

APR - 7 REC'D



4/4/75

To B.J. Lentz

Re: Asbestos to off-plant streams

Some time ago Quality Control
was interested in asbestos fiber
determinations.

The attached information may lead
to the best information yet.

H. M. Taylor

cc: S.A. D'Armond ✓
T.R. Robinson, M.D.



H.M. Taylor
Industrial Hygienist

E-00551

ETC 15423

New Analytical Method Measures Fiber Level Of Waste Stream from Asbestos Diaphragm Cell

A new analytical method is being used by The Dow Chemical Company to identify and measure asbestos levels in waste streams from its diaphragm cell, chlor-alkali process.

Traces of fibers are found in the cell liquor because the diaphragm is made of asbestos. The diaphragm separates the anode side of an electrolytic cell from its cathode side during the breakdown of brine to produce chlorine and caustic soda.

Dr. R. J. Moolenaar, a Dow environmental research scientist, said the technique uses a transmission electron microscope equipped with selected area electron diffraction and an energy dispersive spectrometer.

The method provides positive fiber identification, count and size, Dr. Moolenaar said. The asbestos level found in Dow's chlor-alkali effluent was .001 parts per million.

Asbestos is widely distributed in U.S. waterways. Although some is from industry, Dr. Moolenaar said, much occurs from natural erosion.

Although the only proven health hazards associated with asbestos occur with prolonged inhalation, the Dow scientist recommended that industry develop methods for controlling the release of waterborne asbestos in products, process streams and effluents.

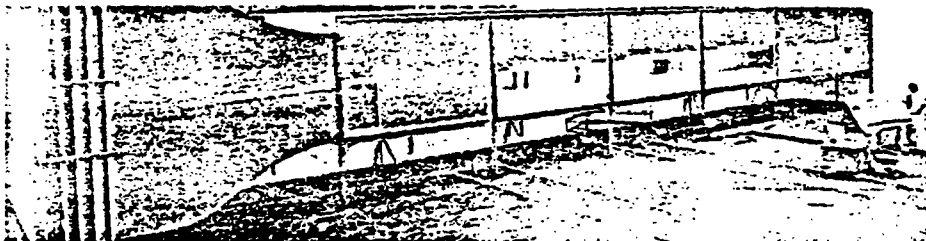
He reported that filtration treatment



Dow scientist David File works with an electron microscope. The screen at rear shows electrons in a sample.

of cell liquor can remove 99.9 percent of asbestos on a weight basis. "Work is in progress at Dow to optimize the conditions for fiber removal by this technique," Dr. Moolenaar said.

He also recommended that each chlor-alkali producer using asbestos diaphragm cells carry out a survey to determine the distribution of asbestos in liquid effluent streams and products, and that medical and toxicological experts in government, universities and industry cooperate in continuing research into the effects of ingested asbestos.



An operator prepares a battery of tests for EPA's new atmospheric wind tunnel.

Light at Tunnel's End is Clean Air

The Environmental Protection Agency has a new tool to help solve some of the problems it's bound to run into in implementing the Clean Air Act.

The device is a wind tunnel for studying how air pollutants spread and dissipate under varying conditions of weather, terrain, tall buildings and city streets.

It could play a major role in helping the agency predict the likelihood of pollutant sources exceeding air quality standards at ground level.

Located at EPA's research center in North Carolina, the 125-foot-long facility is one of the few atmospheric testing wind tunnels in the world.

Air pollution problems will be studied in the tunnel using simulated emissions of smoke or gaseous pollutants, scale models of hills, valleys and buildings and a controllable, artificial wind.

The tunnel is designed to provide fast response to problems of air pollutant dispersal in complex flows. It will allow scientists to complete studies in a few weeks that would take years in the field.

Library

ENVIRONMENT U.S.A.

This directory of environmental organizations and activities concentrates federal and agencies, private groups, a calendar of conferences, lists of environmental executives and press contacts. There are essay chapters on law, employment and raising. A copy is \$15.95 from R. R. B. Order Dept., P.O. Box 1807, Ann Arbor, 48106.

INTER-NOISE 74

Included in the proceedings and papers the 1974 conference on noise are articles enforcing noise standards, noise measure the effects of noise on man and new methods of reduction. To receive a copy, send \$5. Editor, Noise/News, P.O. Box 1758, Peekskill, N.Y. 12501.

INDUSTRIAL WATER PURIFICATION

A review of recent U.S. patents on water purification, the book summarizes processes for solid-liquid separation (flocculation, electrostatic field, continuous loop ion exchange), oil-water separation, removal of trace metals (mercury, lead, rare earths, vanadium, chromium) and others suitable specific chemical and refinery operations. A copy is \$36 from Noyes Data Corporation, Noyes Bldg., Park Ridge, N.J. 07656.

AQUEOUS-ENVIRONMENTAL CHEMISTRY OF METALS

Trace metals in water environments (specifically copper, mercury, cadmium, aluminum and lead) are discussed regarding source distribution and control. Analysis methods, kinetics, precipitation reactions and solubility are described in detail. For the book, send \$10 to Ann Arbor Science Publishers Inc., P.O. Box 1425, Ann Arbor, Mich. 48106.

AIR POLLUTION ABSTRACTS, VOL. 3, #7

These abstracts represent international U.S. literature on air pollution monitoring, measurement and control, effects on life materials, legal and economic aspects listed by a numbered index system. To receive P-2 238/2WP, send \$7.50 to APTIC, Research Triangle Park, N.C. 22151.

REGISTER OF ENVIRONMENTAL ENGINEERING GRADUATE PROGRAMS

The University of Texas offers a free annual edition of graduate programs in U.S. college. Write Dr. Joe Malina, Director of Environmental Health Engineering, 305 Engineering Labs Bldg., University of Texas, Austin, Tex. 78712.

ENCYCLOPEDIA OF ENVIRONMENTAL SCIENCE

Three hundred illustrated articles on human impact on the environment present information from such diverse areas as climatology, meteorology, plant ecology, geochemistry and oceanography. The book is \$24.50 from McGraw-Hill, 1221 Ave. of the Americas, New York, N.Y. 10020.

REPORT TO THE CONGRESS ON OCEAN DUMPING

This report by the National Oceanic and Atmospheric Administration discusses ocean dumping and the long-term view of man's effects on the world's oceans. Information is given on the impact of off-shore terminals, power plants and oil and gas development. COM-74-50532/OWP is \$1.15 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

TECHNICAL BULLETIN TC-21

This pamphlet recommends methods for loading and bracing packaged chemicals in box cars to minimize in-transit damage and spillage. TC-21 is 50 cents from Publication Services, MCA, 1825 Conn. Ave., N.W., Washington, D.C. 20009.

1974-75 DIRECTORIES ON LAND POLLUTION CONTROL

The National directory describes programs of nearly 400 companies, associations, labor unions and federal agencies. The State directory lists agencies dealing with solid wastes, soil erosion, strip mines, litter control and land use planning. National is \$10; State is \$5 from Freed Publishing Company, P.O. Box 1134, Fort Station, New York, N.Y. 10022.

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