



WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF PUBLIC HEALTH

3500 N. LOGAN

P.O. BOX 30035, LANSING, MICHIGAN 48909

BAILUS WALKER, JR., Ph.D., M.P.H., Director

November 2, 1982

Honorable Nunzio Palladino
Chairman
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Palladino:

Enclosed is a copy of a letter from this Department to Dow Chemical Company regarding the proposed movement of radioactively contaminated soil from Dow's Midland facility to a Bay City thorium sludge storage site owned by Dow.

The letter describes the public health concerns of this Department regarding the proposed movement and identifies what appears to be a retreat by Dow from a position of assuring the permanent disposal of source material currently located at the Bay City and Midland sites.

The radioactive material in both cases is licensed by the U. S. Nuclear Regulatory Commission (NRC). Therefore, I request that NRC withhold approval of the Dow plan for decommissioning the Midland site and direct Dow to halt actions associated with the proposed movement of radioactive material to Bay City until 1) the public health aspects are fully considered and 2) the final disposition of the material at both the Bay City and Midland sites is satisfactorily determined.

Your earliest consideration of this request will be appreciated.

Sincerely,

A handwritten signature in cursive script, reading "Bailus Walker, Jr.", written in dark ink.

Bailus Walker, Jr., Ph.D., M.P.H.
Director



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BAILUS WALKER, JR., Ph.D., M.P.H., Director

November 2, 1982

Mr. Paul F. Oreffice, President
Dow Chemical Company
2030 Dow Center
Midland, Michigan 48640

Dear Mr. Oreffice:

This letter concerns the planned movement of thorium-contaminated soil from the Dow Chemical Company Midland Plant to the Dow Chemical Company Bay City Plant as described in a letter with enclosures of October 21, 1982 from R. A. Olson, Dow Chemical Company, to R. G. Page, U. S. Nuclear Regulatory Commission (NRC).

A detailed evaluation of the Dow information has been prepared by the Radiological Health Services Division and is attached. We are concerned about the public health aspects associated with the proposed plan to move the radioactively contaminated material to another site, rather than disposing of the material in an approved, licensed disposal site. Further, the proposed movement of the contaminated soil from Midland to Bay City may be a violation of Act 113 of the Public Acts of 1978.

The only apparent advantage of the proposed movement would be the deletion of the Midland site from NRC Source Material License STB-527. A disadvantage would be the exacerbation of the problem that has existed at Bay City since 1970 by the addition of material which has not been thoroughly evaluated. Since 1970 this Department has received repeated specific assurances by Dow that the storage at Bay City was only a temporary expedient and that it would be permanently disposed in accordance with NRC regulations and State law. The proposal to deposit additional radioactive material at the same site represents a departure by Dow from this position.

In addition, in an October 9, 1979 letter from NRC to Dow, the NRC requested that Dow submit a "comprehensive plan for removal and disposal of all magnesium-thorium wastes now in your [Dow's] possession including soils containing thorium contamination". The NRC position as stated in the 1979 letter clearly supports removal and permanent disposal.

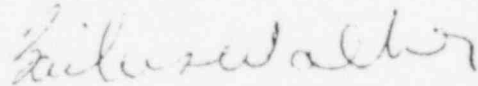
Mr. Paul F. Orefice, President
November 2, 1982
Page 2

Although Department and joint Department-NRC analyses of samples from the Bay City site during the 1970s revealed no imminent migration of the material into the environs, we are concerned that such migration may occur in the future.

The Michigan Department of Public Health believes that, in the interest of public health protection, a permanent solution should be sought. In this regard, both the thorium sludge at Bay City and the contaminated soil at Midland should be disposed in a licensed radioactive material disposal facility.

Therefore, I am requesting Dow Chemical Company to halt the proposed excavation and shipment of thorium-contaminated soil from Midland to Bay City until a method of disposal can be developed which does not worsen the situation. We also ask that Dow submit a plan to accomplish the disposal of the subject radioactive material at Midland and Bay City.

Sincerely,



Bailus Walker, Jr., Ph.D., M.P.H.
Director

Radiological Health Services Division
Dow Thorium Problem

Review of Dow Chemical Company Letter of October 21, 1982
with Enclosures

Our review of the letter and enclosures revealed several problems.

On page 1 of the "Plan for Decommissioning the Midland, Michigan Thorium Slag Storage Site for License STB-527" in the "Transportation" paragraph; "0.00009 Ci/gram" should be "0.00009 μ Ci/gram", "0.002 Ci/gram" should be "0.002 μ Ci/gram", and "49 CFR 173.39" should be "49 CFR 173.389".

On Appendix 1, page 2, "Total Thorium Activity (Ci)" at the end of the 3rd line, " $\frac{x \text{ Ci}}{10} - 12 \text{ pCi}$ " should be " $\frac{x 10^{-12} \text{ Ci}}{\text{pCi}}$ " or " $\frac{\text{Ci}}{10^{12} \text{ pCi}}$ ". On the next line there is an extra " $x 10^{-12}$ " at the end of the line.

In the "Storage" paragraph of page 1 the Bay City storage site is estimated to contain 75,500 pounds of thorium. Our records show, in a letter of December 3, 1970 from Joel Charm, Dow Chemical Company, to Donald E. Van Farowe, Michigan Department of Health, that there was a total of 4,640,000 pounds of sludge of which about 66,000 pounds was thorium (1.4% of sludge) at a concentration of $1.7 \times 10^{-3} \mu\text{Ci}$ of thorium per gram of sludge (1700 pCi/gram). The volume was estimated at 3,260 cubic yards (88,200 cubic feet). If these estimates have been changed and are not current, the current figures and the basis for the change are needed.

On page 2 the "Monitoring" section seems to indicate that the Micro R Meter readings would be used to express equipment contamination in terms of pCi/gram. A conversion factor as indicated may be applicable for soil monitoring, but is not applicable for equipment contamination, which is a surface phenomenon. Equipment contamination should be monitored as near the surface as possible rather than at a distance of a meter.

On page 1 of Appendix 1 the "Background" section is misleading. The first paragraph seems to indicate that NRC Source Material License STB-527 was originally granted on March 9, 1973. Our files indicate that the thorium sludge was accumulated starting in the 1950s, and we have a copy of a renewal of NRC Source Material License STB-527 dated March 26, 1965, indicating that the original license was granted in 1962. When Dow proposed to the Department in 1970 that the sludge be disposed in a landfill not licensed for radioactive material disposal, our investigation revealed that Dow was not licensed to possess the sludge. As a result, Dow applied for an amendment to the license, and STB-527 was amended in a letter of January 14, 1971 from the AEC (now NRC), allowing the possession of up to 200,000 pounds of metal or process sludge. The March 9, 1973 STB-527 license (Amendment No. 05) also incorporated this change.

Appendix 2 quotes soil concentration measurements by the NRC (letter from M. Oestman to Dow dated June 18, 1982) and by Dow. The basis of the measurements is not included. In the Appendix 2, page 2, "Volume of Soil (FT³)" section the average depth is estimated at one foot. No basis is given for the one foot assumption. If the soil concentration measurements did not involve a complete profile down to and beyond the one foot depth, the "Volume of Soil" assumption could be either high or low by a factor of ten (10) or more. There is no justification in the Decommissioning Plan for not assuming that the thorium contamination is merely a surface condition or, conversely, that the contamination extends to a depth of several feet.

The foregoing review of the technical and historical aspects of the Dow Decommissioning Plan reveals certain inaccuracies and errors which warrant resolution. Dow has repeatedly assured this Department of its intention to use the Bay City site as a temporary storage location, pending removal and permanent disposal. The NRC has also expressed support for removal and permanent disposal. According to current NRC regulations, the Bay City storage site can not be designated as a permanent disposal site. In addition, the proposed movement of radioactive material from Midland to Bay City may be a violation of Act 113, P. A. 1978. Although previous analyses by this Division and the NRC of the Bay City site revealed no imminent environmental or public health hazard, there is a potential adverse public health impact associated with the long-term storage of radioactive material at the site.

Therefore, it would be in the public health interest to request that the Decommissioning Plan not be approved or implemented until the technical, regulatory, legal, and public health concerns have been resolved.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Signed by
Ruckelshaus
6/13/83

ADMINISTRATOR'S RESPONSE TO
CENTRAL MICHIGAN CITIZEN'S PETITION
FOR INVESTIGATION AND ENFORCEMENT ACTION

I. INTRODUCTION

On March 16, 1983, the United States Environmental Protection Agency (EPA) received a document entitled "Citizen's Petition for an Investigation and Enforcement Action" submitted by the Environmental Congress of Mid-Michigan and the Foresight Society, two groups based in the central Michigan area. On April 20, 1983, the petitioners submitted a supplemental Petition through the Citizens Clinic for Accountable Government, a group based in Washington, D.C. The original and supplemental petition will be referred to collectively as the Petition.

The Petition makes numerous requests of EPA as follows:

- 1) the Petition makes a requests under Section 21(a) and (b) of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2620(a) and (b), that EPA issue an administrative order to Dow Chemical Company under Section 6(b) of TSCA, 15 U.S.C. 2605(b);
- 2) the Petition requests a full field investigation into the effects of pollution on the residents and environment in Central Michigan, citing Section 21(b)(2) of TSCA, 15 U.S.C. 2620(b)(2);
- 3) the Petition states that it constitutes information of a significant risk under Section 4(f)(2) of TSCA, 15 U.S.C. 2603(f)(2), thereby implicitly seeking to have EPA take action to address this risk in 180 days;


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- 4) the Petition seeks an investigation of risks from hazardous waste disposal, citing Section 3013 of the Resource Conservation and Recovery Act, 42 U.S.C. 6933;
- 5) the Petition seeks investigations to determine the need to take actions under the emergency provisions of the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act;
- 6) the Petition states that it serves as the 60 day notice that is a prerequisite to the filing of citizen's suits to enforce TSCA, the Safe Drinking Water Act, the Clean Air Act, and the Clean Water Act;
- 7) the Petition requests that EPA assess the overall impact of the pollution discovered by its investigations;
- 8) the petitioners seek full participation in decisions made concerning any studies done that are relevant to the Petition; and
- 9) the Petition requests that EPA appoint an independent, expert consultant to oversee implementation of any study performed.

In order to fully answer the Petition, EPA has not limited its response to only those issues which the Agency believes it must address as part of any legal requirements. Instead, the EPA has attempted to address as fully as possible all of the issues raised in the Petition, primarily because the Agency has been concerned about potentially harmful levels of contaminants in the central Michigan area for several years.

The response will review those activities which the EPA and the State of Michigan are already undertaking to address the issues raised in the Petition, and will outline additional activities which the Agency proposes to undertake in the future. These activities, which are discussed in greater detail in the body of the response, include: 1) sampling and analytical work to develop a water discharge permit for the Dow facility (underway); 2) issuance of an

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provisions which protect employees from reprisals by their employers for providing such information. The EPA requests that anyone wishing to provide additional relevant information send it in writing to Mr. David Stringham, Deputy Director, Waste Management Division, U.S. Environmental Protection Agency, 230 South Dearborn Street, Chicago, Illinois 60604. The EPA intends to further provide for public involvement in its actions to address issues raised in the Petition through the public participation mechanisms described in the following section.

II. PUBLIC PARTICIPATION AND OVERSIGHT

The Petition includes specific suggestions and requests for full participation by petitioners in the development of any study relevant to the Petition, and in the appointment of an independent expert to oversee implementation of any study. The EPA intends to conduct the proposed studies of environmental contamination in Michigan that are outlined in this response in a fully open manner. Accordingly, as a matter of its discretion, the EPA will provide the public, including the petitioners, with a description of any such study for their review and comments prior to its implementation. EPA cannot provide such a description at this time, however, because EPA's planning for possible studies is at a very preliminary, budgetary stage. When planning for any particular study is at a sufficiently definite stage that review and comment would be appropriate, EPA will provide this description to the petitioners and other members of the public. EPA has already discussed the probable objectives of proposed studies with the petitioners, the State, and other interested parties.

As studies proceed, EPA intends to design specific public participation mechanisms into the investigative effort. Further, EPA and the responsible



would examine the presence of toxic contaminants in the air, land, and groundwater as well as the water, and attempt to locate the sources of such contamination. As discussed earlier, EPA plans to provide the public, including the petitioners, an opportunity to review and comment on the proposed study prior to its implementation.

B. Air Pollution

With respect to potential risks from air pollution, the Petition primarily focuses on airborne emissions from the Dow Chemical Company facility in Midland, Michigan, although it does mention concern about emissions of other industrial pollutants in the central Michigan area. The Petition cites Dow's history of incineration of both toxic and radioactive wastes as a particular cause for concern. The status of the Midland area as a non-attainment area for certain air pollutants under the Clean Air Act is also cited. 4/

The EPA has been working to address this area's failure to attain national air quality standards for several years, in conjunction with efforts taken by the State. Indeed, the EPA's action in listing Midland County a non-attainment area is a legally significant action which requires the State to develop an implementation plan to decrease pollutant levels. The EPA has reviewed and approved Michigan's State Implementation Plan for control of all "criteria" pollutants. 5/ Implementation of the plan will result in meeting standards for the criteria pollutants. The EPA has further pursued enforcement

4/ The Midland County area is listed as a non-attainment area for ozone and for total suspended particulates. It formerly was also a non-attainment area for sulfur dioxide, but is now meeting standards for that pollutant.

5/ "Criteria" pollutants under the Clean Air Act are total suspended particulates, volatile organic compounds, lead, sulfur dioxide, carbon monoxide, and nitrogen dioxide.

litigation against Dow Chemical Company addressing pollutant emissions from its Midland facility, and entered into a Consent Decree with Dow before a federal district court requiring Dow to meet certain emission limitations at this facility. 6/ Recent data show that Dow is currently meeting the emission limitations set in the Consent Decree.

The petitioners' concerns about potential hazards from toxic air pollutants and radioactive air pollutants are harder to address, primarily because EPA has much less information available on the presence of these types of pollutants in the ambient air and a lack of information on the effects of exposure to many of the toxic air pollutants. EPA has promulgated or proposed emission standards for selected hazardous air pollutants, 7/ but these promulgated or proposed standards do not appear to cover most of the air pollutants of concern to the petitioners. In addition, EPA has proposed a maximum allowable dose standard of 10 millirems per year of total radionuclides.

Despite the lack of national emission standards covering the wide variety of toxic air pollutants of concern to the petitioners, the EPA is planning to sample for toxic chemicals in air emissions in the Midland, Michigan, area as part of its proposed study of dioxin and other toxic pollutants, outlined above. In this study, the EPA seeks to develop data on levels of toxic contaminants in the ambient environment as a result of past and present air emissions. The EPA is specifically considering a plan to analyze for toxicants

6/ U.S. v. Dow Chemical Company, Docket No. 80-40423 (Eastern District of Michigan, Northern Division). The Consent Decree entered 9/22/81, and amended 12/20/82, places specific limitations on sulfur dioxide (SO₂) and total suspended particulates.

7/ Asbestos, Beryllium, Vinyl Chloride, Mercury, Benzene.

in current emissions from industrial sources in the area (including the Dow incinerators), to analyze soils and dust from sites selected in a manner designed to show results of past emissions of toxicants, and, if appropriate, to analyze ambient air at selected locations. In addition, Dow is being required to submit information to EPA on the operation of its incinerators as part of its RCRA permit application (see "Land Pollution" section, below). The EPA has also required that Dow Chemical Company submit information concerning emissions of halogenated dioxins and furans from its Midland, Michigan facility, pursuant to EPA's authority under Section 114 of the Clean Air Act. Dow has provided some of the information, and has stated that further information in response to EPA's request will be forthcoming.

The concerns raised by the petitioners about air pollution hazards from emissions of radioactivity are a subject within the primary authority of the United States Nuclear Regulatory Commission, whose permits cover air and water emissions of radioactive materials. These permits will have to meet the EPA exposure standards, once those standards are promulgated. The EPA has initiated contacts with the Nuclear Regulatory Commission regarding the health concerns the petitioners have raised. The Nuclear Regulatory Commission informed EPA that it had already received a copy of the Petition directly from the petitioners, and would respond directly to the petitioners on those issues raised that are within its jurisdiction. The Nuclear Regulatory Commission further informed EPA that Dow's license to incinerate radioactive wastes would be up for renewal in October, 1983, and issues raised by petitioners would be considered in action taken on the license renewal.

C. Groundwater Contamination And Drinking Water Supplies

The Petition cites concerns with contamination of groundwater and the potential for such contamination to threaten drinking water supplies. The petitioners' concerns stem primarily from leachate from hazardous waste disposal sites, injection of wastes and brine into injection wells, and surface spills of brine at injection wells. The Petition generally asks for a thorough check of drinking water supplies in the central Michigan area.

Under the Safe Drinking Water Act, the EPA and the State of Michigan have required testing of public water supplies for certain inorganic contaminants, radioactivity, and bacteria for many years. As part of a process to address contamination of drinking water supplies with organic chemical contaminants, the EPA issued an Advanced Notice of Proposed Rulemaking in March, 1982, that could ultimately set maximum contaminant levels for various organic compounds in drinking water supplies. In the interim before any such limits are in effect, the EPA has sought to encourage the states to set up programs voluntarily to test drinking water supplies for contamination with organic toxicants. The State of Michigan has established such a program in cooperation with the EPA, and the Michigan Department of Public Health has been sampling public water supply wells for volatile organic chemicals for approximately 18 months. Nearly 460 wells have been tested so far. Full completion of the program will take approximately five years.

In the eight county central Michigan area addressed in the Petition, wells serving 19 public water systems have been tested under this program as of this date. These water systems were chosen for sampling based upon a determination that they were more susceptible to contamination due to either proximity to industry or a possible pollution source, or presence of shallow

overburden that would provide little resistance to migration of contaminants. This effort found no detectable levels of volatile organic chemicals in water systems in the area. Contamination of wells at the Wurtsmith Air Force Base was already known to government agencies, and is already addressed by well abandonment or treatment equipment at the drinking water source, as well as pumping and treating the contaminated aquifer.

The State of Michigan has also tested numerous private drinking water wells in the vicinity of areas known or suspected to have groundwater contamination problems. These areas were identified by the Michigan Department of Natural Resources on a list developed in 1979, and updated in 1982. The Michigan Department of Public Health is currently seeking funding through the Department of Natural Resources and the EPA to complete this private well testing program. The results to date, whether positive or negative, have been made available to the public by the State.

Private wells near the Rockwell Road site near Midland, one of the sites specifically addressed in the Petition, were tested by the State as a part of its private well testing effort. The testing of these wells did not detect contamination. The State very recently repeated testing in the area, and again failed to detect contamination in the private wells, sumps and surface run-off. The EPA intends to perform further assessment of possible hazards from the Rockwell Road site as set out in the Land Pollution section below.

The Michigan Department of Public Health has expressed a continuing interest in testing both public and private drinking water wells in areas

where groundwater contamination is suspected. Anyone who knows of a site with groundwater contamination problems that has not had nearby wells monitored for contamination should contact the Department of Public Health either directly, through their local health department, or through the EPA.

Brine return wells and waste disposal injection wells in the central Michigan area are not currently controlled by an EPA regulatory program, but rather by a control system established by the Michigan Department of Natural Resources (MDNR). The level of EPA involvement in this area will increase in the future, however, because EPA has promulgated national regulations for the underground injection control (UIC) program to control deep well injection of waste. This program, authorized by the Safe Drinking Water Act, requires that deep injection wells be constructed and operated in a way that does not endanger underground sources of drinking water (freshwater aquifers) above or near the injection zone. It provides for appropriate testing of injection wells to assure that drinking water is protected. This Act encourages States to assume primary enforcement authority for the UIC program, and requires EPA to implement the program in any State that declines to do so. Since Michigan does not intend to accept primary enforcement authority for the program, EPA will promulgate regulations to administer this program in the State of Michigan within the next six months. This program will require EPA approval of the construction and operation of any hazardous waste injection wells. However, EPA's statutory authority under the Safe Drinking Water Act does not cover the surface discharges of brine (as opposed to hazardous waste) which are of concern to the petitioners, and these will continue to be regulated by the State.

On April 11, 1983, EPA issued Dow an information request pursuant to several of EPA's statutory authorities, requiring the company to provide information on any halogenated dioxins or furans disposed of in its injection wells. The EPA will review information received pursuant to this request to investigate petitioners concerns over recent and past disposal practices of Dow. Although Dow has indicated they have closed their remaining injection wells as of January 1, 1983, any information obtained will be evaluated to determine possible contamination from previous disposal practices. If Dow in the future seeks to re-open any of its wells for waste disposal, it will be required to obtain EPA approval for construction and operation of the wells.

The EPA's proposed study of the presence of dioxins and other toxic pollutants in the environment around Midland includes a proposal to do some analysis of groundwater in the vicinity of waste injection wells. This effort will complement the information already available from State files and other sources in addressing the petitioners' concerns about waste injection practices.

D. Land Pollution

The Petition raises concerns about land disposal of hazardous wastes in the area, and pays specific attention to land pollution from spillage of brines and toxic wastes from Dow Chemical Company's injection well system. Potential environmental hazards from the handling of hazardous wastes, including those handled on the surface prior to their injection in deep wells, is addressed by EPA's authority under the Resource Conservation and Recovery Act.

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Dow currently has Interim Status for both the Midland facility and the Salzburg Road landfill under Section 3005(e) of RCRA. Interim Status allows an existing hazardous waste facility to continue in operation during the period prior to EPA's issuance or denial of a RCRA permit. Both the Midland facility and the Salzburg Road landfill are required to comply with Interim Status Standards found at 40 CFR Part 265.

An inspection was conducted by EPA, Region V and the MDNR on June 9-11, 1981, at the Midland facility to determine compliance with Interim Status Standards. The inspection found three minor violations which were corrected by Dow. The MDNR conducted another inspection on September 21, 1982, and found no violations. No inspections have been conducted at the Salzburg Road landfill by the EPA.

On March 23, 1983, Dow reported to the MDNR that liquid had been found in the liner failure detection system sump of the Salzburg Road landfill. According to the Act 64 permit issued by the MDNR for the landfill operation, Dow was to cease using any cell of the landfill which was connected to a cell which may be leaking. Dow continued to place wastes in an affected cell, an action which was in violation of its permit. On April 12, 1983, the MDNR issued a Cease and Desist Order requiring Dow to stop using the affected cell and to develop a plan to either cleanse the detection system or to excavate all wastes from the affected cell and place them in a secure cell.

Dow's investigation revealed that the leachate collection pump had malfunctioned, thereby causing a backup into the detection system. In addition to remedying the backup problem, Dow has purged the detection system with city water to clean it out. Dow has also submitted a proposal to the MDNR to perform tracer testing to determine if the landfill liner in the affected

cell has failed. The MDNR is now reviewing this proposal. Both the MDNR and Dow have found no evidence of groundwater contamination, and both believe the liner is not damaged. In the interim, Dow is operating the Salzburg landfill subject to a May 17, 1983, modified Cease and Desist Order and Consent Agreement endorsed by the MDNR.

On April 5, 1983, the EPA notified Dow that Part B applications for permits to store, treat, and dispose of hazardous waste are to be submitted within the next six months for both the Midland facility and the landfill. In preparing the applications, Dow is required to provide details on the operation of its incinerators and landfill, to describe its handling and transportation procedures for hazardous wastes, and to conform all of these practices to the requirements of EPA's regulations.

The EPA's call-in of the Part B permit application initiates the process of complete review of Dow's hazardous waste handling procedures. The petitioners, and the rest of the public, will have the opportunity to review and comment on any proposed Resource Conservation and Recovery Act permit before it is issued.

As previously mentioned, Dow has informed the EPA that it ceased its use of injection wells for the disposal of chemical wastes on January 1, 1983. However, if Dow chooses to employ this disposal method for hazardous wastes in the future, its methods of handling these wastes on the surface while transporting them to wells for disposal will be subjected to this permit review process.

Also as previously mentioned, the handling of brines (as opposed to hazardous wastes) on the surface prior to reinjection is outside the EPA's regulatory jurisdiction. Concerns about problems resulting from the handling of brines before reinjection into the ground must be referred to the State for resolution.

The Resource Conservation and Recovery Act permit for Dow will regulate much more than just the handling of hazardous wastes when it is issued. It will set operation, monitoring and emission standards for the Dow incinerators. It will establish requirements for operation of hazardous waste tanks and containers. It will require liability insurance for possible damages and require planning to cover closure and post-closure costs for hazardous waste areas. In short, it will subject all of Dow's ongoing hazardous waste activities to a comprehensive regulatory scheme, in an effort to keep such activities from causing environmental hazards in the future.

The petitioners are also very concerned about dangers caused by past hazardous waste handling and disposal practices, particularly at the Rockwell Road and Poseyville dump sites. The EPA's authority to take action on these types of problems is under the Comprehensive Environmental Response, Compensation and Liability Act, as well as the Resource Conservation and Recovery Act. Under these statutes, the EPA intends to perform a preliminary assessment of hazards from these dump sites, and follow up with site inspections if warranted by the preliminary assessments. A site inspection under this program involves sampling and collection of other technical information necessary so that the site can be scored under the hazard ranking system specified in the National Contingency Plan. This scoring system is an integral part of determining whether a site is placed on the National Priorities List for cleanup using the federal Superfund.

It is important to note that resources under the Comprehensive Environmental Response, Compensation and Liability Act must be applied on the basis of priority, and the State and EPA must decide how the hazardous waste problems in central Michigan relate to other areas or sites in Michigan. The EPA is currently negotiating a cooperative agreement with Michigan for performance

of preliminary assessments at 430 sites, and site inspections at 50 sites, throughout Michigan over a 15 month period. There currently are 21 site inspections scheduled in Michigan, with 4 of these sites located in the central Michigan area of concern to the petitioners. These sites are the Green Point Landfill, the Outer Drive Landfill, the Saginaw Township Landfill (Arthur) and the Saginaw Township Landfill (O'Connor), all in Saginaw County. Under the terms of EPA's statutory authorities, any federally-funded construction activities subsequent to the investigation of hazards and design of remedial measures will have to be cost-shared by the State. The public is encouraged to participate in activities at sites listed on the National Priorities List through a community relations program implemented for each site. This participation process is designed to inform the public of planned or ongoing actions, to provide the public the opportunity to be involved in decision making, and to focus and resolve any controversy.

E. Effects Of Contaminants On Humans

The Petition raises several issues concerning the effects of certain contaminants on human health, and the synergistic effects of exposure to a combination of toxic contaminants and radioactivity. Some of the issues raised here are of a kind that require basic research, rather than a field investigation, to determine appropriate remedies. The EPA monitors ongoing research on such issues. There is research underway at various institutions addressing some of the health issues that the petitioners have posed. 8/

8/ The health effects of polybrominated biphenyl (PBB) in bodies of Michigan residents is already under study by the University of Michigan Medical Center in Ann Arbor, at least in terms of developmental effects in young children. Research is underway at Michigan State University into the synergistic effects of various PBB congeners, and combinations of PBB and polychlorinated biphenyl (PCB).

EPA has also actively contributed to ongoing research into certain issues the petitioners have raised, including long term study of Michigan residents that have been exposed to polybrominated biphenyl, and a multi-year evaluation of persons who regularly consume Great Lakes fish. ^{9/} EPA's Research and Development Office has been directly involved in certain related research, notably an evaluation of health effects associated with exposure to dioxin that was performed as a part of the development of the dioxin criteria document mentioned in the Water Pollution subsection, above.

The utility of conducting further health effects studies in central Michigan is already the subject of discussions between the EPA, the Michigan Department of Public Health and the federal Centers for Disease Control. These agencies have primary responsibility for health effects studies, and the EPA will work closely with them to examine health effects research alternatives that would address concerns raised in the Petition.

By going beyond the effects of specific contaminants, however, and raising questions of synergistic effects of toxicants and radioactivity, the Petition raises very difficult questions. At this time, the EPA is primarily focusing its resources on determining whether and what environmental contaminants are present, and the effects of such contaminants themselves, in an attempt to fashion remedies to threatened hazards. The investigations that EPA will be performing to identify pollutants in different media should provide a basis for efforts to assess possible interactions of pollutants from different routes of exposure. At a minimum, the data will be collected in a manner to allow the calculation of risk to human health through certain routes of exposure, such as eating contaminated fish. As a step toward identifying

^{9/} These studies are being conducted by the Michigan Department of Public Health under cooperative agreements with EPA.

future research needs in this area, the EPA will initiate a literature search on the issue of synergism between toxicants and radioactivity.

The information that EPA gathers on health effects issues, whether developed by EPA or obtained through the research of other institutions, will be fully available to the petitioners and the rest of the public.

The remainder of this response will address the more specific actions that petitioners have sought to have the EPA perform under particular statutory provisions.

IV. PETITIONERS' REQUESTS UNDER TSCA

The Petition seeks, under Section 21 of TSCA, to have the EPA issue an order under Section 6(b) of TSCA requiring Dow to submit its quality control procedures, to revise such procedures where necessary, and to give public notice of unreasonable risks it has caused. The provisions of Section 6(b) relate to unreasonable risks caused by the manufacture or processing of chemical substances or mixtures.

The risks cited in the Petition from contaminated wastes reaching the environment are more appropriately addressed at this time under other environmental statutes. 10/ EPA has already employed and will continue to

10/ Congress specifically directed the EPA, in Section 9 of TSCA, 15 USC 2608, to use other statutes instead of TSCA if they could be used to eliminate or sufficiently reduce unreasonable risks. The other statutes relevant here include the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act. The issues relating to radioactivity are also more appropriately addressed under the Atomic Energy Act. These acts also provide ample authority to require the submission of process data necessary to administer their respective responsibilities.

11/ This information request was originally issued January 21, 1981, and modified on May 14, 1981. EPA is currently seeking enforcement of this request in federal court (see footnote 1 above).

employ its other statutory authorities to seek internal information from Dow where that information would assist EPA in assessing possible hazards from release of contaminated wastes to the environment. Most notably, internal waste stream information has been sought from Dow under the Clean Water Act 11/ on all processes that produce wastewaters, and information has been sought under the Clean Air Act and the Resource Conservation and Recovery Act on any processes that could emit certain toxic contaminants to the air, including the Dow incinerators. 12/ EPA is concerned about the quality control practices used in the manufacture of certain chemicals, and believes that it may become appropriate at some future time to employ an order under Section 6(b) of TSCA to address a risk posed by the manufacture or processing of chemical substances or mixtures. This determination will be based in part on the investigations outlined above, and on any further information obtained by EPA.

The Petition requests that EPA conduct a full field investigation before ruling on the Petition. Section 21(b)(3) of TSCA provides, however, that EPA shall either grant or deny a petition within 90 days after it is filed. Several of the investigations that EPA has underway or in planning stages will take far in excess of 90 days to complete. Rather than delay ruling on the Petition for the uncertain period of time that will be necessary to complete its investigations into the issues that have been raised, the EPA deems it appropriate to rule upon the Petition in the statutorily prescribed 90 day period.

For the reasons stated above, the EPA hereby denies the Petition to the

12/ An information request was issued on April 11, 1983 and a RCRA permit application was called in on April 5, 1983, as discussed earlier.

extent that it claims that it is necessary or appropriate at this time to issue an order to the Dow Chemical Company under Section 6(b) of TSCA.

The Petition also cites Section 4(f)(2) of TSCA, 15 U.S.C. 2603(f)(2), and states that it constitutes information sufficient to provide a reasonable basis to conclude that a chemical substance or mixture is presenting a significant risk of serious or widespread harm from cancer, gene mutations, or birth defects in the central Michigan area. ^{13/} The primary information supplied in the Petition on this subject is the information concerning increased incidents of birth defects and soft tissue sarcoma in the Midland County area. The EPA will continue to examine data already supplied by the petitioners and any additional information they bring to our attention. Further, the EPA will seek to locate and evaluate any other information on health risks in central Michigan, including information held by other state and federal public health agencies. At this time, the EPA is still collecting information to determine whether any chemical substances or mixture mentioned in the Petition are posing significant risks. The EPA will continue to study the problems addressed in the Petition and utilize whatever regulatory controls are appropriate based upon the information that is obtained.

V. SIXTY DAY NOTICES OF INTENT TO FILE CITIZENS' SUITS

The Petition states that it is intended to serve as a sixty day notice of intent to file citizen's suits under TSCA, the Safe Drinking Water Act, the Clean Air Act, and the Clean Water Act. The expiration of such notices without EPA action allows a notifier to file a citizen's suit against an

^{13/} Section 4(f)(2) is not subject to petition under Section 21 of TSCA, since it provides no direct authority for issuance, amendment or repeal of a rule.

alleged violator of the appropriate statute, or against the EPA for failing to take a non-discretionary action. Since the Petition does not identify any non-discretionary action that the EPA has failed to take at this time, the sixty day notices apparently are intended to allow petitioners to sue alleged violators of the listed statutes. It further appears from the Petition that the citizen's suits contemplated by the petitioners are suits under the emergency provisions of the various statutes. 14/ These emergency provisions allow the EPA, or the citizen notifier in this case, to file injunctive actions in federal district court seeking to require alleged violators to remedy any situation that is or may be presenting an imminent and substantial endangerment to health, welfare, or to the environment.

Upon receiving citizen sixty day notices concerning alleged violations of permit conditions, or specified discharge standards, the EPA can generally make a determination of whether a violation did or did not occur in a relatively straight-forward manner. EPA can then either take action or report it found no violation within the sixty day period. The determination of whether an action under one of the emergency provisions is appropriate is not nearly so straight-forward. The EPA will respond to the petitioners' sixty day notices by conducting its ongoing and proposed investigations as outlined in III above, and by taking action under its various authorities whenever the results of such investigations support such action. The EPA recognizes that this is not sufficient action to foreclose the petitioners right to file a citizen suit against any alleged violator under the cited statutes so long as all other jurisdictional requirements have been met.

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14/ Section 504 of the Clean Water Act, Section 303 of the Clean Air Act, Section 7 of TSCA, Section 1431 of the Safe Drinking Water Act.

VII. CONCLUSION

The central Michigan "Citizen's Petition for Investigation and Enforcement Action" raises numerous issues relating to the pollution of central Michigan's air, water, groundwater, land, and human population with toxic chemicals and radioactivity.

The Petition's request that the EPA exercise its discretion to perform a full investigation of hazards from widespread pollution in central Michigan is granted to the extent that it can be addressed within the context of EPA's various statutory authorities, as outlined in this response. The EPA intends to continue its ongoing efforts to broadly investigate toxic contamination of the air, water, soil, and groundwater in central Michigan under its several statutory authorities. The EPA is pursuing these efforts as a matter of its discretion, beyond what it is legally required to do in response to the Petition. The EPA will perform such investigations because it shares the petitioners' concern about contamination of the environment in Michigan, and has independently determined that such further investigations are appropriate. The EPA's investigations in this area will of necessity be carefully coordinated with the responsible State and federal agencies, in particular the Michigan Department of Natural Resources, the Michigan Department of Public Health, the Nuclear Regulatory Commission, and the Centers for Disease Control. The EPA welcomes additional input from the petitioners and other members of the public on further monitoring activities which should be conducted in this area as part of a full field investigation.

The Petition includes specific suggestions and requests for full participation by the petitioners in the development of any studies relevant to the Petition, and for appointment of an independent expert to oversee implementation of any studies. EPA states its intent to provide public participation mechanisms as a part of proposed investigations, but declines the suggestion

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to appoint an independent expert. EPA's stated intent to provide for peer review, in combination with the public participation mechanisms that will be provided, should meet the petitioners' concerns which led to the suggestion of the independent expert.

The Petition's request that a specific administrative order be issued to Dow Chemical Company under Section 6(b) of TSCA is denied as inappropriate at this time. The EPA has determined that the specific issues raised are more appropriately addressed under other statutory authorities, although the Agency may decide in the future to exercise Section 6(b) authorities to obtain information on quality control.

The Petition states that it serves as a sixty day notice of intent to file citizen suits, apparently against alleged polluters under the provisions of several environmental statutes. The EPA is subjecting this issue to further investigation, and will take action under these provisions whenever supported by available evidence.

Issued this _____ day of _____, 1983

Administrator

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