

Ms. Amanda Armbruster
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Subject:

Dioxin Summary Letter - DRAFT
MID005356696 - RACER Saginaw Malleable Industrial Land / Green Point
Landfill, and Peninsula Property
Saginaw, Michigan

ENVIRONMENT

Date:

October 26, 2016

Dear Ms. Armbruster:

Contact:

Scott Clearwater

This letter has been prepared on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust to identify and summarize historical samples collected at the Saginaw Malleable Industrial Land / Green Point Landfill / Peninsula Property (the Site, **Figure 1**) and analyzed for dioxins and furans, and to put those results in context to the regional dioxin contamination situation.

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Arcadis reviewed historical data for the Site and identified a limited number of samples that have been collected and analyzed for dioxins and furans. One sample (MW-126WT) collected in 1995 from a depth between 14 and 16 feet below ground surface, and was analyzed for dioxins and furans as shown on Figure 1. The sample location is within the 100-year flood plain on the west side of Green Point Landfill, approximately 2,000 feet from the river, neither dioxins nor furans were detected, see **Table 1**. Additionally, soil samples were collected as part of a wetland mitigation project completed on behalf of GM. Two of the samples were analyzed for dioxins and furans due to known dioxin impacts deposited across the river flood plain area as a result of releases by DOW upstream from the Site (**Figure 2**). Twenty-one samples were collected for PCBs (non-coplanar) at a depth of 0-1 foot below ground surface, however, only two of those samples were analyzed for dioxin and furans. These two sample locations were within the 100-year flood plain, within 500 feet of the river, and the samples had detections of dioxins and furans with concentrations that exceed soil direct contact action levels identified in the Dow Chemical Company Interim Response Activity Plan Designed to Meet Criteria (March 2012). Additionally, the two samples exceed the MDEQ Part 201 Residential Direct Contact Criteria of 90 picograms per gram.

Our ref:

B0050096.2016

Extensive sampling programs conducted by the Michigan Department of Environmental Quality (MDEQ) and the DOW Chemical Corporation (DOW) show the presence of dioxin and furan compounds throughout the flood plains and river sediments of the Tittabawassee and Saginaw Rivers that trace from the DOW plant located in Midland Michigan; this documentation was identified on the MDEQ website located at the MDEQ Dioxin Information - Midland Area Soils Corrective Action document archive website: (http://www.michigan.gov/deq/0,4561,7-135-3307_29693_21234-271213--,00.html). According to a MDEQ Affidavit found at this MDEQ website, a sediment removal action was completed in the Saginaw River adjacent to the Site (**Attachment 1**). Further, the MDEQ *Phase II Tittabawassee/Saginaw River Dioxin Flood Plain Sampling Study* stated that there is an insignificant contribution of the total dioxin-like toxicity from coplanar PCB compounds found in connection with dioxin flood plain impacts originating from DOW. The presence of dioxins and furans has not been extensively investigated at the Site as they were determined to not be Site-related compounds; however, per the attached Affidavit, the presence of the Site within the flood plain of the Tittabawassee and Saginaw Rivers, these compounds may be present.

Conclusions and Recommendations:

Arcadis recommends developing Site-specific recreational screening values to assess the potential risks from the observed dioxin concentrations. Based on the above information it appears that the presence of dioxins and furans at the Site should be a Due Care consideration. This matter should be discussed further as the potential use of the Site for passive recreational uses continues to be evaluated.

Please contact me with any questions.

Sincerely,

Arcadis of Michigan, LLC



Scott Clearwater
Certified Project Manager

Copies:

Rhonda Klann, MDEQ
Ann Person, MDEQ
Divinia Ries, MDEQ
Dave Favero, RACER

Enclosures:

Tables

- 1 Soil Analytical Data

Figures

- 1 Site Layout Map
- 2 Dioxin Soil Sample Location Map

Attachments

- 1 Affidavit to Support Unremediated Release(s) in a Remedial Action Plan

References:

Phase II Tittabawassee/Saginaw River Dioxin Flood Plain Sampling Study, MDEQ, June 2003

The Dow Chemical Company Interim Response Activity Plan Designed to Meet Criteria, URS Corporation, March 2012 (revised May 2012)

TABLES



Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	A1 4/18/2000 A1	A2 4/18/2000 A2	A3 4/18/2000 A3	A4 4/17/2000 A4A	A4 4/17/2000 A4B	A5 4/17/2000 A5	A6 4/17/2000 A6	A7 4/17/2000 A7
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
Inorganics									
Total solids (dry wt. as % of wet wt. or volume)	%	79.7	79.5	78.6	77.7	78.5	80.6	80.9	88.2
Arsenic	mg/kg	9.1	11.6	10.7	10.2	9.7	9.5	7.2	4.2
Barium	mg/kg	94.6	96.6	121	125	126	104	86.8	87.0
Cadmium	mg/kg	0.4	0.5	0.44	0.45	0.45	0.44	0.38	0.28
Chromium	mg/kg	16.4	26.1	24.7	23.7	22.5	22.4	17.3	77.5
Copper	mg/kg	13.3	16.2	15	14.4	13.9	14.4	13	15.5
Lead	mg/kg	16.6	20.2	17.3	17.2	16.1	17	13.9	26.0
Mercury (total)	mg/kg	0.07	0.07	0.07	0.06	0.06	0.07	0.07	0.05
Selenium	mg/kg	1.05 <i>U</i>	1.05 <i>U</i>	1.06 <i>U</i>	0.9 <i>U</i>	1.06 <i>U</i>	1.24 <i>U</i>	1.24 <i>U</i>	1.13 <i>U</i>
Silver	mg/kg	0.1 <i>J</i>	0.1 <i>J</i>	0.11 <i>J</i>	0.11 <i>J</i>	0.09 <i>J</i>	0.1 <i>J</i>	0.13 <i>J</i>	0.21 <i>J</i>
Zinc	mg/kg	57.3	70.8	67.4	72.2	69.1	74.4	59.3	62.9
PCDD/Fs									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	NA	NA

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Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
PAHs									
Acenaphthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Acenaphthylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benz[a]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[a]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[b]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[ghi]perylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[k]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chrysene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dibenz[a,h]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3
Fluorene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
PAHs (cont.)									
Naphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Phenanthrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
PCBs									
Aroclor® 1016	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1221	mg/kg	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor® 1232	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1242	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1248	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1254	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.23
Aroclor® 1260	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pesticides									
2,4,5-T	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2,4-D	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2,4-DB	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
2-sec-butyl-4,6-dinitrophenol	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Dalapon	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Dicamba	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Dichlorprop	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
MCPA	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U
MCPP	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U
Silvex	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4,4'-DDD	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4,4'-DDE	µg/kg	9.6	13	9.8	11	9.5	16	9.4	7.4
4,4'-DDT	µg/kg	23 U	27 U	17 U	18 U	17 U	27 U	21 U	7.7 U
Aldrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pesticides (continued)									

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	A1 4/18/2000 A1	A2 4/18/2000 A2	A3 4/18/2000 A3	A4 4/17/2000 A4A	A4 4/17/2000 A4B	A5 4/17/2000 A5	A6 4/17/2000 A6	A7 4/17/2000 A7
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
beta-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	22 U
beta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
delta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dieldrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Endosulfan sulfate	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Endrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Endrin aldehyde	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	9.8 U
Endrin ketone	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
gamma-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
gamma-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Heptachlor	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Heptachlor epoxide	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methoxychlor	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toxaphene	µg/kg	250 U	250 U	250 U	250 U	250 U	250 U	250 U	480 U
Other Organic Compounds									
1,2,4-Trichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4,5-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4,6-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dimethylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2,4-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,6-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Chloronaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Chlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methyl-4,6-dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Methylnaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Nitrophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
3,3'-Dichlorobenzidine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
3-and 4-Methylphenol Coelution	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
3-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Bromophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chloro-3-methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chloroaniline	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chlorophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Nitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location:	A1	A2	A3	A4	A4	A5	A6	A7
	Date:	4/18/2000	4/18/2000	4/18/2000	4/17/2000	4/17/2000	4/17/2000	4/17/2000	4/17/2000
	Sample ID:	A1	A2	A3	A4A	A4B	A5	A6	A7
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
Other Organic Compounds (cont.)									
Aniline	mg/kg	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzoic acid	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzyl alcohol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-chloroethoxy]methane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-chloroethyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Bis[2-chloroisopropyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-Ethylhexyl]phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Butylbenzyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dibenzofuran	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Diethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dimethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Di-n-butyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Di-n-octyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobutadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorocyclopentadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachloroethane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Isophorone	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Nitrobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
N-nitroso dimethylamine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
N-nitroso-di-n-propylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
N-nitrosodiphenylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pentachlorophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Phenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U

Notes:

mg/kg: milligram per kilogram

pg/g: pictogram per gram or part per trillion (ppt)

µg/kg: microgram per kilogram

NA: not analyzed

U: Indicates compound was analyzed for, but not detected.

BOLD: concentrations exceed site specific soil
direct contact action level according to the Dow
Chemical Company Interim Response Activity
Plan Designed to Meet Criteria (March 2012)

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	B1 4/18/2000 B1	B2 4/18/2000 B2	B3 4/18/2000 B3	C1 4/18/2000 C1A	C1 4/18/2000 C1B	C2 4/18/2000 C2
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
Inorganics							
Total solids (dry wt. as % of wet wt. or volume)	%	81.0	80.1	79.2	81.5	80.9	81.5
Arsenic	mg/kg	11.6	12.3	11.6	14.1	13.2	15.5
Barium	mg/kg	81.4	89.6	125	73.3	76.6	86.2
Cadmium	mg/kg	0.44	0.45	0.45	0.46	0.4	0.49
Chromium	mg/kg	17.7	18.7	20.3	19.5	17.2	20.6
Copper	mg/kg	14.6	15.3	14.9	13.8	13.5	15.6
Lead	mg/kg	18	17.9	17.1	17.4	16	19.1
Mercury (total)	mg/kg	0.07	0.08	0.09	0.08	0.08	0.1
Selenium	mg/kg	1.23 <i>U</i>	1.25 <i>U</i>	1.05 <i>U</i>	1.23 <i>U</i>	1.24 <i>U</i>	1.23 <i>U</i>
Silver	mg/kg	0.09 <i>J</i>	0.1 <i>J</i>	0.1 <i>J</i>	0.09 <i>J</i>	0.14 <i>J</i>	0.12 <i>J</i>
Zinc	mg/kg	62.4	65.4	69.3	57.4	56.3	255
PCDD/Fs							
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	280	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	NA	NA	NA	1,370	NA	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	NA	NA	NA	135	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	5.91	NA	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	2,120	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	19	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	495	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	11.9	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	NA	NA	NA	56.8	NA	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	7.56	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	2,910	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	235	NA	NA
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	2,290	NA	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	5.4	NA	NA
2,3,7,8-Tetrachlorodibenzofuran	pg/g	NA	NA	NA	5,840	NA	NA
Octachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	2,250	NA	NA
Octachlorodibenzofuran	pg/g	NA	NA	NA	1,300	NA	NA
Total heptachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	536	NA	NA
Total heptachlorodibenzofurans	pg/g	NA	NA	NA	1,770	NA	NA
Total hexachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	110	NA	NA
Total hexachlorodibenzofurans	pg/g	NA	NA	NA	2,120	NA	NA
Total pentachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	60	NA	NA
Total pentachlorodibenzofurans	pg/g	NA	NA	NA	9,600	NA	NA
Total tetrachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	107	NA	NA
Total tetrachlorodibenzofurans	pg/g	NA	NA	NA	11,500	NA	NA

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	B1 4/18/2000 B1	B2 4/18/2000 B2	B3 4/18/2000 B3	C1 4/18/2000 C1A	C1 4/18/2000 C1B	C2 4/18/2000 C2
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
PAHs							
Acenaphthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Acenaphthylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benz[a]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[a]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[b]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[ghi]perylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzo[k]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chrysene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dibenz[a,h]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Fluorene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
PAHs (cont.)							
Naphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Phenanthrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
PCBs							
Aroclor® 1016	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1221	mg/kg	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Aroclor® 1232	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1242	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1248	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1254	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor® 1260	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pesticides							
2,4,5-T	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
2,4-D	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
2,4-DB	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
2-sec-butyl-4,6-dinitrophenol	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
Dalapon	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
Dicamba	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
Dichlorprop	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
MCPA	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U
MCPP	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U
Silvex	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U
4,4'-DDD	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
4,4'-DDE	µg/kg	12	14	13	15	16	15
4,4'-DDT	µg/kg	25 U	32 U	27 U	29 U	28 U	5
Aldrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
alpha-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Pesticides (continued)							

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	B1 4/18/2000 B1	B2 4/18/2000 B2	B3 4/18/2000 B3	C1 4/18/2000 C1A	C1 4/18/2000 C1B	C2 4/18/2000 C2
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
beta-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
beta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
delta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Dieldrin	µg/kg	5 U	5 U	5 U	5.6	5.2	6.4
Endosulfan sulfate	µg/kg	5 U	5 U	5 U	5 U	5	5 U
Endrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Endrin aldehyde	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Endrin ketone	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
gamma-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
gamma-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Heptachlor	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Heptachlor epoxide	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U
Methoxychlor	µg/kg	5.2 U	5 U	5 U	5 U	5 U	5.7 U
Toxaphene	µg/kg	250 U	250 U	250 U	250 U	250 U	250 U
Other Organic Compounds							
1,2,4-Trichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,3-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4,5-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4,6-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dimethylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,4-Dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
2,4-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2,6-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Chloronaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Chlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methyl-4,6-dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
2-Methylnaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
2-Nitrophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
3,3'-Dichlorobenzidine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
3-and 4-Methylphenol Coelution	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
3-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
4-Bromophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chloro-3-methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chloroaniline	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Chlorophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
4-Nitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location:	B1	B2	B3	C1	C1	C2
	Date:	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/18/2000
	Sample ID:	B1	B2	B3	C1A	C1B	C2
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot
Other Organic Compounds (cont.)							
Aniline	mg/kg	1 U	1 U	1 U	1 U	1 U	1 U
Benzoic acid	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
Benzyl alcohol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-chloroethoxy]methane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-chloroethyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Bis[2-chloroisopropyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
bis[2-Ethylhexyl]phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Butylbenzyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dibenzofuran	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Diethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dimethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Di-n-butyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Di-n-octyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorobutadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachlorocyclopentadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Hexachloroethane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Isophorone	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Nitrobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
N-nitroso dimethylamine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
N-nitroso-di-n-propylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
N-nitrosodiphenylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Pentachlorophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U
Phenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U

Notes:

mg/kg: milligram per kilogram

pg/g: pictogram per gram or part per trillion (ppt)

µg/kg: microgram per kilogram

NA: not analyzed

U: Indicates compound was analyzed for, but not detected.

BOLD: concentrations exceed site specific soil
direct contact action level according to the Dow
Chemical Company Interim Response Activity
Plan Designed to Meet Criteria (March 2012)

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	C3 4/18/2000 C3	D1 4/18/2000 D1	D2 4/18/2000 D2	D3 4/18/2000 D3	E1 4/19/2000 E1	E2 4/19/2000 E2	E3 4/19/2000 E3A	MW-126WT 2/8/1995 MW-126WT
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	14-16 feet
Inorganics									
Total solids (dry wt. as % of wet wt. or volume)	%	80.7	83.6	83.0	81.3	84.1	83.9	81.3	NA
Arsenic	mg/kg	13.8	14.6	13.1	13	13.7	11.8	13	2.33 J
Barium	mg/kg	114	61.7	67.3	98.1	54.8	61.5	89.8	64.6 J
Cadmium	mg/kg	0.49	0.43	0.4	0.48	0.36	0.34	0.45	0.0783
Chromium	mg/kg	19.2	14.9	17.1	19.5	12.1	14	18.8	23.8
Copper	mg/kg	15.1	11.9	12.6	14.5	10.1	18.3	13.4	13.9
Lead	mg/kg	17.5	14.7	15.3	17.3	13.4	48.1	18	5.33 J
Mercury (total)	mg/kg	0.16	0.06	0.08	0.09	0.06	0.08	0.11	0.0572 UJ
Selenium	mg/kg	1.24 <i>U</i>	1.2 <i>U</i>	1.2 <i>U</i>	1.23 <i>U</i>	1.19 <i>U</i>	1.19 <i>U</i>	1.23 <i>U</i>	0.286 UJ
Silver	mg/kg	0.11 <i>J</i>	0.09 <i>J</i>	0.09 <i>J</i>	0.12 <i>J</i>	0.08 <i>J</i>	0.09 <i>J</i>	0.14 <i>J</i>	0.286 U
Zinc	mg/kg	64.5	51.7	52.4	64.3	45.6	50.2	60.5	31.6 J
PCDD/Fs									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	317	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	1,180	NA
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	110	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	4.96	NA
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	1,420	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	19.4	NA
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	324	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	11.6	NA
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	35.2	NA
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	6.86	NA
1,2,3,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	1,890	NA
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	152	NA
2,3,4,7,8-Pentachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	1,470	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	4.54	680 <i>U</i>
2,3,7,8-Tetrachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	4,200	NA
Octachlorodibenzo-p-dioxin	pg/g	NA	NA	NA	NA	NA	NA	2,310	NA
Octachlorodibenzofuran	pg/g	NA	NA	NA	NA	NA	NA	1,370	NA
Total heptachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	606	NA
Total heptachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	1,980	NA
Total hexachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	104	1,900 <i>U</i>
Total hexachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	1,420	540 <i>U</i>
Total pentachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	55.2	400 <i>U</i>
Total pentachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	5,550	730 <i>U</i>
Total tetrachlorodibenzo-p-dioxins	pg/g	NA	NA	NA	NA	NA	NA	111	100 <i>U</i>
Total tetrachlorodibenzofurans	pg/g	NA	NA	NA	NA	NA	NA	8,070	420 <i>U</i>

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	C3 4/18/2000 C3	D1 4/18/2000 D1	D2 4/18/2000 D2	D3 4/18/2000 D3	E1 4/19/2000 E1	E2 4/19/2000 E2	E3 4/19/2000 E3A	MW-126WT 2/8/1995 MW-126WT
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	14-16 feet
PAHs									
Acenaphthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Acenaphthylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Benz[a]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Benzo[a]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Benzo[b]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Benzo[ghi]perylene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Benzo[k]fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 UJ
Chrysene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Dibenz[a,h]anthracene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 UJ
Fluoranthene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.4	0.3 U	0.3 U	0.190 U
Fluorene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
PAHs (cont.)									
Naphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Phenanthrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.190 U
Pyrene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.4	0.3 U	0.3 U	0.190 U
PCBs									
Aroclor® 1016	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Aroclor® 1221	mg/kg	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA
Aroclor® 1232	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Aroclor® 1242	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Aroclor® 1248	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Aroclor® 1254	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Aroclor® 1260	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA
Pesticides									
2,4,5-T	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
2,4-D	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
2,4-DB	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
2-sec-butyl-4,6-dinitrophenol	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
Dalapon	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
Dicamba	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
Dichlorprop	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
MCPA	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	NA
MCPP	µg/kg	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	25,000 U	NA
Silvex	µg/kg	50 U	50 U	50 U	50 U	50 U	50 U	50 U	NA
4,4'-DDD	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
4,4'-DDE	µg/kg	12	16	18	14	15	18	12	NA
4,4'-DDT	µg/kg	27 U	32 U	35 U	5	13	15	15	NA
Aldrin	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
alpha-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
alpha-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
alpha-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Pesticides (continued)									

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location: Date: Sample ID:	C3 4/18/2000 C3	D1 4/18/2000 D1	D2 4/18/2000 D2	D3 4/18/2000 D3	E1 4/19/2000 E1	E2 4/19/2000 E2	E3 4/19/2000 E3A	MW-126WT 2/8/1995 MW-126WT
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	14-16 feet
beta-Endosulfan	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
beta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
delta-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Dieldrin	µg/kg	5 U	5.9	8	5 U	5 U	5 U	5 U	NA
Endosulfan sulfate	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Endrin	µg/kg	5 U	5 U	5.6 U	5 U	6 U	5 U	5 U	NA
Endrin aldehyde	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Endrin ketone	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
gamma-Chlordane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
gamma-Hexachlorocyclohexane	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Heptachlor	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Heptachlor epoxide	µg/kg	5 U	5 U	5 U	5 U	5 U	5 U	5 U	NA
Methoxychlor	µg/kg	5 U	5 U	14 U	5.5 U	7.8 U	7.4 U	5.3 U	NA
Toxaphene	µg/kg	250 U	260 U	250 U	250 U	280 U	270 U	250 U	NA
Other Organic Compounds									
1,2,4-Trichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
1,2-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.0057 U
1,3-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.0057 U
1,4-Dichlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.0057 U
2,4,5-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2,4,6-Trichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2,4-Dichlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2,4-Dimethylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2,4-Dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
2,4-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2,6-Dinitrotoluene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2-Chloronaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2-Chlorophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2-Methyl-4,6-dinitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
2-Methylnaphthalene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2-Methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
2-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
2-Nitrophenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
3,3'-Dichlorobenzidine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
3-and 4-Methylphenol Coelution	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
3-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
4-Bromophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
4-Chloro-3-methylphenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
4-Chloroaniline	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
4-Chlorophenyl-phenyl ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
4-Nitroaniline	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
4-Nitrophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA

Table 1: Soil Analytical Data

RACER Saginaw
Green Point Landfill
Saginaw, Michigan

	Location:	C3	D1	D2	D3	E1	E2	E3	MW-126WT
	Date:	4/18/2000	4/18/2000	4/18/2000	4/18/2000	4/19/2000	4/19/2000	4/19/2000	2/8/1995
	Sample ID:	C3	D1	D2	D3	E1	E2	E3A	MW-126WT
Chemical (dry wt)	Depth	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	0-1 foot	14-16 feet
Other Organic Compounds (cont.)									
Aniline	mg/kg	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA
Benzoic acid	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
Benzyl alcohol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
bis[2-chloroethoxy]methane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
bis[2-chloroethyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Bis[2-chloroisopropyl]ether	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
bis[2-Ethylhexyl]phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Butylbenzyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Dibenzofuran	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Diethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Dimethyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Di-n-butyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Di-n-octyl phthalate	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Hexachlorobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Hexachlorobutadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Hexachlorocyclopentadiene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Hexachloroethane	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Isophorone	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Nitrobenzene	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
N-nitroso dimethylamine	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
N-nitroso-di-n-propylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
N-nitrosodiphenylamine	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA
Pentachlorophenol	mg/kg	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA
Phenol	mg/kg	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA

Notes:

mg/kg: milligram per kilogram

pg/g: pictogram per gram or part per trillion (ppt)

µg/kg: microgram per kilogram

NA: not analyzed

U: Indicates compound was analyzed for, but not detected.

BOLD: concentrations exceed site specific soil
direct contact action level according to the Dow
Chemical Company Interim Response Activity
Plan Designed to Meet Criteria (March 2012)

FIGURES

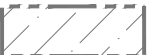




ST. L
MCGREGOR ST.
STEWART ST.
FLORANCE ST.
SALT ST.
W. CENTER ST.
(130.00 FEET WIDE)

SAGINAW RIVER

LEGEND

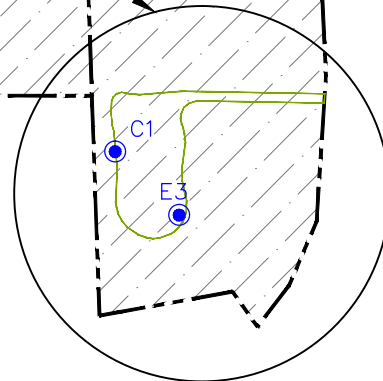
-  PROPERTY BOUNDARY
-  MITIGATION WETLAND APPROXIMATE LOCATION (3.4 AC)
- MW-126WT  MONITORING WELL LOCATION
- C1  DIOXIN AND FURAN WITH PCB SOIL SAMPLE
-  APPROXIMATE 100-YEAR FLOOD PLAIN

SEE FIGURE 2

MW-126WT

NOTE:

FLOOD PLAIN EXTENDS BEYOND PROPERTY BOUNDARY. NOT SHOWN FOR CLARITY.



PROPERTY LINE REFERENCED FROM ATWELL SURVEY DATED 3/5/2013.
FLOOD PLAIN AREA ESTIMATED FROM FEMA FLOOD MAP SERVICE CENTER
MAP ID: 26145C0135D

SAGINAW MALLEABLE INDUSTRIAL LAND,
GREEN POINT LANDFILL, AND PENINSULA PROPERTY
77 WEST CENTER STREET
SAGINAW, MICHIGAN

**SITE LAYOUT AND
DIOXIN SAMPLE
LOCATIONS**

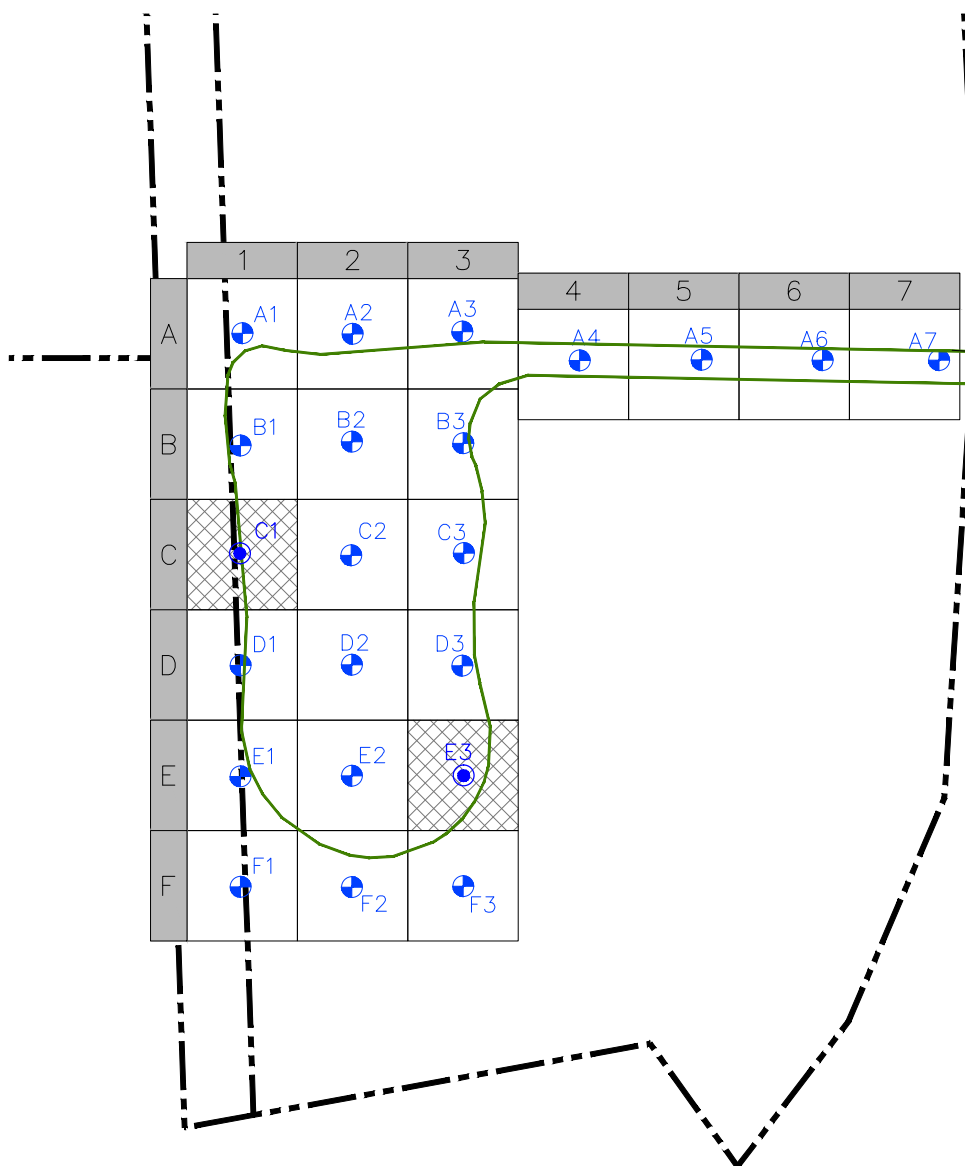


EXHIBIT

1



SAGINAW RIVER



LEGEND

--- APPROXIMATE PROPERTY BOUNDARY



LOCATIONS SELECTED FOR
DIOXIN/FURAN ANALYSIS



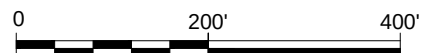
MITIGATION WETLAND APPROXIMATE
LOCATION (3.4 AC)



SOIL SAMPLE LOCATION



DIOXIN AND FURAN WITH PCB SOIL
SAMPLE



GRAPHIC SCALE

PROPERTY LINE REFERENCED FROM ATWELL SURVEY DATED 3/5/2013

GREEN POINT LANDFILL
SAGINAW, MICHIGAN

DIOXIN SOIL SAMPLE
LOCATION MAP



EXHIBIT

2

ATTACHMENT 1

Affidavit to Support Unremediated Release(s)
in a Remedial Action Plan



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

**AFFIDAVIT TO SUPPORT UNREMIEDIATED RELEASE(S)
IN A REMEDIAL ACTION PLAN**

(Under the authority of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 Act 451, as amended), and the Part 201 Administrative Rules promulgated thereunder)

STATE OF Michigan

COUNTY OF Saginaw

The purpose of this Affidavit is to set forth certain information and documentation to enable the Michigan Department of Environmental Quality (hereinafter, the "MDEQ") to make the determinations pursuant to R 299.5534 (hereinafter, "Rule 534") of the Part 201 Administrative Rules (hereinafter, the "Part 201 Rules") promulgated under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (hereinafter, the "NREPA"). All terms found in this document which are defined in Part 3, Definitions, and Part 201 of the NREPA; and the Part 201 Rules, shall have the same meaning as in the statute and the Part 201 Rules.

The undersigned Affiant, being first duly sworn, deposes and says as follows:

1. THIS AFFIDAVIT is executed by the undersigned, William McFarland, whose title is, Director of Remediation, on behalf of the General Motors Corporation, and President, on behalf of the Remediation and Liability Management Company (hereinafter, "the Affiant") located at Engineering Center - West, Mail Code 480-111-W60, 30200 Mound Rd, Warren, MI 48090.
2. This Affidavit accompanies a Remedial Action Plan ("the RAP") prepared on behalf of the Affiant for the following properties: Saginaw Malleable Iron Property, and REALM, Inc. Green Point Landfill and Drum Remediation Area. The legal description is provided in Attachment 1.
3. The properties referred to in Item Number 2 are associated with a "Facility" as defined in Section 20101(1)(o) of the NREPA.
4. The RAP precisely describes the unremediated release at the Facility. "Unremediated release" means a release for which response activity has not been implemented that satisfies the remedial action requirements of Part 201 of the NREPA and the Part 201 Rules.
5. The Affiant is not liable for the unremediated releases associated with the Dow Chemical manufacturing facility located in Midland, Michigan, as identified in Attachment 2.
6. Attached to this Affidavit is information that explains and supports the basis for the conclusion that the Affiant is not liable for the environmental contamination proposed to be omitted from remediation in the RAP.

-
7. Attached to this Affidavit is documentation that demonstrates divisibility of harm and apportionment of liability as required by Section 20129 of the NREPA.
8. The Affiant acknowledges and agrees to all of the following:
- a. If the MDEQ approves the RAP referenced in Item Number 4 relying on representations about liability that are set forth in this Affidavit, the ability of the MDEQ to subsequently review the liability of the Affiant is not limited or affected by reliance on the Affidavit or approval of the RAP. Upon review of the Affidavit, supporting materials and other information available to the MDEQ at any time, the MDEQ may determine that Affiant is liable for any or all of the contamination omitted from remediation under the RAP, or that the Affiant has not met the burden of demonstrating divisibility of harm and apportionment of liability under Section 20129 of the NREPA.
 - b. If the MDEQ later finds the Affiant to be liable for the Facility or to have failed to establish divisibility of harm and apportionment of liability as required by Section 20129 of the NREPA, the Affiant shall promptly undertake remedial action to address that portion of the Facility not covered by the RAP.
 - c. A person who is liable who undertakes a remedial action that he or she knows will not, when complete, comprehensively address all contamination at a facility at the time the remedial action is undertaken, except as provided for in R. 299.5534 for unremediated releases, is subject to fines and penalties as provided for under Part 201 of the NREPA for failure to diligently pursue response activity under Section 20114(1)(g) of the NREPA, as well as other applicable state or federal laws.
 - d. Response activity undertaken by a person who is liable that does not comprehensively address all contamination at a facility, except unremediated releases addressed through the procedure set forth in R.299.5534, is considered an interim response and not a remedial action.

I affirm that the above representations are true and are based upon my personal knowledge and belief after all reasonable inquiry.

I certify that I am legally authorized to execute this Affidavit and to bind the Affiant to the terms and conditions of this Affidavit.

I understand that intentionally submitting false information to the MDEQ is a felony and may result in fines of up to \$25,000 for each violation.

I acknowledge that this Affidavit has been provided pursuant to Rule 534 of the Part 201 Rules.

William McFarland, Affiant

Signature of Person Legally Authorized to Bind Affiant

Date

Print or Type Legal Name

SUBSCRIBED AND SWORN to before me this ____ day of _____, 200__, a Notary Public
in and for _____ County, Michigan.

Notary Public's Signature

My Commission Expires: _____

ATTACHMENT 1

LEGAL DESCRIPTION OF SITE

The Site encompasses approximately 273 acres, and consists of the Saginaw Malleable Iron (SMI) Plant Property and the REALM Green Point Landfill and Drum Remediation Area (DRA) Property, as shown on Figures 1-1 and 1-2 in the Remedial Action Plan. The SMI Plant Property makes up the northern portion of the Site and includes the inactive SMI Plant and support facilities, including two closed Type III Landfills, two stormwater ponds, and an inoperative Water Recycle System. Foundry operations previously conducted at the SMI Plant consisted of activities related to the casting and heat treating of iron. The southern portion of the Site (now owned by REALM, Inc.) includes the closed Green Point Landfill and the DRA, where drums were previously discovered, excavated, and removed.

The Site is located approximately 1,500 feet north of the confluence of the Tittabawassee and Shiawassee Rivers and is located on the western half of Section 35, T12N, R4E, in the city of Saginaw, Saginaw County, Michigan. A legal description of the SMI Plant Property and the REALM Green Point Landfill and Drum Remediation Area Property is provided below.

SMI Plant Property Legal Description (Tax ID: 19 2231 00000)

DESCRIPTION OF A 150.97 ACRE PARCEL OF LAND (KNOWN AS SAGINAW MALLEABLE IRON PLANT PROPERTY)

Commencing at a found monument at the center-line intersections of Salt Road (66.00 feet wide) and Sylvan Road (60.00 feet wide) being part of Sections 34 & 35, T12N, R4E, City of Saginaw, Saginaw County, Michigan; thence N41°13'20"E 53.66 feet along the center-line of said Salt Road; thence S48°46'40"E 33.00 feet perpendicular to said center-line of said Salt Road for a **PLACE OF BEGINNING**; thence N41°13'20"E 155.86 feet along the Southeasterly Right-of-Way line of said Salt Road; thence S56°24'15"E 100.97 feet; thence S79°30'05"E 162.10 feet; thence N13°24'11"E 160.56 feet; thence along the Southwesterly Right-of-Way line of vacated relocated Florence Street (66.00 feet wide) as recorded thereof in Liber 1269, Page 348 of Saginaw County Records, N76°42'45"W 186.19 feet to the said Southeasterly Right-of-Way line of said Salt Road, said point being S44°49'19"E 33.08 feet from a found monument at the center-line of said Salt Road; thence N41°13'20"E 2.12 feet along the Southeasterly Line of said Salt Road; thence N41°30'33"E 1174.43 feet continuing along said Southeasterly Right-of-Way line of said Salt Road to the Southwesterly Right-of-Way Line of West Center Street (130.00 feet wide) for the following seven (7) courses: [1]S77°59'54"E 348.21 feet; [2]S53°41'09"E 303.68 feet; [3]S35°19'18"E 1142.28 feet; [4]S89°15'47"E 87.93 feet; [5]S46°59'44"E 117.45 feet; [6]S66°53'15"E 55.70 feet; [7]S75°13'36"E 193.96 feet to an intermediate traverse point "A"; said point "A" being N75°13'36"W 81.73 feet from the United States Harbor Line as recorded thereof in Liber 2194 Page 1169 of Saginaw County Records; thence S75°13'36"E 25 feet, plus or minus, to the Westerly Edge of Water of the Saginaw River; thence the following three (3) courses along an intermediate traverse line from aforementioned Intermediate Traverse point "A": [1] S03°21'51"E 548.91 feet, [2]S07°27'01"E 907.34 feet, [3] S10°55'18"E 798.66 feet to an Intermediate Traverse Point "B"; said point "B" being

N89°42'41"W 121.04 feet from said United States Harbor Line; thence N89°40'46"W 720.87 feet to the East line of Consumers Power Company Right-of-Way (72.00 feet wide) as recorded thereof in Liber 1106 Pages, 426 & 427; thence N89°34'47"W 72.06 feet along the North line of said Right-of-Way; thence N01°57'47"W 100.28; thence N89°36'59"W 1421.88 feet; thence

N00°07'58"E 1033.08 feet; thence N25°14'05"W 365.55 feet; thence N24°37'18"W 89.80 feet; thence N00°17'27"W 80.90 feet; thence N89°46'34"W 8.85 feet; thence N00°13'22"E 159.80 feet; thence N48°10'04"W 158.71 feet; thence N44°27'28"W 229.01 feet; thence N26°08'40"W 69.66 feet; thence N28°53'40"W 207.15 feet; thence N38°36'14"W 183.21 feet to the PLACE OF BEGINNING. Containing 150.97 acres of land, more or less, subject to easements, conditions, restrictions and exceptions of record, if any.

REALM Green Point Landfill and Drum Remediation Area Property Legal Description (Tax ID: 19 2249 00000)

**DESCRIPTION OF A 122.23 ACRE PARCEL OF LAND
(REALM, INC. PROPERTY)**

Commencing at the Northwest Corner of Section 2, being part of Sections 34 & 35, T12N, R4E, and part of Sections 2 & 3, T11N, R4E, City of Saginaw, Saginaw County, Michigan; thence N89°38'51"W 799.20 feet along the North line of said Section 2 for a **PLACE OF BEGINNING**; thence N00°07'03"W 812.05 feet; thence S89°39'56"E 453.71 feet; thence N00°08'29"E 499.70 feet; thence S89°40'47"E 349.80 feet; thence S00°10'11"W 524.17 feet; thence S89°35'00"E 300.33 feet; thence N00°07'58"E 98.85 feet; thence S89°36'59"E 1421.88 feet; thence S01°57'47"E 100.28 feet to the West line of Consumers Power Company Right-of-Way (72.00 feet wide) as recorded thereof in Liber 1106 Pages, 426 & 427; thence S01°57'47"E 1942.95 feet along said Consumers Power Company Right-of-Way; thence N89°53'29"W 1754.30 feet to a point being S01°59'22"E 1164.37 feet from the Northeast corner of said Section 3; thence N89°53'15"W 836.68 feet; thence N00°08'37"W 1166.95 feet to the Place of Beginning. Containing 122.23 acres of land, more or less, subject to easements, conditions, restrictions and exceptions of record, if any.

ATTACHMENT 2

In April 2000, elevated concentrations of dioxin and furan compounds were identified in soil samples collected in a farm field located east of the REALM Green Point Landfill property. Through extensive sampling programs conducted by the MDEQ and the DOW Chemical Corporation (DOW), the presence of dioxin and furan compounds was traced from the DOW plant located in Midland Michigan, throughout the flood plains and river sediments of the Tittabawassee and Saginaw Rivers. A sediment removal action was completed in the Saginaw River adjacent to the GM SMI and REALM Green Point Landfill properties. Additional information regarding the distribution of dioxin and furan compounds is provided in the attached report, *Phase II Tittabawassee/Saginaw River Dioxin Flood Plain Sampling Study*. The presence of these compounds has not been extensively studied at the Site; however, based on the presence of the Site within the flood plain of the Tittabawassee and Saginaw Rivers, these compounds are likely present.