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June 2005

DOS-based CMB7 was updated and enhanced in 1997 with the development of CMB8 and its documentation by Desert Research Institute (DRI). These products were delivered to EPA in 1998. While CMB8 represents the first Windows®-based version of the software, certain operational issues needed to be resolved and we thought the User Interface could be improved. This led us down a development path to an upgraded version which we call **EPA-CMB8.2**. This version enjoys contributions from staff at Pacific Environmental Services (now MACTEC), and more recently from staff at Ideal Software, Inc. (see Help|About in the software). EPA-CMB8.2 incorporates the upgrade features that CMB8 has over CMB7, but also corrects errors/problems identified with CMB8, updates the linear algebra library, adds enhancements for a more robust and user-friendly system, and employs code that has been reorganized, refactored, and is well-documented.

Substantial quality control efforts have been made to ensure that EPA-CMB8.2 is functionally and numerically equivalent to its predecessor - CMB8. This was especially important since the LINPACK linear algebra library was upgraded to LAPACK v3.0. In late 2004, EPA-CMB8.2 and its documentation[1] were subjected to peer scientific review.[2] The panel's comments, criticisms, and suggestions were addressed through appropriate revisions of the documentation, as well as the source code for this release of the model.

You should download the model executable (EPA-CMB82.zip) and install it per instructions in Section 2 of the Users Manual (EPA-CMB82 Manual.pdf). The Protocol (CMB Protocol.pdf) is also posted.

While EPA-CMB8.2 has been tested using many different data sets, emphasis has been placed on the San Joaquin Valley Fine (SJVF)[3] data set. Other data sets formatted for CMB input have also been locally posted along with their descriptions and references.

Please refer technical questions (applications, runtime errors, etc.) or documentation errors to:

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[1]Environmental Protection Agency, 2004. *EPA-CMB8.2 Users Manual*. Publication No. EPA-452/R-04-011. Office of Air Quality Planning & Standards, Research Triangle Park, NC; December 2004.

Environmental Protection Agency, 2004. *Protocol for Applying and Validating the CMB Model for PM2.5 and VOC*. Publication No. EPA-451/R-04-001. Office of Air Quality Planning & Standards, Research Triangle Park, NC; December 2004.

[2]See Peer Review.pdf and AgencyResponse2PeerReview.pdf posted locally on this website.

[3]Chow, J.C., J.G. Watson, D.H. Lowenthal, P.A. Solomon, K.L. Magliano, S.D. Ziman and L.W. Richards, 1992. PM_{10} source apportionment in California's San Joaquin Valley. *Atmos. Environ.* **26A:** 3335-54.