Clarifications Regarding the 2004 *Extreme Ozone Attainment Demonstration Plan for the Revoked Federal 1-hr Ozone Standard*

August 21, 2008

Background

On October 8, 2004 the Governing Board of the San Joaquin Valley Unified Air Pollution Control District (District) adopted the *2004 Extreme Ozone Attainment Demonstration Plan* (*EOADP*), which fulfilled the District's plan commitment for the federal 1-hr ozone standard as outlined by the U.S. Environmental Protection Agency (EPA) in their final rule approving the state of California's request to classify the San Joaquin Valley Air Basin as extreme nonattainment for the federal 1-hr ozone standard (69 *FR* 20551). Submittal of this plan to EPA also fulfilled one of three options for fulfilling 1-hr ozone planning requirements as outlined by EPA in their Phase I Implementation Rule for the federal 8-hr ozone standard [40 CFR 51.905(a)(1)]. On October 28, 2004, the California Air Resources Board (ARB) approved this plan and forwarded it to EPA by the November 15, 2004 deadline established by EPA (69 *FR* 20551). EPA found the transportation conformity budgets in the plan to be adequate on February 15, 2005 (70 *FR* 7734). The 2004 *EOADP* became complete by operation of law on May 15, 2005 (Section 110(k)(b) of the federal Clean Air Act).

On June 15, 2005, EPA's revocation of the federal 1-hr ozone ambient air quality standard became effective (40 CFR 50.9(b)), as described in the Phase I Implementation Rule for 8-hr ozone (69 *FR* 23951). On December 22, 2006 the U.S. Court of Appeals for the District of Columbia Circuit vacated the entire Phase I Implementation Rule for 8-hr ozone, but later (June 8, 2007) let stand EPA's revocation of the federal 1-hr ozone standard. In part because of uncertainties associated with litigation on the Phase I Implementation Rule for 8-hr ozone, and in part because of a collective focus on challenges associated with developing state implementation plans (SIPs) for 8-hr ozone and PM2.5, EPA delayed its approval action on the 2004 *EOADP*. In early 2008, EPA resumed their review of the plan, which was intensified due to a lawsuit filed by the Association of Irritated Residents and the Natural Resources Defense Council [No. CV 08-0227-SC (N. D. Cal.)]. This lawsuit seeks to compel the EPA administrator to take action on three SIP revisions submitted to EPA by the State of California, one of which is the 2004 *EOADP* (73 *FR* 39288). EPA developed a proposed consent decree with the plaintiffs and agreed to fulfill its obligations under Section 110(k) of the federal Clean Air Act to act on the three California SIPs by mutually agreed upon deadlines. EPA has agreed to sign *Federal Register* notices for the proposed approval actions by October 15, 2008, and to sign *Federal Register* notices of final actions by January 15, 2009.

After conducting a thorough review of the 2004 *EOADP*, EPA requested specific information, which if provided by ARB and the District, would facilitate their approval

action on the 2004 *EOADP*. A June 6, 2008 letter from Deborah Jordan (Director of the Air Division for EPA's Region 9) to Seyed Sadredin (Air Pollution Control Officer for the San Joaquin Valley Air Pollution Control District), outlines these information needs. Because many of the items requested by EPA are for recent and updated information not available at the time the 2004 *EOADP* was developed, or reflect post-2004 changes in law, regulation or policy, ARB and the District largely view them as clarifications to the original plan, and do not consider them as SIP revisions. However, to accommodate EPA's requests as outlined in the June 6, 2008 letter, the District is requesting that ARB transmit the clarifications to EPA, if accepted by the District Governing Board, for incorporation as part of the SIP.

The clarifications consist of the following principal components:

- Withdrawal of the Reasonably Available Control Technology (RACT) portion of the plan (Section 4.2.5), which will be fulfilled when the District addresses the RACT requirements by enhancing the 8-hr ozone RACT SIP (40 CFR 51.912);
- Updated control measure calculations demonstrating actual emission reductions from adopted rules, which provide a surplus of emissions reductions that is more than sufficient to fulfill the long-term measure commitment in the 2004 *EOADP*, thus eliminating the need for contingency measures to backstop the long-term measure commitment;
- Updated ROP calculations reflecting recent EPA policy decisions regarding emission reductions associated with pre-1990 motor vehicle emission standards; and
- Updated contingency measure discussion that reflects the excess reductions not needed to demonstrate ROP and excess reductions from the state's motor vehicle emission control program. Additional reductions are also available from new control measures developed for the *2007 Ozone Plan* (addressing the federal 8-hr ozone standard) and the *2008 PM2.5 Plan*, that can be used for contingency measures for the 2004 *EOADP*; upon adoption, these measures would provide reductions that were not used in ROP or attainment demonstration for 1-hr ozone and that would go into effect without further action by the District, ARB or EPA, therefore meeting the definition of contingency measures.

In addition to the above items, EPA in July 2008 identified one additional clarification item requiring updating:

- Motor vehicle emission data showing downward trends for all years in the planning horizon covered by the 2004 *EOADP*, not just the ROP and attainment years.

The following paragraphs discuss each of these in more detail.

Reasonably Available Control Technology (RACT)

The 2004 *EOADP* was intended to meet the RACT requirements as outlined in EPA's final rule approving California's request to reclassify the San Joaquin Valley Air Basin to extreme nonattainment for the federal 1-hr ozone standard (70 *FR* 20551-20552), as well as prior *Federal Register* rulemakings regarding severe nonattainment (67 *FR* 61784). In developing its Phase 2 Implementation Rule for the federal 8-hr ozone standard (published November 29, 2005 and effective January 30, 2006), EPA articulated new and more robust interpretations of RACT requirements first presented in the 1990 amendments to the federal Clean Air Act. These interpretations included development of a RACT SIP to be submitted to EPA by September 15, 2006. The District developed its RACT SIP in 2006 and the District Governing Board adopted it on August 17, 2006 and transmitted it promptly to ARB for submittal to EPA. ARB submitted the adopted RACT SIP to EPA on January 31, 2007 as part of a package of five California RACT SIPs. This RACT SIP reflected a major source cutoff of 25 tpy, which was the major source cutoff in effect for the SJVAB under state law (California Health and Safety Code 42504) at the time of RACT SIP development. The *2007 Ozone Plan* prepared subsequent to the RACT SIP identified a need for future emission reductions to come from advanced technology, thereby necessitating the reclassification of the SJVAB to extreme nonattainment for 8-hr ozone, which has a major source cutoff of 10 tpy. Consequently, upon EPA issuance of a final rule approving the request to reclassify the SJVAB to extreme nonattainment for the federal 8-hr ozone standard, the District is required to revise the RACT SIP to reflect a major source cutoff of 10 tpy. In anticipation of this action, the District began work on revising the RACT SIP in the fall of 2007. In December 2007, the District issued a revised Draft RACT SIP reflecting the lower major source cutoff and also incorporating new Control Techniques Guidelines (CTGs) issued by EPA. The District is now working with EPA to finalize this RACT SIP that will reflect extreme nonattainment for the federal 8-hr ozone standard and will fulfill applicable CTG requirements.

Because EPA has stated that the RACT discussion in the 2004 *EOADP* is not approvable under EPA's post-2004 RACT implementation, the District is hereby formally withdrawing the RACT portion of the 2004 *EOADP* (Section 4.2.5) and will fill the resulting 1-hr ozone RACT gap with the revised 8-hr ozone RACT SIP now under development. EPA and the District agree that this approach is the best use of agency resources in fulfilling federal Clean Air Act requirements.

Rate of Progress (ROP) and Updated Emission Reductions

The District has prepared and submitted to EPA all required federal 1-hr ozone Rate of Progress (ROP) documentation. The District has adopted and implemented the control measure commitments in the 2004 *EOADP* (Table 4-1 of the 2004 *EOADP*). Analysis of actual emission reductions obtained during the rule development process shows that the District was able to secure emission reductions greatly exceeding those predicted in the 2004 *EOADP*, even after accounting for the different emission inventories used in

plan development vs rule development. Table 1 shows the analysis of predicted vs. actual reductions for volatile organic compounds (VOC) and nitrogen oxides (NOx) emissions for each of the District control measures in the 2004 *EOADP*. Results indicate that the rule development process

- Met the plan's commitment for VOC reductions and obtained over 6 tpd of excess reductions above and beyond those predicted.
- Met the plan's commitment for NOx reductions and obtained over 16 tpd of excess reductions above and beyond those predicted.

ROP and Updated Pre-1990 Motor Vehicle Standards

In Table 2, the District is providing an additional ROP analysis using U.S. EPA's now-preferred methodology (related to pre-1990 adjustments) that demonstrates sufficient emission reductions to satisfy the ROP requirement, relying only on the emission control program as it existed when the Valley's 2004 SIP was submitted, with at minimum three percent surplus reductions to satisfy the contingency measure requirement. This additional analysis successfully demonstrates that ROP is achieved and that sufficient surplus emission reductions occur to satisfy the contingency measure requirements of the Act.

To provide more background on the above topic, recent EPA policy changes reduce the creditable emission reductions initially attached to California's mobile source emission control programs for the purposes of demonstrating ROP. Although this recent change in policy is in dispute, the reductions from existing measures in effect at the time of plan adoption and as computed under the new policy are adequate to meet ROP and contingency requirements. As part of the Clarifications package, the District is providing an additional ROP analysis using U.S. EPA's now-preferred methodology (related to pre-1990 adjustments) that demonstrates sufficient emission reductions to satisfy the ROP requirement, relying only on the emission control program as it existed when the 2004 *EOADP* was submitted, with at minimum three percent surplus reductions to satisfy the contingency measure requirement. The federal Clean Air Act requires the exclusion of emission reductions from pre-1990 motor vehicle measures in emission reduction progress calculations in air quality plans. While the 2004 EOADP properly excluded those reductions from the ROP demonstration, in 2007, EPA began implementing a new policy that reduced the emission impact of California's post-1990 motor vehicle emission control programs in that calculation. This new 2007 policy effectively changes the ROP calculation from what was presented in the 2004 *EOADP*. However, the emission reduction surplus in the ROP calculations in the 2004 *EOADP* were sufficiently large that they could absorb this change while still meeting ROP targets and providing adequate surplus reductions for contingency measures. This surplus is due to the aggressive emission reductions achieved by District and ARB rules and regulations in effect at the time of adoption of the 2004 *EOADP*. The new 2007 EPA policy affects progress demonstrations for many California SIPS (1-hr and 8-hr ozone), and ARB staff is formally disputing the revised EPA policy and has entered into a dialogue with EPA to resolve the dispute.

Table 1 Status of Implementation: San Joaquin Valley Air Pollution Control District 2004 Extreme Ozone Attainment Plan "New Measure" Commitments

NOx Control Measures						
Control Measure ID	**Pollutant**	**Rule #**	**Description**	**Commitment (2010 - tpd)**	**Achieved Emission Reductions (2010 - tpd)**	**Local Adoption**
C	NOx	9310	Fleet rule - School buses	0.1	1.6	21-Sep-2006
D	NOx	9510, 3180	Indirect Source Mitigation *	4.0	4.0	15-Dec-2005
E	NOx	4307	Small Boilers (2 -5 MMBTU)	1.0	5.1	20-Apr-2006
G	NOx	4352	Solid fuel boilers	0.0	0.0	18-May-2006
H	NOx	4702	Stat. IC engines	8.0	16.8	18-Jan-2007
I	NOx	4309	Commercial Dryers	1.0	0.7	15-Dec-2005
N	NOx	New 4308	Water Heaters 0.075 -2	0.2	0.8	20-Oct-2005
Q	NOx	4103	Open Burning	1.1	1.7	17-May-2007
S	NOx	4703	Sta. Gas Turbines	0.6	1.9	17-Aug-2006
			NOx totals	**16.0**	**32.6**	

* The District staff tracks reductions from ISR and reports them to the Governing Board on an annual basis. The 2007-2008 ISR annual report shows 5.7 tpd of NOx reductions for the year, which already exceeds the plan commitment of 4 tpd in 2010. District staff believes that it is on track to meet its 2010 reduction commitment. However, to be conservative, District staff estimates achievement of the 2010 commitment without additional surplus reductions from this rule.

Table 1 *(Continued)*

VOC Control Measures						
Control Measure ID	**Pollutant**	**Rule #**	**Description**	**Commitment (2010 - tpd)**	**Achieved Emission Reductions (2010 - tpd)**	**Local Adoption**
A	VOC	4409	Oil & Gas Fug.	4.7	5.1	20-Apr-2005
B	VOC	4455	Ref. & Chem Fug.	0.2	0.3	20-Apr-2005
F	VOC	4694	Wineries	0.7	0.8	15-Dec-2005
J	VOC	4565	Composting/Biosolids	0.1	0.3	15-Mar-2007
K	VOC	4602	Automotive Coating	0.1	1.0	21-Sep-2006
		New 4612	(note: rule is also listed in M below for solvents only)			20-Sep-2007
L	VOC	4570	CAFO Rule	15.8	17.7	15-Jun-2006
M	VOC	4662	Org. Solvent Degreasing	1.3	3.1	20-Sep-2007
		4663	Org. Sol. Cleaning			
		4603	Metal Parts/Products			
		4604	Can and Coil Coating			
		4605	Aerospace Coating			
		4606	Wood Products Coating			
		4607	Graphic Arts			
		4612	Automotive Coating			
		4653	Adhesives			
		4684	Polyester Resin Operation			
O	VOC	4401	Steam-Enhanced Oil-well	1.4	0.3	14-Dec-2006
P	VOC	4651	Soil Decontamination	<0.05	0.0	20-Sep-2007
Q	VOC	4103	Open Burning	2.9	3.9	17-May-2007
R	VOC	4682	Polymeric Foam Mfg.	0.1	0.1	20-Sep-2007
T	VOC	4621 & 4624	Gasoline storage + Trans.	0.9	1.9	20-Dec-2007
U	VOC	New	Aviation Fuel Transf	<0.05		
			VOC totals	**28.2**	**34.5**	

Table 2 San Joaquin Valley Rate of Progress (ROP)
With California Pre-1990 Motor Vehicle Control Program Adjustments
Using adopted measures only
(Summer Planning tons per day)

	1990	2008	2010
Baseline ROG	633.2	369.4	362.7
California Pre-1990 Adjustment	0.0	120.1	123.8
RACT Corrections	0.0	0.0	0.0
Adjusted 1990 Baseline ROG in milestone year	633.2	513.1	509.4
ROP commitment for ROG reductions from new measures	0	0	0
Required % change since previous milestone year (ROG or NOx) compared to 1990		51%	6%
Required % change since 1990 (ROG or NOx)		51%	57%
Target ROG levels		251.4	219.0
Apparent shortfall in ROG		118.0	143.7
Apparent shortfall in ROG, %		23.0%	28.2%
ROG shortfall previously provided by NOx substitution, %		0	23.0%
Actual ROG shortfall, %		23.0%	5.2%
Baseline NOx	805.1	411.0	384.5
California Pre-1990 Adjustment	0.0	114.0	116.6
Adjusted 1990 Baseline NOx in milestone year	805.1	691.1	688.5
ROP commitment for NOx reductions from new measures	0	0	0
Change in NOx since 1990		280.1	304.0
Change in NOx since 1990, %		40.5%	44.2%
NOx reductions since 1990 already used for ROP substitution and contingency through last milestone year, %		0.0%	26.0%
NOx reductions since 1990 available for ROP substitution and contingency in this milestone year, %		40.5%	18.2%
Change in NOx since 1990 used for ROG substitution in this milestone year, %		23.0%	5.2%
Change in NOx since 1990 available for contingency in this milestone year, %		3.0%	3.0%
Change in NOx since 1990 surplus after meeting substitution and contingency needs in this milestone year, %		14.5%	12.9%
ROP shortfall, if any		0.0%	0.0%
ROP Met?		YES	YES
Contingency Met?		YES	YES

Section 182(g) of the federal Clean Air Act requires nonattainment areas to determine if they have achieved the emission reductions identified during previous three-year ROP intervals as being needed to meet the ROP milestones for the intervals in question. The District has complied with this requirement. Of principal interest to the 2004 *EOADP* are the ROP milestone years of 2002, 2005, 2008 and the attainment year of 2010. The District's Section 182(g) report for the 2002 milestone year is presented in Section 7.6.2 of the 2004 *EOADP*, which shows that reductions achieved their targets. For the 2005 ROP milestone year, the District sent to EPA, through ARB, a milestone compliance demonstration report showing that the District met its 2005 ROP emission reduction

targets.[1] The next required Section 182(g) milestone compliance demonstration report is for calendar year 2008 and is due to EPA by March 31, 2009.

Contingency Measures

As noted above, contingency measure requirements refer to those needed for ROP and attainment milestones [Sections 127(c)(9) and 182(c)(9)] as well as the need for long-term measure contingencies [Section 182(e)(5)]. The ROP analysis submitted with this Clarification Package and discussed above shows that excess emission reductions were available from adopted measures at the time of plan development to meet the ROP and attainment contingency requirements. In addition, the state's motor vehicle emission control program provides excess reductions that can be used for attainment year contingencies (see next section).

The *2007 Ozone Plan* and the *2008 PM2.5 Plan* all contain control measures that the District is committed to adopting and that were not used in demonstrating ROP or attainment in the 2004 *EOADP*. For these reasons, the reductions from the post-2004 plans meet the definition for contingency measures, provided the timing of the *2007 Ozone Plan* and *2008 PM2.5 Plan* reductions is helpful for 1-hr ozone milestones (i.e., the reductions occur in time to help meet 1-hr ozone milestones for ROP or attainment). Inspection of Table 6-1 in the 2007 Ozone Plan shows that District control measures will achieve about 2.3 tpd of NOx reductions in 2008, and 4.4 tpd in 2011 (expressed as summer emissions). The 2008 reductions would represent contingency reductions for the 2008 ROP milestone, and later reductions through 2011 would represent contingency reductions for attainment. Inspection of Table 6-3a in the *2008 PM2.5 Plan* shows annual NOx reductions of about 2.4 tpd in 2009, 3.2 tpd in 2010, and 4.3 tpd in 2011. Because these *PM2.5 Plan* reductions are from the same control measures as those used from the *2007 Ozone Plan*, the reductions are not cumulative. For the purposes of this Clarification documentation, the *PM2.5 Plan* reductions will be used since they reflect a more up to date inventory. Thus the *2008 PM2.5 Plan* provides attainment year contingency reductions of about 4.3 tpd of NOx.

In regards to the need for contingency measures for long-term or advanced technology measures, District rulemakings reduce emissions to a sufficient level to fulfill the advanced technology or long-term contingency measure requirement. In other words, the District's adopted rules from the control measures in the 2004 *EOADP* exceed predictions of reductions by over 16 tpd of NOx and over 6 tpd of VOC; this excess more than covers the long-term measure reductions of 5 tpd of NOx and 5 tpd of VOC. Because these rules have been adopted locally and submitted by the State to U.S. EPA for inclusion into the SIP as required by section 182(e)(5), there is no need for additional contingency measures to satisfy the 182(e)(5) requirements. The specific requirement for contingency measures to backstop the long-term measure commitments under Section 182(e)(5) of the federal Clean Air Act has been met because of the District adoption of rules that completely fulfill the long-term measure commitment.

[1] Letter from Scott Nester, Director of Planning to Catherine Witherspoon, Executive Officer, California Air Resources Board, March 30, 2006.

Motor Vehicle Emission Trends

Section 182(d)(1)(A) of the federal Clean Air Act requires nonattainment areas classified as severe or above to adopt and submit transportation control measures sufficient to offset any growth in emissions from growth in vehicle miles traveled or number of vehicle trips and to provide for ROP. EPA's interpretation of this provision allows areas to satisfy the requirement if they demonstrate that emissions from motor vehicles decline each year through the attainment year--see EPA's General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, April 16, 1992 (57 *FR* 13522). While the 2004 *EOADP* shows a decline in motor vehicle emissions from the base year through the attainment year (Table 3-1), it only does so for ROP years and the attainment year. Table 3 below presents data for the intervening years and further illustrates the downward trend in emissions. In addition, the table shows that existing motor vehicle emissions standards and normal fleet turnover combine to produce a significant surplus in emission reductions in 2011 beyond the levels assumed in the attainment demonstration (an additional 10 tpd of NOx and 5 tpd of VOC (ROG) from 2010 to 2011, as shown below in Table 3). As stated above, this reduction helps to fulfill the requirement for contingency measures for the attainment year.

Table 3 Baseline Motor Vehicle Emissions,[1] 2000-2010
(San Joaquin Valley, Summer Planning, in tons per day)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
ROG	115	107	100	93	88	82	77	72	67	63	59	54
NOx	223	218	211	201	192	184	176	166	157	148	137	127

[1]Emissions shown here are from the CCOS emission inventory, v2.11_RF932PEI. Table 3-1 in the 2004 *EOADP* presents output from that inventory for the year 2000 and the milestone years of 2008 and 2010. Emissions shown in this enclosure do not include reductions from new measure commitments in the 2004 *EOADP*.

Conclusions

Much of the updated information gathered and developed for this Clarification package reflects the difficult work accomplished by the District and ARB in aggressively reducing emissions of ozone precursors in the time frame since the 2004 *EOADP* was developed and adopted. Virtually all of the updates confirm the approvability of the various components of the plan. Emission reductions exceed predictions, federal ROP milestones have been met, and all of the plan commitments, including sufficient emission reductions for contingency measures, have been met. The one exception is the RACT section, which was intended to meet RACT requirements specified by EPA at the time but does not meet EPA's new and enhanced interpretation of RACT requirements in the federal Clean Air Act. Consequently, the District is formally withdrawing the RACT element of the 2004 *EOADP*, thus creating a federal 1-hr ozone RACT gap that will be filled by submitting to EPA a revised 8-hr ozone RACT SIP.

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