

FACT SHEET

**Proposed Renewal Operating License for
The Dow Chemical Company, Michigan Operations
Hazardous Waste Treatment, Storage, and Disposal Facility
and
Major Operating License Modification for
The Dow Chemical Company
Salzburg Road Landfill**

Midland, Michigan

MID 000 724 724

MID 980 617 435

October 7, 2002

**Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
and
Remediation and Redevelopment Division**

BASIS FOR PROPOSED OPERATING LICENSE ISSUANCE AND APPROVAL OF A MAJOR OPERATING LICENSE MODIFICATION

The Michigan Department of Environmental Quality (MDEQ) proposes to issue an operating license to The Dow Chemical Company (Dow), Michigan Operations for the continued operation of the hazardous waste treatment, storage, and disposal units at its facility located at 1000 East Main Street in Midland, Michigan and to approve a major operating license modification for Dow's separately licensed Salzburg Road Landfill located at 2314 West Salzburg Road in Midland, Michigan. The United States Environmental Protection Agency (U.S. EPA) is not proposing to issue a federal permit to the company authorizing continued operation because there are no federal hazardous waste program provisions that the MDEQ is not authorized for at this time. The facility operating license is based on the information contained in operating license applications submitted on March 31, 1993 and March 31, 1994 and substantial revisions to the applications submitted in response to the MDEQ's technical reviews. The public notice for this licensing action was published in the Midland Daily News on October 7, 2002. A similar notice appeared in the DEQ Calendar, a bi-weekly publication produced and distributed by the MDEQ and available at the following web site: http://www.michigan.gov/deq/0,1607,7-135-3308_3325---,00.html. These notices indicated that the MDEQ intended to enter into a corrective action consent order with Dow. The MDEQ has since decided to incorporate the off-site corrective action requirements into the draft operating license. However, Mr. Jim Sygo, Chief of the MDEQ, Remediation and Response Division, remains the information contact person for the off-site corrective action requirements.

The provisions of R 299.9518 of the Michigan Administrative Code (MAC) require the MDEQ to issue an operating license to a hazardous waste treatment, storage, or disposal facility unless: the facility has not been constructed in accordance with approved plans, applicable rules, or the conditions of the approved construction permit; the construction or operation of the facility presents a hazard to public health or the environment; or the applicant has not submitted sufficiently detailed or accurate information to enable the Director to make a reasonable judgment as to whether the operating license should be issued.

Based on the review of the Dow operating license application that was submitted to the MDEQ and numerous site inspections and audits, the MDEQ staff have proposed the operating license be issued based on the following conclusions:

1. The facility has generally been constructed and operated in accordance with approved plans, and applicable rules, except as described below. Environmental monitoring of the groundwater, ambient air, and surface water conducted by Dow and audited by the MDEQ, and compliance inspections conducted by the MDEQ staff, do not at this time show for these media that any unpermitted releases are occurring or that the facility presents a hazard to human health or the environment off-site.
2. It is unknown at this time whether historical releases from the facility present a hazard to human health or the environment. The proposed operating license contains a compliance program to determine if a human health hazard exists, and if so, requires implementation of measures to address any hazards found to be present.
3. The application submitted by Dow is sufficiently detailed to demonstrate that the facility's design and operation complies with the applicable technical standards. In addition to the standard and general facility operating conditions contained in all operating licenses, the draft operating license contains conditions specific to Dow's treatment, storage, and disposal activities. A summary of these conditions is included in Section II.C. of this Fact Sheet. The portions of the license application that describe in detail how the company will comply with certain regulations have been attached to the draft license as enforceable documents (e.g., the Waste Analysis Plan, Inspection Schedule, Personnel Training Program, Contingency Plan, and Closure and Post-Closure Plans).

Dow has attempted to comply with Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) [formerly referred to as the Hazardous Waste Management Act, 1979 PA 64, as amended (Act 64)], during its operating life (see the Compliance Chronology, Attachment 1 to this Fact Sheet). Dow has generally been responsive in correcting violations that

have been cited. The company has made substantial improvements in the facility and operating procedures since:

1. An operating license and federal permit were issued for the container storage area, tank storage/treatment areas, and surface impoundment in 1988;
2. An operating license and federal permit were issued for the Incineration Complex in 1989;
3. A post-closure operating license was issued for several closed surface impoundments in 1992;
4. Significant operating license modifications were issued in 1991 and 1993 and other minor modifications were issued subsequent to those.

Work conducted in response to Notices of Violation and Consent Orders issued by the MDEQ has resulted in:

- The increased monitoring of the Revetment Groundwater Interceptor System (RGIS) that collects contaminated groundwater along the Tittabawassee River, including chemical characterization, and installation of the Tertiary Pond RGIS, under the September 27, 1991 Waste Management Division (WMD) Order No. 64-05-245-05-91;
- The upgrade and significantly enhanced monitoring of the RGIS, as well as implementation of a corrective action interim measure to address contamination in the surface water emergency outfall area in the Tittabawassee River, under the February 11, 1997 WMD Order No. 111-01-97;
- The removal of accumulated solids from the Tertiary Pond under the July 21, 1997 Surface Water Quality Division (SWQD) Administrative Consent Order, ACO-SW97-006, and the SWQD April 25, 2000 Amended Administrative Consent Order, AFO-SW2000-01;
- Improvements to procedures for operation of the incinerators under the December 20, 1993 WMD Order No. 64-05-93;
- Improvements to procedures for prevention of releases of wastewater treatment plant (WWTP) solids, including Tertiary Pond solids and other waste management processes at the facility, and resolution of air permit violations, under the November 19, 1998 WMD Order No. 111-11-98 and the joint April 11, 2002 WMD Order No. 111-31-02 and Air Quality Division (AQD) Order No.13-2002; and
- The following Supplemental Environmental Projects being conducted under the joint April 11, 2002 WMD Order No. 111-31-02 and AQD Order No.13-2002: installation of a groundwater collection tile along part of the east perimeter of the facility, removal of two large brine storage tanks and restoration of the tank area to recreational use.

The MDEQ is proposing to issue an operating license to Dow that incorporates the provisions of the three operating licenses referenced above and certain provisions of the operating license modifications and Consent Orders into a single operating license. One major change related to relicensing of the incinerators is that Dow's two existing incinerators, designated as the 703 and 830 Incinerators, are being closed and replaced with one incinerator with 90 percent of the combined design capacity of the two incinerators. This replacement incinerator, designated as the 32 Incinerator, is designed to meet the hazardous waste combustor maximum achievable control technology (MACT) standards that have taken effect since 1989. A notable change in the regulatory scheme under the MACT is that the hazardous waste operating license will no longer contain the extensive incinerator operating requirements and emission standards that were included in the 1989 operating license and 1993 operating license modification. The renewal hazardous waste operating license will cover the interim operation of the existing 703 and 830 Incinerators until they are closed, along with the incineration-related container and tank storage areas, the design capacity, the Waste Analysis Plan, Personnel Training Program, Contingency Plan, and Closure Plan for the 32 Incinerator.

While the above-listed items will be covered by the operating license, the operation of the 32 Incinerator unit will primarily be regulated under the air permit (Supplement to Air Permit No. 212-00A) issued on September 6, 2001 by the MDEQ AQD pursuant to Part 55, Air Pollution Control, of Act 451. In May 2002, Dow agreed to reopen and revise the air permit to include the more stringent new source MACT emission limitations and other technical changes and error corrections. The 32 Incinerator is expected to be able to meet the new source MACT limitations without making design changes. The revised air permit is under development at this time and may be approved prior to the public hearing that will be held regarding the draft operating license on November 7, 2002. Mr. Paul Schleusener is the AQD contact person for additional information about this issue. His phone number is listed at the end of this Fact Sheet.

Although the MDEQ believes it has done a thorough job of reviewing the company's application for the operating license, the agency is seeking public input on the issuance of this operating license. Section IV of this Fact Sheet describes the major modification proposed to the Salzburg Road Landfill operating license. Section V of this Fact Sheet describes the public participation process.

I. INTRODUCTION

This section of the Fact Sheet describes the state and federal programs established to regulate hazardous waste and to permit hazardous waste treatment, storage, and disposal facilities. Part 111 of Act 451 was passed by the Michigan Legislature to regulate the management of hazardous waste from generation to disposal. Likewise, Subtitle C of the Solid Waste Disposal Act, as amended, 42 USC 6901, et. seq. [commonly known as the Resource Conservation and Recovery Act of 1976 (RCRA)], was passed by the United States Congress to regulate hazardous waste nationwide. The RCRA was amended substantially by the Hazardous and Solid Waste Amendments of 1984 (HSWA).

Both RCRA and Part 111 of Act 451 established a permit system governing the treatment, storage, and disposal of hazardous wastes. The RCRA allows the states to obtain authorization to issue a state hazardous waste permit in lieu of a federal permit. Effective December 27, 1985, the State of Michigan amended its Part 111 of Act 451 Administrative Rules to be equivalent to those under RCRA and applied to the U.S. EPA for authorization. On October 30, 1986, Michigan was granted authorization to administer all portions of the RCRA program except those under HSWA. Subsequently, Michigan received authorization for many of the HSWA provisions. On April 8, 1996, Michigan received authorization for the corrective action program.

The duration of the operating license will be ten years. Because the operating license regulates the Tertiary Pond, a surface impoundment which is considered to be a "land disposal facility," it contains a provision that allows the MDEQ to review the operating license after five years to determine if any modifications are necessary.

II. DESCRIPTION OF THE FACILITY

A. Site Description and Prior Licensing

Dow operates hazardous waste treatment, storage, and disposal facilities at 1000 East Main Street in Midland, Michigan. The Michigan Operations Midland Plant Site is an industrial manufacturing and research site comprising approximately 1,900 acres, part of which is used for hazardous waste management. The company stores a wide variety of hazardous wastes and compatible non-hazardous wastes generated from the manufacturing of plastics, agricultural chemicals, organic chemicals, inorganic chemicals, and the associated research and development activities for the manufacture of these products.

Wastes are stored in containers and tanks prior to incineration on-site or transportation off-site for treatment or disposal. The container storage areas, tank storage/treatment areas, surface impoundments, and incinerators described in the next section are located on a portion of the Midland Plant Site where wastes were historically disposed prior to the enactment of the hazardous waste program. Hazardous wastes are also treated on-site at Dow's WWTP. Since the WWTP has a

National Pollutant Discharge Elimination System permit, the treatment conducted in tanks is subject to the wastewater treatment unit exemption pursuant to R 299.9503(1)(f) and, therefore, is not required to be licensed. However, the final (tertiary) treatment that is conducted in the series of surface impoundments, collectively known as the Tertiary Pond, is subject to regulation under the hazardous waste program. The locations of the hazardous waste management units described below are shown on the facility map, Attachment 2 to this Fact Sheet.

Currently, the container and tank storage areas and the Tertiary Pond are operated under a hazardous waste facility operating license that was issued on September 30, 1988. The 703 and 830 Incinerators are operated under a hazardous waste facility operating license that was issued on September 29, 1989. The closed surface impoundments conduct maintenance and monitoring under a hazardous waste facility post-closure operating license that was issued on March 31, 1992. Those operating licenses expired on September 30, 1993, September 29, 1994, and September 30, 1993, respectively. However, the company submitted timely reapplications and has, therefore, been allowed to continue operating these units under the conditions of the operating licenses referenced above until the new operating license is issued. This extension is allowed by 1969 PA 306, as amended, under the Michigan Administrative Procedures Act.

B. Facility Design and Construction Related Facility-Specific Conditions

Dow operates hazardous waste treatment, storage, and disposal units for wastes generated at the Midland facility and at other Dow and Dow subsidiary facilities. Hazardous wastes managed at the facility include:

- a. Incinerator ash
- b. WWTP solids
- c. Contaminated soils
- d. Waste solvents
- e. Characteristic and listed wastes
- f. Off-specification products
- g. Small quantities of chemicals (lab packs)

Part III - Container Storage Conditions. The operating license allows the storage of a total volume of 443,685 gallons of hazardous waste in containers at Waste Storage Area I. This container storage area consists of a concrete slab with dikes and includes a roofed container storage building 4,200 square feet in size. The 443,685-gallon volume equates to a maximum of 8,067 55-gallon containers, 14,790 30-gallon containers, or the equivalent in containers of varying sizes. Tanker trucks may be staged at Waste Storage Area I prior to direct burning at the incinerator or unloading into the incinerator tank farm. Lab packs (drums containing small bottles of hazardous waste packed in absorbent material) are also stored. Containers of hazardous waste may be stacked at the facility provided certain conditions in the operating license are met. Wastes are typically placed on pallets and banded prior to stacking. 55-gallon containers may be stacked no greater than two high. 30-gallon containers may be stacked no greater than three high. The operating license contains special requirements for the management of ignitable and reactive wastes. Incompatible wastes are required to be segregated to prevent them from coming into contact in the event of a spill or leak.

Secondary containment prevents releases to the environment in the event of a spill or leakage. Any precipitation, leaks, and spills collect within the diked concrete slab. Accumulated liquids containing greater than 1600 milligrams/liter (mg/L) Total Oxygen Demand (TOD) or 650 mg/L Total Organic Carbon (TOC) are required to be removed within 48 hours and incinerated or otherwise managed in accordance with Part 111 of Act 451 and the rules. Accumulated liquids containing less TOD or TOC than described above are required to be removed within 96 hours and discharged to Dow's WWTP or otherwise managed in accordance with Part 111 of Act 451 and the rules.

Part IV - Tank System Storage and Treatment Conditions. The operating license allows the storage and treatment of hazardous waste in tanks as shown in the tables below.

Tank System	Storage Design Capacity	Treatment Design Capacity
Waste Storage Area IIA	1,740 cubic yards or 351,000 gallons	Not Applicable
Waste Storage Area IIB	500,000 gallons East Tank 500,000 gallons West Tank	Not Applicable
1163 Building	1,800 cubic yards or 360,000 gallons	1,950 cubic yards/day or 400,000 gallons/day
29 Building	600 cubic yards or 121,200 gallons	Not Applicable
33 Building	900 cubic yards or 181,800 gallons	1,950 cubic yards/day or 400,000 gallons/day
TOTAL	2,014,000 gallons	3,900 cubic yards/day or 800,000 gallons/day

Note: Conversion Factor Used in Table: 202 gallons/cubic yard

Tank System	Physical Form of Waste	Hazardous Waste Types
Waste Storage Area IIA	Bulk Solids	Soils and other bulk solids contaminated with hazardous wastes listed in the WSA II column of Attachment 5 (to this Fact Sheet)
Waste Storage Area IIB	Pumpable Liquids	Hazardous wastes listed in the WSA II column of Attachment 5
1163 and 29 Buildings	Bulk Solids	Soils, incinerator ash, pressed WWTP solids and other bulk solids contaminated with hazardous wastes listed in the 1163 BLDG. column of Attachment 5
	Containerized Waste	Containerized hazardous waste listed in the INCIN STORAGE column of Attachment 5 containing no free liquids
33 Building	Bulk Solids	Incinerator ash resulting from burning the hazardous wastes listed in the INCIN STORAGE column of Attachment 5 and pressed WWTP solids contaminated with hazardous wastes listed in the 1163 BLDG. column of Attachment 5

The steel tanks in Waste Storage Area IIA were demolished in 1988-1989. Dow was granted approval by the MDEQ in 1994 to modify the remaining secondary containment system concrete diking/tank foundation into a tank system capable of temporarily storing contaminated soils generated during construction to upgrade the RGIS. The contaminated soils are placed into and removed from the tank system using dump trucks and front-end loaders. While contaminated soils are in storage, prior to incineration, they are kept covered by a tarp. The RGIS upgrade project is expected to be completed during 2003. Under the proposed operating license, Dow will be required to close Waste Storage Area IIA in accordance with an approved plan after the RGIS construction has been completed. Construction of a storage unit(s) to replace the Waste Storage Area IIA tank system may be approved by the MDEQ if construction is completed before the operating license expires.

Waste Storage Area IIB is a conventional tank system consisting of two 500,000-gallon steel tanks within a concrete diked secondary containment system. Between 1988 and 1995, these tanks stored dioxin-contaminated wastes from historical herbicide manufacturing operations. In 1995, these wastes were sent off-site for treatment. These tanks are not currently in use. However, secondary containment is present to prevent releases to the environment from a spill or leakage in the event that Dow resumes use of the tanks. In order to return these tanks to use, updated certifications that demonstrate that the tanks and secondary containment are capable of storing the types of wastes Dow wishes to store must be submitted to the MDEQ for review and approval. Waste Storage Areas IIA and IIB are not roofed. Any precipitation, leaks, and spills collect within the diked concrete slab.

The 1163, 29, and 33 Building tank systems are designed to store bulk solids rather than liquid wastes, with the wastes being placed and removed using dump trucks and front-end loaders. Of these three tanks, only the 1163 Building tank system is currently a licensed greater-than-90-day storage tank. Treatment consists of dewatering and delumping bulk waste prior to further treatment or disposal. The status of the 29 and 33 Building tank systems are described below.

Dow is currently operating the 29 Building tank system pursuant to the R 299.9503(1)(f) wastewater treatment unit exemption to manage dewatered Tertiary Pond solids in accordance with the "Petition for Site-Specific Treatability Variance from Land Disposal Restrictions (LDR) Treatment Standards for Hazardous Wastes, Title 40 Code of Federal Regulations (40 C.F.R.) §268.44(h)" Notification of Approval signed by the U.S. EPA and MDEQ on June 18, 2002. After the Tertiary Pond solids project has been completed, Dow has requested that they be allowed to transfer 600 cubic yards of the unused storage capacity from the 1163 Building and convert the 29 Building tank system from a wastewater treatment unit to a licensed storage tank.

The 33 Building tank system is currently under construction as part of the 32 Incinerator complex. Following issuance of this operating license, after the submittal and approval of an acceptable tank system certification and an acceptable demonstration that Dow has obtained an air use approval or permit and any other necessary environmental permits or approvals, Dow has requested that they be allowed to transfer 900 cubic yards and 1950 cubic yards/day of the unused storage and treatment capacity, respectively, from the 1163 Building to the 33 Building tank system.

The 1163, 29, and 33 Building tank systems are all designed in a manner that does not accumulate precipitation or run-on within the tank systems. These tank systems are roofed and constructed with concrete floors and dikes to provide secondary containment. The sloped floors include trenches that gravity drain leachate from the dewatering treatment process and/or truck wash water to Dow's WWTP. Accumulated liquids from all of these tank systems are or will be managed in essentially the same manner as that described for Waste Storage Area I. The operating license contains conditions for the operation, maintenance, and assessment of the tank systems referenced above and special requirements for the management of ignitable, reactive, and incompatible wastes.

In addition to the changes described above, Dow has requested the flexibility to be able to store containerized waste inside the 1163 and 29 Building tank systems following licensure.

The following table summarizes all of the storage capacity transfers to other tank systems and container storage requested by Dow under the operating license and shows the remaining 1163 Building tank system storage capacity. The operating license includes a provision that allows Dow to construct a storage unit(s) to utilize the remaining unused 1163 Building storage capacity without a construction permit provided that construction commences within three years of operating license issuance and is completed before the operating license expires and is done in accordance with a minor modification requiring the written approval of the MDEQ.

1,100,000 gallons	Original 1163 Building Tank System Licensed Storage Capacity (1988)
- 360,000 gallons	Current 1163 Building Tank System
- 121,200 gallons	29 Building Tank System
- 181,800 gallons	33 Building Tank System
- 133,250 gallons	32 Building Pack Room
- 8,250 gallons	Incinerator Tank Systems
295,500 gallons	Remaining 1163 Building Tank System Storage Capacity

Part V - Incinerator Container Storage Conditions. The operating license allows the storage of hazardous waste prior to incineration in several types of containers as shown in the table below. The 830 Building and 32 Building container storage areas are roofed. The unloading spots are not. All of these container storage areas are constructed with concrete floors and dikes to provide secondary containment and they are generally managed in a manner similar to that described above for Waste Storage Area I. The dempsters, dinos, and tanker truck trailers referenced below are portable larger size containers. Some are unloaded into the incinerator storage tanks shown in the table in the next part of this Fact Sheet and others are used for the direct burning of waste in the incinerator.

Container Storage Area	Container Types	Storage Design Capacity
830 Building Container Storage Area	Packs of Varying Sizes; Typically 30-Gallon Packs	125,000 gallons, of which no more than 100,000 gallons may be liquid waste
32 Building Container Storage Area	Packs of Varying Sizes; Typically 30-Gallon Packs	133,250 gallons
Unloading Spot LS-1202	Dempster	750 gallons
Unloading Spot LS-2010	Dempster	750 gallons
Unloading Spot LS-2020	Dempster	750 gallons
Unloading Spot LS-1203	Dino	2,500 gallons
Unloading Spot LS-2030	Dino	2,500 gallons
Unloading Spot LS-2040	Dino	2,500 gallons
Unloading Spot LS-101	Trailer	7,000 gallons
Unloading Spot LS-1213	Trailer	7,000 gallons
Unloading Spot LS-1214	Trailer	7,000 gallons
Unloading Spot LS-2050	Trailer	7,000 gallons
Unloading Spot LS-2060	Trailer	7,000 gallons
Unloading Spot LS-2070	Trailer	7,000 gallons
Unloading Spot LS-2080	Trailer	7,000 gallons
Unloading Spot LS-2090	Trailer	7,000 gallons
Unloading Spot LS-2100	Trailer	7,000 gallons
Unloading Spot LS-1215	Rail Car	20,000 gallons
Unloading Spot LS-1216	Rail Car	20,000 gallons
TOTAL		371,000 gallons

Part VI - Incinerator Tank System Storage Conditions. The incinerator “tank farm” is currently located between the 703 and 830 Incinerators. Its location will not change as a result of the replacement of these incinerators with the 32 Incinerator. Seven of these above-ground, vertical steel tanks are used to store organic liquid wastes prior to incineration; one is used to store water waste; and two are used to collect drainage from unloading spots. The tanks are located in a secondary containment area that is constructed with concrete floors and dikes to contain leaks, spills, and accumulated precipitation. Accumulated liquids are managed in essentially the same manner as that described for the other container and tank storage areas at the facility. This part of the operating license also contains conditions for the operation, maintenance, and assessment of the tank systems referenced below and special requirements for the management of ignitable, reactive, and incompatible wastes.

Tank System	Storage Design Capacity
V-101	10,150 gallons
V-301	18,700 gallons
V-302	18,700 gallons
V-303	18,700 gallons
V-401	18,700 gallons
V-402	15,900 gallons
V-403	18,700 gallons
V-404	18,700 gallons
V-601	7,000 gallons
V-701	7,000 gallons
TOTAL	152,250 gallons

Part VII - Incinerator Treatment Conditions. Page 4 of this Fact Sheet provides an overview of the changes in the regulatory status for the incinerators at the facility since the Hazardous Waste Combustor MACT shifted the bulk of the hazardous waste incinerator regulatory requirements from the hazardous waste program to the air program. The operating license includes the conditions necessary to allow the operation of the 703 and 830 Incinerators to treat hazardous waste that is generated during the transition period until the shakedown of the 32 Incinerator has been completed. The design capacities for the incinerators are shown below.

Incinerator	Maximum heat output for the unit, including hazardous waste and auxiliary fuels
32	130 MMBTU/hr
703	85 MMBTU/hr
830	60 MMBTU/hr

An updated closure plan for the 703 and 830 Incinerators is required to be submitted to the MDEQ for review and approval concurrent with the submittal of the 32 Incinerator certification. Refer to the operating license for the complete set of applicable requirements (e.g., Documentation of Compliance, Continuous Monitoring System Performance Evaluation Plan, Comprehensive Performance Testing (CPT), Notification of Compliance after the CPT) and to the Compliance Schedule for the 32 Incinerator, included in Attachment 3 to this Fact Sheet, for a comprehensive list of the MACT compliance activities and due dates. The Fact Sheet dated July 31, 2001, that was developed by the MDEQ, AQD, for public participation on Permit Application 212-00A is included in Attachment 3 to this Fact Sheet for informational purposes. Condition VII.A.6. of the draft operating license provides that the Director may require a site specific risk assessment (SSRA) of the 32 Incinerator if the Director determines that the results of the CPT or other relevant information indicates that the 32 Incinerator is a potential threat to human health and the environment. Under the “omnibus authority” provided under R 299.9521(3)(b) of Michigan’s hazardous waste program, additional conditions may be imposed for the 32 Incinerator if the SSRA shows that the MACT standards are not sufficient to protect human health and the environment. The U.S. EPA “Hazardous Waste Combustion (HWC) National Emission Standards for Hazardous Air Pollutants (NESHAP) Final Rule Fact Sheet: Resource Conservation and Recovery Act Site-Specific Risk Assessment Policy for Hazardous Waste Combustion Facilities,” July 2000 is included in Attachment 3 to this Fact Sheet for informational purposes. The MDEQ, Waste and Hazardous Materials Division staff who have incinerator licensing and compliance responsibilities will continue working with the AQD staff during the transition period and will assist with CPT oversight and other transitional activities, as needed.

Part VIII - Surface Impoundments Storage and Treatment Conditions. The operating license includes conditions necessary for the final treatment of secondary effluent from Dow’s WWTP in a hazardous waste surface impoundment prior to sand filtration and discharge to the Tittabawassee River. The Tertiary Pond consists of three ponds in series that provide temperature equalization, storage, aeration,

biological treatment, flow stabilization, and surge capacity. The design capacities for the individual ponds are shown in the table below.

Tertiary Pond Surface Impoundments	Surface Area	Capacity
Pentagonal	7.5 acres	33,000,000 gallons
Rectangular	13 acres	50,000,000 gallons
Main	182 acres	700,000,000 gallons
TOTAL	202.5 acres	753,000,000 gallons

The Tertiary Pond is authorized to treat no more than a total volume of 50,000,000 gallons per day in accordance with the waiver under RCRA from meeting the minimum technology requirements for surface impoundments in 40 CFR 264 Subpart K. The U.S. EPA approved the waiver in the Determination Regarding Minimum Technology Requirements Pursuant to Section 3005(j)(3), dated October 6, 1987. In 1991, Dow was required to install a Tertiary Pond RGIS to ensure that hazardous constituents do not vent to surface water. This replaced the requirement to comply with the alternate concentration limits for groundwater listed in the Determination referenced above. This remainder of the waiver continues in effect. Updated requirements for the operation and monitoring of the Tertiary Pond RGIS are included in Part X, Environmental Monitoring, of the operating license.

Part IX - Post-Closure Care Conditions for Closed Units. Conditions for the post-closure care (e.g., environmental monitoring, inspections, maintenance, site security, post-closure use of the property) are included in this part of the operating license for the following closed hazardous waste surface impoundments:

Closed Unit	Closed Unit Process Design Capacities and General Description of Wastes Managed
Diversion Basin Certified Closed March 8, 1989	37,000,000 gallons Diverted untreated waste water and manufacturing complex surface run-off
Open Wastewater Conduits Certified Closed December 27, 1988	
Conduit A	50,000 gallons General influent wastewater
Conduit B	310,000 gallons Phenolic treatment system influent wastewater
Conduit C-1	1,000,000 gallons General influent wastewater
Conduit C-2	90,000 gallons Diverted primary wastewater
Conduit C-3	50,000 gallons Secondary treated wastewater
Sludge Dewatering Facility Certified Closed January 29, 1990	136,000,000 gallons Wastewater Treatment Plant Solids; tanker truck flushings; and sludges from the closure of the Diversion Basin and Open Wastewater Conduits

Wastes and visibly contaminated soils were removed from the Diversion Basin and Open Wastewater Conduits, but they were not clean closed. The Sludge Dewatering Facility was closed with waste in place. The Diversion Basin was replaced with Diversion Tanks that are part of Dow's WWTP which are subject to the wastewater treatment unit exemption pursuant to R 299.9503(1)(f) and, therefore, not required to be licensed. The Open Wastewater Conduits were replaced with piping, which is also

exempt from licensing. In addition, the dewatering of WWTP solids is now being done in exempt wastewater treatment units instead of a surface impoundment.

C. Other Facility-Specific Operating License Conditions

Facility-specific conditions are included in the following parts of the operating license:

Part X – Environmental Monitoring Conditions. The environmental monitoring programs required under the operating license are summarized in Section III, Environmental Impact, below.

Part XI – Corrective Action Conditions. This part of the operating license identifies the waste management units (WMUs) and areas of concern (AOCs) at the facility and requires Dow to continue implementing on-site corrective measures in a phased manner. Refer to Part XI of the operating license for the tables listing the WMUs and AOCs and the corrective action requirements. The Compliance Schedule in Attachment 4 to this Fact Sheet contains a list and prioritized schedule for the corrective action work required to be conducted under the operating license. The operating license includes the proposed corrective action process to address off-site releases.

Part XII – Schedules of Compliance. This part of the operating license requires Dow to comply with:

- The prioritized compliance schedule for environmental monitoring and corrective action contained in Attachment 28 of the operating license. This compliance schedule is attached to this Fact Sheet as Attachment 4. The MDEQ may require additional corrective action based upon the results of the compliance schedule work, other relevant information, or changed conditions which lead the MDEQ to determine that there is, or may have been, a release of a contaminant(s) from WMU(s) or AOC(s).
- The schedule of due dates to conduct activities necessary to comply with the hazardous waste combustor MACT standards are contained in Attachment 29 of the operating license. This compliance schedule is included in Attachment 3 to this Fact Sheet.

III. ENVIRONMENTAL IMPACT

A. Wastes Stored, Treated, and Disposed

The hazardous wastes that can be stored, treated, and disposed by Dow are included in Attachment 8, List of Acceptable Waste Types for Management at the Michigan Operations, Midland Plant Site, and Attachment 21, List of Waste Types Managed in Closed Units, of the operating license. These are attached to this Fact Sheet as Attachment 5. Dow manages an extensive universe of hazardous wastes generated on-site and at off-site Dow facilities and subsidiaries. In addition, Dow manages compatible non-hazardous wastes and wastes from local household hazardous waste collection days. On-site incineration is the primary means used by Dow to reduce the volume and toxicity of hazardous and non-hazardous wastes that it generates. Refer to the Contingency Plan for the facility, Attachment 4 of the operating license, for a description of the procedures that must be followed in the event that fires, explosions, or releases of hazardous waste or hazardous waste constituents to air, soil, or surface water occur which could threaten human health or the environment.

B. Groundwater Monitoring

Dow conducts groundwater monitoring to evaluate whether hazardous constituents from the regulated units (container storage areas, tank storage and treatment areas, incinerators, and existing and closed surface impoundments) have entered the groundwater below the waste management areas. The draft operating license includes multiple groundwater monitoring programs to detect contamination and to effectively evaluate the groundwater remediation at the site. Groundwater monitoring is being

significantly expanded beyond the programs conducted under the 1988 operating license and federal permit.

Monitoring Program	Type of Program	Monitoring Frequency
Glacial Till and Regional Aquifer Groundwater	Detection/Chemical	Quarterly
Sludge Dewatering Facility Groundwater	Detection/Chemical	Leak Detection Wells Quarterly
	Detection/Chemical	Other Monitoring Wells Annually
	Detection/Hydraulic	Quarterly
Poseyville Landfill Groundwater	Detection/Chemical	Quarterly
	Corrective Action/Hydraulic	Quarterly
	Corrective Action/Chemical	Quarterly
Six Purge Wells Groundwater	Corrective Action/Chemical Characterization	Within 60 days After Operating License Issuance
	Corrective Action/Hydraulic	Quarterly
Sand Bar Groundwater	Corrective Action/Chemical	Annually
	Corrective Action/Hydraulic	Real-Time (Averaged on a 12 Hour Basis)
		Bi-Monthly Manual Confirmation
Tertiary Pond Groundwater	Compliance/Chemical	Quarterly (for one year after ceasing Purge Well 4290 operation); if remediation is not complete, continue Quarterly until four consecutive samples show remediation is complete
		Semi-Annual After Remediation is Complete
	Detection/Hydraulic Slurry Wall Integrity	Monthly
East-Side Main Plant RGIS Groundwater	Hydraulic	Real-Time (each primary piezometer averaged on a 12 hour basis)
		Bi-Monthly Manual Confirmation and River Level Comparison
East-Side Main Plant RGIS Groundwater	Chemical - Lift Stations	Annually
West-Side Main Plant and Tertiary Pond RGIS Groundwater	Hydraulic	Monthly Manual Reading and Water Level Comparison
	Chemical – Lift Station 20	Annually
Facility Shallow Groundwater	Hydraulic	Quarterly and Annual
	Chemical (Detection, Compliance or Corrective Action, As Appropriate)	If Hydraulic Monitoring Shows Existence or Potential for Off-Site Groundwater Flow

C. Ambient Air Monitoring Program

Dow has conducted ambient air monitoring since 1992 to track air emissions at the facility. Selected volatile organic compounds and metals will continue to be monitored every 12 days as described in Attachment 26 of the operating license.

D. Soil Monitoring Programs

Under the operating license, Dow will be required to expand the semi-annual soil box monitoring program that was implemented in 2002 as part of the Tertiary Pond solids removal project pursuant to an agreement with the Public Interest Research Group in Michigan and a program approved by the MDEQ and U.S. EPA. This monitoring is described in Attachment 24 of the operating license. Soil boxes are currently located at the 23 Gate, which is near the railroad track on South Saginaw Road, and at Dow's Salzburg Road Landfill. Additional soil boxes will be added at major exit points from the facility: at the 2 Gate, near the 47 Building on East Main Street, and at the 11 Gate, on Bay City Road. Dow will also be required to establish a soil monitoring program in the Green Belt Areas located on Dow property north and east of the facility fence line along Bay and Saginaw Roads downwind of the facility in areas where clean top soil was placed during Phase I of the Soil and Groundwater Exposure Control Program. The purpose of these programs is to verify that the Soil and Groundwater Exposure Control Program, Attachment 27 of the operating license, is effectively preventing the track out of dioxins and furans from the facility and preventing the migration of dioxins and furans from facility surficial soils via blowing dust.

E. Surface Water Monitoring

Dow currently conducts a surface water monitoring program to evaluate whether hazardous constituents have entered the surface water in Bullock Creek and the Tittabawassee River. The surface water monitoring program will be updated under the Compliance Schedule referenced in Part XII of the operating license. Sand Bar groundwater is also required to be evaluated as part of the Surface Water Monitoring Program that is required to be developed under the Compliance Schedule.

F. Leachate Monitoring

Dow conducts leachate monitoring for the Sludge Dewatering Facility, a surface impoundment that was closed with waste in place. Monthly leachate volumes are reported annually. Hydraulic monitoring is conducted on a quarterly basis. Chemical monitoring is conducted every four years. The leachate is sampled and analyzed for the parameters listed in Attachment 24 of the operating license.

Corrective action leachate monitoring at the Poseyville Landfill will be conducted after the current environmental monitoring program has been revised in accordance with the Compliance Schedule, Attachment 28 of the operating license.

IV. **MAJOR OPERATING LICENSE MODIFICATION**

The MDEQ also proposes to approve a major operating license modification for Dow's Salzburg Road Landfill located at 2314 West Salzburg Road in Midland, Michigan concurrent with the issuance of the Michigan Operations facility renewal operating license. The request for the operating license major modification for Dow's Salzburg Road Landfill was made on July 15, 2002, and was subsequently revised. The modification is necessary to ensure that the hazardous waste codes applicable to the incinerator ash, treatment residuals, and other wastes that are disposed at the landfill, remain consistent with the waste types proposed for management under the draft facility operating license.

The operating license for Dow's Salzburg Road Landfill issued on January 12, 1987. This operating license expired on January 12, 1992; however, the company submitted a timely reapplication and has,

therefore, been allowed to continue operating the landfill under the conditions of the existing license until a renewal license is issued. This extension is allowed by 1969 PA 306, as amended, under the Michigan Administrative Procedures Act. It is anticipated that the application review for the landfill will be resumed by the MDEQ after a final decision is made on the facility operating license described in this Fact Sheet.

Condition III.C. of the January 12, 1987 operating license provides for the construction and maintenance of new cells in accordance with the site development plan. Consequently, the MDEQ has continued to allow such construction. The new landfill cells that have been approved by the MDEQ are required to be designed, constructed, operated, and maintained in accordance with the current regulatory requirements for landfills. The most recently constructed hazardous waste landfill cell, designated as Cells 20-22, was constructed in 2000 and approved for use in 2001. This cell will also be used for the disposal of compatible non-hazardous wastes.

In 1984, Congress created the U.S. EPA's Land Disposal Restrictions (LDR) program. The LDR program ensures that toxic constituents present in hazardous wastes are properly treated before they are land disposed. Since then, mandatory technology-based treatment standards have been developed that must be met before hazardous waste is placed in a landfill. These standards were devised to minimize short and long-term threats to human health and the environment. New hazardous waste codes, and subsequently, new LDR standards are periodically added to the federal and state hazardous waste regulations.

Most of the hazardous waste codes that Dow requested to manage in the Salzburg Road Landfill are codes that are handled at the Michigan Operations facility and treated by incineration. Due to the mixture and derived-from rule, the incinerator ash carries these codes, so Salzburg Road Landfill must be licensed to receive these codes. These new hazardous wastes may only be disposed at the Salzburg Road Landfill if they meet the applicable LDR treatment standards listed in 40 CFR Part 268. The amendment would delete the list of hazardous waste codes that is currently attached to the Salzburg Road Landfill operating license and replace it with an updated list that includes waste codes that have been added to Part 2, Identification and Listing of Hazardous Waste, in the Part 111 of Act 451 rules since the facility operating license was issued. Hazardous waste codes that were inadvertently not included in the original list of acceptable waste types for disposal in the landfill have been requested to be added at this time as well. This list is included in Attachment 6 to this Fact Sheet.

V. PUBLIC PARTICIPATION

A. Public Comment Procedures

The purpose of public participation is to ensure that the interested public has knowledge of the MDEQ proposed actions, and that it has the opportunity to comment on those actions. In addition, the process ensures that the MDEQ has the opportunity to benefit from any information the public might have, relevant to the proposed actions.

Comments may be submitted in writing to the addressee listed in Subsection C between October 7, 2002 and December 6, 2002, or comments may be presented at the public hearing. The public comment and public hearing procedures that will be followed are stated in MAC R 299.9514 and R 299.9515 and in 40 C.F.R. 124.11 and 124.12.

Public information meetings will be held at 7:00 p.m. on October 22, 2002 at the Midland High School Cafeteria, 1301 Eastlawn Drive, Midland, Michigan, and at 7:00 p.m. on October 29, 2002 at the H.H Dow High School Cafeteria, 3901 North Saginaw Road, Midland, Michigan.

The public hearing on the Part 111 of Act 451 operating license and major operating license modification is scheduled for 4:00 to 6:00 p.m., and will begin again at 7:00 p.m., on November 7, 2002,

at the Midland Center for the Arts Garden Room, located at 1801 West St. Andrews in Midland, Michigan.

The locations for the public information meetings and the public hearing are accessible to disabled persons. Any person requiring specialized accommodations or assistance, such as an interpreter for the deaf, meeting materials in Braille, large print, or on audio tape, should contact Ms. Julie Blanchard, at the address given in Subsection C, or at 517-373-9875 a week in advance of each meeting.

After the public hearing and the close of the public comment period, the MDEQ will decide whether to issue the final operating license and approve the major operating license application. Written comments submitted during the public comment period and statements provided at the public hearing will be considered by the Chief of the Waste and Hazardous Materials Division (WHMD) in the formulation of the final decision. Responses to written comments and statements will be included in the record supporting the final decision of the agency. The MDEQ's final decision on the operating license and major operating license modification will be communicated to the applicant, each person who submitted a written comment during the public comment period, persons providing statements at the public hearing, and all persons on the facility mailing list.

B. Locations of Available Information

The administrative record for the Part 111 of Act 451 operating license is on file at the MDEQ, WHMD Office located on the North Atrium (lower level) of Constitution Hall at 525 West Allegan in Lansing, Michigan (contact Ms. Cheryl Howe at 517-373-9881). In addition, copies of the draft operating license and major operating modification, the Fact Sheet, and the operating license application are available for review at the MDEQ, Saginaw Bay District Office located at 503 North Euclid in Bay City, Michigan (contact Ms. Trisha Peters at 989-686-8025, ext. 8204); and the Reference Desk of the Grace A. Dow Memorial Library, located at 1710 West St. Andrews in Midland, Michigan (989-837-3449).

C. Due Date for Public Comment and Information Contacts

Written comments concerning the draft operating license should include the name and address of the writer, a concise statement of the basis for the comments, and the supporting relevant facts upon which the comments are based. Written comments must be postmarked no later than December 6, 2002. Comments and requests regarding the Part 111 of Act 451 operating license and/or major operating license modification should be addressed to: Ms. Cheryl Howe, Waste and Hazardous Materials Division, Michigan Department of Environmental Quality, P.O. Box 30241, Lansing, Michigan 48909.

Information contacts are as follows:

Topics	Contact	Phone
General licensing information, containers, tanks, surface impoundments, ambient air monitoring, and air emissions	Ms. Cheryl Howe	517-373-9881
Environmental monitoring, on-site corrective action, and related compliance schedules	Mr. Allan Taylor	517-335-4799
Incineration and related storage, treatment, and compliance schedule	Mr. Daniel Dailey	517-335-6610
Toxicological information related to facility corrective action and risk assessment	Dr. Deborah MacKenzie-Taylor	517-335-4715
Incinerator air permit	Mr. Paul Schleusener	517-335-6828
Compliance history and inspections	Ms. Trisha Peters	989-686-8025, ext. 8204
Off-site corrective action	Mr. Jim Sygo	517-335-1104

