

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	<u>SAGINAW RIVER/BAY</u>	ProjectID: 05-23
Last Updated:	02/28/02	
City:	Bay City, Saginaw, et al.	
County:	Bay, Saginaw	
State:	MI	
Country:	USA	
Bodies of Water:	Saginaw River; Saginaw Bay; Lake Huron	
US EPA Region:	V	
Status (Active, Complete, or Monitoring Only):	Complete	
Date On NPL:	N/A	
ROD/ESD Date:	N/A	
Operable Unit:	N/A	
Areas of Concern (length or acres):	The Saginaw River/Bay is one of the 43 Great Lakes Areas of Concern (AOC). The AOC includes the 22-mile length of the Saginaw River and all of Saginaw Bay (1143 sq. miles) out to its interface with Lake Huron. The Pine River (Project ID 05-17) and the Shiawassee River (Project ID 05-15) are upstream tributaries of the Saginaw River. Five priority segments in a two-mile stretch of the lower Saginaw River, totaling about 53 acres, are targeted, initially, for remedial dredging.	
Other Characteristics of Water Body:	The Saginaw River contributes 75% of the hydraulic flow to Saginaw Bay. Average Saginaw River flow into Saginaw Bay is 4,044 cfs. Saginaw Bay is 52 miles long with a width which varies between 13 and 26 miles.	
Contaminants of Concern:	PCBs; DDT; TCDD; TCDF; PAHs; heavy metals	
Source of Contamination:	Numerous, including 127 wastewater treatment facilities and 87 industries that discharge directly into the Saginaw River/Bay (Reference A-126). Specific sources to the five priority segments, as defined in the Consent Judgment (Reference S-3), include discharges from four GM facilities, the Bay City POTW, the Middlegrounds Island Landfill, and the Saginaw POTW.	
Contaminated Area Physical Characteristics:	Five priority PCB-contaminated segments ("hot spots") have been initially targeted in the lower Saginaw River, situated along a 3-mile stretch of river upstream of the confluence with Lake Huron. These are described in a 1997 application for dredging permit (Reference A-348) and are designated Area 1 (4 acres, 11,300 cy); Area 2 (31.8 acres, 162,700 cy); Area 3 (4.8 acres, 23,200 cy); Area 4 (7.7 acres, 49,500 cy); and Area 5 (4.4 acres, 42,900 cy). Sample results reported in Reference A-348 are relatively low, e.g., for Area 1, 15 ppm PCBs max (0-2'), all other results <0.4 ppm; for Area 2, 34 ppm max (0-2'), median of 1.5 ppm for 28 samples at 0-2'; for Area 3, 13 ppm (0-2.2'); for Area 4, 8.4 ppm max (4-5'); for Area 5, 21 ppm max (0-2'). The volumes targeted in these areas subsequently changed when the construction contract was issued, as follows: Area 1 (23,000 cy), Area 2 (171,000 cy), Area 3 (4,500 cy), Area 4 (64,000 cy), and Area 5 (57,500 cy).	
Type of Regulatory Action:	Consent Judgment pursuant to CERCLA.	
Overall Status Summary:	In 1994, the U.S. Fish and Wildlife Service (FWS) and the State of Michigan (co-trustees) sued General Motors Corp., the City of Saginaw, and Bay City over the PCB contamination in the Saginaw River. The Saginaw Chippew Indian Tribe eventually joined in the suit as a co-trustee. From Reference M-98 (1997): "The Natural Resource Trustees (both federal and state) are completing an agreement with the PRPs to settle a natural resource damage claim, which will	

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include the removal of approximately 170,100 cy of PCB-contaminated sediment. An Agreement-in-Principle was reached with the PRPs in February 1997 which has allowed certain options to be exercised for the purchase of lands for habitat enhancement and restoration. The planning and design phase for the sediment remediation project is underway. Dredging is expected to begin in 1998. The US EPA conducted several contaminated sediment studies and a pilot-scale demonstration of a treatment technology under the ARCS program. Legal complexities and arguments have delayed cleanup for at least three years.”

Negotiation of technical and legal issues between the PRPs and the co-trustees culminated in the Saginaw River and Bay Natural Resource Damage Assessment settlement and the signing of a Consent Judgment, effective Nov. 24, 1998. The \$28.2 million settlement includes \$10.64 million for a dredging project, \$3 million for future monitoring, and the remaining \$14.5 million for resource restoration projects.

The Corps of Engineers Detroit Office is managing the dredging project with oversight being provided by FWS, MI DEQ, and USEPA. The Corps of Engineers developed the dredging plan and bid package. The bids were originally due on March 18, 1999. The bid package defined five areas for dredging, totaling 320,000 cy. An optional sixth area was also included totaling 29,000 cy. This optional area was subsequently added to the contract. The EPA provided a written opinion to the Corps to the effect that “. . . the sediments identified for removal pursuant to the . . . settlement are not regulated under TSCA for disposal.” As a result, the bid package specified that dredged material would be placed into the existing Saginaw Bay Confined Disposal Facility (CDF).

Bidding was temporarily suspended for several months pending a court review/approval. When bidding resumed, the completion of work specification was modified to require completion of work by November 1, 2000 if the notice to proceed was received by September 30, 1999. Failure to complete in the specified time-period would make the contractor liable for liquidated damages of \$2,492 per day.

Five bids were received, for five primary target areas, ranging from \$6.464 million to \$11.442 million (median \$8.047 million). The work was awarded to the low bidder, Luedtke Engineering Company, on September 21, 1999 for \$6.464 million. The cost did not include the cost of disposal into the CDF or the cost for dredging an optional sixth area.

Dredging began in mid-April 2000 and continued in year 2000 until the river iced over. Dredging in 2000 was performed with one clamshell dredge on a 24 hour per day, 6 day per week basis. No verification sampling to determine residual PCB concentrations was specified or performed. Dredging was to a depth target only.

Previously unidentified debris and a hard sand layer were encountered in the largest area, Area 2, including large numbers of submerged pilings. As many as 50 pilings were removed one day. The Cable Arm clamshell, the specified bucket, was less effective for removing the pilings than a conventional clamshell due to its lighter weight and lack of teeth for gripping the wood. For these reasons a conventional clamshell bucket was used for piling removal.

Areas of hard sand encountered in Area 2 also limited the effectiveness of the Cable Arm clamshell. As a result, the Corps agreed to allow the dredge contractor to discontinue use of the Cable Arm bucket in areas where they were unable to remove sufficient sediment to fill the bucket to at least one-half capacity. The contractor would then switch to a conventional clamshell bucket to complete dredging in those areas. One rig was used for dredging in year 2000, with six different bucket sizes. An overall average bucket size was 7 cy, calculated from

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the percentage of time each of the six different size buckets was used.

The contractual completion date for the five primary target areas (Areas 1-5) was originally November 1, 2000 with a penalty of \$2,492 per day for late completion. The Corps ultimately agreed that only Areas 1-3 could be completed by that time and that Areas 4 and 5 (and 6 which was subsequently added to the contract) would have to be completed in 2001. The Corps and Luedtke held discussions on how the new schedule would impact the original contract. In part, Luedtke claimed lost time due to weather (particularly wind) which prevented scow movement to the CDF which was located on an island in the Bay about 2 miles distance. Information is not available on how these claims were resolved.

Total sediment removal in year 2000 based on final soundings was 200,478 cy that included 24,842 cy from Area 1 and 4,150 cy from Area 3, both completed. A total of 171,486 cy were removed from Area 2 with about 5,000 cy remaining. The year 2000 effort took 35 calendar weeks, with dredging scheduled 24-hour per day, except Sundays and holidays (209 dredging days). Dredge up-time was 49.5%. The overall average removal rate per day averaged 981 cy/day (41 cy/hr), based on 24 work hours per day. By late November, cold weather resulted in ice formation on the river (3-4" in some areas) hampering the movement of scows to and from the CDF. As a result, the contractor ceased first-year operations in early December of 2000.

The contractor began the second year of dredging on April 11, 2001 and the construction project was completed on July 22, 2001. In year 2001, 141,840 cy of sediment were removed, as determined from soundings, including 3,824 cy to complete Area 2 and 138,002 cy to complete Areas 4, 5, and 6. The year 2001 effort took 14.5 calendar weeks, with dredging scheduled 24 hours per day, including some Sundays and holidays (95 dredging days). Dredge up-time in 2001 was 57.1%. The overall average removal rate per day averaged 1,493 cy/day (58.7 cy/hr), based on 24 work hours per day. One rig was used for dredging 70% of the time, and for the other 30% of the time two rigs were used to dredge simultaneously in separate target areas. Five different capacity buckets were used; overall average bucket size was 6.3 cy.

A total of 342,304 cy of sediment was removed from six targeted areas over 49.5 calendar weeks of three-shift per day operations (304 dredging days). Total cost was about \$8.9 million (including a reported disposal cost at the CDF of \$1.54 per cy, a cost retro to the 1977 CDF construction cost).

Remedial Action Planned: ☒

Risk Assessment: ☐

Remedial Action Implemented: ☒

Status of Dredging ☒

PRPs: ☒

Contacts: ☒

References: ☒

Modeling: ☒

Fishing Advisory: ☒

Key Conditions: confined disposal facility, dredging, extended (> 1 mile) river, Great Lakes AOC, hydrodynamic

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modeling, wetlands

REMEDIAL ACTION PLANNED

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Target Sediment Cleanup Standards (TSCS):	The dredging area and depths were determined by the MI DEQ and the U.S. Fish and Wildlife Service (as described in Attachment I to the Dredge Plan in the Consent Judgment, Reference S-5). The contractor is required to perform dredging work to remove material to the required depths within the limits shown on the drawings.	
How TSCS Established:	No TSCS established	
Target Bank and Floodplain Cleanup Levels (if applicable):	N/A	
Other Target:	N/A	
Environmental Sample Data References:	<ul style="list-style-type: none">• Sediment: Reference A-348• Water:• Fish:	
Estimated Target Volume:	320,000 cy (from five hot spots totaling 52.7 acres). The areas are: "Dredging Area One (across from WWTP)" (23,000 cy); "Dredging Area Two (Bay City WWTP)" (171,000 cy); "Dredging Area Three (Outfall Area)" (4500 cy); "Dredging Area Four (Upstream from Essexville)" (64,000 cy); and "Dredging Area Five (Downstream from Essexville)" (57,500 cy).	
Planned Disposal Method:	Existing island CDF in Saginaw Bay	
Estimated Calendar Time to Implement Remedy:	Summer 1999 estimated earliest start date.	
Estimated Time to Implement Remedy:	16 months (listed in the dredge permit application, Reference A-348); also, 240 calendar days after the date the successful bidder receives the notice to proceed (specified in the bid package).	
Estimated Cost to Implement Remedy:	\$5 million	
Stated Remedial Action Objectives (and Source):	Remove 80% of the mass of PCB in the Saginaw River (listed in the dredge permit application, Reference A-348).	
Measures of Success to be Used:	Not available	
Planned Monitoring and Restoration:	<p>Source: Reference A-425 (bid package)</p> <ul style="list-style-type: none">• Silt Curtains and Turbidity <p>"During all dredging operations the Contractor shall provide a silt curtain to enclose the required dredging area, in order to maintain water quality. Dredging is not allowed within ten feet of the silt curtain. After an area has been completed, the silt curtain shall remain in place until the water within the dredging area has met the Water Quality Standards set in the following paragraphs. The silt curtains cannot obstruct commercial and recreational navigation."</p> <p>"Three monitoring locations shall be required at each area which requires a silt curtain. These locations shall be established by survey and marked by buoys. Each monitoring location shall be half way between the shoreline and the Federal Channel limit. One monitoring location shall</p>	

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be 300 feet upstream of the most upstream edge of the silt curtain in the area currently being dredged. This location will establish background levels. Two locations shall be established 300 and 600 feet downstream of the most downstream edge of the silt curtain in the area currently being dredged. Due to potential flow-reversals, "upstream" and "downstream" directions may change. Turbidity measurements shall be made once per shift, two hours into the shift, and at mid-depth at each location. In the event downstream turbidity at either location exceeds the upstream (background) turbidity levels by 50% or more, the Contractor shall immediately take a second test to verify the turbidity. If the second test still indicates that the turbidity at either location is 50% or more above the background turbidity the Contractor will stop the dredging operations and consider what changes shall be made in order to keep the turbidity within the allowable tolerance."

- **Water Column PCBs**

"Water-column samples for PCBs shall be collected at two monitoring locations, 300 feet upstream and 300 feet downstream of the silt curtained area for each dredging location. The monitoring location shall be the same as required for the turbidity testing. One water sample shall be collected at each location once per day during the first week of dredging and shall be taken at the same time the samples for turbidity are collected. After the first week of dredging, water samples for PCB analysis shall be collected only when/if the turbidity action level is reached, or at the discretion of the Government."

"The Contractor shall re-test for turbidity, in accordance with the previous paragraphs, if the initial test falls outside the limits. If the turbidity action level is reached, the Contractor shall have to evaluate their dredging operations and controls and take remedial action, and water column sampling frequency will be re-evaluated. The Contractor may have to totally suspend dredging and disposal operations until remedial actions are implemented. This will be done at no additional cost to the Government. Turbidity requirements shall be met outside the silt curtain area at all times during dredging operation and inside the silt curtain at upstream and downstream edges of the silt curtain prior to removing the silt curtain for each dredging area."

- **Air Monitoring**

"The Contractor shall use US EPA Method TO-4 specified in US EPA document "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air". The method is available on EPA's web site: <http://www.epa.gov/ttn/amtic/airtox.html>"

"The Contractor shall set up at least three sampling locations at the perimeter of each of the areas designated as Area 2 and 5. For each of Area 2 and Area 5, there shall be a predominantly downwind and an upwind location and the third location shall be in the direction of the closest residence. The downwind location for Area 2 may be on the north side of Saginaw River. Since this site is a river, the actual locations may be adjusted where necessary. Upwind or background concentration will be taken into consideration for determination of compliance with the action level."

"For each of Area 2 and Area 5, sampling and analyses shall be conducted daily for one full week (at least 5 days of sampling) during dredging and removal by barge of the PCB sediments. If the first week's data for each area show that all incremental concentrations at the site property line are below the action level of 0.02 ug/m3 (micrograms per cubic meter) total PCBs, and similar activities will be conducted during subsequent weeks, testing can be terminated."

"If the first week's data for a given area show that the air quality screening level is exceeded,

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**Agency Position on Sediment
Removal (and Source):**

then air monitoring shall continue at a frequency of at least 3 days per week at that area. This frequency shall continue until a full week of data show no exceedance of the action level."

Source: Reference A-425 (bid package, prepared by Corps of Engineers):

- "The required dredging will begin at Area One [Across from WWTP] and continue downstream to Area Five [Downstream Essexville]. Within each Area, dredging shall begin at the upstream end and proceed downstream. The optional dredging at Area Six [Belinda Street] shall not be dredged until all the required area (s) have been completed. Dredged material shall not be hauled across segments of the required dredging area which have been examined and found to be acceptable."
- "The method of dredging shall be by mechanical means using an environmental bucket, except in Area Three [Outfall Area] where a hydraulic dredge can be used. The environmental bucket shall be a gasketed clamshell or similar design, Cable Arm or equal, with a proven field performance record, which shall preclude loss of material between point of excavation and placement in scows. The environmental bucket shall have welded top steel covers and rubber seals specifically designed and installed by the bucket manufacturer. It shall have vertical side plates which overlap or some method to reduce sediment loss at closure; act as an enclosure to eliminate redeposits of soil from the bucket; vents which open during lowering; depth penetration transducers; seal indicator switches; and depth sensor. The bucket shall not be overfilled to prohibit subsequent overflow. In order to reduce turbidity, the Contractor shall (1) swing to dredge location; (2) slowly lower fully opened bucket at dredge location; (3) stop at required vertical depth cut line as signaled by position equipment; (4) close bucket; (5) confirm bucket closure via visual signal; (6) slowly lift bucket; (7) stop at water surface and allow excess water to drain; (8) swing the closed bucket into position over disposal scow; (9) slowly open bucket to fully discharge spoils; (10) wash bucket in wash tank; (11) repeat cycle. Wash/rinse water shall be reused to the maximum possible extent and then placed in the disposal area in the CDF shown on the drawings. The dredged material shall be placed in scows and then transported to the Disposal site where it shall be offloaded by mechanical means."

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Physical Target: Six nearshore areas with PCB contamination in the Saginaw River. As described in Attachment I to the Dredge Plan in the Consent Judgment, Reference S-5:

“The areas to be dredged were delineated in a three-step process. In the first step, data from numerous studies were gathered and entered into a database. Data were included in the database if concentrations of PCBs were measured in vertical core samples, if samples were collected after the flood of 1986, and if quality assurance/quality control information was acceptable. After review of the existing data, additional sampling was conducted by MDEQ and EPA in May (City of Saginaw area only) and October of 1995 and April of 1996, and by the Army Corps of Engineers in December of 1997. An initial review of the database showed that most of the mass of the PCBs in the Saginaw River sediments was in the Bay City reach.”

“The second step in delineating the dredging area was a geometric analysis of the spatial patterns of the PCB concentrations in the sediments of the Bay City reach. Depth-weighted average concentrations of PCBs were calculated for each core and converted to volume-based concentrations using an assumed solids concentration in the sediment of 1.2 kg/L (70% solids and a solid density of 2.5 g/mL). The maximum PCB depth was estimated based on guidelines developed from examining general patterns of the variation in concentrations with depth. Next, Thiessen polygons were constructed around each core to determine the horizontal extent of the sediments best represented geometrically by each core. The mass of PCBs within each core-specific area was then estimated by multiplying the volume-based average concentration for the core by the maximum PCB depth of that core and its associated area.”

“The geometric analysis was used to target polygons which contained the largest masses of PCBs. The polygons were ranked by the mass of PCB per volume of sediment. A graph was constructed which showed the cumulative PCB mass which could be removed as a function of cumulative sediment volume. The graph demonstrated that once 90% of the mass of PCBs in the Bay City reach of the river were removed, little additional mass of PCBs could be removed without removing very large volumes of sediment. Maps were drawn showing the polygons to be dredged to achieve removal of 90% of the mass of PCBs.”

“The third step in delineating the dredging area was to use a weight-of-evidence approach to combine the results of the geometric analysis with knowledge of river depositional areas, practical considerations of dredging parameters, and evaluations of the quality and timing of various sampling results. In some parts of the river, the geometric approach yielded a patchwork of polygons that would be difficult to dredge and that were not completely coextensive with the known depositional areas. In those cases, the horizontal boundaries of areas to be dredged were expanded to include groups of polygons and to conform with known depositional areas in the river.”

“The vertical extent of dredging within dredge areas was selected with the goal of having the newly exposed bottom sediments be less than 0.33 mg/kg, dw, total PCBs. Cores from some studies were divided in as little as 5 cm vertical intervals while cores from other studies were divided in intervals as great as 4 feet. In dredge areas with multiple cores, the pattern of PCB concentrations in the more finely divided cores was used to infer the pattern of PCB concentrations in the less finely divided cores. In all dredge areas, the general pattern of PCB concentrations was to increase with depth over the first one to three feet and then to decrease with increasing depth. Based on all of the available data, single dredging depths were selected for each dredge area rather than having each polygon dredged to a different depth.”

Goals: Remove “about 80% of the mass of PCB in the Saginaw River” (stated in the dredge permit

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	application, Reference A-348). "Remove the largest mass of PCBs practicable from the Saginaw River" (stated in Attachment I to the Dredge Plan in the Consent Judgment, Reference S-5.)	
Primary Contractor:	Luedtke Engineering Company	
Other Contractors:	U.S. Army Corps of Engineers (design, and construction oversight)	
Generic Remediation Method:	mechanical dredging	
Equipment:	Crane-operated Cable Arm clamshell buckets (6 and 16 cy) and conventional buckets (4, 5, 6, 8, and 10 cy); silt curtains	
Material Handling:	Bucket dredging into scows and transport by tug and scow to an existing island CDF in Saginaw Bay; no land-based support facilities	
Volume Removed:	342,304 cy; an additional 65,891 cy of "obstruction removal volume" was also credited to the contractor, over and above the 342,304 cy of sediment removed volume	
Calendar Time:	April 11, 2000 thru July 22, 2001, with a Winter shutdown from Dec. 9, 2000 thru April 10, 2001	
Time To Implement:	49.5 weeks (24 hour per day operation, except Sundays and holidays; some Sundays and holidays were worked in 2001); 304 dredging days	
Total Cost:	Total cost was about \$8.9 million (\$26 per cy). Reasons for the relatively low cost include (a) no confirmation sampling performed or concentration target specified; (b) no land-based facilities of any kind (i.e., no offloading, stockpiling, water treatment, or dewatering); and (c) a negligible disposal cost - - only \$1.54 per cy at the CDF (about \$600,000).	
Dredging Cost:	Most of the total cost was "dredging cost."	
Disposal of Sediment:	Based on characterization data, PCB levels did not exceed 35 ppm. This allowed the dredged sediment to be barged to an existing island confined disposal facility (CDF) about two miles away and disposed as non-TSCA waste in a manner similar to navigational dredge spoils.	
Volume of Water:	N/A	
Method of Water Treatment:	N/A	
Water Discharge Limit:	N/A	
Air Monitoring During Remediation:	One week only, at Areas 2 and 5.	
Water Monitoring During Remediation:	Turbidity was measured once per shift at one upstream and two downstream locations outside the silt curtains (300 ft. and 600 ft. downstream).	
Outcome:	Refer to Report 04A.	
Restoration and Post-Monitoring:	No restoration. Post-monitoring details not yet determined.	
Site-Specific Difficulties:	<ul style="list-style-type: none">The Bid Package specified that dredging must be done with a sealed environmental bucket. The contractor selected a Cable Arm bucket. Since the Cable Arm bucket is relatively light-weight and does not have teeth, it is efficient only in unconsolidated sediments. Since many areas of "hard"	

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bottom material were encountered, the Corps allowed the contractor to use conventional buckets as appropriate. The result was that the Cable Arm bucket was used less than 40% of the time.

- Submerged pilings were frequently encountered and required removal and disposal, periodically stopping the production work.
- Weather delays and scow delays were responsible for about 20% dredging downtime during the project. Winds were a particular problem, slowing scow transport and, coupled with shallow water conditions at the CDF, periodically preventing maneuvering and offloading of loaded scows at the CDF. With no empty scows available at the dredging areas, dredging would have to stop.

Monitoring Data

References:

- **Sediment** A-710, A-711, A-713, A-714, A-716, A-723, B-608, B-609, B-611, B-613, B-615
- **Water:**
- **Fish:** A-712, A-717, B-619

POTENTIALLY RESPONSIBLE PARTIES

Project Name **SAGINAW RIVER/BAY**

ProjectID: 05-23

PRP Name: PRP INFORMATION NOT RELEASED

PRPID:

Street Address:

City:

State:

KEY CONTACTS

Project Name **SAGINAW RIVER/BAY**

ProjectID: 05-23

Last Name: KEY CONTACT INFORMATION NOT RELEASED

Contact ID:

First Name:

Title:

Company:

Address:

City:

State:

Postal Code:

Work Phone # :

Other Phone #:

Fax # :

Email Address:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 182

Title: *Evaluation of Hopper Loading and Overflow for Saginaw River, Michigan (US Army Corp of Engineers - Miscellaneous Paper D-89-3*

Location: AEM

Category: Dredging: Equipment

Prepared by/Author: Michael R. Palermo and Robert E. Randall

Preparer/Author Address: U.S. Army Corps of Engineers and Texas A&M University

Prepared For:

Date Published: October 1989

Key Words and Phrases:

Reference Type: A

ReferenceID: 348

Title: *Application for Dredging Permit: Saginaw River, Bay City, MI, with attached correspondence*

Location: AEM

Category: Remedial Design

Prepared by/Author: Michigan Department of Environmental Quality

Preparer/Author Address: 300 S. Washington Sq.
Lansing, MI 48933

Prepared For: Corps of Engineers

Date Published: October 27, 1997

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 353

Title: *MDNR Remedial Action Plan for Saginaw River and Saginaw Bay AOC*

Location: BBL

Category: Remedial Action Plan/Work Plan

Prepared by/Author: Michigan Department of Natural Resources
(now Michigan Department of Environmental Quality)

Preparer/Author Address: Lansing, MI

Prepared For:

Date Published: September 1988

Key Words and Phrases:

Reference Type: A

ReferenceID: 425

Title: *Environmental Dredging: Saginaw River / Bay, Michigan: Construction Solicitation and Specifications, with Amendments 0001 and 0002*

Location: AEM

Category: Bid Package

Prepared by/Author: U.S. Army Corps of Engineers

Preparer/Author Address: Detroit District,
Detroit, MI

Prepared For: General Public

Date Published: February 1999

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 443

Title: *Amendment of Solicitation / Modification of Contract:
Amendment/Modification No. 0003 for Saginaw Dredging*

Location: AEM

Category: Bid Package

Prepared by/Author: U.S. Army Corps of Engineers

**Preparer/Author
Address:** Detroit District
Detroit, MI

Prepared For: General Public

Date Published: August 20, 1999

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 446

Title: *Amendment of Solicitation / Modification of Contract:
Amendment/Modification No. 0004 for Saginaw Dredging*

Location: AEM

Category: Bid Package

Prepared by/Author: U.S. Army Corps of Engineers

**Preparer/Author
Address:** Detroit District
Detroit, MI

Prepared For: General Public

Date Published: August 25, 1999

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 470

Title: *Amendment of Solicitation / Modification of Contract:
Amendment/Modification No. 0005 for Saginaw Dredging*

Location: AEM

Category: Bid Package

Prepared by/Author: U.S. Army Corps of Engineers

**Preparer/Author
Address:** Detroit District
Detroit, MI

Prepared For: General Public

Date Published: September 3, 1999

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

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Reference Type: A

ReferenceID: 710

Title: *Report on Results of Coring and Analysis for PCBs in Bay City Region of Saginaw River*

Location: AEM

Category: Analytical Data

Prepared by/Author: Clifford P. Rice

Preparer/Author Address: Great Lakes Research Division
The University of Michigan
2200 Bonisteel Blvd.
Ann Arbor, MI 48109

Prepared For: US EPA GLNPO

Date Published: February 1983

Key Words and Phrases:

Reference Type: A

ReferenceID: 711

Title: *1991 Saginaw River Study: Final Report*

Location: AEM

Category: Analytical Data

Prepared by/Author: ANATECH Analytical Laboratories

Preparer/Author Address:

Prepared For: General Motors Powertrain Division, Bay City, Michigan

Date Published: 1991

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

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Reference Type: A

ReferenceID: 712

Title: *Staff Report: Bioaccumulation Study on the Saginaw River and Tributaries: August 1, 1988 to September 21, 1988*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Michigan Department of Natural Resources
Surface Water Quality Division

Preparer/Author Address: State Office Building
411-J East Genesee
Saginaw, MI 48607

Prepared For: Distribution

Date Published: 1991

Key Words and Phrases:

Reference Type: A

ReferenceID: 713

Title: *Field Report: Sediment Sampling Program: Upper Saginaw River*

Location: AEM

Category: Contaminated Sediments: Characteristics/Bioavailability

Prepared by/Author: Thermo Analytical / ERG, Inc.

Preparer/Author Address: 525 Avis Drive, Suite 7
Ann Arbor, MI 48108

Prepared For: Us Army Corps of Engineers, Detroit District

Date Published: December 1993

Key Words and Phrases:

Reference Type: A

ReferenceID: 714

Title: *Analytical Results: Saginaw River: Delivery Order No. 0024*

Location: AEM

Category: Analytical Data

Prepared by/Author: Thermo Analytical / ERG, Inc.

Preparer/Author Address: 525 Avis Drive, Suite 7
Ann Arbor, MI 48108

Prepared For: Us Army Corps of Engineers, Detroit District

Date Published: February 1994

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 715

Title: *Position Paper: Defendants' Position Paper Regarding Proposed USEPA CNTS Dated 12/11/95*

Location: AEM

Category: Legal

Prepared by/Author: General Motors

**Preparer/Author
Address:**

Prepared For: US EPA

Date Published: December 1995, circa

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 716

Title: *Assessment of Sediments in the Saginaw River Area of Concern*

Location: AEM

Category: Analytical Data

Prepared by/Author: Science Applications International Corporation

**Preparer/Author
Address:** 303 East Wacker Drive, Suite 320
Chicago, IL 60601

Prepared For: US EPA GLNPO

Date Published: September 28, 1995

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 717

Title: *Staff Report: A Caged Fish Study of the Saginaw River and Major Tributaries, July 28-August 26, 1993*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Michigan DEQ, Surface Water Quality Division

**Preparer/Author
Address:**

Prepared For: Distribution

Date Published: October 1996

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 723

Title: *Staff Report: PCB Concentrations in the Vicinity of Crotty Street - Saginaw River*

Location: AEM

Category: Contaminated Sediments: Investigation/Delineation

Prepared by/Author: Dreas Nielsen

Preparer/Author Address: Exponent
15375 SE 30th Place, Suite 250
Bellevue, WA 98007

Prepared For: Stuart Hersh, Esq

Date Published: November 18, 1998

Key Words and Phrases: Crotty Street Channel

Reference Type: A

ReferenceID: 746

Title: *Assessment and Remediation of Contaminated Sediments (ARCS) Program - Baseline Human Health Risk Assessment: Saginaw River, Michigan, Area of Concern (EPA 905-R92-008)*

Location: AEM

Category: Risk Assessment

Prepared by/Author: Dr. Judy L. Crane

Preparer/Author Address: ASci Corporation
Athens, GA 30613

Prepared For: US EPA Environmental Research Laboratory (Athens, GA)

Date Published: December 1992

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: A

ReferenceID: 759

Title: *Completion Report for Contract No. DACW35-99-C-0038, Environmental Dredging, Saginaw River / Bay, Michigan*

Location: AEM

Category: Close-Out Report

Prepared by/Author: Tyrone Crear, Area Engineer and Administrative Contracting Officer

Preparer/Author Address: US Army Corps of Engineers

Prepared For: Chief, USACE, Contract Administration Branch

Date Published: November 9, 2001

Key Words and Phrases:

Reference Type: B

ReferenceID: 334

Title: *Sport-Caught Fish Consumption Advisory for the Saginaw Bay Watershed*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Michigan Department of Environmental Quality

Preparer/Author Address: <http://www.deq.state.mi.us/ogl/sagbay>

Prepared For: General Public

Date Published: December 10, 1997 (date updated)

Key Words and Phrases:

Reference Type: B

ReferenceID: 335

Title: *Press Release - August 14, 1998*

Location: AEM

Category: Site Update

Prepared by/Author: Michigan Department of Environmental Quality

Preparer/Author Address: <http://www.deq.state.mi.us/>

Prepared For: General Public

Date Published: August 14, 1998

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 336

Title: *Saginaw River/Bay Area of Concern - Progress Report*

Location: AEM

Category: Site Update

Prepared by/Author: Michigan Department of Environmental Quality

**Preparer/Author
Address:** <http://www.deq.state.mi.us/ogl/>

Prepared For: General Public

Date Published: January 1994

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 357

Title: *Enforcement: GM, Michigan Cities Will Pay to Clean River*

Location: AEM

Category: Site Update

Prepared by/Author: U.S. Department of Justice and U.S. Fish and Wildlife Service

**Preparer/Author
Address:**

Prepared For: Press Release

Date Published: November 24, 1998

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 361

Title: *Birds of the Saginaw Bay: Wetlands, Waders, and Waterfowl*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Watershed Initiative Network

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: 1998 circa

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 388

Title: *Letter: EPA Region V (Adamkus) to Colonel Thomas Haid, USACOE, Detroit District*

Location: AEM

Category: Contaminated Sediments: Disposal Methods

Prepared by/Author: Valdas V. Adamkus

Preparer/Author Address: US EPA Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Prepared For: USACOE, Detroit District

Date Published: March 28, 1997

Key Words and Phrases:

Reference Type: B

ReferenceID: 437

Title: *Fish Advisories - Charts of Specific Advisories*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Michigan Department of Community Health

Preparer/Author Address:

Prepared For: General Public

Date Published: January 1999 (updated)

Key Words and Phrases:

Reference Type: B

ReferenceID: 450

Title: *Letter re: Saginaw Bay Dredging*

Location: AEM

Category: Remedial Action Plan/Work Plan

Prepared by/Author: Leslie Allen, Senior Attorney

Preparer/Author Address: Environmental Enforcement Section
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611

Prepared For: Joseph M. Polito, Honigman Miller Schwartz & Cohn

Date Published: August 28, 2000

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 463

Title: *Public Updated on Cleanup Plans for Saginaw River*

Location: AEM

Category: Site Update

Prepared by/Author: Lisa Williams

**Preparer/Author
Address:** East Lansing Field Office

Prepared For: US Fish & Wildlife Service - Region 3

Date Published: December 7, 1999

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 464

Title: *Saginaw River and Bay Natural Resource Damage Assessment*

Location: AEM

Category: Site Update

Prepared by/Author: U.S. Fish & Wildlife Service - Region 3

**Preparer/Author
Address:** 1 Federal Drive
BHW Federal Building
Fort Snelling, MN 55111

Prepared For: General Public

Date Published: January 2001 (circa.)

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 478

Title: *Remediation, Restoration Program in Saginaw Lauded by State*

Location: AEM

Category: Site Update

Prepared by/Author: Michigan Department Environmental Quality

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: November 24, 1998

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 479

Title: *Press Release*

Location: AEM

Category: Site Update

Prepared by/Author: Michigan Department Environmental Quality

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: April 13, 2000

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 545

Title: *Dredging Completed Ahead of Schedule in Clean-up of Saginaw River and Bay Contaminants*

Location: AEM

Category: Site Update

Prepared by/Author: U.S. Fish & Wildlife Service

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: July 24, 2001

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 608

Title: *Selected Pages of 1987-88 PCB Data for Saginaw River*

Location: AEM

Category: Analytical Data

Prepared by/Author: Unknown (sent by Greg Goudy, Michigan DNR)

**Preparer/Author
Address:**

Prepared For: Unknown (sent to Peter Booth, PTI)

Date Published: Unknown

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 609

Title: *Selected Tables of Sediment PCB Results in the Saginaw River for October 1995*

Location: AEM

Category: Analytical Data

Prepared by/Author: Michigan DEQ Laboratory

**Preparer/Author
Address:**

Prepared For: Distribution

Date Published: January 1996

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 610

Title: *Letter (Transmittal) re: Updated materials for sediment evaluation and dredging to the Saginaw NRDA Federal and Tribal Team*

Location: AEM

Category: Site Update

Prepared by/Author: Lisa Williams

**Preparer/Author
Address:** Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road
East Lansing, MI 48823

Prepared For: Distribution (Leslie Allen, Matt Brock, Timothy Burns, Bonnie Eleder, Shelly Hall, David Haury, Stuart Hersh, Frank Horvath, Amy Pelka, Gary Segrest, Bill Sullivan, Tom Schlosser)

Date Published: February 26, 1996

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 611

Title: *Six Tables Listing PCB Levels in Saginaw River Core Samples*

Location: AEM

Category: Analytical Data

Prepared by/Author: Industrial Economics, Inc.

Preparer/Author Address: 2067 Massachusetts Avenue
Cambridge, MA 02140

Prepared For: US Fish and Wildlife Service

Date Published: February 1996, circa

Key Words and Phrases:

Reference Type: B

ReferenceID: 612

Title: *Letter and Attachments re: Saginaw River Dredging*

Location: AEM

Category: Remedial Design

Prepared by/Author: (1) Robert P. Miller, Chief, (2) Charles Wooley, Field Supervisor

Preparer/Author Address: (1) Surface Water Quality Division
Michigan DEQ
(2) US Fish and Wildlife Service

Prepared For: Colonel Randolph O. Buck, District Commander, USACE Detroit

Date Published: February 9, 1996

Key Words and Phrases: Delineation of dredging areas

Reference Type: B

ReferenceID: 613

Title: *Seven Tables Listing PCB and Metals Levels in Saginaw River Sediment Samples*

Location: AEM

Category: Analytical Data

Prepared by/Author: Michigan DEQ Laboratory (sent by Roger Jones, MI DEQ)

Preparer/Author Address:

Prepared For: Distribution (sent to Tom Ginn, PTI)

Date Published: May 1996, circa

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 614

Title: *Memo re: TSCA Determination on Suitability of Disposal of PCB-Contaminated Sediments from the Saginaw River at the Saginaw Confined Disposal Facility*

Location: AEM

Category: Remedial Action Plan/Work Plan

Prepared by/Author: Bonnie L. Eleder, Regional Team Manager of Sediments, US EPA Region V

**Preparer/Author
Address:**

Prepared For: John F. Connell, Chief, Toxic Programs Section, Pesticides and Toxics Branch,
US EPA Region V

Date Published: December 30, 1996

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 615

Title: *None: Letter from US Fish and Wildlife Service to Michigan Department of Natural Resources re: Saginaw River Sediment Sampling Data*

Location: AEM

Category: Analytical Data

Prepared by/Author: Lisa L. Williams, Ph.D

**Preparer/Author
Address:** United States Department of the Interior
Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road
East Lansing, MI 48823

Prepared For: William Creal
Michigan Department of Natural Resources
SWQD-Knapp Centre
300 S. Washington Square
Lansing, MI 48933

Date Published: January 16, 1997

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 616

Title: *None: Letter from US EPA to US Army Corps of Engineers re: Classification of Saginaw River Dredged Sediment as non-TSCA, with Two Attached Memos*

Location: AEM

Category: Remedial Action Plan/Work Plan

Prepared by/Author: Valdas V. Adamkus, Regional Administrator

Preparer/Author Address: US EPA Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Prepared For: Colonel Thomas Haid, US Army Corps of Engineers (Detroit District)

Date Published: March 28, 1997

Key Words and Phrases:

Reference Type: B

ReferenceID: 617

Title: *None: Letter from US Fish and Wildlife Service to US Army Corps of Engineers (Detroit District) re: Areas in Saginaw River Proposed for Environmental Dredging*

Location: AEM

Category: Remedial Design

Prepared by/Author: Richard A. Powers, Assistant Chief (Michigan DEQ) and
Charles M. Wooley, Field Supervisor, US Fish and Wildlife Service

Preparer/Author Address:

Prepared For: Colonel Thomas Haid, US Army Corps of Engineers (Detroit District)

Date Published: September 18, 1997

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 618

Title: *Memo re: Summary of Analyses to Develop a Covenant-Not-To-Sue Level for PCB-Contaminated Sediment in Saginaw River/Saginaw Bay, Michigan*

Location: AEM

Category: Risk Assessment

Prepared by/Author: (1) Matthew H. Williams, Environmental Engineer, (2) Amy Pelka, Environmental Health Scientist, (3) Janice Lin Huang, Research Fellow, (4) Arthur Lubin, Regional Statistician

Preparer/Author Address: (1 to 4) US EPA Region V

Prepared For: Stuart Hersh, Assistant Regional Counsel, USEPA Region V

Date Published: December 31, 1997

Key Words and Phrases:

Reference Type: B

ReferenceID: 619

Title: *Letter re: Saginaw NRD Administrative Record: Transmittal of Document (Printout of Fish Tissue Data from Michigan DEQ)*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Dreas Nielsen

Preparer/Author Address: Exponent
15375 SE 30th Place, Suite 250
Bellevue, WA 98007

Prepared For: Stuart Hersh, Assistant Regional Counsel, USEPA Region V

Date Published: November 18, 1998

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 621

Title: *Realizing Remediation II - An Updated Summary of Contaminated Sediment Remediation Activities at Great Lakes Areas of Concern: Saginaw River and Bay*

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: US EPA

Preparer/Author Address: Great Lakes National Program Office
Chicago, IL

Prepared For: Distribution

Date Published: July 2000

Key Words and Phrases:

Reference Type: B

ReferenceID: 748

Title: *Saginaw River Dredging Starts*

Location: AEM

Category: Site Update

Prepared by/Author: Michigan DEQ

Preparer/Author Address:

Prepared For: General Public

Date Published: April 3, 2000

Key Words and Phrases:

Reference Type: B

ReferenceID: 789

Title: *Realizing Remediation I - Great Lakes Contaminated Sediments Saginaw River (see Reference A-905)*

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: US EPA Great Lakes National Program Office (GLNPO)

Preparer/Author Address: 77 West Jackson Boulevard (G-17J)
Chicago, IL 60604

Prepared For: General Public

Date Published: August 1, 2002

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: B

ReferenceID: 939

Title: *e-mail re: Final Results for Saginaw River Dredging Project*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: General Electric

Date Published: January 15, 2002

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 1080

Title: *Significant Activities Report: Saginaw Dioxin Studies*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA GLNPO

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: June - July 2003

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 85

Title: *Saginaw thermo-chemical PCB fix backed*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: Superfund Week

Date Published: October 2, 1992

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: C

ReferenceID: 159

Title: *Bay City removal, capping needed*

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author

Address:

Prepared For: Superfund Week

Date Published: September 9, 1994

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 283

Title: *US ACE gets tough on Saginaw River dredging*

Location: AEM

Category: Dredging: Equipment

Prepared by/Author:

Preparer/Author

Address:

Prepared For: Dredging and Port Construction (DPC)

Date Published: April 1999

**Key Words and
Phrases:** Cable Arm, Inc.

Reference Type: C

ReferenceID: 352

Title: *Dredging Needed at Saginaw River Following \$28.2M PRP
Settlement*

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author

Address:

Prepared For: Superfund Week

Date Published: December 11, 1998

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: C

ReferenceID: 543

Title: *Saginaw River To Be Dredged For PCB Laced Sediment*

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author

Address:

Prepared For: ENS

Date Published: April 14, 2000

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 589

Title: *Sediment Remediation Can Improve Great Lakes Water Quality*

Location: AEM

Category: Miscellaneous

Prepared by/Author: (1) John H. Hartig, (2) Lisa Maynard, (3) Michael A. Zarull, (4) Gail Krantzberg

Preparer/Author (1) Greater Detroit American Heritage River Institute

Address: Detroit, MI

(2) International Joint Commission

Windsor, Ontario, Canada

(3) National Water Research Institute

Burlington, Ontario, Canada

(4) Ontario Ministry of Environment

Prepared For: Water Environment & Technology (WE&T)

Date Published: October 1999

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: C

ReferenceID: 804

Title: *Luedtke Engineering Dredging Saginaw River in Massive Cleanup Settlement*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: International Dredging Review (IDR), 2000, Vol. 19, No. 3

Date Published: March/April/May 2000

**Key Words and
Phrases:**

Reference Type: D

ReferenceID: 57

Title: *GM, 2 Mich. cities to pay to settle pollution charges*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: The Baltimore (MD) Sun

Date Published: November 25, 1998

**Key Words and
Phrases:**

Reference Type: D

ReferenceID: 168

Title: *Bay environmental cleanup makes headway - Results are becoming visible from \$28.2 million GM-Saginaw-Bay City settlement*

Location: AEM

Category: Site Update

Prepared by/Author: Kristina Riggle

**Preparer/Author
Address:**

Prepared For: The Bay City (MI) Times

Date Published: December 7, 2000

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: E

ReferenceID: 22

Title: *Carcinogenic Human Health Risks Associated with Consuming Contaminated Fish from Five Great Lakes Areas of Concern*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Judy L. Crane

Preparer/Author Address: EVS Consultants
195 Pemberton Avenue
North Vancouver, British Columbia V7P 2R4

Prepared For: Journal of Great Lakes Research 22 (3): 653-668

Date Published: 1996

Key Words and Phrases:

Reference Type: E

ReferenceID: 23

Title: *Modeling the Transport of Sediments and Hydrophobic Contaminants in the Lower Saginaw River*

Location: AEM

Category: Modeling

Prepared by/Author: Mary Cardenas and Wilbert Lick

Preparer/Author Address: University of California (Santa Barbara)

Prepared For: Journal of Great Lakes Research 22 (3): 669-682

Date Published: 1996

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: E

ReferenceID: 35

Title: *Bioaccumulation Models and Applications: Setting Sediment Cleanup Goals in the Great Lakes (Saginaw and Manistique Rivers)*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Amy Pelka

Preparer/Author Address: US EPA Region V
Chicago, IL

Prepared For: National Sediment Bioaccumulation Conference

Date Published: September 1996

Key Words and Phrases:

Reference Type: E

ReferenceID: 80

Title: *An Overview of Bottom Sediment Problems in Saginaw River and Bay, Marinette-Menominee Harbor, and Waukegan Harbor*

Location: AEM

Category: Site Update

Prepared by/Author: Karl E. Bremer

Preparer/Author Address: US EPA Region V
Chicago, IL 60604

Prepared For: Proceedings of Third U.S. - Japan Experts Meeting (EPA 600/3-78-084 9/78)

Date Published: September 1978

Key Words and Phrases:

Reference Type: E

ReferenceID: 91

Title: *Pilot-Scale Demonstration of Sediment Washing*

Location: AEM

Category: Contaminated Sediments: Treatment Technologies

Prepared by/Author: Jim E. Galloway and Frank L. Snitz

Preparer/Author Address: U.S. Army Corps of Engineers
Detroit District
Detroit, MI 48226-2550

Prepared For: Dredging 1994

Date Published: November 13-16, 1994

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: E

ReferenceID: 228

Title: *Environmental Dredging: Methods, Trends, and Case Histories*

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: B.S. Cushing and M.K. Hammaker

**Preparer/Author
Address:** AEM, Inc.

Prepared For: WEDA XXI Conference, Houston, TX

Date Published: June 24-27, 2001

**Key Words and
Phrases:**

Reference Type: E

ReferenceID: 235

Title: *The Cable Arm Clamshell: Development and Track Record for Environmental Dredging*

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: (1) R.E. Bergeron, (2) B.S. Cushing, (3) M.K. Hammaker

**Preparer/Author
Address:** (1) Cable Arm, Inc.
Trenton, MI 48183
(2), (3) Applied Environmental Management
Malvern, PA 19355

Prepared For: WEDA XX Conference, Warwick, RI

Date Published: June 25-28, 2000

**Key Words and
Phrases:**

Reference Type: F

ReferenceID: 13

Title: *Chapter 5: PCBs in Aquatic Organisms*

Location: AEM

Category: Fish/Biota

Prepared by/Author: Arthur J. Niimi

**Preparer/Author
Address:**

Prepared For: Textbook: Environmental Contaminants in Wildlife (CRC Press)

Date Published: 1996

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: H

ReferenceID: 18

Title: *Six Saginaw River Maps and Attachments with PCB Concentrations*

Location: AEM

Category: Analytical Data

Prepared by/Author: Unknown (sent by Diane Dennis-Flagler, US EPA GLNPO)

**Preparer/Author
Address:**

Prepared For: Unknown (sent to Bruce Walker)

Date Published: Unknown

**Key Words and
Phrases:**

Reference Type: K

ReferenceID: 8

Title: *Saginaw River Dredging Video - June 8, 2000 and July 5-6, 2000 (Tapes 1 and 2)*

Location: AEM

Category: Dredging: Contaminated

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: General Electric

Date Published: July 5-6, 2000

**Key Words and
Phrases:**

Reference Type: K

ReferenceID: 9

Title: *Dredging Film Footage - Saginaw River*

Location: AEM

Category: Dredging: Contaminated

Prepared by/Author: BBDO

**Preparer/Author
Address:** 1285 Avenue of the Americas
New York, NY 10019-6095

Prepared For: General Electric

Date Published: October 31, 2000

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: L

ReferenceID: 77

Title: *Memo re: Update on Saginaw River Dredging*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

Preparer/Author Address: Malvern, PA 19355

Prepared For: Distribution

Date Published: September 13, 2000

Key Words and Phrases:

Reference Type: L

ReferenceID: 92

Title: *Memo re: Conversation with Tim Kibby of Luedkte Engineering re Saginaw River Dredging*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

Preparer/Author Address: Malvern, PA 19355

Prepared For: Internal use

Date Published: December 11, 2000

Key Words and Phrases:

Reference Type: L

ReferenceID: 95

Title: *Summary of Daily Logs: Saginaw River Environmental Dredging: 2000*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

Preparer/Author Address: Malvern, PA 19355

Prepared For: General Electric

Date Published: March 2001

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: L

ReferenceID: 97

Title: *Briefing Summary: Environmental Dredging - Saginaw River, Michigan*

Location: AEM

Category: Miscellaneous

Prepared by/Author: General Electric Co.

**Preparer/Author
Address:**

Prepared For: Internal Distribution

Date Published: January 26, 2001

**Key Words and
Phrases:**

Reference Type: L

ReferenceID: 160

Title: *Summary of Daily Logs: Saginaw River Environmental Dredging: 2001*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: General Electric

Date Published: January 15, 2002

**Key Words and
Phrases:**

Reference Type: L

ReferenceID: 164

Title: *Summary of Bucket Usage, by Volume: Saginaw River Environmental Dredging: 2000*

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: Internal use

Date Published: March 7, 2001

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: L

ReferenceID: 185

Title: *Memo re: Site Visit: Saginaw River Remedial Dredging Project*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

Preparer/Author Address: Malvern, PA 19355

Prepared For: File

Date Published: June 8, 2000

Key Words and Phrases:

Reference Type: L

ReferenceID: 209

Title: *Memo re: Telephone conversation with Tim Kibby, Luedtke Field Supervisor Saginaw River Project - 7/13/00 (am)*

Location: AEM

Category: Phone Memos (Site Updates)

Prepared by/Author: AEM, Inc.

Preparer/Author Address:

Prepared For: Internal Files

Date Published: August 21, 2000

Key Words and Phrases:

Reference Type: L

ReferenceID: 210

Title: *Memo re: Reconnaissance of Saginaw River Remedial Dredging Project Accompanied by Susan Linnell, Representative of Cohn & Co.*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

Preparer/Author Address:

Prepared For: Distribution

Date Published: July 14, 2000

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M
Title: *Update on Three High-Profile Sites*
Location: AEM
Category: Site Update
Prepared by/Author: AEM, Inc.
Preparer/Author Address: Malvern, PA 19355
Prepared For: Distribution
Date Published: March 18, 1999
Key Words and Phrases:

ReferenceID: 17

Reference Type: M
Title: *Bidders List for Environmental Dredging Project*
Location: AEM
Category: Bid Package
Prepared by/Author: U.S. Army Corps of Engineers
Preparer/Author Address: Detroit District
477 Michigan Avenue
Detroit, MI 48226
Prepared For: General Public
Date Published: February 24, 1999
Key Words and Phrases:

ReferenceID: 26

Reference Type: M
Title: *Overcoming Obstacles to Sediment Remediation in the Great Lakes Basin - White Paper*
Location: AEM
Category: Contaminated Sediments: Remedial Options/Guidance
Prepared by/Author: Sediment Priority Action Committee
Great Lakes Water Quality Board
Preparer/Author Address: <http://www.ijc.org/boards/wqb/>
Prepared For: International Joint Commission
Date Published: 1997
Key Words and Phrases:

ReferenceID: 98

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M

ReferenceID: 99

Title: *Pilot Confined Disposal Facility Biomonitoring Study:
Channel/Shelter Diked Facility, Saginaw Bay, Bay City,
Michigan, 1987*

Location: BBL

Category: Contaminated Sediments: Disposal Methods

Prepared by/Author: Rathbun, J.E., et al.

**Preparer/Author
Address:** Duluth, Minnesota

Prepared For: US EPA

Date Published: December 1988

**Key Words and
Phrases:**

Reference Type: M

ReferenceID: 156

Title: *ARCS Bench-Scale Evaluation of RCC's Basic Extraction Sludge
Treatment (B.E.S.T.) Process on Contaminated Sediments from
the Buffalo, Saginaw, and Grand Calumet Rivers*

Location: AEM

Category: Contaminated Sediments: Treatment Technologies

Prepared by/Author: Clyde J. Dial

**Preparer/Author
Address:** Science Applications International Corporation
Cincinnati, OH

Prepared For: US EPA
Great Lakes National Program Office
Assessment and Remediation of Contaminated Sediments (ARCS) Program
Chicago, IL 60604,

Date Published: October 1994

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M

ReferenceID: 160

Title: *Bench-Scale Evaluation of Bioremediation for the Treatment of Sediments from the Ashtabula, Buffalo, Saginaw and Sheboygan Rivers*

Location: AEM

Category: Contaminated Sediments: Treatment Technologies

Prepared by/Author: W. Jack Jones, Rochelle Araujo, and John E. Rogers

Preparer/Author Address: US EPA NERL-Athens
National Exposure Research Laboratory
Ecosystems Research Division
Athens, GA

Prepared For: US EPA
Great Lakes National Program Office
Assessment and Remediation of Contaminated Sediments (ARCS) Program
Chicago, IL 60604,

Date Published: Undated

Key Words and Phrases:

Reference Type: M

ReferenceID: 216

Title: *Saginaw River and Bay, Michigan*

Location: AEM

Category: Site Update

Prepared by/Author: Beth A. Millemann

Preparer/Author Address:

Prepared For: Muddy Waters - The Toxic Wasteland Below America's Oceans, Coasts, Rivers and Lakes (Reference M-220)

Date Published: August 1999

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M

ReferenceID: 267

Title: *Comparing Polychlorinated Biphenyl Concentrations and Patterns in the Saginaw River Using Sediment, Caged Fish, and Semipermeable Membrane Devices*

Location: AEM

Category: Miscellaneous

Prepared by/Author: (1) Kathy R. Echols, (2) Robert W. Gale, (3) Ted R. Schwartz, (4) James N. Huckins, (5) Lisa L. Williams, (6) John C. Meadows, (7) Douglas Morse, (8) Jimmie D. Petty, (9) Carl E. Orazio, (10) Donald E. Tillitt

Preparer/Author Address: (1, 2, 3, 4, 6, 8, 9, 10)
Columbia Environmental Research Center,
U.S. Geological Survey
(5) U.S. Fish and Wildlife Service Field Office
(7) Michigan Department of Environmental Quality

Prepared For: Environmental Science & Technology

Date Published: 2000 (Vol. 34, No. 19)

Key Words and Phrases:

Reference Type: M

ReferenceID: 337

Title: *Information Summary, Area of Concern: Saginaw River and Saginaw Bay (Misc. Paper EL-91-7)*

Location: AEM

Category: Site Update

Prepared by/Author: (1) D.L. Brandon, (2) C.R. Lee, (3) J.W. Simmers, (4) H.E. Tatem (5) J.G. Skogerboe

Preparer/Author Address: Environmental Laboratory
Department of the Army
Waterways Experiment Station, Corps of Engineers
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Prepared For: US EPA Great Lakes National Program Office
Chicago, IL

Date Published: March 1991

Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M

ReferenceID: 338

Title: *Report: Calculation of Related Mass of PCB in GM's Proposed Bay City Focused Assessment Area*

Location: AEM

Category: Mass Balance

Prepared by/Author: PTI Environmental Services

**Preparer/Author
Address:**

Prepared For: General Motors

Date Published: 1995 circa

**Key Words and
Phrases:**

Reference Type: M

ReferenceID: 339

Title: *Position Paper: Decision Approach for a PCB Reopener in the EPA Covenant Not to Sue*

Location: AEM

Category: Legal

Prepared by/Author: PTI Environmental Services

**Preparer/Author
Address:**

Prepared For: Unknown

Date Published: January 16, 1995

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: M

ReferenceID: 340

Title: *Position Paper: Designation of Dredging Areas in the Lower Saginaw River for the Purpose of PCB Removal*

Location: AEM

Category: Remedial Design

Prepared by/Author: PTI Environmental Services

**Preparer/Author
Address:**

Prepared For: General Motors Corporation
485 W. Milwaukee Avenue
Detroit, MI 48202

Date Published: August 8, 1996

**Key Words and
Phrases:**

Reference Type: N

ReferenceID: 4

Title: *AEM Notes of Phone Calls with Contractor and Corps*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:**

Prepared For: AEM, Inc.

Date Published: January 2-3, 2002

**Key Words and
Phrases:**

Reference Type: N

ReferenceID: 15

Title: *Phone Conversation with Tim Kibby, Luedtke Field Superintendent, Saginaw River Project*

Location: AEM

Category: Site Update

Prepared by/Author: AEM, Inc.

**Preparer/Author
Address:** Malvern, PA 19355

Prepared For: File

Date Published: July 13, 2000

**Key Words and
Phrases:**

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: Q **ReferenceID:** 5
Title: *Abstract of Offers (Environmental Dredging: Saginaw Bay/River)*
Location: AEM
Category: Cost Summary Reports
Prepared by/Author: Wanda Carter-Davis (Bid Opening Officer)
Preparer/Author Address: U.S. Army Corps of Engineers
Detroit District
Prepared For: General Public
Date Published: September 17, 1999
Key Words and Phrases:

Reference Type: Q **ReferenceID:** 6
Title: *None: Summary sheets for Contract DACW35-99-C-0038 (Saginaw River Dredging Project)*
Location: AEM
Category: Cost Summary Reports
Prepared by/Author: US Army Corps of Engineers, Detroit District
Preparer/Author Address:
Prepared For: US Army Corps of Engineers
Date Published: September 21, 1999
Key Words and Phrases:

Reference Type: S **ReferenceID:** 5
Title: *Consent Judgment: MI DEQ, et al. vs. GM, City of Bay City, and City of Saginaw*
Location: AEM
Category: Legal
Prepared by/Author: Michigan Department of Environmental Quality
Preparer/Author Address:
Prepared For: US District Court for the Eastern District of Michigan
Date Published: November 19, 1998
Key Words and Phrases:

REFERENCES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Reference Type: T

ReferenceID: 1

Title: *Daily Logs of Construction (2000)*

Location: AEM

Category: Site Update

Prepared by/Author: Luedtke Engineering Company and US Army Corps of Engineers

Preparer/Author

Address:

Prepared For: US Army Corps of Engineers

Date Published: April 12, 2000 thru December 11, 2000

**Key Words and
Phrases:**

Reference Type: T

ReferenceID: 2

Title: *Daily Logs of Construction (2001)*

Location: AEM

Category: Site Update

Prepared by/Author: Luedtke Engineering Company and US Army Corps of Engineers

Preparer/Author

Address:

Prepared For: US Army Corps of Engineers

Date Published: April 11, 2001 thru July 21, 2001

**Key Words and
Phrases:**

MODELING

Project Name: SAGINAW RIVER/BAY

ProjectID: 05-23

Last Updated: 09/25/98

Modeling Performed: Modeling of the transport of sediments and hydrophobic contaminants in the Lower Saginaw River.

Modeling Objectives: Develop a quantitative numerical model which can predict the resuspension, deposition, and transport of sediments in the Saginaw River and which can also predict the transport and fate of hydrophobic organics (such as PCBs) which are associated with these sediments.

Modeling Description: Refer to "Modeling Summary"

Company Performing Modeling: U. of California (Santa Barbara)

Modeling Status: Complete, with the following qualifier (from Reference E-23): " It is believed that the present model is capable of predicting the transport and fate of hydrophobic contaminants reasonably well. However, . . . the concentrations of PCBs in the sediments and additional sources of PCBs in the lower river are not well quantified. These need to be more accurately measured for the better prediction of PCB transport in the river and also in order to determine the most appropriate remedial action in the river."

Modeling Summary: Source, Abstract in Reference E-23: "A study of processes that are significant in the transport and fate of sediments and hydrophobic contaminants in the lower Saginaw River over long periods of time, up to 25 years, has been made. The numerical model used in the analysis consists of a two-dimensional, vertically-integrated, time-dependent hydrodynamic and sediment transport model coupled (a) with a three-dimensional, time-dependent model of the dynamics of the sediment bed and its properties and (b) with a model of the transport and fate of hydrophobic contaminants. Calculations of sediment transport for different magnitude flow events demonstrate the variations in erosion and deposition at different sites and the dependence of this erosion and deposition on the flow rate. These calculations also illustrate the inherent variability, or uncertainty, in any long-term predictions since the results depend to a great extent on the times of occurrence of the largest flow events, times which can not be predicted but are only known statistically. The transport and fate of PCBs were also investigated with the emphasis on the effects of (a) large flow events, (b) incoming upstream PCB loads, and (c) burial of contaminated sediments by clean sediments with subsequent erosion of sediments by a large flow event. The analysis clearly shows that the major erosion of contaminated sediments occurs at the edge of the river channel with little erosion of contaminated sediments in the near-shore area,"

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1194
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: dioxin
Species: catfish-channel
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1197
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: dioxin
Species: catfish-channel
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1186
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: mercury
Species: walleye
Population: RGP
Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1187
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: mercury
Species: walleye
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1184
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total
Species: catfish
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1185
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total
Species: catfish
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1203
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: bass-white
Population: RGP
Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1204
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: bass-white
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1205
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: carp-common
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1202
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: carp-common
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1193
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1201
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1192
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish-blue
Population: RGP
Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1195
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish-channel
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1198
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish-channel
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake ***Advisory Number:*** 266

Status (Active or Rescinded): Active ***Date Rescinded:***

Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1196
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: catfish-channel
Population: RGP
Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1191
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: perch-white
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1190
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: perch-yellow
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1189
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: pike-northern
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1188
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: sucker-white
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1200
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: walleye
Population: RGP
Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 1199
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: walleye
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 1183
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: bass-white
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Rescinded ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 325
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: chlordane
Species: trout-lake
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.
Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Lake Huron ***AdvisoryID:*** 327
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: dioxin
Species: trout-lake
Population: NCGP
Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 328
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: dioxin
Species: trout-lake
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Lake Huron ***AdvisoryID:*** 329
Extent: Saginaw Bay - Including tributaries into which migratory species enter
Pollutant: PCBs (total)
Species: trout-lake
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake ***Advisory Number:*** 266
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i>	330
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter		
<i>Pollutant:</i>	PCBs (total)		
<i>Species:</i>	trout-lake		
<i>Population:</i>	RGP		
<i>Population Definition:</i>	Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.		
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i>	266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>	
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i>	517-335-8834
<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i>	331
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter		
<i>Pollutant:</i>	dioxin		
<i>Species:</i>	trout-lake		
<i>Population:</i>	RGP		
<i>Population Definition:</i>	Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.		
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i>	266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>	
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i>	517-335-8834
<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i>	332
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter		
<i>Pollutant:</i>	PCBs (total)		
<i>Species:</i>	trout-brown		
<i>Population:</i>	NCSP		
<i>Population Definition:</i>	No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.		
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i>	266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>	
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i>	517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i> 333
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter	
<i>Pollutant:</i>	PCBs (total)	
<i>Species:</i>	trout-brown	
<i>Population:</i>	RGP	
<i>Population Definition:</i>	Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.	
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i> 266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i> 517-335-8834
<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i> 335
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter	
<i>Pollutant:</i>	PCBs (total)	
<i>Species:</i>	trout-lake	
<i>Population:</i>	NCGP	
<i>Population Definition:</i>	No Consumption-General Population: Advise against consumption by the general population.	
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i> 266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i> 517-335-8834
<i>Advisory:</i>	Lake Huron	<i>AdvisoryID:</i> 336
<i>Extent:</i>	Saginaw Bay - Including tributaries into which migratory species enter	
<i>Pollutant:</i>	dioxin	
<i>Species:</i>	catfish-channel	
<i>Population:</i>	RGP	
<i>Population Definition:</i>	Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.	
<i>Advisory Type:</i>	Great Lake	<i>Advisory Number:</i> 266
<i>Status (Active or Rescinded):</i>	Active	<i>Date Rescinded:</i>
<i>Contact Name:</i>	David R. Wade	<i>Contact Number:</i> 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw Bay

AdvisoryID: 652

Extent:

Pollutant: PCBs (total)

Species: bass-white

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Rescinded

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 717

Extent:

Pollutant: PCBs (total)

Species: bass-white

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Rescinded

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 314

Extent:

Pollutant: chlordane

Species: trout-lake > 22"

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw Bay

AdvisoryID: 315

Extent:

Pollutant: dioxin

Species: trout-lake > 22"

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 316

Extent:

Pollutant: dioxin

Species: trout-lake < 22"

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 317

Extent:

Pollutant: dioxin

Species: trout-lake < 22"

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw Bay

AdvisoryID: 318

Extent:

Pollutant: PCBs (total)

Species: carp-common

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 319

Extent:

Pollutant: PCBs (total)

Species: catfish-channel

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 320

Extent:

Pollutant: PCBs (total)

Species: trout-brown > 21"

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw Bay

AdvisoryID: 321

Extent:

Pollutant: PCBs (total)

Species: trout-brown > 21"

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 322

Extent:

Pollutant: PCBs (total)

Species: trout-lake > 22"

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw Bay

AdvisoryID: 323

Extent:

Pollutant: PCBs (total)

Species: trout-lake > 22"

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw Bay

AdvisoryID: 324

Extent:

Pollutant: PCBs (total)

Species: trout-lake > 22"

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: Great Lake

Advisory Number:

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: James W. Bedford

Contact Number: 517-335-9215

Advisory: Saginaw River

AdvisoryID: 1182

Extent: Entire length

Pollutant: dioxin

Species: all other fish

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 1180

Extent: Entire length

Pollutant: dioxin

Species: carp-common

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw River

AdvisoryID: 1181

Extent: Entire length

Pollutant: dioxin

Species: catfish

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 1179

Extent: Entire length

Pollutant: PCBs

Species: all other fish

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 1176

Extent: Entire length

Pollutant: PCBs

Species: bass-white

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw River

AdvisoryID: 1177

Extent: Entire length

Pollutant: PCBs

Species: carp-common

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 1178

Extent: Entire length

Pollutant: PCBs

Species: catfish

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 655

Extent: Entire length

Pollutant: PCBs (total)

Species: carp-common

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

FISH ADVISORIES

Project Name **SAGINAW RIVER/BAY**

ProjectID: 05-23

Advisory: Saginaw River ***AdvisoryID:*** 656
Extent: Entire length
Pollutant: PCBs (total)
Species: catfish-channel
Population: NCSP
Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.
Advisory Type: River ***Advisory Number:*** 268
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Saginaw River ***AdvisoryID:*** 654
Extent: Entire length
Pollutant: PCBs (total)
Species: all fish except banned species
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: River ***Advisory Number:*** 268
Status (Active or Rescinded): Rescinded ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

Advisory: Saginaw River ***AdvisoryID:*** 1175
Extent: Entire length
Pollutant: PCBs
Species: bass-white
Population: RSP
Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.
Advisory Type: River ***Advisory Number:*** 268
Status (Active or Rescinded): Active ***Date Rescinded:***
Contact Name: David R. Wade ***Contact Number:*** 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw River

AdvisoryID: 309

Extent: Entire length

Pollutant: dioxin

Species: all fish except banned species

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Rescinded

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 311

Extent: Entire length

Pollutant: dioxin

Species: carp-common

Population: NCGP

Population Definition: No Consumption-General Population: Advise against consumption by the general population.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 312

Extent: Entire length

Pollutant: dioxin

Species: catfish-channel

Population: NCSP

Population Definition: No Consumption-Subpopulation(s): Advises against consumption for populations that are potentially at greater risk, e.g., pregnant or nursing women, and small children.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Active

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

FISH ADVISORIES

Project Name SAGINAW RIVER/BAY

ProjectID: 05-23

Advisory: Saginaw River

AdvisoryID: 313

Extent: Entire length

Pollutant: PCBs (total)

Species: all fish except banned species

Population: RGP

Population Definition: Restricted Consumption-General Population: Advises the general population to restrict the size of the organisms and/or the frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Rescinded

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834

Advisory: Saginaw River

AdvisoryID: 337

Extent: Entire length

Pollutant: dioxin

Species: all fish except banned species

Population: RSP

Population Definition: Restricted Consumption-Subpopulation(s): Advises subpopulations potentially at greater risk, e.g., pregnant or nursing women, and/or small children, to restrict the size of the organism and/or frequency of meals consumed.

Advisory Type: River

Advisory Number: 268

Status (Active or Rescinded): Rescinded

Date Rescinded:

Contact Name: David R. Wade

Contact Number: 517-335-8834
