

# Lawrence Berkeley National Laboratory

## Recent Work

### Title

MONTHLY PROGRESS REPORT FOR JANUARY - ENVIRONMENTAL EFFECTS AND CONTROLS FOR COAL-WATER SYSTEMS

### Permalink

<https://escholarship.org/uc/item/42r8t9dv>

### Authors

Newton, Amos  
Fox, Phyllis.

### Publication Date

1981



# Lawrence Berkeley Laboratory

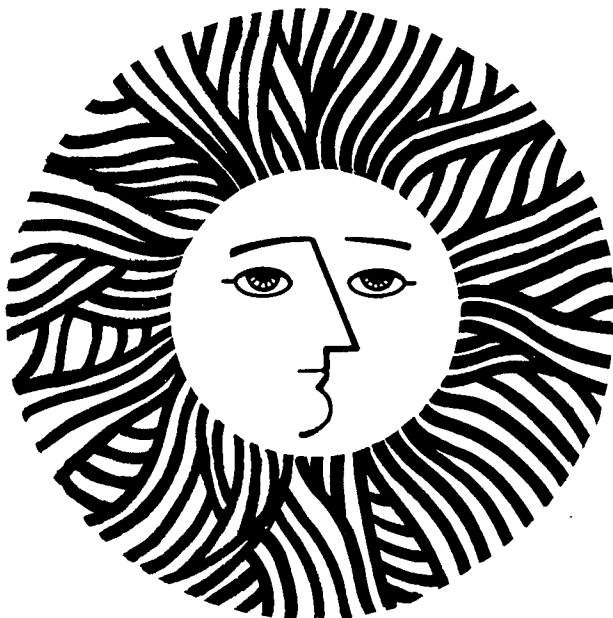
UNIVERSITY OF CALIFORNIA

## ENERGY & ENVIRONMENT DIVISION

RECEIVED  
LAWRENCE  
BERKELEY LABORATORY

MAY 11 1981

LIBRARY AND  
DOCUMENTS SECTION



**For Reference.**

Not to be taken from this room

LBID-366  
c.1

## **DISCLAIMER**

This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor the Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or the Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof or the Regents of the University of California.

February 12, 1981

TO: Charles Grua

FROM: Amos Newton and Phyllis Fox

RE: Monthly Progress Report for January  
Environmental Effects and Controls for Coal-Water Systems  
LBID-366

This month has been spent in preparation for the studies of low molecular weight and high molecular weight compounds in coal slurry water. The low molecular weight compounds, corresponding in boiling point to C<sub>1</sub> to C<sub>8</sub> hydrocarbons, are to be studied by a modified head-space analysis. The gas in the rodmill will be pumped by a Toepler pump through a small absorption tube filled with 80-100 mesh Tenax GC absorbent. This should remove all organics. The organics will be desorbed from the Tenax into a cold trap and from there injected directly onto a capillary gas chromatographic column on the GC/MS. Quantification is a problem since it does not appear possible to add an internal standard which will not be partially absorbed by the coal.

Considerable effort has been spent in overhauling and checking a total carbon analyzer to bring its performance up to an acceptable level. Some changes, such as the elimination of all rubber tubing, have reduced the background signal and noise considerably. The performance on standard solutions of organics in water suggest that the determination of 1 ppm organic carbon in water should be possible if the inorganic carbon is not above about 5 ppm. Use of the system is limited by a lack of water which is totally free of organic carbon for making primary standards and establishing a zero response. An organic-free water source has been ordered. Measurements will not, however, be dependent upon the arrival and installation of the organic-free water source.

This report was done with support from the Department of Energy. Any conclusions or opinions expressed in this report represent solely those of the author(s) and not necessarily those of The Regents of the University of California, the Lawrence Berkeley Laboratory or the Department of Energy.

Reference to a company or product name does not imply approval or recommendation of the product by the University of California or the U.S. Department of Energy to the exclusion of others that may be suitable.

TECHNICAL INFORMATION DEPARTMENT  
LAWRENCE BERKELEY LABORATORY  
UNIVERSITY OF CALIFORNIA  
BERKELEY, CALIFORNIA 94720