

State of California

AIR RESOURCES BOARD

Resolution 89-51
June 9, 1989

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

WHEREAS, a solicited research proposal, Number 177-28 entitled "Validity of Current Aerosol Models for Calculating Gas-Aerosol Equilibrium, Water Content and Size Distributions, and Relative Contributions of Various Source Types to Visibility Degradation", has been submitted by the California Institute of Technology; and

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the South Coast Air Quality Management District staff has reviewed and recommended that their Board co-fund this proposal with the Air Resources Board; and

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

Proposal Number 177-28, entitled "Validity of Current Aerosol Models for Calculating Gas-Aerosol Equilibrium, Water Content and Size Distributions, and Relative Contributions of Various Source Types to Visibility Degradation," submitted by the California Institute of Technology, for a total amount not to exceed \$180,000 with co-funding by the Board of the South Coast Air Quality Management District.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 177-28, entitled "Validity of Current Aerosol Models for Calculating Gas-Aerosol Equilibrium, Water Content and Size Distributions, and Relative Contributions of Various Source Types to Visibility Degradation," submitted by the California Institute of Technology, for a total amount not to exceed \$180,000 with co-funding by the Board of the South Coast Air Quality Management District.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$180,000 with co-funding by the Board of the South Coast Air Quality Management District.

I hereby certify that the above is a true and correct copy of Resolution #89-51, as adopted by the Air Resources Board.


Cary Allison, Board Secretary

ITEM NO.: 1
DATE: June 9, 1989

State of California
AIR RESOURCES BOARD

- ITEM:** Research Proposal No. 177-28 entitled "Validity of Current Aerosol Models for Calculating Gas-Aerosol Equilibrium, Water Content and Size Distributions, and Relative Contributions of Various Source Types to Visibility Degradation".
- RECOMMENDATION:** Adopt Resolution 89-51 approving Proposal No. 177-28 for an amount not to exceed \$196,234 with co-funding by the Board of the South Coast Air Quality Management District.
- SUMMARY:** This is one of several studies to analyze and interpret the data from the 1987 Southern California Air Quality Study (SCAQS) by methods other than airshed models. Issues related to the Board's regulatory needs will be addressed.
- This major research effort will test critical components of atmospheric models of aerosol processes against observations made during the SCAQS program, and provide insight into the factors that govern aerosol formation and visibility degradation in the South Coast Air Basin.
- The results of this project will provide guidance to ARB on how air pollution control strategies could be devised to reduce both PM₁₀ concentrations and visibility degradation in the South Coast Air Basin and other nonattainment areas.
- The South Coast Air Quality Management District Board has voted to co-fund this project because of their interest in assessing the validity of current models for nitrate-containing aerosol that will be used in developing the 1991 plan required by the California Clean Air Act.
- The contractor for this study will be the California Institute of Technology, and the principal investigators will be Professors Glen R. Cass and John H. Seinfeld.

B U D G E T S U M M A R Y

California Institute of Technology

"Validity of Current Aerosol Models for Calculating Gas-Aerosol Equilibrium, Water Content and Size Distributions, and Relative Contributions of Various Source Types to Visibility Degradation"

DIRECT COSTS

1. Labor	\$57,000
2. Consultants & Subcontracts	38,317
3. Equipment	-0-
4. Travel & Subsistence	-0-
5. Computer Usage	10,000
6. Reproduction	-0-
7. Mail & Phone	-0-
8. Supplies	-0-
9. Other*	6,000

Total Direct Costs \$111,317

INDIRECT COSTS

Includes Labor Overhead, Benefits,
Material Overhead, General &
Administrative Expense, and Profit \$ 68,683

TOTAL PROJECT COSTS \$180,000

*Supplies and expenses (publication costs, copying, etc.)

ITEM NO.:

DATE: April 13, 1989

State of California

AIR RESOURCES BOARD

ITEM: Research Proposal No. 1689-146 entitled
"Low Level Carbon Monoxide Exposure in Sensitive
Subjects Exposed at High Altitude"

RECOMMENDATION: Adopt Resolution 89-42 approving Proposal No.
1689-146 for an amount not to exceed \$236,779.

SUMMARY: The objective of this project is to resolve residual existing uncertainties regarding the high altitude standard for carbon monoxide. The existing high altitude standard for carbon monoxide is based on calculations derived from a theoretical model. However, the calculations have been shown to contain an erroneous factor, hence there are uncertainties about the standard. Also, experimental data are needed to validate the model.

The investigator will evaluate 25 human subjects with stable angina (a group sensitive to carbon monoxide effects) both at sea level and simulated high altitude before, during and after exposure to carbon monoxide. The parameters to be measured include changes in the time of onset of angina and the critical variables that appear in the equation used to calculate the high altitude standard.

This study will help to: 1) confirm the need for the high altitude standard for carbon monoxide; 2) validate the model used to calculate the standard; and 3) measure the variables fitting into the model. The contractor will be the University of California, Irvine. The principal investigator will be Michael T. Kleinman.

State of California

AIR RESOURCES BOARD

Resolution 89-56

June 9, 1989

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

WHEREAS, an unsolicited research proposal, Number 178-29 entitled "Interim Oversight for Materials Exposure Sites", has been submitted by C-E Environmental, Inc.; and

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

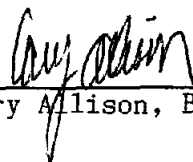
Proposal Number 178-29, entitled "Interim Oversight for Materials Exposure Sites," submitted by C-E Environmental, Inc., for a total amount not to exceed \$8,952.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 178-29, entitled "Interim Oversight for Materials Exposure Sites," submitted by C-E Environmental, Inc., for a total amount not to exceed \$8,952.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$8,952.

I hereby certify that the above is a true and correct copy of Resolution #89-56, as adopted by the Air Resources Board.


Cary Allison, Board Secretary

B U D G E T S U M M A R Y

C-E Environmental, Inc.

"Interim Oversight for Materials Exposure Sites"

BUDGET ITEMS:

1. Labor	\$2,958
2. Consultants & Subcontracts	-0-
3. Equipment	-0-
4. Travel & Subsistence	785
5. Computer Usage	-0-
6. Reproduction	-0-
7. Mail & Phone	-0-
8. Supplies	225
9. Other*	-0-

Total Direct Costs \$3,968

INDIRECT COSTS

Includes Labor Overhead, Benefits,
Material Overhead, General &
Administrative Expense, and Profit \$4,984

TOTAL PROJECT COSTS \$8,952

*Supplies and expenses (publication costs, copying, etc.)

ITEM NO.: 2
DATE: June 9, 1989

State of California
AIR RESOURCES BOARD

ITEM: Research Proposal No. 178-29 entitled "Interim Oversight for Materials Exposure Sites"

RECOMMENDATION: Adopt Resolution 89-56 approving Proposal No. 178-29 for an amount not to exceed \$8,952.

SUMMARY: The purpose of this project is to provide interim service at the Air Resources Board materials exposure sites until a contractor is selected, in the next fiscal year, to carry out the materials damage program under the Atmospheric Acidity Protection Act.

The proponent will prepare approximately 100 material coupons for field exposure. The coupons will be cleaned, equilibrated, weighed and photographed prior to deployment. The sets of previously deployed material coupons, which are currently in place at the exposure sites, will be collected. The collected coupons will be photographed and placed in storage in light-excluding boxes in a temperature and humidity-controlled room for analyses at a later date. The sites will be revisited after four months to collect another set of material coupons and to conduct maintenance of exposure racks as needed. The collected coupons also will be photographed and stored for further analyses. At the end of the six-month period, the contractor will provide to the ARB a spreadsheet documenting weights of material coupons prior to deployment.

The study will be conducted by C-E Environmental, Inc. and the principal investigator will be Mr. Robert Hillestad.