



WARE Institute, Inc.

P.O. BOX 2037 • PHONE 608/257-4851 • 506 WALNUT ST.

Madison, Wis. 53701

May 27, 1969

257-4851 return to mjs

AIR
MAIL

Mr. Sam Rotrosen
Montrose Chemical Co.
100 Lister Avenue
Newark, New Jersey 07105

Dear Mr. Rotrosen:

Enclosed is a proposal for an industry study of the Lake Michigan Basin to help to determine the magnitude and causes of contamination with chlorinated pesticides. We believe that the work proposed will add significantly to the information being obtained by State and Federal agencies.

We shall look forward to your early decision. If approved, we would intend to begin sampling on June 16.

If desirable, we would be glad to meet with the industry group, at your convenience, to discuss details.

Very truly yours,

John J. Birdsall
Vice President

jfb/p
Enc.

cc: Mr. D.J. Keating, Stauffer Chemical Co.
Mr. Bernard Lorant, Velsicol Chemical Co.
Dr. M.J. Sloan, Shell Chemical Co.

DSW 162173

Proposal for an Industry Study
of the Lake Michigan Basin

DSW 162174

Background

A great amount of information has been obtained concerning the studies in progress or to be conducted by several State and Federal agencies in the immediate future. These studies are briefly outlined below.

USDA: -- 731 soil samples are now being collected from the Lake Michigan Drainage Area. These samples are randomly selected according to a statistical grid system. 117 will be taken in Northern Michigan, 323 in Southern Michigan, 42 in Indiana, 13 in Illinois and 236 in Wisconsin. The samples will be analyzed at the USDA Gulfport laboratory.

In addition, teams of USDA and state personnel are now surveying pesticide formulation and other industrial plants throughout the Lake Michigan Drainage Area. The teams are using formal questionnaires to determine pesticide types, manufacturing practices and times, waste disposal procedures, etc. The questionnaires will be collected at the USDA offices in Minneapolis where the information will be digested. Some follow-up sampling of waste water from perhaps 60 plants is anticipated.

It is not known when analytical results from either program will be available but WARF Institute will be kept informed through Dr. Paul Sand.

DSW 162175

STLCOPCB4040779

Lake Michigan Interstate Pesticides Committee

This group is composed of representatives of the four states, the Federal Water Pollution Control Administration and the Bureau of Commercial Fisheries with assistance from USDA and other agencies. The chairman of the committee is Dr. Donald Mount, FWPCA, Duluth. This committee recommended a monitoring program in November, 1968 and this program is now being implemented.

a) Water Sampling of Major Tributaries: Nine major tributaries will be sampled continuously for three days, once each month. The sites are the following rivers: Wisconsin, Fox, Menominee, Milwaukee (2); Michigan, Grand, Kalamazoo, Manistec, Muskegon, St. Joseph; Indiana, Grand Calumet. These samplings are not underway as yet but will be in a few weeks. These water analyses will be conducted by the State of Wisconsin and by the State of Michigan. The Grand Calumet will be sampled by Indiana but probably analyzed by Michigan. This sampling will probably be done only through October.

b) Lake Water Sampling: The Bureau of Commercial Fisheries will sample two open water sites (Northern Basin and Southern Basin) with three samples of surface water taken three times each year.

The water intake of the Chicago Central District Filtration Plant will be sampled weekly. The city of Chicago will analyze these samples as well as those open water samples obtained by the BCF. Chicago is presently unable to take and analyze samples so the FWPCA, Lake Michigan Basin Office is temporarily assuming this task.

DSW 162176

c) Fish sampling: The Bureau of Commercial Fisheries' Biological Lab at Ann Arbor will collect and analyze fish samples. At least four species will be collected in April and October at four sampling stations: Green Bay, Waukegan, Saugatuck and Charlevoir. 68 samples are planned at each interval. Males and females of alewives, yellow perch, chubs and Coho salmon will be included.

Other fish sampling is now being done by Federal and State (at least Wisconsin) Sports Fisheries and Wildlife agencies. These groups are taking samples of game fish such as smelt, Rainbow trout, German brown trout, Whitefish and Lake Trout. The exact numbers of samples and times of sampling are not known.

Additional fish sampling may be done by the State of Wisconsin water pollution group in Green Bay this summer but on a very limited basis.

d) Biological sampling of tributaries: Living clams are being placed in 68 streams, including seven of the 9 major tributaries which are being sampled for water. The clams will be removed and replenished at 3-4 week intervals at each site. Each sample is comprised of 3-4 clams. Samples of the clams have been pre-tested and found to be very low in residue content.

The Wisconsin program is underway with the first samples to be taken during the week of May 26-30. The other states have not yet begun to our knowledge.

DSW 162177

This program will continue as long as weather permits, probably into October, if the clam supply holds out. Wisconsin and Michigan will do the analyses.

The last committee meeting was on May 2. WARF Institute has been invited to the next meeting in Chicago on June 24.

Proposal

To supplement the programs described above, it is recommended that the following studies be considered:

1. Supplemental sediment, water, plankton and fish sampling and analyses.

It is proposed that, at each of the 68 biological (clam) monitoring stations described above, six composite samples be taken in mid-June and mid to late August. These samples would be a) bottom sediment at the stream mouth, b) and c) plankton and water samples from stream mouth to 1/2 mile directly out into Lake Michigan, d) and e) plankton and water sampled 1-1/2 miles directly out into Lake Michigan from the stream mouth and f) a 10 fish sample of fresh chubs from a commercial fisherman working waters in the area. A maximum of 408 samples would be taken at each period.

These samples should relate nicely with the clam work and water monitoring of major tributaries.

Other samples which could be taken would include water samples at sites of non-stream waste outlets leading directly into the lake. These can be spotted by boat and are not under investigation by other groups. Water and/or plankton samples could also be taken along the shore at sites of high population density (i.e., Milwaukee, Chicago) and at sites of intensive agriculture (i.e., cherry, apple orchards). These latter samples would not exceed 50-60 total.

All samples for the above would be taken by boat on two continuous trips around the lake. The sample collection should take about 2 weeks at a rate of 5 streams per day. Samples would be transported to Madison by truck or station wagon every 2 days.

2. Investigative Sampling and Analysis

There are a number of possibilities for obtaining meaningful samples which could help to confirm or deny possible sources of contamination. These are listed below with an estimate of the number of samples which might be taken:

a) Effluent from dry-cleaning establishments	60
b) Overflow of sewer mains	40
c) Formulators and other industrial plants	100
d) Water releases from lagoons and holding ponds	50
e) Municipal and other dumps	75
f) Other samples suggested by	
USDA Information	75
Results of clam monitoring + program 1	<u>75</u>
	475

Considerable latitude is necessary to implement this investigation program. The USDA lists of industrial plants will be carefully studied and the USDA survey results evaluated thoroughly. Samples would be obtained through contact with municipal officials to find water main locations and assistance in sampling. If, for instance, we wish to sample the water from Spic and Span Cleaners & Launderers in Milwaukee, we would contact the municipal Sewer Construction and Maintenance official who would aid us in sampling from an appropriate manhole near the laundry.

The Lake Michigan Interstate Pesticides Committee would be asked to participate in sample collection by reporting to us, through their fieldmen, instances which suggest rapid sampling. The fieldmen would be asked to phone us collect to report any overflows, excessive run-off or other unusual occurrences. We would then decide if a sample should be taken or not. If yes, we would instruct the fieldman how to sample and send.

This effort would be concentrated on areas where clam testing and our own results would indicate excessive levels of input.

DSW 162180

Wisconsin / Omni Research Foundation • Madison, Wisconsin

Costs

A. Lake study

1. Sample collection	\$17,000
2. Sample analyses	<u>29,000</u>
	\$46,000
3. Plus PCB's on 20% of samples	<u>5,000</u>
	\$51,000

B. Investigation study

1. Sample collection	\$10,000
2. Sample analyses	<u>16,000</u>
	\$26,000
3. Plus PCB's on 20% of samples	<u>3,000</u>
	\$29,000

DSW 162181

TABLE 4

Tributary Streams Recommended
for Biological Monitoring

Tributary	Location
<u>Michigan</u>	
Gallen River	LaPort Road, New Buffalo, Michigan
Drain	Sawyer, Michigan
St. Joseph River*	U.S. 31 Bridge, St. Joseph, Michigan
Paw Paw River	Above St. Joseph, Michigan
Black River	U.S. 31 Bridge, South Haven, Michigan
Kalamazoo River*	U.S. 31 Bridge, Saugatuck, Michigan
Black River	Ottawa Beach, Michigan
Pigeon River	Lake Shore Ave., Port Sheldon, Mich.
Grand River*	Corps. of Engineers, Grand Haven, Mich.
Muskegon River*	Coast Guard, Muskegon, Michigan
White River	S. Channel wall, Whitehall, Michigan
Pentwater River	Coast Guard, Pentwater, Michigan
Pere Marquette River	Channel area, Ludington, Michigan
Manistee River*	Maple St. Bridge, Manistee, Michigan
Betsie River	Coast Guard, Frankfort, Michigan
Platte River	M-22, Benzie State Park, Michigan

* Water monitoring station for pesticide analysis.

DSW 162182

Table 4 cont'd.

(Michigan)

Crystal River	Bay Lane, Glen Arbor, Michigan
Leelanau Lake outlet	Leland, Michigan
Boardman River	Traverse City, Michigan
Elk River	Elk Rapids, Michigan
Lake Charlevoix outlet	Charlevoix, Michigan
Bear River	Petoskey, Michigan
Millecoquins Creek	Naubinway, Michigan
Manistique River	Manistique, Michigan
Sturgeon River	Nahma, Michigan
Whitefish River	U.S. Bridge, Rapid River, Michigan
Escanaba River	Wells, Michigan
Ford River	M-35 Bridge, Ford River, Michigan
Menominee River*	Breakwater, Menominee, Michigan

Indiana

Grand Calumet River*	East Chicago, Indiana
Burns Ditch	Midwest Steel Catwalk, Burn Harbor, Indiana
Trail Creek	Franklin St. Bridge, Michigan City, Indiana

* Water monitoring station for pesticide analysis.

DSW 162183

STLCOPCB4040787

Table 4 cont'd.

Wisconsin

Peshigo River	Marinette County
Oconto River	Oconto County
Pensaukee River	Oconto County
Little Susamico River	Oconto County
East River	Brown County
Suamico River	Brown County
Mink River	Door County
Unnamed Streams (7)	Door County
Ahnapee River	Kewaunee County
Kewaunee River	Kewaunee County
East Twin River	Manitowoc County
West Twin River	Manitowoc County
Manitowoc River	Manitowoc County
Silver Creek	Manitowoc County
Calvin Creek	Manitowoc County
Pine Creek	Manitowoc County
Point Creek	Manitowoc County
Fisher Creek	Manitowoc County
Centerville Creek	Manitowoc County
Seven Mile Creek	Sheboygan County
Pigeon River	Sheboygan County

Table 4 cont'd.

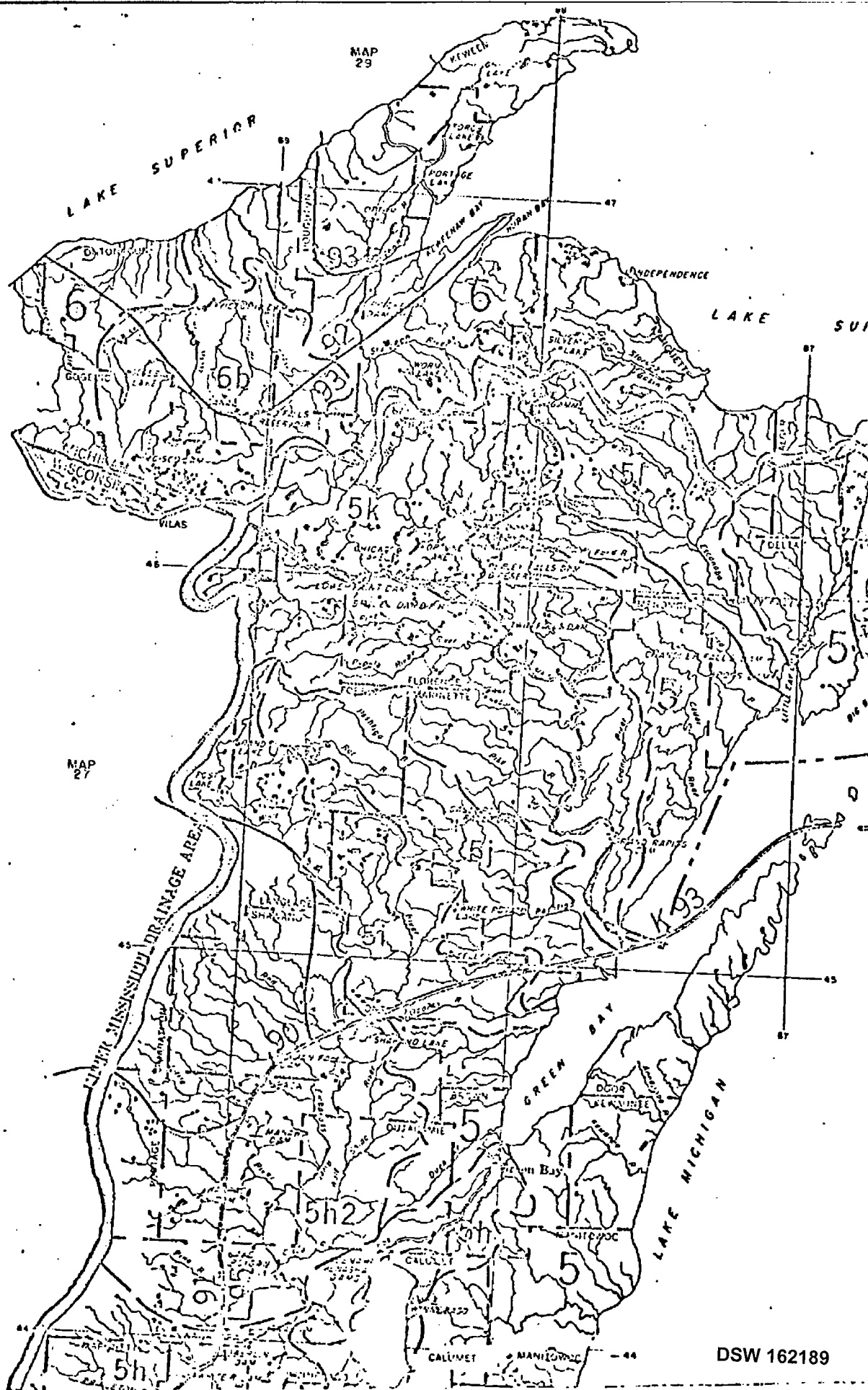
(Wisconsin)

Sheboygan River	Sheboygan County
Black Creek	Sheboygan County
Sauk Creek	Ozaukee County
Menomonic River	Milwaukee County
Kinnickinnic River	Milwaukee County
Oak Creek	Milwaukee County
Root Creek	Racine County
Pike River	Kenosha County
Barnes Creek	Kenosha County

DSW 162185



DSW 162187



DSW 162189



SEP 5 1969

WARF Institute, Inc.

P.O. BOX 2037 • PHONE 608/257-4851 • 506 WALNUT ST.

Madison, Wis. 53701

September 3, 1969

Mr. J. O. King
Manager, Agricultural Chemicals Sales
Diamond Shamrock Chemical Company
300 Union Commerce Building
Cleveland, Ohio 44115

Dear Mr. King:

We certainly appreciate your company's support of the study we are conducting of the Lake Michigan Basin. A progress report is in preparation and will be forwarded to all supporting firms sometime next week.

Please note the attached announcement of the next Interstate Committee meeting at which we intend to present some of the findings to date. Also enclosed is a copy of a press release which was issued on August 5th and did not, to our knowledge, receive very much attention. We will, however, keep plugging as the situation permits or demands.

Very truly yours,


John J. Birdsall
Vice-President

JJB:vk

Cc. to: Dr. M. J. Sloan
Mr. S. Rotrosen
Mr. B. H. Lorant
Dr. E. P. Wheeler

DSW 162190

STLCOPCB4040794