July 14, 2010

TO: Members of the MAG Regional Council Executive Committee

FROM: Mayor Thomas Schoaf, City of Litchfield Park, Chair

SUBJECT: REVISED MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA FOR THE MAG REGIONAL COUNCIL EXECUTIVE COMMITTEE AND A POSSIBLE EXECUTIVE SESSION

Monday, July 19, 2010 - 12:00 Noon
MAG Office, Suite 200 - Cholla Room
302 North 1st Avenue, Phoenix

The July 19, 2010 agenda of the MAG Regional Council Executive Committee has been updated to reflect changes to agenda item #7 Update on Exceptional Events and MAG Five Percent Plan for PM-10.

A meeting of MAG Regional Council Executive Committee has been scheduled for the time and place noted above. Members of the Committee may attend the meeting either in person, by telephone conference, or by video conference.

Please park in the garage under the building. Bring your ticket to the meeting, parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Denise McClafferty at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

If you have any questions regarding the Executive Committee agenda items, please contact me at (602) 262-7445. For MAG staff, please contact Dennis Smith, MAG Executive Director, at (602) 254-6300.

MAG EXECUTIVE COMMITTEE
TENTATIVE AGENDA
July 19, 2010

COMMITTEE ACTION REQUESTED

1. Call to Order

   The meeting of the Executive Committee will be called to order.

2. Call to the Audience

   An opportunity will be provided to members of the public to address the Executive Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Executive Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

   2. Information and discussion.

3. Approval of Executive Committee Consent Agenda

   Prior to action on the consent agenda, members of the audience will be provided an opportunity to comment on consent items that are being presented for action. Following the comment period, Committee members may request that an item be removed from the consent agenda. Consent items are marked with an asterisk (*).

   3. Approval of Executive Committee Consent Agenda.

ITEMS PROPOSED FOR CONSENT
BY THE EXECUTIVE COMMITTEE

*3A. Approval of the June 21, 2010 Executive Committee Meeting Minutes

   3A. Review and approval of the June 21, 2010 Executive Committee meeting minutes.

*3B. Consultant Selection for the MAG Intelligent Transportation Systems and Transportation Safety On-Call Services Request for Qualifications

   3B. Approval of the selected list of consultants for the ITS and Transportation Safety on-call services, for the following areas of expertise: (1) Traffic Engineering, (2) ITS Planning, (3) ITS Operations Planning, (4) ITS Training, (5) ITS Evaluation &

The FY 2011 MAG Unified Planning Work Program and Annual Budget, approved by the MAG Regional Council in May 2010, includes a number of projects to be launched in the areas of Intelligent Transportation Systems (ITS) and Transportation Safety. These projects will be executed through on-call consultant contracts with qualified consultants selected in eight areas of technical expertise. A request for qualifications was advertised on April 26, 2010. Two selection panels, each appointed by the ITS Committee and the Transportation Safety Committee, evaluated the statements of qualifications and recommended to MAG the selection of a number of qualified consultant teams, in each of the areas of expertise. On June 22, 2010, the MAG Transportation Safety Committee recommended approval of the list of consultants for Transportation Safety Projects. On July 7, 2010, the ITS Committee recommended approval of the on-call list of consultants for ITS projects. This item is on the July 14, 2010 MAG Management Committee agenda to recommend approval. Please refer to the enclosed material.

Feasibility Studies, (6) ITS Modeling and Supporting Services (7) Regional Fiber Network Planning and Management (8) Transportation Safety Planning.

*3C. Consultant Selection for Building and Employment Databases Project

The fiscal year (FY) 2010 MAG Unified Planning Work Program and Annual Budget, approved by the MAG Regional Council in May 2009, includes $100,000 to create a unified Building and Employment Database. This database will allow for better modeling and visualization capabilities for MAG staff and MAG member agencies. Five proposals were received in response to a request for proposals that was advertised on April 7, 2010. On June 15, 2010, a multi-agency evaluation team reviewed the proposals and unanimously recommended to MAG the selection of Applied Economics to conduct this project in an amount not to exceed $100,000. This item is on the July 14, 2010 MAG Management Committee agenda. Please refer to the enclosed material.

3C. Approval of the selection of Applied Economics to conduct the Building and Employment Database project in an amount not to exceed $100,000.

*3D. Amendment of the FY 2011 MAG Unified Planning Work Program and Annual Budget to Accept FY 2010 Federal Highway Administration Metropolitan Planning Funding

Each year, MAG prepares a Unified Planning Work Program and Annual Budget that lists anticipated revenues for the coming year. Recently, MAG was notified by the Arizona Department of Transportation of the official amount of FY 2010 Federal Highway Administration Metropolitan Planning (PL) funding. An amendment to the FY 2011 MAG Unified Planning Work Program and Annual Budget is needed to decrease this amount by $4,479.64.

3D. Approval to amend the FY 2011 MAG Unified Planning Work Program and Annual Budget to decrease the FY 2010 Federal Highway Administration Metropolitan Planning funding by $4,479.64.

ITEMS PROPOSED TO BE HEARD BY THE EXECUTIVE COMMITTEE

4. Sustainable Communities Program Grant

The Sustainable Communities Planning Grant Program supports the development of regional plans for sustainable development. Applying for this funding now may position the region well if such plans become a requirement with the reauthorization of federal funding. Since April 2010, the MAG Executive Committee as well as other MAG Committees and community partners have explored the most advantageous response for this region. A survey of MAG member agencies in June indicates there may be support for MAG to apply either on behalf of the MAG region or on behalf of the Sun Corridor in partnership with the Pima Association of Governments and the Central Arizona Association of Governments.

The Notice of Funding Availability released by the U.S. Department of Housing and Urban Development indicates the Sun Corridor is eligible for funding through this program. With a grant deadline of August 23, 2010, direction is sought from the MAG Executive Committee on the process and partners to be included with the proposal.

4. Information, discussion and guidance on authorizing MAG to proceed with an application for the HUD Sustainable Communities Planning Grant Program.

5. Joint Planning Advisory Council Update

On June 28, 2010, the Joint Planning Advisory Council (JPAC) held a meeting to present the results of the Global Cities Institute Sun Corridor Study by AECOM. This study identified the future economic engines for the Sun Corridor. The Honorable Jan Brewer was also in attendance and opened the meeting with a discussion on Building Arizona's Economy. Following this meeting, it was suggested that a subcommittee be formed at MAG to provide continuity and guidance on projects related to the JPAC, such as the Freight Transportation Framework Study. Please refer to the enclosed material.

5. Information, discussion and possible action to recommend forming a MAG subcommittee to provide continuity and guidance on projects related to the JPAC, such as the Freight Transportation Framework Study, the proposed Interstate 11 corridor and the proposed inland port.

6. MAG Public Involvement Process

Federal transportation legislation requires Metropolitan Planning Organizations to adopt a formal public involvement process with a public comment component. In 1992, the MAG Regional Council approved a process to allow for public comment at MAG meetings. This process has been enhanced throughout the years. In December 2006, the MAG Regional Council adopted a new MAG Public Participation Plan in response to new federal transportation legislation. The plan includes opportunities for public comment at every MAG technical and policy committee meeting during the Call to the Audience, Consent Agenda, and on all Action items. In addition, MAG prepares three public input opportunity reports each year, including a response to comments section in the Mid Phase and Final Phase reports. Comments are also received via the MAG website, in written form, over the telephone and via e-mail. Nearly all comments received are responded to verbally or in written form. Public records request forms are available on the MAG website and all public records requests are fulfilled as appropriate.

At the June 9, 2010 Management Committee meeting, a committee member proposed a potential future agenda item regarding responses to public comments. It was noted that residents

6. Information, discussion and possible action.

sometimes pose questions during the Call to the Audience, but that under the Arizona open meeting law, committee members cannot engage in dialogue with the residents to address questions or concerns. The law does allow an individual public officer to respond to criticism, ask staff to review an item, or ask that an item be placed on a future agenda. While MAG public involvement staff makes every attempt to respond to citizen questions and concerns, the concern was raised that MAG committee members are not always made aware of how specific issues are resolved with members of the public. MAG staff will provide an update on current public involvement policies and seek input on ideas for addressing how staff communicates outcomes with the policy committees.

7. Update on Exceptional Events and MAG Five Percent Plan for PM-10

On June 21, 2010, the MAG Executive Committee directed staff to retain legal counsel and other consultants to take administrative action needed regarding the Environmental Protection Agency (EPA) nonconcurrence on the four exceptional events at the West 43rd Avenue monitor in 2008 and the EPA's intent to disapprove the MAG Five Percent Plan for PM-10 for reducing dust pollution in the Valley. Staff has been considering potential firms for legal counsel and anticipates engaging legal advice due to the immediacy of the EPA action. On June 23, 2010, EPA indicated that the proposed consent decree has been lodged with the court, but still has to go out to public notice. EPA has to propose action on the MAG Five Percent Plan for PM-10 by September 3, 2010, and finalize the action by January 28, 2011. The Arizona Department of Environmental Quality transmitted comments from ADEQ and MAG on the EPA exceptional events technical support document on June 30, 2010 and July 2, 2010 respectively. The transmittal included a letter from the Western States Air Resources Council expressing concern that EPA has not yet addressed the implementation issues with the Exceptional Events

7. Information, discussion and possible action to recess the meeting to conduct an executive session with MAG's attorney for legal advice regarding the EPA nonconcurrence on the four exceptional events at the West 43rd Avenue monitor in 2008 and the EPA's intent to disapprove the MAG Five Percent Plan for PM-10 for reducing dust pollution in the Valley; and to conduct an interview with an attorney for the purpose of representing MAG regarding this EPA issue. A.R.S. § 38-431.03(A)(3) & A.R.S. § 38-431.03(A)(1).

Rule. Solving these issues is more critical than ever. Further, EPA has issued decisions not to concur with California and Arizona exceptional events where both states are highly confident that these exceedances do meet the criteria in the Rule for qualifying as exceptional events.

The Executive Committee may vote to recess the meeting and go into executive session with MAG's attorney for legal advice regarding the EPA nonconcurrence on the four exceptional events at the West 43rd Avenue monitor in 2008 and the consequences to MAG; and to conduct an interview with an attorney for the purpose of representing MAG regarding this EPA issue. The authority for such an executive session is A.R.S. § 38-431.03(A)(3) & A.R.S. § 38-431.03(A)(1). The Executive Committee will then reconvene regular session. Please refer to the enclosed material.

8. Request for Future Agenda Items

Topics or issues of interest that the Executive Committee would like to have considered for discussion at a future meeting will be requested.

8. Information and discussion.

9. Comments from the Committee

An opportunity will be provided for the Executive Committee members to present a brief summary of current events. The Executive Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.

9. Information

Adjournment

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
MAG REGIONAL COUNCIL EXECUTIVE COMMITTEE
June 21, 2010
MAG Offices, Cholla Room
302 N. 1st Avenue, Phoenix, Arizona

MEMBERS ATTENDING

Councilwoman Peggy Neely, Chair
Mayor Thomas L. Schoaf, Litchfield Park, Vice Chair
Mayor Hugh Hallman, Tempe, Treasurer
Mayor Marie Lopez Rogers, Avondale
Mayor James M. Cavanaugh, Goodyear
Mayor Scott Smith, Mesa
Mayor Jim Lane, Scottsdale

* Not present
# Participated by video or telephone conference call

1. Call to Order

The Executive Committee meeting was called to order by Chair Neely at 12:05 p.m. Chair Neely stated that public comment cards were available for those members of the public who wish to comment. Transit tickets were available from Valley Metro for those using transit to come to the meeting. Parking validation was available from MAG staff for those who parked in the parking garage.

2. Call to the Audience

Chair Neely noted that, according to the MAG public comment process, members of the audience who wish to speak are requested to fill out the public comment cards. She stated that there is a three-minute time limit. Public comment is provided at the beginning of the meeting for items that are not on the agenda that are within the jurisdiction of MAG, or non-action agenda items that are on the agenda for discussion or information only. Chair Neely noted that no public comment cards had been received.

3. Consent Agenda

Chair Neely noted that prior to action on the consent agenda, members of the audience are provided an opportunity to comment on consent items that are being presented for action. Following the comment period, Committee members may request that an item be removed from the consent agenda. Chair Neely noted that no public comment cards had been received.

Chair Neely requested a motion to approve the consent agenda. Mayor Schoaf noted a correction in the minutes under agenda item #6 that is the reference to Vice Mayor Schoaf which should be Vice Chair Schoaf. Dennis Smith stated that correction will be made.

Mayor Schoaf then moved to approve items #3A and #3B. Mayor Lopez Rogers seconded the motion and the motion carried unanimously.

3A. Approval of the May 17, 2010 Executive Committee Meeting Minutes

The Regional Council Executive Committee, by consent, approved the May 17, 2010, Executive Committee meeting minutes.

3B. Amendment to the FY 2010 MAG Unified Planning Work Program and Annual Budget to Accept Funding from the City of Phoenix for Human Services Transportation Coordination Planning

The Regional Council Executive Committee, by consent, approved the budget amendment to the FY 2010 MAG Unified Planning Work Program and Annual Budget (UPWP) to add a new Intergovernmental Agreement that increases the FY 2010 MAG UPWP by $192,385. The FY 2010 MAG Unified Planning Work Program and Annual Budget (UPWP) was approved on May 27, 2009. A new intergovernmental agreement for Human Services that was not included in the FY 2010 MAG UPWP was awarded to MAG recently. This item is to recommend approval of an amendment to the MAG 2010 UPWP increasing the budget in Human Services for a new intergovernmental agreement received from the City of Phoenix to conduct human services transportation coordination planning. This planning is required by SAFETEA-LU and affects any applicants for Section 5310, Elderly Persons and Persons with Disabilities; Section 5316, Job Access and Reverse Commute; and Section 5317, New Freedom. The intergovernmental agreement increases the FY 2010 MAG UPWP by $192,385.

5. Sustainable Communities Program Grant

This agenda item was taken out of order. Chair Neely suggested that the Committee consider agenda item number 4 last due to the anticipated length of discussion.

Amy St. Peter thanked the Executive Committee for the opportunity to provide an update on the Sustainable Communities Program Grant. She stated that the HUD Sustainable Communities Planning Grant Program makes $100 million available nationally to support the creation of regional plans for sustainable development. Of this amount, $5 million is available for large metro areas and $2 million is available for small metro or rural areas. Ms. St. Peter stated that the advance notice did not define eligible applicants or regions and the Notice of Funding Availability (NOFA) still has not been released. She noted that information on this item was presented to this Executive Committee in April and May, and to Regional Council in May as well. She stated that at the request of the Regional Council in May, MAG surveyed member agencies to determine if they intended to apply for this grant on their own; if they supported MAG applying on behalf of the MAG region; and if they supported MAG working with the Pima Association of Governments (PAG) and the Central Arizona Association of Governments (CAAG) to apply on behalf of the Sun Corridor. Ms. St. Peter stated that 24 responses were received, and of this number, two member agencies intend to submit their own applications for the $2 million category; five agencies have expressed interest in submitting a West Valley application for the $2 million category; fifteen agencies supported MAG applying on behalf of the region, with eight agencies undeclared and one neutral. Ms. St. Peter explained that Maricopa County was approached by ASU to develop an application for the $5 million category. Maricopa County told them they are prioritizing a MAG application and would

only work with them if it was not in competition with the MAG application. She noted that PAG and CAAG continue to express interest in working with MAG to submit a consolidated application on behalf of the Sun Corridor. This would include all of Maricopa County.

Chair Neely asked for the number of agencies that are supportive of the Sun Corridor application. Ms. St. Peter stated that of the agencies that responded, fourteen were supportive on applying on behalf of the Sun Corridor; eight agencies did not have a position; one agency was neutral; and one agency did not support the Sun Corridor application because they were concerned that the money would not cover the entire Sun Corridor. She summarized that the majority of MAG member agencies are supportive of MAG applying for this grant on behalf of the region and on behalf of the Sun Corridor. She noted that staff is looking for direction as to whether either of these options should be pursued. She stated that hopefully, the Notice of Funding Availability will lend clarity and help determine the most competitive approach for the region to adopt. Ms. St. Peter stated that it is MAG's highest priority to support the member agencies and not to compete with them in any way. She noted that it appears that applying for such funds could make the region more competitive in the future if regional plans become a requirement with the reauthorization of transportation funding. In addition, the trend in federal funding has been to focus on and reward collaborations and partnerships. Ms. St. Peter stated that more than 20 community agencies have approached MAG wanting to collaborate. She noted that if our intention is not to do so, staff should notify them so they can develop other plans. She also noted that, to date, there has been no indication that receiving these funds would incur additional requirements. Ms. St. Peter assured the Executive Committee that staff will carefully review the Notice of Funding Availability when it is released to determine if that is still the case. She then thanked the Committee for their time and stated she would be happy to answer any questions.

Mayor Schoaf asked if it was possible for an agency to be a part of several different grant applications. Ms. St. Peter replied that at this point, it seems as though that is a possibility. She stated that when the NOFA is released, that may be limited. Mayor Lopez Rogers stated that she is supportive of the Sun Corridor application, but is hesitate not knowing what strings may be attached. She also asked that if MAG receives the grant, will there be a need to hire additional staff. Mr. Smith responded that at the present time, there are no plans to hire staff. He noted that maybe it could be interns or contractors, which have already approached MAG. Mr. Smith stated that we are unclear right now until the NOFA is released. He stated that we will have more information at the next Executive Committee meeting after the NOFA is released. Mayor Lopez Rogers stated that there are a lot of questions. She has heard that they really want serious applications and that there may be a very large percentage of match required. Ms. St. Peter responded that some of the other cities also expressed their concern about the match. She noted that right now the advanced notice had indicated a 20 percent match, which could be in-kind. She also noted that it looks like plans like this may become a requirement of the federal transportation reauthorization funding. Chair Neely stated that it has become clear that the State of Arizona will only be awarded one application, if any. She noted that HUD is encouraging the application to be more than just Maricopa County, and recognizes that this makes some member agencies uncomfortable. Chair Neely stated that this is the chance to look at opportunities we have not looked at before. She noted that this may be an opportunity to assist us in finding solutions for air quality issues in the region. Chair Neely stated that the Committee needs to give staff some direction today and her suggestion is that we do not compete against member agencies for the small level grants, but we should look at the Sun Corridor region in the grant application.

Mayor Smith stated that he agrees. He noted that there is $100 million available nationwide, and that is a small amount. He agreed that the Sun Corridor is something that would stand out in the application competition. Mayor Smith stated that his preference would be the Sun Corridor application. Chair Neely asked that this Committee stand ready to meet if need be and asked staff to provide more information and direction once the NOFA becomes available. Chair Neely thanked Ms. St. Peter for her report.

6. Transit Planning Responsibilities

Dennis Smith stated that in the Committee's packet is the revised responsibilities chart. He noted that at the last Executive Committee meeting, there was a legal question that the Committee asked staff to research. He stated that Fredda Bisman, MAG legal counsel, and Eric Anderson have been in discussions about that question. Mr. Smith stated that Mayor Schoaf also had a question at the last meeting regarding the other portion of the law that refers to MAG already being the agency to approve any changes to the TIP and RTP. He then asked Eric Anderson to update the Committee.

Mr. Anderson stated that the memorandum of understanding (MOU) was signed April 6th and SB1063 is due to go into effect on July 29, 2010. He noted that there are a number of concepts both in the MOU and SB 1063 that raises some questions. He stated that one of the major questions is what does the language in SB1063 that references the Transit Life Cycle Program (TLCP) mean. The bill language says, "changes to the budget that materially impact the performance of the Regional Transportation Plan...or that add or delete current or planned regional service and corridor, shall be approved by the Regional Planning agency..." He noted that there are several questions within that one statement. Mr. Anderson stated that he had discussions with the MAG attorney as to whether there are any legal or statutory definitions that might guide us in terms of what the clause "materially impact the performance of the Regional Transportation Plan (RTP)" really means. Fredda Bisman stated that there is nothing in the legislation that references what the intent of "materially" means. She also noted that she did not find any cases that refers to material changes or impacts in regards to the Transportation Plan. She stated that we could look at is general case law about what "material" means. She noted that this does not clarify much. Ms. Bisman stated that generally the reference to adding or deleting current or planning regional service was thought to cover most of what would be material changes. Mr. Anderson suggested that it was unlikely that there would be anything that would have a significant impact that is not one of those factors. He noted that the more important language is "add or delete current or planned additional service in a corridor." He gave an example as part of the Life Cycle Program approved earlier this year, there were substantial reductions in planned bus rapid transit service in the region. Mr. Anderson stated under the new language in SB 1063, those changes would come to MAG for approval. He explained that those changes would also represent a material impact to the Plan, because we are actually changing or deleting major service that was part of the Regional Transportation Plan.

Mr. Anderson stated that there is another part of the statute that deals specifically with the Regional Transportation Plan (RTP), Title 28-6353, which is the provision in state law that provides guidance in terms of how we deal with the RTP. He noted that from a policy standpoint, the question is, when the Regional Public Transportation Authority (RPTA) is making changes in the Transit Life Cycle Program, how does that agency proposing changes get concurrence or approval for those changes by MAG. Mr. Anderson stated that we did get comments from RPTA on trying to assist in some of the definition issues and they suggested that we go back to how "material change" is defined in the TLCP policies. He confirmed that was a good suggestion, but those definitions apply to projects

themselves and how costs and scopes change on a project basis, and what the language in SB 1063 refers to is how the overall Plan is impacted. Mr. Anderson stated that staff will need to do more research, but the big question is how do we coordinate the Board actions/approvals by RPTA on the TLCP with the Board action of the MAG Regional Council.

Mr. Smith stated that in the statute on the freeway side, it is obvious that MAG has had the authority all along. He noted that what we have are two agencies with similar missions and we are trying to sort out the missions of the two agencies. Mr. Smith noted that on the highway side, we do not have a board approving something and then sending it to MAG. Mr. Anderson provided the information on the historical practice regarding changes to the TLCP. He noted that after the TLCP is approved by the RPTA board, MAG staff then takes that TLCP information and incorporates that information into the RTP and the TIP that then goes to the Regional Council for approval. Mr. Anderson stated that in a technical sense, MAG is approving the changes to the TLCP as part of the MAG TIP and RTP. He noted that MAG is not taking separate action on these changes. He noted that changes in the State Law as it relates to changes in the TLCP would indicate that MAG needs to take a separate action on the TLCP proposed changes.

Chair Neely stated that she agrees that we have been the body approving these changes through incorporation into our TIP and RTP. She suggested that we provide clarification that MAG will now approve these changes separately. Mayor Hallman agreed with Chair Neely and suggested this process be in writing and then adopted by the MAG Executive Committee and Regional Council. Chair Neely agreed. Mayor Schoaf stated the in SB 1063, one of the sections states that the Regional Planning agency shall "develop" the public transportation element of the RTP. He asked whether develop implies that all the work is done in RPTA and then MAG simply votes to approve or disapprove, or is MAG staff working on developing this element so that when brought to the Executive Committee it is a product of the MAG process. Mr. Anderson replied that our plan is to develop the public transit element of the RTP within MAG. He added that we will certainly work with the transit operators, RPTA, City of Phoenix and Tempe, as we develop the plan. Mayor Schoaf stated that there are some policy decisions that have been made in developing the regional transportation transit portion of our plan in the past, and those policy issues will drive a number of the planning answers. He asked whether those policy issues will be decided at MAG so that we agree on what the policy will be to drive this planning effort. Mr. Anderson replied that there are some policies and procedures in place as adopted by the RPTA board that govern the TLCP and how changes to that TLCP are handled within the RPTA structure. He noted that MAG may be able to comment or impact those, but whether MAG could change those is up to further discussions. He noted that there are some policies related to transit, from a long-term planning perspective, that are important to begin to have a regional dialogue and need to be imbedded in the RTP. Mr. Anderson noted that those are creating a regional transit vision for the region with basic concepts in terms of service levels, as well as integrating transit with other modes to provide a more effective system.

Mayor Schoaf asked if those policies that drive planning will be policies that MAG will review and adopt as MAG policies, or will they be policies that have been adopted by RPTA and MAG must follow with some possible input. Mr. Anderson stated that MAG as an agency and within our planning responsibilities can establish policies for transit that can drive transit in this region. Mayor Schoaf stated that MAG will look at various issue that drive these types of planning decisions and adopt policies that are appropriate given the MAG process. Mr. Anderson confirmed that was correct. Mr. Smith stated that another component that MAG needs to bring to the transit discussion

on making these decisions is the technical foundation and modeling. Chair Neely suggested that the process be put in writing for review and adoption by the board. Mayor Smith asked if there was anything that could materially impact the performance of the regional plan that does not involve adding or deleting service in a corridor. Mr. Anderson replied that statement probably covers 90 percent of the potential changes. Mayor Smith stated that the issue may be with frequency of service and whether that is adding or deleting service. Mr. Anderson stated that staff will address that issue with the partners.

Chair Neely noted that we are talking about planning and should not cloud the discussion with operations issues. Mayor Smith agrees, but stated that it is sometimes hard to determine where operations ends and planning begins. He suggested refining what is in the agreement and keep it at a high level. Mayor Hallman stated that he is focused on keeping policy versus implementation and local control versus regional interests clearly separated. Chair Neely stated that she agrees and noted this is our chance to show that we can be successful in these efforts.

7. MAG Committee Chair and Vice Chair Appointments ending June 30, 2010

Mayor Hallman moved to approve the appointments of the technical and policy committee chairs and vice chairs ending June 30, 2010 as noted on the attached chart. Mayor Cavanaugh seconded the motion and the motion carried unanimously.

8. 2010 Desert Peaks Awards Update

Kelly Taft thanked the Executive Committee for the opportunity to provide a brief update regarding the upcoming Desert Peaks Awards. She stated that the awards ceremony will be held on Wednesday, June 30th, immediately following the MAG Regional Council Annual Meeting. The Annual Meeting and the Awards program will both be held at the Downtown Phoenix Sheraton, located at 340 N. 3rd Street, and validation tickets will be provided for parking at the meeting. Ms. Taft noted that the Regional Council meeting will be held at its regular time of 5:00 p.m. on the 2nd floor of the Sheraton in the Valley of the Sun Ballroom, Room D. She stated that the awards program will begin at approximately 6:15 p.m. The awards program will be held in Room A of the Valley of the Sun Ballroom Room , which is adjacent to the Regional Council meeting room. Ms. Taft stated that a reception will be held beginning at 5:30 p.m. when guests can check in and make use of their two free drink tickets and enjoy the hors d'oeuvres that will be provided. There is no cost to attend the event and the cost of the program is being defrayed by sponsorships. She stated that MAG received approximately $15,000 in sponsor donations. Award recipients were notified in advance, and the RSVPs are currently at approximately 230. Ms. Taft commented that a special photo location will be set up for award recipients or others who want to commemorate the event. She noted that a copy of the program was at the table and outlines the evening flow.

Ms. Taft stated that Chair Neely will serve as the emcee of the event and Dennis Smith will introduce Chair Neely, who will begin the program by recognizing attending Regional Council members, Past MAG officers, special guests or elected officials, and Management Committee members. Chair Neely will also recognize the event sponsors, as well as the judges who elected the award recipients. Ms. Taft noted that following the introduction the awards presentation will begin. She noted that a copy of the portion of the script has been emailed to each presenter's intergovernmental representative, along with a memo that outlines the process. Ms. Taft noted that there have been a couple of minor edits and new hard copies are available for each committee

member at their place. She explained that generally, one person is called to the stage to accept the large project award and make comments on behalf of the group. The Mayor presenter then calls up the partnering agencies, who do not speak but who come to the stage to receive a smaller personalized version of the award. However, she noted that MAG is accommodating several requests this year to allow more than one individual to come to the stage and share the microphone based on the unique circumstances of the partnership, so there are several exceptions to the normal award flow. Ms. Taft stated that this affects only the group awards, so rather than take the time right now, she requested time after the meeting to discuss each presenter's instructions to prevent confusion during the event.

Ms. Taft stated that Chair Neely will come to the microphone to introduce each Executive Committee presenter. Mayor Schoaf is scheduled to present the Public Partnership award. She noted that in that category, the judges selected two recipients. Mayor Cavanaugh will present the Public Private Partnership award, where the judges also selected two recipients; Mayor Lane will present the Professional Service award; Mayor Smith will present the Regional Partnership award; and Mayor Hallman will present the Regional Excellence Award. Ms. Taft stated that we will conclude the program with the passing of the gavel. She also noted that we received a number of donated raffle prizes and we will have several great door prize drawings throughout the event. Ms. Taft stated that concluded her update and she would be happy to take any questions.

Chair Neely thanked Ms. Taft and stated that it sounds like we have a good turn out for the event.

4. Update on Exceptional Events and MAG Five Percent Plan for PM-10

This agenda item was taken out of order. Dennis Smith stated that staff was directed at the last Regional Council meeting to return to the Executive Committee with the motion to explore getting legal assistance on the PM-10 issue. Chair Neely suggested that the Committee go into executive session. Mayor Hallman moved that the Executive Committee enter into Executive Session for the purpose of obtaining legal advice. Mayor Lane seconded the motion and the motion carried unanimously. The Executive Committee went in to executive session at 12:55 p.m.

The Executive Committee reconvened executive session at 1:20 p.m.

Mayor Smith moved to authorize staff to retain legal counsel and other consultants, and take administrative action needed regarding the EPA nonconcurrence on the four exceptional events at the West 43rd Avenue monitor in 2008 and the EPA's intent to disapprove the MAG Five Percent Plan for PM-10 for reducing dust pollution in the Valley. Mayor Lane seconded the motion and the motion carried unanimously.

9. Request for Future Agenda Items

Chair Neely asked if there were any requests for future agenda items. There were none.

10. Comments from the Committee

Chair Neely asked if there were any comments for the committee members. Mr. Smith stated that the Joint Planning Advisory Council (JPAC) meeting is scheduled for June 28, 2010 at the Sheraton

Wild Horse Pass. He noted that there are 45 participates from the MAG region attending, and we are waiting for the attendee list from PAG and CAAG. Mr. Smith noted that the Governor will be in attendance as well. Mr. Smith stated that we are looking forward to that meeting.

Adjournment

Mayor Hallman moved to adjourn the Executive Committee meeting. Mayor Lane seconded the motion and it carried unanimously. There being no further business, the Executive Committee adjourned at 1:26 p.m.

_____
Chair

_____
Secretary

Agenda Item #3B

MARICOPA ASSOCIATION OF GOVERNMENTS
INFORMATION SUMMARY... for your review

DATE:
July 12, 2010

SUBJECT:
Consultant Selection for the MAG Intelligent Transportation Systems and Transportation Safety On-Call Services Request for Qualifications

SUMMARY:
The 2011 MAG Unified Planning Work Program includes projects to be launched in the areas of Intelligent Transportation Systems (ITS) and Transportation Safety. The area of ITS was further subdivided into seven subareas of expertise resulting in a total of eight areas of technical expertise: (1) Traffic Engineering, (2) ITS Planning, (3) ITS Operations Planning, (4) ITS Training, (5) ITS Evaluation & Feasibility Studies, (6) ITS Modeling and Support Services (7) Regional Fiber Network Planning and Management (8) Transportation Safety Planning. Approximately 36 projects, in these eight areas, are planned to be carried out using a list of On-Call consultants that are qualified in each area of technical expertise. The On-Call contracts will be utilized over a span of two-years to complete these projects. Project oversight will be provided by the ITS Committee and the Transportation Safety Committee.

The origin of ITS projects to be carried out through on-call consulting services, and what they hope to accomplish in the region are linked to regional ITS objectives and recommendations stated in the MAG ITS Strategic Plan approved in April 2001. One of the projects will update this Plan in 2011. Transportation safety projects to be carried out will support the project planning and programming process for the new federally funded safety improvement projects.

A request for qualifications (RFQ) was advertised on April 26, 2010, and 28 consulting teams (Attachment One) submitted proposals seeking to qualify for ITS consulting services, with 22 of the teams also seeking to qualify in Transportation Safety. Two selection panels consisting of transportation professionals from MAG member agencies, the MAG ITS Committee, the MAG Transportation Safety Committee and MAG staff evaluated the proposals and recommended to MAG a number of qualified consultant teams in each of the eight areas of technical expertise (shown in Attachment Two).

PUBLIC INPUT:
None has been received.

PROS & CONS:
PROS: Approximately 36 projects, in the eight areas of technical expertise, are expected to be launched through the resulting ITS/Transportation Safety on-call services contracts, over a period of two years. These contracts will enable MAG and member agencies obtain consultant services in an efficient manner. Execution of the planned projects using consultant services will be extremely helpful for improving the region's transportation system and related operations. Recent experience at MAG has shown that utilizing on-call consultant services as the method of procurement leads to very efficient execution of projects.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS:
TECHNICAL: None.

POLICY: The resulting consultant projects will, in general, not result in any changes to existing regional policies. In the area of traffic signal operations, some projects may lead to recommendations for unified operations.

ACTION NEEDED:
Approval of the selected list of consultants for the ITS and Transportation Safety on-call services, for the following areas of expertise: (1) Traffic Engineering, (2) ITS Planning, (3) ITS Operations Planning, (4) ITS Training, (5) ITS Evaluation & Feasibility Studies, (6) ITS Modeling and Supporting Services (7) Regional Fiber Network Planning and Management (8) Transportation Safety Planning.

PRIOR COMMITTEE ACTIONS:
This item is on the July 14, 2010 Management Committee agenda to recommend approval of the selected list of consultants for the ITS and Transportation Safety on-call services, for the following areas of expertise: (1) Traffic Engineering, (2) ITS Planning, (3) ITS Operations Planning, (4) ITS Training, (5) ITS Evaluation & Feasibility Studies, (6) ITS Modeling and Supporting Services (7) Regional Fiber Network Planning and Management (8) Transportation Safety Planning.

On July 7, 2010, the MAG Intelligent Transportation Systems Committee unanimously recommended approval of the list of consultants as shown in Attachment Two (Areas of Expertise 1 through 7) for ITS projects.

MEMBERS ATTENDING

Scott Nodes, ADOT
* Soyoung Ahn, ASU
Margaret Boone-Pixley, City of Avondale
Thomas Chlebanowksi, Town of Buckeye
Mike Mah, City of Chandler
* Lt. Jenna Mitchell, DPS
* Jerry Horacek, City of El Mirage
Jennifer Brown, FHWA
Kurt Sharp, Town of Gilbert
Debbie Albert, City of Glendale
Luke Albert, City of Goodyear
Nicolaas Swart, Maricopa County (Chair)
Derrick Bailey, City of Mesa
* Ron Amaya, City of Peoria
Marshall Riegel, City of Phoenix
Bob Ciotti, Phoenix Public Transit
Bill Birdwell, Town of Queen Creek
Bruce Dressel, City of Scottsdale
Albert Garcia for Nick Mascia, City of Surprise
Cathy Hollow for Jim Decker, City of Tempe
Arkady Bernshteyn, Valley Metro Rail

The MAG Transportation Safety Committee recommended approval of the list of consultants for Transportation Safety Projects shown in Attachment Two (Area of Expertise 8) at their June 22, 2010 meeting, with nine abstention (shaded).

MEMBERS ATTENDING

Megan Sigl for Linda Gorman, AAA Arizona
* Tom Burch, AARP
Kohinoor Kar, ADOT
Heather Hodgman for Shane Kiesow, Apache Junction
* Robert Gray, Arizona State University
Margaret Boone-Pixley, Avondale
* Martin Johnson, Chandler
* Lt. Jenna Mitchell, DPS
* Jorge Gastelum, El Mirage
* Karen King, FHWA
Kurt Sharp, Gilbert
Chris Lemka, Glendale
* Hugh Bigalk, Goodyear
Chris Plumb, Maricopa County
Renate Ehm, Mesa
* William Mead, Paradise Valley
Mannar Tamirisa for Jamal Rahimi, Peoria
Maduri Uddaraju for Kerry Wilcoxon, Phoenix
Paul Porell, Scottsdale
Tracy Eberlein, Surprise
Julian Dresang, Tempe (Chair)
* Gardner Tabon, RPTA

* not present

On June 14, 2010, the two selection panels met separately to finalize their review of Statements of Qualifications and reached a consensus to recommend qualified consultant teams in each of the eight areas of technical expertise.

ITS On-Call Selection Panel
Scott Nodes, ADOT
Mike Mah, City of Chandler
Debbie Albert, City of Glendale
Bob Steele, Maricopa County
Audrey Skidmore, MAG
Sarath Joshua, MAG

Transportation Safety On-Call Selection Panel
Linda Gorman, AAA AZ
Chris Lemka, City of Glendale
Mannar Tamirisa, City of Peoria
Paul Porrell, City of Scottsdale
Julian Dresang, City of Tempe
Sarath Joshua, MAG

CONTACT PERSON:
Sarath Joshua, MAG, (602) 254-6300.

ATTACHMENT ONE

MAG ITS AND TRANSPORTATION SAFETY
ON-CALL CONSULTANT SERVICES RFQ
LIST OF CONSULTANTS THAT SUBMITTED QUALIFICATIONS

AECOM Technical Services Inc.
AMEC Earth & Environmental, Inc.
Arizona State University
Ayres Associates Inc.
Cambridge Systematics, Inc.
CivTech
Delcan Corporation
DMD and Associates Ltd.
EPS Group, Inc.
Gannet Fleming Inc.
Horrocks Inc.
Jacobs Engineering Group, Inc.
Kimley-Horn and Associates, Inc.
Lee Engineering, LLC
Michael Baker Jr., Inc.
Parsons Brinckerhoff America
PBS&J
Purvis Systems Inc.
Siemens Industry Inc.
Stantec Consulting Services Inc.
Strand Associates Inc.
SWTE LLC
Telvent
The CK Group, Inc.
United Civil Group
University of Arizona
Wilbur Smith Associates, Inc.
Y.S. Mantri & Associates, LLC.

MAG ITS AND TRANSPORTATION SAFETY ON-CALL CONSULTANT SERVICES RANK ORDERED LIST OF QUALIFIED CONSULTANTS

Area of Expertise 1: Traffic Engineering
1. Lee Engineering, LLC
2. Kimley-Horn and Associates
3. Y.S. Mantri & Associates, L.L.C.
4. Ayres Associates Inc.
5. Michael Baker Jr., Inc.
6. Jacobs Engineering Group, Inc.
6. PBS&J
8. AMEC Earth & Environmental, Inc.
8. Stantec Consulting Services Inc.
10. The CK Group, Inc.

Area of Expertise 2: ITS Planning
1. Kimley-Horn and Associates
2. Lee Engineering LLC
3. Parsons Brinckerhoff America
4. Ayres Associates Inc.
5. Jacobs Engineering Group, Inc.

Area of Expertise 3: ITS Operations Planning
1. Kimley-Horn and Associates
2. Jacobs Engineering Group, Inc.
3. Stantec Consulting Services Inc.
4. Cambridge Systematics, Inc.

Area of Expertise 4: ITS Training
1. Lee Engineering LLC
2. Kimley-Horn and Associates
3. Ayres Associates Inc.
4. University of Arizona
5. Jacobs Engineering Group, Inc.
5. Y.S. Mantri & Associates, L.L.C.

Area of Expertise 5: ITS Evaluation
1. Kimley-Horn and Associates
2. Cambridge Systematics, Inc.
3. Parsons Brinckerhoff America
4. Lee Engineering LLC

Area of Expertise 6: Modeling Support
1. Jacobs Engineering Group, Inc.
2. Cambridge Systematics, Inc.
3. Parsons Brinckerhoff America
4. Kimley-Horn and Associates
5. University of Arizona
6. Lee Engineering LLC

Area of Expertise 7: Fiber Network Management
1. Kimley-Horn Associates, Inc.
2. Purvis Systems Inc.
3. Parsons Brinckerhoff America
4. Jacobs Engineering Group, Inc.

Area of Expertise 8: Transportation Safety
1. Lee Engineering
2. Kimley-Horn Associates, Inc.
3. Jacobs Engineering Group, Inc.
4. Cambridge Systematics, Inc.
5. Stantec Consulting Services Inc.
6. EPS Group Inc.
7. AMEC Earth & Environmental, Inc.
8. Wilbur Smith Associates, Inc.
9. AECOM Technical Services, Inc.
10. Michael Baker Jr., Inc.

Agenda Item #3C

MARICOPA ASSOCIATION OF GOVERNMENTS INFORMATION SUMMARY... for your review

DATE:
July 12, 2010

SUBJECT:
Consultant Selection for Building and Employment Database

SUMMARY:
The fiscal year (FY) 2010 MAG Unified Planning Work Program and Annual Budget, approved by the MAG Regional Council in May 2009, includes $100,000 to create a unified Building and Employment Database. This database will allow for better modeling and visualization capabilities for MAG staff and MAG member agencies.

MAG has been preparing subregional socioeconomic projections for the region for more than twenty-five years to provide input to transportation and air quality modeling. With the increase in population in the region – from 1.5 million in 1980 to four million in 2009 – sound socioeconomic projections are crucial to properly plan for and manage this growth. Recently, MAG initiated a behavioral socioeconomic model, Arizona's Socioeconomic Model, Analysis and Reporting Toolbox (AZ-SMART) to enhance the MAG socioeconomic modeling and to prepare for the transportation activity model currently being developed. A clear understanding of the built space and employment in the region is an important input to this model.

MAG staff currently maintains a Geographic Information System (GIS) database of employers and employment in Maricopa County. This database represents a synthesis of employer location and employment data purchased or acquired from a private clearinghouse, government agencies, and local knowledge. MAG's 2009 draft Employer database contains more than 45,000 distinct locations for employers in Maricopa County with five or more employees. MAG recently created a Built Space database of data on residential and non-residential built space by MAG parcel. This project will then compile additional building and employment inventory databases for the MAG Region and link all of these databases together for a unified Building and Employment Database.

The Request for Proposals was advertised on April 7, 2010. Five proposals were received: Applied Economics, ARCADIS, Belfiore Real Estate Consulting, InfoGroup and TerraSystems Southwest. A multi-agency proposal evaluation team consisting of MAG member agencies and MAG staff reviewed the proposal documents and, on June15, 2010, the proposal evaluation team recommended to MAG the selection of Applied Economics to conduct this project in an amount not to exceed $100,000.

PUBLIC INPUT:
No public input has been received.

PROS & CONS:
PROS: The unified Building and Employment database created by this project will provide the employment by place of work data necessary for input into the MAG socioeconomic model, AZ-SMART and the transportation activity model currently under construction.

CONS: None.

TECHNICAL & POLICY IMPLICATIONS:
TECHNICAL: The unified Building and Employment database created by this project is a necessary input to the MAG socioeconomic model, AZ-SMART.

POLICY: MAG and MAG member agencies will be able to use the unified Building and Employment database created by this project to assess the spatial relationships of employment by industry for policy and economic development activities.

ACTION NEEDED:
Approval of the selection of Applied Economics to conduct the Building and Employment Database project in an amount not to exceed $100,000.

PRIOR COMMITTEE ACTIONS:
This item is on the July 14, 2010 Management Committee agenda to recommend approval of the selection of Applied Economics to conduct the Building and Employment Database project in an amount not to exceed $100,000.

On June 15, 2010, the proposal evaluation team recommended to MAG the selection of Applied Economics to complete the Building and Employment Databases project for an amount not to exceed $100,000.

Tom Elder, City of Phoenix
Sammi Curless, City of Avondale
David Williams, Town of Queen Creek
Rita Walton, MAG
Anubhav Bagley, MAG
Jason Howard, MAG
Jami Garrison, MAG

CONTACT PERSON:
Jami Garrison, MAG, (602) 254-6300

Agenda Item #4

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490

July 12, 2010

TO: Members of the MAG Regional Council Executive Committee

FROM: Amy St. Peter, Human Services Manager

SUBJECT: SUSTAINABLE COMMUNITIES PROGRAM GRANT

The Sustainable Communities Planning Grant Program supports the creation of regional plans for sustainable development. Applying for this funding now may position the region well if such plans become a requirement with the reauthorization of federal funding. Since April, the MAG Executive Committee has received information about the program and offered direction regarding MAG's role in addressing this opportunity. This memorandum provides an update on activities undertaken since the June MAG Executive Committee, a report on details about the grant competition, and recommendations for the Committee's consideration.

At the June MAG Executive Committee meeting, the Committee discussed the viability of MAG applying on behalf of the Sun Corridor. A survey of MAG member agencies indicated support for this option. The U.S. Department of Housing and Urban Development released the Notice of Funding Availability (Notice) for the Sustainable Communities Planning Grant Program on June 24, 2010. The Notice indicates the Sun Corridor is an eligible region for this grant. The Sun Corridor is defined as Maricopa, Pinal, and Pima Counties. MAG staff confirmed the eligibility of the Sun Corridor with HUD staff in Washington, D.C. They emphasized the importance of addressing the entire Counties within the grant application. This is in alignment with MAG's priority of ensuring the entire region benefits from this grant.

HUD has also emphasized the importance of developing a diverse consortium of partners for this grant. The Notice mandates that all consortiums include the metropolitan organization for the region; the traditional principal city; a nonprofit agency; and additional cities, counties and tribes to ensure that the consortium represents no less than 50 percent of the population residing within the region. MAG is working with the Pima Association of Governments and the Central Arizona Association of Governments to identify potential partners for the Sun Corridor Consortium. HUD is requiring all consortium partners to sign a partnership agreement. Any partners receiving funding through the grant are required by HUD to sign a Memorandum of Understanding.

All partners on the grant will receive the benefit of preferred sustainability status if the application meets certain threshold requirements. HUD created this status to reward consortia that have promising proposals but are not funded. The benefits of receiving preferred sustainability status include receiving technical assistance to assist the applicant in the following year's grant application. The status also benefits all members of the consortium when they apply for other federal grants. HUD will be releasing additional details about the preferred sustainability status as they further define the concept.

The preferred sustainability status will assist regions to maintain momentum even in the absence of grant funding. HUD has indicated this will be an extremely competitive application process. In order to develop a competitive application, MAG staff recommends the following steps for consideration by the MAG Executive Committee:

1. Approve MAG as the lead applicant to work collaboratively with MAG member agencies, PAG, CAAG, and community partners to submit an application for the Sustainable Communities Planning Grant Program on behalf of the Sun Corridor by August 23, 2010. The application will request up to $5 million for a three year period.

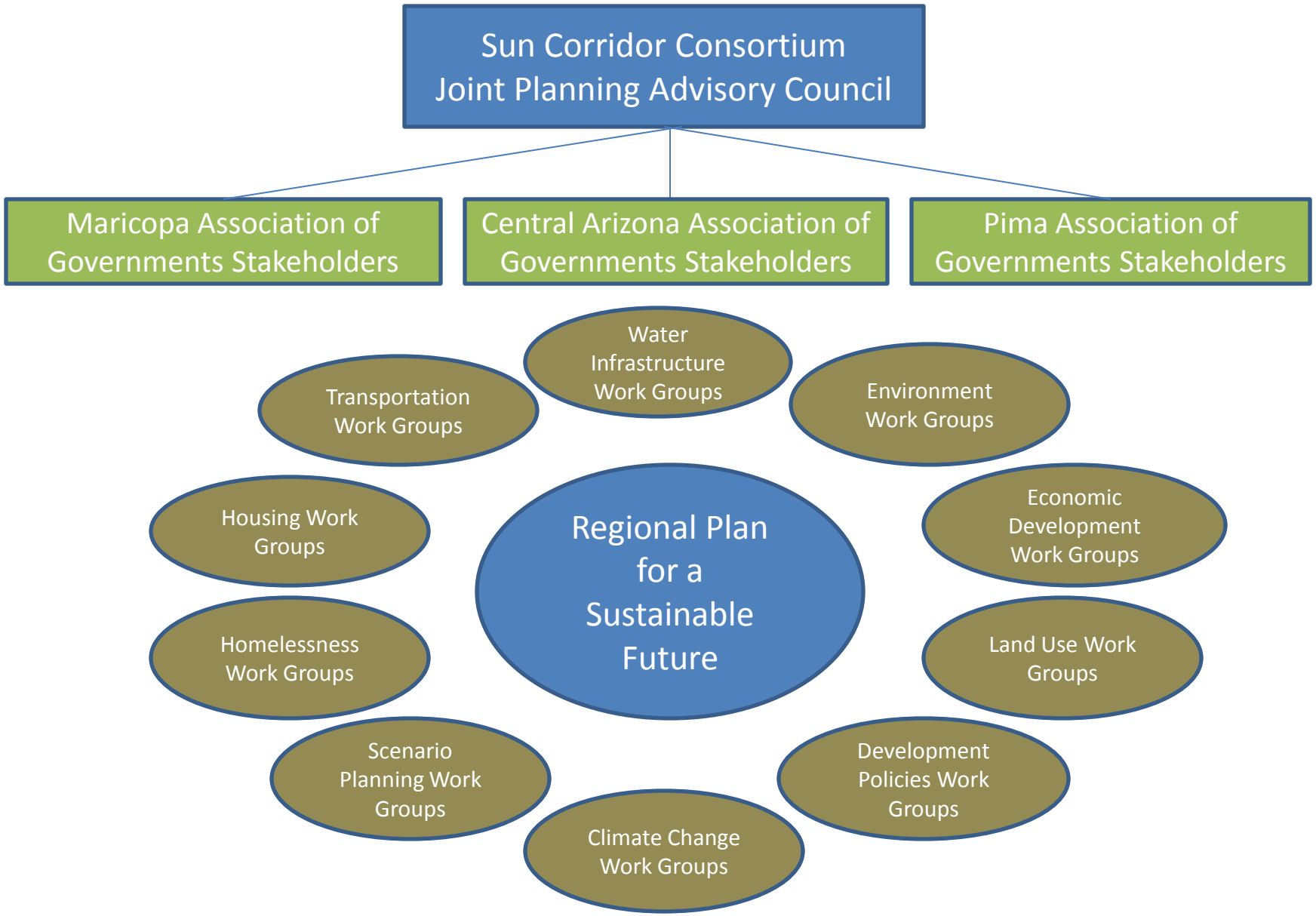
2. Direct MAG staff to solicit signed partnership agreements and Memorandums of Understanding from diverse representatives including but not limited to MAG member agencies, nonprofit agencies, educational institutions, and philanthropies. This will demonstrate a high level of community engagement and collaboration.

3. Recommend that the MAG Regional Council Chair sign a partnership agreement on behalf of the MAG member agencies or that the full MAG Regional Council approve the partnership agreement at their July meeting.

4. Approve the enclosed organizational chart indicating that the Joint Planning Advisory Council will coordinate grant activity at the Sun Corridor level. MAG, PAG, and CAAG will convene local stakeholders to identify strategies at the regional level.

If you have any questions regarding this item, please contact me at the MAG office at (602) 254-6300.

Sun Corridor Consortium Organizational Chart



Sun Corridor Consortium; Regional Stakeholders; Work Groups to Address Regional Plan Elements

Agenda Item #5

MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490

July 12, 2010

TO: Members of the MAG Regional Council Executive Committee

FROM: Denise McClafferty, Management Analyst III

SUBJECT: JOINT PLANNING ADVISORY COUNCIL (JPAC) UPDATE

On June 28, 2010, the Joint Planning Advisory Council (JPAC) held a meeting to present the results of the Global Cities Institute Sun Corridor Study by AECOM. This study identified the future economic engines for the Sun Corridor. The Honorable Jan Brewer was also in attendance and opened the meeting with a discussion on Building Arizona's Economy. Following this meeting, it was suggested that a subcommittee be formed at MAG to provide continuity and guidance on projects related to the JPAC, such as the Freight Transportation Framework Study, the proposed Interstate 11 Corridor and the proposed inland port.

On December 17, 2009, the Sun Corridor Joint Planning Resolution, which establishes a Joint Planning Council for the Sun Corridor, was signed by the Maricopa Association of Governments (MAG), the Central Arizona Association of Governments (CAAG), and the Pima Association of Governments (PAG). In the past, MAG, CAAG, and Pinal County have participated in many joint planning studies, such as the Southeast Maricopa/Northern Pinal County Study, the Commuter Rail Strategic Plan, and the Hidden Valley Transportation Framework Study, to assist in improving the overall region.

To continue this effort, several JPAC meetings have been held over the past few months to coordinate planning activities and cooperatively work together toward a successful and economically viable Sun Corridor. The next meeting is anticipated to be held in September and will continue to focus on issues such as the inland port, the Interstate 11 Study, and the progress of the Freight Framework Study. The proposed subcommittee would assist in guiding these activities as they relate to MAG. Staff is requesting that the Executive Committee recommend to the Regional Council appointing a MAG subcommittee to provide continuity and guidance on project related to the JPAC.

If you have any questions regarding this item, please contact me at the MAG office at (602) 452-5033.

ADEQ Arizona Department of Environmental Quality **News Release**

1110 West Washington Street • Phoenix, Arizona 85007 • azdeq.gov

DATE: July 6, 2010
CONTACT: Mark Shaffer, Director of Communications, (602) 771-2215 (o); (480) 433-9551 (cell)

EPA Failed to Adequately Consider ADEQ's Scientific Research in Aftermath of Dust-Storm Air-Quality Exceedances

PHOENIX (July 6, 2010) – The U.S. Environmental Protection Agency failed to adequately consider the Arizona Department of Environmental Quality's scientific research in concluding that dust storms were not to blame for four air-pollution exceedances during 2008 at a monitoring station near 43rd Avenue and Broadway Road.

In a letter from ADEQ Director Benjamin H. Grumbles to EPA Region 9 Administrator Jared Blumenfeld, the state's environmental regulatory agency also noted that the EPA is not consistent with its own rules for determining whether air quality violations are caused by man or nature and is also not consistent in its analysis of Arizona's data and earlier analyses done within the San Joaquin Valley of California.

EPA in May denied ADEQ's request to classify several Maricopa County air quality violations related to dust as being the result of uncontrollable natural events. EPA's denial could lead to the disapproval of an air quality plan designed to reduce dust emissions in Maricopa County until EPA standards are achieved. A final disapproval of the air quality plan could result in sanctions, potentially putting billions of dollars of federal highway funding at risk in Arizona.

"The EPA analysis was incomplete and gave short shrift to our scientific research," Director Grumbles said. "EPA's analysis also was not shared with ADEQ or other local authorities prior to the announcement of its decision. ADEQ is seeking an opportunity to find common ground with EPA on the scientific and technical differences."

Grumbles noted in his letter that the EPA's preamble for its exceptional events rule indicated that the federal agency will work cooperatively with states, tribes and local agencies, a process that was not followed in Arizona's case.

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division

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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA [PHOENIX DIVISION]

SANDRA L. BAHR, DIANE E. BROWN, and DAVID MATUSOW, Plaintiffs, v. LISA JACKSON, in her official capacity as Administrator of the United States Environmental Protection Agency, and the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Defendants.	CV 09-2511-PHX-MHM **NOTICE OF LODGING OF PROPOSED CONSENT DECREE**

Defendant Lisa Jackson, in her official capacity as Administrator of the United States Environmental Protection Agency, and Defendant United States Environmental Protection Agency (collectively, "EPA"), hereby lodge with the Court a proposed consent decree that contains the terms of a proposed settlement of this action. See Attachment 1, Consent Decree.

The proposed consent decree should not be signed or entered by the Court at this time. Pursuant to section 113(g) of the Clean Air Act, 42 U.S.C. § 7413(g), the EPA Administrator must provide "a reasonable opportunity by notice in the Federal Register to persons who are not named as parties or intervenors to the action or matter to comment in writing" upon the proposed consent decree. Accordingly, EPA will publish in the Federal Register a notice of the proposed consent decree and request public comments. After a reasonable comment period, the EPA Administrator will promptly consider any written comments received and, if none of the comments disclose facts or considerations which indicate that the proposed consent decree is inappropriate, improper, inadequate, or inconsistent with the requirements of the Clean Air Act, Defendants will move for entry of the decree.

Respectfully submitted,

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division

Dated: June 23, 2010

/s/ Rochelle L. Russell
ROCHELLE L. RUSSELL
Trial Attorney
United States Department of Justice
Environment and Natural Resources Division
Environmental Defense Section
301 Howard Street, Suite 1050
San Francisco, CA 94105
Phone: (415) 744-6566
Email: rochelle.russell@usdoj.gov
Attorney for Defendants

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on June 23, 2010, true and correct copies of the foregoing **NOTICE OF LODGING OF PROPOSED CONSENT DECREE** were served on the following Counsel of Record via the Court's CM/ECF system:

Joy E. Herr-Cardillo
Arizona Center for Law in the Public Interest
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Email: jherrcardillo@aclpi.org

Timothy Michael Hogan
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/s/ Rochelle L. Russell
ROCHELLE L. RUSSELL

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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA [PHOENIX DIVISION]

SANDRA L. BAHR, DIANE E. BROWN, and DAVID MATUSOW, Plaintiffs, v. LISA JACKSON, in her official capacity as Administrator of the United States Environmental Protection Agency, and the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Defendants.	CV 09-2511-PHX-MHM CONSENT DECREE

WHEREAS, on December 2, 2009, Plaintiffs Sandra L. Bahr, Diane E. Brown, and David Matusow filed the complaint in the above-captioned matter against Defendants Lisa Jackson, in her official capacity as Administrator of the United States Environmental Protection Agency, and the United States Environmental Protection Agency (collectively, "EPA"), alleging that EPA has failed to undertake a certain nondiscretionary duty under the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401-7671q, and that such alleged failure is actionable under section 304(a)(2) of the CAA, 42 U.S.C. § 7604(a)(2);

WHEREAS, section 110(a)(1) of the CAA, 42 U.S.C. § 7410(a)(1), requires States to adopt and submit to EPA for review state implementation plans ("SIPs"), which establish specific control measures and other requirements that apply to particular sources of air pollution within a State and are designed to attain, maintain, and enforce National Ambient Air Quality Standards established by EPA that specify the maximum permissible concentrations for those pollutants in the ambient air, see 42 U.S.C. §§ 7408, 7409;

WHEREAS, section 189(d) of the CAA, 42 U.S.C. § 7513a(d), requires States to adopt and submit to EPA SIP revisions to meet specific additional requirements for serious PM-10 nonattainment areas that have failed to meet the standard by the applicable attainment date;

WHEREAS, section 110(k) of the CAA, 42 U.S.C. § 7410(k), sets forth the process by which EPA is to review SIP submissions, including SIP revisions;

WHEREAS, Plaintiffs' complaint alleges that EPA has a nondiscretionary duty to act on SIP submissions and revisions submitted to EPA within the time lines set forth in section 110(k)(2) of the CAA, 42 U.S.C. § 7410(k)(2);

WHEREAS, Plaintiffs' complaint alleges that EPA has failed to take timely action under CAA section 110(k)(2) on the "MAG 2007 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area," Maricopa Association of Governments, 2007 (the "5% Plan"), a SIP revision submitted to EPA in December 2007 by the State of Arizona pursuant to section 189(d);

WHEREAS, Plaintiffs' complaint seeks an order from this Court directing EPA to

either approve or disapprove, in whole or in part, the 5% Plan on a specific timetable;

WHEREAS, the parties have agreed to a settlement of this action without admission of any issue of fact or law;

WHEREAS, the parties, by entering into this Consent Decree, do not waive or limit any claim or defense, on any grounds, related to any final EPA action;

WHEREAS, the parties consider this Consent Decree to be an adequate and equitable resolution of all of the claims in this matter;

WHEREAS, it is in the interest of the public, the parties, and judicial economy to resolve this matter without protracted litigation;

WHEREAS, the parties agree that this Court has jurisdiction over this matter pursuant to the citizen suit provision in section 304(a)(2) of the CAA and that venue lies in the District of Arizona;

WHEREAS, the Court, by entering this Consent Decree, finds that the Consent Decree is fair, reasonable, in the public interest, and consistent with the CAA;

NOW THEREFORE, before the taking of testimony, without trial or determination of any issue of fact or law, and upon the consent of the parties, it is hereby ordered, adjudged and decreed that:

1. EPA shall sign for publication in the Federal Register:

   (a) no later than September 3, 2010, a notice of the Agency's proposed action on the 5% Plan pursuant to section 110(k) of the CAA. Once signed, EPA shall deliver the notice to the Office of the Federal Register for publication; and

   (b) no later than January 28, 2011, a notice of the Agency's final action on the 5% Plan pursuant to section 110(k) of the CAA. Once signed, EPA shall deliver the notice to the Office of the Federal Register for publication.

2. When EPA's obligations under Paragraph 1 have been completed, the parties will file a joint request to the Court to dismiss this matter with prejudice.

3. The deadlines in Paragraphs 1 and 9 may be extended (a) by written stipulation of Plaintiffs and EPA with notice to the Court, or (b) by the Court upon motion of EPA and upon consideration of any response by Plaintiffs.

4. Nothing in this Consent Decree shall be construed to limit or modify the discretion accorded EPA by the CAA and by general principles of administrative law, including the discretion to alter, amend or revise any response and/or final action contemplated by this Consent Decree. EPA's obligation to take the actions set forth in Paragraph 1 by the time specified therein does not constitute a limitation or modification of EPA's discretion within the meaning of this paragraph.

5. Nothing in this Consent Decree shall be construed to confer upon the district court jurisdiction to review any decision made in the final action identified in Paragraph 1. Nothing in this Consent Decree shall be construed to confer upon the district court jurisdiction to review any issues that are within the exclusive jurisdiction of the United States Courts of Appeals pursuant to sections 307(b)(1) and 505 of the CAA, 42 U.S.C. §§ 7607(b)(1), 7661d.

6. This Court shall retain jurisdiction to enforce the terms of this Consent Decree and to consider any requests for costs of litigation, including attorneys' fees.

7. In the event of a dispute between the parties concerning the interpretation or implementation of any aspect of this Consent Decree, the disputing party shall provide the other party with a written notice outlining the nature of the dispute and requesting informal negotiations. If the parties cannot reach an agreed-upon resolution within ten (10) business days after receipt of the notice, any party may move the Court to resolve the dispute.

8. No motion or other proceeding seeking to enforce this Consent Decree shall be considered properly filed, unless Plaintiffs have followed the procedure set forth in Paragraph 7 and provided EPA with written notice received at least ten (10) business days before the filing of such motion or proceeding.

9. EPA agrees that, pursuant to section 304(d) of the CAA, 42 U.S.C. § 7604(d), Plaintiffs are both eligible and entitled to recover their costs of litigation in this action, including reasonable attorneys' fees, incurred prior to entry of this Consent Decree. The deadline for filing a motion for costs of litigation, including reasonable attorneys' fees, is hereby extended until 90 days after the date on which the Court enters this Consent Decree. During this time the parties shall seek to resolve informally any claim for costs of litigation, including reasonable attorneys' fees.

10. The obligations imposed upon EPA under this Consent Decree may only be undertaken using appropriated funds. No provisions of this Consent Decree shall be interpreted as or constitute a commitment or requirement that EPA obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable federal law.

11. Plaintiffs and EPA shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter this Consent Decree.

12. The parties agree and acknowledge that before this Consent Decree is entered by the Court, EPA must provide notice of this Consent Decree in the Federal Register and an opportunity for public comment pursuant to section 113(g) of the CAA, 42 U.S.C. § 7413(g). After this Consent Decree has undergone notice and comment, the Administrator and/or the Attorney General, as appropriate, shall promptly consider any such written comments in determining whether to withdraw or withhold their consent to the Consent Decree, in accordance with section 113(g) of the CAA. If the Administrator and/or the Attorney General do not elect to withdraw or withhold their consent, EPA shall promptly file a motion that requests the Court to enter this Consent Decree.

13. Any notices required or provided for by this Consent Decree shall be made in writing, via facsimile, e-mail or other means, and sent to the following:

For Plaintiffs:

Joy E. Herr-Cardillo
Arizona Center for Law in the Public Interest
2205 E. Speedway Blvd.

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Phone: (520) 529-1798
Fax: (520) 529-2927
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For Defendants:

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Environment and Natural Resources Division
Environmental Defense Section
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U.S. Environmental Protection Agency
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Jan Taradash
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San Francisco, CA 94105
Phone: (415) 972-3907
Fax: (415) 947-3570
Email: taradash.jan@epa.gov

14. The undersigned representatives of each party certify that they are fully authorized by the party that they represent to bind that party to the terms of this Consent Decree.

IT IS SO ORDERED.

Dated: _____

_____
MARY H. MURGUA
UNITED STATES DISTRICT JUDGE

COUNSEL FOR PLAINTIFFS:

Dated: June 23, 2010

/s/ Joy E. Herr-Cardillo (with permission)
JOY E. HERR-CARDILLO
TIMOTHY M. HOGAN
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Counsel for Plaintiffs

COUNSEL FOR DEFENDANTS:

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division

Dated: June 23, 2010

/s/ Rochelle L. Russell
ROCHELLE L. RUSSELL
Trial Attorney
United States Department of Justice
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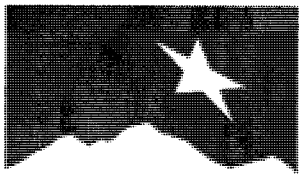
Attorney for Defendants

WESTERN STATES AIR RESOURCES COUNCIL



WESTAR

July 6, 2010

Ms. Gina McCarthy, Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue N.W.
Washington, DC 20760

Dear Ms. McCarthy,

On September 11, 2009, the Western States Air Resources (WESTAR) Council, an association of 15 western state air quality managers, offered a number of recommendations to EPA on ways to streamline the implementation of the rules governing the treatment of data influenced by exceptional events (attached). EPA responded to WESTAR's recommendations on March 8, 2010, indicating that over the coming six months, the agency would work with WESTAR to explore how the implementation of the exceptional events rule could be improved. As of this date, this collaborative effort between EPA and WESTAR has not yet begun.

The issues we raised in 2009 related to implementation of the exceptional events rule are still with us today. In fact, solving these issues is more critical than ever. EPA continues to increase the stringency of standards for several pollutants and, as a result, states must determine attainment status, classifications, and non-attainment area boundaries, all of which are driven by what data are and are not included in the monitoring data sets. Meanwhile, state and local agencies continue to collect monitoring data influenced by exceptional and natural events; continue to flag data they believe should be excluded for establishing attainment status; continue to respond to seemingly endless requests for further analyses to justify exceptional events requests; and continue to wait for decisions from EPA on requests that, in some cases, are several years old. Further, EPA has recently issued decisions not to concur with California and Arizona requests for several exceptional events where both states are highly confident that these exceedances do, in fact, meet all the criteria in the Rule for qualifying as exceptional events.

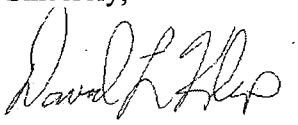
As we noted in our earlier recommendations, revisions to the exceptional events rule are needed, revisions that will solve many of the implementation issues we have encountered over the past three years. While our earlier recommendations include alternatives that could be implemented without changes to the rule, fixing the rule would be more efficient, in part because actions taken based on clear regulatory language are less likely to be challenged than

WESTAR, 1218 3rd Ave, Seattle, WA 98101 (206)254-9142

actions taken based on guidance that, in effect, works around the core issues in the underlying regulation. WESTAR believes that EPA should begin rulemaking immediately.

Our scarce air quality management resources need to focus on problems we can solve, not on problems over which we have little or no control. Simple revisions to the exceptional events rule, and guidance that will result in expedited decisions on exceptional events requests, are urgently needed. We look forward to EPA following through on its commitment to work with WESTAR on this important issue in the coming weeks. If you have any questions, or wish to discuss this further, please contact Dan Johnson, WESTAR's Executive Director, at 206-254-9145.

Sincerely,



Dave Klemp, President
Western States Air Resources Council

CC: Bill Harnett, EPA/OAQPS
Bill Becker, NACAA
Dr. Alfredo "Al" Armendariz, EPA/Region 6
Callie Videtich, EPA/Region 8
Deborah Jordan, EPA/Region 9
Rick Albright, EPA/Region 10

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Benjamin H. Grumbles
Director

July 2, 2010

Mr. Jared Blumenfeld, Administrator
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Blumenfeld: Jared

This letter transmit comments prepared by the Maricopa Association of Governments (MAG) regarding the West 43rd Avenue PM10 monitoring site and the Exceptional Events Rule (EER), 40 C.F.R. § 50.14. ADEQ has reviewed these comments and concluded that they raise valid concerns, which we hope you will consider along with the work submitted by ADEQ on July 1.

We remain hopeful that, working together, we can develop a mutual agreement on ways to address Exceptional Events more effectively.

If you have questions or need to discuss this further, please contact Nancy Wrona, who can be reached at (602) 771-2311, or Lindy Bauer, Environmental Programs Director at MAG, who can be reached at (602) 254-6300.

Sincerely,

Benjamin H. Grumbles
Director

Enclosure

cc: Lindy Bauer (with enclosure)
Deborah Jordan (with enclosure)
Colleen McKaughan (with enclosure)

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

MAG Responses to EPA's Review of Exceptional Event Request,
Maricopa County, AZ, May 12, 2010

General MAG Responses:

EPA Comments, section 4.2, page 7; section 4.3, page 7; section 4.4, page 9; section 5.0, page 9:
EPA asserts in several sections of the document that ADEQ analysis of surrounding anthropogenic sources is limited and prohibits EPA from determining the role of human activity in contributing to the exceedance.

MAG Response:
The responses in this document primarily address EPA comments regarding anthropogenic sources in sections that evaluate the causal role of high winds on the event day and that demonstrate no exceedance would have occurred "but for" the high winds. However, as an initial response to EPA's concern, it is noted that even if human activity is ultimately shown to contribute to the exceedance, it does not prohibit the event from being flagged as exceptional. EPA's exceptional event rule clearly states,

> "Also, EPA recognized, in recently acting to retain PM_{10} as a measure of coarse particulate, that in some instances exceedances of this NAAQS 'may be caused in whole or in part, by exceptional events, including natural events such as windstorms * * * (and that) an exceedance may be treated as an exceptional event even though anthropogenic sources such as agricultural and mining emissions contribute to the exceedance.'"[1]

It is known to local air and planning agencies, as well as EPA, that there are significant PM-10 emission sources near the West 43rd Avenue monitor. This fact suggests that these sources may lead to a higher average PM-10 reading than other monitors, but it does not presume that these sources become the tipping point in the creation of an exceedance on a high wind day. On the exceedance days in question, there is no evidence that the anthropogenic sources near the West 43rd Avenue monitor were not reasonably controlled.

What is most germane to the exceptional event determination is whether there is any evidence that supports a causal relationship between human activity and the exceedance. EPA has provided no evidence that human activity on the day of the exceedance was not in line with historical norms. All available evidence points to general source compliance in the area around the monitor, except for the two instances noted by ADEQ in their assessment. EPA does not establish a causal link between source noncompliance and exceedances at the monitor on high wind days.[2]

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[1] 72 FR 13564

[2] On November 16, 2009, the Five Percent Plan Technical Committee, including EPA staff, received a spreadsheet from Maricopa County that identified the 2009 calendar year permit violations within two miles of the monitor. This spreadsheet showed several days when violations occurred, but no exceedances were recorded at the monitor.

EPA Comment, section 4.3, pages 7 and 8: EPA's discussion that elevated wind speeds associated with the event days do not constitute a "natural event".

MAG Response: In particular, EPA challenges the assertion that the elevated winds occurring on the event days were "unusual" for the time of year the events occurred, thus the event days were not natural events.[3] EPA argues that only seasonal (March-June) wind speed data should be used, and that the data should show how the event day relates to hourly historical wind speeds.

In response, hourly event day maximum wind speed (gusts) was compared against hourly historical gusts from four years (2005-2008) during the months of March through June at the West 43rd Avenue Monitor.[4] Table 1 and Figures 1 through 4 show the relationship between the hourly, seasonal historical wind gusts and the event days challenged by EPA.

It is clear in both the table and the figures that all four event days had a significant number of hours that were in the 95th and even the 99th percentile for the season in question. The 95th percentile represents approximately the 23 uppermost gusts out of 457 historical hours; while the 99th percentile represents approximately the 5 uppermost gusts out of 457. The gusts observed during these uppermost hours certainly are not usual and appropriately should be considered statistical outliers in the case of the 99th percentile hours.

On the event days in question, these 95th and 99th percentile gusts largely occur as consecutive hours, not independent of each other, compounding their statistical rarity. Specifically, March 14th recorded 6 total hours in the 95th percentile (all consecutive) with 2 of those hours in the 99th percentile. Hour 12 on March 14th also is the highest wind gust ever recorded in the four year period. April 30th recorded 6 hours in the 95th percentile (all consecutive) with 1 hour in the 99th percentile. May 21st recorded a staggering 13 hours in the 95th percentile (9 consecutive) with 6 hours in the 99th percentile. And lastly, June 4th recorded 11 hours in the 95th percentile (all consecutive) and 1 hour in the 99th percentile.[5] The shear amount and extended duration of these high winds definitively classifies these event days as "unusual" under any standard statistical measure.

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[3] It should be noted that "unusual" should not be equated with the rarity of the event. EPA states in the preamble to its rule regarding exceptional events data that, "It is important to note that natural events, which are one form of exceptional events according to this definition, may recur, sometimes frequently" (72 FR 13563).

[4] Maximum hourly wind speed (gusts) were not recorded until April 2005 at the West 43rd Avenue monitor, thus March 2005 is excluded from the data set.

[5] The above wind speed analysis used March – June in order to match the seasonal period cited in the EPA comment. Sierra Research used the period February – June for their analyses of unusual winds based on an historical analysis of high winds conducted by Peter Hyde, Arizona State University, for the Five Percent Plan Technical Committee.

Table 1. Event day max hourly wind speed (mph) vs. historical (2005-2008, March-June) max hourly wind speed (mph) at the West 43rd Avenue monitor.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Hours in 95th	Hours in 99th
Mean	8.4	8.2	7.7	7.5	7.1	6.8	6.9	7.9	9.2	10.6	11.7	13.4	14.7	16.1	17.3	17.8	17.6	16.7	15.0	11.8	9.9	9.5	9.2	8.8	NA	NA
95th Percentile	18.4	18.1	17.1	16.5	14.4	13.1	13.7	16.6	18.7	20.1	21.0	23.3	25.2	27.0	29.2	30.1	30.8	28.7	28.1	24.1	22.0	23.4	21.3	20.2	NA	NA
99th Percentile	24.9	23.6	23.2	25.1	20.4	20.7	19.6	22.1	26.5	26.8	27.5	31.4	30.0	34.7	34.2	37.0	39.3	38.9	34.8	32.0	31.2	30.7	27.5	27.1	NA	NA
Max	30.1[6]	29.6	29.2	27.5	27.1	30.8	30.2	29.5	37.9	33.8	35.6	41.2	36.1	37.8	42.0	43.1	53.3[7]	44.6	48.0	44.4	41.9	42.4	50.8	54.3	NA	NA
3/14/2008	8.8	10.4	7.5	7.2	8.6	7.9	10.8	6.1	4.8	22.7	23.9	31.2	36.1	35.6	30.6	25.5	23.9	19.7	13.7	15.1	21.8	21.6	10.8	10.6	6	2
4/30/2008	12.8	9.0	5.7	8.5	12.8	6.8	6.7	7.9	7.2	20.2	23.6	33.0	28.0	27.4	30.5	26.6	27.8	24.7	22.6	11.9	18.7	20.5	13.9	9.5	6	1
5/21/2008	21.2	18.6	11.5	7.1	14.2	8.9	9.3	20.8	28.8	31.5	29.5	29.3	33.8	34.8	34.4	30.3	30.5	31.7	30.6	22.4	19.9	16.6	21.1	15.7	13	6
6/4/2008	7.0	8.3	7.6	7.9	6.7	5.6	6.6	9.1	8.4	9.3	15.8	18.6	23.8	27.0	29.6	35.5	31.3	35.1	31.1	30.1	27.0	30.4	27.2	28.7	11	1

Note: Orange shading represents the 95th percentile; red shading represents the 99th percentile

[6] Max recorded speed of 96.3 mph removed as data outlier.
[7] Max recorded speed of 72.8 mph removed as data outlier.

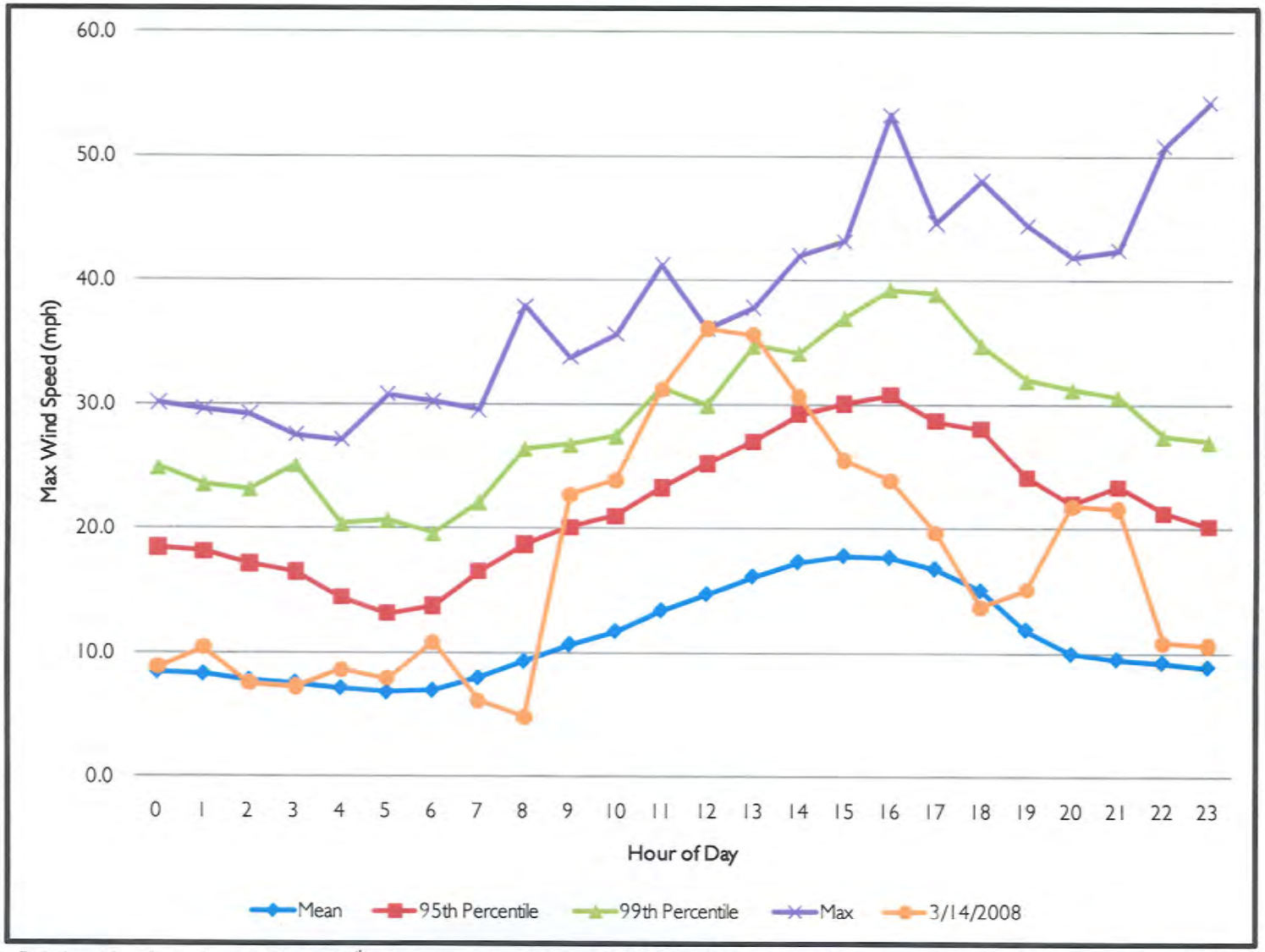

Figure 1. Relationship of max hourly March 14th wind speeds to historical (2005-2008, March-June) max hourly wind speeds at the West 43rd Avenue monitor.

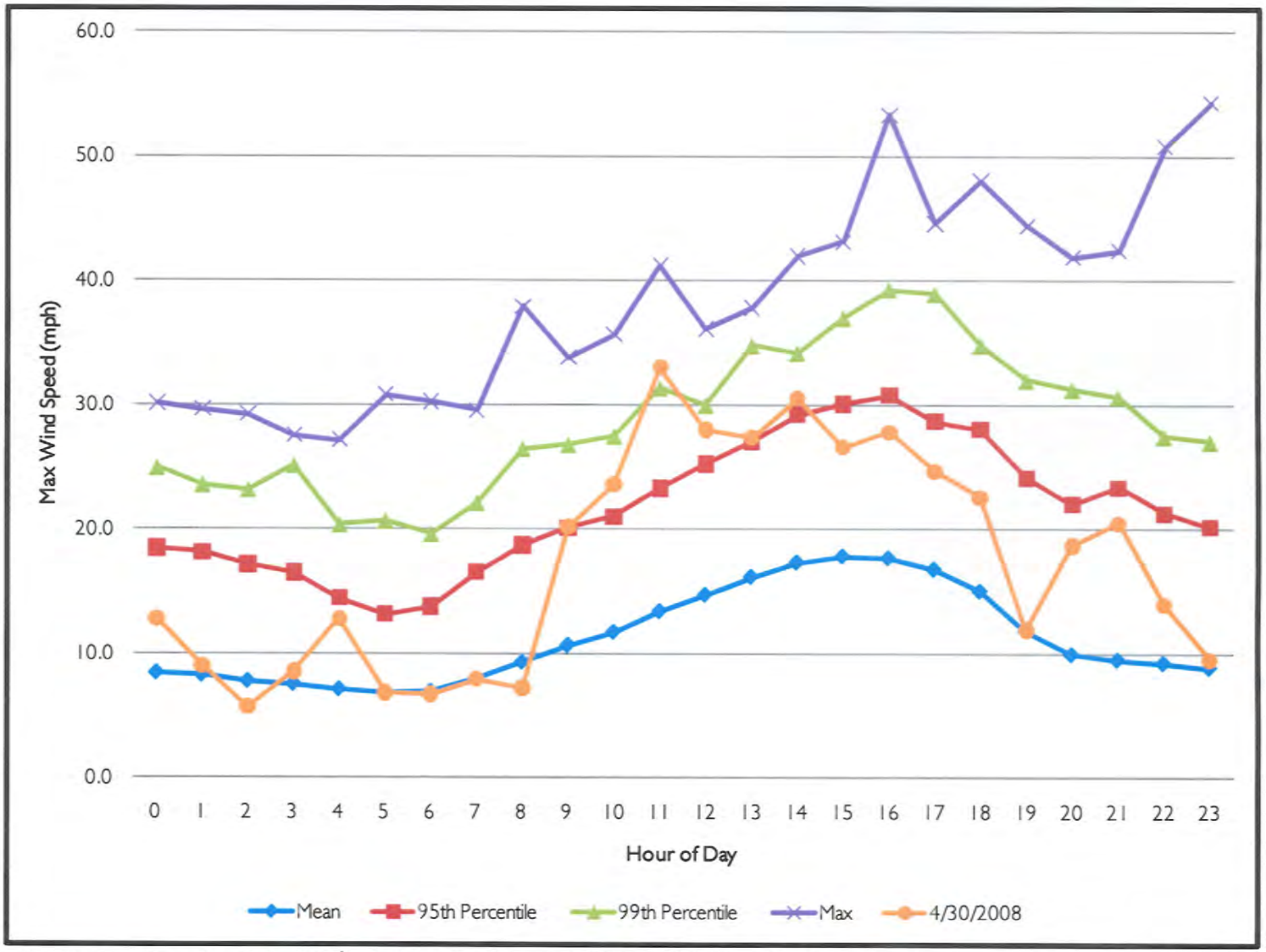

Figure 2. Relationship of max hourly April 30th wind speeds to historical (2005-2008, March-June) max hourly wind speeds at the West 43rd Avenue monitor.

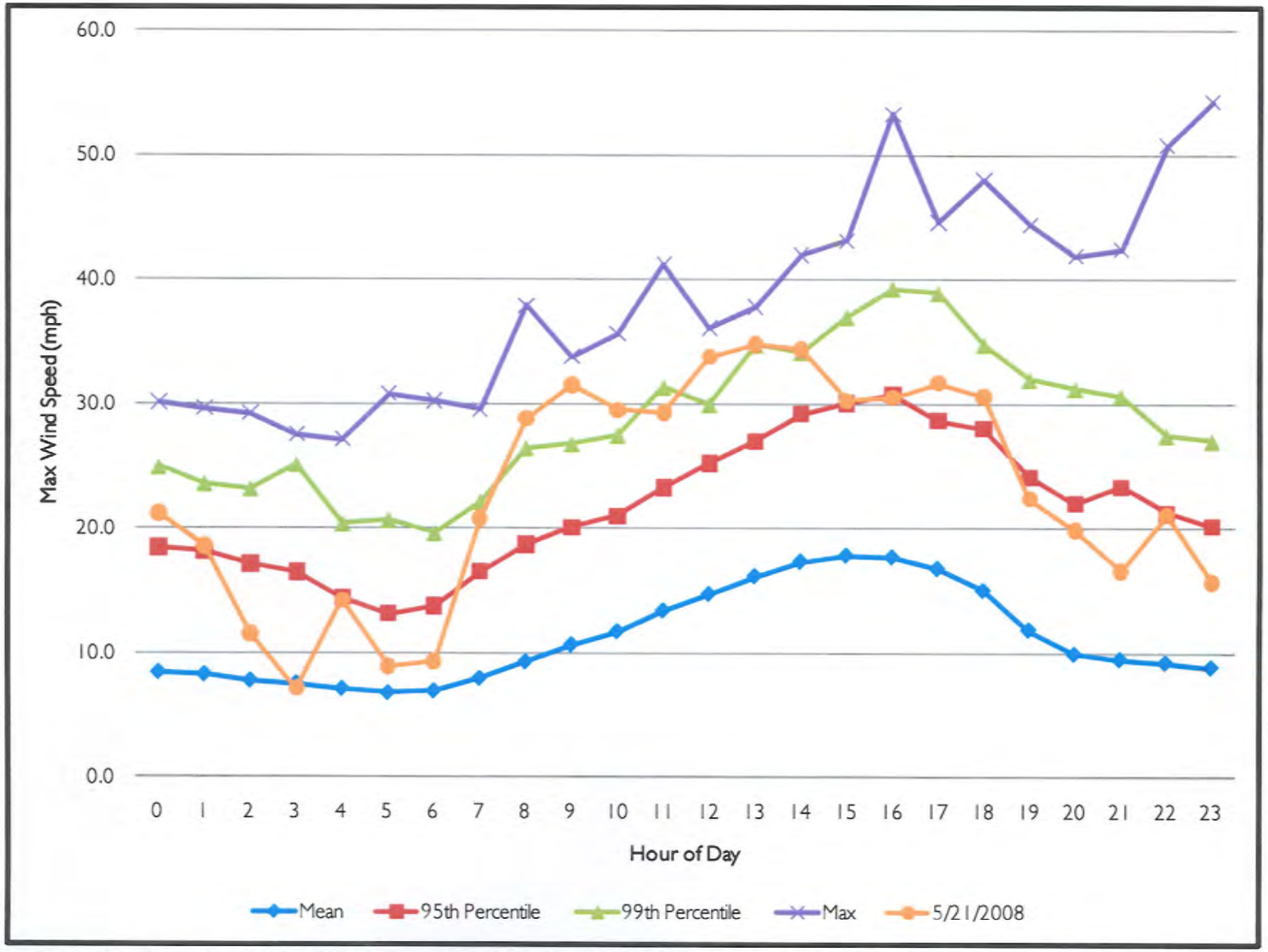

Figure 3. Relationship of max hourly May 21st wind speeds to historical (2005-2008, March-June) max hourly wind speeds at the West 43rd Avenue monitor.

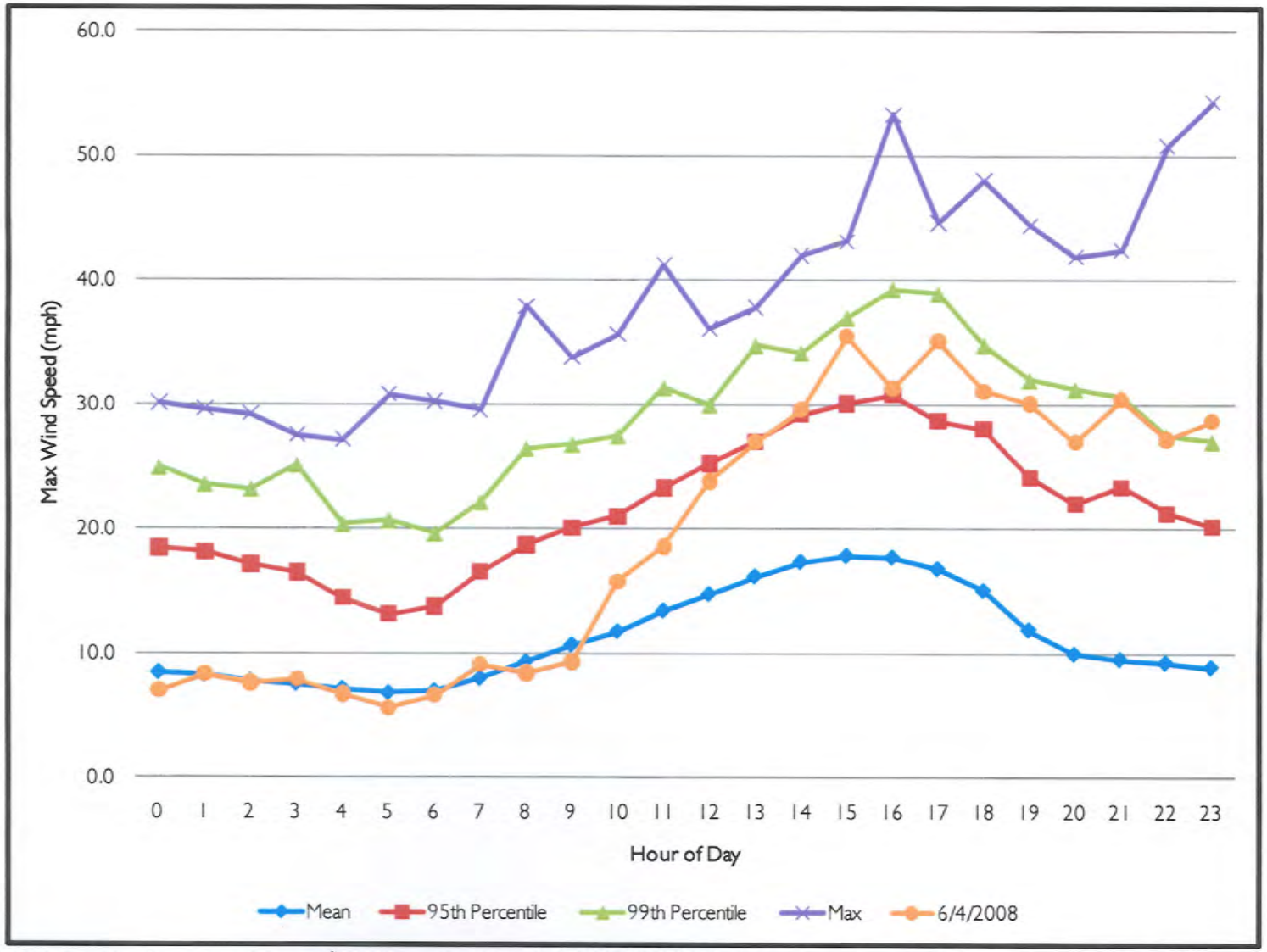

Figure 4. Relationship of max hourly June 4th wind speeds to historical (2005-2008, March-June) max hourly wind speeds at the West 43rd Avenue monitor.

EPA Comment, section 5.0, pages 16, 21, 26, 32: EPA asserts that the weight of evidence does not support a clear causal relationship between the observed elevated winds and the exceedance.

MAG Response: The correlation between increases in wind speed and PM-10 concentrations on event days at the West 43rd Avenue monitor is well presented in ADEQ's assessment and need not be repeated here. Indeed, EPA concurs with this established correlation at the West 43rd Avenue monitor in all four event days. In sections 5.1.1, 5.2.1, 5.3.1, and 5.4.1 EPA repeatedly makes statements to the fact that the observed PM-10 concentrations increase significantly with increased winds speeds.

EPA does not argue against the specific facts of the correlation observed at the West 43rd Avenue monitor, but rather points to the observation that other area monitors do not show the same level of correlation,

> "...there is not a similar correlation between PM_{10} and maximum wind speed at other monitoring sites in the area. These facts suggest that the elevated PM_{10} concentrations at West 43rd may have been caused by local upwind sources and were not regional in nature."[8]

EPA's exceptional event rule repeatedly talks about exceedances at the monitor in question; there is no mention of a requirement that multiple monitors in an area exceed in order for the event to be classified as exceptional. With particular regard to high winds, EPA takes pains to point out that evaluation and weight of evidence should focus on the exceeding monitor since high winds vary across a region and have different regional effects depending on geologic and meteorological conditions.

> "Since the conditions that cause or contribute to high wind events vary from area to area with soil type, precipitation, and the speed of wind gusts, States should provide appropriate documentation which indicates what types of circumstances contributed to the exceedances or violations ***at the monitoring site in question*** (emphasis added)."[9]

The quote above from the exceptional event rule again makes no mention that high winds need to be "regional"[10] in nature in order to be classified as a natural event; only that the weight of evidence supports the fact that high winds were the causal agent in the exceedance.[11] The fact that the West 43rd Avenue monitor may be more susceptible to increases in PM-10 concentrations associated with high winds only serves to add to the strength of the causal relationship.

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[8] Section 5.2.1, pg. 17

[9] 72 FR 13577

[10] Even if EPA had attempted such a requirement a definition of regional would need to be in place in order to classify the high winds in question.

[11] Footnote 11 of 72 FR 13566 states, "Therefore, in instances where the level of the wind speed results in exceedances or violations of particulate matter, for data affected by these events to be considered for exclusion under the weight of evidence approach, a clear causal relationship must be demonstrated between the exceedances measured at the ***air quality monitoring site*** (emphasis added) and the high wind event in question."

In addition to the data provided by ADEQ in their assessment, the following figures add to the weight of evidence that a clear causal relationship exists between high winds and increased PM-10 concentrations on the event days at the West 43rd Avenue monitor. All historical data in the following figures are from a four year period (2005-2008) where concurrent maximum hourly wind speed and PM-10 concentration data were recorded for the high wind season months of March through June.[12]

Figure 5 visibly shows the relationship between max wind speed and PM-10 concentration at the West 43rd Avenue monitor. The trend line of the figure is a classic fit for a second order polynomial, as referenced by the high R^2 value of 0.939. The trend line demonstrates that there are two distinct patterns with regards to max wind speed and PM-10 concentrations. First, when gusts stay below 15 mph, PM-10 concentrations actually decrease slightly with increasing wind speeds. However, as gusts rise past 15 mph, wind speeds have an exponential effect on PM-10 concentrations. This pattern is clearly born out on the event days in question, establishing a strong correlation between rising wind gusts and PM-10 concentrations.

Figure 6 compares the hourly mean PM-10 concentrations at the West 43rd Avenue monitor alongside hourly mean max wind speeds. A couple of plain relationships emerge in the figure: (1) the bulk of anthropogenic emissions occur in the hours between 0400 and 0800, when wind speeds are lowest and, (2) moderate afternoon (1100-1900) wind gusts (12-18 mph) actually help to disperse PM-10 concentrations and reduce the readings at the monitor. This graph further helps to show that elevated afternoon PM-10 concentrations (as occurred in all 4 event days) are not typical and would not historically be associated with anthropogenic sources.

Figure 7 strengthens this assumption by showing hourly mean PM-10 concentrations when wind gusts are at their lowest (5th percentile). It is important to state again that the data included in this figure does not include the winter months when inversion forces are at work, but is limited to March-June as requested by EPA[13]. Clearly, in terms of anthropogenic emissions, the highest levels of PM-10 concentrations are seen when the wind gusts are at their lowest.

This relationship dramatically changes when comparing mean PM-10 concentrations when gusts are at their highest. Figure 8 displays hourly mean PM-10 concentrations when maximum wind speeds are in the 95th percentile (highest 5% of observed wind speeds). No other conclusion can be drawn from this figure other than that when wind gusts reach these upper thresholds, PM-10 concentrations consistently and predictably rise, especially in the afternoon hours when the heat of the day has reduced the surface moisture of the affected soils. As mentioned above, elevated afternoon PM-10 concentrations are the rarity, not the norm, and can only reasonably be caused by high winds.

Figure 9 serves to strengthen this relationship shown in Figure 8 by comparing hourly mean PM-10 concentrations when wind gusts are in the 99th percentile (top 5 recorded wind speeds). The wind

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[12] March 2005 is excluded from the data set as max wind speeds were not recorded at the West 43rd Avenue monitor until April 2005.

[13] The above wind speed analysis used March – June in order to match the seasonal period cited in the EPA comment. Sierra Research used February – June for their analyses of unusual winds based on a historical analysis of high winds conducted by Peter Hyde, Arizona State University, for the Five Percent Plan Technical Committee.

gust and PM-10 concentration lines again show highest observed PM-10 concentrations in the afternoon hours, when wind gusts are at their greatest, almost maximum levels. All four event days in question had at least 1 hour that was in the 99th percentile of wind gusts.

Based on the seasonal data shown in the figures above, the only reasonable conclusion is that a clear causal relationship exists between elevated PM-10 concentrations and high winds at the West 43rd Avenue monitor. Given the historical pattern of highest anthropogenic emissions seen in the early morning hours, there is no evidence to suggest that anything but the high winds caused the exceedances on the event days in question.

Lastly, in direct address of EPA's concern that neighboring monitors did not exceed on the days that the West 43rd Avenue monitor exceeded, EPA itself compellingly disputes against the presumption of this concern. In a recently published finding[14] affirming the flagging of exceptional event days related to construction activity, EPA argues that activities that caused an exceedance one day, may not lead to an exceedance on another similar day. In the quote below, EPA is responding to comments from "Earthjustice" arguing that EPA did not establish a causal relationship between the event (construction activities) and the exceedance,

> "Earthjustice argues that because exceedances did not occur on other days when construction activities were occurring, this indicates that construction did not cause the exceedances in September and October 2006. But this argument is misleading. Generally, varying degrees, types and locations of the construction activity, and changing meteorological conditions lead to varying impacts on the monitor. The fact that construction activities did not cause exceedances on some days does not mean that they were not responsible for the exceedances that occurred on other days."[15]

This same judgment applies well to the event days in question, when only the West 43rd Avenue monitor exceeded and other area monitors did not. In fact, simply modifying the quote above by replacing the words "Earthjustice" with "EPA" and "construction activities" with "high winds", establishes a strong defense for flagging the event days in question:

> "*EPA* argues that because exceedances did not occur on other days when *high winds* were occurring, this indicates that *high winds* did not cause the exceedances in September and October 2006. But this argument is misleading. Generally, varying degrees, types and locations of the *high winds*, and changing meteorological conditions lead to varying impacts on the monitor. The fact that *high winds* did not cause exceedances on some days does not mean that they were not responsible for the exceedances that occurred on other days." (italicized sections changed from original EPA quote).

The logic of this argument is sound, and EPA should apply it to the high wind days in question here, as it did in affirming the exceptional events caused by construction activities in the San Joaquin Valley.

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[14] *Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; State of California; PM-10; Affirmation of Determination of Attainment for the San Joaquin Valley Nonattainment Area*, 73 FR 14687.

[15] 73 FR 14690

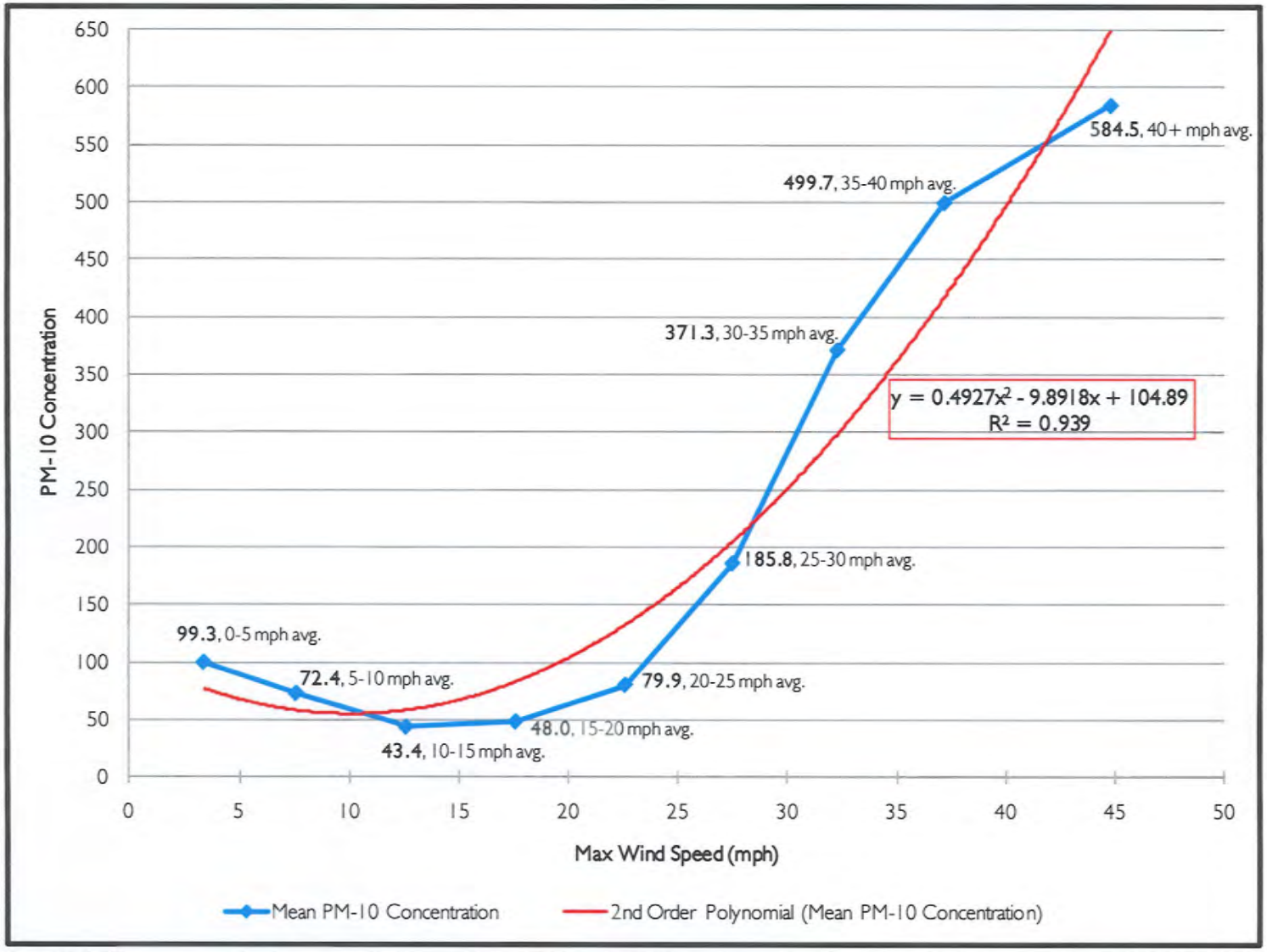

Figure 5. Mean PM-10 concentration by max wind speed bins (0-5 mph, 5-10 mph, etc.) at the West 43rd Ave. monitor (2005-2008, March-June).

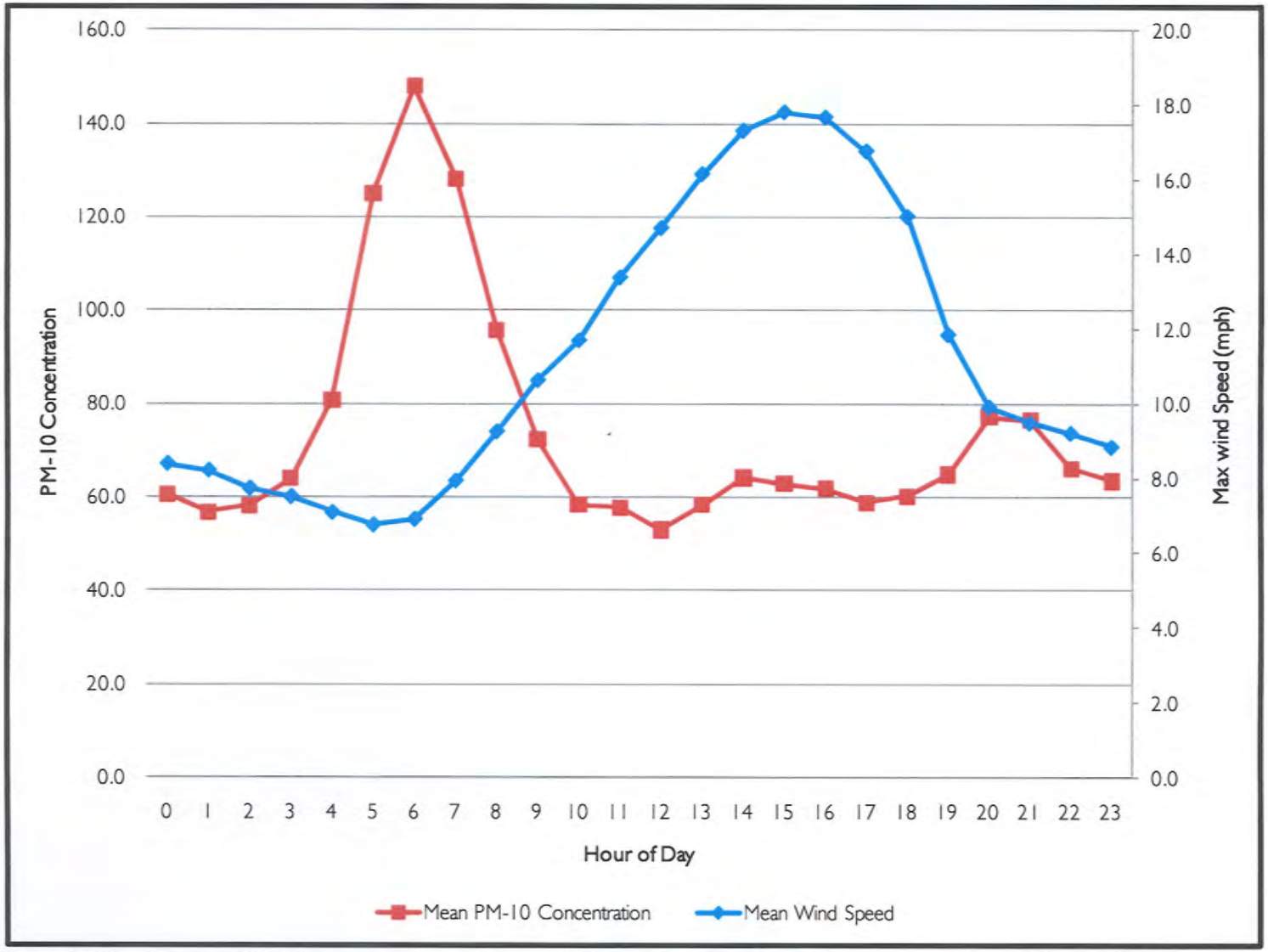

Figure 6. Hourly mean PM-10 concentration and max wind speed at the West 43rd Avenue monitor (2005-2008, March-June).

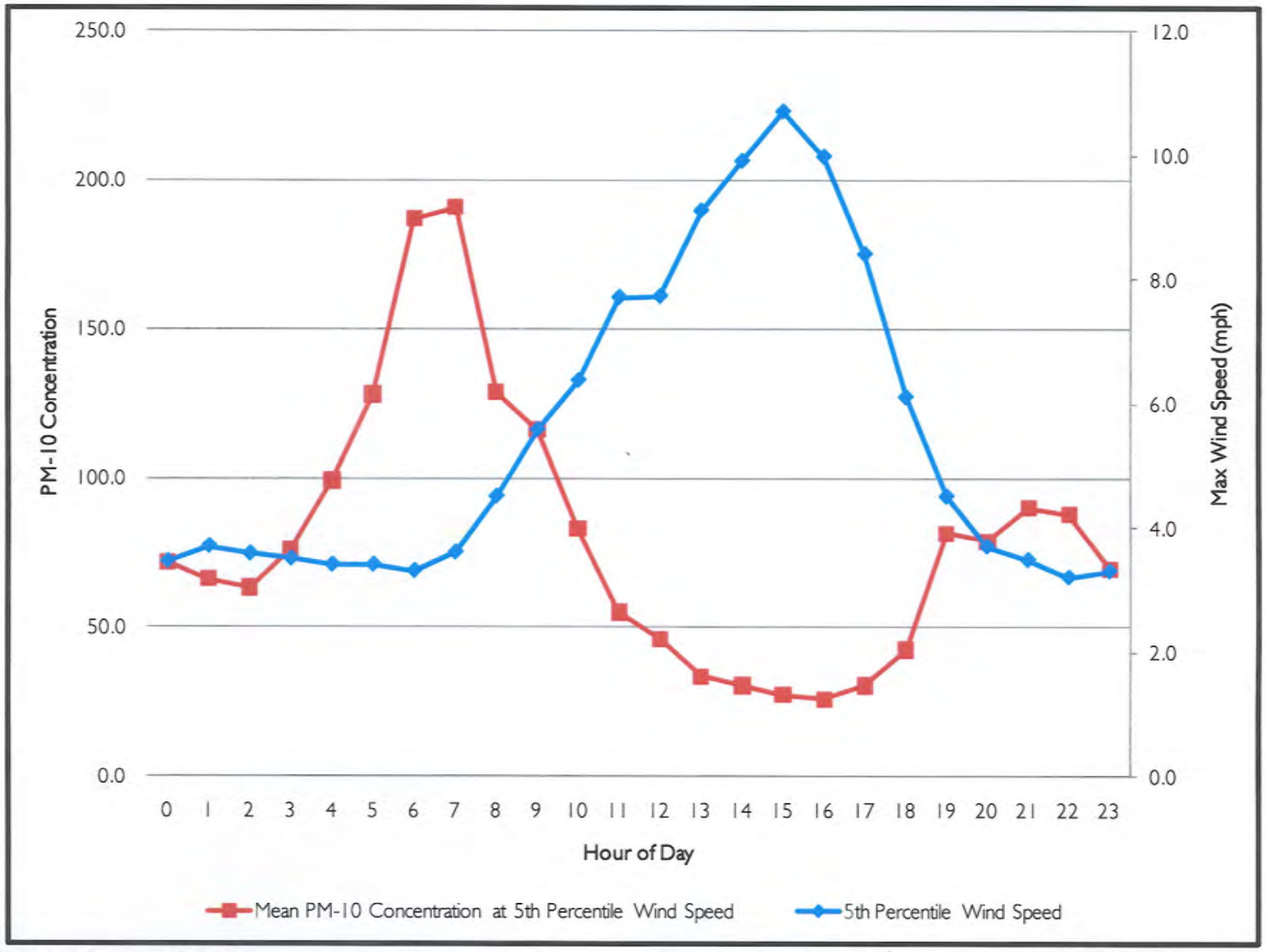

Figure 7. Hourly mean PM-10 concentration at 5th percentile max wind speed at the West 43rd Avenue monitor (2005-2008, March-June).

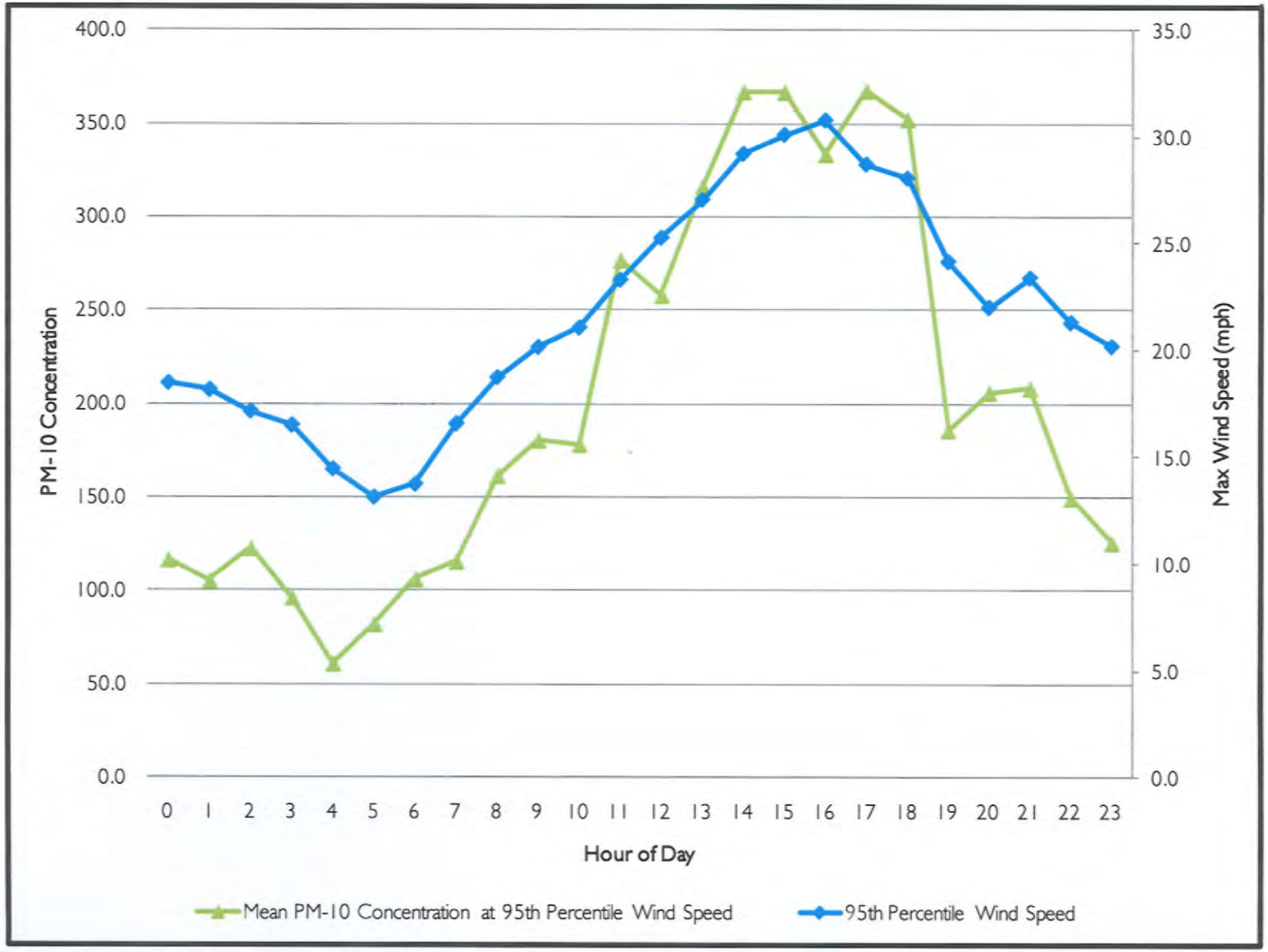

Figure 8. Hourly mean PM-10 concentration at 95th percentile max wind speed at the West 43rd Avenue monitor (2005-2008, March-June).

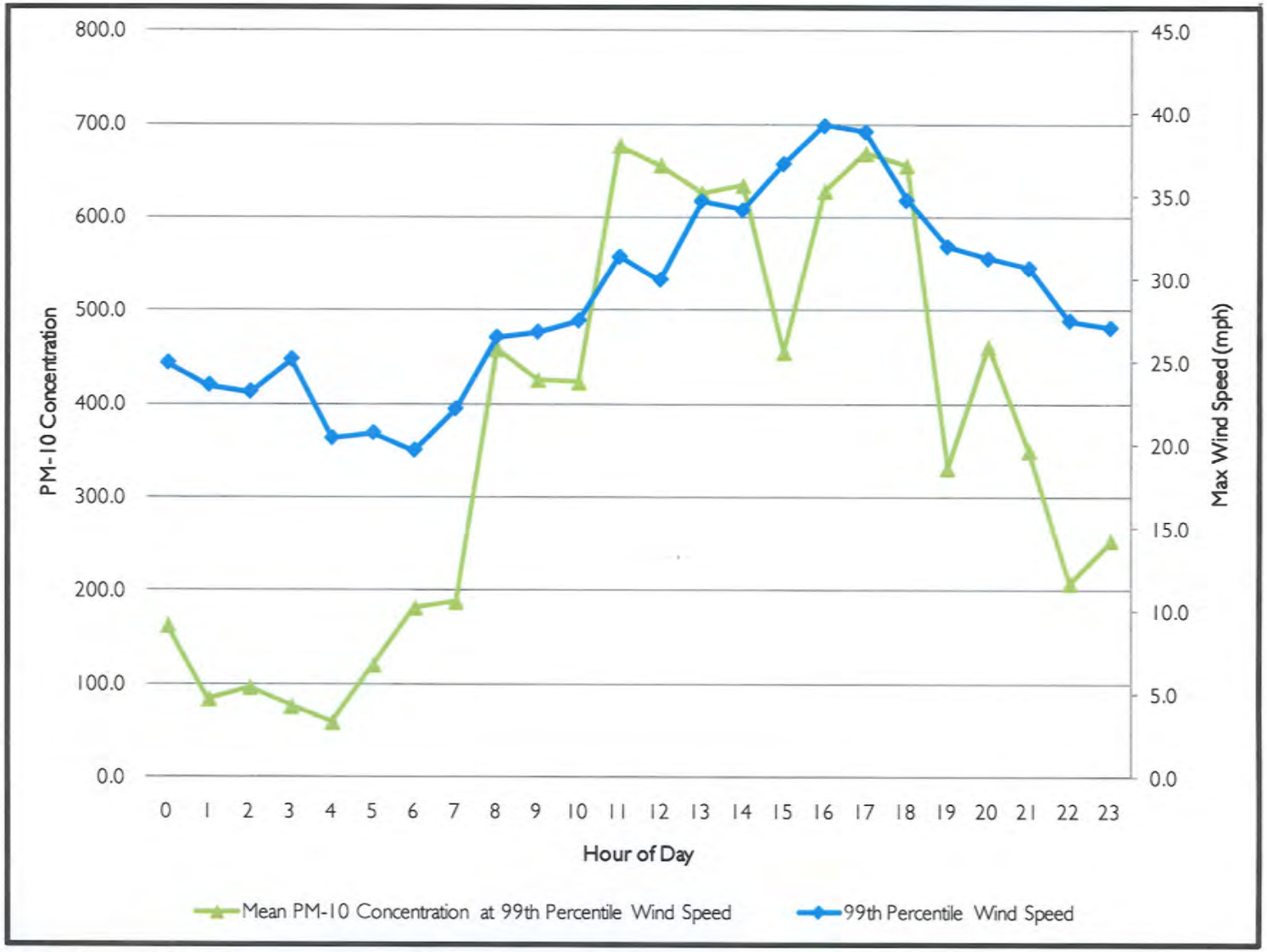

Figure 9. Hourly mean PM-10 concentration at 99th percentile max wind speed at the West 43rd Avenue monitor (2005-2008, March-June).

EPA Comment, section 7.0, page 33: EPA states ADEQ's method of excluding the PM-10 concentrations associated with the high wind hours to demonstrate that the monitor would not have exceeded but for the event,

> "...it was determined that the hours that have been chosen for exclusion are replaced by the average PM_{10} concentration calculated with remaining hours of the day."

EPA additionally comments that,

> "This is equivalent to assuming there is no normal increase during those hours. If there is a typical rise during this period, than the average used may not be representative of typical conditions."

MAG Response: As shown in the earlier discussion of the causal relationship between elevated wind speeds and elevated PM-10 concentrations at the West 43rd Avenue monitor, on average the bulk of anthropogenic emissions seen at the monitor occur in the morning hours.[16] So, typical emissions for the excluded hours (afternoon hours) would actually be **lower** than the estimates provided by ADEQ and is further proof that the exceedance on the event days is primarily linked to high winds.

As additional proof, the data in the tables and figures presented below show that even assuming worst case anthropogenic conditions during the excluded hours, the event days would not have exceeded the standard. Table 2 shows the breakout of 4-year (2005-2008), seasonal (March-June)[17], summed hourly PM-10 concentrations and their association with low (<20 mph) and high (>20 mph) hourly maximum wind speeds. Figure 10 graphs the PM-10 concentration amounts as presented in Table 2.

Table 3 and Figure 11 replicate the data presented in the preceding table and figure, but limit the observations to PM-10 concentrations recorded at or above the 95th percentile. This table and graph dramatically shows that high afternoon PM-10 concentrations are overwhelmingly linked to wind gusts greater than 20 mph. In fact, for 6 consecutive hours (1300-1800) PM-10 concentrations at or above the 95th percentile are exclusively linked to wind gusts above 20 mph.[18] When high winds are absent, the evidence overwhelmingly points to anthropogenic PM-10 emissions that are consistently lower in the afternoon.

Lastly, Table 4 provides a second ultra-conservative substitution method for event day windy hours. It shows that even when PM-10 concentrations during the 95th percentile windy hours (on the event days) are substituted with 95th percentile PM-10 concentrations from the historical period, an exceedance is not achieved. This worst case scenario provides ample evidence that but for the high winds on the event days, the monitors would not have exceeded the 24 hour PM-10 standard. It should be stated that both the method shown in Table 4 (replacement of windy hours with 95th percentile concentrations) and ADEQ's original method (replacement of windy hours with day-specific average concentrations) are conservative estimates that do not exceed the standard, as typical PM-10 concentrations are historically lowest in the afternoon hours.

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[16] See figures 6 and 7.

[17] As mentioned earlier, March 2005 data was excluded due to lack of maximum wind speed values.

[18] Hour 16 additionally has no 95th percentile concentrations linked to wind gusts below 25 mph, with hours 15, 17 and 18 only recording one observation of 95th percentile concentrations linked to gusts below 25 mph.

Table 2. Relationship of hourly PM-10 concentrations to low (<20 mph) and high (>20 mph) wind gust categories at the West 43rd Avenue monitor (2005-2008, March-June).

Hour	Total Period PM-10 Concentration ($\mu g/m^3$)	PM-10 Concentration Associated with Wind Gusts Below 20 mph ($\mu g/m^3$)	PM-10 Concentration Associated with Wind Gusts Above 20 mph ($\mu g/m^3$)	% PM-10 Concentration Associated with Wind Gusts Below 20 mph	% PM-10 Concentration Associated with Wind Gusts Above 20 mph
0	27,316.4	25,675.9	1,640.5	94%	6%
1	25,778.0	24,057.9	1,720.1	93%	7%
2	26,472.0	25,539.7	932.3	96%	4%
3	28,955.5	27,280.6	1,674.9	94%	6%
4	36,859.7	36,563.2	296.5	99%	1%
5	57,041.5	56,286.2	755.3	99%	1%
6	67,346.2	66,669.6	676.6	99%	1%
7	58,434.8	56,586.3	1,848.5	97%	3%
8	43,741.6	40,384.5	3,357.1	92%	8%
9	32,894.6	28,561.8	4,332.8	87%	13%
10	26,013.4	21,312.8	4,700.6	82%	18%
11	25,218.8	16,992.7	8,226.1	67%	33%
12	22,924.8	13,855.7	9,069.1	60%	40%
13	25,619.3	12,867.6	12,751.7	50%	50%
14	28,825.8	11,935.8	16,890.0	41%	59%
15	28,495.0	10,529.0	17,966.0	37%	63%
16	28,076.5	9,775.4	18,301.1	35%	65%
17	26,763.1	10,224.7	16,538.4	38%	62%
18	27,369.5	13,951.9	13,417.6	51%	49%
19	29,600.5	22,458.0	7,142.5	76%	24%
20	35,036.6	28,934.3	6,102.3	83%	17%
21	34,876.0	29,263.1	5,612.9	84%	16%
22	30,030.0	26,373.2	3,656.8	88%	12%
23	28,710.2	25,819.2	2,891.0	90%	10%

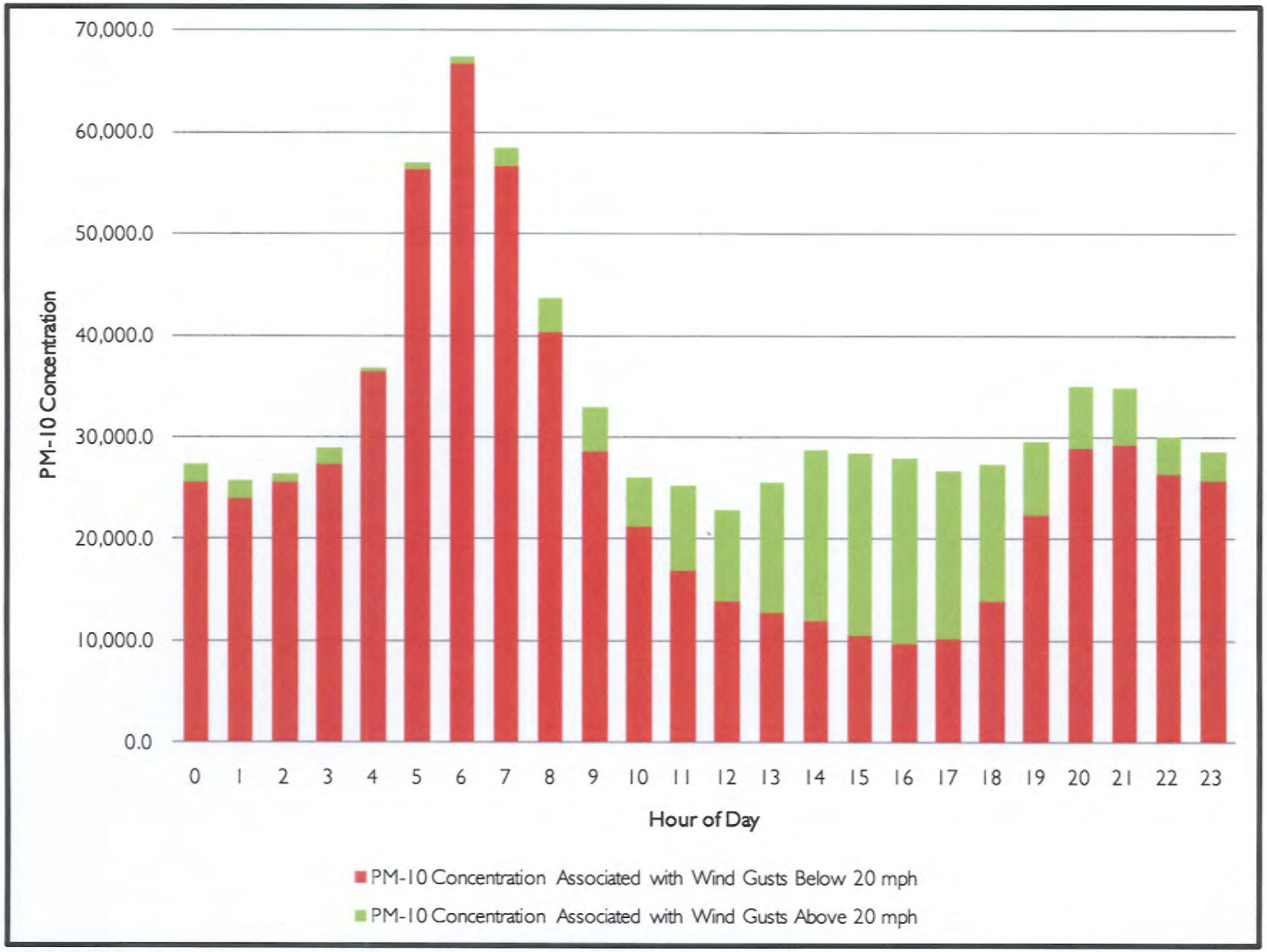

Figure 10. Association of hourly PM-10 concentrations by low and high wind gust categories (2005-2008, March-June).

Table 3. Relationship of hourly 95th percentile PM-10 concentrations to low (<20 mph) and high (>20 mph) wind gust categories at the West 43rd Avenue monitor (2005-2008, March-June).

Hour	95th Percentile Concentration ($\mu g/m^3$)	Total Period PM-10 Concentration ($\mu g/m^3$)	PM-10 Concentration Associated with Wind Gusts Below 20 mph ($\mu g/m^3$)	PM-10 Concentration Associated with Wind Gusts Above 20 mph ($\mu g/m^3$)	% PM-10 Concentration Associated with Wind Gusts Below 20 mph	% PM-10 Concentration Associated with Wind Gusts Above 20 mph
0	129.8	4,849.8	4,011.1	838.7	83%	17%
1	112.3	4,102.8	2,991.2	1,111.6	73%	27%
2	119.0	4,698.9	4,361.8	337.1	93%	7%
3	129.9	4,565.4	3,365.9	1,199.5	74%	26%
4	186.6	5,335.3	5,335.3	0.0	100%	0%
5	292.3	7,840.5	7,522.5	318.0	96%	4%
6	313.5	8,164.2	8,164.2	0.0	100%	0%
7	278.1	7,707.2	7,372.5	334.7	96%	4%
8	198.3	7,265.7	4,890.9	2,374.8	67%	33%
9	149.5	6,198.1	3,100.7	3,097.4	50%	50%
10	118.0	5,425.2	1,681.8	3,743.4	31%	69%
11	102.5	7,126.0	824.2	6,301.8	12%	88%
12	128.4	6,707.3	194.1	6,513.2	3%	97%
13	163.6	8,392.1	0.0	8,392.1	0%	100%
14	196.6	9,790.2	0.0	9,790.2	0%	100%
15	218.7	9,891.0	0.0	9,891.0	0%	100%
16	210.4	9,647.9	0.0	9,647.9	0%	100%
17	188.7	9,650.6	0.0	9,650.6	0%	100%
18	192.8	9,416.0	0.0	9,416.0	0%	100%
19	160.4	5,676.6	1,293.3	4,383.3	23%	77%
20	153.6	6,272.7	2,111.1	4,161.6	34%	66%
21	162.8	6,075.3	2,434.6	3,640.7	40%	60%
22	145.5	5,483.7	3,271.9	2,211.8	60%	40%
23	141.6	5,404.1	3,580.8	1,823.3	66%	34%

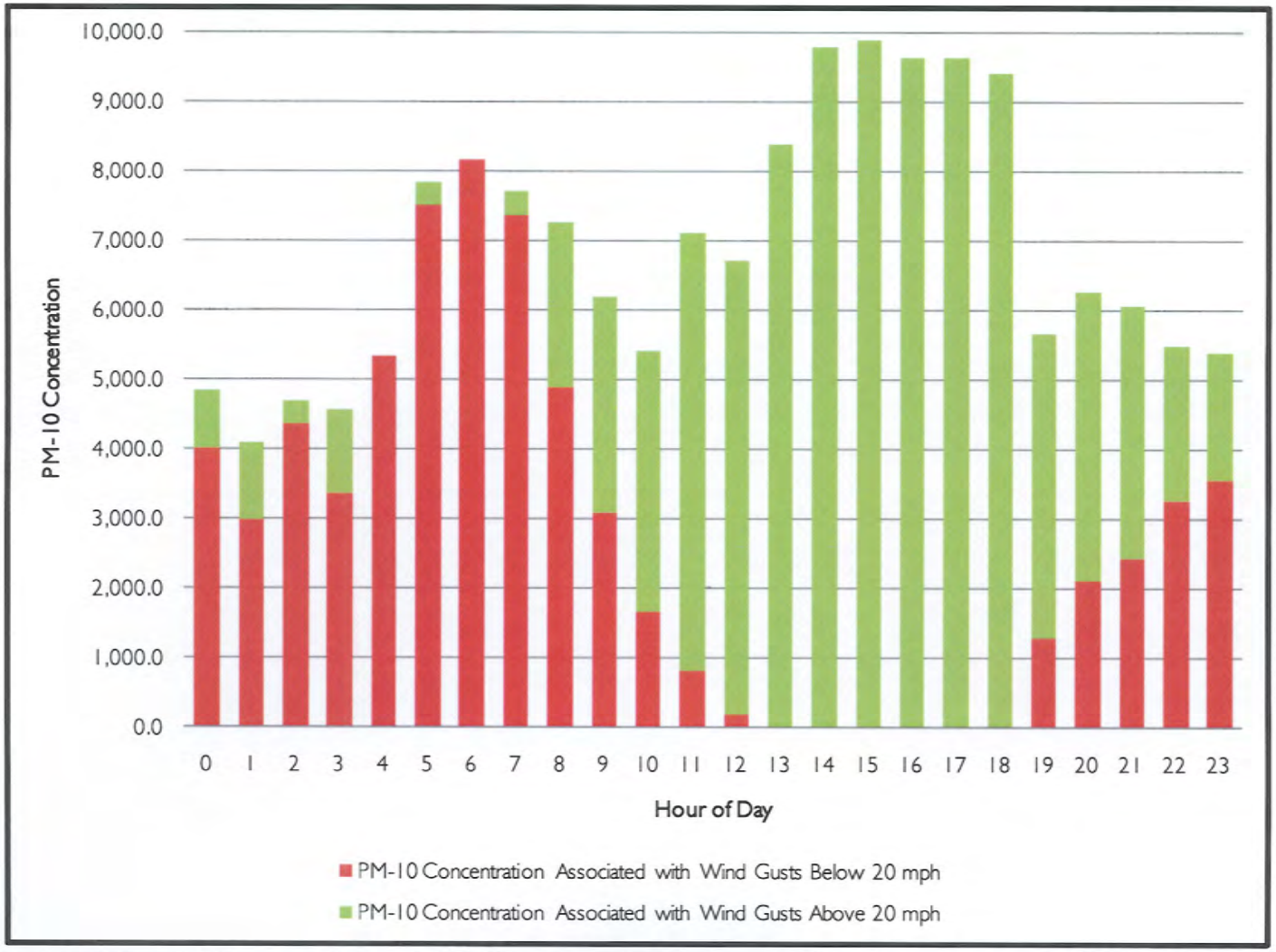

Figure 11. Association of 95th percentile hourly PM-10 concentrations by low and high wind gust categories (2005-2008, March-June).

Table 4. 24-Hour event day PM-10 concentrations after substituting actual 95th percentile windy hour PM-10 concentrations with historical (2005-2008, March-June) 95th percentile hourly PM-10 concentrations.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24 HR PM-10 CONC.
95th Perc.	**129.8**	**112.3**	**119.0**	**129.9**	**186.6**	**292.3**	**313.5**	**278.1**	**198.3**	**149.5**	**118.0**	**102.5**	**128.5**	**163.6**	**196.6**	**218.7**	**210.4**	**188.7**	**192.8**	**160.4**	**153.6**	**162.8**	**145.5**	**141.6**	**174.7**
3/14/2008	26.1	28.9	22.2	28.4	64.6	154.6	145.5	133.8	187.7	328.9	118.0	102.5	128.5	163.6	196.6	87.0	57.1	23.6	37.1	40.8	86.4	93.1	73.4	72.9	92.6
4/30/2008	36.6	30.5	32.8	35.0	51.4	112.0	109.1	119.9	75.3	85.0	118.0	102.5	128.5	163.6	196.6	365.6	236.4	212.4	133.9	77.4	62.5	46.8	28.5	30.6	108.0
5/21/2008	87.1	46.7	40.2	28.7	32.0	60.3	54.9	135.2	198.3	149.5	118.0	102.5	128.5	163.6	196.6	218.7	224.8	188.7	192.8	104.9	76.7	69.2	58.1	69.9	114.4
6/4/2008	51.5	33.9	34.5	71.2	65.0	141.6	199.4	89.7	85.0	67.2	39.6	64.3	165.2	163.6	196.6	218.7	210.4	188.7	192.8	160.4	94.7	84.3	145.5	141.6	121.1

NOTE: Highlighted (yellow and green cells) values represent hours when max wind speeds were in the 95th percentile. Yellow highlighted cells were substituted with seasonal, historic 95th percentile PM-10 concentrations; green highlighted cells were not substituted because they represent actual PM-10 event day concentrations values below the 95th percentile. Clear cells are not subject to substitution as those hours did not have wind gusts at or above the 95th percentile.

EPA Comment, 1st paragraph, page 16 and at end of pages 20, 25, and 31: EPA reviewed all four events (March 14, 2008, April 30, 2008, May 21, 2008, and June 4, 2008). In the Clear Causal Relationship section of Chapter 5 of EPA's report, EPA recognized that "...the magnitude of PM-10 concentrations measured at the West 43rd Avenue site seem to be associated with factors in addition to wind speed."

MAG Response - Additional information detailing the unique susceptibility of the West 43rd Avenue monitor to high wind events: Even though it is not necessary to do so under EPA's current exceptional event rule, the following table is provided to help explain why the West 43rd Avenue monitor exceeded on the event days and the closest neighboring monitors did not. In addition to the work detailing the effects of surface roughness, Table 5 shows the amount of upwind acreage (NW-SW, degrees of 225-315[19]) capable of producing windblown dust emissions within two miles of the West 43rd Avenue, Durango Complex and South Phoenix monitors. The table shows that the West 43rd Avenue monitor contains 69% more acres that are subject to windblown dust emissions than South Phoenix, and 254% more acres than the Durango Complex monitor. The acreage below includes both disturbed and undisturbed soils. It is important to note that under high wind conditions, local soils produce dust with or without anthropogenic disturbance, although the threshold friction velocities are higher when the soils are undisturbed.

Table 5. Upwind (225-315 degrees) acreage capable of producing windblown dust.

Land Use	West 43rd (acres)	Durango Complex (acres)	South Phoenix (acres)
Agriculture	187.2	22.8	37.8
Developing Other	5.0	19.9	14.6
Developing Residential	20.4	0.0	17.4
Landfill/Sand & Gravel	601.0	28.1	383.1
Riverbed	577.5	315.9	121.4
Vacant	110.3	204.8	313.4
Grand Total	**1501.4**	**591.5**	**887.6**

EPA Comment, end of 2nd paragraph, page 34; and 2nd paragraph of page 35: "...the Assessments did not adequately establish a clear source-receptor relationship or make a convincing demonstration that the events in question should be considered natural events under the EER"; [and] "The June 4 DSR did not provide sufficient technical analysis to support a clear source receptor relationship or provide new evidence to support the notion that the June 4 event should be considered a natural event under the EER."

MAG Response: EPA has far exceeded the technical scope of the exceptional events rule (EER) by suggesting that source-receptor relationships need to be established in order to prove the causal relationship between the exceptional event and the exceedance. The EER clearly states the opposite in the following excerpt:

[19] This range also is in line with earlier land use analysis based upon back trajectories developed by Sierra Research and presented to EPA by MAG during the Five Percent Plan Technical Committee Meetings.

> "The EPA will maintain the proposed "but-for" requirement that air quality data may not be excluded except where States, Tribes, or local agencies show that exceedances or violations of applicable standards would not have occurred "but for" the influence of exceptional events. Through analyses, it is possible to demonstrate that an exceedance or violation would not have occurred but for the event [See sample "but-for" analysis in memo to docket, Husar *et al.* 2006 (*http://www.regulations.gov*, EPA–HQ–OAR– 2003–0061–0733 thru 0733.5)]. ***This analysis does not require a precise estimate of the estimated air quality impact from the event.*** The weight of evidence demonstration can present a range of possible concentrations which is not as technically demanding as justifying a specific adjustment to a measured value (emphasis added)."[20]

By including source-receptor relationships as a prerequisite to establishing cause between the event and the exceedance, EPA is in effect requiring that a modeling exercise of the event day be performed. In a recent federal notice affirming the State of California's exceptional events related to construction activity, the EPA rejected the idea that modeling was necessary to support an exceptional event determination,

> "Earthjustice seems to be suggesting that in order to meet the criterion "affects air quality" the State should have used an air quality model such as AERMOD or CalPuff to show the behavior of fugitive dust. In other words, Earthjustice is asking for a modeling demonstration that would show, quantitatively, that a given amount (either in the form of an emission rate or initial ambient concentrations at the source regions) can produce a particular concentration at a receptor point (e.g., monitoring site location). This type of modeling, at the scale Earthjustice is suggesting, is not an appropriate tool for use in this type of application because it cannot be performed with any degree of accuracy."[21]

The exceptional events rule, however flawed, should be applied equitably. EPA's own defense clearly shows that establishment of a source-receptor relationship is outside the bounds of the exceptional events rule, and thus should not be arbitrarily and capriciously applied to the events submitted here.

[20] 72 FR 13570

[21] 73 FR 14702-3

Detailed MAG Responses:

1.0 EMISSION SOURCES

1.1 Natural Emission Sources

EPA Comment, end of 2nd paragraph, page 32: While ADEQ has concluded that the exceedance at West 43rd was caused by emissions originating in the Salt and Gila River channels, there little technical justification supporting this conclusion and there is no discussion explaining how emissions from these sources are not reasonably controllable or preventable.

MAG Response: On February 24, March 10, and April 7, 2010, MAG distributed a threshold friction velocity map to the Five Percent Plan Technical Committee, including EPA, which shows soils from the natural river terrain upwind of the West 43rd Avenue monitor (i.e., the Salt, Gila and Agua Fria riverbeds) become airborne at wind speeds exceeding 13 mph. Graphs prepared by Sierra Research and distributed to the Committee indicate that five-minute wind speeds frequently exceeded 13 mph on the four days of concern; therefore, the contribution of these upwind natural sources to exceedances at the West 43rd Avenue monitor is likely to be significant.

1.2 Upwind Sources & Control Measures

EPA Comment, end of 1st paragraph, page 34: The majority of the data concerning these relationships are presented in tables and a small number of graphs with no explanation of the interpretation of the information that has been presented.

EPA Comment, end of 2nd paragraph, page 34: With little discussion of the meteorological conditions on the event days combined with a very limited discussion on possible sources, the Assessments did not adequately establish a clear source-receptor relationship or make a convincing demonstration that the events in question should be considered natural events under the EER.

MAG Response: The maps, graphs and supporting text that MAG distributed to the Five Percent Plan Technical Committee, including EPA, in January through May 2010, provide extensive supplemental information on the meteorological conditions that occurred on March 14, April 16[22], April 30 and June 4, 2008. In addition, the threshold friction velocity maps that MAG distributed on February 24, March

[22]On December 2, 2009, Michael Flagg of EPA made a presentation to the Five Percent Plan Technical Committee that identified four exceptional event days of concern to EPA: March 14, April 16, April 30 and June 4, 2008. In EPA's May 12, 2010 technical support document that discusses nonconcurrence with four exceptional events in 2008, April 16 is missing and May 21 has been added. While participating in numerous meetings of the Five Percent Plan Technical Committee between January and May 2008, EPA staff never revealed that a different date than the four identified by Michael Flagg was of concern. The Committee spent considerable effort performing analyses on the four original dates provided by Michael Flagg. If May 21, 2008 had been identified as an exceptional event day of concern at any time over the last six months, the anthropogenic contribution and natural conditions on that date would also have been analyzed and distributed to EPA and other members of the Five Percent Plan Technical Committee.

10, and April 7, 2010 identify the potential sources located upwind of the West 43rd Avenue monitor based on the latest (2009) MAG land use data. MAG also distributed preliminary tables to the Five Percent Plan Technical Committee that showed the percent contribution of anthropogenic sources along the upwind back trajectories from the West 43rd Avenue monitor for each of the four event days. This supplemental data, which EPA received as a participant in the Five Percent Plan Technical Committee meetings, makes a compelling case that the four exceedances at the West 43rd Avenue monitor were exceptional events. Now that EPA has indicated that May 21, 2008 is also of concern, the same information is being prepared for this exceptional event day.

As a participant in the Five Percent Plan Technical Committee meetings, EPA also received the following information regarding ongoing and planned data collection for sources upwind and in the vicinity of the West 43rd Avenue monitor:

1. February 3, March 24, April 21, and May 19, 2010 meetings – MAG, MCAQD, and ADEQ staff will collect soil samples from areas that have potential for high wind erodiblity: areas with severe soil texture, areas with soil grain size conducive to wind erosion, and alluvial deposits. These soil samples will be analyzed by Arizona State University researchers for PM-10 emissions potential using dust resuspension chambers and standard sieving analysis. MAG is providing $21,500 to ADEQ to fund the analyses of the soil samples by Arizona State University.

2. March 24, 2010 meeting - Sierra Research is collecting activity data for rock product facilities upwind of the West 43rd Avenue monitor and control measures in place in 2008.

3. April 7, April 21, and May 19, 2010 meetings – ADEQ and MAG are collecting data on the types and distribution of crops grown in 2008, and drafting a crop calendar of different field activities and stages of crop growth with assistance from the Arizona Farm Bureau, Maricopa County Farm Bureau, Arizona Cotton Growers, Arizona Cotton Research and Protection Council, and the University of Arizona Cooperative Extension. ADEQ is contacting farmers for field activity data for the days of interest in 2008 and for the Agricultural Best Management Practices they had in place in 2008.

2.0 SURFACE ROUGHNESS & THRESHOLD FRICTION VELOCITY

EPA Comment, 3rd paragraph, page 10 (on March 14 date; similar statements are included for the three other dates): ADEQ also provided four graphs that show the potential correlation between maximum wind speeds and PM-10 concentrations at the West 43rd, Durango Complex, Greenwood, and South Phoenix monitoring sites. The graphs show that hourly PM-10 concentrations increase with an increase in maximum recorded wind speed at the West 43rd site, but not at the other three monitoring sites. In fact, the graphs show that the maximum wind speeds at the Durango Complex site were higher than those measured at the West 43rd site, but the Durango Complex site experienced significantly lower PM-10 values during periods of elevated wind speed. These data suggest that the elevated PM-10 concentrations at the West 43rd site may have been caused by local upwind sources and were not due to a high wind event that was regional in nature.

EPA Comment, 2nd paragraph, page 19: Given that the Durango Complex, South Phoenix, Greenwood, and West Phoenix sites are located within approximately five miles of the West 43rd site, one would expect to see greater consistency in the concentrations if a regional high wind event was occurring. The data suggest that the West 43rd site was most likely significantly influenced by local upwind sources and the claimed exceptional event was not regional in nature.

MAG Response: At the Five Percent Plan Technical Committee meetings on March 10 and April 7, 2010, MAG provided maps and a technical paper that explain the impact of surface roughness on the PM-10 concentrations at the West 43rdAvenue, Durango Complex, and South Phoenix monitors during the high westerly winds on March 14, April 16 and 30, and June 4, 2008. The technical paper demonstrates that a 400% increase in measured surface roughness levels between West 43rd Avenue and the Durango and South Phoenix monitors reduces PM-10 concentrations at the two downwind monitors. At the same meeting, MAG distributed a threshold friction velocity map that shows soils from the natural river terrain upwind of the West 43rd Avenue monitor (i.e., the Salt, Gila and Agua Fria riverbeds) become airborne at wind speeds exceeding 13 mph. Graphs prepared by Sierra Research and distributed to the Committee indicate that five-minute wind speeds frequently exceeded 13 mph on the four days of concern; therefore, the contribution of these upwind natural sources to exceedances at the West 43rd Avenue monitor is likely to be significant.

EPA Comment, 3rd paragraph, page 10: In fact, the graphs show that the maximum wind speeds at the Durango Complex site were higher than those measured at the West 43rd site, but the Durango Complex site experienced significantly lower PM-10 values during periods of elevated wind speed. These data suggest that the elevated PM_{10} concentrations at the West 43rd site may have been caused by local upwind sources and were not due to a high wind event that was regional in nature.

MAG Response: In the above statement, the EPA indicated that the elevated PM-10 concentrations at the West 43rd site may have been caused by local upwind sources. However, temporal variation of local PM-10 concentrations may be governed by other important local parameters and processes, including soil type, turbulent diffusion, dry deposition, and wind. Emissions from local upwind sources are only one of the possible causes of the elevated PM-10 concentrations at the West 43rd Avenue site.

If roughness of the land surface increases suddenly along with the air mass motion, the dry deposition rate will significantly increase due to the intensive turbulent exchange caused by high values of the gradient of surface roughness. This results in more windblown dust being deposited on the ground surface in this surface roughness transition zone. This is the case for the West 43rd Avenue monitoring site, which is located in an area where the surface roughness transitions from low surface roughness to high surface roughness, and will, as a result, have higher PM-10 emissions than the Durango Complex and South Phoenix monitoring sites. These two downwind monitors are located in a more urbanized area with uniformly higher surface roughness values. Hence, it is not appropriate to

characterize the elevated PM-10 concentrations at the West 43rdAvenue site as being due to only local upwind sources[23].

3.0 METEOROLOGY

3.1 Unusual Winds

EPA Comment, 1st paragraph, page 10: EPA also notes that Arizona provided a different set of meteorological data for each event. Considering the four events discussed in this document are very similar in nature, it is unclear why ADEQ did not provide the same data for each event. In some instances the most relevant meteorological data, (those data from the closest or upwind locations) are not included in the supporting documentation.

MAG Response: On April 7 and April 21, 2010, supplemental graphs and documentation prepared by Sierra Research were distributed to the Five Percent Plan Technical Committee, including EPA, for the exceptional events occurring on March 14, April 16, April 30, and June 4, 2008. These graphs were developed on the basis of consistent data for each event; meteorological and PM-10 concentration data recorded at the West 43rd Avenue monitor were used to prepare the graphs.

3.2 Similar Meteorological Conditions

EPA Comment, 2nd and 3rd paragraphs, page 14: The following analysis compares hourly PM_{10} data, wind speed, and wind gusts recorded at Goodyear Airport on March 14 with the same data for three days in March with similar meteorological conditions. And On March 14, the West 43rd monitor measured elevated PM_{10} concentrations of 1051 µg/m3 and 1270 µg/m3 at 1100 and 1200 hrs, respectively. Wind speeds at Goodyear Airport during this period were from the west (260°) at 14 and 18 mph with gusts of 29 and 34 mph. On March 2, the Goodyear station measured wind speeds and gusts of equal or higher magnitude: 23 mph with 34 mph gusts from the NW (310°- 320°) for two consecutive hours.

MAG Response: The wind direction on March 14th was from the west (260°), while the wind direction on March 2nd was from the northwest (310-320°). Since the wind directions on these two days differed by 50° to 60°, it is not appropriate to state that these two days had similar meteorological conditions. In addition, there was precipitation as high as 6 mm in the region on February 15, 20, and 22. The precipitation on these three days could significantly affect soil moisture content on March 2. Hence, it is not appropriate to directly compare the PM-10 concentrations on March 2nd and March 14th based on wind speed alone.

EPA Comment, 1st paragraph, page 15: Similarly, on March 29, wind speeds of 16 to 17 mph with wind gusts of 29 to 32 mph from the SSW (200°) and the WSW (240°) were recorded at Goodyear Airport for a period of three hours.

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[23] *High PM-10 Associated with High Wind Events in the Salt River Basin of Phoenix*; Feng Liu, Maricopa Association of Governments (see Met_High_PM10_final_030210.docx in MAG folder on ADEQ's ftp site)

MAG Response: The wind speed and wind gusts on March 29th are lower than those on March 14th. Wind tunnel experiments have shown that windblown dust emissions are proportional to the cube of wind speed and/or wind gust[24]. Hence, it is not appropriate that wind speed and wind gusts on March 14th were compared with those on March 29th, since the cube of the peak wind speed on March 14th is about 2.8 times the cube of the peak wind speed on March 29th.

EPA Comment, 1st and 2nd paragraphs, page 25: The following analysis compares the hourly PM_{10} data, wind speed, and wind gusts on May 21 with the same data from a similar day in May. Similarly, on May 12, the Goodyear station measured wind speeds and gusts of equal magnitude; 21 mph wind speeds and 30 mph gusts from the SW (230°). These elevated wind speeds, however, only correspond to moderate hourly PM_{10} values at the West 43rd site.

MAG Response: Similar to the response to EPA's previous comment on wind speeds for March 29th, the cube of the peak wind gust speed between 1200 to 1400 hour on May 12th is less than half (0.45) of the cube of the peak wind speed gust of wind between 0800 to 1000 hour on May 21. Hence, the meteorological conditions on these two days are not similar.

4.0 PM-10 CONCENTRATIONS ANALYSES

4.1 PM-10 and Wind Analyses

EPA Comment, Figures 4 - 6, 10, 14, and 18: These figures in the EPA report relate the temporal variation of PM-10 concentrations at the West 43rd Avenue site with wind speeds and wind gusts at the Goodyear Airport site.

MAG Response: EPA's report did not compare the wind gust data between the West 43rd Avenue site and Goodyear Airport site or indicate how different these two wind gust data sets were. However, the figures in EPA's report indicate that PM-10 concentrations at the West 43rd Avenue site were better correlated with wind *gusts* than wind *speeds* at the Goodyear Airport site. This implies that PM-10 concentrations at the West 43rd Avenue site are also more highly correlated with wind gusts than wind speeds. EPA did not take into account the impact of wind gusts on PM-10 concentrations at the West 43rd Avenue site.

4.2 Dust Storms

EPA Comment, Appendix B, page 40: Earlier research suggests that reduced visibility less than 7 miles constitutes dust storm classification (Orgill, Sehmel, 1976).

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[24] Bowker G., et.al, 2007. *Sand Flux Simulations at a Small Scale over a Heterogeneous Mesquite Area of the Northern Chihuahuan Desert.* Journal of Applied Meteorology and Applied Climatology; Park Y. and Park S., 2010. *Development of a New Wind-Blown-Dust Emission Module Using Comparative Assessment of Existing Dust Models.* Particle Science and Technology; Jickells T.D., et. al, 2005. *Global Iron Connections Between Desert Dust, Ocean Biogeochemistry, and Climate.* Science.

MAG Response: Appendix B in EPA's report discusses the relationship between dust storm and visibility and refers to two cutpoints for dust storm classification from two separate research papers as examples of definitions of dust storms. Then EPA's report compared the visibility recorded at the Goodyear Airport during the event days in question to this dust storm definition in Table 1 of Appendix B. The above dust storm/visibility reference used a reduced visibility of 7 miles or less as a cutpoint for dust storm classification. Using this criterion for dust storms, two event days (April 30 and May 21) could be characterized as having dust storms that resulted in elevated PM-10 concentrations.

4.3 Natural Events

EPA Comment, 1st paragraph, page 9: In summary, considering the limited analysis on the elevated wind speeds associated with the event combined with little analysis of possible contributing sources located directly upwind of the West 43rd site, EPA has determined that ADEQ's documentation did not provide sufficient evidence to support that the events in question should be considered "natural events" as required under the EER.

MAG Response: Graphs and accompanying documentation, prepared by Sierra Research, were distributed to the Five Percent Plan Technical Committee, including EPA staff, on April 7 and April 21, 2010. This material shows the five-minute wind speeds and their relationship to the 95th percentile on March 14, April 16, April 30, and June 4, 2008. The Sierra Research analysis indicates that wind speeds during the high wind event on each of these days were in the 98th percentile or higher.

5.0 Appendix A

EPA Comment, Appendix A, page 39: Appendix A in EPA's report provided pollution roses based on the percent total PM-10 mass for all four of the events in question.

MAG Response: These pollution roses do not provide any clear causal relationship between the potential local sources and the events in question. Also, there was no description about the pollution roses in the EPA report.

6.0 Summary

EPA Comment, end of 3rd paragraph, page 34: Although it is very clear that there is something unique about the measured exceedances at the West 43rd site, the assessments did not explain these differences in PM_{10} concentrations and how they are inconsistent with a regional high wind event.

MAG Response: The maps, graphs and supporting text that MAG distributed to the Five Percent Plan Technical Committee, including EPA, in January through May 2010, provide extensive documentation of the unique meteorology, geography and natural sources that contributed to exceedances of the PM-10 standard at the West 43rd Avenue monitor on March 14, April 16, April 30 and June 4, 2008.

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

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Janice K. Brewer
Governor

Benjamin H. Grumbles
Director

June 30, 2010

Mr. Jared Blumenfeld
Regional Administrator
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Blumenfeld: Jared

This letter responds to concerns raised in your May 21, 2010, letter and at our May 25, 2010, meeting regarding the West 43rd Avenue PM10 monitoring site and the Exceptional Events Rule (EER), 40 C.F.R. § 50.14. I am hopeful that, prior to EPA's publication of a final determination, ADEQ and EPA will find common ground on the information ADEQ should provide to EPA to satisfy the EER.

ADEQ has three principal concerns about EPA's review of our demonstrations under the EER. ADEQ has preliminarily determined that EPA's review:

- Is not always consistent with the EER and the preamble for the final rule.
- Failed to take into account some of ADEQ's supporting data and analysis.
- Is not always consistent with EPA's August 27, 2007, concurrence with California's request to exclude data from the determination of the attainment status for the San Joaquin Valley (SJV).

ADEQ recognizes EPA's review identifies some changes that we could make to strengthen our request. ADEQ therefore intends to develop and submit supplemental requests. The enclosure to this letter provides a comprehensive section-by-section response to the review. It addresses both the difficulties with EPA's review and areas that ADEQ intends to address in its supplemental documentation. ADEQ intends to submit supplemental information regarding the June 4, 2008, event by July 22, 2010, and for the other three events within a few weeks thereafter.

I. PROCESS ISSUES

The preamble for the EER emphasizes that the EPA regional offices should work cooperatively with states, tribes and local agencies:

The EPA regional offices will work with the States, Tribes, and local agencies to ensure that proper documentation is submitted to justify data exclusion.

The EPA does not believe that an appellate process is necessary because we anticipate that the States and Regional Offices will be working closely through the data and documentation submission process.
The process leading up to EPA's decision was not always in keeping with the spirit of cooperation envisioned by the preamble.

ADEQ first submitted requests for exceptional events exclusions pursuant to the EER on September 16, 2008. These requests addressed exceptional events that occurred in calendar year 2007. EPA did not respond to this request until May 22, 2009, and then only in the form of a draft letter. ADEQ, as discussed below, has attempted to address the issues raised in that correspondence.

ADEQ submitted preliminary assessments for the 2008 events in June 2009 to insure that it met the deadlines established in 40 C.F.R. § 50.14(c)(3)(i) and with the intention of addressing the issues raised in the May 22, 2009, letter in subsequent submissions. In July through September, 2009, ADEQ reformatted the submittals to address the concerns raised in the draft letter and added citations to the EER. ADEQ opened the 30-day public comment period for this submittal on October 15, 2009. EPA submitted no comments.

On November 17, 2009, ADEQ submitted final documentation for the twelve Maricopa County exceptional events that occurred in 2008, including the four that are the subject of EPA's non-concurrence.

At a December 2, 2009, meeting of the Five Percent Plan Technical Committee for the Phoenix Serious PM10 Nonattainment Area, EPA provided an in-person PowerPoint presentation on exceptional events. EPA representatives participated in numerous other Technical Committee meetings discussing the exceptional events.

In response to these discussions, ADEQ prepared a draft supplemental package for the June 4, 2008, event as a model for correcting prior and drafting future submittals of demonstrations under the EER as discussed with EPA. ADEQ submitted this package on March 17, 2010, and sought EPA feedback. Rather than providing the anticipated feedback, EPA proceeded to issue its non-concurrence with ADEQ's requests.

If EPA had instead raised the issues included in the non-concurrence in comments earlier in the process or in response to the March 17, 2010, draft supplemental package, ADEQ could have brought the issues identified below to EPA's attention. ADEQ and EPA could have likely resolved these issues prior to the May 21, 2010, correspondence. ADEQ is hopeful that EPA review of the supplemental information will lead to a mutual understanding of the nature and cause of these events.

II. EPA's SUBSTANTIVE REVIEW

Under 40 C.F.R. § 50.14(c)(3)(iii), a demonstration to justify the exclusion of data as being due to an exceptional event must provide evidence that:

(A) The event satisfies the criteria set forth in 40 CFR 50.1(j);
(B) There is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area;
(C) The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and
(D) There would have been no exceedance or violation but for the event.

Each of these elements is addressed below.

A. CRITERIA SET FORTH IN 40 C.F.R. § 50.1(J)

Section 50.1(j), defines an exceptional event as one that:

[1] affects air quality,
[2] is not reasonably controllable or preventable,
[3] is an event caused by human activity that is unlikely to recur at a particular location or a natural event,
[4] is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event[, and]
[5] does not include stagnation of air masses or meteorological inversions, a meteorological event involving high temperatures or lack of precipitation, or air pollution relating to source noncompliance.

(Emphasis and formatting added.)

The first criterion is satisfied by showing that two other elements of the overall test—a clear causal connection and a measured concentration in excess of normal historical fluctuations—are satisfied. These elements are addressed in sections 0 and 0 below. ADEQ does not claim that the events were caused by human activity that is unlikely to recur. Our discussion of the third criterion, therefore, will focus on whether they qualified as "natural events." Whether the fourth criterion should be satisfied is of course the subject of this document. With regard to the fifth criterion, there appears to be no question that the events subject to ADEQ's request did not "include stagnation of air masses or meteorological inversions, a meteorological event involving high temperatures or lack of precipitation." We will therefore limit our discussion of that criterion to the important question of whether events included "air pollution relating to source noncompliance."

A central objection raised by EPA in its review of both the second and third criteria—the event is not reasonably controllable or preventable and is a natural event—is that ADEQ failed to identify

the specific anthropogenic sources that may have contributed to the measured concentrations. In section 4.2 of its review, EPA states that:
Without addressing the types, and locations of sources in the area, however, it is not possible to evaluate whether sources in the area were reasonably controlled.

In section 4.2, EPA contends that:

The lack of analysis regarding anthropogenic contribution upwind of the West 43rd site makes it difficult to determine the contributing role of human activity to the exceedances at the West 43rd site, particularly where it is known that commercial activities such as agriculture, sand and gravel mining and construction are known to take place.

These objections are inconsistent with the EER and past Region 9 practice.

According to the EER preamble:

The EPA's final rule concerning high wind events states that ambient particulate matter concentrations due to dust being raised by unusually high winds will be treated as due to uncontrollable natural events where ... the dust originated from anthropogenic sources within the State, that are determined to have been reasonably well-controlled at the time that the event occurred ...

73 Fed. Reg. at 13576. Thus, the rule does not require identification of specific anthropogenic sources that contributed to particulate matter concentrations. It states that even if wind-blown dust originated from anthropogenic sources, it will be treated as part of a natural event as long as those sources are "reasonably well-controlled."

ADEQ's request demonstrated that this requirement was met in two ways.

First, it referred to the comprehensive control strategy that has been developed and implemented for the Phoenix Serious PM10 nonattainment area. Because of the intractability of the PM10 nonattainment problem in Maricopa County, anthropogenic sources of PM10 in this area have likely received more scrutiny from the State, the public and EPA than any other sources in the country. The control strategy and compliance program developed for the area meet the most stringent planning requirements of the Clean Air Act, including the Best Available Control Measures (BACM) requirement of section 189(b)(1)(B) and the most stringent measures requirement of section. [ADD FR CITES] The control strategy had to include a comprehensive inventory of sources, so any suggestion that there are unknown, uncontrolled sources that could be identified from satellite images (see Review § 4.3 at 7) is unwarranted.

Second, the demonstration included a comprehensive review of all available compliance data for the 72-hour periods leading up to and including the events. Except for two minor violations identified by Maricopa County inspectors on June 4, 2008, no unusual dust-producing activities

were identified. There is no basis for concluding that anthropogenic emissions varied significantly before, during or after the event.

That this type of demonstration satisfies the EER is shown by EPA's concurrence in a September 22, 2006, exceptional event request for the SJV:

Section 50.1(j) of the Exceptional Events Rule requires that for an event to qualify as an exceptional event, whether natural or anthropogenic, a state must show that the event was not reasonably preventable or controllable. Here this requirement is met by demonstrating that despite reasonable and appropriate measures in place, the September 22, 2006, wind event caused the exceedances. During this event there were no other unusual dust-producing activities occurring in the SJV and anthropogenic emissions were approximately constant before, during and after the event. In addition, the State shows that reasonable and appropriate measures were in place, including Regulation VIII (the District's general fugitive dust rules) and Rule 4550 which limits fugitive dust emissions specifically from agricultural operations through Conservation Management Practices. Moreover, EPA has approved the District's best available control measure (BACM) demonstration for all significant sources of PM-10 in the SJV as meeting CAA section 189(b)(1)(B).

72 Fed. Reg. 49046, 49051 (Aug. 27, 2007). EPA's rejection of ADEQ's substantially identical demonstration warrants further dialogue between the agencies.

Other discrepancies in EPA's analysis of the § 50.1(j) criteria are discussed in the enclosure.

B. CLEAR CAUSAL RELATIONSHIP

Of the objections EPA raises to ADEQ's showing of a clear causal relationship, the one that deserves by far the greatest attention is EPA's claim that there is no geographical correlation between high winds and high PM10 concentrations on any of the four dates in question.

The first subsection of each causal relationship discussion emphasizes that there was supposedly no correlation between wind speed and PM10 concentrations across a wider geographic area:

The graphs show that hourly PM10 concentrations increase with an increase in maximum recorded wind speed at the West 43rd site, but not at the other three monitoring sites. [§ 5.1.1]

While the hourly PM10 concentrations increase with an increase in maximum recorded wind speeds at the West 43rd site, there is not a similar correlation between PM10 and maximum wind speed at the other monitoring sites in the area. [§§ 5.2.1 and 5.3.1]

The graphs show that, at the West 43rd site, the hourly PM10 concentrations increase with an increase in maximum recorded wind speeds at the West 43rd site; however, there does not seem to be a similar correlation between PM10 and maximum wind speed for the other monitoring sites in the area until later in the evening. [§ 5.4.1]

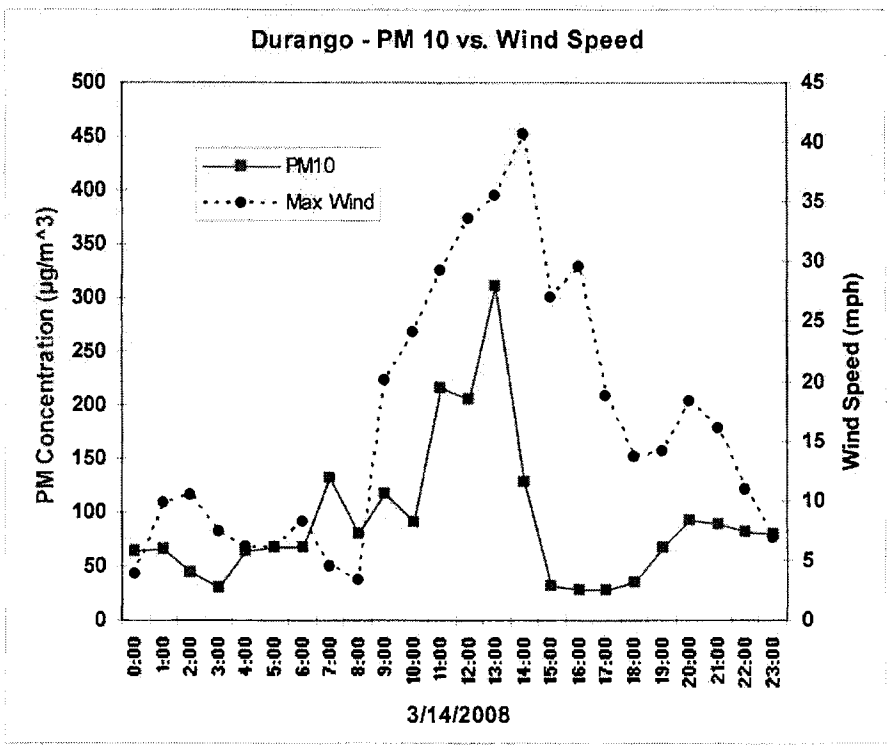
After each of these statements, the same EPA conclusion follows:

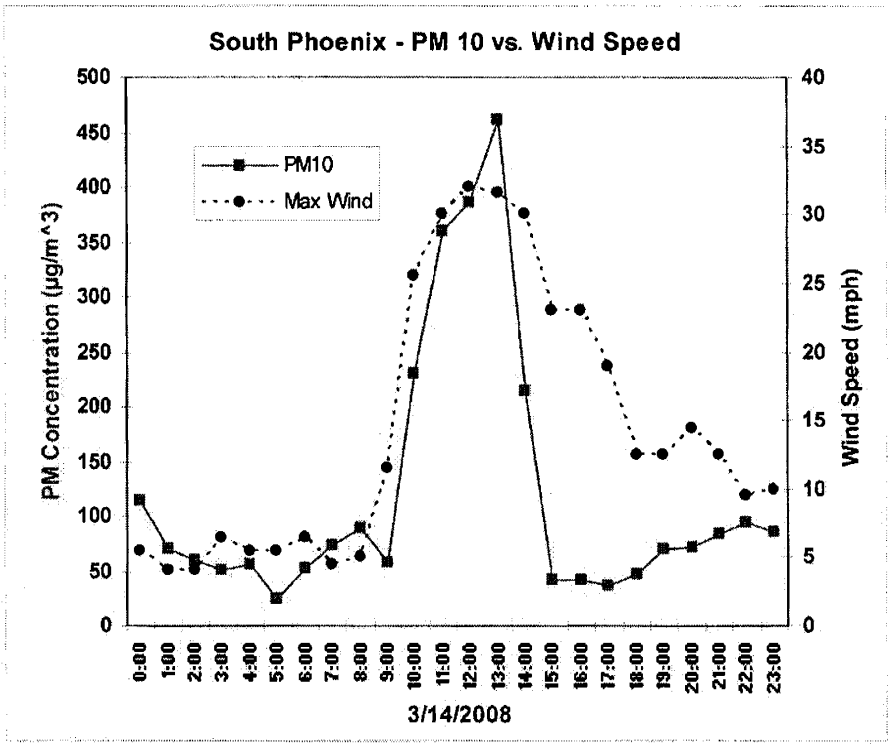
These facts suggest that the elevated PM10 concentrations at West 43rd may have been caused by local upwind sources and were not regional in nature. [§5.1.1, 5.2.1, 5.3.1; cf. § 5.4.1]

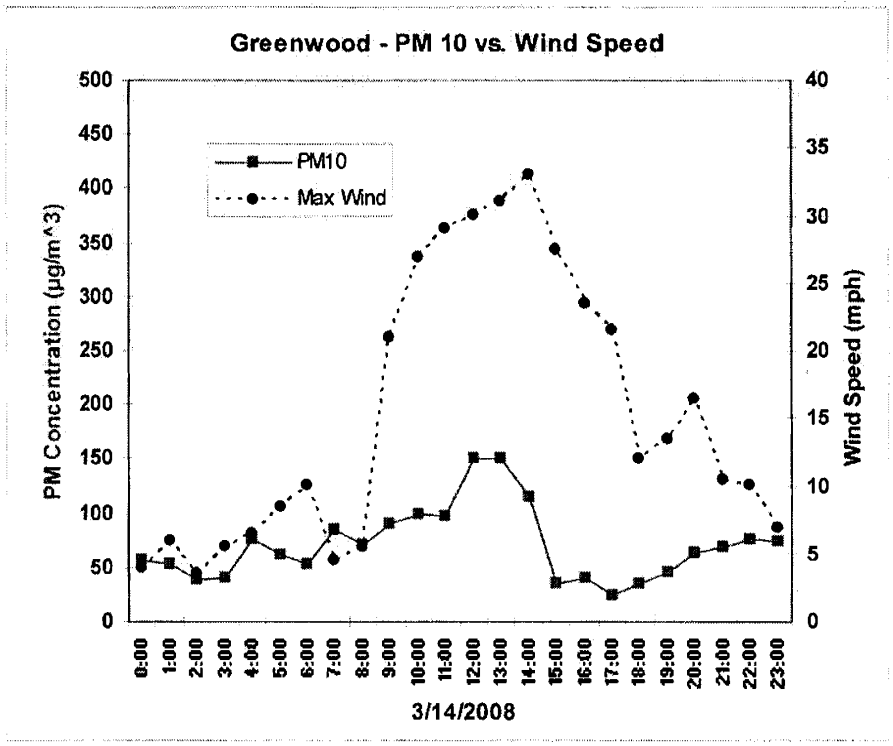
This point is emphasized again in EPA's conclusion for each causation section:
The data show that the spatial extent of PM10 during this day was isolated and not regional in nature. The data also show differences in the measured PM10 concentrations at the West 43rd site and the remaining sites in the Phoenix area. [§§ 5.1.7, 5.2.7, 5.3.7]

The data show that the spatial extent of PM10 during the early portion of the day was isolated and not regional in nature. [§ 5.4.9]

This objection is simply not true. Both the data and graphs included in ADEQ's request and the graphs in EPA's own review show that high wind speeds were, in fact, correlated with higher PM10 concentrations at all four monitoring locations. Although the correlation is evident in the original graphs, it is easier to see when the scale is adjusted to reflect the generally lower concentrations at the other three sites, as in the following adjusted graphs for the March 14, 2008, event:




South Phoenix - PM 10 vs. Wind Speed
PM10
Max Wind
PM Concentration (µg/m^3)
Wind Speed (mph)
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
30
35
40
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
3/14/2008


Greenwood - PM 10 vs. Wind Speed
PM10
Max Wind
PM Concentration (µg/m^3)
Wind Speed (mph)
0
50
100
150
200
250
300
350
400
450
500
0
5
10
15
20
25
30
35
40
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
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14:00
15:00
16:00
17:00
18:00
19:00
20:00
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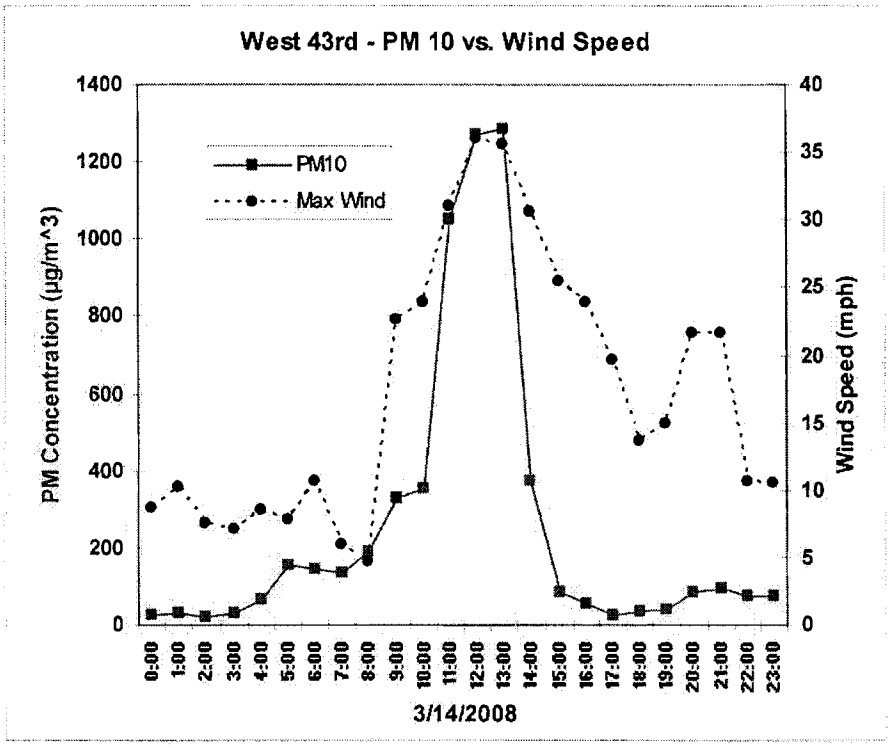
22:00
23:00
3/14/2008

For the purpose of comparison, this is the original chart for the West 43rd Avenue site:



Thus, EPA's statement that the "graphs show that hourly PM10 concentrations increase with recorded wind speed at the West 43rd site, but not at the other three monitoring sites" is not supported by the facts. The concentrations did increase with an increase in wind speed, and in many cases the hourly measurements exceeded the 24-hour NAAQS by a substantial margin. The only difference between the West 43rd Avenue monitor and the others is that the 24-hour concentrations recorded at the other three did not exceed the NAAQS.

The source of the discrepancy between the magnitude of the concentration increases at the monitors is evident from ADEQ's submissions. Because of its location, the West 43rd monitor is especially susceptible to dust generated by high winds traveling from a west or southwest direction along the Gila and Salt River channels and at their confluence.

EPA's conclusion that the concentrations at the West 43rd Avenue monitor "may have been caused by local upwind sources and were not regional in nature" is not substantiated by the facts. In any case, this conclusion, even if justified, would not legally support EPA's determination that there was not a clear causal connection between the winds and the concentrations. As already noted, local, anthropogenic sources may be considered part of an exceptional high wind event, so long as they are reasonably controlled. As discussed above, there

is ample basis for concluding that the sources in the vicinity of the West 43rd Avenue monitor satisfied this requirement.

A section-by-section response to all of EPA's statements relating to causation is included in the enclosure.

C. A MEASURED CONCENTRATION IN EXCESS OF NORMAL HISTORICAL FLUCTUATIONS

In section 6.0 its review, EPA acknowledges that all of the measurements ADEQ seeks to exclude were well above the 95th percentile values for the West 43rd Avenue monitor.

EPA then states:

There is no specific threshold test for this requirement, but concentrations in the high percentiles can provide supporting evidence and informs EPA's weight of evidence analysis of the exceptional events in question.

The rule, however, calls for a determination of whether concentrations are in excess of normal fluctuations as a distinct element of the exceptional event requirements. Concentrations in the high percentiles are not simply data points to be considered in determining whether other elements, such as causation, are satisfied. They are direct evidence that this specific element is satisfied.

D. NO EXCEEDANCE BUT FOR THE EVENT

A critique of EPA's analysis of the "but-for" test is included in the enclosure. As demonstrated in the enclosure, EPA's conclusion that ADEQ failed to establish this element is not supported by the facts.

Thank you for your consideration of this information. If your staff has questions or would like to discuss this further, please have them contact Nancy Wrona, who can be reached at (602) 771-2311.

Sincerely,

Benjamin H. Grumbles
Director

Enclosure

cc: Deborah Jordan (with Enclosure)
Colleen McKaughan (with Enclosure)

Enclosure

SECTION BY SECTION RESPONSE TO

Review of Exceptional Events Request
Maricopa County AZ
24-Hour PM_{10}

- March 14, 2008
- April 30, 2008
- May 21, 2008
- June 4, 2008

U.S. Environmental Protection Agency
Region 9

May 12, 2010

PREPARED BY

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
AIR ASSESSMENT SECTION

June 30, 2010

This document contains a section by section presentation of and response to the Technical Support Document (TSD) developed by the U.S. Environmental Protection Agency (EPA) in response to the Exceptional Events demonstrations submitted to EPA by the Arizona Department of Environmental Quality (ADEQ).

Review of Exceptional Event Request

Maricopa County, AZ

24-Hour PM_{10}

- March 14, 2008
- April 30, 2008
- May 21, 2008
- June 4, 2008

U.S. Environmental Protection Agency
Region 9

May 12, 2010

ADEQ COMMENTS

1. ADEQ Submitted the 2007 Exceptional Events Rule (EER) Demonstrations on September 16, 2008.

2. ADEQ received an un-official, unsigned response from EPA in May 2009 in response. There was no resolution, clarification or finalization of information content or need.

3. ADEQ Submitted preliminary assessments for the 2008 events in June 2009 followed by the final submittals in November 2009 that included ADEQ's "Unusual Winds" and the "Control Measures" White Papers.

4. ADEQ prepared a supplemental package for the June 4, 2008 event as a model for future submittals and sought EPA feedback on the submittal. Only the June 4, 2008, event has had a supplement added to the original "complete" reports that were submitted in November 2009. ADEQ is still waiting for a response.

5. EPA's response does not address the earlier 2007 and other 2008 submittals.

6. EPA's co-mingling of issues between events makes it difficult to develop a clear picture of EPA's vision for the expected contents of an "acceptable" EER demonstration.

7. EPA should respond completely to the June 4, 2008 event which corresponds to the event that ADEQ generated substantially more information in the supplemental submittal to determine what if any additional information may be needed.

RELEVENT FEDERAL REGISTER CITATIONS:

72 FR 13573
To obtain concurrence, EPA must determine that the demonstration is complete and provides a reasonable technical demonstration.

Because of the variability in the nature of exceptional events and the resulting demonstration requirements, States should consult with the appropriate EPA Regional Office early in the process of preparing their demonstrations. We are not specifying what will be required as a minimum level of documentation in all cases because facts and circumstances will vary significantly based on, among other things, geography, meteorology and the relative complexity of source contributions to measured concentrations in any particular location. We believe, however, that at a minimum, the elements of such a demonstration should include a showing that an event occurred at a time when meteorological conditions were conducive to transporting emissions from the event downwind to the monitor recording a high concentration of one or more criteria pollutants. Acceptable documentation will be determined through consultation with the EPA regional offices. However, certain minimum requirements (e.g., ''but for'' test) will be necessary as discussed in the earlier sections of this rule.

72 FR 13574
Comment: One commenter stated that EPA must provide a reasonable explanation and documentation for their decision to deny any request for the flagging of data. *Response:* The EPA regional offices will work with the States, Tribes, and local agencies to ensure that proper documentation is submitted to justify data exclusion. The EPA will make the response and associated explanation publicly available. *Comment:* One commenter stated that EPA must establish a technically-based appellate process for States to follow when Regional Offices do not concur with a data flag. *Response: t*he EPA does not believe that an appellate process is necessary because we anticipate that the States and Regional Offices will be working closely through the data and documentation submission process.

72 FR 13581
§50.14(c)
(3) *Submission of demonstrations.*
(i) A State that has flagged data as being due to an exceptional event and is requesting exclusion of the affected measurement data shall, after notice and opportunity for public comment, submit a demonstration to justify data exclusion to EPA not later than the lesser of, 3 years following the end of the calendar quarter in which the flagged concentration was recorded or, 12 months prior to the date that a regulatory decision must be made by EPA. A State must submit the public comments it received along with its demonstration to EPA.

Contents

ADEQ COMMENTS

EPA's general interpretation of "unusual winds" (see Sections 4.3 and 9.0)

ADEQ has reviewed EPA's concerns about ADEQ's treatment of "unusual winds." ADEQ has also reviewed EPA's actions regarding exceptional events submitted by other jurisdictions. As a result, ADEQ has concluded that EPA's treatment of ADEQ's demonstrations differs significantly from similar actions for other jurisdictions. Therefore, it is difficult for ADEQ, in revising past and preparing future demonstrations to understand the nature and type of analyses that would lead to EPA concurrence.

For example, in the San Joaquin Valley (SJV) EER demonstration for the exceptional event that occurred on October 25, 2006, on which EPA concurred (72 FR 49055), EPA acknowledged that, "... The documentation also states that wind speeds of these intensities are relatively rare in the southwestern part of the SJV and occur less than 5% of the time, based on long-term monitoring records." EPA thus concurred that winds exceeding the 95th percentile are unusual. ADEQ used the same basis in developing the "Unusual Winds" White Paper. Nowhere in the SJV EER demonstration were these wind speeds analyzed or presented by season. Although the preamble does acknowledge that states should show the winds were unusual for the time of year, in the case of SJV no such requirement was imposed by EPA. The EPA concurrence flag was applied without this demonstration. For EPA to be calling for ADEQ to provide a seasonal breakdown, while the SJV was not required to do so, creates an inconsistency, which ADEQ would like to understand and resolve.

Further, EPA's focus on the 5% observation for hourly-average wind speeds ignores the remainder of the submittal in the Unusual Winds White Paper. The literature is clear that winds in the 15 mph range can create blowing dust, and that the wind speeds in question during the events were substantially higher than this minimum, generally with gusts at or above 28 mph that occur less than 1.5 percent of the time. Also, the data presented in the White Paper shows the same general pattern of wind speed to PM concentration occurs from the Buckeye monitor in the West Valley, through Phoenix (West 43rd & Durango), to the Higley monitor in the East Valley.

The wind-gust frequency table for the West 43rd Avenue in the White Paper is presented below:

	PM10 Category	< 1	1 mph	2 mph	3 mph	4 mph	5-6	7 mph	8-10	11-13	14-16	17-21	22-27	28-34	35-43	44+	TOTAL
WEST 43RD AVE	1996-3161 ug/m3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1258-1994 ug/m3	-	-	-	-	-	-	-	-	-	-	2	-	-	7	-	9
	794-1257 ug/m3	-	-	1	-	-	3	1	-	1	-	3	1	12	14	5	41
	501-793 ug/m3	-	1	2	6	8	5	1	-	1	2	6	6	33	27	6	103
	316-500 ug/m3	-	1	1	25	74	94	11	19	4	2	5	26	59	25	6	351
	199-315 ug/m3	-	4	9	93	252	468	89	91	14	9	25	82	86	16	1	1,239
	125-198 ug/m3	1	4	31	214	562	1,054	242	358	90	42	70	181	103	13	1	2,966
	79-124 ug/m3	-	15	60	399	912	1,738	528	758	320	159	275	263	60	8	-	5,495
	50-78 ug/m3	-	29	63	383	951	1,897	721	1,399	732	470	654	376	47	3	1	7,635
	31-49 ug/m3	-	21	68	277	656	1,640	715	1,912	1,414	992	976	235	17	5	2	8,930
	19-30 ug/m3	-	20	27	138	287	780	461	1,511	1,443	1,006	714	117	13	3	1	6,521
	12-18 ug/m3	-	10	16	59	127	340	186	679	647	450	286	57	12	-	-	2,868
	7-11 ug/m3	-	8	5	16	34	129	97	276	228	169	117	34	3	1	-	1,116
	5-6 ug/m3	-	1	1	7	10	24	19	57	50	28	21	9	-	-	-	227
	3-4 ug/m3	-	-	1	1	7	14	9	36	35	25	23	7	-	-	-	167
	1-2 ug/m3	-	1	-	-	3	12	2	10	22	10	11	2	-	-	-	73
	<1 ug/m3	-	-	-	-	1	7	3	9	7	7	10	2	-	-	-	46
	TOTAL	1	115	285	1,626	3,884	8,205	3,084	7,114	5,008	3,371	3,198	1,296	445	122	23	37,777

Of the 37, 777 hours of data that were examined, only 590 hours (445+122+23) had wind gusts at or above 28 mph. This represents only 1.5 % of the hours. Even if all of these hours occurred in the same season, which is not the case, it would represent 6 % of the hours, a small deviation from the 5% threshold that was the basis for EPA's concurrence with the SJV demonstration. Instead of acquiring and processing other data in the TSD to make the argument against concurring with ADEQ's demonstration, EPA's time would have been better spent reviewing the data submitted by ADEQ. EPA should focus on the wind-gust data presented in the demonstrations. EPA's focus on average wind speeds is misplaced, because elevated PM10 concentrations during the events are driven by peak winds.

Tables

Figures

ADEQ COMMENTS

EPA's reliance on newly-created data is not consistent with the principle of public awareness and review established in 40 CFR 50.14(c)(3)(i).

ADEQ assembled and analyzed quality-assured and validated data, organized in an easy to understand fashion, to allow the general public to understand the nature of the event and the basis for ADEQ's assertion that it qualified as an exceptional event. These data were presented at stakeholder meetings, and were subjected to a 30-day comment period (with the exception of the draft supplement for June 4th which was submitted for the purpose of discussion with EPA). ADEQ stakeholders reviewed the data and offered no comments related to concerns or questions related to the data.

Throughout the TSD EPA relied upon data that was not submitted by ADEQ, and as such, is not traceable to a quality-assured source. Specifically, the data contained in Appendix A, Appendix B, Tables 1-6, and Figures 1-18 were not based on data submitted by ADEQ. Although some portions of the data submitted by ADEQ may be part of these tables and figures, the majority is not. EPA's creation of data, and use of that data in arguments without affording the opportunity for public review is contrary to principles established in 40 CFR 50.14(c)(3)(i).

If EPA concludes that the data submitted by ADEQ does not enable them to concur, in the spirit of collaboration discussed in the preamble to the EER, EPA should identify the areas where ADEQ should improve the quality of the demonstration. Reliance on newly-created data which the public has not been given an opportunity to review should be avoided, in favor of providing ADEQ with timely feedback.

The general tone of the concerns raised by EPA could have been easily articulated by EPA sending a letter informing ADEQ that the information that was submitted was not sufficient for EPA to concur with the demonstration. EPA could have identified areas for improvement and suggesting that ADEQ:

- Add a seasonal breakdown component to the Unusual Wind White Paper, and better explain the issue of what constitutes "unusual winds" for the purpose of the EER.
- Include all particulate matter data in the demonstration.
- Include all available meteorological data in the demonstration.
- Identify the location of any NOVs issued to sources on the days in questions to determine whether or not the emissions were significant contributors.
- Demonstrate why the emissions from the alluvial plain west of the West 43rd monitor are not reasonably controllable.

1.0 Introduction

On March 22, 2007, EPA adopted the *Treatment of Data Influenced by Exceptional Events,*[1] also known as the Exceptional Events Rule (EER), to govern the review and handling of certain air quality monitoring data for which the normal planning and regulatory processes are not appropriate. Under the terms of the EER, a state may request EPA to exclude data showing exceedances or violations of the National Ambient Air Quality Standard (NAAQS) that are directly due to an exceptional event from use in determinations by demonstrating to EPA's satisfaction that such event caused a specific air pollution concentration at a particular air quality monitoring location.[2] Before EPA will exclude data from these regulatory determinations, the state must flag the data in EPA's AQS database and, after notice and an opportunity for public comment, submit a demonstration to justify the exclusion. After considering the weight of evidence provided, EPA will determine if the demonstration satisfies all the requirements of the EER and either concur or nonconcur with the state's request.

On June 30, 2009, the Arizona Department of Environmental Quality (ADEQ) submitted to EPA a preliminary demonstration for exceedances that occurred at various monitoring locations throughout Arizona on 27 separate days in 2008, including five at the West 43rd monitoring site located in southwestern Phoenix. On November 17, 2009 ADEQ submitted final demonstrations for twelve of these exceedances, including five at the West 43rd site.[3]

This document sets forth the legal and factual basis for EPA's decision regarding four exceedances of the 24-hour PM_{10} NAAQS in 2008 at the West 43rd monitoring site on March 14, April 30, May 21, and June 4, 2008 that ADEQ has flagged as "high wind" exceptional events.[4] EPA has not yet completed its analysis of the remaining dates and is not making a concurrence or non-concurrence determination for them at this time.

The documentation submitted by ADEQ and considered by EPA in support of the exceptional events claims includes the following:

- Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate (PM_{10}) Concentration Events in the Phoenix Area on March 14, 2008 (March 14 Assessment);
- Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate (PM_{10}) Concentration Events in the Phoenix Area on April 30, 2008 (April 30 Assessment);

[1] 72 FR 13560-13581, March 22, 2007.
[2] 40 CFR §50.14 (a).
[3] On March 17, 2010 EPA received a draft-supplemental report titled "Assessment of Qualification for Treatment Under the Federal Exceptional Events Rule: High Particulate (PM_{10}) Concentration Events in the Phoenix and Yuma Areas on June 4th, 2008." Information presented in this document will be considered in EPA's concurrence/non-concurrence decision for the claimed event that occurred on June 4, 2008. EPA has not received additional information concerning the other three events we are reviewing in this document.
[4] The West 43rd monitor also measured a fifth exceedance on November 9, 2008; EPA is not reviewing this event at this time.

ADEQ COMMENTS

- Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate (PM_{10}) Concentration Events in the Phoenix Area on May 21, 2008 (May 21 Assessment);
- Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate (PM_{10}) Concentration Events in the Phoenix Area on June 4, 2008 (June 4 Assessment);
- The Impact of Exceptional Events "Unusual Winds" on PM_{10} Concentrations in Arizona (Unusual Winds White Paper);
- High Wind Exceptional Events and Control Measures for PM_{10} Areas (Controls White Paper); and
- DRAFT – Supplemental Report: Assessment of Qualification for Treatment under the Federal Exceptional Events Rule: High Particulate (PM_{10}) Concentration Events in the Phoenix and Yuma Areas on June 4, 2008 (June 4 DSR).

2.0 Summary of the Events

In 2008, there were seventeen PM_{10} monitoring sites operating in Maricopa County, ten of which use continuous PM_{10} analyzers that produce hourly data. During 2008, the West 43rd monitoring site, which measures PM_{10} with a continuous analyzer,[5] measured five exceedances of the 24-hour PM_{10} NAAQS, four of which are reviewed in this document.[6] ADEQ has claimed that the exceedances at the West 43rd site resulted from the transport of dust from soils by high winds, the high wind event was a regional phenomenon that affected the entire Phoenix area, and the events were the result of the transport of dust and soils from high winds that suspended natural soils and soils from areas where BACM was in place.[7]

Table 1: West 43rd 2008 PM_{10} Exceedances

Date	PM_{10} (ug/m^3)	Weather Condition	Wind Direction
March 14	251	Low Pressure Trough	W
April 30	173	Frontal System Passage	WSW
May 21	279	Frontal System Passage	W
June 4	194	Frontal System Passage	WSW

3.0 Requirements of the Exceptional Events Rule

Pursuant to 40 CFR §50.14(c)(3)(iii) a request for EPA's concurrence on an exceptional event flag must be accompanied by a demonstration that:

(A) The event satisfies the criteria set forth in 40 CFR §50.1(j) that it:
1. affects air quality;
2. is not reasonably controllable or preventable;

[5] All of the continuous analyzers in Maricopa County, including the analyzer at West 43rd, are Thermo Scientific TEOM 1400AB analyzers with EPA FEM designation number EQPM-1090-079.
[6] EPA is not analyzing the exceedance on November 9, 2008 at this time.
[7] March 14, April 30, May 21, and June 4 Assessments at p.4.

ADEQ COMMENTS

1. The "Unusual Winds White Paper" and "Control Measures White Paper" were two developments submitted in November 2009 as an enhancement to earlier submittals. EPA never reviewed and provided feedback to ADEQ on these two important work products until the publication of the TSD. Earlier feedback would have allowed ADEQ to respond to, for example, the need to provide a seasonal breakdown of unusual winds.

2. The Supplemental Report developed for the June 4, 2008, event was anticipated to be a model for a re-engineered structure for all demonstrations. EPA never provided feedback on how the proposed restructuring improved the reviewability of the submittals.

3. In 2007 there were 35 events that caused 67 monitor measurements that were flagged by ADEQ. Documentation of these events was submitted to EPA on a timely basis. EPA has still not responded to these submittals.

4. The "Summary of Events" fails to acknowledge that the June 4 event also resulted in exceedances of the PM_{10} NAAQS at the Buckeye and Coyote Lakes monitors in Maricopa County and the Yuma monitor, which were flagged "RJ" for high winds, along with 5 monitors in California and one in Nevada that were also flagged "RJ" (see below). Thus, in total the regional high wind frontal system passage on June 4th contributed to a total of 10 exceedances that a variety of agencies have requested concurrence for "high wind" flags from EPA.

JUNE 4, 2008 MONITOR READING FLAGGED

The following are all the monitors in the AQS database that were flagged "RJ" (for high-wind) that have been requested for EPA concurrence which were caused by the regional high wind event that occurred on June 4th (See Attached AQS Report run on 3/15/2010):

1. AZ – 04-013-4009 – West 43rd Ave (1pm/10p)
2. AZ – 04-013-4011 – Buckeye (4pm/10p)
3. AZ – 04-013-4014 – Coyote Lakes (6pm/11p)
4. AZ – 04-027-0004 – Yuma (3pm/7pm)
5. CA – 06-065-1999 – Riverside Co (1pm/8pm)
6. CA – 06-065-2002 – Riverside Co (11am/6pm)
7. CA – 06-065-5001 – Riverside Co (11pm/7pm)
8. CA - 06-071-0306 – San Bernardino Co (3pm)
9. CA – 06-071-1234 – San Bernardino Co (12noon)
10. NV – 32-023-0014 – Nye Co (3pm)

5. The table in Section 2.0 includes a "Wind Direction." A corresponding entry can not be found in the data submitted by ADEQ. What is the source of the value? EPA's response should either rely on data provided by the submitting agency, or EPA should provide a reference to the data.

6. EPA contends that the regional event must be based on regional blowing dust. ADEQ refers to the elevated winds as the regional event. Whether dust is generated from a particular area is dependent on soil type, soil moisture, threshold friction velocity, wind direction and wind speed. In all the cases reviewed for West 43rd, natural soils from the alluvial plain were the source.

3. is caused by human activity that is unlikely to recur at a particular location, or is a natural event;
4. does not include stagnation of air masses or meteorological inversions, a meteorological event involving high temperatures or lack of precipitation, or pollution relating to source noncompliance;

(B) There is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area;

(C) The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and

(D) There would have been no exceedance or violation but for the event.

The demonstrations must fully meet all the above criteria to EPA's satisfaction; failure to meet any one of the criteria will result in the non-concurrence of the event in question.. In addition to the technical criteria, the EER also has procedural requirements. 40 CFR §50.14(c)(2)(iii) requires that data claimed to be due to an exceptional event must be flagged in the AQS database, and that an initial description of the event be provided to EPA; both must occur by July 1 of the year following the event. In addition, 40 CFR §50.14(c)(3)(i) requires that the State:

- submit a demonstration to EPA within three years of the calendar quarter of the event or 12 months prior to an EPA regulatory decision;
- provide notice and opportunity for public comment; and
- submit any public comments along with the demonstration.

EPA's concurrence or non-concurrence with a State's flag constitutes its agreement or disagreement with the State on whether the data should be excluded from regulatory decisions involving a State's compliance with the NAAQS. EPA's determination regarding a State's attainment status or action on a state SIP submission will be issued in a rulemaking which is a final agency action that is judicially reviewable under CAA section 307(b)(1).

The following sections evaluate ADEQ's assessments of March 14, April 30, May 21, and June 4, 2008 with respect to these requirements.

4.0 Criteria Set Forth in 40 CFR §50.1(j)

4.1 Affect Air Quality

As stated in the preamble to the EER, the event in question shall be considered to have affected air quality if it can be shown that there is a clear causal relationship between the monitored exceedance and the event (section 5.0), and that the event is associated with a measured concentration in excess of normal historical fluctuations (section 6.0).[8]

[8] 72 FR 13569, 72 FR 49051, and 73 FR 14702.

ADEQ COMMENTS

4.2 Reasonably Controllable or Preventable

A determination of whether a particular event was "not reasonably controllable or preventable" depends on the specific facts and circumstances surrounding the event. Therefore, EPA addresses this and the other criteria of the EER on a case by case basis.

This factor of the analysis should consider whether anthropogenic sources contributing to the exceedance caused by the event were reasonably controlled.[9] ADEQ's supporting documentation, however, did not specifically identify the type or location of the possible contributing sources in the area, other than the Salt and Gila River channels, located upwind of the West 43rd monitoring site.. Although the June 4 DSR identifies that the alluvial channels located upwind of the West 43rd monitor most likely significantly contributed to the exceedance at West 43rd site, ADEQ did not evaluate whether emissions from those sources were reasonably controllable or preventable.

The June 4 DSR included a table titled, "Rules Regulating Particulate Matter Emissions in Maricopa County," which includes the rule number, title, and a brief description of the general sources that the rule is designed to control. Without addressing the types, and locations of sources in the area, however, it is not possible to evaluate whether sources in the area were reasonably controlled.

4.3 Human Activity/Natural Event

The term "natural event" is defined at 40 CFR §50.1(k) as "an event in which human activity plays little or no direct causal role." As described in the preamble to the EER, high wind events may qualify as exceptional events if the following conditions are met: the wind speed associated with the event is "unusual for the affected area during the time of year that the event occurred," and, in instances where wind produces emissions from anthropogenic sources, all reasonable and appropriate measures must be in place for all contributing sources.[10] An event that was caused by human activity, but is unlikely to recur at a given location may be considered an exceptional event assuming all other requirements of the rule are met.

ADEQ's Assessments briefly discussed the various source categories in the area, including industrial sources, construction, area sources (unpaved parking lots and shoulders), roads, track out, and windblown dust. According to ADEQ, the windblown dust category includes significant contribution from the following sources: agriculture, alluvial channels, vacant lots, construction, industrial, disturbed areas, and stockpiles. In addition, EPA has identified, through satellite images and visits to the area, numerous anthropogenic sources in the area that could contribute to elevated PM_{10} concentrations. The commercial nature associated with many of these activities indicates that some portion of them can be reasonably expected to recur.

To establish that the exceedances at the West 43rd site may properly be classified as "natural events," the data must support a finding that "human activity plays little or no direct causal

[9] EER Preamble, 72 FR 13566, n. 11.
[10] EER Preamble, 72 FR 13566.

ADEQ COMMENTS

EPA's response in 4.2 fails to recognize two fundamental facts in the demonstration.

1. All controllable sources of PM_{10} in the area are subject to an EPA approved Serious Area SIP (MAG, 2000), including numerous Maricopa County rules as well as other local dust control measures. Millions of dollars have been invested by the stakeholders and local governments in implementation of these controls. A staff of inspectors and compliance personnel routinely monitors the operations of sources in the area. The fact that no significant finding of non-compliance was observed is a prima-facie demonstration that the PM emissions that caused the exceedance were not "Reasonably Controllable or Preventable."
2. For the June 4th event, NWS data showed that blowing dust was generated in Southern California and transported into Arizona. Areas prone to dust generation along the entire path of the frontal system passage experienced blowing dust, either transported into the area, or generated locally and added to the dust cloud. Regional blowing dust was not the only contribution to the elevated concentrations in the Phoenix area. The river beds of the Gila, Salt, Agua Fria Rivers and others are prime sources of fine dusts when winds are sufficiently high to entrain that material.

The Federal Register for the proposed approval of the San Joaquin area included approval of several exceptional events under the EER. EPA allowed San Joaquin to rely on existing measures in their control programs as adequate. Specifically, at 72 FR 49055, column 1, paragraph 1, EPA acknowledges the following:

72 FR 49055
"ii. Not Reasonably Controllable or Preventable
Section 50.1(j) requires that for an event to qualify as an exceptional event, whether natural or anthropogenic, a state must show that the event was not reasonably preventable or controllable. Here this requirement is met by demonstrating that despite reasonable and appropriate measures in place, the October 25, 2006 wind event caused the exceedances. During this event, there were no other unusual dust-producing activities occurring in the SJV and anthropogenic emissions were approximately constant before, during and after the event. In addition, the State showed that reasonable and appropriate measures were in place, including regulation VIII (the District's general fugitive dust rules) and Rule 4550 which limits fugitive dust emissions specifically from agricultural operations through Conservation Management Practices.47 Moreover, EPA has approved the District's BACM demonstration for all significant sources of PM–10 in the SJV as meeting CAA section 189(b)(1)(B).48"

Finally, the alluvial channel referred to throughout this document is a "natural" source of dust (dried river bottom) as opposed to an anthropogenic source.

role."[11] ADEQ's Assessments of the four exceedances did not analyze potential contribution from anthropogenic sources. The Controls White Paper states that because of "the relative complexity of the emitting source mix, parsing out a specific source or source category along with the applicable control measures for a determination of relative effectiveness can be difficult and may even be counter-productive." ADEQ's Assessments also stated that "no specific emission allocation is possible based on the data for analysis" and that "the primary source appears to be wind-blown dust over central Arizona for which there is not an effective or efficient method to estimate the relative contributions from specific sources."[12]

The lack of analysis regarding anthropogenic contribution upwind of the West 43rd site makes it difficult to determine the contributing role of human activity to the exceedances at the West 43rd site, particularly where it is known that commercial activities such as agriculture, sand and gravel mining and construction are known to take place.

EPA notes that the EER did not set a specific threshold to define a "high wind event,"[13] but suggested the use of a comparison of wind speeds measured on the event day to be compared to historical wind speed levels "for the season of the year that the event occurred."[14] The analysis that supports ADEQ's definition of "unusual" wind was based on data from 2005 through 2009 for the entire year period and was only analyzed for four monitoring sites (Buckeye, West 43rd, Durango Complex, and Higley). The use of a complete year of data in this situation rather than the season during which the events occurred likely biases the statistical analysis low. The Phoenix area experiences more consistent elevated wind speed levels associated with frontal passages during the months of March through June.

Conclusions drawn from this analysis suggest that wind speeds that occur less than 5% of the time should be considered "unusual" for exceptional events purposes. For the West 43rd monitoring station, this standard would correspond to sustained hourly wind speeds greater than 10 mph and wind gusts[15] greater than 20 mph. ADEQ's documentation did not provide any specific analysis pertaining to certain hours of the day and there is no discussion of the wind speeds that are associated with the event and their relationship to the 95th percentile. While wind speeds above the 95th percentile may seem unusual, the frequency of occurrence of hourly wind speeds over 10 mph at this site is approximately 100 days per year.[16]

The Unusual Winds White Paper further stated that "unusual winds can be defined as any wind that has the ability to create windblown dust." ADEQ's definition could be interpreted to treat all windblown PM_{10} as exceptional as long as the wind speeds are about the threshold friction velocity for that area. Threshold wind speeds provide a minimum baseline for wind speeds that are capable of producing windblown dust and are based on particle interaction on the ground surface, while "high" and "unusual" wind speed definitions should be based on a separate analysis. Thus, although this evidence may contribute to the exceptional analysis, it should not

[11] 40 CFR §50.1(k)
[12] March 14, April 30, May 21, and June 4 Assessments at p.4.
[13] EER Preamble 72 FR 13577.
[14] Id. at 13566.
[15] Wind gusts from Maricopa County stations are 1-sec maximum wind speed value for the hour.
[16] Based on data from 2007-2009.

ADEQ COMMENTS

EPA's response in 4.3 fails to recognize the history of the area under consideration for exceptional event review. Numerous State Implementation Plans, including the EPA approved Serious Area SIP (MAG, 2000) have been written to address the well known dust issues in and around the Phoenix Metro area. There are three basic premises that EPA ignores when it comes to the control measures required by these SIPs.

1. No control measure has an unfailing degree of control
2. Exceptional events can override the best controls
3. Exceptional events are not a reliable determinant of control efficacy

In the case of controls that could have been overwhelmed by the exceptional nature of the event or where it can be shown that *on average* the control measures have a high degree of control, save the exceptional nature of the event, ADEQ is asking that the event be disregarded as a violation of the NAAQS.

EPA's statement that the "frequency of occurrence of hourly wind speeds over 10 mph at this site is approximately 100 days per year" implies that ADEQ would perhaps wish to treat those days as exceptional as well. For EPA to allude that ADEQ is trying to make that claim is false. ADEQ stated in the Unusual Winds White Paper that "literature and data from monitors indicate that the phenomenon of blowing dust can occur over a broad range, but generally is associated with hourly averaged wind speeds that are above 10 mph, which are commonly associated with wind gusts above 20 mph". Contrary to EPA's implication, ADEQ does not assert that any day experiencing an hourly average wind speed greater than 10 mph should be considered exceptional in nature.

EPA's statement that ADEQ only performed the analysis for four monitors is fundamentally irrelevant, since the center piece of the analysis was the West 43rd monitor, which was the only monitor being examined by EPA in the TSD.

Hourly average wind speeds over 10 mph do not alone create exceptional windblown dust events. In fact, it has been shown that wind gusts, and not hourly average wind speeds, are more influential in the creation of windblown dust. For this reason, ADEQ analyzes maximum wind gusts in all exceptional event demonstrations (see WRAP Fugitive Dust Handbook, page 1-7).

ADEQ asserts that windblown dust typically occurs only when hourly average winds are at least 10 mph and gusts are at least 20 mph. That isn't to say that any wind of 10mph or gust of 20 mph is "exceptional" or would create blowing dust. The 10 and 20 mph values are given as estimates for when winds may be considered "unusual", and this is backed up by the fact that the NWS typically does not report wind gusts unless they are greater than 15 mph. As EPA has not provided a threshold value for wind speed that they would consider "unusual," ADEQ used available data to estimate the wind speed at which 5% or less of all values would fall. As was pointed out in the discussion of this issue is found in comments facing Page 2 of the TSD, EPA used a reference to the 5% when approving the SJV submittals.

EPA cites the Federal Register discussion that winds should be compared to historical wind speed levels "for the season of the year that the event occurs." EPA goes on to suggest that March through June should be the benchmark of comparison. March through June is not a "season". Meteorological Seasons are defined by the National Weather Service as Winter (December, January, February), Spring (March, April, May), Summer (June, July, August), and Autumn (September, October, November). Using the argument of "similarity", EPA could arbitrarily ask ADEQ to include October into the Spring "season" as easily as June.

be a major deciding factor when determining whether wind speed associated with an exceptional event is "unusual."

In summary, considering the limited analysis on the elevated wind speeds associated with the event combined with little analysis of possible contributing sources located directly upwind of the West 43rd site, EPA has determined that ADEQ's documentation did not provide sufficient evidence to support that the events in question should be considered "natural events" as required under the EER.

4.4 Stagnation of Air Masses/Inversions/High Temperature/Lack of Precipitation/Source Noncompliance

ADEQ did not provide any evidence suggesting that the exceedances at the West 43rd monitoring site were the direct result of stagnation of air masses, inversions, high temperature, or lack of precipitation. Regarding source noncompliance, ADEQ states that, "no local sources were reported as significantly contributing to the air quality episode" for all days except June 4. This statement assumes that because there were no observations made (i.e. there were no reported civilian complaints or enforcement actions), that all sources in the area were in compliance with all applicable fugitive dust control measures.

The June 4 assessment explained that there were two Notice of Violations (NOV) issued on June 4 and June 5 for noncompliance with Maricopa County's (MCAQD) fugitive dust rules. The June 4 DSR also states that "one complaint based inspection of a dust control permit on June 4... resulted in a Notice of Violation (NOV) for track-out under Rule 310" and on June 5 "an inspection of a Rule 316 source resulted in the issuance of a notice of violation for failure to install a wheel washer." Both of the NOVs were issued to sources that are located within a two mile radius of the West 43rd monitoring site, but the specific locations of these facilities were not identified in the June 4 assessment or DSR. The NOVs provide some evidence that nearby sources may not have been reasonably controlled during the time of the event.

5.0 Clear Causal Relationship

In order for EPA to concur with an exceptional event request, the EER requires the State to demonstrate that there is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected air quality in the area. 40 CFR §50.14(a)(2); 40 CFR §50.14(c)(3)(iii). To address this element for "high wind events," such as those flagged by Arizona, the state should reasonably consider the relationship between an event, the PM_{10} emissions caused by unusually high winds, and a measured exceedance at a monitoring site. Arizona's Assessments included various data points relevant to this analysis. EPA's technical review also considered additional data regarding wind speed and direction, PM_{10} concentration, and visibility.[17]

As a preliminary matter relevant to this issue, EPA notes that ADEQ's limited analysis of the potential sources that might have contributed to the exceedances at the West 43rd site (sections

[17] Appendix A contains pollution roses based on % total PM_{10} mass for all four of the events in question.

ADEQ COMMENTS

EPA Failure To Focus On Wind Gusts vs Average Winds

EPA participated in and assisted in funding work of the Western Regional Air Partnership (WRAP). The WRAP Fugitive Dust Handbook was a collaborative work product on dust sources, modeling, and controls. On page 1-7, the document states:

> "**Wind Gusts**. Although mean atmospheric wind speeds may not be sufficient to initiate wind erosion from a particular "limited-reservoir" surface, wind gusts may quickly deplete a substantial portion of its erosion potential. ... For this reason, the use of an average wind speed to calculate an average emission rate is inappropriate."

EPA Comments on Stagnation Are Not Relevent

Regarding "stagnation", by definition, a high-wind event can not be a stagnation event. There should be no need to argue that stagnation was not occurring when the winds are substantially over 20 mph.

EPA Misrepresentation of Evidence of Controls In Place and Inspections

In section 4.4 EPA notes two minor violations reported within two miles of the West 43rd monitor within the time period encompassing 72 hours prior to and 72 hours following the event. About these NOVs, ADEQ asserts the following:

1. The data show that inspectors were out in the field actively looking for dust control issues and only noted the two minor violations.
2. Based on ADEQ's experience, the two minor violations listed would not have been sufficient to significantly contribute to the concentrations of dust reported during the June 4th event.
3. Based on the review of all available data, it seems justifiable to conclude that BACM were in place and being used on all other controllable sources near the West 43rd site during the June 4th event.
4. Any contributions from those controlled sources upwind of the monitor were due to BACM being overwhelmed.

As previously stated, no control measure has an unfailing degree of control and Exceptional Events can override the best controls. ADEQ must again assert that the event be disregarded as a violation of the NAAQS in the case of controls that were overwhelmed by the exceptional nature of the event or where it has been shown that *on average* the control measures have a high degree of control save the exceptional nature of the event.

4.2 and 4.3) makes it difficult to comprehensively evaluate the causal relationship between the event and the exceedance. Another general point concerns the data provided by Arizona for each event. EPA notes that, for each of the four events reviewed in this document, Arizona provided different sets of PM_{10} data drawn from among the ten monitoring stations using continuous analyzers. EPA also notes that Arizona provided a different set of meteorological data for each event. Considering the four events discussed in this document are very similar in nature, it is unclear why ADEQ did not provide the same data for each event. In some instances the most relevant meteorological data, (those data from the closest or upwind locations) are not included in the supporting documentation.[18]

5.1 March 14, 2008

5.1.1 Correlation between Wind Speed and PM_{10}

The March 14 Assessment included tabular hourly and maximum wind speed and PM_{10} data for five monitoring sites in the Phoenix area: West 43rd, Durango Complex, West Phoenix, Coyote Lakes, and Central Phoenix. ADEQ also included meteorological data from three National Weather Service (NWS) stations: Goodyear Airport, Glendale Airport, and Phoenix Sky Harbor.[19] EPA notes that ADEQ did not provide hourly PM_{10} data from the other four continuous PM_{10} analyzers in the Phoenix area and did not include wind speed and direction data from numerous other meteorological stations in the Phoenix area.

ADEQ also provided four graphs that show the potential correlation between maximum wind speeds and PM_{10} concentrations at the West 43rd, Durango Complex, Greenwood, and South Phoenix monitoring sites. [20] The graphs show that hourly PM_{10} concentrations increase with an increase in maximum recorded wind speed at the West 43rd site, but not at the other three monitoring sites. In fact, the graphs show that the maximum wind speeds at the Durango Complex site were higher than those measured at the West 43rd site, but the Durango Complex site experienced significantly lower PM_{10} values during periods of elevated wind speed. These data suggest that the elevated PM_{10} concentrations at the West 43rd site may have been caused by local upwind sources and were not due to a high wind event that was regional in nature.

5.1.2 Visibility

The March 14, Assessment included photographs from numerous locations throughout the Phoenix area. Unfortunately, there is not a significant discernable difference between the conditions preceding and during the event. Therefore, the photographs do not significantly

[18] Table 1 in Appendix A identifies the PM_{10} and meteorological stations ADEQ used in their analysis of the 2008 exceptional events in question.

[19] ADEQ also included meteorological data from two AZMET stations. These data are collected at 3 meters, while NWS and Maricopa County data are collected at 10 meters. There does not seem to be any correction or adjustment for the difference in the heights of these stations.

[20] The max wind speed values used in this comparison are the instantaneous max wind speed values recorded by onsite data loggers, which have the capability of recording these instantaneous values in a fraction of a second. ADEQ does not explain why the use of the maximum 1-sec value for an hour is the appropriate measure for comparison to hourly average PM_{10} values.

ADEQ COMMENTS

EPA asserts in Section 5.1.2 that "there is not a significant discernable difference between the conditions preceding and during the event." However, ADEQ strongly believes that the White Tank Mountain images included with the March 14, 2008, event submittal clearly show that this is not true. (Images from Figure 1 of the 3/14/08 demo):

Before the Event – 10:45am

During the Event – 1:45pm

After the Event Began to Subside – 2:45pm

The timing of reduced visibility in the images corresponds to the onset of elevated winds and PM_{10} concentrations. For EPA to state that there is no discernable difference in the conditions preceding and during the event in the images may be an indication that they did not fully review the submitted materials and/or did not consider the full weight of evidence presented to them. ADEQ contends that exceptional events do not need to rise to the intensity of haboobs (dust clouds of biblical proportions.)

Regarding footnote 20, EPA continues to fail to acknowledge that wind gusts provide the energy to suspend dusts more than the hourly average wind speeds.

contribute to establishing a causal relationship between wind speed, potential contributing sources, and PM_{10} concentrations at the West 43rd site.

The March 14 Assessement also stated that reduced visibility during the event throughout portions of the Phoenix provides further evidence of a clear causal relationship between the high wind event and the measured exceedance at the West 43rd site. The visibility at Goodyear Airport before the event ranged from 60 to 20 statute miles, while during the time of the elevated PM_{10} concentrations at West 43rd the visibility ranged from 15 to 10 miles. Other NWS stations in the area did not record any decrease in visibility throughout the entire day: visibility at Glendale Airport remained at 20 miles, Sky Harbor remained at 10 miles, and Luke Air Force Base remained at 10 miles. Visibility throughout the day in the Phoenix area was never significantly reduced; thus, this information does not significantly contribute to establishing a clear causal relationship.[21]

5.1.3 Review of 24-Hour PM_{10} Data

The 24-hour PM_{10} concentrations measured on March 14 at the West 43rd and surrounding sites are listed in Table 2 and shown in Figure 1. On this day, the West 43rd site was the only site in the Phoenix area to exceed the 24-hour PM_{10} standard. Furthermore, PM_{10} concentrations at the West 43rd site were 2-3 times higher than those measured at other sites, which is generally inconsistent with the notion that a regional high wind event caused the exceedance.[22]

Table 2: March 14, 2008 24-Hour PM_{10}

Site Name	PM_{10} (ug/m3)	Site Name	PM_{10} (ug/m3)
Buckeye[23]	80	West PHX	57
West 43rd	251	Central PHX	69
Durango Complex	92	JLG Supersite	41
South PHX	120	Higley	54
Greenwood	71	Coyote Lakes	48

[21] Appendix B contains information pertaining to reduced visibility and dust storms in Arizona.
[22] The only other exceedance recorded in Arizona on March 14, 2008, was the Cowtown monitoring site in Pinal County, which was not flagged as an exceptional event.
[23] 24-hour PM_{10} data for this site was not included in Arizona's Assessment.

ADEQ COMMENTS

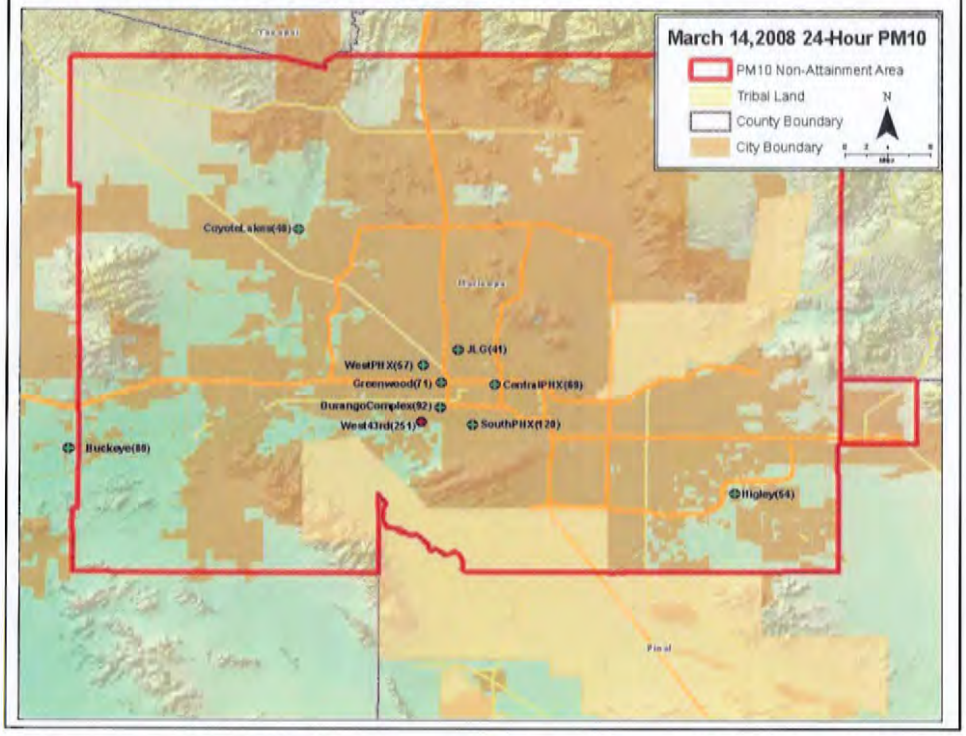
EPA's citation of visual range data from airports is out of context and demonstrates a lack of understanding of airport operations requirements for standard visual range. Many transmissometers used at airports are capped to read a maximum visual range substantially below the true visual range. It is common to see 10 miles as a maximum. This is because airport operational procedures are not impacted until the visual range is lower (i.e., 7 miles). The visibility impacts referred to in the ADEQ demonstrations are based on images from a visibility camera network operated by Air Resource Specialists, the primary contractor for visibility measurement systems in the U.S.

In order to utilize airport visual range as a surrogate for PM concentration, extinction efficiency models can be relied upon. The IMPROVE extinction efficiencies can be used to convert standard visual range to an estimate of PM concentration (i.e. assuming a 90% coarse, 10% fine soil split) as follows:

- 9 miles = 406 $\mu g/m^3$,
- 7 miles = 527 $\mu g/m^3$,
- 5 miles = 744 $\mu g/m^3$,
- 3 miles = 1,250 $\mu g/m^3$,
- 1 mile = 3,781 $\mu g/m^3$, and
- 0.5 miles = 7,577 $\mu g/m^3$.

ADEQ does not rely on these converted PM estimates for standard visual ranges exceeding 10 miles, because the data reported from many airport transmissometers is capped at 10 miles.

Figure 1: March 14, 2008 24-Hour PM_{10}



5.1.4 Review of Hourly PM_{10} and Meteorological Data

The hourly PM_{10} data are shown in Figure 2. As early at 0500 hrs, the West 43rd site began to experience an increase in PM_{10} concentration that was not characteristic of the other nine monitoring sites in the Phoenix area. From 0500 to 1000 hrs, the hourly PM_{10} values increased from 150 $\mu g/m^3$ to 360 $\mu g/m^3$. During these hours the hourly wind speeds throughout the Phoenix area remained below 9 mph, which suggests these elevated concentrations were not driven by high wind, but by some other mechanism. Thus, the elevated PM_{10} during these hours do not appear to have been caused by elevated wind conditions.

The first sign of any elevated winds occurred at the majority of the stations around 1100 hrs. NWS data for Goodyear Airport showed an increase in wind speed from 6 to 14 mph (accompanied by a 29 mph gust); while an increase in hourly wind speed from 12 to 15.9 mph was recorded at the West 43rd site. At 1100 hrs, the PM_{10} concentration at the West 43rd site also rose from 355 to 1051 $\mu g/m^3$ and continued to increase over the next two hours to a maximum hourly concentration of 1286 $\mu g/m^3$. While the values at some of the other sites in the area increased over the same time period, the values at the West 43rd site ranged from 3-20 times higher than other sites in the Phoenix area. Given that the Durango Complex, South Phoenix,

ADEQ COMMENTS

In Section 5.1.4 EPA mentions concerns regarding the timing of elevated winds and elevated PM_{10} concentrations at the West 43rd Ave. monitor. There are three issues to note about the winds reported during the March 14, 2008, event.

1. Glendale airport did report elevated hourly average winds greater than 15 mph with gusts of 23 mph beginning as early as the 9:00 hour (10:00 report)
   (See graphs below from Fig. 1 of the 3/14/2008 demo)
2. Unfortunately there were no data collected at the NWS Glendale station prior to their 10:00 report, and thus, it cannot be determined if those winds were occurring even earlier in the morning at that site, though it is a possibility.
3. The timing of elevated winds beginning during the 9:00 hour at NWS Glendale coincides with the increase in the PM_{10} readings from188 $\mu g/m^3$ to 329 $\mu g/m^3$, and eventually as high as 1286 $\mu g/m^3$ during the peak wind gusts of 30 to 40 mph reported at various weather stations.

It is important for the EPA to realize that wind speeds are not homogeneous across a landscape and the timing of elevated winds and elevated PM_{10} levels may not always be identical, especially when looking at NWS stations located distances of 13 miles or greater from the West 43rd particulate monitor. Additionally, slight variations in terrain and in urban build-up around NWS sites or monitors may also have an impact on timing due to funneling winds or shielding certain areas from winds given only slight variations in direction.

Even if the 188 $\mu g/m^3$ reading is not excluded, the exclusion of the readings recorded from the 10:00 a.m. report to the 3:00 p.m. report, all of which occurred during a period of strong and gusty winds, would bring the 24-hour PM_{10} concentrations well below the NAAQS. As the winds began to subside, PM10 concentrations also decreased, further demonstrating a causal relationship between the two.

NWS-Goodyear Airport

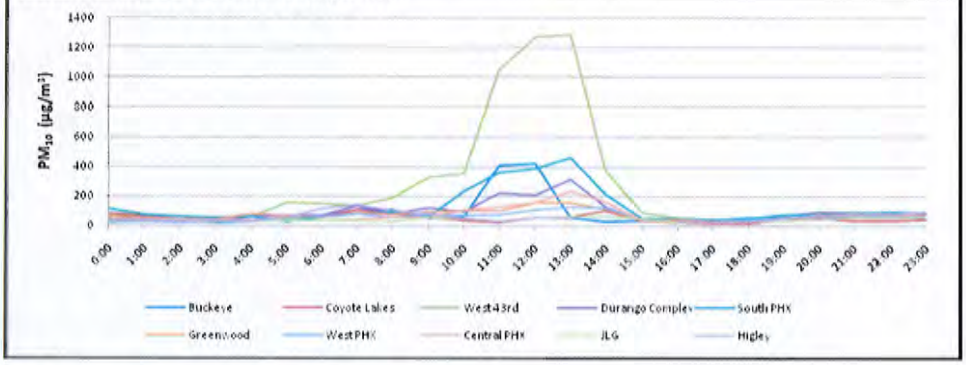
Hr	T(F)	VR	Dust	Spd	Gust	Dir
1	0	0		0	0	N/A
2	0	0		0	0	N/A
3	0	0		0	0	N/A
4	0	0		0	0	N/A
5	0	0		0	0	N/A
6	0	0		0	0	N/A
7	0	0		0	0	N/A
8	61	60		9	9	W
9	66	40		9	9	SW
10	70	30		7	7	W
11	73	20		6	6	SW
12	82	15		14	29	W
1	86	10		18	34	W
2	86	15		25	43	W
3	84	20		14	23	W
4	84	20		17	17	SW
5	82	40		17	17	SW
6	81	40		11	11	W
7	75	40		6	6	*VR
8	0	0		0	0	N/A
9	70	20		11	11	SW
10	0	0		0	0	N/A
11	0	0		0	0	N/A
12	0	0		0	0	N/A

NWS-Glendale Municipal Airport

Hr	T(F)	VR	Dust	Spd	Gust	Dir
1	0	0		0	0	N/A
2	0	0		0	0	N/A
3	0	0		0	0	N/A
4	0	0		0	0	N/A
5	0	0		0	0	N/A
6	0	0		0	0	N/A
7	0	0		0	0	N/A
8	0	0		0	0	N/A
9	0	0		0	0	N/A
10	70	20		15	23	SW
11	73	20		16	23	SW
12	79	20		18	23	W
1	81	20		20	26	W
2	82	20		21	26	W
3	82	20		20	25	W
4	81	20		14	23	SW
5	82	20		11	21	W
6	81	20		11	11	SW
7	75	20		5	5	W
8	0	0		0	0	N/A
9	0	0		0	0	N/A
10	0	0		0	0	N/A
11	0	0		0	0	N/A
12	0	0		0	0	N/A

Greenwood, and West Phoenix sites are located within approximately five miles of the West 43rd site, one would expect to see greater consistency in the PM_{10} concentrations if a regional high wind event was occurring. It is also worth noting that the West 43rd site came close to reaching the peak concentration seen by other nearby sites well before the arrival of elevated wind speeds. The closest site, Durango Complex, reached a maximum concentration of 310 $\mu g/m^3$ at 1300 hrs, while West 43rd exceeded this level at 0900 hrs. The inconsistency in the PM_{10} concentrations during the period from 1100 to 1400 hrs and the relatively low wind speeds in the morning hours suggest that the West 43rd site was most likely significantly influenced by local upwind sources and the claimed exceptional event was not regional in nature.

Figure 2: March 14, 2008 Hourly PM_{10}



5.1.5 Review of 5-Min PM_{10} and Wind Speed Data

The 5-min data reinforce the fact that even though elevated wind speeds were measured at other nearby locations, the West 43rd monitor consistently measured much higher PM_{10} concentrations than other locations. Figure 3 shows the 5- min PM_{10} and wind speed data from West 43rd and Durango Complex monitoring sites. These monitors are located only 2 miles apart, yet there seems to be a considerable difference in the relationship between PM_{10} and wind speed on March 14. Both sites experience similar wind speed levels, but during some periods of the day the 5-min PM_{10} concentrations at the West 43rd site were more than five times those measured at Durango Complex. These data provide further evidence that the claimed regional high wind event only affected PM_{10} concentrations at the West 43rd site and the elevated PM_{10} concentrations measured at this site were most likely significantly influenced by local sources and the claimed exceptional event was not regional in nature.

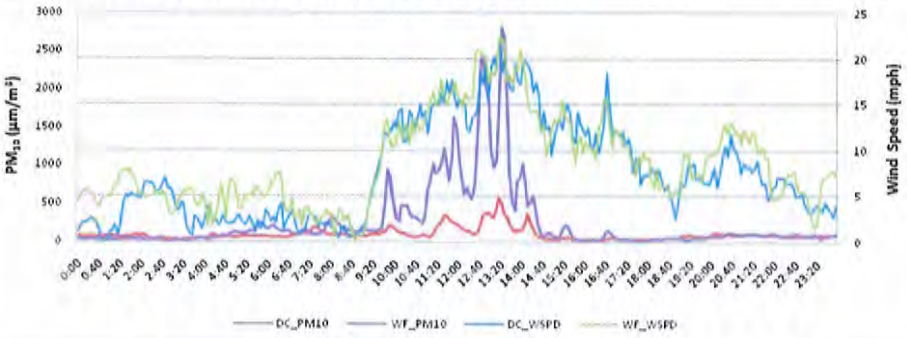
For the March 14th event, if the source of the PM was in the river channel, the concentration profile would look like that presented in Figure 2. Note the concentrations of Durango Complex and South Phoenix are approximately even. A Gaussian plume centered in the river channel would have this shape of distribution.

In footnote 24 on the next page, EPA erroneously implies that there is a fundamental difference between the maximum wind speed measured by the Maricopa County data logger, and the value from a National Weather Service observation. This is fundamentally wrong. The exact wording from the Federal Meteorological Handbook No. 1 (September 2005) Page 5-1 & Page 5-2 is:

> **"5.4.4 Wind Gust.** The wind speed data for the most recent 10 minutes shall be examined to evaluate the occurrence of gusts. Gusts are indicated by rapid fluctuations in wind speed with a variation of 10 knots or more between peaks and lulls. The speed of a gust shall be the **maximum instantaneous wind speed**." (emphasis added)
>
> **"5.5.4 Wind Gust.** When a gust is detected within 10 minutes of the actual time of the observation, the **maximum instantaneous speed** shall be reported (see paragraph 12.6.5.a)." (emphasis added)

Thus EPA's assertion that wind gusts are reported as 5-second average is incorrect. NWS reported gusts and maximum winds from a data logger are comparable measures.

Figure 3: March 14, 2008 5-Min PM_{10} and Wind Speed



5.1.6 Days with Similar Meteorological Conditions

The following discussion emphasizes that meteorological conditions in upwind locations do not always affect on PM_{10} concentrations at the West 43rd site. The NWS station at Goodyear Airport is located approximately 13 miles to the west of the West 43rd monitoring site and serves as the closest location with readily available meteorological data for the area directly to the west of the West 43rd monitoring site.[24]

Wind speeds at Goodyear Airport exceeded 15 mph on ten days in March 2008. On six of those days, wind gusts exceeded 25 mph. Despite these facts, March 14 was the only day in the month of March that measured an exceedance of the 24-hour PM_{10} NAAQS. The following analysis compares hourly PM_{10} data, wind speed, and wind gusts recorded at Goodyear Airport on March 14 with the same data for three days in March with similar meteorological conditions.

On March 14, the West 43rd monitor measured elevated PM_{10} concentrations of 1051 µg/m³ and 1270 µg/m³ at 1100 and 1200 hrs, respectively. Wind speeds at Goodyear Airport during this period were from the west (260°) at 14 and 18 mph with gusts of 29 and 34 mph. On March 2, the Goodyear station measured wind speeds and gusts of equal or higher magnitude: 23 mph with 34 mph gusts from the NW (310°-320°) for two consecutive hours. Elevated wind speeds on March 2 corresponded to an increase in PM_{10} from 29 µg/m³ to 177 µg/m³ at the West 43rd monitoring site. This increase in PM_{10} is relatively minor compared to PM_{10} concentrations on measured on March 14, which reached at maximum of 1270 µg/m³.

[24] NWS stations report meteorological data differently than meteorological stations operated by Maricopa County. NWS service stations report wind speeds as a 2-min average and wind gusts are defined as "a rapid fluctuation of wind speed with variations of 10 knots or more between peaks and lulls," which are reported as a 5-sec average. Maricopa County meteorological stations have the capability of reporting wind speeds as a 5-min average, an hourly average, or a maximum wind speed, which is recorded as an instantaneous reading that can be less than one second in duration.

ADEQ COMMENTS

EPA inappropriate use of vector average wind speed data (Figure 3)
EPA'S Meteorological Monitoring Guidance for Regulatory Modeling Applications recommends that scalar wind speeds be used for modeling applications (see 6.9 Recommendations). EPA's reliance on a graph with 5-minute vector average wind speed significantly understates the kinetic energy of the wind involved in the dust generating process. ADEQ did not provide or rely on the data presented in Figure 3. The maximum 5-minute average wind speed reported in the 1:00 p.m. time period was approximately 21 mph, while the maximum wind gust during the hour was measured at 36 mph. At 36 mph, the air would have 3 times the kinetic energy that would be present at 21 mph. It also occurs less than 0.4 percent of the time (greater that the 99.5 percentile). See supplemental comment on use of wind gusts vs average wind speeds.

EPA failed to acknowledge the relevant data that was presented by ADEQ
The data presented by ADEQ consisted of the following (Figure 1 of the 3/14/08 demo):

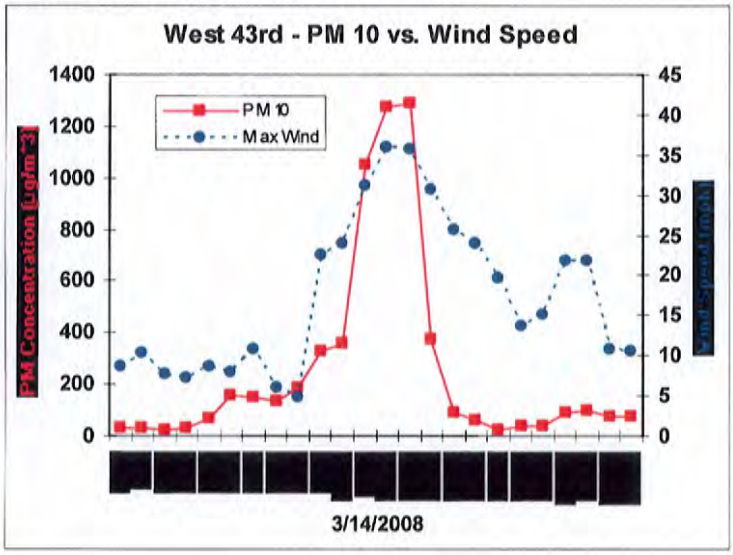
Wind and PM table:

16659 (112.14Wx33.41N)

MC - WEST FORTY THIR

	Hr	T(F)		PM	Spd	Max	Dir
MC - WEST FORTY THIR	1	69		26	5	9	SW
	2	68		28	6	10	SW
	3	66		22	5	8	W
	4	64		28	5	7	SW
	5	58		64	3	9	NE
	6	57		154	5	8	E
	7	57		145	4	11	E
	8	59		133	2	6	E
	9	64		187	2	5	NE
	10	73		328	7	23	W
	11	77		355	12	24	W
	12	79		1051	16	31	W
	1	82		1270	18	36	W
	2	83		1286	19	36	W
	3	84		374	14	31	W
	4	84		87	12	26	W
	5	83		57	12	24	W
	6	81		23	10	20	W
	7	77		37	6	14	W
	8	75		40	8	15	SW
	9	74		86	11	22	SW
	10	72		93	10	22	SW
	11	67		73	6	11	W
	12	66		72	5	11	SW

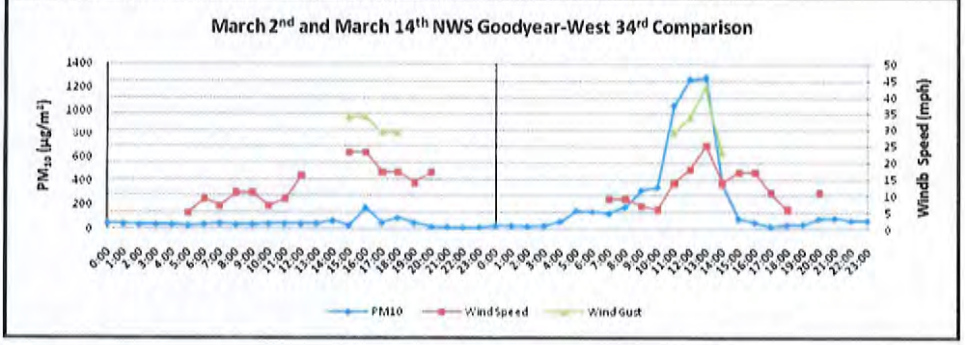
Graph of Concentration:



12:45 South Mountain:
Dust blocking Estrella Range
(Right edge of screen)

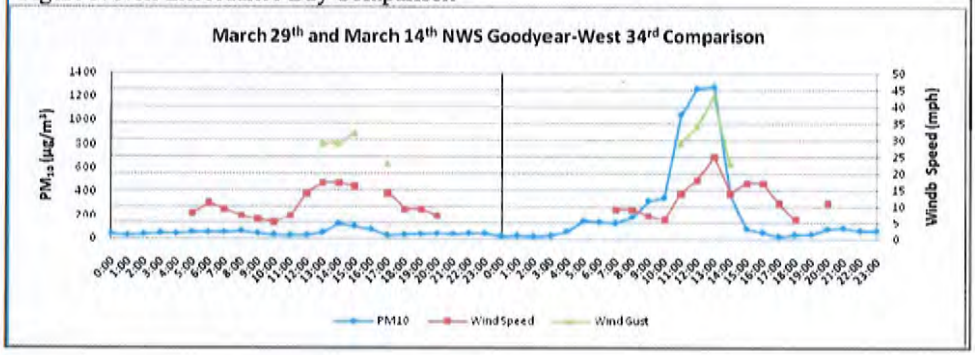
12:45pm Estrella Mountain
Dust in river channel blocking Foreground of Estrella Mtn.
(dust heavier closer to bottom)

Figure 4: Non-Exceedance Day Comparison



Similarly, on March 29, wind speeds of 16 to 17 mph with wind gusts of 29 to 32 mph from the SSW (200°) and the WSW (240°) were recorded at Goodyear Airport for a period of three hours. The corresponding PM_{10} concentrations at West 43rd remained below 130 $\mu g/m^3$ for the entire day. On the following day, March 30, wind speeds of 25 to 29 mph from the SW (230°-240°) were recorded at Goodyear, which corresponded to a spike in PM_{10} concentration at the West 43rd site. There are, however, significant differences between the spike measured on March 30 and the one measured on March 14 and flagged as an exceptional event. First, the spike on March 30 clearly follows a period of elevated wind speed while the spike measured on March 14 was coincident with or even precedes the elevated wind. In addition, the PM_{10} spike on March 30 was shorter in duration and much smaller in magnitude.

Figure 5: Non-Exceedance Day Comparison



ADEQ COMMENTS

EPA Failure to Consider Wind Direction (EPA TSD Pages 14-15):

In the arguments presented that the wind speeds on other days were similar to March 14th, EPA fails to recognize the most important parameter used in characterizing pollution concentration from a source, i.e. wind direction. The geometry of the source-receptor relationship is the overwhelming consideration when computing ambient concentrations. The other factors, given a fixed source strength, are wind speed and turbulence. EPA failed to consider this primary factor in their argument.

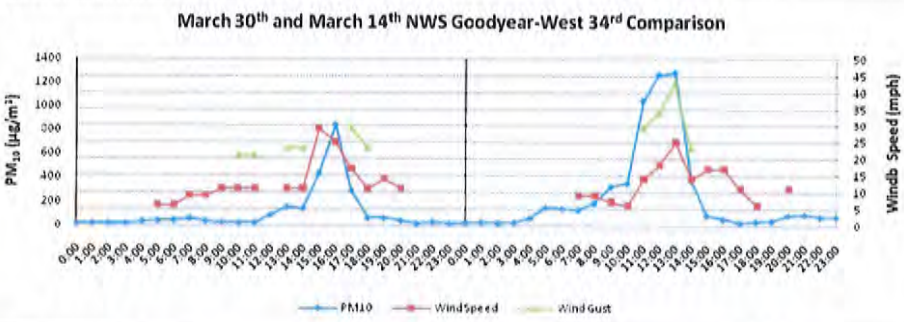
The comparison of March 14 to March 2 is not a valid one given the disparity in wind direction and duration. ADEQ has suggested that the most prevalent potential source for PM_{10} at the West 43rd monitor is the Salt River channel, which has the greatest fetch to the west and southwest of the monitor location. There are two main issues with using March 2, 2008, for comparison.

1. Winds on March 2nd were out of the northwest. While the Salt River channel does run past the north side of the West 43rd monitor, the fetch over which northwesterly winds can draw from it as a potential PM source is much more limited than when westerly or southwesterly winds are occurring.
2. Winds on March 2nd included gusts of 23 mph and 34 mph lasting for only two hours. Winds on March 14th gusted over 23 mph for four consecutive hours at the NWS Goodyear station and gusted over 23 mph for up to 7 consecutive hours at other proximal NWS stations (Glendale and Sky Harbor).

As can be seen above, the comparison of March 14, 2008, to March 2, 2008, by EPA provides little or no support for EPA's claims. ADEQ has stated that the emissions from the river channel are the primary contributor to the West 43rd monitor readings. EPA's identification of a day with similar wind speeds, but different wind direction that did not experience elevated particulate matter concentration is consistent with ADEQ's proposed explanation of the elevated particulate matter concentrations.

EPA attempts to compare winds from March 29th and March 30th to the winds of the March 14th event, and while the wind directions are comparable to the March 14th event, the wind gusts were significantly lower and shorter in duration on March 29-30 than were reported on March 14th. For these reasons, each comparison provides little or no support to EPA's claims. It also should be noted that while wind speeds recorded by the NWS upwind of a monitor may be important in showing potential transport, winds measured at the monitor itself are also important, especially if local sources, both controllable and uncontrollable, may be potentially contributing a portion of the measured PM_{10}.

Figure 6: Non-Exceedance Day Comparison



These examples illustrate how elevated wind speeds in upwind areas are related to elevated PM_{10} concentrations on occasion, but the magnitude of PM_{10} concentrations measured at the West 43rd site seem to be associated with factors in addition to wind speed. Also, March 2, March 29, and March 30 were weekend days, which also indicates that elevated wind speeds are not necessarily the primary factor in creating elevated PM_{10} concentrations at the West 43rd site.

5.1.7 Summary of Clear Causal Relationship for March 14, 2008

ADEQ's conclusions that the recorded exceedance was caused by a regional high wind event are not substantiated by relevant monitoring and meteorological data. The data show that the spatial extent of PM_{10} during this day was isolated and not regional in nature. The data also show differences in the measured PM_{10} concentrations at the West 43rd site and the remaining sites in the Phoenix area. In addition, as explained above, ADEQ provided only limited analysis of possible contribution from human activity, making it difficult to determine the relationship between the claimed event and the exceedance. Therefore, EPA has determined that the weight of evidence presented in the March 14 Assessment does not demonstrate a clear causal relationship as required by the EER.

5.2 April 30, 2008

5.2.1 Correlation between Wind Speed and PM_{10}

The April 30 Assessment included hourly and maximum wind speed and PM_{10} data for five sites in the Phoenix area: West 43rd, Durango Complex, South Phoenix, Central Phoenix, and Higley. ADEQ also included meteorological data from the NWS Sky Harbor and Deer Valley stations.[25] ADEQ did not provide tabular hourly PM_{10} data from the other four continuous PM_{10} analyzers in the Phoenix area and did not include wind speed and direction data from numerous other meteorological stations in the Phoenix area. The assessment also did not include any information discussing the 7 filter-based monitoring sites that collected samples on this day.

[25] ADEQ also includes meteorological data from two AZMET stations. These data are collected at 3 m while NWS and Maricopa County data are collected at 10 m. There does not seem to be any correction or adjustment for the collection heights of these stations, and therefore should not be used in the exceptional events analysis.

ADEQ COMMENTS

Refer to Appendix A for more information on the PM_{10} and meteorological data used in the April 30 assessment.

ADEQ also provided four graphs that show the potential correlation between maximum wind speeds and PM_{10} concentrations. The four graphs display data from the West 43rd, Durango Complex, Greenwood, and South Phoenix monitoring sites. While the hourly PM_{10} concentrations increase with an increase in maximum recorded wind speeds at the West 43rd site, there is not a similar correlation between PM_{10} and maximum wind speed at the other monitoring sites in the area. These facts suggest that the elevated PM_{10} concentrations at West 43rd may have been caused by local upwind sources and were not regional in nature.

5.2.2 Visibility

The April 30 assessment included photographs from numerous locations throughout the Phoenix area. Unfortunately, there is not a significant discernable difference between the conditions preceding and during the event. Therefore, the photographs do not significantly contribute to establishing a clear causal relationship between wind speed, potential contributing sources, and PM_{10} concentrations at the West 43rd monitoring site.

ADEQ also stated that reduced visibility during the event at Goodyear Airport provides further evidence of a causal relationship between the high wind event and the measured exceedance at the West 43rd site. The visibility at Goodyear Airport before and during the event ranged from 20 to 7 statute miles. Other NWS stations in the area did not record any decrease in visibility throughout the entire day: visibility at Glendale Airport remained at 20 miles and Sky Harbor remained at 10 miles. At the Goodyear Airport, the minimum recorded visibility was 7 statute miles. The visibility throughout the day in the Phoenix area was never significantly reduced, and thus this information does not significantly contribute to establishing a clear causal relationship.[26]

5.2.3 Review of 24-hour PM_{10} Data

The 24-hour PM_{10} concentrations measured on April 30 at the West 43rd and surrounding sites are listed in Table 3 and shown in Figure 7. On this day, the West 43rd monitor was the only site in the entire Phoenix area to violate the 24-hour PM_{10} standard.[27] Furthermore, PM_{10} concentrations at the West 43rd site were more than double those recorded at other local sites, which is generally inconsistent with the notion that a regional high wind event caused the exceedance.

[26] See Appendix B for information regarding reduced visibility and dust storms in Arizona.
[27] Similar to the data for March 14, 2008, the only other exceedance recorded in Arizona on this day was the Cowtown monitoring site in Pinal County, which was not flagged as an exceptional event.

ADEQ COMMENTS

EPA asserts in Section 5.2.2 that visibility in the Phoenix area was never significantly reduced and that visibility information from NWS stations in the area does not significantly contribute to establishing a clear causal relationship. This, however, seems contradictory to both the observation data and to EPA's own statements.

- EPA itself has stated that the Goodyear NWS station "serves as the closest location with readily available meteorological data for the area directly to the west of the West 43rd monitoring site"
- A reduction in visibility by more than 50% at the NWS Goodyear station is relevant
- The fact that areas directly upwind of the West 43rd monitor were experiencing reduced visibility as a result of the elevated winds helps add to the weight of evidence and establish a clear causal relationship due to their concurrent timing

See ADEQ's comments to page 11 of the TSD.

Figure 7: April 30, 2008 24-Hour PM_{10}

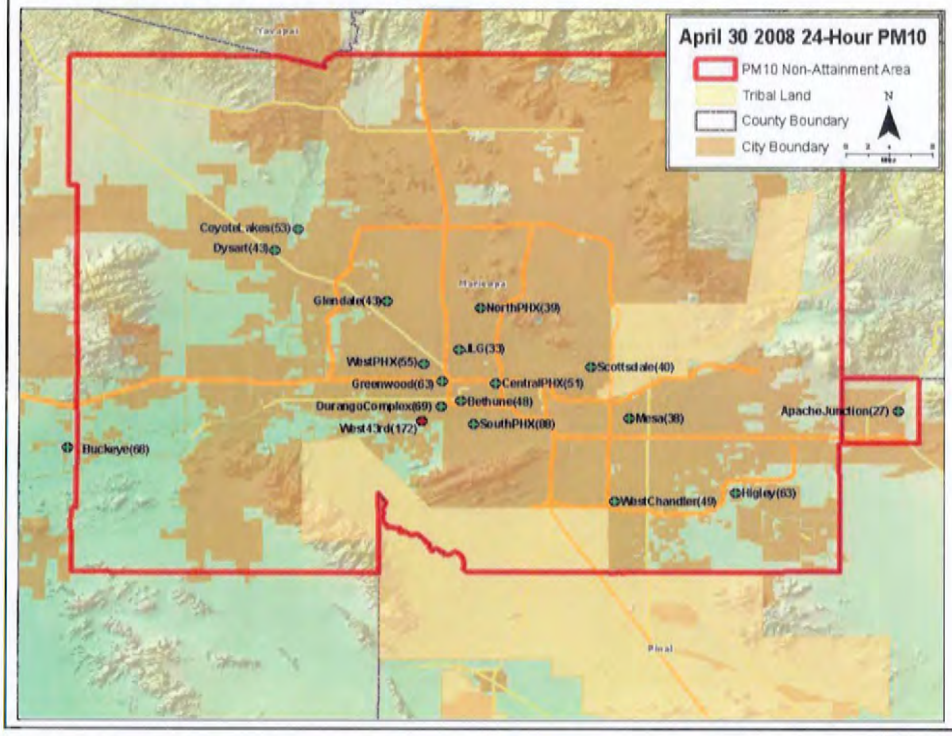


Table 3: April 30, 2008 24-Hour PM_{10}			
Site Name	**PM_{10} (ug/m^3)**	**Site Name**	**PM_{10} (ug/m^3)**
Buckeye*[28]	68	Glendale(FRM) [29]*	43
West 43rd	172	Mesa (FRM)*	38
Durango Complex	69	North PHX (FRM)*	39
South PHX	88	South Scottsdale (FRM)*	40
Greenwood	63	West Chandler (FRM)*	49
West PHX	55	Bethune Elementary (FRM)*	48
Central PHX	51	Dysart (FRM)*	43
JLG Supersite	46	Coyote Lakes	53
Higley	63		

[28] 24-hour PM_{10} data for these sites were not included in the Assessment.
[29] PM_{10} FRM samplers operate on a 1 in 6 day schedule.

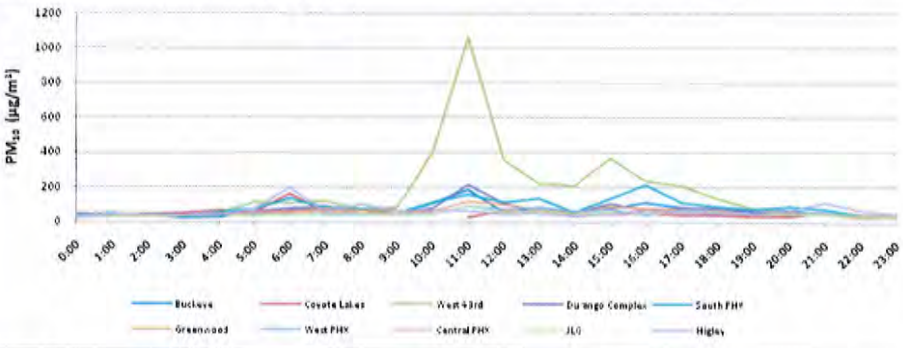
ADEQ COMMENTS

5.2.4 Review of Hourly PM_{10} and Meteorological Data

The hourly PM_{10} data are shown in Figure 8. As early as 1000 hrs, the West 43rd site began to experience an increase in PM_{10} concentration that was not characteristic of the other nine monitors in the Phoenix area. From 0900 to 1000 hrs the hourly PM_{10} values at the West 43rd site increased from 85 $\mu g/m^3$ to 404 $\mu g/m^3$, while PM_{10} values at surrounding sites remained below 120 $\mu g/m^3$. The first sign of any elevated winds occurred at the majority of the stations around 1100 hrs. NWS data for Goodyear Airport showed an increase in wind speed from 16 to 17 mph (accompanied by a 29 mph gust); while an increase in hourly wind speed from 12.7 to the day's maximum value of 16 mph was recorded at the West 43rd site. At 1100 hrs, the PM_{10} concentration at the West 43rd site also rose from 404 $\mu g/m^3$ to the day's maximum value of 1065 $\mu g/m^3$.

While values at other sites in the area increased over the same time period, the values at the West 43rd site ranged from 5 to 10 times higher than other sites in the Phoenix area. For example, the majority of the sites measured maximum PM_{10} concentrations that were coincident with the maximum PM_{10} concentrations at the West 43rd site, but all sites in Maricopa County measured maximum PM_{10} concentrations less than 220 $\mu g/m^3$. Given that the Durango Complex, South Phoenix, Greenwood, and West Phoenix sites are located within approximately five miles of the West 43rd site, one would expect to see greater consistency in the concentrations if a regional high wind event was occurring. The data suggest that the West 43rd site was most likely significantly influenced by local upwind sources and the claimed exceptional event was not regional in nature.

Figure 8: April 30, 2008 Hourly PM_{10}



5.2.5 Review of 5-Min PM_{10} and Wind Speed Data

The 5-min data reinforce the fact that even though elevated wind speeds were measured at other nearby locations, the West 43rd monitor consistently measured much higher PM_{10} concentrations than other locations. Figure 9 shows the 5- min PM_{10} and wind speed data from West 43rd and Durango Complex. These monitors are located only 2 miles apart, yet there seems to be a considerable difference in the relationship between PM_{10} and wind speed on April 30. Both sites experience similar wind speed levels, but during some periods of the day the 5-min PM_{10}

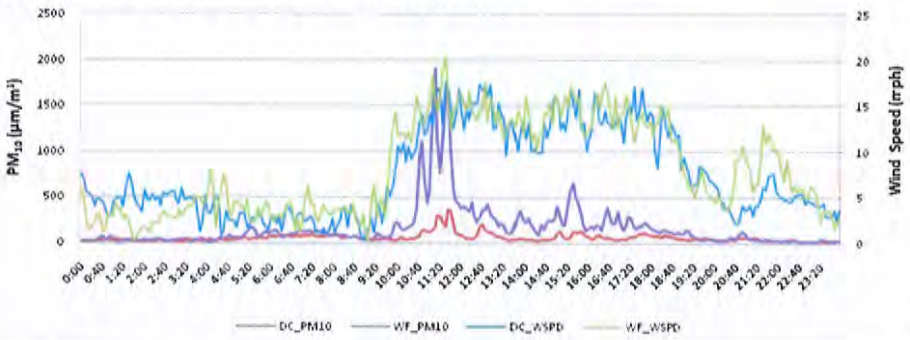
ADEQ COMMENTS

The source of the discrepancy between the magnitude of the concentration increases at the monitors is evident from ADEQ's submissions. Because of its location, the West 43rd monitor is especially susceptible to dust generated by high winds traveling from a west or southwest direction along the Gila and Salt River channel.

EPA's conclusion that the concentrations at the West 43rd Avenue monitor "may have been caused by local upwind sources and were not regional in nature" is therefore unsubstantiated. In any case, this conclusion, even if justified, would not legally support EPA's determination that there was not a clear causal connection between the winds and the concentrations. Local, anthropogenic sources may be considered part of an exceptional high wind event, as long as they are reasonably controlled. As previously discussed, there is ample basis for concluding that the sources in the vicinity of the West 43rd Avenue monitor satisfied this requirement.

concentrations at West 43rd site were more than 9 times those measured at Durango Complex. The two highest 5-min PM_{10} averages measured at the West 43rd site were approximately 1920 and 1624 $\mu g/m^3$, while PM_{10} concentrations at Durango Complex during the same time period were 178 and 373 $\mu g/m^3$, respectively. These data provide further evidence that the claimed regional high wind event only affected PM_{10} concentrations at the West 43rd site and the elevated PM_{10} concentrations measured at this site were most likely significantly influenced by local sources and the claimed exceptional event was not regional in nature.

Figure 9: April 30, 2008 5-Min PM_{10} and Wind Speed



5.2.6 Review of Days with Similar Meteorological Conditions

On twenty days in April 2008, the wind speeds at Goodyear Airport exceeded 15 mph. On six of those days, wind gusts exceeded 25 mph. The following analysis compares the hourly PM_{10} data, wind speed, and wind gusts recorded at Goodyear Airport on April 30 with the same data from a similar day in April.

On April 30, the West 43rd monitor experienced elevated PM_{10} concentrations of 404 $\mu g/m^3$ and 1065 $\mu g/m^3$ at 1000 and 1100 hrs, respectively. Wind speeds at Goodyear Airport during this period were from the WSW (240°-260°) at 17 mph with gusts of 29 mph. On April 29, the Goodyear station measured wind speeds and gusts of equal magnitude; 17 mph winds and 29 mph gusts from the SW (230°) for three consecutive hours. A maximum concentration of 177 $\mu g/m^3$ was observed during this period, but it is considerably lower than the PM_{10} concentrations measured on the day the exceptional event is claimed to have occurred. This example illustrates how elevated wind speeds in upwind areas are related to elevated PM_{10} concentrations on occasion, but the magnitude of PM_{10} concentrations measured at the West 43rd site seem to be dependent on a number of different factors.

ADEQ COMMENTS

EPA inappropriate use of vector average wind speed data (Figure 9)

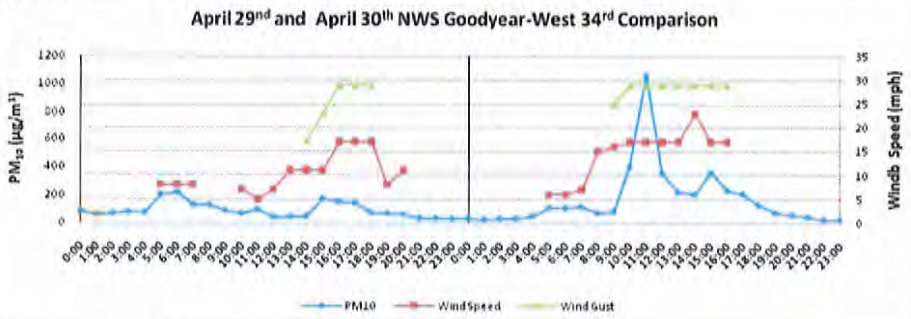
EPA's reliance on a graph with 5-minute vector average wind speed significantly understates the kinetic energy of the wind involved in the dust generating process. ADEQ did not provide or rely on the data presented in Figure 9. It was distributed in the 5% Technical Committee deliberations.

EPA failed to acknowledge the relevant data that was presented

As with the March 14, 2008 event, EPA discounted the data that was included in the submission.

Also see ADEQ's comments to page 14 of the TSD.

Figure 10: Non-Exceedance Day Comparison



5.2.7 Summary of Clear Causal Relationship for April 30, 2008

ADEQ's conclusions that the recorded exceedance was caused by a regional high wind event are not substantiated by relevant monitoring and meteorological data. The data show that the spatial extent of PM_{10} during this day was isolated and not regional in nature. The data also show differences in the measured PM_{10} concentrations at the West 43rd site and the remaining sites in the Phoenix area. In addition, ADEQ provided only limited analysis of possible contribution from human activity, making it difficult to comprehensively evaluate the relationship between the claimed event and the exceedance. Therefore, EPA has determined that the weight of evidence presented in the April 30 Assessment does not demonstrate a clear causal relationship as required by the EER.

5.3 May 21, 2008

5.3.1 Correlation between Wind Speed and PM_{10}

The May 21 Assessment included tabular hourly and maximum wind speed and PM_{10} data for five sites in the Phoenix area: West 43rd, Durango Complex, South Phoenix, and Buckeye.[30] ADEQ also included meteorological data from the NWS Luke Air Force Base station. ADEQ did not provide hourly PM_{10} and meteorological data from the remaining five continuous PM_{10} analyzers in the Phoenix area and did not include wind speed and direction data from numerous other meteorological stations in the Phoenix area. Appendix A contains more information on the PM_{10} and meteorological data used in the May 21assessment.

ADEQ also provided three graphs that show the potential correlation between maximum wind speeds and PM_{10} concentrations. The three graphs display data from the West 43rd, Durango Complex, and South Phoenix monitoring sites. While the hourly PM_{10} concentrations significantly increase with an increase in maximum recorded wind speeds at the West 43rd site,

[30] ADEQ's supporting documentation for this event also contained information pertaining to measured exceedances at monitoring sites in Yuma County (Yuma Courthouse site). The Yuma monitor is more than 150 miles from the West 43rd site. We expect the circumstances that caused the exceedance at the Yuma MCAS site to be different that those affecting the Phoenix area; therefore we are giving this data relatively little weight in our evaluation.

The graphs show that concentrations did increase with an increase in wind speed at each monitor, and in many cases the hourly measurements exceeded the 24-hour NAAQS by a substantial margin. The only difference between the West 43rd Avenue monitor and the others, is that the 24-hour concentrations recorded at the other three did not exceed the NAAQS.

The source of the discrepancy between the magnitude of the concentration increases at the monitors is evident from ADEQ's submissions. Because of its location, the West 43rd monitor is especially susceptible to dust generated by high winds traveling from a west or southwest direction along the Gila and Salt River channels.

EPA's conclusion that the concentrations at the West 43rd Avenue monitor "may have been caused by local upwind sources and were not regional in nature" is therefore unsubstantiated. In any case, this conclusion, even if justified, would not legally support EPA's determination that there was not a clear causal connection between the winds and the concentrations. Local, anthropogenic sources may be considered part of an exceptional high wind event, as long as they are reasonably controlled. As previously discussed, there is ample basis for concluding that the sources in the vicinity of the West 43rd Avenue monitor satisfied this requirement.

there is not a similar correlation between PM_{10} and maximum wind speed at the other monitoring sites in the area. These facts suggest that the elevated PM_{10} concentrations at West 43rd may have been caused by local upwind sources and were not regional in nature.

5.3.2 Visibility

The assessment included photographs from numerous locations throughout the Phoenix area. Photographs taken at 1330 hrs show evidence of reduced visibility and a potential regional event; however, PM_{10} concentrations at the West 43rd site began to increase at 0800 hrs. Photographs were provided for 0930, 1330, 1430, and 1530 hrs. Photographs were not submitted for the hours preceding the elevated PM_{10} concentrations measured at the West 43rd site. Therefore, the photographs do not significantly contribute to establishing a causal relationship between wind speed, potential contributing sources, and PM_{10} concentrations at the West 43rd monitoring site during the morning hours.

ADEQ also stated that reduced visibility during the event throughout portions of Phoenix provides further evidence of a clear causal relationship. The visibility at Goodyear Airport before the event ranged from 20 to 7 statute miles; visibilities of 7 miles were recorded at 1047, 1647, and 1747 hrs. Chandler Airport recorded observations of blowing dust (BLDU) at 1347 hrs, which was followed by a recorded visibility of 7 miles at 1447 hrs. Visibility at other NWS stations in the area remained above 10 miles for the entire day: Glendale Airport ranged from 10 to 20 miles, Sky Harbor remained at 10 miles, and Luke Air Force Base remained at 10 miles. The visibility throughout the day in the Phoenix area was never significantly reduced, and thus this information does not significantly contribute to establishing a clear causal relationship.[31]

5.3.3 Review of 24-Hour PM_{10} Data

The 24-hour PM_{10} concentrations measured on May 21 at the West 43rd and surrounding sites are listed in Table 4 and shown geographically in Figure 11. On this day, the West 43rd monitor was the only site in the entire Phoenix area to violate the 24-hour PM_{10} standard. Furthermore, PM_{10} concentrations at West 43rd were more than double those recorded at other local sites, which is generally inconsistent with the notion that a regional high wind event caused the exceedance.

[31] See Appendix B for information regarding reduced visibility and dust storms in Arizona.

ADEQ COMMENTS

Visibility was decreased at locations in the Phoenix area during the high wind event occurring on May 31, 2008, as is described by EPA in Section 5.2.2. Yet, EPA states that visibility in the Phoenix area was never significantly reduced and that visibility information from NWS stations in the area does not significantly contribute to establishing a clear causal relationship. This, however, seems contradictory both to the observation data and to EPA's own statements.

- EPA itself has stated that the Goodyear NWS station "serves as the closest location with readily available meteorological data for the area directly to the west of the West 43rd monitoring site"
- A reduction in visibility by more than 50% at the NWS Goodyear station during the period of high winds and elevated PM_{10} concentrations seems very relevant
- The fact that areas directly upwind of the West 43rd monitor were experiencing reduced visibility as a result of the elevated winds helps add to the weight of evidence and establish a clear causal relationship due to the winds occurring concurrently with the reduced visibility

See ADEQ's comments to page 11 of the TSD.

Figure 11: May 21, 2008 24-Hour PM_{10}

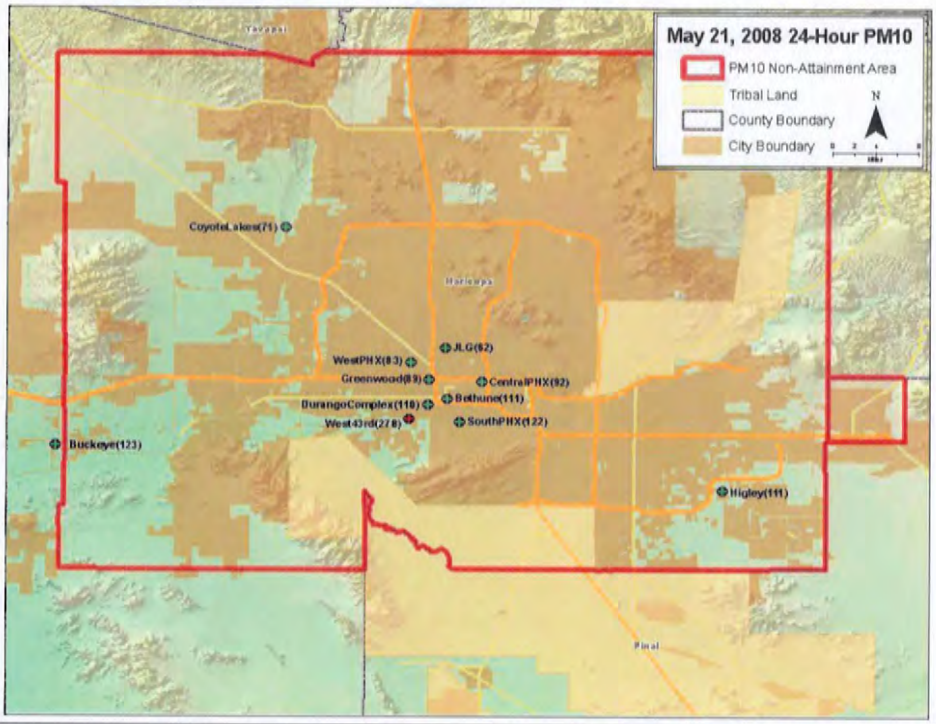


Table 4: May 21, 2008 24-Hour PM_{10}

Site Name	PM_{10} (ug/m3)	Site Name	PM_{10} (ug/m3)
Buckeye*[32]	123	West PHX*	83
West 43rd	278	Central PHX*	92
Durango Complex	110	JLG Supersite*	62
South PHX	122	Higley*	111
Greenwood	89	Coyote Lakes*	71
Bethune (FRM)*	111		

5.3.4 Review of Hourly PM_{10} and Meteorological Data

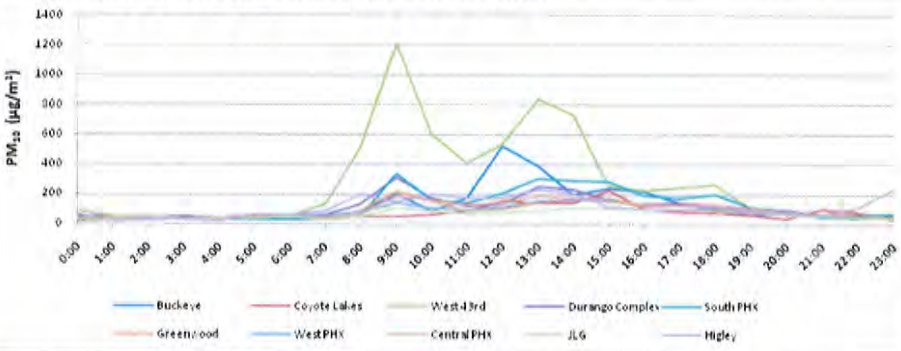
The hourly PM_{10} data for Maricopa County are shown in Figure 12. The peak PM_{10} concentration of 1207 $\mu g/m^3$ at 0900 hrs measured at the West 43rd site coincides with an increase in wind speed from 11 to 22 mph, and a recorded wind gust of 28 mph at the Goodyear

[32] 24-hour PM_{10} data from these sites were not included in the Assessment.

ADEQ COMMENTS

station and an increase in hourly wind speed from 15.3 to 18.1 mph at the West 43rd monitoring site. Similar to previously discussed events, the measured PM_{10} concentrations at West 43rd were more than 3.9 times the PM_{10} values measured at the Durango Complex station just 2 miles to the northeast and 3.6 times the values measured at the South Phoenix station 4 miles to the east. The inconsistencies in PM_{10} concentrations suggest that the West 43rd site most likely was influenced by local upwind sources and the claimed exceptional event was not regional in nature.

Figure 12: May 21, 2008 Maricopa County Hourly PM_{10}



5.2.5 Review of 5-Min PM_{10} and Wind Speed Data

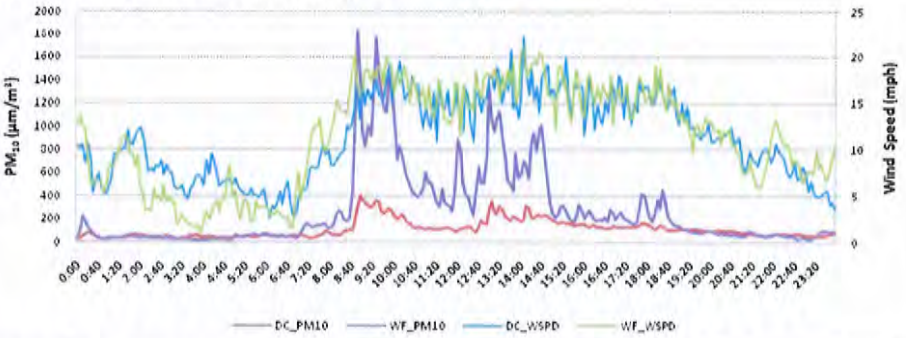
The 5-min data reinforce the fact that even though elevated wind speeds were measured at other nearby locations, the West 43rd monitor consistently measured much higher PM_{10} concentrations than other locations. Figure 13 shows the 5- min PM_{10} and wind speed data from the West 43rd and Durango Complex sites. These monitors are located only 2 miles apart, yet there seems to be a considerable difference in the relationship between PM_{10} and wind speed on May 21. Both sites experience similar wind speed levels, but during some periods of the day the 5-min PM_{10} concentrations at West 43rd site ranged from 3-6 times higher than those measured at Durango Complex. The two highest 5-min PM_{10} averages measured at the West 43rd site were approximately 1837 and 1769 $\mu g/m^3$, while PM_{10} concentrations at Durango Complex during the same time period were 290 and 362 $\mu g/m^3$, respectively. These data provide further evidence that the claimed regional high wind event only affected PM_{10} concentrations at West 43rd and the elevated PM_{10} concentrations measured at this site were most likely significantly influenced by local sources and the claimed exceptional event was not regional in nature.

ADEQ COMMENTS

The source of the discrepancy between the magnitude of the concentration increases at the monitors is evident from ADEQ's submissions. Because of its location, the West 43rd monitor is especially susceptible to dust generated by high winds traveling from a west or southwest direction along the Gila and Salt River channel.

EPA's conclusion that the concentrations at the West 43rd Avenue monitor "may have been caused by local upwind sources and were not regional in nature" is therefore unsubstantiated. In any case, this conclusion, even if justified, would not legally support EPA's determination that there was not a clear causal connection between the winds and the concentrations. Local, anthropogenic sources may be considered part of an exceptional high wind event, as long as they are reasonably controlled. As previously discussed, there is ample basis for concluding that the sources in the vicinity of the West 43rd Avenue monitor satisfied this requirement.

Figure 13: May 21, 2008 5-Min PM_{10} and Wind Speed

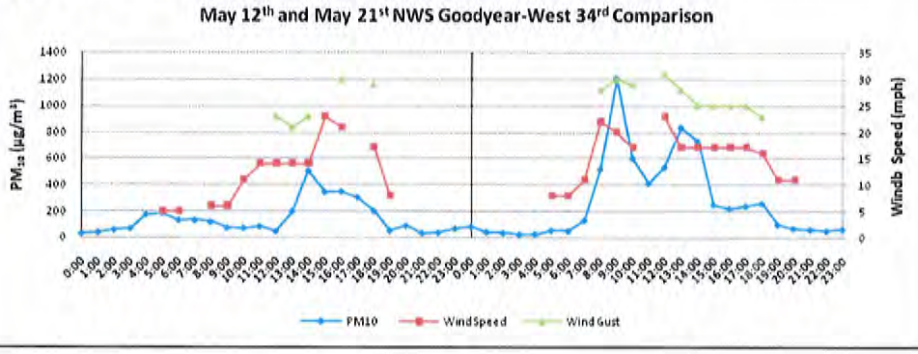


5.3.6 EPA Review of Days with Similar Meteorological Conditions

On fourteen days in May 2008, the wind speed at Goodyear Airport exceeded 15 mph. On three of those days, wind gusts exceeded 25 mph. The following analysis compares the hourly PM_{10} data, wind speed, and wind gusts on May 21 with the same data from a similar day in May.

On May 21, the West 43rd monitor experienced elevated PM_{10} concentrations of 518 µg/m^3 and 1207 µg/m^3 at 0800 and 0900 hrs, respectively. Wind speeds at Goodyear Airport during this period were from the WSW (240°) at 22 and 21 mph with gusts of 28 and 30 mph. Similarly, on May 12, the Goodyear station measured wind speeds and gusts of equal magnitude; 21 mph wind speeds and 30 mph gusts from the SW (230°). These elevated wind speeds, however, only correspond to moderate hourly PM_{10} values at the West 43rd site. Hourly PM_{10} concentrations on May 12 were considerably lower than the PM_{10} concentrations measured on the day the exceptional event is claimed to have occurred; maximum PM_{10} values on May 12 only reached 500 µg/m^3. This example illustrates how elevated wind speeds in upwind areas are related to elevated PM_{10} concentrations on occasion, but the magnitude of PM_{10} concentrations measured at the West 43rd site seem to be dependent on a number of different factors.

Figure 14: Non-Exceedance Day Comparison



ADEQ COMMENTS

As stated earlier, the use of vector average winds is inappropriate for this analysis, and fails to acknowledge the peak gusts which occurred during the event.

On May 21, 2008, the Goodyear NWS monitor experienced wind gusts of 25 mph or greater for nine total hours, six of which occurred consecutively. Contrastingly, on May 12, 2008, winds gusted to 25 mph or greater for only two, non-consecutive hours. Therefore, it is apparent that a comparison of the two days as being equivalent meteorologically is inappropriate, as both the average winds and wind gusts of May 21st were substantially greater in both duration and overall impact than those occurring on May 12th.

Also see ADEQ's comments to page 14 of the TSD.

5.3.7 Summary of Clear Causal Relationship for May 21, 2008

ADEQ's conclusions that the recorded exceedance was caused by a regional high wind event are not substantiated by relevant monitoring and meteorological data. The data show that the spatial extent of PM_{10} during this day was isolated and not regional in nature. The data also show differences in the measured PM_{10} concentrations at the West 43rd site and the remaining sites in the Phoenix area. In addition, as explained above, ADEQ provided only limited analysis of possible contribution from human activity (sections 4.2 and 4.3 above), making it difficult to comprehensively evaluate the relationship between the claimed event and the exceedance. Therefore, EPA has determined that the weight of evidence presented in the May 21 Assessment does not demonstrate a clear causal relationship as required by the EER.

5.4 June 4, 2008 Event

The June 4 assessment contained information pertaining to measured exceedances at monitoring sites in both the Phoenix area (Buckeye, Coyote Lakes, and West 43rd site) and Yuma County (Yuma MCAS site). These two locations are over 150 miles apart and the data concerning the Yuma area has limited value in determining whether or not exceptional events occurred in the Phoenix area. It is also important to note that EPA is not evaluating the exceedances measured at the Buckeye and Coyote Lakes monitoring sites in this document. As discussed in the next section, it is clear that the PM_{10} concentrations at these sites are not correlated to those measured at the West 43rd site for the majority of the day on June 4 and were most likely influenced by a different set of sources and meteorological conditions (Figure 16).

5.4.1 Correlation between Wind Speed and PM_{10}

The assessment included tabular wind speed and PM_{10} data for five sites in the Phoenix area: West 43rd, Durango Complex, Central Phoenix, Coyote Lakes, and Buckeye. ADEQ also included meteorological data from the NWS Luke Air Force Base station. ADEQ did not provide tabular hourly PM_{10} data from the remaining five continuous PM_{10} analyzers in the Phoenix area and did not include wind speed and direction data from numerous other meteorological stations in the Phoenix area. Appendix A contains more information on the meteorological data used in the June 4 supporting documentation.

ADEQ also provided seven graphs that show the potential correlation between maximum wind speeds and PM_{10} concentrations. The graphs show that, at the West 43rd site, the hourly PM_{10} concentrations increase with an increase in maximum recorded wind speeds at the West 43rd site; however, there does not seem to be a similar correlation between PM_{10} and maximum wind speed for the other monitoring sites in the area until later in the evening. These data suggest that the elevated PM_{10} concentrations in the morning and early afternoon hours at the West 43rd site were most likely caused by local upwind sources and are not regional in nature.

5.4.2 High Winds

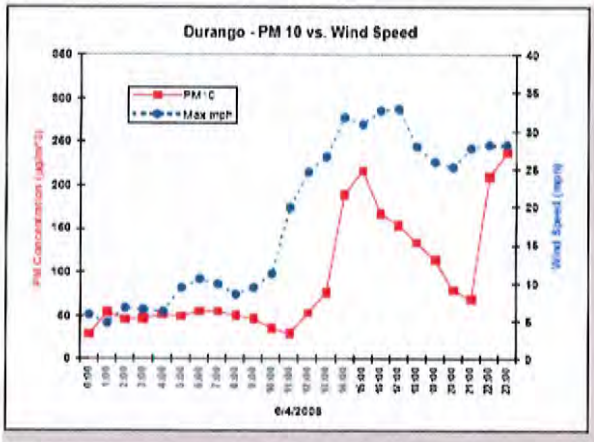
While Section 4.3 contains a general discussion of ADEQ's high wind analysis, ADEQ's DSR provided a more detailed discussion of the meteorological conditions that were associated with

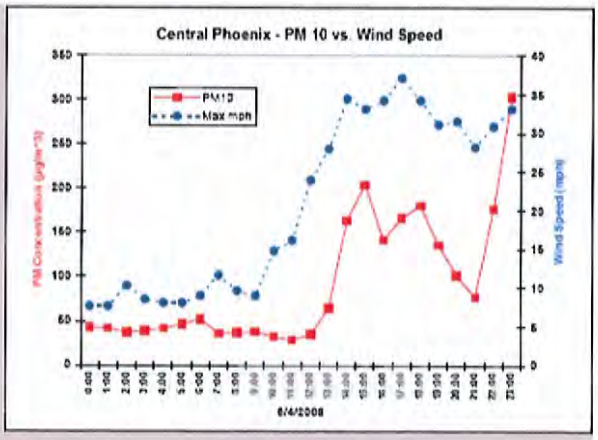
ADEQ COMMENTS

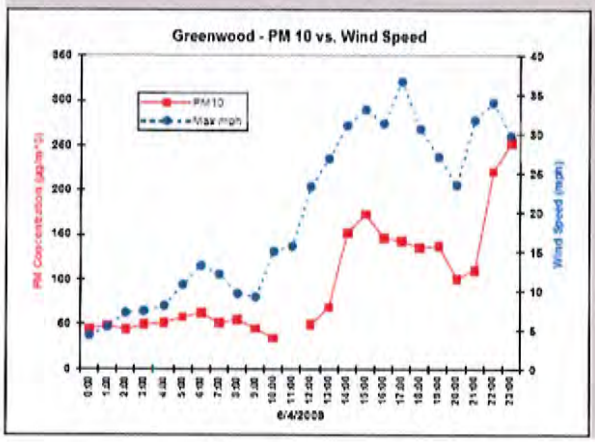
EPA's response in Section 5.4.1 sites a number of monitors whose data were not included in the assessment submitted by ADEQ.

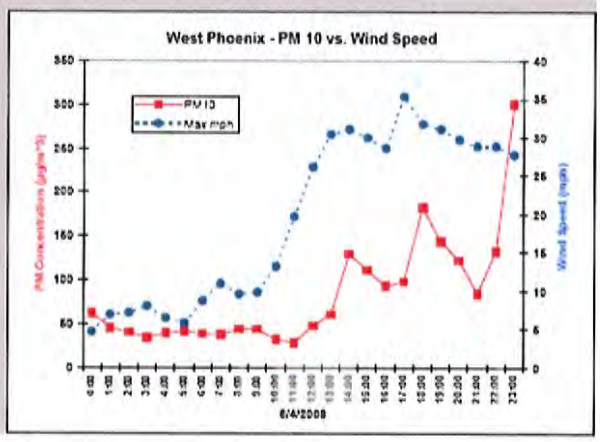
- On page 33 of this review document EPA seems to agree that ADEQ shows, in comparison to normal historical fluctuations, concentrations measured on each flagged day at West 43rd are "in the high percentiles", which indicates that "a lesser amount of documentation or evidence may be required." Yet, additional information and analysis were included in the June 4, 2008, supplemental submittal which showed unusually high winds occurred throughout, not just the Phoenix Metro area, but the entire State of Arizona and much of the entire Southwestern United States.

In EPA's analysis of the graphs in section 5.4.1, EPA fails to acknowledge the graphs establish a clear causal relationship between the onset of strong and gusty winds and the onset of elevated PM_{10} values at West 43rd, as both are showed to have occurred concurrently. Similar patterns are evident in the graphs of other monitor locations included with the event submittal and depicted below.









the claimed exceptional event occurring on June 4. Unlike the previously discussed events, the DSR contained copies of NWS advisories concerning the meteorological conditions in the Phoenix area. These reports provide additional evidence of the nature of the wind speeds associated with the claimed exceptional event. Specifically, NWS issued a wind advisory at 0356 hrs on June 4 that was set to be in effect from 1500 to 2100 hrs. The advisory states that "wind speeds of 25 to 30 mph with gusts up to 40 mph can be expected" and warned that "strong winds over desert areas could result in briefly lowered visibilities to well under a mile at times in blowing dust or blowing sand...especially near empty farm fields and construction areas."

While these advisories continued to be in effect during the afternoon hours of June 4, the average hourly wind speeds observed at the West 43rd monitoring site never exceeded 17.1 mph for the entire day, while wind gusts reached a maximum of 36 mph at 1600 hrs. ADEQ's DSR states that during the afternoon hours the Phoenix area experienced "unusually high gusts of 35-40 mph which would likely overwhelm BACM in place for PM in the Phoenix" area, but as discussed in section 4.2.2, ADEQ has not determined at which wind speeds this may be occurring. As discussed below, the West 43rd monitoring site began measuring elevated PM_{10} concentrations at 1200 hrs, well before the NWS advisories were put into effect.

5.4.3 Visibility

The assessment included photographs from numerous locations throughout the Phoenix area. Photographs taken at 1830 hrs show evidence of reduced visibility and a potential regional event,[33] but it is important to note that PM_{10} concentrations at the West 43rd monitoring site began to increase at 1200 hrs. No photographs were submitted for this time period or for hours preceding the elevated PM_{10} concentrations. Therefore, the photographs do not significantly contribute to establishing a causal relationship between observed wind speeds, potential contributing sources, and PM_{10} concentrations at the West 43rd monitoring site during the late morning, early afternoon hours.

ADEQ also stated that reduced visibility during the event at Goodyear Airport provides further evidence of a clear causal relationship. The visibility at Goodyear Airport during the morning and early afternoon hours ranged from 20 to 10 statute miles. While the reduced visibility observed at numerous NWS after 1800 hrs suggests a regional event may have occurred, it is important to note that PM_{10} concentrations at the West 43rd site began to increase at 1200 hrs: a time when visibility was between 10 to 20 miles.

5.4.4 Review of 24-Hour PM_{10} Data

The 24-hour PM_{10} concentrations measured on June 4 at the West 43rd and surrounding sites are shown in Figure 15. On this day, the West 43rd monitor measured PM_{10} concentrations that were more than double those measured at other monitoring sites in the area, except for the Buckeye and Coyote Lakes sites, which recorded similar concentrations.

[33] See Appendix B regarding visibility and dust storms in Arizona.

ADEQ COMMENTS

EPA focuses on the timing of the maximum wind gusts in section 5.4.2, claiming that the highest winds did not occur until after the West 43rd monitoring site began measuring elevated PM_{10} concentrations. These gusts measured to 36 mph at the 4:00p.m. reading. EPA appears to disregard a number of other valid considerations as follows:

1. The 4 highest PM_{10} concentrations measured on June 4th by the West 43rd monitor occurred concurrent with winds gusting to over 30 mph
2. The concurrent timing of winds and PM_{10} concentrations indicates clear causal relationship between the elevated wind speeds and the most elevated PM_{10} concentrations
3. Elevated hourly concentrations that were recorded during and after that maximum gust were undoubtedly a result of a high wind regional dust event, as is evident by the Buckeye and Coyote Lakes beginning to spike around the same time

In that same section, EPA cites the ADEQ submittal and notes that ADEQ has not determined at which wind speeds BACM may be overwhelmed. As is discussed in the Unusual Winds White Paper, there does not exist substantial literature aimed at determining at what wind speeds BACM are overwhelmed, and EPA has not provided a standard for determining what weight of evidence is necessary to meet the burden of proof for showing that BACM is overwhelmed. ADEQ, however, provided data and information to demonstrate that BACM was overwhelmed.

1. ADEQ listed all dust control measures that are required to be in place in the 5 Percent Plan for PM_{10} (MAG, 2007).
2. ADEQ listed the inspection and complaints reported for the 72 hours preceding and following the June 4th high wind event.
3. ADEQ included all pertinent wind information to show that strong and gusty winds were occurring at or upwind of the affected monitors.

As only two minor violations were found by inspectors in the two mile radius around West 43rd, it is fair to assume, given reviews of all available data, that control measures were in place, and if dust from local sources under these controls contributed significantly to the PM_{10} event at West 43rd, it was due to those controls being overwhelmed by the strong, gusty winds, that were reported in the area. Additionally, in response to EPA's assertion that the West 43rd monitoring site began measuring elevated PM_{10} concentrations well before the NWS advisories were put into effect, ADEQ would like to note that this does not mean that winds were not increasing before the advisory was put effect. In fact, ADEQ provided data that shows increasing winds well before the NWS advisory was in effect, and these elevated winds were coincident with elevated PM_{10} concentrations recorded at the West 43rd site.

In order to show the severity of the dust that impacted the area, only the worst visibility images were included with the June 4th event analysis; however, ADEQ does have images showing significantly reduced visibility and blowing dust starting earlier than 1830 hrs. EPA must understand that visibility does not go from clear to completely obscured instantaneously, and thus, the images showing how much visibility decreased between 1400 hrs and 1830 hrs should indicate that visibility decreased significantly over that time period. That is also the period when concentrations were at their highest at the West 43rd monitor. ADEQ would be pleased to provide these images to EPA for their consideration.

Figure 15: June 4, 2008 24-Hour PM_{10}

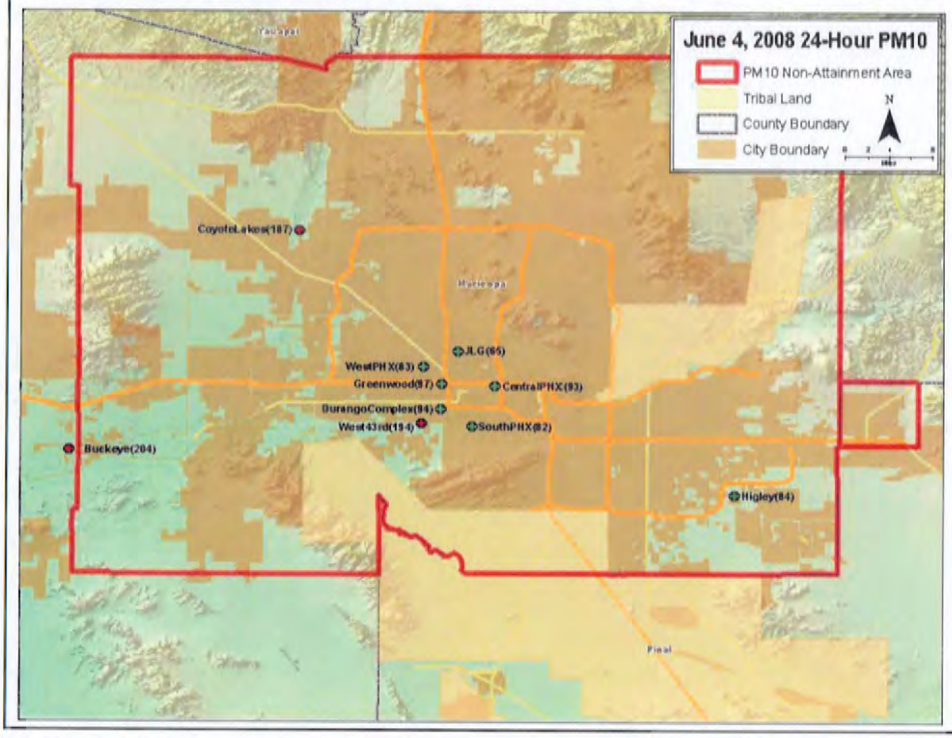


Table 5: June 4, 2008 24-Hour PM_{10}			
Site Name	**PM_{10} (ug/m3)**	**Site Name**	**PM_{10} (ug/m3)**
Buckeye	204	Greenwood*	97
West 43rd	194	West PHX*	83
Coyote Lakes	187	Central PHX*	93
Durango Complex*[34]	94	JLG Supersite*	65
South PHX*	82	*Higley*	84

5.4.5 Review of Hourly PM_{10} and Meteorological Data

The patterns observed through the morning hours and mid-day on June 4 are similar to the claimed exceptional event days discussed in previous sections and the data from this time period does not indicate an influence from a regional high wind event. Also, similar to the previously

[34] 24-hour PM_{10} data for this station was not included in the Assessment.

ADEQ COMMENTS

Back on page 27 of the TSD, EPA refers to a national weather service advisory that was issued at 3:56am out of the Phoenix NWS station. The header and key points in that advisory:

WWUS75 KPSR 041056
NPWPSR
URGENT – WEATHER MESSAGE
NATIONAL WEATHER SERVICE PHOENIX AZ
365 AM MST WED JUN 4 2008
…
{Included advisories for most of Arizona and California.}

"WIND ADVISORY IN EFFECT FROM 3 PM THIS AFTERNOON TO 9 PM MST THIS EVENTING FOR SOUTHWEST AND SOUTH-CENTRAL ARIZONA INCLUDING THE PHOENIX METRO AREA…"

At 5:56 a.m., a RED FLAG WARNING was issued.

"DUE TO VERY STRONG WINDS…LOW HUMIDITY…AND HIGH FIRE DANGER…THE NATIONAL WEATHER SERICE IN PHOENIX HAS ISSUED A RED FLAG WARNING…WHICH IS IN EFFECT FROM 1 PM MST /1 PM PDT/ THIS AFTERNOON TO 10 PM MST / 10 PM PDT/ THIS EVENING."

And at 2:35 p.m., the URGENT – WEATHER MESSAGE

"…WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MST /9 PM PDT THIS EVENING."

EPA stated on page 27:

"…the wind gusts reached a maximum of 36 mph at 1600 hrs."

"…the West 43rd monitoring site began measuring elevated PM10 concentrations at 1200 hrs, well before the NWS advisories were put into effect"

There are four points that should be noted:

1. The forecast of a wind advisory 11 hours before an event contains uncertainties, especially with respect to time of onset, and should not be used in place of measurements.
2. The Red Flag warning issued two hours later moved up the time of onset to 1:00 p.m., and the message at 2:35 p.m. implies the advisory was already in effect.
3. The PM_{10} at West 43rd did not start elevating until closer to 1:30 p.m. with the onset of gusty winds (see EPA TSD Figure 17).
4. Winds at West 43rd began gusting above 24 mph between Noon and 1:00 p.m.

discussed events, the West 43rd site measured elevated PM_{10} concentrations earlier and of a higher magnitude than other monitoring sites located nearby. For example, on the early afternoon of June 4, the West 43rd monitor began measuring PM_{10} concentrations ranging from 165 $\mu g/m^3$ to 645 $\mu g/m^3$ between 1200 and 1400 hrs, while all other monitors in the Phoenix area remained below 200 $\mu g/m^3$ for the same time period. The inconsistencies in these concentrations suggest that the West 43rd site was most likely significantly influenced by local upwind sources and the claimed exceptional event was not regional in nature. ADEQ acknowledged that the concurrent timing of elevated wind speeds "may indicate that PM sources in close proximity to the monitor contributed significantly to the dust event" and "it is likely that the loose particulates deposited in the dry river bed to the west and south-west of the monitor were transported the short distance to the West 43rd monitor by the high winds."[35]

It appears that a regional weather event began on the evening of June 4 and lasted into the morning of June 5. Figure 16 shows that the Buckeye site begins to measure significantly elevated PM_{10} concentrations at 1600 hrs, followed by an increase in PM_{10} at the Coyote Lakes site a few hours later. The West 43rd site lagged behind Buckeye and Coyote Lakes and did not show elevated PM_{10} from the regional event until 2200 hrs on June 4. While the West 43rd, Buckeye, and Coyote Lakes sites all exceeded on June 4, the cause of the exceedances seems to be different. The exceedances at Buckeye and Coyote Lakes were most likely due to a regional event that began in the evening and did not reach West 43rd until 2200 hrs, while the exceedance at West 43rd was most likely caused by a different set of circumstances (Figure 16). Also, beginning around 2200 hrs and extending into the early morning hours of June 5, PM_{10} concentrations at all sites in the Phoenix area were elevated and uniformly consistent, illustrating a potential regional event. In the DSR, ADEQ acknowledged that "a more homogeneous dust plume affected the area just after midnight on the following day."

While there was some contribution to the 24-hour PM_{10} concentration that can be attributed to this evening event, the West 43rd monitor began measuring high PM_{10} concentrations well before the arrival of the "dust plume" described in the June 4 DSR. Furthermore, the arrival of the dust plume began at around 2100 hrs and only contributed to approximately 11.3 percent of the total PM_{10} mass concentration for June 4. With such a small total contribution, if all PM_{10} concentrations measured after 2100 hrs were completely removed from the data set, the PM_{10} 24-hour average for June 4 would still be above the PM_{10} 24-hour NAAQS. The majority of the PM_{10} mass was measured well before the arrival of the evening event described above and the high PM_{10} concentrations measured in the late morning and early afternoon hours have been determined to be independent from the regional event that took place on the evening of June 4.

[35] June 4 DSR at p. 24.

ADEQ COMMENTS

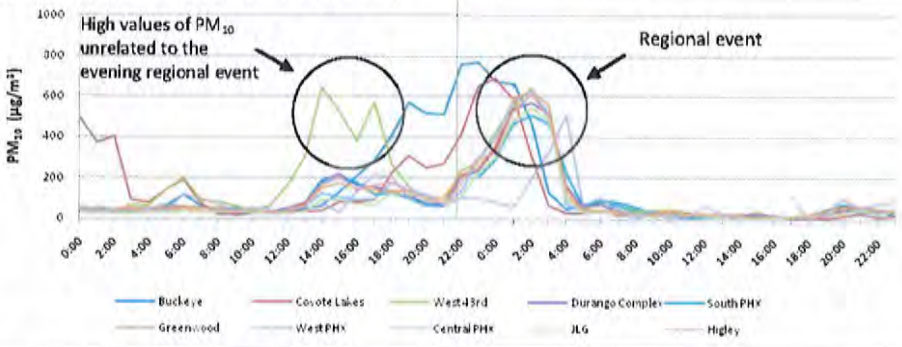
As high winds have been shown to drive PM_{10} events, EPA is incorrect in Section 5.4.5 when they state that "it appears that a regional weather event began on the evening of June 4 and lasted into the morning of June 5." ADEQ provides ample evidence that a regional weather event in the form of elevated strong and gusty winds began in the late morning / early afternoon hours of June 4th.

1. Winds at the West 43rd monitor gusted to 24 mph as early as the noon hour, and reached a maximum of 36 mph during the 3:00p.m. hour.
2. Additional documentation included by ADEQ shows that similarly timed and similar strength winds were occurring throughout much of the Phoenix area (as well as areas of California, Nevada and northern Arizona), with the strongest Phoenix area winds on the western periphery of the Valley.

Thus, while PM_{10} levels may not have been significantly elevated in some areas until later in the evening, winds began to become elevated to levels above typical historical fluctuations much earlier in the day.

Additionally, EPA asserts that only approximately 11.3 percent of the total PM_{10} mass concentration for June 4th can be attributed to the exceptional event. This, however, is based upon discounting the effect that strong and gusty winds had on the West 43rd monitor readings before the period when other monitors in the Valley were impacted by a larger, more homogeneous, dust plume. A different conclusion may be reached if one considers that all PM_{10} concentrations measured at West 43rd during the period of elevated winds, and definitely all concentrations measured there after 1400 (when winds were near their peak and Buckeye began to experience elevated PM_{10} as well) are removed from the 24-hour average PM_{10} calculation.

Figure 16: June 4 & 5, 2008 Hourly PM_{10}



5.4.6 Review of 5-Min PM_{10} and Wind Speed Data

The 5-min data also show that even though elevated wind speeds were measured at other nearby locations, the West 43rd monitor consistently measured much higher PM_{10} concentrations than other locations. Figure 18 shows the 5- min PM_{10} and wind speed data from West 43rd and Durango Complex:. these monitors are located only 2 miles apart, yet there seems to be a considerable difference in the relationship between PM_{10} and wind speed on June 4 during the late morning and early afternoon hours. Both sites experience similar wind speed levels, but during some periods of the day the 5-min PM_{10} concentrations at West 43rd site ranged from four to nine times higher than those measured at Durango Complex. The two highest 5-min PM_{10} averages measured at the West 43rd site were approximately 1475 and 975 $\mu g/m^3$, while PM_{10} concentrations at Durango Complex during the same time period were 153 and 264 $\mu g/m^3$, respectively.

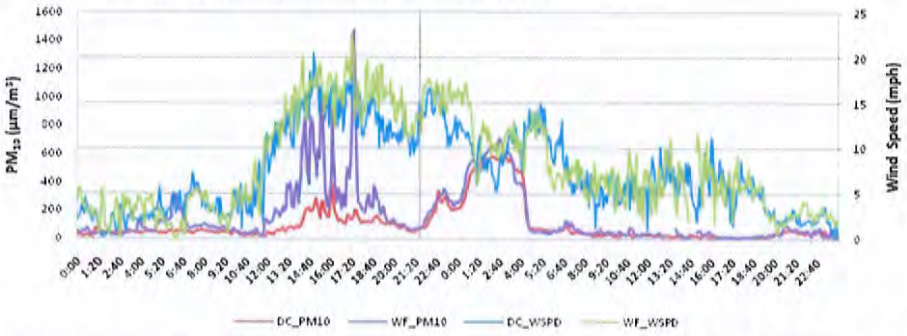
These data provide further evidence that the claimed regional high wind event only affected PM_{10} concentrations at West 43rd and the elevated PM_{10} concentrations measured at this site in the morning and early afternoon hours were most likely significantly influenced by local sources and the claimed exceptional event was not regional in nature.

ADEQ COMMENTS

The "regional event" noted in the early morning hours of June 5th did not cause an exceedance of the NAAQs at any location. The "regional wind" event the previous day on June 4th did cause exceedances at several locations. The source of the discrepancy between the magnitude of the concentration increases at the monitors is evident from ADEQ's submissions. Because of its location, the West 43rd monitor is especially susceptible to dust generated by high winds traveling from a west or southwest direction along the Gila and Salt River channels.

EPA's conclusion that the concentrations at the West 43rd Avenue monitor "may have been caused by local upwind sources and were not regional in nature" is therefore unsubstantiated. In any case, this conclusion, even if justified, would not legally support EPA's determination that there was not a clear causal connection between the winds and the concentrations. Local, anthropogenic sources may be considered part of an exceptional high wind event, as long as they are reasonably controlled. As previously discussed, there is ample basis for concluding that the sources in the vicinity of the West 43rd Avenue monitor satisfied this requirement.

Figure 17: June 4 & 5, 2008 5-Min PM_{10} and Wind Speed

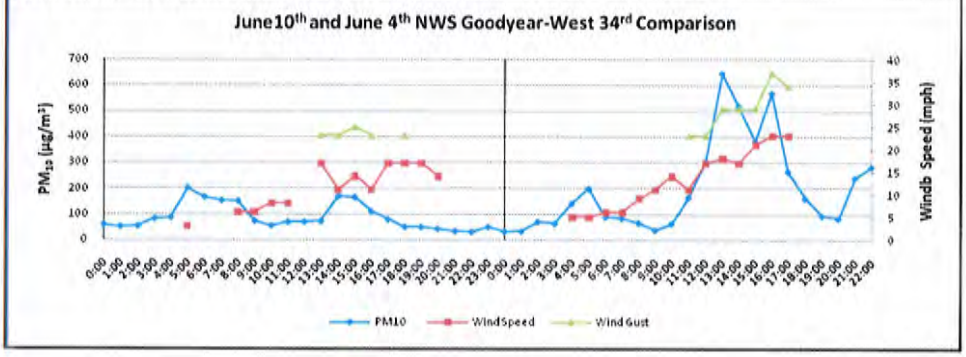


5.4.7 Review of Days with Similar Meteorological Conditions

On twelve days in June 2008, the wind speed at Goodyear Airport exceeded 15 mph. On two of those days, wind gusts exceeded 25 mph. The following analysis compares the hourly PM_{10} data, wind speed, and wind gusts on June 4 with the same data from a similar day in May.

On June 4, the West 43rd monitor experienced elevated PM_{10} concentrations of 307 µg/m^3 and 644.9 µg/m^3 at 1300 and 1400 hrs, respectively. Wind speeds at Goodyear Airport during this period were from the WSW (242°) at 17 and 18 mph with gusts of 23 and 29 mph. Similarly, on June 10, the Goodyear station measured wind speeds and gusts of similar magnitude; 17 mph wind speeds and 23 mph gusts from the WSW (240°). These elevated wind speeds, however, only correspond to a slight increase in hourly PM_{10} values at the West 43rd site. This example illustrates how elevated wind speeds in upwind areas are related to elevated PM_{10} concentrations on occasion, but the magnitude of PM_{10} concentrations measured at the West 43rd site seem to be dependent on a number of different factors.

Figure 18: Non-Exceedance Day Comparison



ADEQ COMMENTS

EPA inappropriate use of vector average wind speed data (Figure 3)

EPA's reliance on a graph with 5-minute vector average wind speed significantly understates the kinetic energy of the wind involved in the dust generating process. ADEQ did not provide or rely on the data presented in Figure 17.

It is apparent in Figure 18 provided by EPA that the winds occurring on June 10th were substantially weaker and shorter in duration than those occurring on June 4th. Wind gusts on June 4th were measured at or greater than 25 mph for five consecutive hours at the Goodyear NWS station on June 4th and were as high as 37 mph, while winds at the same location on June 10th appear to have gusted to near 25 mph for only one hour. EPA's statement that these two days experienced winds of similar magnitude is inaccurate and misleading. No conclusion as far as the magnitudes of PM_{10} in relation to wind gusts can be accurately drawn from a comparison of these two dates, as the winds experienced on June 4th were substantially greater than those experienced on June 10th.

5.4.8 Summary of Clear Causal Relationship for June 4, 2008

The data show that the spatial extent of PM_{10} during the early portion of the day was isolated and not regional in nature. In addition, ADEQ did not adequately address the possible contributing sources in the area directly upwind of the West 43rd monitor, which makes a causal relationship difficult to evaluate. ADEQ has also failed to adequately explain the differences in the measured PM_{10} concentrations at the West 43rd site and the remaining sites in the Phoenix area experiencing similar wind conditions.

ADEQ asserted that while elevated wind speeds occurred throughout the Phoenix area, "the blowing dust that was generated from these high winds occurred at sporadic locations;" the "high concentrations of blowing dust only occurred where dust sources were located;" and "these dust sources are typically located in depositional areas where fine and coarse particles are deposited during times of precipitation." ADEQ further concluded that "cause of the exceedances for the Maricopa County monitors was alluvial dust generated by high winds in the river channels, coupled with the generally elevated dust from the region-wide dust storm." Even more explicitly, ADEQ explained that the exceedance at West 43rd "was due to generally elevated PM_{10} from the dust storm coupled with contributions from dust generated in the alluvial plain of the Salt and Gila Rivers due to high, gusty winds." While ADEQ has concluded that the exceedance at West 43rd was caused by emissions originating in the Salt and Gila River channels, there little technical justification supporting this conclusion and there is no discussion explaining how emissions from these sources are not reasonably controllable or preventable.

While there appears to be some component of the PM_{10} that could be attributed to a regional dust storm event, the time series (Figures 16 and 17) indicate that the regional event did not influence the measured PM_{10} at the West 43rd site until very late on June 4 and the principal cause of the exceedance were emissions from local sources. Therefore, the weight of evidence does not demonstrate a clear causal relationship as required by the EER.

6.0 Concentration in Excess of Normal Historical Fluctuations

Pursuant to 40 CFR 50.14(c)(3)(iii)(C), the demonstration must show that "the event is associated with a measured concentration in excess of normal historical fluctuations." ADEQ provided tables for each event that ranked the PM_{10} exceedances using data from the past five years (2003-2008). A comparison was made to five years of data from the "spring season" and the complete five year data set. Table 6 summarizes these data.

Table 6: ADEQ Historical Distribution

Exceedance Date	PM_{10} Concentration	Seasonal Percentile	Yearly Percentile
3.14.08	251 $\mu g/m^3$	< 99.5	< 99.5
4.30.08	172 $\mu g/m^3$	< 97.5	< 99.7
5.21.08	279 $\mu g/m^3$	< 99.5	< 99.5
6.4.08	194 $\mu g/m^3$	< 97.5	< 99.0

ADEQ COMMENTS

EPA's asserts incorrectly in Section 5.4.8 that ADEQ's West 43rd event submittal is lacking in evidence to show that the Salt and Gila River channels are a primary source of PM_{10} emissions.

1. ADEQ included a map showing the location of the West 43rd monitor and its proximity to the Salt River Channel.

2. ADEQ included a detailed map showing the threshold friction velocities in and around the Phoenix Metro Area.

3. ADEQ has shown that adequate dust control measures are in place for many potential sources positioned upwind from the West 43rd monitor.

4. ADEQ has shown that any impacts those potential upwind sources might have on PM_{10} concentrations during the high winds are most likely the result of BACM being overwhelmed.

There is no specific threshold test for this requirement, but concentrations in the high percentiles can provide supporting evidence and informs EPA's weight of evidence analysis of the exceptional events in question. As stated in the EER preamble, "For extremely high concentrations relative to historical values, a lesser amount of documentation or evidence may be required."[36] While the relative comparison to the historical fluctuations informs the amount of evidence required, for an event to be considered an exceptional event, all criteria listed under section 3.0 must be met.

7.0 No Exceedances But For the Event

Pursuant to 40 CFR §50.14(c)(3)(iii)(D), the demonstration must show that "there would have been no exceedance or violation but for the event." The weight of evidence in a demonstration does not require a precise estimate of the air quality impact from the event,[37] though such information could be useful.

Assessments for all events include an "event contribution analysis" to support the notion that there would have been no exceedance but for the event. This analysis consists of a table that calculates the 24-hour PM_{10} concentration excluding the hours of the day that the event was assumed to have occurred. There is no explanation of how to interpret this analysis, and it is unclear how these hours are chosen for exclusion. Also, from the documentation alone, it is unclear how this calculation is performed. After conversations with staff members of ADEQ, it was determined that the hours that have been chosen for exclusion are replaced by the average PM_{10} concentration calculated with remaining hours of the day. This is equivalent to assuming there is no normal increase during those hours. If there is a typical rise during that period, then the average used may not be representative of typical conditions. Considering the weight of evidence, the assessments for all four events do not provide sufficient evidence to establish that there would not have been an exceedance but for the event.

8.0 Procedural Requirements

The EER at 40 CFR §50.14(c)(2)(iii) requires that data claimed to be due to an exceptional event must be flagged in the AQS database, and that an initial description of the event be provided to EPA by July 1 of the year following the event.

Pursuant to 40 CFR §50.14(c)(3)(i) the State must submit a demonstration to EPA within three years of the event. EPA received the final demonstrations for the 2008 events in question on November 17, 2009, which satisfies the three year submission requirement.

40 CFR §50.14(c)(3)(i) also requires notice and opportunity for public comment. ADEQ's documentation was available on the ADEQ web-site and the ADEQ Library in Phoenix beginning on October 15, 2009. No comments were received from the public during the comment period.[38] Information included in the draft supplemental report, received by EPA on March 17, 2010, has not yet gone through the public comment process.

[36] EER Preamble, 72 FR 13569.
[37] Id. at 13570.
[38] Letter from Nancy Wrona, ADEQ, to Deborah Jordan, USEPA Region 9 received on November 17, 2009.

ADEQ COMMENTS

From section 7.0 of EPA's TSD, referring to the Event Contribution Analysis (aka the 'But For' analysis), EPA incorrectly states that "there is no explanation of how to interpret this analysis."

This statement is simply not true as the June 4th DSR explains very clearly what the table is showing. For example, page 23 of the June 4th DSR states:

> 'The Event Contribution Analysis above highlights hours that exhibited elevated levels of PM_{10} due to unusually high winds at the Buckeye monitor on June 4, 2008. Data highlighted in pink are those hours that are being flagged for exclusion due to the influence of high winds. The calculation of the 24-hr average for PM_{10} is given both including the flagged event hours as well as omitting those hours from the average and replacing those values with the average of the rest of the day's PM_{10} values that were not influenced by the high wind event. The number highlighted in red shows the 24-hr PM_{10} concentration that would be above the NAAQS when including the concentrations measured during the high wind event, while the number highlighted in green shows a 24-hr average PM_{10} concentration that is below the NAAQS when replacing the elevated values due to the high winds with the average PM_{10} of the hours not occurring during the wind event.'

9.0 Conclusion

ADEQ stated that the measured exceedances at the West 43rd monitoring site, during these days, were a result of the transport of dust from soils by high winds that were associated with approaching low pressure systems. For all of the events, there appears to be elevated wind speeds in various locations throughout the Phoenix area, but as discussed in section 4.3, ADEQ's approach to defining "unusual" winds relies on complete yearly data, rather than the season during which the events occurred. In addition, ADEQ's approach would find that "unusual" winds occur on approximately 100 days a year. Also, there is little discussion or explanation concerning the meteorological conditions that were occurring on the days in question and how those conditions affected the elevated PM_{10} concentrations at the West 43rd monitoring site. The majority of the data concerning these relationships are presented in tables and a small number of graphs with no explanation of the interpretation of the information that has been presented.

Moreover, the Assessments did not adequately address the sources that may have been contributing to the event. Without this information, it is difficult to determine whether the elevated PM_{10} concentrations resulted from controllable anthropogenic sources or natural desert sources. Since there are numerous anthropogenic sources located in upwind areas, this information is critical to assessing whether an exceedance is the result of an exceptional event or uncontrolled anthropogenic sources. With little discussion of the meteorological conditions on the event days combined with a very limited discussion on possible sources, the Assessments did not adequately establish a clear source-receptor relationship or make a convincing demonstration that the events in question should be considered natural events under the EER.

Furthermore, the information in the Assessments did not support the broad conclusion that the elevated PM_{10} concentrations were caused by transport of dust from soils by high winds. Again, without acknowledging the sources that may be contributing to the event, it is difficult to determine where the dust originated from and how it was transported to West 43rd. Also, the monitoring data is inconsistent with the notion of transport. If transport was occurring on these days, one would expect to see similar concentrations at nearby monitoring locations. One of the most interesting aspects of these events is that on March 14 and April 30 the West 43rd monitor is the only monitor to violate the 24-hour standard, not only in the Phoenix area, but the entire state of Arizona except for the Cowtown monitor in Pinal County, which consistently measures the highest levels of PM_{10} within Region 9 due to its proximity to a large cattle feedlot. Also, the differences between the hourly PM_{10} concentrations at West 43rd and other sites that are located just a few miles away are striking. Although it is very clear that there is something unique about the measured exceedances at the West 43rdsite, the assessments did not explain these differences in PM_{10} concentrations and how they are inconsistent with a regional high wind event.

The June 4 DSR included a more detailed discussion of the meteorological conditions during the event and provided some discussion on the sources that may be influencing the elevated PM_{10} concentrations at the West 43rd monitoring site. The additional documentation asserted that the exceedance measured at the West 43rd monitoring site can be attributed to emissions from the dry Gila and Salt River channels that were coupled with contributions from a regional dust storm. As previously discussed, the documentation Assessments did not provide sufficient technical

ADEQ COMMENTS

ADEQ asserts that windblown dust typically occurs only when hourly average winds are at least 10 mph and gusts are at least 20 mph. That isn't to say that any wind of 10mph or gust of 20 mph is "exceptional" or would creaste blowing dust. The 10 and 20 mph values are given as estimates for when winds may be considered "unusual", and this is backed up by the fact that the NWS typically does not report wind gusts unless they are greater than 15mph. As EPA has not provided a threshold value for wind speed that they would consider "unusual", ADEQ used available data to come up with an estimate for the wind speed at which 5% or less of all values would fall.

As previously discussed, the assertion that ADEQ's approach would result in claims that 100 days per year are unusual is misleading and does not look at wind gusts, which have been shown in both our data and in previous literature to be more influential than hourly average winds in creating windblown dust.

justification of this conclusion and did not explain how emissions from these sources were not reasonably controllable or preventable. Furthermore, the data show that the contribution from the regional dust storm during the late night hours of June 4 was not significant and the exceedance was most likely driven by the elevated PM_{10} concentrations measured in the late morning and early afternoon hours.

The June 4 DSR provided some new information regarding the significant differences in the hourly PM_{10} values seen at the Durango Complex and South Phoenix monitoring sites. The documentation stated that "it is also entirely possible that the urbanized core of the Phoenix metro area acted to reduce the amount of blowing dust compared to the western periphery due to increased surface roughness." While this might be relevant, it does not account for the nearly identical PM_{10} concentrations measured throughout the entire Phoenix area in the evening hours of June 4 and the morning hours of June 5. The June 4 DSR did not provide sufficient technical analysis to support a clear source receptor relationship or provide new evidence to support the notion that the June 4 event should be considered a natural event under the EER. Considering the weight of available evidence, EPA does not concur that the March 14, April 30, May 21 and June 4, 2008 exceedances at the West 43rd monitoring site should be treated as exceptional events.

ADEQ COMMENTS

The rule does not require identification of specific anthropogenic sources that contributed to particulate matter concentrations. It states that even if wind-blown dust originated from anthropogenic sources, it will be treated as part of a natural event as long as those sources are "reasonably well-controlled."

ADEQ's request demonstrated that this requirement was met in two ways.

First, it referred to the comprehensive control strategy that has been developed and implemented for the Phoenix Serious PM_{10} nonattainment area (MAG, 2000; MAG, 2007). Because of the intractability of the PM_{10} nonattainment problem in Maricopa County, anthropogenic sources of PM_{10} in this area probably have received more scrutiny from the State, the public and EPA than any other sources in the country. The control strategy and compliance program developed for the area were developed in response to the most stringent planning requirements of the Clean Air Act, including the Best Available Control Measures (BACM) requirement and the most stringent measures requirement. The control strategy had to include a comprehensive inventory of sources, so any suggestion that there are unknown, uncontrolled sources (see Review § 4.3 at 7) is unwarranted.

Second, the demonstration included a comprehensive review of all available compliance data for the 72-hour periods leading up to and including the events. Except for two minor violations identified by Maricopa County inspectors on June 4, 2008, no unusual dust-producing activities were identified. Thus, there is no basis for concluding that anthropogenic emissions varied significantly before, during or after the event.

Appendix A

Table 1: Meteorological Data Used in ADEQ's Assessments[39]						
Available Met Data	**Distance to West 43rd**	**Direction**	**3.14.08**	**4.30.08**	**5.21.08**	**6.4.08**
WEST PHOENIX	5	N	x		x	
MESA	16	E		x		
NORTH PHOENIX	12	NNE				
GLENDALE	12	N				
PINNACLE PEAK	27	NE				
CENTRAL PHOENIX	7	ENE	x	x		x
SOUTH SCOTTSDALE	14	ENE		x		
GREENWOOD	4	NNE				
SOUTH PHOENIX	4	E		x	x	
COYOTE LAKES*	21	NNW	x			x
WEST CHANDLER	17	ESE		x		
TEMPE	12	E				
HIGLEY	25	ESE		x		
WEST 43RD	n/a	n/a	x	x	x	x
DYSART	20	NNE				
BUCKEYE	28	W			x	x
DURANGO COMPLEX	2	NE	x	x	x	x
JLG SUPERSITE	7	NNE				
WEST INDIAN ROAD	6	N				
FALCON FIELD	24	E				
CAVE CREEK	29	NNE				
BLUE POINT	32	ENE				
FOUNTAIN HILLS	28	ENE				
GOODYEAR	13	W	x	x		
LUKE AFB	16	NW				x
GLENDALE	13	NW	x			
SKY HARBOR	9	ENE	x		x	
DEER VALLEY	20	N			x	
SCOTTSDALE	20	NE				
FALCON FIELD	24	E				
CHANDLER	21	ESE				
WILLIAMS GATEWAY	29	ESE				

[39] The highlighted areas in Table 1 correspond to either the closest meteorological station or stations upwind of the West 43rd monitoring site.

ADEQ COMMENTS

Appendix A is irrelevant. ADEQ presented the wind data that were relevant to the discussion and event being discussed.

Table 2: PM_{10} Data Used in ADEQ's Assessments[40]				
Site Name	**Distance to West 43rd**	**Direction**	**24 Hour PM_{10} Data**	**Hourly PM_{10} Data**
		3.14.08		
WEST PHOENIX	5	N	x	x
CENTRAL PHOENIX	7	ENE	x	x
GREENWOOD	4	NNE	x	x
SOUTH PHOENIX	4	E	x	
COYOTE LAKES	21	NNW	x	x
HIGLEY	25	ESE	x	
WEST 43RD	n/a	n/a	x	x
BUCKEYE	28	W		
DURANGO COMPLEX	2	NE	x	x
JLG SUPERSITE	7	NNE	x	
		4.30.08		
WEST PHOENIX	5	N	x	
MESA	16	E		n/a
NORTH PHOENIX	12	NNE		n/a
GLENDALE	12	N		n/a
CENTRAL PHOENIX	7	ENE	x	x
SOUTH SCOTTSDALE	14	ENE		n/a
GREENWOOD	4	NNE	x	x
SOUTH PHOENIX	4	E	x	x
COYOTE LAKES	21	NNW	x	
WEST CHANDLER	17	ESE		n/a
HIGLEY	25	ESE	x	x
WEST 43RD	n/a	n/a	x	x
DYSART	20	NNE		n/a
BUCKEYE	28	W		
BETHUNE	4	NE		n/a
DURANGO COMPLEX	2	NE	x	x
JLG SUPERSITE	7	NNE	x	
		5.21.08		
WEST PHOENIX	5	N		x
CENTRAL PHOENIX	7	ENE		
GREENWOOD	4	NNE	x	
SOUTH PHOENIX	4	E	x	x
COYOTE LAKES	21	NNW		
HIGLEY	25	ESE		
WEST 43RD	n/a	n/a	x	x
BUCKEYE	28	W		x
BETHUNE	4	NE		n/a
DURANGO COMPLEX	2	NE	x	x
JLG SUPERSITE	7	NNE		

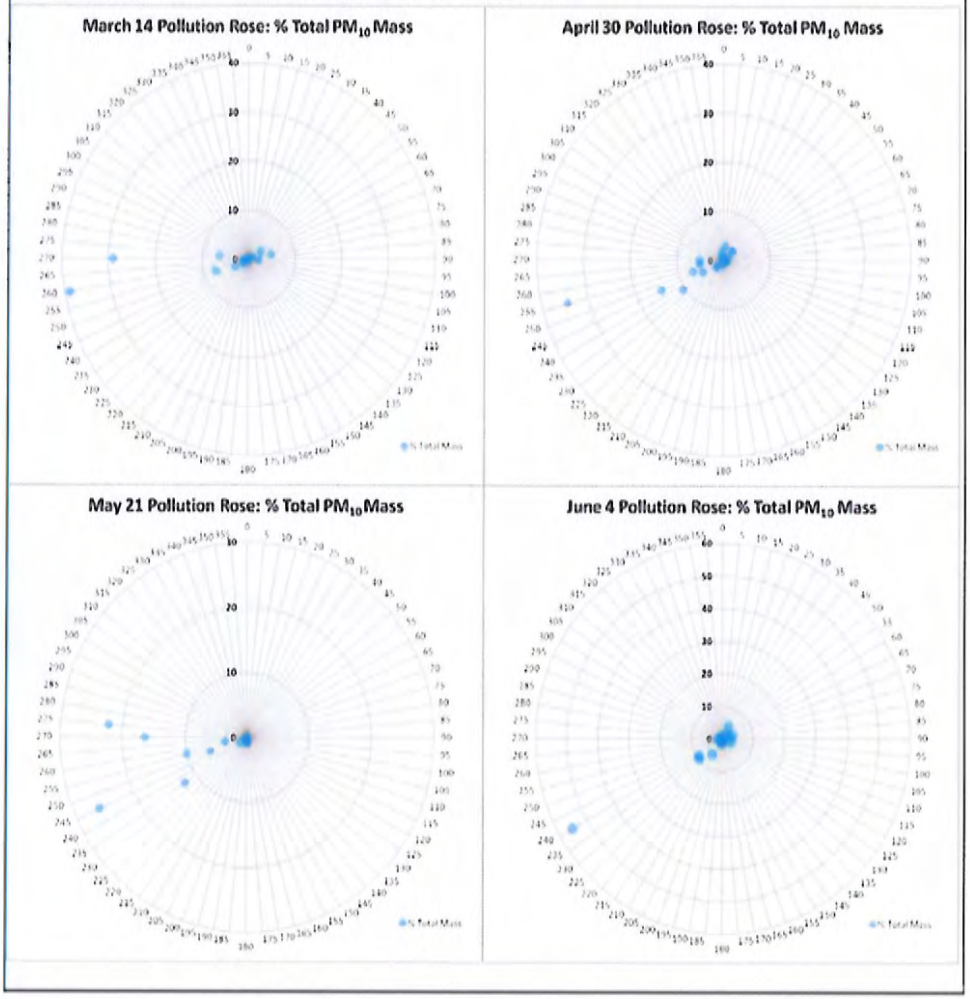
[40] The highlighted areas in Table 1 correspond to either the closest meteorological station or stations upwind of the West 43rd monitoring site.

ADEQ COMMENTS

6.4.08				
WEST PHOENIX	5	N		x
CENTRAL PHOENIX	7	ENE		x
GREENWOOD	4	NNE		x
SOUTH PHOENIX	4	E		
COYOTE LAKES	21	NNW	x	x
HIGLEY	25	ESE		
WEST 43RD	n/a	n/a	x	x
BUCKEYE	28	W	x	x
BETHUNE	4	NE		
DURANGO COMPLEX	2	NE		x
JLG SUPERSITE	7	NNE		

ADEQ COMMENTS

Figure 1: West 43rd Pollution Roses % Total PM_{10} Mass



ADEQ COMMENTS

Appendix B

EPA acknowledges that massive dust storms do occur in the Southwestern United States and that these events could quality as exceptional events if all requirements of the EER were satisfied. The following information could be used as evidence in an exceptional events demonstration if the conditions of the event were consistent with those observed during a dust storm.

The relationship between weather types, wind speed, and dust storm generation has been researched and examined for many years. Generally, there are generally four different weather types that are capable of producing dust storms. These conditions were examined in further detail by Brazel and Nickling in two separate research papers during the 1980's. Both studies conclude that the frequency of dust storms can be directly linked to specific weather conditions which are accompanied by elevated wind speeds, but also note that dust events are "strongly affected by antecedent conditions (i.e. surface moisture, vegetation cover, surface crusting, and anthropogenic disturbances)". For the years 1965 -1980, 80% of all intense dust storms[41] in the Phoenix area were related to thunderstorm activity in the region. The mean wind speed for dust storms during this time period in the Phoenix area were 12.4 m/s or 27.7 mph, while the mean peak gusts were 17.8 m/s or 39.8 mph (Nickling W.G., Brazel A.J., 1984). Some of these intense dust storms that occur in the Phoenix area could potentially be classified as "haboobs": events that are caused by powerful downdrafts from thunderstorms and have the potential to create solid walls of advancing dust (Idso, 1972).

There are a number of different definitions of "dust storms" based on different levels of reduced visibility. The National Weather Service issues a dust storm advisory when visibility drops below 1 mile and a dust storm warning when visibility is less than ¼ mile. NWS further states that "typically, Blowing Dust Advisories are issued for widespread winds that may produce localized areas of blowing dust" and "dust storms can occur with widespread winds, or may be associated with thunderstorm outflow." Table 2 lists all days in 2008 that had reports of blowing dust or dust storms at Phoenix NWS stations.

Similarly, Nickling and Brazel (1984) also use a reduced visibility of 1 mile as a cut-off point for dust storm classification. This criterion was chosen to be the most representative of the conditions that can be attributed to dust storms in Arizona. Earlier research suggests that reduced visibility less than 7 miles constitutes dust storm classification (Orgill, Sehmel, 1976). Table 1 shows the visibility recorded at Goodyear Airport during the event days in question compared to the various dust storm definitions discussed above.

In 2008, the Phoenix area experienced numerous occurrences of thunderstorm activity and elevated winds. A detailed account of these events is displayed in table 3 and is available in the NWS report "Storm Data and Unusual Weather Phenomena". Four of the events are described as dust storms.[42] For example, an event occurring on September 11 was described as "a

[41] Intense dust storms (IDS) correspond with visibility ≤ 1 mile, while moderate-to-weak dust storms (MWDS) correspond to visibility >1 mile but ≤ 7 miles.

[42] The events described by the NWS as dust storms occurred on May 15, July 1, July 10, and September 9. The meteorological events that occurred on the days of concern for the present analysis (March 14, April 30, May 21, and June 4) were not characterized as such.

ADEQ COMMENTS

EPA's Appendix B seems to imply that only a major dust "storms" can be excluded. This is not true. Any wind capable of generating dust, and overwhelming BACM controls can be a source of an exceptional event.

2000 TCD Page 2 Paragraph 3 discuses the experience of the ADEQ contractor performing work on Arizona soils.

"Prior research has shown that high wind speeds especially when coupled with drought conditions and low soil moisture have caused dust storms in the southwest United States. A portable wind tunnel was used by ADEQ contractors in 1989 to estimate wind erosion at various wind speeds over different soils in Arizona; Nickling, W.G. and Gillies, J.A. 1989, Emission of Fine Grained Particulates from Desert Soils. Their investigations found disturbed desert soils became suspended at about 7.0 meters per second (15.7 mph). Subsequent hour-by-hour measurements of PM_{10} and wind by ADEQ at various locations have substantiated this finding. This information was given to the natural exceptional events researchers for incorporation in the qualification criteria."

Also, see Table 3 U_{t10m} in the original Nickling, W.G. and Gillies, J.A. 1989.

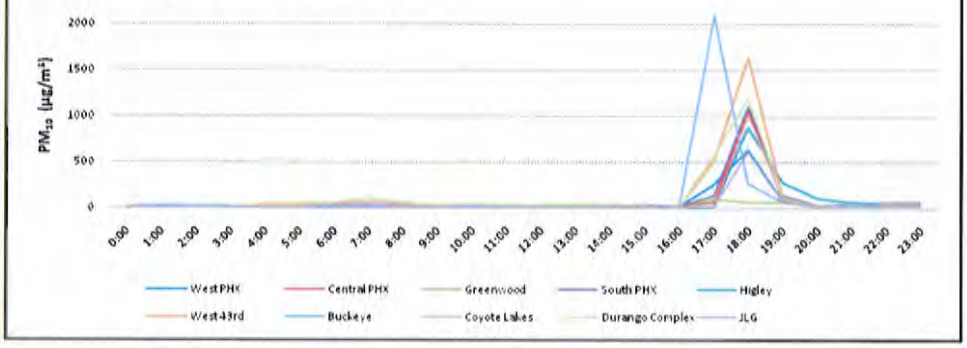
spectacular dust storm moved across west-central and central Maricopa County, including the Greater Phoenix area. Dust moved southwest to northeast, with winds typically 30-50 mph accompanying the blowing dust. A 3-mile stretch of power poles was blown down along old U.S. highway 80 south of Buckeye and north of Gila Bend (615 PM)".

Table 1: Dust Storm Comparison

Event Date	**3.14.08**	**4.30.08**	**5.21.08**	**6.4.08**
Event Visibility (miles)[43]	**10**	**7**	**7**	**20**
0.25[44]	N	N	N	N
1[45]	N	N	N	N
7[46]	N	N	N	N

Figure 1 further illustrates how PM_{10} concentrations can be affected during these events. The September 9 dust storm originated in the southwest and moved through Phoenix, heading northeast. Wind speeds throughout the Phoenix area reached 30 mph, with 40 mph wind gusts reported at the NWS Luke Air Force Base station. Wind direction during the event was predominately from the west/southwest. The visibility during the event dropped below ¼ mile at one station and remained below 5 miles for other stations in the area. Figure 1 shows the west to east movement of the dust storm and its effect on the PM_{10} monitoring stations in the Phoenix area. PM_{10} concentrations spike first at the Buckeye monitor at 1700 hrs and the rest of the central Phoenix area experiences elevated PM_{10} concentrations at 1800 hrs.

Figure 1: PM_{10} concentrations 9/11/08



[43] Visibility during periods of elevated wind speed and elevated PM_{10} at West 43rd
[44] NWS Warning
[45] NWS Advisory & Nickling and Brazel
[46] Orgill and Sehmel

ADEQ COMMENTS

Table 2: National Weather Service Significant Weather Types 2008									
Date	Goodyear	Luke AFB	Glendale	Sky Harbor	Chandler	Williams Gateway	Falcon Field	Scottsdale	Deer Valley
3.14.08									
4.16.08	BLDU								
4.30.08									
5.15.08	BLDU	SQ			BLDU				
5.21.08					BLDU				
6.4.08	BLDU	BLDU DU							
6.5.08		HZ		BLDU HZ	BLDU	HZ		HZ	HZ
7.1.08		BLDU			BLDU				HZ SQ
7.3.08		BLDU							
7.4.08			BLDU					HZ	
7.10.08				BLDU					
7.13.08				BLDU					
7.26.08						BLDU			
8.7.08		BLDU		BLDU	BLDU				
8.14.08	BLDU	BLDU		BLDU	BLDU	BLDU			
8.25.08	BLDU	BLDU SQ	BLDU	BLDU					
8.30.08		BLDU			BLDU				
9.8.08					BLDU				
9.11.08	DS	BLDU HZ	BLDU	BLDU HZ SQ	BLDU	DS HZ	BLDU	HZ SQ	HZ
9.26.08						BLDU			
9.27.08				BLDU					
11.9.08	BLDU	HZ		BLDU	BLDU		BLDU		HZ
12.13.08	BLDU								

Notes: BLDU - Blowing Dust DS - Dust Storm DU - Dust HZ - Haze SQ – Squall[47]

Table 3: NWS Storm Data and Unusual Weather Phenomena Reports 2008				
Date	Location[48]	Event	Time	Description
3.14.08	**NONE**			
4.16.08	**NONE**			
4.30.08	**NONE**			
5.15.08	AZZ028-Central Deserts	**Dust Storm**	1515-1640	Strong and gusty winds uprooted trees in Eastern Chandler. **Dense blowing dust** with low visibility was reported at Gateway airport
	Maricopa County	Thunderstorm Wind	1535-1610	Portions of eastern Maricopa county and Pinal county received gusty winds from a line of thunderstorms that moved rapidly toward the south.
5.21.08	NONE			

[47] NWS definition: sudden onset of a strong wind with increase of at least 16 knots and sustained at 22 knots or more for at least one minute

[48] See Figure 2 for NWS Forecast Areas

ADEQ COMMENTS

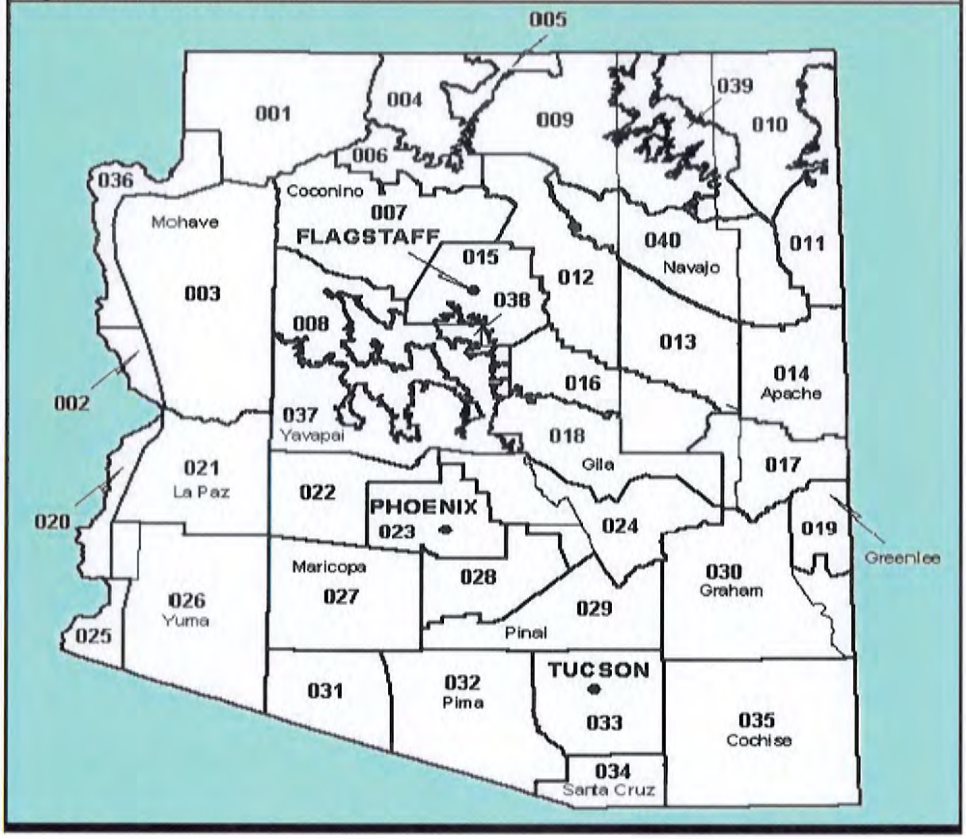
6.4.08	**NONE**			
6.5.08	NONE			
7.1.08	AZZ028-Central Deserts	**Dust Storm**	1740-1800	Low visibility due to blowing dust resulted from strong winds from nearby thunderstorms. Winds were generally in the 30 to 40 mph range with reports of **blowing dust** in the Phoenix East Valley Late in the afternoon and early afternoon.
7.3.08	Maricopa County	Funnel Cloud	2140	Pilot reported sighting a brief funnel cloud. Thunderstorms were triggered by an old outflow boundary. The associated peak wind gusts were 28 knots at Sky Harbor and 39 knots at Scottsdale airport
	Pinal County	Thunderstorm Wind	1630-1631	Several trees were uprooted at Saddlebrook
7.4.08	Maricopa County	Thunderstorm Wind	1900-2000	Scottsdale airport recorded peak winds of 53 mph during thunderstorms. Winds at Sky Harbor airport reached as high as 39 mph and some tents at the fireworks display were blown down
7.10.08	AZZ026 - Southwestern Deserts	**Dust Storm**	1540-1700	Strong winds from nearby thunderstorms resulted in **dense blowing dust**.
	Maricopa County	Thunderstorm Wind	1830-2045	Winds caused power outages and property damage due to microburst winds as high as 65 mph. Winds blew down a tree near 78th Street and McDonald which damaged a covered parking structure.
	Maricopa County	Thunderstorm Wind	1915-1925	Winds speed measured at 68 mph at Bush Highway and Usery Pass Road. According to radar, these storms were moving west at about 35 mph.
	Pinal County	Thunderstorm Wind	1927-1940	Spotters in two locations in Apache Junction had gusts to 67 and 89 mph
7.13.08	Maricopa County	Thunderstorm Wind	1600-1630	Winds from a microburst blew down about 25 trees and damaged light poles at Mesa Community College. A security officer was slightly injured when the strong winds blew him from his golf cart.
7.26.08	Maricopa County	Thunderstorm Wind	1830	Power poles and trees were reported down at Chandler Heights and Greenfield roads, as well as Ocotillo and Higley and at Ocotillo and Power roads. Brief strong winds caused isolated damage to parts of the Southeast Valley
8.7.08	Maricopa County	Thunderstorm Wind	1940-1950	Power poles and lines reported blown down. As many as 70 poles were down in the Buckeye area alone. Note: the estimated wind gust of 60 knots is equivalent to 69 mph.
	Maricopa County	Thunderstorm Wind	2017-2020	Power poles down in Central Phoenix. Note: the estimated wind gust of 60 knots is equivalent to 69 mph.
	Maricopa County	Thunderstorm Wind	2020-2025	Large branches blown from trees. Note: the estimated wind gust of 55 knots is equivalent to 63 mph.
8.14.08	Pinal County	Thunderstorm Wind	1810-1850	Strong winds reported by spotter. Note: the estimated wind gust of 52 knots is equivalent to 60 mph.

ADEQ COMMENTS

	Maricopa County	Thunderstorm Wind	1812-1852	Several crashes on the Loop 202 were blamed on strong winds and rain. Power outages were reported after winds and rain moved through the East Valley. SRP reported about 3,000 customers were left without electricity... and APS reported 2,000 customers without power. Note: the estimated wind gust of 52 knots is equivalent to 60 mph.
	Maricopa County	Thunderstorm Wind	1838	Strong winds reported at Brown and Mesa. Trees were damaged. Note: the estimated wind gust of 50 knots is equivalent to 58 mph.
	Maricopa County	Thunderstorm Wind	1905	Winds at Chandler Airport reached 50 knots as severe thunderstorms moved toward the west. The southern and central portions of Arizona were very moist and unstable. Storms developed and moved toward the southwest and strong winds kicked up widespread areas of **blowing dust**. A Severe Thunderstorm Watch was in effect for much of the evening. Note: the measured wind gust of 50 knots is equivalent to 58 mph.
8.25.08	Maricopa County	Thunderstorm Wind	1510-1526	Microburst winds hit Chandler airport and flipped at least two planes. Winds also damaged a fence and other property. Northeast winds peaked at 67 mph at 3:25 pm. Thunderstorm winds over 80 mph damaged planes at Chandler Municipal Airport. Strong winds also blew down tress and damaged some homes in the Chandler area. **Dense blowing dust** was also reported. Note: the measured wind gust of 58 knots is equivalent to 67 mph.
8.30.08	NONE			
9.8.08	NONE			
9.11.08	Maricopa County	Thunderstorm Wind	1710-1720	Shingles were blown off homes, and a few trees were uprooted.
	Maricopa County	Thunderstorm Wind	1734-1742	Winds estimated to reach as high as 60 mph along with visibility to less than a 1/4 mile in **blowing dust**.
	Maricopa County	Thunderstorm Wind	1740	Flood control district sensor measured a gust to 60 mph.
	AZZ023-Greater Phoenix Area	**Dust Storm**	1745-1815	Thunderstorms moved steadily toward the northeast during afternoon hours. As a result, locally heavy rain, strong winds and very low visibility due to **dust and sand moved across the deserts**
	Maricopa County	Thunderstorm Wind	1815-1840	According to Arizona Public Service, 48 power poles across a distance of three miles were blown down along Old Highway 80 between Buckeye and Gila Bend. Winds were measured up to 56 mph on the Palo Verde Nuclear Generating Station tower.
9.26.08	NONE			
9.27.08	NONE			
11.9.08	NONE			
12.13.08	NONE			

ADEQ COMMENTS

Figure 2: NWS Forecast Areas



ADEQ COMMENTS

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ADEQ COMMENTS

ADEQ References

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ADEQ COMMENTS

None.

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ADEQ COMMENTS

None.

PROPOSED CONSENT DECREE, CLEAN AIR ACT CITIZEN SUIT

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9170–9]

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Proposed Consent Decree; Request for Public Comment.

Text of Notice

SUMMARY: In accordance with **section 113(g) of the Clean Air Act**, as amended (CAA), 42 U.S.C. 7413(g), notice is hereby given of a proposed consent decree, to address a lawsuit filed by Sandra L. Bahr, Diane E. Brown and David Matusow, *Bahr, et al.* v. *Jackson,* No. CV 09–2511–PHX–MHM (D. Ariz.). Plaintiffs filed a deadline suit to compel the Administrator to take final action under **section 110(k)(2) of the CAA** on the "MAG 2007 Five Percent Plan for PM–10 for the Maricopa County Nonattainment Area," Maricopa Association of Governments, 2007 (the 5% Plan), a State implementation plan (SIP) revision submitted to the U.S. Environmental Protection Agency (EPA or Agency) in December 2007 by the State of Arizona pursuant to **section 189(d) of the CAA**. The proposed consent decree establishes deadlines for EPA action on the 5% Plan.

DATES: Written comments on the proposed consent decree must be received by *August 2, 2010*

ADDRESSES: Submit your comments, identified by Docket ID number EPA–HQ–OGC–2010–0428, online at http://*www.regulations.gov* (EPA's preferred method); by e-mail to *oei.docket@epa.gov;* mailed to EPA Docket Center, Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; or by hand delivery or courier to EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC, between 8:30 a.m. and 4:30 p.m. Monday through Friday, excluding legal holidays. Comments on a disk or CD-ROM should be formatted in Word or ASCII file, avoiding the use of special characters and any form of encryption, and may be mailed to the mailing address above.

FOR FURTHER INFORMATION CONTACT: Geoffrey L. Wilcox, Air and Radiation Law Office (2344A), Office of General Counsel, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone: (202) 564–5601; fax number (202) 564–5603; e-mail address: *wilcox.geoffrey@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Additional Information About the Proposed Consent Decree

The proposed consent decree would resolve a lawsuit seeking to compel action by the Administrator to take final action under **section 110(k)(2) of the CAA** on the 5% Plan submitted by the State of Arizona to EPA as revisions to the SIP for the Maricopa County serious PM–10 nonattainment area as required by **section 189(d) of the CAA**.

The proposed consent decree requires EPA to sign for publication in the **Federal Register** no later than September 3, 2010, a notice of the Agency's proposed action on the 5% Plan pursuant to **section 110(k) of the CAA** and sign for publication in the **Federal Register** by January 28, 2011, a notice of the Agency's final action on the 5% Plan pursuant to **section 110(k)**. If EPA fulfills its obligations, Plaintiffs have agreed to dismiss this suit without prejudice.

For a period of thirty (30) days following the date of publication of this notice, the Agency will accept written comments relating to the proposed consent decree from persons who were not named as parties or intervenors to the litigation in question. EPA or the Department of Justice may withdraw or withhold consent to the proposed consent decree if the comments disclose facts or considerations that indicate that such consent is inappropriate, improper, inadequate, or inconsistent with the requirements of the CAA. Unless EPA or the Department of Justice determines, based on any comment submitted, that consent to this consent decree should be withdrawn, the terms of the decree will be affirmed.

II. Additional Information About Commenting on the Proposed Consent Decree

A. How can I get a copy of the consent decree?

The official public docket for this action (identified by Docket ID No. EPA–HQ–OGC–2010–0428) contains a copy of the proposed consent decree. The official public docket is available for public viewing at the Office of Environmental Information (OEI) Docket in the EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the OEI Docket is (202) 566–1752.

An electronic version of the public docket is available through *http://www.regulations.gov.* You may use the *http://www.regulations.gov* to submit or view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Once in the system, key in the appropriate docket identification number then select "search".

It is important to note that EPA's policy is that public comments, whether submitted electronically or on paper, will be made available for public viewing online at *http://www.regulations.gov* without change, unless the comment contains copyrighted material, CBI, or other information whose disclosure is restricted by statute. Information claimed as CBI and other information whose disclosure is restricted by statute is not included in the official public docket or in the electronic public docket. EPA's policy is that copyrighted material, including copyrighted material contained in a public comment, will not be placed in EPA's electronic public docket but will be available only in printed, paper form in the official public

docket. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the EPA Docket Center.

75 FR 38521

B. How and to whom do I submit comments?

You may submit comments as provided in the **ADDRESSES** section. Please ensure that your comments are submitted within the specified comment period. Comments received after the close of the comment period will be marked "late." EPA is not required to consider these late comments.

If you submit an electronic comment, EPA recommends that you include your name, mailing address, and an e-mail address or other contact information in the body of your comment and with any disk or CD ROM you submit. This ensures that you can be identified as the submitter of the comment and allows EPA to contact you in case EPA cannot read your comment due to technical difficulties or needs further information on the substance of your comment. Any identifying or contact information provided in the body of a comment will be included as part of the comment that is placed in the official public docket, and made available in EPA's electronic public docket. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

Use of the *http://www.regulations.gov* Web site to submit comments to EPA electronically is EPA's preferred method for receiving comments. The electronic public docket system is an "anonymous access" system, which means EPA will not know your identity, e-mail address, or other contact information unless you provide it in the body of your comment. In contrast to EPA's electronic public docket, EPA's electronic mail (e-mail) system is not an "anonymous access" system. If you send an e-mail comment directly to the Docket without going through *http://www.regulations.gov*, your e-mail address is automatically captured and included as part of the comment that is placed in the official public docket, and made available in EPA's electronic public docket.

Dated: June 28, 2010.

Kevin W. McLean,

Acting Associate General Counsel.

[FR Doc. 2010–16172 Filed 7–1–10; 8:45 am]

BILLING CODE 6560–50–P

these errors or omissions, but can make no representation regarding the accuracy of the information provided.

CAROLYN S. ALLEN
DISTRICT 8

STATE SENATOR
FORTY-NINTH LEGISLATURE

COMMITTEES:

HEALTH, CHAIRMAN
VETERANS & MILITARY AFFAIRS
COMMERCE

Arizona State Senate

July 6, 2010

Mr. Glenn Hamer, President and CEO
Arizona Chamber of Commerce and Industry
1850 North Central Avenue, Suite 1433
Phoenix, AZ 85004

Mr. Todd Sanders, President and CEO
Greater Phoenix Chamber of Commerce
201 North Central Avenue, 27th Floor
Phoenix, AZ 85004

Mr. Barry Broome, President and CEO
Greater Phoenix Economic Council
Two North Central Avenue, #2500
Phoenix, AZ 85004-4469

Mr. Roger Ferland, Partner
Quarles and Brady, LLP
Two North Central Avenue
Phoenix, AZ 85004-2391

RE: ARIZONA AIR QUALITY ISSUES AND RELATED ENVIRONMENTAL CONCERNS

Dear Messrs. Hamer, Sanders, Broome and Ferland:

There is a looming environmental issue with potentially negative economic consequences that requires your attention: The possibility of US Environmental Protection Agency (EPA) sanctions against the State of Arizona for its failure to adequately address the reduction of particulate matter (PM10) required to meet the health standards under the Clean Air Act (CAA) National Ambient Air Quality Standards (NAAQS). From a public health and economic perspective, this is an issue that must receive immediate priority and attention.

My tenure in the Arizona Legislature concludes at the end of this year and so my bully pulpit to raise these issues will be diminished. This issue and other important environmental matters will require a long-term sustained effort, if we ever hope to make Arizona truly sustainable and globally competitive. It is imperative, therefore, that you and your organizations, on behalf of your members and the citizens of this state, petition the appropriate elected officials of this state for a specific and scientifically sound strategy for addressing the environmental strategies needed to address our air quality, water quality and other general environmental concerns on the county and state level. This must happen as early as possible.

1700 W. Washington, Senate Wing, Room 303, Phoenix, AZ 85007
Phone: (602) 926-4480; Fax (602) 926-3429 EMAIL: callen@azleg.gov

I am requesting that as business leaders in Arizona you rally your members to support a healthy environment, which is so important to Arizona's long-term success, and that you start with the immediate concern regarding the threat from EPA to impose a federal implementation plan (FIP) to address PM10 emissions in Maricopa and Pima Counties, and to inflict a sanction on the state in the form of withdrawing federal highway funds.

As you know, the history of Arizona's efforts to comply with the PM10 NAAQS has been a long and difficult one. The counties and ADEQ have submitted state implementation plans (SIPs) to EPA in the past that were designed to bring us into compliance. These were sound plans at that time, but there are unique challenges for desert communities like ours and the measures in those plans have failed to prevent situations where we exceed NAAQS at air quality monitors stationed in Maricopa and Pinal Counties.

For our state to avoid the FIP sanctions, we must have policy and business leaders take up this issue and drive the necessary changes in state and local laws and regulations, to allow us to comply with the federal requirements. Your organizations' help in resolving this issue is critical, and time for your engagement is now. Failure to collectively succeed on this issue must not be acceptable because the loss of federal highway funds, especially at this time, will be extraordinarily painful as we seek to bring Arizona out of the current recession and work to improve our infrastructure in preparation for the economic upturn.

I respectfully request that you take these issues to your respective boards and, if necessary, seek permission to work with all relevant stakeholders to develop an effective SIP for PM10 that will be acceptable to the EPA.

This is not a one-time effort. Arizona needs strong leadership to plan for future environmental policies for our counties and the state, and I hope you will be counted among those who will make continuous effort to ensure that Arizona's environmental policies remain within the influence of Arizona stakeholders.

Please contact me no later than Monday, July 19, to respond to this letter. I look forward to hearing from you.

Sincerely,

Carolyn S. Allen

CAROLYN S. ALLEN
State Senator

cc: Gov. Jan Brewer
Senate President Bob Burns
House Speaker Kirk Adams
ADEQ Director Ben Grumbles

Related Practice Areas

Environmental

Indian Law

Environmental Law & Natural Resources in Indian Country

Air Emissions Permitting & Control Strategies

CERCLA (Superfund)/RCRA Remediation & Litigation

Compliance Advice & Enforcement Defense

Due Diligence in Corporate & Property Transactions

Emergency Response & Crisis Management

Energy

Natural Resource & Natural Resource Damages

Project Permitting and Facility Siting

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Toxic Tort Defense

Utilities & Energy Regulation

Waste/Materials Management & Recycling

Water Discharges Permitting & Control Strategies

Water Law

Wetlands

Clean Energy, Climate Change & Sustainability

Jet Fuel Consortiums

Roger K. Ferland

Partner

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roger.ferland@quarles.com

Professional Experience

An Arizona native, Roger Ferland has practiced in the areas of environmental and natural resources law in both the public and private sector since 1975. Mr. Ferland's recent experience includes:

- Defense of high technology company, aerospace manufacturer, furniture manufacturer, chemical distributor, waste management company, power plant and mining companies in civil enforcement actions involving a variety of environmental laws.
- Representation of a steel manufacturer, a nonferrous smelter and a utility company in obtaining all of the environmental permits, licenses and approvals necessary to construct, expand and operate their facilities.
- Representation of a statewide business coalition of trade associations and companies in negotiations that led to the Arizona Comprehensive Air Quality Act.
- Representation of developers in sophisticated Brownfield acquisitions and development.
- Representation of power plants, property owners, developers, and other business entities in power plant and transmission line siting cases before the Arizona Corporation Commission.
- Advising an Arizona Indian tribe in the development of the nation's first comprehensive Tribal Implementation Plan under the Federal Clean Air Act as well as wastewater, pesticide, waste management and water quality regulatory programs.
- Representation of clients as responsible parties at state and federal superfund sites throughout the western United States.
- Advising the fastest growing county in the nation on air quality issues including a complete rewrite of the county's air quality regulations.
- Chaired or co-chaired two gubernatorial air quality task forces that made recommendations to the State Legislature that resulted in a series of significant laws dealing with air pollution in the Phoenix metropolitan area.

Quarles & Brady LLP

Education and Honors

- Duke University (J.D., *with distinction*, 1974)
- Lewis & Clark College (B.A., *magna cum laude*, 1968)

Bar Admissions

Arizona, 1974

Professional Recognition

- Listed in *Chambers USA*® (only Arizona environmental attorney with Chambers' highest "Star" ranking). Arizona Environmental Lawyers including Water Rights.
- Listed in *The Best Lawyers in America*® (1995-present: Environmental Law); named the Best Lawyers' 2010 Phoenix Environmental Lawyer of the Year.
- Martindale-Hubbell AV® Preeminent™ Peer Review Rated (5.0 out of 5).
- First Recipient, Michael J. Brophy Distinguished Service Award presented by the State Bar of Arizona Environmental & Natural Resources Law Section (2008).
- Founding Fellow, American College of Environmental Lawyers and its only Arizona member.
- Listed in the *Arizona Business Journal*'s "Best of the Bar" and "Who's Who in Arizona Business."
- Dragonlaw 3000 (country's top 3000 lawyers in all specialties).

Professional and Civic Activities

- State Bar of Arizona (Member, Administrative Law Committee; Co-chair, Chamber of Commerce and Industries' Air Quality Subcommittee).
- Former Chair and Co-chair, Governor's Air Quality Strategies Task Forces (Appointed by Governor's Symington and Hull).
- Roger has served as a member of a number of both formal and informal legislative ad hoc committees on environmental issues.
- He is an adjunct professor for environmental law at Arizona State University College of Law.
- Serves on various civic, arts and charitable organizations including current Chair of the Board of Arizona Audubon and Co-chair of Audubon's Science & Public Policy Committee.

Selected Presentations/Publications

- "From the Backburner to the Frontburner: A Critical Look at Environmental Justice," his annual lecture to the Air & Water Management Association and the Environmental & Natural Resource Law Section of the State Bar of Arizona, February 25, 2010.

- "Economic Development Opportunities in the American Recovery and Reinvestment Act – Solar Energy," sponsored by Greater Phoenix Chamber of Commerce.

- "My Perspective on the Energy Initiatives in the American Recovery & Reinvestment Act, " The Stimulus Plan: What does it mean for Arizona business? sponsored by Greater Phoenix Chamber of Commerce, Quarles & Brady & 20 companies.

- "What You Should Know About the Obama Administration's Environmental & Energy Initiatives," AWMA & ENRLS Joint Meeting.

- "State Implementation Plans & New Source Review," Environmental Law class at Arizona State University.

- "Permitting Renewable Energy Sources," A&WMA/ENRLS Joint Meeting.

- 2008 Gatekeeper Regulatory Roundup, Sponsored by EPAZ, ACHMM and AZSERC, Chair, Air Quality Enforcement Policies Panel.

- "Greenhouse Gas Regulations — What Should You Be Doing Now?," Addressing Climate Change in Arizona (Regulatory Alternatives, Practical Implementation, and Market Analysis), Sponsored by Quarles & Brady, Trinity Consultants & Element Markets, LLC.

- Panelist, "History of the Environmental Quality Act: Past Challenges and the Beginning of ADEQ," The 20th Anniversary of the Environmental Quality Act and ADEQ: Assessing, Protecting and Remediating the State's Water Quality. What Future Challenges?"

- Chair and Program Moderator, 2007 Air Quality Conference, sponsored by Arizona Association of Industries and Maricopa County Air Quality Control Department.

- "Air Quality Regulations 101," Environment Committee, Arizona Mining Association.

Quarles & Brady LLP

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RELATED PRACTICE GROUPS

- Environmental
- Air Emissions Permitting & Control Strategies
- Brownfields & Real Property Development
- CERCLA (Superfund)/RCRA Remediation & Litigation
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- Energy
- Project Permitting and Facility Siting
- Pulp & Paper Industry
- Toxic Tort Defense
- Utilities & Energy Regulation
- Waste/Materials Management & Recycling
- Water Discharges Permitting & Control Strategies
- Clean Energy, Climate Change & Sustainability

Michael S. McCauley / Partner

Professional Experience
Mike McCauley served as chair of Quarles & Brady's National Environmental Law Practice Group from 1986 to 2007. He counsels corporate clients in all aspects of environmental management and dispute resolution. His practice includes special emphasis on the Clean Air Act and Clean Energy issues, environmental assessments in business and real estate transactions, and providing advice on environmental compliance issues. Mr. McCauley represents clients in state and federal courts, and before the Wisconsin Department of Natural Resources, the U.S. Environmental Protection Agency and other state and federal environmental agencies. His recent experience includes:

- Representing a variety of industrial clients (paper mills, foundries and general manufacturers) in the defense of Clean Air Act enforcement cases, Notices of Violation and civil investigations.
- Providing strategic advice on environmental due diligence issues for mergers and acquisitions of several large national corporations. Mr. McCauley has also been advising clients on alternative fuel and renewable energy projects and on carbon regulation issues.
- Representing a large Midwestern utility in the environmental permitting for the construction and operation of 2,230 megawatts (MW) of new electrical power generation, including two 500 MW combined cycle gas-fired units at one location and two 615 MW advanced technology, coal-based generation units at a second location.
- Mr. McCauley serves as primary outside environmental legal counsel for two national paper manufacturing companies, each of which has production facilities located throughout the United States.

Education and Honors
- University of Iowa College of Law (J.D., *with highest distinction*, 1977)
  - *Iowa Law Review* (Member, Board of Editors, 1976-1977).
  - Order of the Coif (Member).
- Harvard University (M.P.A., 1974)
- University of Notre Dame (B.A., *magna cum laude*, 1969)

Bar Admissions
Wisconsin, 1977

Court Admissions
U.S. District Court, Eastern District of Wisconsin, 1977

U.S. District Court, Western District of Wisconsin, 1977
U.S. Court of Appeals, 7th Circuit, 1977

Professional Recognition
American College of Environmental Lawyers (Elected Fellow, 2009).

Listed in *Chambers USA*® (2010: Environmental Law).

The Best Lawyers in America® (1991-present: Environmental Law).

Martindale-Hubbell AV® Peer Review Rated.

Professional and Civic Activities

Member: State Bar of Wisconsin (Board of Directors, Environmental Law Section, 1990-1993); American Bar Association Air Quality Committee (Vice Chair, 1993-1999); American Bar Association Environmental Quality Committee (Vice Chair, 1990-1992); Milwaukee Bar Association; Wisconsin Air and Waste Management Association (Board of Directors); Wisconsin Environmental Law and Regulation Reporter (Advisory Board Member, 1992-1998); Environmental Law Institute; Wisconsin Environmental Working Group, Wisconsin Manufacturers & Commerce Association (1995-2007).

Member: Board of Directors of the Shorewood Foundation (2006-present); Village of Shorewood Board of Review, 1980-90 (Chairman, 1988-1990); Indo-Chinese Refugee Tutor Program (Advisory Board of Directors, 1988-93); St. Robert Parish Finance Committee (1982-86); Archbishop's Stewardship Appeal (Parish Chair), 1990-2008; Downtown Milwaukee Kiwanis Club, 2002-2005; National Association of Returned Peace Corps Volunteers.

Selected Presentations/Publications

- "Federal Clean Air Act Developments," Wisconsin State Bar Environmental Conference.
- "Practical Tips on Protecting Confidential Business Information Submitted to Environmental Agencies," Quarles & Brady Publication.
- "Protecting Your Rights in the Environmental Information Age," Quarles & Brady Publication.
- "Risk Assessment and its Role in Shaping Environmental Law and Policy, National Air and Waste Management Association Conference.
- "Developing and Maintaining a Corporate Environmental Compliance Program," Milwaukee Bar Association Conference.

RELATED NEWS

Forty-six Quarles & Brady Attorneys Recognized in Chambers USA

Quarles & Brady's McCauley Elected Fellow in the American College of Environmental Lawyers

Quarles & Brady Attorneys Named in The Best Lawyers in America® 2010 - 152 Quarles & Brady Attorneys Recognized Nationally

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RELATED PUBLICATIONS

Environmental Law Alert - Happy New Year! Are you Ready for Greenhouse Gas Regulation?

Environmental Law Alert - New EPA Final Rule Requires Reporting of Greenhouse Gas Emissions - Starting January 1, 2010

Environmental Law Alert - New Proposed Rules Establish Framework for Regulation of Greenhouse Gas Emissions Through Title V and PSD Permits

Quarles & Brady LLP

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- Utilities & Energy Regulation
- Waste/Materials Management & Recycling
- Water Discharges Permitting & Control Strategies

Cynthia A. Faur / Partner

Professional Experience

Cynthia Faur practices in the area of environmental law. In her practice, she has advised clients in all aspects of environmental regulation, including solid and hazardous waste regulation, clean water issues, endangered species issues and Superfund. Ms. Faur has substantial experience in advising clients on all facets of the Clean Air Act, including permitting, New Source Performance Standards, hazardous air pollutants, mobile sources, fuel additives and ozone depleting substances. She also advises clients on a variety of climate change and sustainability issues, including the regulation and reporting of greenhouse gas emissions.

Recently, Ms. Faur served as the Confidential Senior Policy Advisor to the Regional Administrator of the United States Environmental Protection Agency, Region 5. Her recent experience includes:

- Participating in the development and implementation of the Region 5 Framework for Addressing Climate Change and Clean Energy, a multi-media approach to encourage greenhouse gas emission reductions in the Great Lakes region.
- Contributing to the Midwestern Governors' Association' Energy Security and Climate Stewardship Platform for the Midwest and the Midwestern Greenhouse Gas Accord, as a member of the Carbon Markets Workgroup.
- Advising clients, including power generation and wind power companies, on air quality, noise, zoning, and endangered species issues related to the siting of new facilities.
- Negotiating Nonattainment New Source Review (NSR), Prevention of Significant Deterioration (PSD), and Title V permits for numerous clients throughout the United States.
- Successfully negotiating a major Clean Air Act settlement on behalf of a client which was part of U.S. EPA's initiative against power plants. This settlement not only resolved all potential past violations of the federal NSR and PSD rules but also provided a future resolution of certain claims concerning those permitting rules.
- Participating in the development of the environmental plan included in Chicago 2016's bid to host the 2016 Olympic and Paralympic Games.

Education and Honors

- University of Chicago Law School (J.D., 1993)
- University of Michigan (B.A., *high distinction*, 1989)
  - Phi Beta Kappa (Member).

Clean Energy, Climate Change & Sustainability

RELATED NEWS

Quarles & Brady Launches Clean Energy, Climate Change & Sustainability Industry Group

Quarles & Brady Welcomes Four New Partners to Growing Chicago Office

RELATED PUBLICATIONS

EPA Issues "Tailoring Rule" for Permitting Greenhouse Gas Emissions - Environmental Law Alert

Environmental Law Alert - Happy New Year! Are you Ready for Greenhouse Gas Regulation?

Environmental Law Alert - Courts Clash on Viability of Greenhouse Gas Public Nuisance Suits

More

Bar Admissions
Illinois, 1993

Professional Recognition
Leading Lawyers Network (Member).

Professional and Civic Activities

American Bar Association (Member, Environment, Energy and Resources Law Section).

Illinois State Bar (Member).

Selected Presentations/Publications

- Quoted, "Melt Down: The Winds of Change Buffet Climate Change Policy," *Inside Counsel*, April 2010.
- "Climate Change Policy and Regulation: Greenhouse Gas Reporting and Initiatives," Federation of Environmental Technologists presentation, October 20, 2009.
- Co-author, "It's Not Easy Marketing Your Products Green," *Executive View*, September 8, 2009.
- Contributed to article "Quarles Launches Clean Energy, Climate Group," published in LAW 360.
- "Comments of Minnesota Mining and Manufacturing Company on the Proposed Emission Market System for Northeastern Illinois," published in *Market-Based Approaches to Environmental Policy*.
- Co-author, "Can Emissions Trading Work Beyond a National Program? Some Practical Observations on the Available Tools," published in the *University of Pennsylvania Journal of International Economic Law*.
- Co-author, "Audit Privilege and Immunity," published in the Second Edition of the American Bar Association publication, *Environmental Aspects of Real Estate Transactions*.
- Co-author, "The United States Environmental System: an Evolution in Federal vs. Local Control," written for the China Council for International Cooperation on Environment and Development, Task Force on Environmental Governance, published as an occasional paper at Tsinghua University's School of Public Policy and Management.

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- Project Permitting and Facility Siting
- Sediment Remediation
- Toxic Tort Defense
- Utilities & Energy Regulation
- Waste/Materials Management & Recycling

Michelle A. De Blasi / Partner

Professional Experience

Michelle De Blasi practices in the area of environmental and natural resources law. She has experience advising clients on federal and state water quality issues, NEPA, Endangered Species Act, CERCLA, RCRA, natural resource damage issues, Oil Pollution Act, Clean Air Act, FOIA, underground storage tank issues, and other matters. Ms. De Blasi's specific recent experience includes:

- Assisting clients with siting, negotiating power purchase agreements, and permitting energy projects, including traditional fossil fuel power plants and renewable energy projects.
- Assisting clients in managing regulatory permitting processes under both state and federal laws, including NPDES permits, aquifer protection permits, and Clean Water Act Section 404 permits.
- Defending clients accused of environmental regulatory violations by government agencies and private parties under CERCLA, WQARF, RCRA, Clean Air Act, NPDES, and aquifer protection laws.
- Advising clients on regulatory compliance issues, including assistance with internal environmental audits and participation in the Voluntary Remediation Program.
- Conducting environmental due diligence reviews for clients engaged in real property transactions, including traditional and renewable energy power projects and Brownfield acquisitions/development.
- Representing several clients in the power plant and transmission line siting process regulated by the Arizona Corporation Commission.
- Advising an Arizona Indian Tribe in the development of the nation's first comprehensive Tribal Implementation Plan under the Clean Air Act.
- Advising the fastest growing county in the nation on air quality issues, including a complete rewrite of the county's air quality regulations.
- Counseling industrial and developer clients in connection with asbestos abatement projects, and underground storage tank removal and remediation projects.
- Representing clients at administrative hearings for appeals from agency decisions and in appeals of administrative decisions to Superior Court.

Education and Honors

- University of Washington School of Law (J.D., 1998)

Water Discharges Permitting & Control Strategies

Water Law

Clean Energy, Climate Change & Sustainability

Indian Law

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RELATED NEWS

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Michelle De Blasi Elected to Board of Directors for Air & Waste Management Association

RELATED PUBLICATIONS

Environmental Law Alert - Renewable Energy, Energy Efficiency, and Electricity Transmission Funding Opportunities in the American Recovery and Reinvestment Act of 2009

Environmental Alert - Articles: PM2.5 Emissions; Federal Air Rule; NEPA Procedures; Superfund Sites; Biodegrading Wood Waste; Spill Reporting; Climate Information

Environmental E-Mail Alert - June 2007 Edition

More

Certificate of Emphasis in Environmental Law.
- Arizona State University (B.S., *magna cum laude*, 1993)

Bar Admissions
Arizona, 2003
Washington, 1998

Professional Recognition
Department of Commerce Attorney of the Year Award (Recipient).

Phi Beta Kappa (Member).

Professional and Civic Activities

- Air & Waste Management Association (Chair & Board of Directors, Grand Canyon Chapter).
- Arizona Chamber of Commerce (Water Subcommittee).
- Arizona Technology Council (Environment, Natural Resources & Safety Committee).
- Maricopa County Bar Association (Environment and Natural Resources Law Section).
- South Mountain Village Planning Committee (Member).
- State Bar of Arizona (Executive Council, Environment and Natural Resources Law Section).
- Valley Forward Association (Executive Committee, Board of Directors, Chair: Energy Subcommittee).
- Women's Metropolitan Arts Council of the Phoenix Art Museum.

Selected Presentations/Publications

- Author, "The Key to Our Sustainable Future is Through Economic Development," *Valley Forward*, May 2010.
- Author, "Renewable Energy Sound Off," *Phoenix Business Journal*, April 9, 2010.
- Quoted, "Power Center: Local groups are working to protect the link between water and energy," *Arizona Business Magazine*, December 2009.
- Author, "Illuminating Solar Power Agreements," *Counsel to Counsel*, November/December 2009.
- Author, "How To Avoid Regulatory Pitfalls In Solar Energy Projects," *Environmental Leader*, December 7, 2009.
- Co-author (with Peter Tomasi), "The Green Paradox," *Bloomberg Law Reports: Sustainable Energy*, November 2009.
- "Energy Efficiency and Renewable Energy: Legal and Practical Issues," 33rd Arizona State School Boards

Association Law Conference, September 11, 2009.

- "Do You Know Your Company's Carbon Footprint and Why Should You?," Specialized CLE for In-House Counsel sponsored by Quarles & Brady.
- "Greenhouse Gas Regulations—What Should You Be Doing Now?," Addressing Climate Change in Arizona (Regulatory Alternatives, Practical Implementation, and Market Analysis), sponsored by Quarles & Brady and Trinity Consultants & Element Markets, LLC.
- "The Natural Resource Damage Process," Arizona State Bar Environmental & Natural Resources Law Section Seminar.
- "Avoiding Criminal Environmental Sanctions: The Best Defense is Good Offense," 1st Annual Air Quality Outlook Conference, sponsored by Arizona Association of Industries.
- Co-author, "Natural Resource Damages under the Oil Pollution Act of 1990 and International Agreements: A Comparative Analysis," The Maritime Law Association of the United States, *The MLA Report*, November 6, 1998.

ROGER FERLAND'S AIR QUALITY WORK FOR PUBLIC ENTITIES

Chaired the Air Quality Strategies Task Force for Governor Symington.

- Adopted recommendations for the Governor, State Legislature, MAG, and Maricopa County for attaining the one-hour ozone NAAQS and 24-hour and annual PM-10 NAAQS.

Co-chaired the Air Quality Strategies Task Force for Governor Hull.

- Adopted recommendations for the Governor, State Legislature, MAG, and Maricopa County for additional control measure for ozone and PM-10.

Successfully represented Clark County/Las Vegas in challenge by Western States Petroleum Association to the County's winter oxygenated fuels program for CO.

Successfully represented Clark County/Las Vegas in obtaining change in nonattainment area designation boundaries for ozone after EPA Region 9 had designated much larger boundaries.

Advised Clark County/Las Vegas in complete rewrite of County's air quality permitting rules.

Advising the Gila River Indian Community in development of the nation's first comprehensive Tribal Implementation Plan under the Clean Air Act.

Advising the Salt River Pima Maricopa Indian Community in development of an air quality regulatory program for the Community.

As Assistant Attorney General and Senior Environmental Counsel for the Attorney General's Office in the late 1970's, was responsible for all air quality-related regulation and enforcement, including rules drafting, assisting in the preparation of State Implementation Plan packages for submission to EPA, negotiations with EPA on a wide range of matters.

General Firm Air Quality Experience and Expertise.

- Helping clients obtain Prevention of Significant Deterioration ("PSD") and Nonattainment New Source Review ("NNSR") permits for facilities located throughout the United States.

- Assisting clients in obtaining Title V and NPDES permits in Arizona, Connecticut, Illinois, Indiana, Michigan, Nevada, Ohio, Wisconsin and elsewhere.

- Regularly counseling utilities on matters involving complex Clean Air Act issues including EPA's 2002 NSR Reform rules; Title IV of the Clean Air Act (Acid Rain) and its relation to the Clean Air Interstate Rule (CAIR); federal and state New Source Performance Standards (NSPS); and National Emission Standards of Hazardous Air Pollutants (NESHAP) compliance issues.

- Successfully representing a client in a two-week-long contested case hearing and follow-up judicial review action involving a third party challenge to the New Source Review air permit for one of the largest coal handling and transshipping facilities in the western hemisphere.

- Successfully representing a major investor-owned utility in an administrative proceeding that upheld the Clean Air Act construction permit for a new $2.2 billion, 1260 MW coal-fired, baseload electric generating facility. This was the first administrative case which determined that Integrated Gasification Combined Cycle (IGCC) process technology was not required by law to be considered as an alternative air emission control technology in the BACT and LAER analyses for two proposed Super Critical Pulverized Coal (SCPC) generating units.

- Representing clients in complex air enforcement cases brought by U.S. EPA and variety state agencies, involving violations of federal NSR and NESHAPs, as well as state air quality regulations. In a number of cases, the penalties originally demanded exceeded $100 million.