

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

Tittabawassee River Fish Consumption Health Consultation

TITTABAWASSEE RIVER
MIDLAND, MIDLAND COUNTY, MICHIGAN

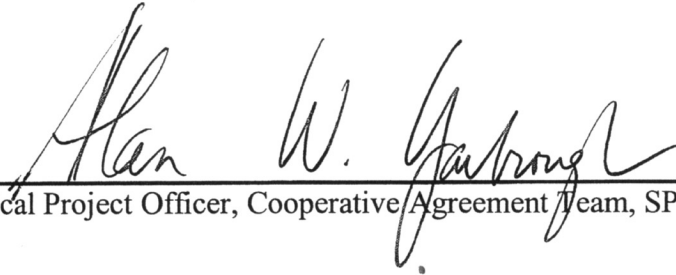
EPA FACILITY ID: MID980994354

Prepared by:

Michigan Department of Community Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

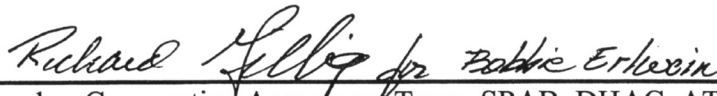
Certification

This Tittabawassee River Fish Consumption Health Consultation was prepared by the Michigan Department of Community Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.



Technical Project Officer, Cooperative Agreement Team, SPAB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.



Team Leader, Cooperative Agreement Team, SPAB, DHAC, ATSDR

2,3,7,8-TCDD in Tittabawassee River walleye fillets, by year (from locations downstream of Dow Dam in Midland; includes both skin-on and skin-off fillets; composite data not included)			
Sample Year	N ^d	2,3,7,8-TCDD range (ppt)	Data Source
1983	5	2.8–5.1	National Dioxin Study (U.S. EPA)
1985	18	ND ^{a,b} –9.3	Dow Chemical, FDA
1987	3	1.1–1.5	Dow Chemical
1990	8	0.8–3.2	Dow Chemical
1992	10	ND ^c –6.8	Dow Chemical
	2	1.46–1.67	MDEQ (FCMP 92064)
1994	10	0.9–5.3	Dow Chemical
2000	10	0.34–0.91	MDEQ (FCMP 2000093)
2002	10	0.9–3.1	Dow Chemical
2003	10	0.36–1.5	MDEQ (FCMP 2003132)

^a ND = not detected

^b Detection limit = 1.8 ppt

^c Detection limit = 0.5 ppt

^d N = number of samples

2,3,7,8-TCDD in Tittabawassee River smallmouth bass fillets, by year (from locations downstream of Dow Dam in Midland; includes both skin-on and skin-off fillets; composite data not included)			
Sample Year	N ^a	2,3,7,8-TCDD range (ppt)	Data Source
1985	1	5.8	Dow Chemical
1999	5	1.0–2.7	MDEQ (FCMP 1999066)
2000	10	0.83–3.3	MDEQ (FCMP 2000093)
2003	10	0.86–2.6	MDEQ (FCMP 2003132)

^a N = number of samples

2,3,7,8-TCDD in Tittabawassee River white bass fillets, by year (from locations downstream of Dow Dam in Midland; includes both skin-on and skin-off fillets; composite data not included)			
Sample Year	N ^a	2,3,7,8-TCDD range (ppt)	Data Source
1995	10	1.58–8.81	MDEQ (FCMP 95013)
2003	10	1.6–4.9	MDEQ (FCMP 2003132)

^a N = number of samples

10a	Soil Ingestion ^c	g/d	0.1	0.05	0.05	U.S. EPA, 1997a
10b	Soil Dermal Contact ^d	g/d	0.025	0.121	0.121	U.S. EPA, 1997a
11	Vegetable Fat ^e	g/d	7.37	7.37	7.37	U.S. EPA, 1997b
12	Water ingestion	L/d	0.74 ^g	1.4 ⁱ	1.4 ⁱ	U.S. EPA, 1997a

^a U.S. EPA 2002, 95% upper confidence limit on the mean fish consumption rate.

^b U.S. EPA 2002, 90% upper bound on the 95th percentile.

^c U.S. EPA 1997a, Table 4-23.

^d U.S. EPA 1997a, Tables 6-4 and 6-12, calculated an average value for adults and children.

^e U.S. EPA 1997b, Table 11-26 and 11-27, mean total fat intake (81.9 g/d) times the percentage of fat intake from vegetables (9%), therefore, 81.9 * 0.09 = 7.37 g/d.

^f U.S. EPA 1997a, Table 5-23, mean value for 9- to 11-year-olds for males and females combined.

^g U.S. EPA 1997a, Table 3-30, mean value for 1- to 10-year-olds.

^h U.S. EPA 1997a, Table 5-23, *Adults-Female*.

ⁱ U.S. EPA 1997a, Table 3-30, *Adults*.

^j U.S. EPA 1997a, Table 5-23, *Adults-Male*.

Table C. Calculation of consumption rate estimates, by food type.

Food Type	Scenario	Individual Estimates					Mean	
		g/d	g/d	g/d	g/d	g/d	g/d	
Eggs	Child 6–12 yrs old	17 ^a	17 ^b	14 ^b			16	
	Female	17 ^b	23.5 ^c	26.9 ^a	37.8 ^d	27 ^e	20 ^b	25
	Male	23.5 ^c	26.9 ^a	37.8 ^d	27 ^e	27 ^b	20 ^b	27
Milk	Child 6–12 yrs old	446 ^a	439 ^b	310 ^b				398
	Female	279.7 ^c	253.5 ^a	289.7 ^d	266 ^e	148 ^b	224 ^b	243
	Male	279.7 ^c	253.5 ^a	289.7 ^d	266 ^a	202 ^b	224 ^b	252
Beef	Child 6–12 yrs old	63.4 ^a						63
	Female	55.9 ^f	92.9 ^c	87.6 ^a	78.4 ^g			79
	Male	92.9 ^c	86.8 ^f	87.6 ^a	78.4 ^g			86
Pork	Child 6–12 yrs old	18.2 ^a						18
	Female	18.8 ^f	29.6 ^c	28.2 ^a				26
	Male	26.5 ^f	29.6 ^c	28.2 ^a				28
Poultry	Child 6–12 yrs old	24.7 ^a						25
	Female	26.6 ^c	44.7 ^f	31.3 ^a	72.1 ^g			44
	Male	26.6 ^c	51.7 ^f	31.3 ^a	72.1 ^g			45
Other Dairy	Child 6–12 yrs old	47.3 ^a						47
	Female	56.5 ^c	55.1 ^a					56
	Male	56.5 ^c	55.1 ^a					56

^a U.S. EPA 1997b, Table 11-16.

^b U.S. EPA 1997b, Table 11-13.

^c U.S. EPA 1997b, Table 11-17.

^d U.S. EPA 1997b, Table 11-20.

^e U.S. EPA 1997b, Table 11-12.

^f U.S. EPA 1997b, Table 11-21.

^g U.S. EPA 1997b, Table 11-19.

