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Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Henry R. Darwin  
Director

February 13, 2013

Joy E. Herr-Cardillo  
Arizona Center for Law in the Public Interest  
2205 E. Speedway Blvd  
Tucson, AZ 85719

RE: Response Submitted on February 12, 2013 to ADEQ Concerning the Request for Public Comments on the Exceptional Event Demonstration Packages for the Greater Phoenix Area Posted on January 14, 2013.

Dear Ms. Herr-Cardillo;

Thank you for reviewing and providing comments to these exceptional event demonstrations. We agree that ADEQ's highest priority is to protect public health. Collectively, we have made great strides in improving the levels of PM10 in Maricopa County.

Your letter regarding modeling analysis states that such analysis would provide additional geographical and temporal information. We disagree. As described in the exceptional event demonstration, ADEQ examined multiple sources of evidence to characterize the events. In fact, we had access to an abundance of data available to develop the demonstrations. These data types include:

- Actual radar data showing the thunderstorm movement.
- Actual photographs from the Phoenix area visibility camera network, with 5 minute intervals, from various locations across the valley.
- Actual monitoring data with 1 hour and 5 minute resolution showing temporal and spatial relationship of dust to monitors.
- Actual meteorological data available from multiple sites throughout the area.

Per your previous letter, ACLIPI has been working on a modeling analysis prior to the January 1, 2013 comment letter. As you have no doubt found, running these models can be time consuming. Models such as the WRF and Hysplit back trajectory have limitations that affect their usefulness in exceptional event analysis. For example, the WRF model is a forward looking, predictive model most useful as a tool to provide advanced notice of potential inclement weather. The Hysplit model can provide back trajectories that estimate an air parcels movement over time. However, the model is limited by the resolution of meteorological inputs and cannot accurately estimate air parcel movement for small scale atmospheric phenomenon such as thunderstorm outflow. ADEQ did not identify any changes that could be made to the exceptional

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event demonstrations through modeling. None the less, we would be interested in you sharing your modeling methods and results with us when they are available.

ADEQ's approach to documentation of these exceptional events considers a preponderance of the monitored evidence to support the conclusions. ADEQ used available, existing evidence that is scientifically compelling. ADEQ disagrees that quantity of information leads to a better quality demonstration. Because the preponderance of available evidence supports the demonstration and was included in the work, modeling analysis will not, in ADEQ's opinion, change the outcome of the demonstrations. ADEQ determined that there was no need to provide the additional time consuming and costly analysis to the demonstrations.

ADEQ provides for the protection of public health through numerous programs. ADEQ's air pollution forecast program and dust action general permit program in Maricopa County provides advanced notice to the public when forecaster determine that an event is possible. Also, Maricopa County has implemented a rapid response air monitoring network which allows people to take immediate action to protect themselves from dust. And finally, a portion of Pinal County is now a separate PM<sub>10</sub> non-attainment area and ADEQ is currently developing a state implementation plan for the area. ADEQ will add ACLIPI to the stakeholder list.

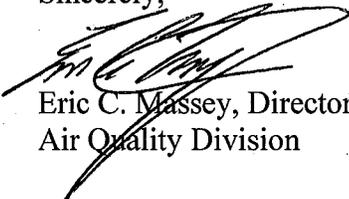
ACLIPI provided comments regarding sources of dust and evaluation of controls outside of Maricopa County. Scientific studies demonstrate that sustained winds speeds and wind gusts like those observed during the windblown dust event demonstrations included in this comment period can entrain dust from natural desert soils and also overwhelm reasonable controls that are meant to prevent the entrainment of dust (Macpherson et al., 2008; Roney and White, 2004; Loosemore and Hunt, 2000; Harris and Davidson, 2009). While there is no comprehensive and conclusive study that gives the threshold speeds for the sustained winds or wind gusts that are necessary to entrain and transport dust from the varied natural and anthropogenic terrain and soil types throughout the southwest, data and observations in the 2011 and 2012 exceptional event demonstrations, often including sustained winds from 20-30 mph and gusts from 30-40 mph, provide compelling evidence that wind speeds in upwind source areas were significant enough to entrain dust from natural desert soils and overwhelm all controls. The purpose of the exceptional event demonstration was to show that there was no possible way for the Maricopa County non-attainment area to prevent the exceedances. As mentioned above, a portion of Pinal County was designated non-attainment for PM<sub>10</sub> in May of 2012. The planning process will identify controls for the area and source contributions will be identified. ADEQ will welcome information ACLIPI provides from its modeling to ensure sources area controlled through the new state implementation plan for Pinal.

ACLIPI provided comment regarding intra-state particulate matter transport. The state of Arizona is the 6<sup>th</sup> largest state ranked upon land area and Pinal and Maricopa counties are larger than entire states in the East. Because of this, it is reasonable to treat western states differently based upon size, diversity of terrain and meteorology. The exceptional event rule and guidance do not restrict this treatment. Finally, ADEQ is currently working through the state implementation plan process for Pinal County.

ACLPI indicated that ADEQ is responsible for implementation of the Clean Air Act in the state. However, it should be recognized that determinations of attainment/non-attainment are made for each pollutant and the area(s) impacted. For Maricopa County, the AgBMP program was originally defined in the 2001 Maricopa County PM10 SIP, and later strengthened in 2007 per Senate Bill 1552. It was not until 2009 that the Arizona Legislature passed Senate Bill 1225 revising the AgBMP Program to include any future PM10 non-attainment areas. Thus, Pinal County became part the AgBMP program when they were designated non-attainment in May 2012, just months before the 2012 monsoon season. Aside from Rillito, which is a small Non-Attainment Area and pre-exists AgBMP discussion, Pima County is in attainment for PM10, so it is not covered by the AgBMP Program. Even though Pinal County was just recently designated PM10 non-attainment, both ADEQ's AgBMP inspector and the Department of Agriculture's consultation and training program have been working with Pinal County's agricultural community. Storms commonly originate in these areas. Science shows that winds generated by these storms overcome natural and reasonable controls. The exceptional events demonstrations show that the high dust levels were a result of dust generated outside of the Maricopa County non-attainment area and were sufficient to overwhelm Best Available Control Measures (BACM) and Most Stringent Measures (MSM) already in place in Maricopa County.

We appreciate your participation in this process and join you in the commitment to continue to protect public health for the citizens of Arizona.

Sincerely,



Eric C. Massey, Director  
Air Quality Division