

ATTACHMENT 13
CORRECTIVE ACTION

MODULE B9

SOLID WASTE MANAGEMENT UNIT (SWMU) INFORMATION

As required by the Hazardous and Solid Waste Amendments of 1984 (HSWA), Section 3004 (a), this section contains information on Waste Management Units at the Dow Corning Corporation (Dow Corning) Midland Site.

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B9.A WASTE MANAGEMENT UNIT INFORMATION

B9.A.1 Solid Waste Management Units [40 CFR 270.14(d)(1)(i)-(v)]

Listed in Tables B9-1, B9-2, B9-3 and B9-4 are summaries of Solid Waste Management Units (SWMUs) at Dow Corning's Midland, Michigan plant site. Each of these SWMUs, except the chemical sewer, is identified on drawings provided in Appendix B9-1.

Detailed historical information, sampling data, and information on corrective actions have been provided to Department of Natural Resources and Environment (DNRE) and U.S. EPA in the *RCRA Facility Investigation (RFI)*, Phase I, submitted by Dow Corning on February 9, 1989 and *RFI Phase II*, submitted on August 30, 1991. All SWMUs except the landfill and chemical sewer have been determined by U.S. EPA to require no further action at this time, as a result of corrective measures already taken, including installation of the Site Interceptor System (SIS). The U.S. EPA's determination is documented in a letter to Dow Corning dated September 30, 1994 regarding the final Federal Permit for Dow Corning.

The SIS is a system of buried drainage tiles completely enclosing the perimeter of the Midland plant site. It is designed to capture all shallow groundwater flowing off-site most of the site, thereby preventing any potential contamination from reaching groundwater outside the facility property. Design and construction details of the SIS have also been provided to DNRE and U.S. EPA, beginning with the proposed *Corrective Action Plan (CAP)* submitted on April 26, 1993, including various revisions and detailed construction logs, and concluding with the submittal of a complete set of as-built drawings on October 20, 1997.

B9.A.2 Areas of Concern

Two Areas of Concern (AOCs) were listed in the U.S. EPA Hazardous Waste Management Permit, issued September 30, 1994, the 1000 Block Demolition Pile and the 4700 Storm Water Retention Pond. These areas were addressed in the *RCRA Facility Investigation Final Report*, which was submitted to DNRE in January 2001. The *RCRA Facility Investigation Final Report* incorporated results from a previous investigation (*Dow Corning Midland Facility RFI Release Assessment* document, submitted to U.S. EPA Region 5 and Michigan DNRE on December 20, 1995, with a subsequent revision filed on January 30, 1997).

These reports evaluated exposure pathways and determined that soil impact to groundwater was not a relevant pathway because the regional aquifer is protected by a impermeable clay layer approximately 80 feet thick. The concentrations of all parameters in samples from the demolition pile and stormwater retention pond were less than direct human contact criteria, particulate soil inhalation criteria, criteria for protection of indoor air and criteria for protection of ambient air. Therefore, these areas do not present a hazard to human health through groundwater, direct contact or through air.

B9.A.3 Contaminant Release Information [40 CFR 270.14(d)(2)]

Table B9-5, located at the end of this section, contains a list of releases of hazardous waste or hazardous waste constituents from SWMUs since the issuance of the 1994 hazardous waste facility license. All releases listed in Table B9-5 were reported to Michigan DNRE as required and immediate cleanup actions were taken as described.

See Module A7 (Contingency Plan) for details on procedures for handling releases at the facility. Although the response measures taken are believed to have been adequate to prevent negative environmental impact, these releases all occurred at locations within the plant site area bounded by the site interceptor system (SIS) corrective action measure. The SIS captures groundwater before it migrates off-site, and will also capture any hazardous wastes or hazardous constituents which may remain after the releases are cleaned up. Details of SIS design and construction and the monitoring programs are included in Module B2 (*Corrective Action Information*) and Module B5 (*Environmental Monitoring Programs*), respectively. Most of the releases listed occurred at existing SWMUs; the few that did not occur at existing SWMUs, were releases to air only. For this reason, and because all cleanup measures were prompt and thorough, Dow Corning does not consider any of these releases to have created any new SWMUs.

Table B9-1

**Summary of Solid Waste Management Units
(SWMUs)**

**Table B9-1
Summary of SWMUs
Dow Corning Corporation, Midland, Michigan**

(ID#s refer to Drawing Y1-74997, provided in Appendix B9-1)

ID#	Description	Wastes Managed	Period of Operation	Status	Closure File Date/ Agency Submitted
N/A	Surface sands surrounding landfill	Benzene, chlorobenzene, ethylbenzene, toluene, xylene	Historic	NFA ¹	September 30, 1994 / EPA Region V
1	Neutralization Bed: Synthetic membrane with 2 ft. clay cover	Corrosive (acidic) brine wastewater - D002	1975-1989	Closed ²	December 16, 1992 / DNRE
2	Neutralization Tank: Concrete, lined with HDPE; secondary containment consisting of 60 mil polyethylene on clay base, with leak detection	Corrosive (acidic) brine wastewater - D002	1988-present	NFA ¹	September 30, 1994 / EPA Region V
3	304 Vinyl Chloride Vent Incinerator - emissions control device	Vinyl chloride air emissions - not a solid waste	1974-1978	NFA ¹	September 30, 1994 / EPA Region V
4	337 Scrubber Gel Accumulation Pond	Corrosive (D002, acid) brine solutions containing HCl, nonreg. siloxane gels	1971-1988	NFA ^{1,6}	September 30, 1994 / EPA Region V
4	337 Scrubber Gel Accumulation Tank	Corrosive (D002, acid) brine solutions containing HCl, nonreg. siloxane gels	1987 present	NFA ¹	September 30, 1994 / EPA Region V
5	400 Block Wood Ash Storage Building	Nonregulated wood ash from wood-fire electric power generating process	1982-present	NCSA ⁴	Covered under the existing SIS Corrective Action
6	501 Building North Skimmer	Wastewater with silicones and solvents (D001)	1977-present	NFA ¹	September 30, 1994 / EPA Region V
7	501 Building South Skimmer	Wastewater with silicones and solvents (D001)	1979-2005	NFA ¹	September 30, 1994 / EPA Region V
8	505 Building East Skimmer	Wastewater with silicones and solvents (D001)	1979-present	NFA ¹	September 30, 1994 / EPA Region V
9	700 Block Waste Pile	Debris, soil, crushed drums	1950's & '60's	NFA ¹	September 30, 1994 / EPA Region V
10	513 Spill Area Pond	Toluene	May, 1987	NFA ¹	September 30, 1994 / EPA Region V
11	800 Block Container Storage facilities, original	Solvents, chlorosilanes, silicone fluids, debris, nonhazardous wastes - primary waste codes D001, D003, F002-F005	801: 1978-present 809: 1988-present	NCSA ⁴	Covered under the existing SIS Corrective Action
12	Landfill: 6-ft. thick compacted clay walls and 25-ft. thick native clay liner, with leachate collection system and external interceptor drainage system.	Nonhazardous wastes since 1984; D008 (lead) prior to that time	1943-Present	existing ⁵	Existing unit, still in operation. Not closed
13	Truck Wash Facility	Dirt tracked from landfill on vehicles - RCRA non-regulated	1986-present	NFA ¹	September 30, 1994 / EPA Region V

**Table B9-1
Summary of SWMUs (continued)
Dow Corning Corporation, Midland, Michigan**

ID#s refer to Drawing Y1-74997, provided in Appendix B9-1

ID#	Description	Wastes Managed	Period of Operation	Status	Closure File Date/ Agency Submitted
14	800 Block Tank Farm, original	Solvents, chlorosilanes, silicone fluids - primary waste codes D001, D003, F002-F005	1968-1989	Closed ⁸	May 21, 1990 / DNRE
15	Site Paint Area: 62,500 ft ²	Mineral spirits, toluene, xylene	1972 - present	NFA ¹	September 30, 1994 / EPA Region V
16	Benzene Spill Area	Benzene	January 1989	NFA ¹	September 30, 1994 / EPA Region V
17	Quench Pond: Basins excavated in native clay, with bentonite curtain wall for groundwater protection	Ignitable, corrosive, and reactive chlorosilane wastes - D001, D002, D003	1975-1988	Closed ³	April 5, 1996 / DNRE
18	Aboveground Quencher Tank: Concrete with synthetic liner, on clay base with bentonite curtain wall for groundwater protection	Ignitable, corrosive, and reactive chlorosilane wastes - D001, D002, D003	1987-1994	NFA ¹	September 30, 1994 / EPA Region V
19	Transfer Stations 207 Bldg: Compactor for nonhaz. trash	Nonhazardous trash and scrap metal	207 Bldg: 1974-Present	NFA ¹	September 30, 1994 / EPA Region V
19	800 Block: Compactor for nonhaz. trash and bin for scrap metal	Nonhazardous trash and scrap metal	1979-Present	Existing	Existing unit, still in operation. Not closed
20	207 Spill Area	Toluene, xylene, 1-1-1-trichloroethane	October, 1975	NFA ¹	September 30, 1994 / EPA Region V
21	Dow Injection Well	Nonregulated wastewater	1951-1969	NFA ¹	September 30, 1994 / EPA Region V
22	505 Spill Area	Toluene, benzene	February, 1979	NFA ¹	September 30, 1994 / EPA Region V
23	513 (Pinto) Spill Area	Toluene	May, 1987	NFA ¹	September 30, 1994 / EPA Region V
	Chemical Sewer	Various solvents	current	Existing ⁵	Existing unit, still in operation. Not closed
26	New Site Paint Facility	Mineral spirits, toluene, xylene	current	Existing	Existing units, still in operation. Not closed
27	604 Vaults	Carbon tetrachloride, chloroform, toluene, dichloropropane	current	Existing	Existing unit, still in operation. Not closed
28	802 Dewatering area	Mixed solvents	1990-2009	Demolished ⁹	Area will be included in the 800 Block Closure
SWMUs not addressed by SIS					
24	Demolition Pile	Construction debris		NFA ⁷	Not Applicable for Closure
25	4705 Stormwater Retention Pond	Low levels of mixed solvents	current	NFA ⁷	Existing units, still in operation. Not closed

Table B9-1
Summary of SWMUs (continued)
Dow Corning Corporation, Midland, Michigan

Notes:

1. NFA - No further action. These SWMUs were listed by U.S. EPA as requiring no further action. This determination was contained in Response 2.a. of the document "Response to Comments on the Draft Federal HSWA Permit", transmitted to Dow Corning with a letter from Norman R. Niedergang, Associate Division Director for RCRA, Region 5 U.S. EPA, dated September 30, 1994.
2. Closed. Closure of the Neutralization Bed unit was accepted by DEQ, as documented in letter of December 16, 1992 from Roland Harnes, Michigan DEQ to Wayne Winslow, Dow Corning. Response 2.b. of the document cited in Note 1, above, states this unit is "not subject to corrective action at this time..." because of closure.
3. Closure of the Quench Pond unit was accepted by DEQ, as documented in letter of April 5, 1996 from Jim Sygo, Michigan DEQ to Ron Perry, Dow Corning. Response 2.b. of the document cited in Note 1, above, states this unit is "not subject to corrective action at this time..." because of closure.
4. NSCA - Not subject to corrective action. Response 2.c. in the document cited in Note 1, above, states that these units "are not subject to corrective action at this time since the units have been determined to have adequate secondary containment, lack evidence of any release of hazardous waste or hazardous constituents, and are covered by the SIS corrective measure..."
5. Existing units, still in operation. Response 2.d. of the document cited in Note 1, above, states that the Chemical Sewer and Landfill "will be subject to corrective action when the facility undergoes final closure..." Until such time, any potential releases are adequately addressed by the SIS.
6. When the 337 Scrubber Gel Accumulation Pond was closed a dewatering system of perimeter tiles was installed and accumulated groundwater pumped to the chemical sewer for treatment.
7. Extensive sampling conducted on both AOC's concluded there were no exceedances of USEPA or relevant Michigan Cleanup Criteria, and therefore no further action should be required.
8. Closure of the original 800 Block tank farm was certified and submitted to MDEQ on May 21, 1990.
9. Concrete dewatering area was removed after proper decontamination. Material was placed into the 800 block landfill. Since area is part of the 800 block facility it will be closed as part of the final closure of the facility, and therefore no further action is required.

Table B9-2
Ninety-Day Hazardous Waste Drum & Dempster Storage Areas
Dow Corning Corporation, Midland, Michigan

ID#s refer to Drawing Y1-75002, provided in Appendix B9-1

ID#	Description	Wastes Managed	Period of Operation	Status
A. Drum Storage Areas				
1.	Bldg. 109	Toluene, xylene	current	NSCA
2.	Bldg. 212	Xylene	current	NSCA
3.	Bldg. 303	Toluene, xylene	current	NSCA
4.	Bldg. 321	Toluene, xylene, methanol	current	NSCA
5.	Bldg. 322	Cyclohexane	current	NSCA
6.	Bldg. 324	Toluene, xylene, methanol	current	NSCA
7.	Bldg. 505	Toluene, xylene	current	NSCA
8.	Bldg. 516	Phenyl chlorosilane	current	NSCA
9.	Bldg. 2504	Siloxane	current	NSCA
10.	Bldg. 2602		current	NSCA
11.	Bldg. 2703	Methanol, toluene, aminosilane	current	NSCA
12.	Bldg. 2901	Toluene, xylene	current	NSCA
13.	Bldg. 3104	Toluene, xylene	current	NSCA
14.	Bldg. 5102	Xylene	current	NSCA
16.	Bldg. 601	Molecular sieves, cyclic siloxanes	current	NSCA
B. Dempster storage areas - see Drawing Y1-75002				
1.	Bldg. 106	Chlorosilane	current	NSCA
3.	Bldg. 310	Heptane, methanol	current	NSCA

Notes:

1. Generator 90-day container and Dempster storage areas "closed" were decontaminated by power washing with high pressure water to remove all visible residues of hazardous waste and waste constituents. Decontamination water was disposed in wastewater sewer for treatment at Dow Chemical's NPDES permitted wastewater treatment facility.
2. NSCA - Not subject to corrective action. Response 2.c. of the document "Response to Comments on the Draft Federal HSWA Permit", transmitted to Dow Corning with a letter from Norman R. Niedergang, Associate Division Director for RCRA, Region 5 U.S. EPA, dated September 30, 1994, states that these units "are not subject to corrective action at this time since the units have been determined to have adequate secondary containment, lack evidence of any release of hazardous waste or hazardous constituents, and are covered by the SIS corrective measure...".

Table B9-3
Hazardous Waste Railcar and Tank Truck Loading Areas
Dow Corning Corporation, Midland, Michigan

ID#s refer to Drawing Y1-75002, provided in Appendix B9-1

ID#	Description	Wastes Managed	Period of Operation	Status
Railcar loading/unloading stations				
1.	Bldg. 2502 - 15G hazardous waste railcar loading station	Chlorosilanes	current	NSCA
Tank trailer loading stations:				
2.	Bldg. 212	Xylene	current	NSCA
3.	Bldg. 303	Toluene, xylene, methanol, isopropanol	current	NSCA
4.	Bldg. 308	Xylene, benzene, chlorosilane	current	NSCA
5.	Bldg. 321	Xylene, toluene, methanol	current	NSCA
6.	Bldg. 322	Cyclohexane, hexane, toluene, chlorosilane	current	NSCA
7.	Bldg. 324	Toluene, xylene, methanol, heptane, methyl ethyl ketoxime	current	NSCA
8.	Bldg. 501	Heptane, mixed chlorinated hydrocarbons	current	NSCA
10.	Bldg. 505	Toluene, xylene, methanol	current	NSCA
11.	Bldg. 513	Ethyl ether, ethanol, ethyl chloride, methanol	current	NSCA
12.	Bldg. 602	Xylene, dimethylcyclosiloxanes	current	NSCA
13.	Bldg. 604	Methyl dichlorosilane, methyl trichlorosilane	current	NSCA
14.	Bldg. 800	Chlorinated & non-chlorinated solvents, chlorosilanes	current	NSCA
15.	Bldg. 2504	Isopropanol	current	NSCA
16.	Bldg. 2508	Chlorosilanes	current	NSCA
17.	Bldg. 2704	Methanol, isopropanol, methyl chloride	current	NSCA
18.	Bldg. 2901	Toluene, acetonitrile	current	NSCA

Notes:

- Trailer loading stations "closed" have been decontaminated and secondary containment power washed as described above for associated tank closures.
- NSCA - Not subject to corrective action. Response 2.c. of the document "Response to Comments on the Draft Federal HSWA Permit", transmitted to Dow Corning with a letter from Norman R. Niedergang, Associate Division Director for RCRA, Region 5 U.S. EPA, dated September 30, 1994, states that these units "are not subject to corrective action at this time since the units have been determined to have adequate secondary containment, lack evidence of any release of hazardous waste or hazardous constituents, and are covered by the SIS corrective measure..."

**Table B9-4
Hazardous Waste Tank Storage Areas
Dow Corning Corporation, Midland, Michigan**

see Drawing Y1- 74998, provided in Appendix B9-1

ID#	Description	Wastes Managed	Period of Operation	Status
1.	Bldg. 106, tank 5967	Toluene xylene	current	NSCA
2.	Bldg. 305, tank 5207	Chlorosilanes	current	NSCA
3.	Bldg. 212, tanks 6057, 6059	Xylene (both)	current	NSCA
4.	Bldg. 306, tank 21	Toluene, xylene	current	NSCA
6.	Bldg. 321, tanks 6900, 6901, 6903	Xylene, toluene, methanol	current	NSCA
7.	Bldg. 322, tank 7632	Cyclohexane, hexane, toluene, chlorosilane	current	NSCA
8.	Bldg. 324, tank 5616	Toluene, xylene, methanol, heptane, methyl ethyl ketone	current	NSCA
9.	Bldg. 501, tank 15030 (tank 6216 closed)	Heptane, siloxanes	current	NSCA
10.	Bldg. 502, tank 256	Benzene, chlorosilanes, toluene, biphenyls, phenylsilanes	current	NSCA
11.	Bldg. 505, tank 5-500	Xylene, toluene, methanol	current	NSCA
12.	Bldg. 513, tanks 5-605E, 5-617E	5-617E: methanol	closed 1999	NSCA
13.	Bldg. 516, tank 10633	Benzene, chlorosilane, phenyl hydrogen silane, chlorobenzene	current	NSCA
14.	Bldg. 602, tanks 6184, 6622, 8884	6184: dimethyl cyclic siloxanes	current	NSCA
15.	Bldg. 604, tank 8052 (8033, 8054, 8055 closed 1999)	8052: chlorosilane	current	NSCA
17.	Bldg. 2502, tanks 25-101, 25-104 (25-103 closed 1999)	25-101: benzene, chlorosilane, chlorobenzene, toluene 25-103 & -104: chlorosilane	current	NSCA
18.	Bldg. 2504, tanks 8330, 8331 (8322 & 8352 closed 1999)	Isopropanol (all)	current	NSCA
19.	Bldg. 2704, tanks 9011, 9013, 9016, 9005	9011: IPA, methanol; 9013: methanol; 9016: methylchloride; 9005: methanol, ethylenediamine	current	NSCA
20.	Bldg. 323, tank 16731	Xylene, chlorosilane	current	NSCA

Table B9-4 (continued)
Hazardous Waste Tank Storage Areas
Dow Corning Corporation, Midland, Michigan

see Drawing Y1- 74998, provided in Appendix B9-1

ID#	Description	Wastes Managed	Period of Operation	Status
21.	Bldg. 806, tanks 19781, 19782, 19783 and 19786, 19785, 19785	19781-19783 & 19786 - Xylene, toluene, methanol, 19784 – Alkoxysilanes, 19785 – IPA and SiH siloxanes	current	NSCA

Notes:

1. Tanks designated as "closed" have been drained of waste and sludges, and the tanks thoroughly rinsed with an appropriate solvent suitable to remove all residues. Wastes, sludges and rinse solutions have been properly disposed at licensed waste disposal facilities or by wastewater sewer for treatment at Dow Chemical's NPDES permitted wastewater treatment facility. Secondary containment areas were power washed with high-pressure water to remove all visible residues of hazardous waste and waste constituents. Decontamination water was disposed in wastewater sewer for treatment at Dow Chemical's wastewater treatment facility.
2. NSCA - Not subject to corrective action. Response 2.c. of the document "Response to Comments on the Draft Federal HSWA Permit", transmitted to Dow Corning with a letter from Norman R. Niedergang, Associate Division Director for RCRA, Region 5 U.S. EPA, dated September 30, 1994, states that these units "are not subject to corrective action at this time since the units have been determined to have adequate secondary containment, lack evidence of any release of hazardous waste or hazardous constituents, and are covered by the SIS corrective measure...".

**Table B9-5
Release Information 1999-2009
Dow Corning Corporation, Midland, Michigan**

Date of Release	Amount & Type of Material	Location	Media	Corrective Measures
2-19-99	4000 lbs.mixed Chlorosilanes and Allyl Chloride	2703 tank farm, existing SWMU	Secondary containment	Spilled material absorbed
3-10-99	1.4 lbs. of Benzene	303 Bldg.,	Air – vapor only	n/a
3-20-99	3.6 lbs. of volatile Methyl Siloxane	501 Bldg.	Air – vapor only	n/a
9-7-99	375 lbs. of Sulfuric Acid	311 tank farm, existing SWMU	Secondary containment	Spilled material flushed to chemical sewer for treatment
9-22-99	10 lbs. of HCL	340 Bldg.	Air – vapor only	n/a
9-28-99	Less than 1 lb. of HCL	304 Bldg.	Air – vapor only	n/a
11-17-99	700 lbs. of Isopropyl Alcohol	2901 Bldg.	Air – vapor only	n/a
12-1-99	601 lbs. of Methylsilane/Toluene	3102 Bldg.	Air – vapor only	n/a
6-8-00	8.4 lbs. of Xylene	322 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal
6-17-00	280 lbs. of Xylene	321 tank farm, existing SWMU	Air, secondary containment	Spilled material absorbed and packaged for disposal
6-17-00	1.4 lbs of Toluene/Benzene	25-101 tank, 2502 tank farm, existing SWMU	Air, secondary containment	Spilled material flushed to chemical sewer for treatment
8-2-00	778 lbs. of Propene	2703 tank farm	Air – vapor only	n/a

**Table B9-5
Release Information 1999 - 2009 (continued)
Dow Corning Corporation, Midland, Michigan**

Date of Release	Amount & Type of Material	Location	Media	Corrective Measures
2-8-01	37 lbs of Benzene	304 Bldg.	Air – vapor only	n/a
2-20-01	1464 lbs. of Isopropyl Alcohol	207 Bldg.	Air – vapor only	n/a
3-2-01	124 lbs. Isopropyl Alcohol and 14 lbs. of Methanol	207 Bldg.	Air – vapor only	n/a
5-22-01	1625 lbs. of Heptane	321 Bldg.	Air – vapor only	n/a
7-2-01	5000 lbs. of Acetylene gas	322 Bldg.	Air – vapor only	n/a
7-10-01	3150 lbs. of Benzene and 1350 lbs. Cyclohexane	306 tank farm, existing SWMU	Air, secondary containment	Spilled material absorbed and packaged for disposal
9-5-01	900 lbs. of Acetylene gas	322 Bldg.	Air – vapor only	n/a
4-17-02	1.0 lb. of Tetramethoxy and Trimethoxysilane	2703 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal
12-13-02	150 lbs. of Methyl Chloride and 500 lbs. of HCL	311 Bldg.	Air – vapor only	n/a
7-8-03	352 Lbs. of Methyl Chloride	2703 Bldg.	Air – vapor only	n/a
8-13-03	100 lbs. Benzene	304 Bldg.	Air – vapor only	n/a
8-18-03	560 lbs. of Trifluoropropene	604 Bldg.	Air – vapor only	n/a
1-14-04	16000 lbs. Calcium Chloride	340 Bldg., existing SWMU	Secondary containment	Spilled material flushed to chemical sewer for treatment
1-25-04	40 lbs. of Volatile Organic compounds.	322 Bldg.	Air – vapor only	n/a

**Table B9-5
Release Information 1999 - 2009 (continued)
Dow Corning Corporation, Midland, Michigan**

Date of Release	Amount & Type of Material	Location	Media	Corrective Measures
2-25-04	541 lbs. of Benzene	304 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal
3-3-04	300 lbs. of Methyl chloride	2703 Bldg.	Air – vapor only	n/a
5-13-04	830 lbs. of Trifluoropropene	604 Bldg.	Air – vapor only	n/a
9-10-04	317 lbs. of Methyl Chloride	340 Bldg.	Air – vapor only	n/a
2-20-05	395 lbs. of Hexamethyldisiloxane and 9 lbs. of Hexamethylcyclotrisiloxane	501 Bldg.	Air – vapor only	n/a
5-6-05	100 lbs. of Ammonia	322 Bldg.	Air – vapor only	n/a
2-25-06	260 lbs. of Methylhydrogendichlorosilane, 75 lbs, of HCL, 447 lbs. of CO2 and 285 lbs, of CO	322 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal
10-20-06	254 lbs. of HCL	515 Bldg.	Air – vapor only	n/a
5-31-07	442 lbs. of Propylene and 4 lbs. of Allyl Chloride	2703 Bldg.	Air – vapor only	n/a
5-15-08	382 lbs. of Biphenyl and 1413 lbs. of Phenyl Ether	341 Bldg.	Air – vapor only	n/a
6-25-08	1764 lbs. of Heptane	2901 Bldg.	Air – vapor only	n/a
9-3-08	1883 lbs. of Propene, 89 lbs. of Allyl Chloride, 2.5 lbs. of Silicon Tetrachloride and 6.6 lbs. of Trichlorosilane	2703 Bldg.	Air – vapor only	n/a

**Table B9-5
Release Information 1999 - 2009 (continued)
Dow Corning Corporation, Midland, Michigan**

Date of Release	Amount & Type of Material	Location	Media	Corrective Measures
1-24-09	7 lbs. of HCL	325 Bldg.	Air, secondary containment	Spilled material flushed to chemical sewer for treatment
7-23-09	130 lbs. of Biphenyl	501 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal
8-17-09	3 lbs. of Cyclohexane	322 Bldg.	Air, secondary containment	Spilled material absorbed and packaged for disposal

APPENDIX B9-1

Solid Waste Management Unit Drawings

This Appendix includes the following drawings:

Drawing Y1-74997, SWMU Location Plan

Drawing Y1-74998, Hazardous Waste Storage Tanks Location Plan

Drawing Y1-75002, Hazardous Waste Dempsters, Drum Storage, Truck and Rail Loading Stations



MARK SOLID WASTE MANAGEMENT UNITS ADDRESS BY SIS

1	NEUTRALIZATION TANK
2	200 M3 INCINERATOR
3	300 M3 SCUMBER POND AND SCUMBER CONCRETE BASIN
4	400 BLOCK ASH STORAGE BLDG
5	500 NORTH SCUMBER
6	600 SOUTH SCUMBER
7	700 EAST SCUMBER
8	800 WEST SCUMBER
9	900 BLOCK WASTE PILE
10	1000 SPILL POND
11	CONTAINER STORAGE AREA
12	LANDFILL
13	TRUCK WASHING SLAB
14	EXISTING 800 BLOCK TANK FARM & NEW TANK FARM
15	5000 TANK AREA
16	BRONZE SPILL AREA
17	DIENCH POND
18	ASBESTOS REMEDIATION FACILITY
19	TRANSFER STATIONS
20	200 SPILL AREA
21	DOWN WINDING WELL
22	500 SPILL AREA
23	POND SPILL AREA
24	NEW PEST PAINT FACILITY
25	800 VALVE
26	800 SWALLOWING AREA

MARK SOLID WASTE MANAGEMENT UNITS NOT ADDRESS BY SIS

24	DEMOLITION PILE
25	4000 STORAGE RETENTION POND

○ IN SERVICE ○ NOT IN SERVICE

LEGEND:

—○— SIS (SITE INTERCEPTOR SYSTEM) INSTALLED 1993 AND 1994

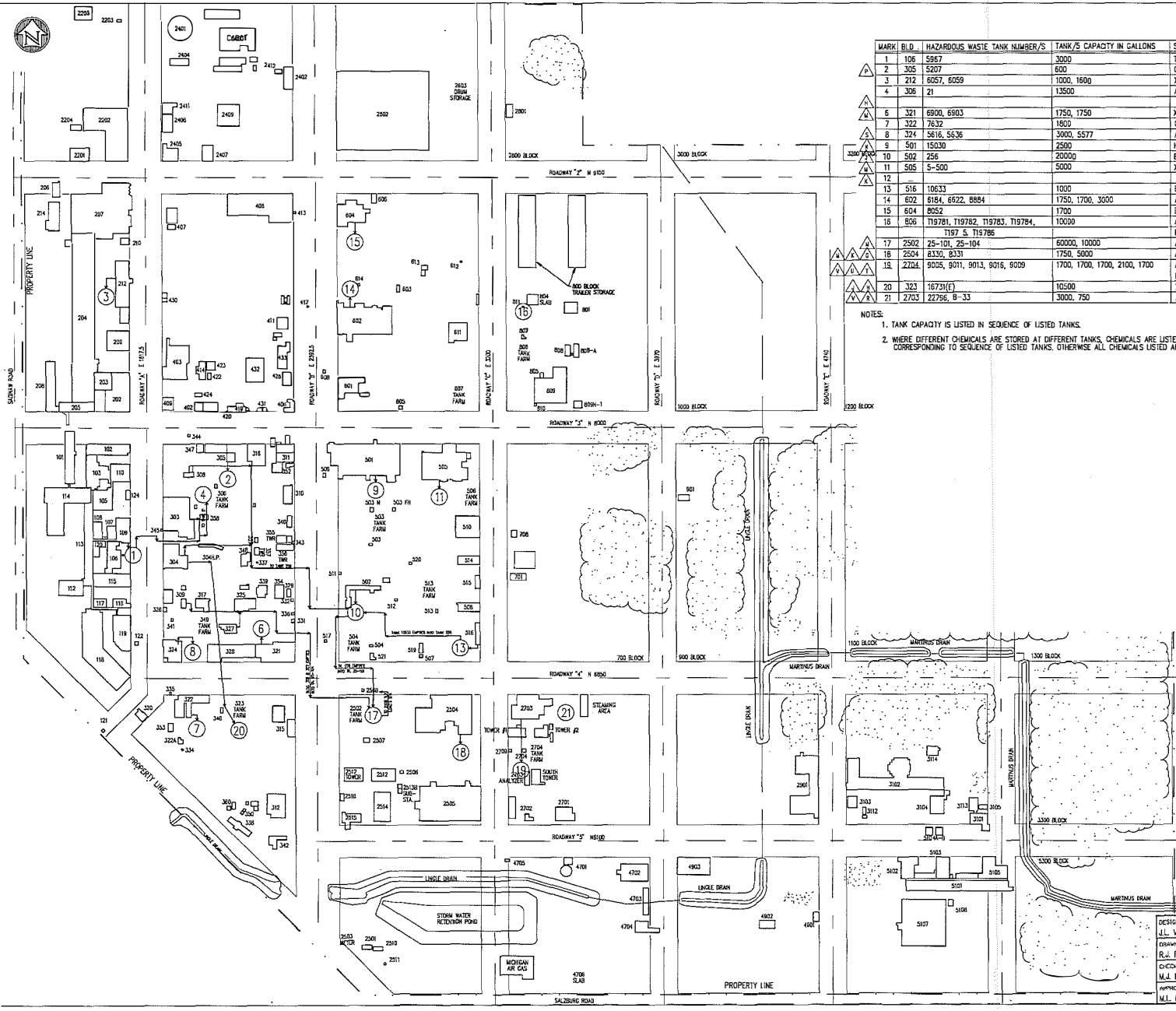
LAST GENERAL UPDATE: 04-JAN-2010

MARK	DESCRIPTION	REVISIONS	BY	DATE	APP
A	GEN ADDED FACILITIES 18-21: GENERAL REVISION		R.F.	11-18-88	PC
B	GEN ADDED FACILITIES 10,15,16 & 20		R.F.	03-MAR-89	NEW
C	GEN ADDED FACILITIES 10,15,16,20,22,23 & 24		R.F.	23-APR-89	NEW
D	GEN ADDED FACILITY 25		R.F.	14-NOV-89	NEW
E	GEN ADDED 500 LAYOUT & FACILITY 26		R.F.	04-DEC-89	PC
F	GEN ADDED FACILITY 27 & 28		CNR	18-MAR-90	SHI
G	GEN UPDATED DRAWING		JAM	04-NOV-91	SHI

CADD

DESIGNED J.L. VanderKolk	DATE 11-08-88	DOW CORNING CORPORATION	SITE
DRAWN R.J. Fortler	DATE 11-17-88		
CHECKED M.J. Bush	DATE 11-22-88	MIDLAND PLANT	
APPROVED M.L. Marchione	DATE 11-23-88	SOLID WASTE MANAGEMENT UNITS	
		LOCATION PLAN	
SCALE	INCH FOOT	DRAWING NUMBER	REVISION
1" = 200'		Y1-74997	Q

REV: 1-88



MARK	BLD	HAZARDOUS WASTE TANK NUMBER/S	TANK/S CAPACITY IN GALLONS	STORIED MATERIALS IN TANK/S
1	106	5967	3000	TOLUENE, XYLENE
2	305	5207	600	CHLOROSILANE
3	212	6057, 6059	1000, 1600	XYLENE
4	306	21	13500	A: TOLUENE & XYLENE
6	321	6900, 6903	1750, 1750	XYLENE, TOLUENE, METHANOL; IPA
7	322	7632	1800	CYCLOHEXANE, HEPTANE, TOLUENE, CHLOROSILANE
8	324	5616, 5636	3000, 5577	A: TOLUENE, XYLENE, METHANOL, HEPTANE, HEXO; B: TOLUENE, HEXANE
9	501	15030	2500	HEPTANE, SILOXANES
10	502	256	20000	BENZENE, CHLOROSILANES, TOLUENE, BIPHENYLS, PHENYLSILANES
11	505	5-500	5000	XYLENE, TOLUENE, METHANOL
12				
13	516	10633	1000	BENZENE, CHLOROSILANE, PHENYLHYDROGEN SILANE, CHLORO BENZENE, TOLUENE
14	602	8184, 6922, 8884	1750, 1700, 3600	A: DIMETHYL CYCLOCS; B: C: XYLENE
15	604	8552	1700	B: CHLOROSILANE
16	606	119781, 119782, 119783, 119784, 119785, 119786	10000	A: B: C: D: MISC. CHLORINATED & NON-CHLORINATED SOLVENTS; E: F: CHLOROSILANE DIMETHOXYSIANES MACH
17	2502	25-101, 25-104	60000, 10000	A: BENZENE, CHLOROSILANE, CHLORO BENZENE, TOLUENE; B: CHLOROSILANE
18	2504	8330, 8331	1750, 5000	A: B: IPA
19	2704	9005, 9011, 9013, 9015, 9009	1700, 1700, 1700, 2100, 1700	A: ETHYLEDIAMINE HYDROCHLORIDE; B: IPA, METHANOL; C: METHANOL; D: LIQUIFIED METHYLCHLORIDE; E: CHLOROSILANE
20	323	16731(E)	10500	XYLENE, CHLOROSILANE
21	2703	22796, B-33	3000, 750	A: PROPYLENE, CHLOROSILANE; B: CHLOROSILANE

- NOTES:
- TANK CAPACITY IS LISTED IN SEQUENCE OF LISTED TANKS.
 - WHERE DIFFERENT CHEMICALS ARE STORED AT DIFFERENT TANKS, CHEMICALS ARE LISTED UNDER SECTIONS (A, B, C, ETC.) CORRESPONDING TO SEQUENCE OF LISTED TANKS. OTHERWISE ALL CHEMICALS LISTED ARE STORED IN ALL TANKS, IF APPLICABLE.

LAST GENERAL UPDATE: 04/JAN/2010

MARK	LOC	REVISIONS	BY	DATE	APP
A		GEN ADDED TANK CAPACITY AND WASTE MATERIAL	R.F.	13/06/08	P.C.
B		GEN REVISED STORED MATERIALS, ADDED FLOW DIAGRAM	R.F.	12/04/08	P.C.
C		GEN ADDED TANKS AT 504 BLOCK	M.J.	22/02/09	P.C.
D		GEN REVISED LEGEND	MAD	27/02/09	NSD
E		GEN GENERAL UPDATE	R.F.	27/03/09	NSD
F		GEN GENERAL UPDATE	R.F.	29/04/09	NSD
G		GEN ADDED TANK 8322 TO AREA 18	R.F.	03/04/09	NSD
H		GEN FEM IN 26 & SHING/ADD UK 20 REV PIPING & LEG	MAD	23/04/09	NSD
I		GEN GENERAL UPDATE	R.F.	23/04/09	NSD
J		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
K		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
L		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
M		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
N		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
O		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
P		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
Q		GEN GENERAL UPDATE	R.F.	03/05/09	NSD
R		GEN ADDED TANK 22796 TO AREA 21	R.F.	23/04/09	NSD
S		GEN ADDED TANK #2636	R.F.	03/04/09	NSD
T		GEN REVISED TANK 89015	R.F.	03/04/09	NSD
U		GEN ADDED TANK #2003	R.F.	03/04/09	NSD
V		GEN ADDED TANK #9009 AND B-33	R.F.	03/04/09	NSD
W		GEN UPDATED DRAWING	JAM	04/01/10	NSD

DESIGNED: L.L. VanderMide
 DRAWN: R.L. Fortler
 CHECKED: M.J. Bush
 APPROVED: M.L. Marchione

DATE: 08/NOV/88
 DATE: 17/NOV/89
 DATE: 22/NOV/88
 DATE: 23/NOV/88

DOW CORNING CORPORATION
 MIDLAND PLANT
 HAZARDOUS WASTE STORAGE TANKS
 LOCATION PLAN

SCALE: 1" = 200'
 DRAWING NUMBER: Y1-74998
 REVISION: W

