

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:

The Dow Chemical Company
Midland, Michigan, 48667,

Respondent.

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMOVAL ACTION

EU001

Docket No.

V-W- 08-C-906

Proceeding Under Sections 104, 106(a), 107
and 122 of the Comprehensive
Environmental Response, Compensation,
and Liability Act, as amended, 42 U.S.C. §§
9604, 9606(a), 9607, and 9622

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent (“Settlement Agreement”) is entered into voluntarily by the United States Environmental Protection Agency (“U.S. EPA”) and The Dow Chemical Company (“Respondent”). This Settlement Agreement provides for the performance of removal actions by Respondent and the reimbursement of certain response costs incurred by the United States at or in connection with dioxin contamination at the area known as Exposure Unit 001 (“EU001”), which is located within the Tittabawassee River Dioxin Spill Site. EU001 is an area approximately 1,000-foot long by 150-foot wide bounded by the bank of the Tittabawassee River to the south, Consumers Power lines to the west, a berm on state land to the north, and a forested area to the east (the “Site”).

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622, as amended (“CERCLA”). This authority has been delegated to the Administrator of the U.S. EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A, 14-14-C and 14-14-D, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A, 14-14-C and 14-14-D.

3. U.S. EPA has notified the State of Michigan (the “State”) of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

4. U.S. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any issue of fact, or law, or liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of facts, conclusions of law, and determinations in Sections IV and V of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the jurisdictional basis or the validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon U.S. EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent’s responsibilities under this Settlement Agreement.

6. Respondent is required to carry out all activities required by this Settlement Agreement.

7. Respondent shall ensure that its contractors, subcontractors, and representatives comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

III. DEFINITIONS

8. Unless otherwise expressly provided herein, terms used in this Settlement Agreement which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

b. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXX.

c. "Dioxin" or "dioxin" shall mean the seventeen chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans identified by the World Health Organization in *The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds*, expressed as toxic equivalence concentrations, as set forth below.

Congener (Full-Name)	Congener (Abbreviation)	CAS No
Dioxins		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	2,3,7,8-TCDD	637719
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1,2,3,7,8-PCDD	40321-76-4
1,2,3,4,7,8- Hexachlorodibenzo-p-dioxin	1,4-HxCDD	39227-28-6
1,2,3,6,7,8- Hexachlorodibenzo-p-dioxin	1,6-HxCDD	57653-85-7
1,2,3,7,8,9- Hexachlorodibenzo-p-dioxin	1,9-HxCDD	19408-74-3
1,2,3,4,6,7,8- Heptachlorodibenzo-p-dioxin	1,4,8-HpCDD	35822-39-4
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	OCDD	3268-87-9
Furans		
2,3,7,8-Tetrachlorodibenzofuran	2,3,7,8-TCDF	40024
1,2,3,7,8-Pentachlorodibenzofuran	1,2,3,7,8-PCDF	57117-41-6
2,3,4,7,8-Pentachlorodibenzofuran	2,3,4,7,8-PCDF	57117-31-4
1,2,3,4,7,8-Hexachlorodibenzofuran	1,4-HxCDF	70648-26-9
1,2,3,6,7,8- Hexachlorodibenzofuran	1,6-HxCDF	57117-44-9
1,2,3,7,8,9- Hexachlorodibenzofuran	1,9-HxCDF	72918-21-9
2,3,4,6,7,8- Hexachlorodibenzofuran	4,6-HxCDF	60851-34-5
1,2,3,4,6,7,8- Heptachlorodibenzofuran	1,4,6-HpCDF	67562-39-4

1,2,3,4,7,8,9- Heptachlorodibenzofuran	1,4,9-HpCDF	55673-89-7
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	OCDF	13550882

Individual dioxins are assessed using a toxic equivalency factor (“TEF”), which is an estimate of the relative toxicity of the compounds to 2,3,7,8-tetrachlorodibenzo-p-dioxin (“TCDD”). These converted concentrations are then added together to determine the “toxic equivalence concentration” (“TEQ”) of the dioxin compounds as a whole.

d. “Future Response Costs” shall mean all costs, including direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement on or after the Effective Date.

e. “Interest” shall mean interest at the rate specified for interest on investments of the U.S. EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

f. “License” shall mean the Hazardous Waste Management Facility Operating License issued by the State of Michigan Department of Environmental Quality to The Dow Chemical Company on June 12, 2003.

g. “MDEQ” shall mean the Michigan Department of Environmental Quality and any successor departments or agencies of the State.

h. “National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

i. “Settlement Agreement” shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.

j. “Parties” shall mean U.S. EPA and Respondent.

k. “Performance Based” means the method for implementing this interim response action removal work, based, not on numerical cleanup criteria, but on locations, volumes, boundaries, and/or specific actions at or in connection with the Site, as described in the Work Plan.

l. “RCRA” shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.* (also known as the Resource Conservation and Recovery Act).

m. “Respondent” shall mean The Dow Chemical Company, a Delaware corporation.

n. “Site” or “EU001” shall mean the area in Saginaw, Michigan, approximately 1,000-foot long by 150-foot wide bounded by the bank of the Tittabawassee River to the south, Consumers Power lines to the east, a berm on state land to the north, and a forested area to the west. The Site includes an approximately 1000 feet portion of Riverside Boulevard and the following parcels in Saginaw, Michigan:

“EU001 Area 1 (Residential)” shall mean:

- 1 Riverside Boulevard
- 3 Riverside Boulevard
- 4 Riverside Boulevard
- 5 Riverside Boulevard
- 7 Riverside Boulevard
- 9 Riverside Boulevard
- 12 Riverside Boulevard
- 13 Riverside Boulevard
- 14 Riverside Boulevard
- 15 Riverside Boulevard
- 17 Riverside Boulevard
- 19 Riverside Boulevard
- 21 Riverside Boulevard
- 23 Riverside Boulevard
- 25 Riverside Boulevard
- 27 Riverside Boulevard
- 29 Riverside Boulevard
- 31 Riverside Boulevard
- 35 Riverside Boulevard
- 37 Riverside Boulevard
- 44 Riverside Boulevard
- 46 Riverside Boulevard
- 3311A Gabriel (that portion of 3311 Gabriel bounded by the Tittabawassee River to the south, 150 feet from the Tittabawassee River to the north, 37 Riverside Drive to the west, and the eastern boundary of 46 Riverside to the east)

“EU001 Area 2 (West Transition Area)” shall mean

- 2 Riverside Boulevard

“EU001 Area 3 (North and East Transition Areas)” shall mean

- 8 Riverside Boulevard
- 3311B Gabriel (that portion of 3311 Gabriel bounded by the Tittabawassee River to the south, 150 feet from the

Tittabawassee River to the north, the eastern boundary of 46 Riverside to the west, and 150 feet from the eastern boundary of 46 Riverside to the east).

The Site is depicted generally on the map attached as Attachment A. The Site, for practical purposes, is broken out into three areas as depicted on the map attached as Attachment B. Area 1 includes residential property (including 11 residences and lands immediately surrounding those residences), Area 2 is zoned for industrial use and is considered to be the western most parcel of the Site to a ditchline, and Area 3 is considered to be the state land to the north (bounded by a land berm) and the state land which is a forested area to the east.

o. "State" shall mean the State of Michigan.

p. "Tittabawassee River Dioxin Spill Site" shall mean the area located in and along approximately the upper six miles of the Tittabawassee River and its floodplains, beginning at Reach B, located upstream of the Midland Plant, and extending downstream to approximately Wickes Park, and any other areas where hazardous substances, pollutants, or contaminants from this area have or may have come to be located, including the Saginaw River and its floodplains and Saginaw Bay in Lake Huron.

q. "U.S. EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

r. "Waste Material" shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and 4) any "hazardous material" under Michigan Administrative Code R 299.9203.

s. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement, except those activities required by Section XI (Retention of Records).

IV. FINDINGS OF FACT

9. Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds that:

a. The Site is an area where dioxin contamination is found in soil and household dust. EU001 is an area approximately 1,000-foot long by 150-foot wide bounded by the bank of the Tittabawassee River to the south, Consumers Power lines to the west, a berm on state land to the north, and a forested area to the east. The Site is depicted generally on the map attached as Attachment A. The Site is broken out into three areas as depicted on the map attached as Attachment B. Area 1 includes residential

property (including 11 residences and lands immediately surrounding those residences), Area 2 is zoned for industrial use and is considered to be the western most parcel of the Site to a ditchline, and Area 3 is considered to be the state land to the north (bounded by a land berm) and the state land which is a forested area to the east. Riverside Boulevard runs through the Site and is located just south of the land berm located on the northern edge of the Site. The Site contains 26 parcels of property that include 11 residences and open lots that can be accessed from Riverside Boulevard. Riverside Boulevard is privately owned by one of the neighborhood property owners. The Site is located downstream of The Dow Chemical Company Midland Plant Property with a common address of 1000 East Main Street, 1790 Building, Midland, Michigan, 48667 (the "Midland Plant"). The Site is the location where hazardous substances, pollutants, or contaminants released from the Midland Plant have or may have come to be located.

b. The Dow Chemical Company is a Delaware corporation and its registered agent is The Corporation Trust Company with an address of Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware.

c. The Midland Plant began operations in 1897. The Midland Plant covers approximately 1,900 acres. The majority of the Midland Plant is located on the east side of the Tittabawassee River and South of the City of Midland.

d. The Tittabawassee River is a tributary to the Saginaw River, draining 2,600 square miles of land in the Saginaw River watershed. The Tittabawassee River flows south and east for a distance of approximately 80 miles to its confluence with the Shiawassee River approximately 22 miles southeast of Midland. Upstream of the Midland Plant, the Tittabawassee River flow is regulated by the Secord, Smallwood, Edenville, and Sanford dams. The current operation of the hydroelectric station at Sanford results in water releases from Sanford Dam during peak electricity usage periods to provide peaking power to Consumers Energy. Sanford Lake has limited flood storage capacity due to a narrow range of permitted lake levels. The Dow Dam is located adjacent to the Midland Plant. Below the Dow Dam, the river flow is free flowing to its confluence with the Shiawassee and Saginaw Rivers. Tittabawassee River flow and water level fluctuate daily in response to releases from the Sanford Dam. The average and 100-year flood discharge for the Tittabawassee River based on data from 1937 to 1984 are approximately 1,700 cubic feet per second ("cfs") and 45,000 cfs, respectively. The relatively large ratio between the 100-year flood discharge and the long-term average discharge (26.5) indicates that the river is "flashy," or has a flow regime that is characterized by highly variable flows with a rapid rate of change.

e. The average monthly discharge from 1937 to 2003 for the Tittabawassee River 2,000 feet downstream of the Dow Dam ranged from approximately 600 cfs (in August) to 3,900 cfs (in March), with an average of 1,700 cfs. Discharge is typically highest in March and April during spring snowmelt and runoff. The maximum recorded historical crest of the Tittabawassee River occurred in 1986. A large storm in September 1986 produced up to 14 inches of rain in 12 hours. The discharge of the river near the Dow Dam reached nearly 40,000 cfs, and the river stage was 10 feet above flood

stage at its crest (Deedler, Undated). Flows greater than 20,000 cfs have occurred in 22 of the 95 years between 1910 and 2004, with flows greater than 30,000 cfs occurring in 1912, 1916, 1946, 1948, and 1986. In March 2004, the river discharge reached approximately 24,000 cfs.

f. Portions of the Tittabawassee River floodplain are periodically inundated by floodwaters.

g. Sheet piling has been used to stabilize the banks of the Tittabawassee River along numerous stretches within the Midland Plant area and in several downstream locations. This type of bank stabilization increases channel velocity in the immediate area during flood stage by restricting the cross-sectional area of the river and, depending on the local cross-section, may increase downstream flood elevations and erosive forces by increasing the flows and velocities of water that can no longer be stored on the overbank above the stabilized banks.

h. Initially, the Midland Plant operations involved extracting brine from groundwater pumped from production wells ranging in depth from 1,300 to 5,000 feet below groundwater surface. Over the time of its operation, the Midland Plant has produced over 1,000 different organic and inorganic chemicals. These chemicals include the manufacture of 24 chlorophenolic compounds since the 1930s.

i. In the very early history of the Midland Plant, wastes were discharged directly into the Tittabawassee River and, sometime later, wastes were stored and treated in ponds. Other wastes were disposed of at the Midland Plant either on land or by burning. Over time, changes in waste management practices included installation and operation of a modern wastewater treatment plant as well as use of incinerators instead of open burning. Changes in the wastewater treatment plant and subsequent incorporation of pollution controls into both the operations of and emissions from the incinerators have reduced or eliminated releases and emissions from the Midland Plant.

j. Air deposition appears to be among the sources of elevated furans and dioxins, and other hazardous substances, found in surface soils in the Midland Plant area. Elevated dioxin and furan levels in and along the Tittabawassee River appear to be primarily attributable to aqueous discharges related to brine electrolysis for chlorine manufacturing, and associated waste management practices for the period at the Midland Plant. Prior to the construction of wastewater storage ponds in the 1920s, waste from manufacturing processes was discharged directly to the Tittabawassee River. Flooding of the Midland Plant property may have resulted in discharges to the Tittabawassee River of stored brines and untreated or partially treated process wastewaters. The primary source of furans and dioxins from the Midland Plant to the Tittabawassee River is believed to be historic releases of aqueous wastes. The chlorine manufacturing process was the likely source of comparatively high furan toxicity equivalent ("TEQ") readings in and along the Tittabawassee River. Dioxins and furans would have been discharged directly to the Tittabawassee River. Dioxins and furans found in more recent sediments may be related to chlorophenol production that began in the mid-1930s.

k. Pursuant to Section 3006 of the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. § 6926, the Administrator of U.S. EPA may authorize a State to administer the RCRA hazardous waste program in lieu of the federal program when the Administrator finds that the State program meets certain conditions. Any violation of regulations promulgated pursuant to Subtitle C (Sections 3001-3023 of RCRA, 42 U.S.C. §§ 6921-6939e) or of any state provision authorized pursuant to Section 3006 of RCRA, constitutes a violation of RCRA, subject to the assessment of civil penalties and issuance of compliance orders as provided in Section 3008 of RCRA, 42 U.S.C. § 6928. Pursuant to Section 3006(b) of RCRA, 42 U.S.C. § 6926(b), the Administrator of U.S. EPA granted the State of Michigan final authorization to administer a state hazardous waste program in lieu of the federal government’s base RCRA program effective October 30, 1986. 51 Fed. Reg. 36804 (October 16, 1986). The U.S. EPA granted Michigan final authorization to administer certain HSWA and additional RCRA requirements effective January 23, 1990, 54 Fed. Reg. 48608 (November 24, 1989); June 24, 1991, 56 Fed. Reg. 18517 (April 23, 1991); November 30, 1993, 58 Fed. Reg. 51244 (October 1, 1993); April 8, 1996, 61 Fed. Reg. 4742 (February 8, 1996); December 28, 1998, 63 FR 57912 (October 29, 1998) (stayed and corrected effective June 1, 1999, 64 Fed. Reg. 10111 (March 2, 1999)); and, July 31, 2002, 67 FR 49617 (July 31, 2002) . The U.S. EPA authorized Michigan regulations are codified at Michigan Part 111 Administrative Rules 299.9101 *et seq.* See also 40 C.F.R. § 272.1151 *et seq.*

l. The Michigan Department of Environmental Quality (“MDEQ”) issued to Dow its current Resource Conservation and Recovery Act (“RCRA”) Hazardous Waste Management Facility Operating license for the Midland Plant, with an effective date of June 12, 2003, and an expiration date of June 12, 2013 (the “License”). Under its License, Dow has been conducting corrective action work. As part of the RCRA corrective action work, Dow prepared and submitted on December 29, 2005, a Remedial Investigation (“RI”) Work Plan (“RIWP”) for the area consisting of river channels and floodplains of the Tittabawassee River. On March 2, 2006, the MDEQ notified Dow that the RCRA RIWP was substantively deficient and Dow was required to submit a completely revised RIWP. On July 7, 2006, Dow submitted a GeoMorph Sampling and Analysis Plan for the Upper Tittabawassee River (“UTR SAP”). On July 12, 2006, the MDEQ approved on a pilot basis, the UTR SAP for the upper 6.5 miles of the Tittabawassee River. On December 1, 2006, Dow submitted a revised RIWP to the MDEQ for review. On February 1, 2007, Dow submitted the UTR Pilot Site Characterization Report. On May 3, 2007, the MDEQ approved the UTR Pilot Site Characterization Report with conditions and removed pilot site status from the GeoMorph process. On July 9, 2007, Dow submitted a Sampling and Analysis Plan for the Upper Tittabawassee River and Middle Tittabawassee River. On July 12, 2007, MDEQ approved the Sampling and Analysis Plan for the Upper Tittabawassee River and Middle Tittabawassee River. On July 13, 2007, Dow submitted the Remedial Investigation Scope of Work for the Saginaw River and Floodplain and Saginaw Bay. On July 24, 2007, MDEQ approved with modifications Compliance Schedules for the Tittabawassee River and Floodplain Soils and Midland Area Soils Remedial Investigation Work Plans. On August 29, 2007, MDEQ issued a Notice of Deficiency for the

Remedial Investigation Scope of Work for the Saginaw River and Floodplain and Saginaw Bay. On September 17, 2007, Dow submitted a revised RIWP to MDEQ for the Tittabawassee River and on October 15, 2007, Dow submitted a revised RIWP for the City of Midland, and a revised Remedial Investigation Scope of Work for the Saginaw River and Floodplain and Saginaw Bay. On October 15, 2007, Dow submitted a Direct Contact Criteria Report for the City of Midland Soils. On November 9, 2007, MDEQ issued a Disapproval and Letter of Warning to Dow for the Direct Contact Criteria Report for the City of Midland Soils. On February 1, 2008, MDEQ issued an Approval with Modifications for the Remedial Investigation Scope of Work for the Saginaw River and Floodplain and Saginaw Bay. On March 3, 2008, Dow submitted to MDEQ the report of the data collected in 2007 from the Middle Tittabawassee River. On April 16, 2008, MDEQ notified Dow that Interim Response Actions will be required in 2008. On May 19, 2008, Dow submitted a Lower Tittabawassee River Sampling and Analysis Plan.

m. The pilot GeoMorph sampling plan included sampling conducted in 2006 in and along the Tittabawassee River. Sampling within Reach D establishes dioxin sediment contamination levels of up to 69,000 parts per trillion (“ppt”) dioxin, and other contaminants, including chlorobenzene at levels of up to 950 parts per million (“ppm”). Sampling within Reach J-K establishes dioxin sediment contamination levels of up to 84,000 ppt dioxin. Sampling within Reach O establishes dioxin sediment contamination levels of up to 87,000 ppt dioxin. Sampling conducted in 2007 within Reach L establishes dioxin sediment contamination levels of up to 110,000 ppt dioxin.

n. Sampling has been conducted by Dow under the pilot GeoMorph UTR SAP as part of the RCRA Remedial Investigation process under the License. The sampling is being conducted to identify areas contaminated with dioxins and furans, and other potential contaminants of interest.

o. Contaminants found in July 1994 in the Midland Plant revetment groundwater interception system sumps were: chlorobenzene; tetrachlorobenzene; trichloroethene; xylene; 1,2-dichlorobenzene; 1,3-dichlorobenzene; 1,4-dichlorobenzene; 2,4-dichlorophenol; 2,6-dichlorophenol; hexachlorobutadiene; 2,3,4,6-tetrachlorophenol; 1,2,4-trichlorobenzene; 2,4,5-trichlorophenol; 2,4,6-trichlorophenol; 2-chlorophenol; 3-methylphenol (meta cresol); 4-methylphenol (para cresol); 2,4-dichlorophenoxyacetic acid; phenol; pentachlorophenol; TCDF; PCDF isomers; and HCDF isomers. These contaminants may be found within the Site. Based on the Midland Plant’s historic operations, other contaminants that may be present at the Site include volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, metals, and pesticides. Currently, none of these contaminants identified above are among the contaminants of concern at EU001. The groundwater system continues to be monitored for contaminants including those listed herein.

p. Sampling conducted as part of the RCRA RIWP under the License indicates that the dioxin/furan contamination in the Tittabawassee River adjacent to and downstream of Dow is associated with the Midland Plant. Soil samples collected upstream of the City of Midland did not contain elevated levels of dioxins or furans.

Dioxin and furan concentrations from these sample locations are consistent with statewide background concentrations. Sampling within tributaries to the Tittabawassee River has not identified any significant sources of dioxins or furans. No significant sources of dioxins or furans are known within the City of Midland other than Dow. Dioxin/furan congener profile charts for Tittabawassee River sediments and floodplain soils downstream of the Midland Plant are similar among themselves and very different from sample locations upstream of the Midland Plant. Dioxin and furan contamination within the estimated 100-year flood plain downstream of the Midland Plant has been documented.

q. Comparison of the dioxin and furan sample results from the samples collected at EU001 with the sample results collected as part of the RCRA RIWP under the License indicates that the dioxin/furan contamination in the Tittabawassee River adjacent to and downstream of Dow, including at EU001, is associated with the Midland Plant.

r. U.S. EPA's general understanding of potential hazardous substances in soils at the Tittabawassee River Dioxin Spill Site is based, in part, on studies conducted by Dow in 1984 (Agin et al., 1984) and 1998 (Dow, 2000), U.S. EPA in 1983-1984 (U.S. EPA, 1985), and MDEQ in 1996 (MDEQ, 1997). Although these studies focused primarily on dioxins and furans, the 1985 U.S. EPA study also analyzed samples for volatile organic compounds ("VOCs"), semivolatile organic compounds ("SVOCs"), and polychlorinated biphenyls ("PCBs"). More recent but limited sampling results have been provided by Dow, the University of Michigan Dioxin Exposure Study ("UMDES"), and onsite soil sampling conducted by MDEQ at the Midland Plant in 2005 and 2006. A study conducted by U.S. EPA in 1987 provided limited data on concentrations of dioxins and furans in garden vegetables grown in the City of Midland.

s. The studies conducted prior to 1996 by Dow, U.S. EPA, and MDEQ focused on sampling and analysis for 2,3,7,8-tetrachlorodibenzo-p-dioxin ("TCDD") as the main dioxin congener. More recent studies report dioxin and furan data TEQ concentrations. Dioxin and furan sample results from the laboratory are currently typically reported on an individual congener basis. TEQ concentrations are calculated according to a toxicity weighting scale. TEQ concentrations are typically reported in concentrations of parts per trillion.

t. The following sampling events and studies are among those conducted at, and around, the Tittabawassee River Dioxin Spill Site:

i. 1978 Dow Chemical Study - Dow reported results of a chlorinated dioxin and dibenzofuran monitoring program to the Michigan Department of Natural Resources and U.S. EPA Office of Toxic Substances. (Blumb, R.R. et al, "Trace Chemistries of Fire: A Source of Chlorinated Dioxins," Science, 210, 385, 1980). Based on this study and Dow data, U.S. EPA formed a preliminary conclusion of substantial risk of injury to human health or the environment existed under section 8(e) of the Toxic Substances Control Act and concluded that Dow Chemical was likely the sole source of

the dioxin contamination. (August 8, 1978, communication to J. Merenda, Director, Assessment Division, OTE/OTS, "Interim Status Report 8EHQ-0778-0209," from F. Kover, OTE/OTS; September 6, 1978, communication to Ethyl H. Blair, Dow Chemical, "EPA Document Control Number 8EHQ-0778-0209," from Warren R. Muir, OTS, EPA; February 8, 1979, communication to J. Merenda, Director, Assessment Division, OTRE/OTS, "Status Report Supplement 8EHQ-0778-0209", from F. Kover, OTE/OTS; A Review of Polychlorinated dibenzo-p-dioxin and Polychlorinated dibenzofurans: Sources and Effects, U.S. EPA, 1981).

ii. 1984 Dow study - the primary objective of the 1984 Dow study was to identify point sources of dioxins and furans at the Midland Plant (Agin et al., 1984).

iii. 1985 U.S. EPA Study - The primary objective of the 1985 U.S. EPA Study was to determine whether concentrations of dioxins and other hazardous substances present on- and off-site of Dow's Midland Plant might pose unacceptable public health risks (U.S. EPA, 1985). ("Dioxin Risk Assessment for Dioxin Contamination Midland Michigan", EPA-905/4-88-005, April, 1988).

iv. 1986 U.S. EPA Study - Wastewater characterization studies, fish and sediment of dioxin releases from the Midland Plant. (July 6, 1986, Dow Chemical Wastewater Characterization Study; Tittabawassee River Sediments and Native Fish, EPA-9005/4-88-003).

v. 1987 U.S. EPA Study - U.S. EPA evaluated the incinerator data submitted by Dow as well as U.S. EPA's independent investigations of incinerator exhaust and ambient air. (Michigan Dioxin Studies, "Dow Chemical Building 703 Incinerator Exhaust and Ambient Air Study;" EPA-905/4-88-04).

vi. 1987 U.S. EPA garden vegetable study - In 1987, U.S. EPA Region 5 conducted preliminary screening of home-grown vegetables from two gardens in the City of Midland, and a control garden in Eagle, Michigan (U.S. EPA, 1988). Fresh or frozen vegetables (carrots, beets, onions, and lettuce) and garden soil samples were collected and analyzed for dioxins and furans. Although dioxins and furans were present in the soils of both gardens, they were not detected in any vegetable tissue samples (U.S. EPA, 1988).

vii. 1988 U.S. EPA Study and Risk Management Conclusions - A comprehensive human health risk analysis was completed by U.S. EPA on sample results obtained from air, water, fish, and soils ("Dioxin Risk Assessment for Dioxin Contamination Midland, Michigan", EPA-905/4-88-005, April, 1988; Risk Management Recommendations for Dioxin Contamination at Midland, Michigan: Final Report; EPA-905/4-88-008).

viii. 1988 U.S. EPA Risk Management Report - U.S. EPA concluded that Tittabawassee River sediments and the river flood plain, from upstream of

the Midland Plant to downstream of the facility should be evaluated to determine the potential for dioxin and other chemical contamination. Based upon these findings it was recommended that a determination be made regarding whether sediment removal might be appropriate (Risk Management Recommendations for Dioxin Contamination at Midland, Michigan: Final Report; EPA-905/4-88-008).

ix. 1996 MDEQ study - The objective of the 1996 MDEQ study was to evaluate the distribution of dioxin and furan concentrations in the Midland community and the Midland Plant and to compare these results to those of the 1984 Dow and 1985 U.S. EPA studies (MDEQ, 1997).

x. 1998 Dow study - Approximately 45 soil samples were collected in the offsite Study Area during the 1998 Dow study (Dow, 2000). Most samples were collected from Dow property (Corporate Center area). The objective of this study was to determine descriptive statistics (mean, median, geometric mean, standard deviation, variance, and normality check) for sample groups from the Dow Corporate Center and Saginaw/Salzburg/Rockwell Roads site.

xi. 2002 Great Lakes Protection Fund Study conducted by MDEQ - Baseline Chemical Characterization of Saginaw Bay Watershed Sediments - The focus of the study was to characterize the sediments in the Tittabawassee River study area beginning upstream of Midland, Michigan on the Pine, Chippewa, and Tittabawassee Rivers, and continuing downstream on the Tittabawassee to its confluence with the Saginaw River.

xii. 2003 – Michigan Department of Environmental Quality – Final Report Phase II Tittabawassee /Saginaw River Dioxin Flood Plain Sampling Study June 2003 (revised August 2003) found total dioxin TEQ levels ranging from 45 – 1,400 ppt on residential property on Riverside Boulevard.

xiii. 2005 - Michigan Department of Community Health Study - A Pilot Exposure Investigation: Dioxin Exposure in Adults Living in the Tittabawassee River Flood Plain Saginaw County, Michigan (PEI). The Michigan Department of Community Health (“MDCH”) Division of Environmental and Occupational Epidemiology conducted this Investigation under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (“ATSDR”).

xiv. 2006 Great Lakes National Program Office Grant Project # GL965334010 conducted by MDEQ - Dioxin-Like Toxicity in the Saginaw Bay Watershed - Flood plain soils (115) and sediment samples (97) were collected from the Saginaw Bay Watershed. Samples were collected from a geographically extensive area that includes the Shiawassee River, the Saginaw River, and Saginaw Bay. These samples were analyzed for a number of constituents, including dioxins and furans, coplanar polychlorinated biphenyls (“PCBs”), and polybrominated diphenyl ethers (“PBDEs”).

xv. 2006 University of Michigan Dioxin Exposure Study

("UMDES") - The objective of the UMDES was to evaluate human exposure to the dioxins, furans and dioxin-like PCBs.

xvi. 2005 MDEQ samples - MDEQ collected surface soil samples from eight locations within the Midland Plant in 2005. Samples were analyzed for dioxins and furans, PCBs, pesticides, VOCs, SVOCs, and metals.

xvii. 2006 MDEQ samples - MDEQ collected additional surface soil samples from within the Midland Plant in 2006. These samples were also analyzed for dioxins and furans, PCBs, pesticides, VOCs, SVOCs, and metals.

u. In October 2003, MDEQ completed its "Tittabawassee River Aquatic Ecological Risk Assessment," and Dow responded to that document on December 19, 2003. In April 2004, MDEQ completed its "Tittabawassee River Floodplain Screening-level Ecological Risk Assessment." On July 30, 2004, U.S. EPA issued its "(1) Health Risk Analysis of Tittabawassee Fish with Dioxin and (2) Recommendations for Risk Evaluation."

v. In the MDEQ 2003 "Tittabawassee River Aquatic Ecological Risk Assessment," risks to birds and mammals from consuming fish from the Tittabawassee River below the City of Midland were evaluated using a streamlined approach that included site-specific contaminant data and modeling related to TCDD (fish tissue and bird egg concentrations) and data from the scientific literature.

w. In the MDEQ 2004 "Tittabawassee River Floodplain Screening-level Ecological Risk Assessment" risks to six species of birds and mammals from consuming soils and invertebrate, mammalian, and avian prey from the floodplain of the Tittabawassee River downriver of the City of Midland were evaluated using a screening level ecological risk assessment. This analysis was based on empirical soil PCDD/PCDF concentrations and bioaccumulation, toxicological, and ecological data from the scientific literature. The question addressed by this ecological risk assessment was whether an unacceptable risk to ecological receptors in the Tittabawassee River floodplain could be reasonably discounted.

x. In the U.S. EPA 2004 "(1) Health Risk Analysis of Tittabawassee Fish with Dioxin and (2) Recommendations for Risk Evaluation," U.S. EPA conducted an initial evaluation of the risks to humans from consuming fish from the Tittabawassee River.

y. As part of Dow's GeoMorph Sampling and Analysis Plan, in 2007, several transects were placed across the Tittabawassee River to collect soil and sediment for analysis. As part of their actions under their operating license requirements, Dow submitted analytical data from the samples that had been analyzed to MDEQ in the fall of 2007.

z. In February, 2008, MDEQ, U.S. EPA, and MDCH met to evaluate data

previously provided by Dow to determine the need to conduct further assessment of properties in the floodplain. The purpose of the sampling was to determine if there was substantial risk to those people accessing or living on the properties. During the discussions, it was decided that MDEQ would lead the effort to prioritize areas to be further assessed. These areas would be called "exposure units." MDEQ recommended that EU001 (the Riverside Boulevard area) would be given first priority, because the site's contamination-related characteristics are unique among properties in the floodplain. Human access to EU001 is unrestricted to people approaching EU001 from Riverside Boulevard and from the Tittabawassee River. EU001 is largely made up of residential yards including, in some cases, flower beds and play areas for children. The residential structures on the 11 EU001 residential properties are all at least partly within 100 feet of the river. The 11 EU001 residential properties are almost all entirely within the 5-year floodplain. Accordingly, EU001 is subject to periodic, almost annual, flooding. All of the houses and other residential structures on EU001 residential properties are themselves within the 5-year floodplain. All of the houses on the site are within 100 feet of the river and are less than 20 feet above the median water surface level. These conditions expose the homes to far more frequent and extensive flooding than is seen anywhere else along the Tittabawassee River. Human access to EU001 is unrestricted to people approaching EU001 from Riverside Boulevard and from the Tittabawassee River. Wildlife in the area also has unrestricted access. EU001 is also subject to periodic, almost annual, flooding and erosion. This is particularly true during high stream flow events. EU001 flooding results in the deposition of contaminated soil and sediment from upstream locations. This may result in an increase in the amount and/or level of dioxin contamination at EU001 in the future. Flooding and erosion of EU001 also may result in the spread of dioxin contamination to other locations within the flood plain, as well as to downstream locations. This may also result in further contamination of fish and invertebrates within the river and at downstream locations. MDCH supported this program.

aa. The sampling plans for EU001 were developed using U.S. EPA Visual Sampling Plan ("VSP") software. The sampling was designed to meet confidence levels for the data to be comparable to what has been used previously at the Site by MDEQ. The team of U.S. EPA, MDEQ, and MDCH obtained access agreements from all of the EU001 property owners with the exception of one resident.

bb. On April 1, 2008, U.S. EPA and its contractors mobilized to site and began collecting samples for dioxin/furan analysis. A total of 381 discrete outdoor soil sample locations were sampled. In addition, several of the residential units were also selected for dust and/or wipe sampling. In general, samples were collected from the soil via a hydraulic press (Geoprobe 420M) or by hand sampling with a slide hammer and probe or by the bucket auger method. The sample cores were logged and samples were collected from the 0-12 inch interval, the 18-24 inch interval, and the 30-36 inch interval. If refusal (i.e. probe or auger wouldn't push any further into the ground) was encountered, only the intervals represented were sampled.

cc. Surface and subsurface soil sampling were conducted at 381 locations within EU001, yielding a total of 1,238 soil samples (including appropriate quality

assurance samples). In addition, the sampling team collected a total of 14 wipe samples and 9 dust samples from exterior (8 wipe samples) and interior locations. All samples were shipped under chain of custody to two laboratories for analysis of dioxins/furans. A total of 426 samples (which includes duplicates) were selected for analysis; the balances of samples are currently being archived for future at-depth analyses, if necessary. All EU001 sampling was completed on April 17, 2008 and equipment and personnel were demobilized from site on April 18, 2008.

dd. Although all samples collected were shipped to off-site independent laboratories for analysis, only the top interval has been analyzed. The bottom two intervals are the samples being held by the lab for further analyses if that information is needed during a response action at EU001.

ee. The surface soil sample results from EU001 establish that dioxins and furans are present in various locations in the subject area. Of the first 381 surface (0-12 inch) soil samples analyzed, approximately 58 percent (%) exceed U.S. EPA's residential direct contact criteria of 1 part per billion ("ppb") dioxin (1,000 ppt TEQ) with one surface soil sample result at 23,000 ppt TEQ. The average of the results from the 381 surface soil samples is 2,110 ppt. Several of the samples from the unpaved road contained dioxin contamination greater than 1,000 ppt. Interior dust sample dioxin TEQ concentrations ranged from 55 to 210, with the exception of one sample out of a total of 9 resulting in a detection of 3,100 ppt. Interior wipe sample dioxin TEQ contamination ranged from 6.1 to 210 picograms per meter squared (pg/m²). Exterior wipe sample contamination at EU001 ranged from 240 pg/m² to 990 pg/m².

ff. On July 12, 2007, U.S. EPA and Dow entered into three separate Administrative Settlement Agreements and Orders on Consent under the authority of Sections 104, 106(a), 107, and 122 of CERCLA. On November 15, 2007, U.S. EPA and Dow entered into a fourth such Administrative Settlement Agreement and Order on Consent. The Administrative Settlement Agreements and Orders provide for CERCLA time critical removal actions to remove certain dioxin-contaminated bottom deposits, sediments, and/or soils in, or along, the Tittabawassee River in Midland County, Michigan. The Administrative Settlement Agreements and Orders consist of the following elements:

i. The first Administrative Settlement Agreement and Order on Consent ("AOC"), entered in U.S. EPA Docket No. V-W-07-C-874, provides for the performance of removal actions by Dow to cleanup dioxin-contaminated bottom deposits and sediments at the area known as Reach D, which is located at and in the vicinity of an historic flume situated along the northeast bank of the Tittabawassee River, within the Midland Plant property in Midland County, Michigan. Under this AOC, Dow removed dioxin-contaminated sediments in designated locations. A Notice of Completion and Determination of Compliance with this AOC is pending.

ii. Under the second AOC, entered in U.S. EPA Docket No. V-W-07-C-875, Dow agreed to perform a removal action at an area known as Reach J-K,

which is located in overbank areas on the northeast side of the Tittabawassee River, approximately 3.6 miles downstream of the confluence of the Chippewa and Tittabawassee Rivers. Under this AOC, Dow removed a dioxin-contaminated naturally occurring levee, capped one dioxin-contaminated upland area and fenced off another dioxin-contaminated wetland area. Reach J-K is located within Dow's property bounded to the northeast by a wetland with Saginaw Road to the northeast beyond the wetland, the Caldwell boat launch to the South, and to the west by the east channel bank of the Tittabawassee River, in Midland County, Michigan. EPA issued its Notice of Completion and Determination of Compliance with this AOC on May 2, 2008.

iii. Under the third AOC, entered in U.S. EPA Docket No. V-W-07-C-876, Dow agreed to perform a removal action at an area known as Reach O of the Tittabawassee River, an approximately 1,300 foot-long point bar extending approximately 50 to 100 feet into the Tittabawassee River and situated parallel to the northeast bank of the Tittabawassee River, approximately 6.1 miles downstream of the confluence of the Chippewa and Tittabawassee Rivers and located within, or immediately adjacent to, Dow property located to the south of North Saginaw Road in Midland County, Michigan. Under this AOC, Dow removed dioxin-contaminated sediments in designated locations of the point bar. EPA issued its Notice of Completion and Determination of Compliance with this AOC on April 10, 2008.

iv. Under the fourth AOC, entered in U.S. EPA Docket No. V-W-08-C-886, Dow agreed to perform a removal action at an area known as the Saginaw River Sediment Dioxin Contamination Site (adjacent to Wickes Park, City of Saginaw, Michigan). Under this AOC, Dow removed dioxin-contaminated sediments in designated locations. A Notice of Completion and Determination of Compliance with this AOC is pending.

gg. Dioxins, furans, and chlorobenzenes are listed as hazardous constituents in the Resource Conservation and Recovery Act (RCRA) Appendix VIII to 40 CFR 261; and Part 111, Hazardous Waste Management, of Michigan's NREPA, 1994 PA 451, as amended, Michigan Compiled Laws ("MCL") 324.101 et seq.

hh. U.S. EPA OSWER Directive 9200.4-26, April 13, 1998, has generally selected 1 ppb as a cleanup level for dioxin for direct contact threat in residential soils at Superfund and RCRA cleanup sites. MDEQ has established a more restrictive state ARAR of .09 ppb. The MDEQ ARAR is established in Part 201, Environmental Remediation, of the NREPA, 1994 PA 451, as amended and Part 213, Leaking Underground Storage Tanks, of the NREPA, which also allows for a different cleanup number to be developed and used based on site-specific and other information.

ii. Dioxins and furans are listed as hazardous constituents in the Resource Conservation and Recovery Act (RCRA) Appendix VIII to 40 CFR 261; and Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Michigan Compiled Laws ("MCL") 324.101 et seq. ("NREPA").

V. CONCLUSIONS OF LAW AND DETERMINATIONS

10. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, U.S. EPA has determined that:

- a. The Site is a “facility” as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- b. The contamination found at the Site, as identified in the Findings of Fact above, includes a “hazardous substance” as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- c. Respondent is a “person” as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- d. Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is liable for performance of response action and for response costs incurred and to be incurred at the Site.
 - i. Respondent is the “owner” and/or “operator” of a facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).
 - ii. Respondent is the “owner” and/or “operator” of a facility at the time of disposal of hazardous substances at the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).
- e. The conditions described in the Findings of Fact above constitute an actual or threatened “release” of a hazardous substance from the facility into the “environment” as defined by Sections 101(22) and 101(8) of CERCLA, 42 U.S.C. §§ 9601(22) and 9601(8).
- f. The conditions present at the Site constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, as amended (“NCP”), 40 CFR §300.415(b)(2). These factors include, but are not limited to, the following:
 - i. Actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants. This factor is present at EU001 due to the presence of dioxin-contaminated soils at or near

the ground surface, as well as at depth. Dioxins and furans are listed as a “hazardous substance” as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). They are also listed in RCRA Appendix VIII to 40 CFR 261; and Part 111, Hazardous Waste Management, of Michigan’s NREPA, as amended, MCL 324.101 et seq. The dioxin-contaminated soils are at the surface with actual or potential direct contact exposure in high-use residential yards with unrestricted access by human population. Human access to EU001 is unrestricted to people approaching EU001 from Riverside Boulevard and from the Tittabawassee River. EU001 is largely made up of residential yards including flower beds and play areas for children. Wildlife in the area also has unrestricted access.

EU001 is also subject to periodic, almost annual, flooding and erosion. This is particularly true during high stream flow events. EU001 flooding results in the deposition of contaminated soil and sediment from upstream locations. This may result in an increase in the amount and/or level of dioxin contamination at EU001 in the future. Flooding and erosion of EU001 also may result in the spread of dioxin contamination to other locations within the flood plain, as well as to downstream locations. This may also result in further contamination of fish and invertebrates within the River and at downstream locations.

Additionally, during the assessment of EU001, the U.S. EPA personnel observed large amounts of dust in the air from vehicle traffic on Riverside Boulevard. Since surface samples from this road revealed dioxin contamination in several areas to be higher than 1,000 ppt, inhalation of these dusts is a direct exposure pathway in this area. Additionally, these dusts are likely to migrate into adjacent homes where they combine with dust derived from yard soil. Ingestion of these soils and dusts can occur by transfer to mouth via direct contact. This is especially a concern for children playing in this area.

- ii. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate. This factor is present at EU001 due to the existence of dioxin-contaminated soil at or near the surface, as well as at depth existing within EU001. EU001 is subject to annual flooding. This may result in the spread of dioxin contamination to other locations within the flood

plain, as well as to off-site and downstream locations. Additionally, human and animal tracking may spread contamination away from this source location and into homes in the area. This migration of contaminants has been documented on-Site by the presence of dioxin contamination inside the residences that chemically matches the profile of the dioxins contaminating the soil. During the assessment, the U.S. EPA personnel observed large amounts of dust in the air from vehicle traffic on Riverside Boulevard. Since surface samples from this road revealed dioxin contamination in several areas to be higher than 1,000 ppt, inhalation of these dusts is a direct exposure pathway in this area. Additionally, ingestion of soils can occur from transfer to mouth via direct contact. This is especially a concern for children playing in this area.

- iii. Actual or potential contamination of sensitive ecosystems. This factor is present at EU001 due to the existence of dioxin-contaminated soils at or near the surface, as well as at depth at the Site. EU001 is subject to periodic flooding. This may result in the spread of dioxin contamination to downstream locations and the contamination of the surface water in the Tittabawassee River, the Saginaw River, and ultimately Lake Huron.
- iv. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. The Tittabawassee River is often subjected to extreme weather conditions in the winter and spring, which may result in annual flooding of EU001. Frequent flooding enhances the threat of a release and migration of dioxins and furans to other areas in the floodplain and to the Tittabawassee and Saginaw Rivers. Frequent flooding also enhances the threat of continuing contamination of the EU001 Site surface with dioxin from up-stream locations, again leading to direct contact threats. Floodwaters in EU001, when those floods are significant, have been shown to actually enter the residential units carrying the contamination with it.

g. The removal action required by this Settlement Agreement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be considered consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VI. SETTLEMENT AGREEMENT AND ORDER

11. Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all attachments to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

12. Respondent shall retain one or more contractors to perform the Work and shall notify U.S. EPA of the name(s) and qualifications of such contractor(s) within 5 business days of the Effective Date. Respondent shall also notify U.S. EPA of the name(s) and qualification(s) of any other contractor(s) or subcontractor(s) retained to perform the Work at least 5 business days prior to commencement of such Work. U.S. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If U.S. EPA disapproves of a selected contractor, Respondent shall retain a different contractor and shall notify U.S. EPA of that contractor's name and qualifications within 3 business days of notification to Dow of U.S. EPA's disapproval. The contractor must demonstrate compliance with ANSI/ASQC E-4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared consistent with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B0-1/002), or equivalent documentation as required by U.S. EPA.

13. Respondent has designated, and U.S. EPA has approved, Todd Konechne as the Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. U.S. EPA retains the right to disapprove of the designated Project Coordinator. If U.S. EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify U.S. EPA of that person's name, address, telephone number, and qualifications within 4 business days following notification to Dow of U.S. EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from U.S. EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

14. U.S. EPA has designated Jeffrey Kimble of the Emergency Response Branch #1, Region 5, as its On-Scene Coordinator ("OSC"). Brian Schlieger of the Emergency Response Branch #1, Region 5 shall serve as the alternate OSC. Except as otherwise provided in this Settlement Agreement, Respondents shall direct all submissions required by this Settlement Agreement to the OSC at: Jeffrey Kimble, On Scene Coordinator, USEPA Large Lakes Research Station/ORD, USEPA Region 5, Emergency Response

Branch # 1, 9311 Groh Road (mail code: SE-GI), Grosse Ile, MI 48138-1697. Respondent is encouraged to make its submissions to U.S. EPA on recycled paper (which includes significant post consumer waste paper content where possible) and using two-sided copies.

15. U.S. EPA and Respondent shall have the right, subject to Paragraph 13, to change their respective designated OSC or Project Coordinator. U.S. EPA shall notify the Respondent, and Respondent shall notify U.S. EPA, as early as possible before such a change is made, but in no case less than 24 hours before such a change. The initial notification may be made orally but it shall be promptly followed by a written notice.

VIII. WORK TO BE PERFORMED

16. Respondent shall perform, at a minimum, all actions necessary to implement the approved Removal Work Plan. The actions to be implemented generally include, but are not limited to, the following:

a. Develop for review and approval by U.S. EPA a Performance Based Removal Work Plan (“RWP”) and a Site Health and Safety Plan (“HASP”). The RWP shall include a comprehensive description of the project tasks, procedures to accomplish them, quality assurance/quality control systems, project documentation, and project schedule. The removal activities described in the RWP shall be performed in accordance with the criteria in Paragraphs 16.a.i. through 16.a.vii. The actions described in this RWP are expected to be completed by October 15, 2008, and generally include, but are not limited to, the following:

i. Develop (for review and approval by U.S. EPA) and implement a Sampling and Analysis Plan (“SAP”) describing the sampling and data collection methods to be used. The SAP shall include the following:

- (1) methodologies to confirm dioxin TEQ contaminant levels (if any) in residential interiors following cleaning activities;
- (2) methodologies for conducting air sampling during removal action work; and
- (3) a process to determine disposal requirements for excavated soil.

The SAP may include the following:

- (4) methodologies to assess the two parcels (23 and 27 Riverside Boulevard) for dioxin TEQ contamination where access has previously been denied; and
- (5) methodologies to confirm dioxin TEQ contaminant levels (if any) remaining in soils post-excavation.

ii Obtain written access agreements to private properties within EU001;

iii. Excavate soil at EU001, including the two previously unassessed parcels (these two parcels must be assessed if access to conduct removal activities is denied by the owner), and excluding Riverside Boulevard and all driveways associated with the residential parcels as follows

(1) EU001 Area 1 (Residential):

A. excavate all soil to a depth of 24” (or deeper, if requested by Respondent and approved by U.S. EPA). After excavation is complete, line excavated area with a marker layer (e.g., geomembrane fabric, plastic snow fencing); OR

B.

(1) identify the presence of in-situ pre-industrial native clay in EU001 Area 1 between 0” and 24” (or deeper, if requested by Respondent and approved by U.S. EPA) as follows:

(a) conduct soil profiling to identify the presence of a defining clay layer; and

(b) complete dioxin TEQ sampling and analysis to demonstrate that the clay is pre-industrial and therefore is not contaminated (e.g., via comparison to background dioxin TEQ concentrations).

(2) excavate all soil to in-situ pre-industrial native clay layer (if present) found at a depth between 0” and 24” (or deeper, if requested by Respondent and approved by U.S. EPA), including at least 2” of the clay layer itself.

(2) EU001 Area 2 (West Transition Area)

A. excavate all soil to a depth of 12" (or deeper, if requested by Respondent and approved by U.S. EPA). After excavation is complete, line excavated area with a marker layer (e.g., geomembrane fabric, plastic snow fencing); OR

B.

(1) identify the presence of in-situ pre-industrial native clay in EU001 Area 2 between 0" and 12" (or deeper, if requested by Respondent and approved by U.S. EPA) as follows:

(a) conduct soil profiling to identify the presence of a defining clay layer; and

(b) complete dioxin TEQ sampling and analysis to demonstrate that the clay is pre-industrial and therefore is not contaminated (e.g., via comparison to background dioxin TEQ concentrations).

(2) excavate all soil to in-situ pre-industrial native clay layer (if present) found at a depth between 0" and 12" (or deeper, if requested by Respondent and approved by U.S. EPA), including at least 2" of the clay layer itself.

(3) EU001 Area 3 (North and East Transition Areas)

A. deliver for recording to the Saginaw County Register of Deeds a restrictive covenant, enforceable by Respondent and restricting all soil disturbances below 12", within 30 days of approval by U.S. EPA of a draft restrictive covenant. Respondent shall provide a draft restrictive covenant to U.S. EPA for U.S. EPA's review within 7 days of the Effective Date of this Order. After the restrictive covenant is delivered to the Saginaw County Register of Deeds for recording, Respondent shall excavate all soil to a depth of 12" (or deeper, if requested by Respondent and approved by U.S. EPA). After excavation is complete, line excavated area with a marker layer (e.g., geomembrane fabric, plastic snow fencing).

B. if a restrictive covenant, enforceable by Respondent and restricting all soil disturbance below 12", is not delivered for recording to the Saginaw County Register of Deeds within 30 days of U.S. EPA approval, then Respondent shall:

(1) excavate all soil to a depth of 24" (or deeper, if requested by Respondent and approved by U.S. EPA). After excavation is complete, line excavated area with a marker layer (e.g., geomembrane fabric, plastic snow fencing); OR

(2)

(a) identify the presence of in-situ pre-industrial native clay in EU001 Area 3 between 0" and 24" (or deeper, if requested by Respondent and approved by U.S. EPA) as follows:

(i) conduct soil profiling to identify the presence of a defining clay layer; and

(ii) complete dioxin TEQ sampling and analysis to demonstrate that the clay is pre-industrial and therefore is not contaminated (e.g., via comparison to background dioxin TEQ concentrations).

(b) excavate all soil to in-situ pre-industrial native clay layer (if present) found at a depth between 0" and 24" (or deeper, if requested by Respondent and approved by U.S. EPA), including at least 2" of the clay layer itself.

iv. Backfill excavated areas with clean fill to at least the original grade. The final 6" surface lift of the backfill shall be topsoil. Replace structures (patios, flower gardens, etc.) displaced during the removal process. Re-vegetate disturbed yard areas. The RWP will describe how fill will be characterized to ensure that it is free of priority contaminants;

v. Clean residential interiors of occupied homes (including but not limited to garages and workshops) within EU001, including but not limited to the cleaning of all hard surfaces (including hard floors beneath existing

carpeting), the cleaning of upholstery, the cleaning of mattresses, the cleaning of ductwork, the removal and replacement of all carpeting, and the replacement of furnace filters. After cleaning is complete, confirm dioxin TEQ contaminant levels (if any) in residential interiors via sampling and analysis;

vi. Excavate soil at Riverside Boulevard roadway and all driveways associated with the residential parcels to a depth of 6" (or deeper, if requested by Respondent and approved by U.S. EPA), backfill the excavated roadway and driveways with clean fill and pave the Riverside Boulevard roadway and all driveways associated with the residential parcels; and

vii. Transport and dispose of all dioxin TEQ-contaminated soils removed from EU001. Waste shall be transported off-site for proper disposal at a landfill approved to accept dioxin TEQ remediation waste. Waste must be disposed of in compliance with the EPA Off-Site Disposal Rule (Section 300.440 of the NCP and 58 Fed. Reg. 49200).

17. Work Plan and Implementation.

a. Respondent shall submit to U.S. EPA for approval a draft Removal Work Plan for performing the removal action generally described in Paragraph 16.a.i. through 16.a.vii., above, by July 18, 2008, or 7 calendar days after the Effective Date, whichever is later. The draft Removal Work Plan shall provide a description of, and an expeditious schedule for, the actions required by the Work described in Paragraph 16.a.i. through 16.a.vii., above, and in this Settlement Agreement.

b. U.S. EPA may approve, disapprove, require revisions to, or modify the draft Removal Work Plan in whole or in part. To the extent practicable, and only to the extent consistent with the NCP, EPA shall first provide Respondent one request for modification and an opportunity to submit the requested modification(s) within 7 calendar days before EPA modifies the draft Removal Work Plan. If U.S. EPA requires revisions, Respondent shall submit a revised draft Removal Work Plan within 7 calendar days of receipt of U.S. EPA's notification of the required revisions. Respondent shall implement the Removal Work Plan as approved in writing by U.S. EPA in accordance with the schedule approved by U.S. EPA. Once approved, or approved with modifications, the Removal Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

c. Except as previously authorized and/or directed by MDEQ, or as provided by this Settlement Agreement, Respondent shall not commence any Work except in conformance with the terms of this Settlement Agreement, or commence implementation of the Removal Work Plan developed hereunder until receiving written U.S. EPA approval pursuant to Paragraph 17(b).

18. Health and Safety Plan. Respondent shall submit for U.S. EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-Site work under this Settlement Agreement by July 18, 2008, or 7 calendar days after the Effective Date, whichever is later. This plan shall be prepared consistent with U.S. EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If U.S. EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by U.S. EPA and shall implement the plan during the pendency of the removal action.

19. Quality Assurance and Sampling.

a. Respondent shall submit to U.S. EPA for approval, a Quality Assurance Project Plan ("QAPP") by July 18, 2008, or 7 calendar days of the Effective Date, whichever is later. Respondent shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operation," (EPA QA/R5) (EPA/240/B-01/003, March 2001); "Guidance for Quality Assurance Project Plans (QA/G5)" (EPA/600/R-98/018, February 1998), and subsequent amendments to such guidelines upon notification by U.S. EPA to Respondent of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures. Consistent with the foregoing, the methods and procedures contained in Respondent's existing QAPP covering the RCRA corrective actions associated with the Midland Plant shall be used as much as possible. Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate U.S. EPA guidance. Respondent shall follow, as appropriate, "EPA Guidance for Quality Assurance Project Plans," EPA/QA/G-5, EPA/600/R-02/009 (December 2002), "EPA Requirements for Quality Assurance Project Plans," EPA/QA/R-5, EPA/240/B-01/003 (March 2001) and "Instructions on the Preparation of a Superfund Division Quality Assurance Project Plan," EPA Region 5, based on EPA QA/R-5, Revision 0 (June 2000), "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001)," or equivalent documentation as determined by U.S. EPA. U.S. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.

b. Upon request by U.S. EPA or the State, Respondent shall have such a laboratory analyze samples submitted by U.S. EPA or the State for QA monitoring. Respondent shall provide to U.S. EPA and the State the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

c. Upon request by U.S. EPA or the State, Respondent shall allow U.S. EPA, the State or their authorized representatives to take split and/or duplicate samples of any samples collected by Respondent or its contractors or agents while performing the Work. Respondent shall notify U.S. EPA and the State not less than 3 business days in advance of any sample collection activity, unless shorter notice is agreed to by U.S. EPA and the State. U.S. EPA and the State shall have the right to take any additional samples that U.S. EPA or the State deems necessary. Upon request, U.S. EPA and the State shall allow Respondent or its contractors to take split or duplicate samples of any samples taken as part of their oversight of Respondent's implementation of the Work.

20. Post-Removal Site Control. In accordance with the Removal Work Plan schedule, or as otherwise directed by U.S. EPA after consultation with the State, Respondent shall submit a proposal for post-removal site control consistent with Section 300.415(I) of the NCP and OSWER Directive No. 9360.2-02. Upon approval by U.S. EPA, after a reasonable opportunity for review and comment by the State of the proposal for post-removal site control, Respondent shall implement such controls and shall provide U.S. EPA and the State with annual documentation of all post-removal site control arrangements.

21. Reporting.

a. Respondent shall submit a brief weekly written progress report to U.S. EPA and to the State concerning actions undertaken pursuant to this Settlement Agreement, beginning 7 days after the Effective Date until EPA's approval of the Final Report under Section XXVI, unless otherwise directed in writing by the OSC. These reports shall describe all significant developments during the preceding week, including the Work performed and any problems encountered, validated final analytical data received during the reporting period and developments anticipated during the next reporting period, including a schedule of Work to be performed, anticipated problems and planned resolutions of past or anticipated problems.

b. Respondent shall submit to U.S. EPA and to the State three copies of all plans, reports or other submissions required by this Settlement Agreement or the approved Removal Work Plan. Upon written request by U.S. EPA or the State, Respondent shall submit such documents in electronic form.

c. If the Respondent owns real property at the Site where Work related to this Settlement Agreement will be performed, Respondent shall, at least 30 days prior to the conveyance of any interest in such property, give written notice to the transferee that the property is subject to this Settlement Agreement, and written notice to U.S. EPA and

the State of the proposed conveyance, including the name and address of the transferee. Respondent also agrees to require that its successors provide the same notice to U.S. EPA, the State, and to any subsequent transferee that is required of Respondent in the immediately preceding sentence. Respondent further agrees to require its successors to comply with Sections IX (Site Access) and X (Access to Information).

22. Final Report. Within 90 calendar days after receipt of all manifests, validated final analytical and QA/QC data and completion of all Work required by Section VIII of this Settlement Agreement, except for any continuing obligations required by this Settlement Agreement (e.g., monitoring, record retention and payment of Future Response Costs), Respondent shall submit for U.S. EPA review and approval, in consultation with the State, a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP, 40 C.F.R. § 300.165 entitled “OSC Reports” and with the guidance set forth in “Superfund Removal Procedures: Removal Response Reporting – POLREPS and OSC Reports” (OSWER Directive No. 9360.3-03, June 1, 1994). The final report shall include: 1) a good faith estimate of total costs or a statement of actual costs incurred in complying with this Settlement Agreement; 2) a listing of quantities and types of materials removed off-Site or handled on-Site; 3) a listing of the ultimate destination(s) of those materials; 4) a presentation of the final validated analytical results of all sampling and analyses performed; 5) and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of the final report:

“Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

23. Off-Site Shipments.

a. Respondent shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment and of any contemplated additional shipments of Waste Material to the appropriate state environmental official in the receiving facility’s state and to the OSC. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

b. Respondent shall include in the written notification the following information: 1) the name and location of the facility to which the Waste Material is to be shipped; 2) the type and quantity of the Waste Material to be shipped; 3) the expected schedule for the shipment of the Waste Material; and 4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of

major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

c. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-Site location, Respondent shall obtain U.S. EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send hazardous substances, pollutants, or contaminants from the Site to an off-Site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

IX. SITE ACCESS

24. Respondent shall provide access to those areas of the Site that it owns or is in possession of, which access is necessary to implement this Settlement Agreement. Such access shall be provided to EPA employees, contractors, agents, consultants, designees, representatives, and State representatives. These individuals shall be permitted to move freely at those areas of the Site that Respondent owns or is in possession of in order to conduct actions which EPA determines to be necessary.

25. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within 30 calendar days after the Effective Date, or as otherwise specified in writing by the OSC. Respondent shall immediately notify U.S. EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes an in-person visit, a follow-up telephone call and a certified letter from Respondent to the present owner of the property, requesting an access agreement to permit Respondent and EPA, including its authorized representatives, access to the property to conduct the activities required under this Consent Order. Respondent shall describe in writing its efforts to obtain access. U.S. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as U.S. EPA deems appropriate. Respondent shall reimburse U.S. EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XV (Payment of Response Costs).

26. Notwithstanding any provision of this Settlement Agreement, U.S. EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

X. ACCESS TO INFORMATION

27. Respondent shall provide to U.S. EPA and to the State, upon request, copies of all documents, records and information within its possession or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody

records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to U.S. EPA and to the State for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

28. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to U.S. EPA or to the State under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by U.S. EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to U.S. EPA, or if U.S. EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent.

29. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, it shall provide U.S. EPA and the State with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

30. No claim of privilege or confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

31. Notwithstanding any provision of this Settlement Agreement, U.S. EPA retains all of its information gathering authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

XI. RECORD RETENTION

32. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVI (Notice of Completion of Work), Respondent shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention

policy to the contrary. Until 6 years after Respondent's receipt of U.S. EPA's notification pursuant to Section XXVI (Notice of Completion of Work), Respondent shall also instruct its contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to performance of the Work.

33. At the conclusion of this document retention period, Respondent shall notify U.S. EPA at least 60 days prior to the destruction of any such records or documents, and, upon request by U.S. EPA, Respondent shall deliver any such records or documents to U.S. EPA. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide U.S. EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or information; and 6) the privilege asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

34. Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by U.S. EPA or the State or the filing of suit against it regarding the Site and that it has fully complied and will fully comply with any and all U.S. EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XII. COMPLIANCE WITH OTHER LAWS

35. Respondent shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable local, state, and federal laws and regulations except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 6921(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-Site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by U.S. EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental or facility siting laws. Respondents shall identify ARARs in the Removal Work Plan subject to U.S. EPA approval.

XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

36. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall

take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer, Emergency Response Branch #1, Region 5 at (312) 353-2318, of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and U.S. EPA takes such action instead, Respondent shall reimburse U.S. EPA all costs of the response action not inconsistent with the NCP pursuant to Section XV (Payment of Response Costs).

37. In addition, in the event of any release of a hazardous substance from the Site, Respondent shall immediately notify the OSC at (734) 692-7688 and the National Response Center at (800) 424-8802. Respondent shall submit a written report to U.S. EPA within 7 business days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

XIV. AUTHORITY OF ON-SCENE COORDINATOR

38. The OSC shall be responsible for overseeing Respondent's implementation of this Settlement Agreement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

XV. PAYMENT OF RESPONSE COSTS

39. Payments for Future Response Costs.

a. Respondent shall pay U.S. EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, U.S. EPA will send Respondent a bill requiring payment that consists of an Itemized Cost Summary. Respondent shall make all payments within 45 calendar days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 41 of this Settlement Agreement according to the following procedures.

(i) If the payment amount demanded in the bill is for \$10,000 or greater, payment shall be made to U.S. EPA by Electronics Funds Transfer ("EFT") in accordance with current EFT procedures to be provided to Respondent by U.S. EPA Region 5. Payment shall be accompanied by a statement identifying the name and address of the party(ies) making payment, the Site name, U.S. EPA Region 5, and the Site/Spill ID Number B5KF.

(ii) If the amount demanded in the bill is \$10,000 or less, the Settling Respondent may in lieu of the procedures in subparagraph 39(a)(i) make all payments required by this Paragraph by a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, and the EPA Site/Spill ID Number B5KF. Settling Respondent shall send the check(s) to:

U.S. EPA
Superfund Payments
Cincinnati Finance Center
P.O. Box 979076
St. Louis, MO 63197-9000

b. At the time of payment, Respondent shall send notice that payment has been made to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590 and to Jeffrey A. Cahn, Associate Regional Counsel, 77 West Jackson Boulevard, C-14J, Chicago, Illinois, 60604-3590, and to Catherine J. Garypie, Associate Regional Counsel, 77 West Jackson Boulevard, C-14J, Chicago, Illinois, 60604-3590.

c. The total amount paid by Respondent pursuant to Paragraph 39(a) shall be deposited by U.S. EPA in the Tittabawassee River Dioxin Spill Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by U.S. EPA to the EPA Hazardous Substance Superfund.

40. In the event that the payments for Future Response Costs are not made within 45 days of Respondents' receipt of a bill, Respondent shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII.

41. Respondent may dispute all or part of a bill for Future Response Costs submitted under this Settlement Agreement, only if Respondent alleges that U.S. EPA has made an accounting error, or if Respondent alleges that a cost item is inconsistent with the NCP or outside the scope of this Settlement Agreement. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondent shall pay the full amount of the uncontested costs to U.S. EPA as specified in Paragraph 39 on or before the due date. Within the same time period, Respondent shall pay the full amount of the contested costs into an interest-bearing escrow account. Respondent shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 39(b) above. Respondent shall

ensure that the prevailing party or parties in the dispute shall receive the amount upon which they prevailed from the escrow funds plus interest within 20 calendar days after the dispute is resolved.

XVI. DISPUTE RESOLUTION

42. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

43. If Respondent objects to any U.S. EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, it shall notify U.S. EPA in writing of its objection(s) within 10 calendar days of such action, unless the objection(s) has/have been resolved informally. This written notice shall include a statement of the issues in dispute, the relevant facts upon which the dispute is based, all factual data, analysis or opinion supporting Respondent's position, and all supporting documentation on which such party relies. U.S. EPA shall provide its Statement of Position, including supporting documentation, no later than 10 calendar days after receipt of the written notice of dispute. In the event that these 10-day time periods for exchange of written documents may cause a delay in the work, they shall be shortened upon, and in accordance with, notice by U.S. EPA. The time periods for exchange of written documents relating to disputes over billings for response costs may be extended at the sole discretion of U.S. EPA. An administrative record of any dispute under this Section shall be maintained by U.S. EPA. The record shall include the written notification of such dispute, the Statement of Position served pursuant to this paragraph, and all other materials exchanged during dispute resolution and designated as submitted as part of such dispute resolution. Based upon the administrative record, the Director of the Superfund Division, U.S. EPA Region 5, shall resolve the dispute consistent with the NCP and the terms of this Settlement Agreement. The Director of the Superfund Division, or his or her designee, shall, upon request, meet with the Parties before resolving the dispute.

44. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with U.S. EPA's decision, whichever occurs.

XVII. FORCE MAJEURE

45. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Respondent, or of any entity controlled by Respondent, including but not limited to its

contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

46. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify U.S. EPA orally within 72 hours of when Respondent first knew that the event might cause a delay. Within 7 calendar days thereafter, Respondent shall provide the following to U.S. EPA in writing: 1) an explanation and description of the reasons for the delay; 2) the anticipated duration of the delay; 3) all actions taken or to be taken to prevent or minimize the delay; 4) a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; 5) Respondent's rationale for attributing such delay to a *force majeure* event if it intends to assert such a claim; and 6) a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall be grounds for U.S. EPA to deny Respondent an extension of time for performance. Respondent shall have the burden of demonstrating by a preponderance of the evidence that the event is a *force majeure*, that the delay is warranted under the circumstances, and that best efforts were exercised to avoid and mitigate the effects of the delay.

47. If U.S. EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by U.S. EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If U.S. EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, U.S. EPA will notify Respondent in writing of its decision. If U.S. EPA agrees that the delay is attributable to a *force majeure* event, U.S. EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. STIPULATED PENALTIES

48. Respondent shall be liable to U.S. EPA for stipulated penalties in the amounts set forth in Paragraphs 49 and 50 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XVII (*Force Majeure*) or as otherwise approved by U.S. EPA. "Compliance" by Respondent shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of this Settlement Agreement within the specified time schedules established by and approved under this Settlement Agreement.

49. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 49(b):

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500	1st through 14th day
\$1000	15th through 30th day
\$2,500	31st day and beyond

b. Compliance Milestones

1. Respondent shall submit each of the plans required by this Settlement Agreement, including the Removal Work Plan in accordance with the schedules established in this Settlement Agreement.
2. Respondent shall complete each of the tasks required by the plans, including the Removal Work Plan in accordance with the schedules established in the plans, including the Removal Work Plan.
3. Respondent shall implement the Work as prescribed in this Settlement Agreement, and the plans, including the Removal Work Plan.
4. Respondent shall pay Future Response Costs as provided in this Settlement Agreement.

50. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports pursuant to Paragraphs 21, 22, 37, and 73 :

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500	1st through 14th day
\$1000	15th through 30th day
\$2,500	31st day and beyond

51. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after U.S. EPA's receipt of such submission until the date that U.S. EPA notifies Respondents of any deficiency; and 2) with respect to a decision by the Director of the Superfund Division, Region 5, under Paragraph 43 of Section XVI (Dispute Resolution), during the

period, if any, beginning on the 21st day after U.S. EPA submits its written statement of position until the date that the Director of the Superfund Division issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement. U.S. EPA shall consider Respondent's good faith and best efforts in seeking to meet the terms and conditions of this Settlement Agreement and associated Work Plans and schedules.

52. Following U.S. EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, U.S. EPA may give Respondent written notification of the failure and describe the noncompliance. U.S. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether U.S. EPA has notified Respondent of a violation.

53. All penalties accruing under this Section shall be due and payable to U.S. EPA within 30 days of Respondent's receipt from U.S. EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures under Section XVI (Dispute Resolution). All payments to U.S. EPA under this Section shall be paid by certified or cashier's check(s) made payable to "U.S. EPA Hazardous Substances Superfund," shall be mailed to U.S. Environmental Protection Agency, Fines and Penalties, Cincinnati Finance Center, PO Box 979077, St. Louis, MO 63197-9000, shall indicate that the payment is for stipulated penalties, and shall reference the U.S. EPA Site/Spill ID Number B5KF, the U.S. EPA Docket Number, and the name and address of the party making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to U.S. EPA as provided in Paragraph 39(b).

54. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

55. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until 20 days after the dispute is resolved by agreement or by receipt of U.S. EPA's decision.

56. If Respondent fails to pay stipulated penalties when due, U.S. EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 52. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of U.S. EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(l) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that U.S. EPA shall not seek civil penalties pursuant to Section 106(b) or 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is

provided herein, except in the case of a willful violation of this Settlement Agreement. Should Respondent violate this Settlement Agreement or any portion hereof, U.S. EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. §9604, and/or may seek judicial enforcement of this Settlement Agreement pursuant to Section 106 of CERCLA, 42 U.S.C. §9606. Notwithstanding any other provision of this Section, U.S. EPA may, in its unreviewable discretion, waive in writing any portion of stipulated penalties or interest that have accrued pursuant to this Settlement Agreement.

XIX. COVENANT NOT TO SUE BY U.S. EPA

57. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, U.S. EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XV. This covenant not to sue extends only to Respondent and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY U.S. EPA

58. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of U.S. EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement. U.S. EPA also reserves the right to take any other legal or equitable action as it deems appropriate and necessary, or to require the Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

59. The covenant not to sue set forth in Section XIX (Covenant Not To Sue By U.S. EPA) above does not pertain to any matters other than those expressly identified therein. U.S. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definition of Future Response Costs;
- c. liability for performance of response action other than the Work;

- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

XXI. COVENANT NOT TO SUE BY RESPONDENT

60. Except as specifically provided in this Settlement Agreement, Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
- b. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Michigan Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or
- c. any claim against the U.S. EPA pursuant to CERCLA, 42 U.S.C. §§ 9601, et seq., relating to the Work or Future Response Costs.

Except for the claims described in Paragraph 60.c., Respondent specifically reserves any and all claims that it may have under CERCLA, 42 U.S.C. §§ 9601, et seq., against the United States to recover response costs in connection with the Work or Future Response Costs and/or to recover natural resources damages at the Site.

61. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 59(b), (c), and (e) - (g), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation. Further, nothing in this Settlement Agreement shall prevent Respondent from seeking legal or equitable relief to enforce the terms of this Settlement Agreement.

62. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXII. OTHER CLAIMS

63. By issuance of this Settlement Agreement, the United States and U.S. EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or U.S. EPA shall not be deemed a party to any contract entered into by Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement Agreement.

64. Except as expressly provided in Section XIX (Covenant Not to Sue by U.S. EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

65. No action or decision by U.S. EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. CONTRIBUTION

66. a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for “matters addressed” in this Settlement Agreement. The “matters addressed” in this Settlement Agreement are the Work and Future Response Costs.

b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which the Respondent has, as of the Effective Date, resolved its liability to the United States for the Work and Future Response Costs.

c. Nothing in this Settlement Agreement precludes the United States or Respondent from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not Parties to this Settlement Agreement. Nothing herein diminishes the right of the United States, pursuant to Section 113(f)(2) and (3), 42 U.S.C. § 9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response action, and to enter into settlements that give rise to

contribution protection pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2).

XXIV. INDEMNIFICATION

67. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States. The Federal Tort Claims Act (28 U.S.C. §§ 2671, 2680) provides coverage for injury or loss of property, or injury or death caused by the negligent or wrongful act or omission of an employee of U.S. EPA while acting within the scope of his or her employment, under circumstances where U.S. EPA, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.

68. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

69. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXV. MODIFICATIONS

70. The OSC may make modifications to any plan or schedule in writing or by oral direction. To the extent practicable, and only to the extent consistent with the NCP, EPA shall first provide Respondent one request for modification and an opportunity to submit the requested modification(s) within 5 calendar days before EPA modifies such

plan or schedule. Any oral modification will be memorialized in writing by U.S. EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.

71. If Respondent seeks permission to deviate from any approved work plan or schedule, Respondent's Project Coordinator shall submit a written request to U.S. EPA for approval outlining the proposed modification and its basis. Respondent may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 70.

72. No informal advice, guidance, suggestion, or comment by the OSC or other U.S. EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXVI. NOTICE OF COMPLETION OF WORK

73. When U.S. EPA determines, after U.S. EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including, *e.g.*, post-removal site controls, payment of Future Response Costs, and record retention, U.S. EPA will provide written notice of completion to Respondent, at which time this Settlement Agreement shall be deemed satisfied. Such notice shall not be unreasonably withheld. If U.S. EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, U.S. EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the Removal Work Plan if appropriate in order to correct such deficiencies. Respondent shall implement the modified and approved Removal Work Plan and shall submit a modified Final Report in accordance with the U.S. EPA notice. Failure by Respondent to implement the approved modified Removal Work Plan shall be a violation of this Settlement Agreement.

XXVII. FINANCIAL ASSURANCE

74. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security in the amount of \$3,000,000 in one or more of the following forms:

- a. A surety bond guaranteeing performance of the Work;
- b. One or more irrevocable letters of credit equaling the total estimated cost of the Work;
- c. A trust fund;

d. A guarantee to perform the Work by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of Respondents; or

e. A demonstration that Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f). For these purposes, references in 40 C.F.R. § 264.143(f) to the “sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates” shall mean the amount of financial security specified above. If Respondent seeks to provide a demonstration under 40 C.F.R. § 264.143(f) and has provided a similar demonstration at other RCRA or CERCLA sites, the amount for which it is providing financial assurance at those other sites should generally be added to the estimated costs of the Work for this Paragraph.

75. If Respondent seeks to demonstrate the ability to complete the Work through a guarantee by a third party pursuant to Paragraph 74(d) of this Section, Respondent shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f). If Respondent seeks to demonstrate its ability to complete the Work by means of the financial test or the corporate guarantee pursuant to Paragraph 74(d) or (e) of this Section, Respondent shall resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date. In the event that U.S. EPA determines at any time that the financial assurances provided pursuant to this Section are inadequate, Respondents shall, within 30 days of receipt of notice of U.S. EPA’s determination, obtain and present to U.S. EPA for approval one of the other forms of financial assurance listed in Paragraph 74 of this Section. Respondent’s inability to demonstrate financial ability to complete the Work shall not excuse performance of any activities required under this Settlement Agreement.

76. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 74 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to U.S. EPA, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by U.S. EPA. In the event of a dispute, Respondent may reduce the amount of the security in accordance with the written decision resolving the dispute.

77. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and approval by U.S. EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVIII. INSURANCE

78. At least 7 days prior to commencing any on-Site work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of one-million dollars (\$1,000,000), combined single limit. Within the same time period, Respondent shall provide U.S. EPA with certificates of such insurance. In addition, for the duration of the Settlement Agreement, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to U.S. EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXIX. SEVERABILITY/INTEGRATION/ATTACHMENTS

79. If a court issues an order that invalidates any provision of this Settlement Agreement or finds that Respondent has sufficient cause not to comply with one or more provisions of this Settlement Agreement, Respondent shall remain bound to comply with all provisions of this Settlement Agreement not invalidated or determined to be subject to a sufficient cause defense by the court's order.

80. This Settlement Agreement and its attachments constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following attachments are incorporated into this Settlement Agreement:

Attachment A - Site Map

Attachment B - Site Areas Map

Attachment C – Action Memorandum

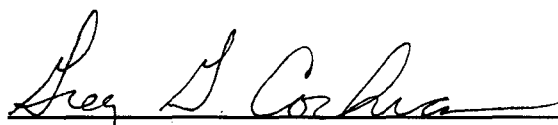
XXX. EFFECTIVE DATE

81. This Settlement Agreement shall be effective upon receipt by Respondent of a copy of this Settlement Agreement signed by the Regional Administrator, U.S. EPA Region 5.

The undersigned representative of Respondent certifies he/she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the Respondent to this document.

Agreed this 11th day of July, 2008.

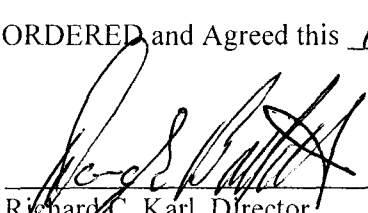
For Respondent: The Dow Chemical Company

By: 
Greg G. Cochran
Director, Michigan Dioxin Initiative

IN THE MATTER OF:

The Dow Chemical Company
Midland, Michigan, 48667

It is so ORDERED and Agreed this 15 day of July, 2008.

By: 
for Richard C. Karl, Director
Superfund Division
United States Environmental Protection Agency
Region 5

ATTACHMENT A

Site Map

ATTACHMENT B

Site Areas Map

ATTACHMENT C

Action Memorandum