

# DEPARTMENT of the INTERIOR

news release

GEOLOGICAL SURVEY

Forrester (202) 343-4646

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## PCB SPOTTED IN NATION'S WATER RESOURCES

PCB (polychlorinated biphenyls) — an environmentally persistent industrial compound chemically similar to DDT — has been found in an unexpectedly large number of sampling points in streams, lakes, and reservoirs throughout the Nation, according to scientists of the U. S. Geological Survey, Department of the Interior.

The PCB findings were first made public in a paper presented to the Division of Pesticide Chemistry of the American Chemical Society, New York City, August 29, 1972, by Hans J. Crump-Wiesner, Herman R. Feltz, and Marvin L. Yates, of the USGS Water Resources Division, Washington, D. C.

Reporting on work done as part of an interagency monitoring program concerned with pesticides in water supplies, Crump-Wiesner, senior author of the paper, and Chief Chemist of the Geological Survey's Water Quality Laboratory, Washington, D.C., said that "During the past two years, we have analyzed over 2,000 water and sediment samples from streams and lakes throughout the United States, collected from January 1971 through June 1972."

"We expected to find traces of PCBs at sampling points near industrial centers," the Survey scientist said, "but were surprised to find detectable levels in samples from 17 of 39 States covered by the sampling."

"We found PCBs in river water, some newly-developed real-estate lakes, and at two U.S. Geological Survey 'benchmark' stations located in relatively remote areas essentially unaffected by man," Crump-Wiesner said, adding that "We also found lake and stream sediments to have relatively high concentrations of PCB residues. One out of every five bottom sediment samples collected in 18 States contained significant concentrations of PCBs."

Emphasizing that State and Federal health officials have been alerted to the occurrence of PCBs, the Survey spokesman noted that "a safe level for PCBs has not been generally accepted to date."

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The Food and Drug Administration limits the concentration in food products to 5,000 micrograms per kilogram (five pounds per million pounds), and the Environmental Protection Agency, in May, 1972, as the result of information obtained in this and other studies, recommended a maximum limit of 0.01 micrograms per liter (one pound in 50 billion quarts) in river and lake water.

The USGS study indicates that detectable concentrations of PCBs in river and lake water ranged from 0.1 to 4.0 micrograms per liter. Concentrations in bottom sediments of streams and lakes ranged from 5.0 to 3,200 micrograms per kilogram.

First produced about 40 years ago, the PCB compounds have become increasingly useful in such industrial applications as components in transformers and capacitors, heat exchangers, paints, inks, dyes, and for dust control.

"Although previous investigations have generally been concerned with PCB contamination from accidental spills in industrial areas, this study was an attempt to document general distribution of the compounds in our waterways," Crump-Wiesner said.

"PCBs can enter the aquatic environment," he explained, "by atmospheric fallout from low temperature incineration of solid wastes, from spills, or from sewage and industrial waste outfalls."

The USGS paper, "A Study of Distribution of Polychlorinated Biphenyls in the Aquatic Environment," is planned for publication in the American Chemical Society's "Advances in Chemistry" series.

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(Note to Editors: Attached tables give a general State-by-State listing of PCB concentrations detected in the initial survey. Detailed listing of sampling sites is on file with State agencies involved)

SUMMARY OF PCB RESIDUE DETERMINATIONS - SEDIMENT SAMPLES  
January 1971 - June 1972

| <u>STATE</u>   | <u>Number of<br/>Sediment Samples</u> | <u>Number of Samples<br/>w/Detectable PCB</u> | <u>Concentration<br/>Range<br/>(micrograms/kilograms)</u> |
|----------------|---------------------------------------|-----------------------------------------------|-----------------------------------------------------------|
| ALASKA         | 3                                     | 0                                             | --                                                        |
| ARIZONA        | --                                    | --                                            | --                                                        |
| ARKANSAS       | 23                                    | 4                                             | 20 - 2,400                                                |
| CALIFORNIA     | 13                                    | 3                                             | 20 - 190                                                  |
| COLORADO       | --                                    | --                                            | --                                                        |
| CONNECTICUT    | 1                                     | 1                                             | 40                                                        |
| FLORIDA        | 118                                   | 50                                            | 5 - 3,200                                                 |
| GEORGIA        | 12                                    | 10                                            | 10 - 1,300                                                |
| HAWAII         | 4                                     | 0                                             | --                                                        |
| IOWA           | --                                    | --                                            | --                                                        |
| KANSAS         | --                                    | --                                            | --                                                        |
| KENTUCKY       | --                                    | --                                            | --                                                        |
| LOUISIANA      | --                                    | --                                            | --                                                        |
| MAINE          | --                                    | --                                            | --                                                        |
| MARYLAND       | 11                                    | 5                                             | 10 - 1,200                                                |
| MASSACHUSETTS  | --                                    | --                                            | --                                                        |
| MICHIGAN       | --                                    | --                                            | --                                                        |
| MINNESOTA      | --                                    | --                                            | --                                                        |
| MISSISSIPPI    | 8                                     | 2                                             | 10 - 1,200                                                |
| MISSOURI       | --                                    | --                                            | --                                                        |
| MONTANA        | --                                    | --                                            | --                                                        |
| NEBRASKA       | --                                    | --                                            | --                                                        |
| NEW JERSEY     | 12                                    | 10                                            | 8 - 250                                                   |
| NEW MEXICO     | --                                    | --                                            | --                                                        |
| NEW YORK       | --                                    | --                                            | --                                                        |
| NORTH DAKOTA   | --                                    | --                                            | --                                                        |
| OHIO           | 1                                     | 1                                             | 8.8                                                       |
| OKLAHOMA       | --                                    | --                                            | --                                                        |
| OREGON         | 4                                     | 2                                             | 15 & 140                                                  |
| PENNSYLVANIA   | 16                                    | 11                                            | 10 - 50                                                   |
| PUERTO RICO    | --                                    | --                                            | --                                                        |
| SOUTH CAROLINA | 11                                    | 8                                             | 30 - 200                                                  |
| SOUTH DAKOTA   | --                                    | --                                            | --                                                        |
| TEXAS          | 294                                   | 24                                            | 7.9 - 290                                                 |
| VIRGINIA       | 10                                    | 8                                             | 5 - 80                                                    |
| WASHINGTON     | 10                                    | 0                                             | --                                                        |
| WEST VIRGINIA  | 2                                     | 1                                             | 10                                                        |
| WISCONSIN      | --                                    | --                                            | --                                                        |
| WYOMING        | --                                    | --                                            | --                                                        |

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SUMMARY OF PCB RESIDUE DETERMINATIONS - WATER SAMPLES  
January 1971 - June 1972

| <u>STATE</u>   | <u>Number of<br/>Water Samples</u> | <u>Number of<br/>Samples with<br/>Detectable PCB</u> | <u>Concentrated<br/>Range<br/>(micrograms/lite.)</u> |
|----------------|------------------------------------|------------------------------------------------------|------------------------------------------------------|
| ALASKA         | 3                                  | 0                                                    | --                                                   |
| ARIZONA        | 8                                  | 0                                                    | --                                                   |
| ARKANSAS       | 32                                 | 0                                                    | --                                                   |
| CALIFORNIA     | 161                                | 2                                                    | 0.1 & 0.1                                            |
| COLORADO       | 32                                 | 1                                                    | 0.3                                                  |
| CONNECTICUT    | 13                                 | 6                                                    | 0.1 - 0.2                                            |
| FLORIDA        | 231                                | 12                                                   | 0.1 - 2.1                                            |
| GEORGIA        | --                                 | --                                                   | --                                                   |
| HAWAII         | 5                                  | 0                                                    | --                                                   |
| IOWA           | 24                                 | 0                                                    | --                                                   |
| KANSAS         | 10                                 | 0                                                    | --                                                   |
| KENTUCKY       | 7                                  | 0                                                    | --                                                   |
| LOUISIANA      | 9                                  | 0                                                    | --                                                   |
| MAINE          | 2                                  | 0                                                    | --                                                   |
| MARYLAND       | 6                                  | 1                                                    | 0.1                                                  |
| MASSACHUSETTS  | 5                                  | 1                                                    | 0.2                                                  |
| MICHIGAN       | 2                                  | 0                                                    | --                                                   |
| MINNESOTA      | 3                                  | 2                                                    | 0.1 - 0.3                                            |
| MISSISSIPPI    | 8                                  | 0                                                    | --                                                   |
| MISSOURI       | 21                                 | 0                                                    | --                                                   |
| MONTANA        | 47                                 | 0                                                    | --                                                   |
| NEBRASKA       | 44                                 | 0                                                    | --                                                   |
| NEW JERSEY     | 11                                 | 3                                                    | 0.1                                                  |
| NEW MEXICO     | 36                                 | 0                                                    | --                                                   |
| NEW YORK       | 325                                | 52                                                   | 0.1 - 4.0                                            |
| NORTH DAKOTA   | 40                                 | 0                                                    | --                                                   |
| OHIO           | --                                 | --                                                   | --                                                   |
| OKLAHOMA       | 19                                 | 0                                                    | --                                                   |
| OREGON         | 13                                 | 0                                                    | --                                                   |
| PENNSYLVANIA   | 2                                  | 1                                                    | 0.2                                                  |
| PUERTO RICO    | 7                                  | 1                                                    | 0.1                                                  |
| SOUTH CAROLINA | --                                 | --                                                   | --                                                   |
| SOUTH DAKOTA   | 18                                 | 0                                                    | --                                                   |
| TEXAS          | 660                                | 12                                                   | 0.1 - 3.0                                            |
| VIRGINIA       | 4                                  | 1                                                    | 0.1                                                  |
| WASHINGTON     | 25                                 | 0                                                    | --                                                   |
| WEST VIRGINIA  | 4                                  | 0                                                    | --                                                   |
| WISCONSIN      | 3                                  | 0                                                    | --                                                   |
| WYOMING        | 18                                 | 0                                                    | --                                                   |

(more)

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