GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	***St. LOUIS RIVER/INTERLAKE/DULUTH TAR***	***ProjectID:*** 05-31
Last Updated:	05/13/04	

City:	Duluth
County:	St. Louis
State:	MN
Country:	USA
Bodies of Water:	Stryker Bay; St. Louis River; Lake Superior
US EPA Region:	V
Status (Active, Complete, or Monitoring Only):	Active
Date On NPL:	1983
ROD/ESD Date:	October 1999 (subsequently set aside)
Operable Unit:	SedOU
Areas of Concern (length or acres):	35-acre Stryker Embayment, 23-acre Boat Slip 6, and 27-acre Keene Creek Bay/Boat Slip 7
Other Characteristics of Water Body:	The St. Louis River is the largest U.S. tributary to Lake Superior. The site is within the West Duluth neighborhood of the city of Duluth, on the north bank of the St. Louis River, approximately four river miles upstream of Lake Superior. Stryker Embayment is a 35-acre shallow water embayment with emergent wetlands at the north end of the embayment. Boat Slip 6 is a 23-acre deep water environment, actively used for loading and unloading ships. Keene Creek Bay/Boat Slip 7 is 27 acres of emergent wetlands and shallow water environment grading into deep water environment. Water depths are about 5 feet in Stryker Embayment; 26 feet in Slips 6 and 7.
Contaminants of Concern:	PAHs; mercury; heavy metals (non-mercury)
Source of Contamination:	As described in the 1999 ROD, the adjacent land portion of the site is the former location of pig iron and coking plants and a water/gas plant that began operation in 1904. Tar and chemical companies used by-products of the iron companies' coking operations to make other products, including tar paper and shingles. The tar and chemical companies closed operations in 1948. The iron plant closed its operations in 1961, and demolished the blast furnace and emptied the coke ovens in 1962. The contamination on the land portion of the site was found as tar seeping at the ground surface, tar deposits within the fill material, tar impacted soil and fill, and solid wastes such as coal and coke particles, ash, and slag. Similar contaminants were also found in the river sediments and in floating slicks on the surface water.
Contaminated Area Physical Characteristics:	As described in the 1999 ROD (Reference A-466), the Sediment Operable Unit addresses sediments impacted by discharges from the industrial operations into Stryker Embayment, Boat Slip 6, and Keene Creek Bay/Boat Slip 7. Investigations of the sediments in Stryker Embayment identified a distinct "buttery" or "pudding like" odorous, black-colored stratum of contaminated sediments. This tar-like material was observed at a depth of 0.5 to 1.5 feet below the surface of the sediments, with a thickness ranging from 0.5 to several feet over most of Stryker Embayment (called layer 102). A thin layer of less contaminated material (layer 101) is present above layer 102. Droplets of oil/tarry material have been observed in the sediment matrix (layer 103) below layer 102 on the east side of the bay. Recent investigations have indicated that in several areas on the eastern side of the bay the contaminated sediment layer is up to approximately seven feet thick. The pre-industrial layer (layer 104) below the contaminated industrial layers is clean and does not contain contaminant concentrations above the MPCA remediation requirements. Chemical analysis of samples revealed the presence of PAH compounds, metals, and VOCs. Average total PAH concentrations in Stryker Embayment are reportedly 2,160 ppm.

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An estimated 286,000 cubic yards of sediment is contaminated at levels exceeding the Remediation Requirements of 6 ppm total carcinogenic PAHs (cPAHs) and 40 ppm total PAHs (tPAHs). The 286,000 cy estimate breaks down into 135,000 cy in Stryker Embayment, 48,000 cy in Boat Slip 6, and 103,000 cy in Keene Creek Bay/Boat Slip 7.

Type of Regulatory Action: Superfund. Final. Pursuant to an agreement of June 20, 1995 between US EPA and the Minnesota Pollution Control Agency (MPCA), the MPCA assumed full responsibility for investigation and cleanup of this and 12 other State-enforcement lead sites.

Overall Status Summary: This Superfund site is within the West Duluth neighborhood of the city of Duluth, on the north bank of the St. Louis River, approximately four river miles upstream of Lake Superior. Targeted sediment areas (the Sediment Operable Unit) are Stryker Embayment, a 35-acre shallow water embayment with emergent wetlands at the north end of the embayment; Boat Slip 6, a 23-acre deep water environment, actively used for loading and unloading ships; and Keene Creek Bay/Boat Slip 7, 27 acres of emergent wetlands and shallow water environment grading into deep water environment.

A pig iron plant and tar and chemical companies were located on the land portions of the site and have been shut down for decades. The contamination on the land portion of the site was found as tar seeping at the ground surface, tar deposits within the fill material, tar impacted soil and fill, and solid wastes such as coal and coke particles, ash, and slag. Similar contaminants were also found in the river sediments and in floating slicks on the surface water. An estimated 286,000 cubic yards of sediment is contaminated at levels exceeding the Remediation Requirements of 6 ppm total carcinogenic PAHs and 40 ppm total PAHs. The 286,000 cy estimate breaks down into 135,000 cy in Stryker Embayment, 48,000 cy in Boat Slip 6, and 103,000 cy in Keene Creek Bay/Boat Slip 7.

A cooperative agreement between the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) was approved in January 1986. Under this agreement, federal Superfund money was given to the MPCA to hire a state contractor to implement a preliminary remedial investigation of the Site. Phase I activities were initiated in August 1987. Phase II activities were initiated in June 1989. The remedial investigation report was completed in January 1990. The EPA and MPCA issued a ROD for one of the two land-based operable units in 1990. The remedy was implemented from 1992-1994 and included excavation of the tar seep wastes and transportation of the wastes to be burned off-site for energy recovery. In 1995, the ROD for the second land-based operable unit was issued. The remedy was implemented in 1996 and 1997 and included excavation of contaminated soil, treatment by thermal desorption, and landfilling.

In November 1998, the MPCA presented, for public comment, a proposed plan for the Sediment Operable Unit. The selected remedy was presented by the MPCA in a ROD issued October 26, 1999. The MPCA Citizen's Board accepted the ROD on December 14, 1999. The selected remedy for sediments was as follows:

- Phase I. Dredge layers 101, 102, and 103 from Stryker Embayment and contain them in a CAD/CDF in Boat Slip 6. The Owner/Operator of Boat Slip 6 would be relocated. An estimated 135,000 cy of contaminated sediments would be removed from Stryker Embayment. Removal depth would average 2.4 feet. Phase I is estimated to take as many as three years to complete.

- Phase II. Evaluate the remaining capacity of the Boat Slip 6 CAD/CDF, after completion of Phase I, to determine if it can accommodate all the contaminated sediments from Keene Creek Bay/Boat Slip 7, estimated at 103,000 cy. If so, contaminated sediments will be dredged and

placed in Boat Slip 6. If it is determined that Boat Slip 6 cannot accommodate contaminated sediments from the Boat Slip 7 shallows and transition zone, the sediments will be reconfigured and placed under an engineered cap and wetland or will be consolidated and placed within a CAD/CDF constructed within Keene Creek Bay/Boat Slip 7.

During preparation and presentation of the selected sediment remedy, an extensive debate and dialogue ensued between the PRPs and the MPCA regarding the efficacy of removal vs. capping. The PRPs favored a capping remedy. Specifically, the PRPs favored Alternative 3 in the FS comprising selective dredging with capping (6-12 inches) of undredged areas. After Alternative 3 was rejected by the MPCA, the PRPs presented a new Thick Cap Alternative in June 1999 - - an alternative consisting of placement of a 2 to 3 foot cap over the contaminated areas creating wetlands in the entire Stryker Embayment as well as other shallow areas adjacent to the boat slips. Ultimately, the proposed capping remedies were rejected by the MPCA in favor of the above recommended removal remedy.

In a mid-December 1999 development, the MPCA agreed to delay the effective date of the ROD for the Sediment Operable Unit until March 1, 2000. The delay was for the purpose of providing the MPCA and the PRPs time to negotiate a contract that will lead to resolution of outstanding differences regarding remedy and cost-allocation.

On February 22, 2000, the MPCA Citizen's Board voted to sign an agreement between the MPCA and the Interlake Corporation (now XIK Corporation), Honeywell International Inc., and Domtar Inc (the three participating PRPs) providing for the setting aside of the 1999 ROD and the re-opening of the Remedial Investigation/Feasibility Study, and selection of a remedy. Approval of this agreement rendered ineffective the MPCA Board's December 14, 1999 decision adopting the October 15, 1999 Record of Decision to dredge and contain contaminated sediments in Hallett Boat Slip and the Board's December 14, 1999 decision adopting the Findings of Fact supporting adoption of the Record of Decision.

Some of the key features of the terms and conditions of the Agreement are:

- Payment by the PRPs of all past unreimbursed MPCA costs.

- Installation, by the PRPs, of signs within the site informing the public that the sediments are contaminated.

- Establishment of a fund, in the amount of $200,000, which will be used to finance environmental improvement projects in the vicinity of the site.

- A commitment by all parties to the Agreement as to the manner in which the re-opened Remedial Investigation and Feasibility Study process will proceed toward remedy selection.

- Establishment of a peer review group of experts who will aid in the identification of data gaps and will review the re-opened Feasibility Study and will comment on the advantages and disadvantages of each of the alternative remedies.

- A commitment by the PRPs to implement the remedy selected by the MPCA.

- An agreement by the PRPs to pay stipulated penalties if they fail to comply with the terms and conditions of the Agreement.

In mid-2001, the MPCA provided the three participating PRPs with proposed Performance

Requirements, to be used as performance specifications for each of the remedial alternatives being considered in the FS, and also provided to the PRPs a list of Sediment Preliminary Remediation Goals (PRGs) for total PAHs, mercury, and metals. (The alternative to accepting the use of the PRGs as final cleanup goals would be for the PRPs to accept site-specific risk-based sediment remediation goals developed by the MPCA from newly-collected site-specific data.)

The Environmental Trust Fund Beneficiaries Committee has selected projects within the St. Louis River Watershed to be funded by the $200,000 that was set aside by the PRPs, pursuant to the February 2000 Agreement. Work on the projects commenced during the 2001 summer and was to continue into 2002. A nine-member committee was appointed to solicit and choose proposals that are tangible and visible to the community and enhance or protect the environment. Committee members represent the MPCA, responsible companies, City of Duluth, St. Louis County, St. Louis River Citizens Action Committee, and West Duluth neighborhoods or organizations.

Additional data were collected to fill 14-identified data gaps, and a draft Data Gap Report was submitted in November 2002. As described in Reference A-1016:

"Meetings were held during the data gathering period in 2001 and 2002 with the Peer Review Team, and additional meetings were held in February 2003, following completion of the Data Gap Report, with all Parties and 50 other stakeholders. A brain storming session at the February 2003 meeting produced a number of hybrid alternatives. Using these suggestions and comments, the Parties and the Minnesota DNR identified a hybrid alternative that they believed would meet the Superfund criteria, respond to the concerns expressed by the participants in the stakeholder meetings, and address other site conditions. The Parties then reconvened the stakeholders and sought their reaction to the hybrid option. As a result, by mutual agreement of the Parties, the Dredge/Cap Hybrid Alternative replaced the Dredging and On-Site Disposal Alternative option in this FS."

Also, in 2002, Federal, state, and tribal natural resource trustees submitted for public comment an Assessment Plan for the Natural Resource Damage Assessment at the Site.

A total of fifteen reports were expected to be submitted by the PRPs, preceding the draft Feasibility Study. All submittals are reviewed by both the MPCA and an independent Peer Review Team. The draft Feasibility Study was submitted on November 24, 2003, to be followed by a Proposed Plan from the MPCA for public review and a ROD.

The draft Feasibility Study evaluated, compared, and costed four remedial alternatives: (1) No Action; (2) In-Situ Capping Only ($19.3 million); (3) Dredge/Cap Hybrid, with disposal in a CAD cell in Slip 7 ($31.9 million); and (4) Dredge/Off-Site Disposal ($93.9 million). For Alternative (4), removal of 495,000 cy by dredging was estimated.

The Proposed Plan was issued in April 2004 for public review. The primary elements of the preferred cleanup alternative as described in the plan are:

1. Dredging up to 224,000 cy from:

• "Approximately 25 acres of sediment throughout the site (22 acres in Stryker Bay, 0.3 acres in Slip 6, and 3 acres in the Minnesota Channel). This includes areas located along the western shoreline, a portion of the wetlands located in the north end, and contaminated sediments which extend out into the St. Louis River beyond the mouth of the bay. Dredging will not be

conducted in an area on the northeastern side of Stryker Bay where the highest naphthalene concentrations are located or where the bay is underlain by compressible peat that is conducive to surcharging;"

- "Contaminated sediments located within the federal navigation channel near the 48 inch outfall area;"

- "All contaminated sediments that lie in Wisconsin waters;" and

- "Two contaminated areas of wetland along the western shoreline of Keene Creek Bay/Slip 7."

Backfill placement will follow dredging to "isolate any dredge residual and restore bathymetry and substrate to DNR permit requirements."

2. "Capping approximately 7 acres of contaminated sediments in Stryker Bay, including sediments with the highest naphthalene concentrations in Stryker Bay. A portion of Stryker Bay will be capped using a surcharge technique to consolidate the underlying sediment and isolate contaminants without reducing the bay's water depth and natural resource functions." All other areas of 28-acre Keene Creek/Slip 7 will be capped, including an on-shore wetlands area of Keene Creek Bay/Slip 7 that exceeds MPCA criteria for TPAH of 13.7 ppm.

3. "Construction of a Confined Aquatic Disposal Facility (CAD) in Slip 6 to contain the dredged sediment."

The estimated cost for performing this work is between $43.8 and $48.2 million.

Remedial Action Planned:	☑
Risk Assessment:	☑
Remedial Action Implemented:	☐
Status of Dredging	☐
PRPs:	☑
Contacts:	☑
References:	☑
Modeling:	☐
Fishing Advisory:	☐

Key Conditions: capping, dedicated landfill or CDF, dredging, floating oil, Great Lakes AOC, property access issues, wetlands

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Target Sediment Cleanup Standards (TSCS): 6 ppm total carcinogenic PAHs and 40 ppm total PAHs; the total carcinogenic PAHs are expressed as benzo (a) pyrene equivalents.

How TSCS Established: Human health risk assessment (screening evaluation) for the 6 ppm carcinogenic PAHs and ecological screening risk evaluation for the 40 ppm total PAHs.

Target Bank and Floodplain Cleanup Levels (if applicable):

Other Target: According to the ROD (Reference A-466), "removal of sediments based on PAH contamination will result in the reduction or elimination of other site-related contaminants, including metals and VOCs, which co-occur with PAHs."

Environmental Sample Data References:

- ***Sediment:***
- ***Water:***
- ***Fish:***

Estimated Target Volume: Phase I, 135,000 cy from Stryker Embayment; Phase II, 103,000 cy from Keene Creek Bay/Boat Slip 7.

Planned Disposal Method: Into a CDF in Boat Slip 6

Estimated Calendar Time to Implement Remedy:

Estimated Time to Implement Remedy: 3 years for Phase I

Estimated Cost to Implement Remedy: For Phase I and II combined, between $9 and $33 million (source: FS); between $18 and $29 million (source: Table 3 in the ROD, based on PRP estimates); not included is the cost for relocating Hallett Dock Company away from Boat Slip 6 (which will be turned into a CAD); the estimated cost for treating dredge water to achieve acceptable PAH discharge levels is highly uncertain, adding uncertainty to the total cost.

The ROD has subsequently been set aside (in 2000) and the RI/FS process has been reopened.

Stated Remedial Action Objectives (and Source): Not specifically stated, but inferred from the following statements in the ROD (Reference A-466): "The acceptable human health risk levels utilized in the screening evaluation were a hazard quotient of 0.2 for individual noncarcinogenic contaminants, a hazard index of 1.0 for multiple noncarcinogenic contaminants affecting the same target endpoint, and a total excess lifetime cancer risk of 1E-5 (i.e., one in 100,000). Both the child wader scenario and the swimmer scenario evaluation produced risk estimates that exceeded the acceptable risk levels. These results indicate that additional action at the site, based on potential human contact with sediments, is warranted."

"The weight of evidence from the various site investigations indicates that sediment contaminants, primarily PAHs, are causing toxicity to benthic organisms, resulting in decreased survival and degraded benthic communities, and potentially affecting bottom-feeding fish, as well as invertebrate- and fish-eating wildlife and aquatic plants. It is recommended that contaminated sediments be removed down to native sediment layers wherever feasible; native sediments have total PAH and metals concentrations at or below typical random St. Louis River

ambient sediment concentrations. Removal of contaminated sediments would reduce residual total PAH concentrations to near background levels, and would thus reduce or eliminate impacts of PAHs on fish, wildlife or plants, as well as reduce or eliminate potential impacts from other contaminants such as metals. Where removal to native sediment is not feasible, residual average total PAH levels in surface sediments should not exceed benthic invertebrate effects levels over any significant area."

The ROD has subsequently been set aside (in 2000) and the RI/FS process has been reopened.

Measures of Success to be Used:

Refer to "Planned Monitoring and Restoration"

Planned Monitoring and Restoration:

As described by the MPCA in the ROD (Reference A-466): "The selected remedy will provide protection of public health and welfare and the environment from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the Site. The selected remedy will allow for future unlimited use of open water in Stryker Embayment, Keene Creek Bay/Boat Slip 7 and the 48-Inch Outfall by reducing the contaminant levels to levels acceptable for the human and ecological use. This will be achieved by dredging and containing contaminated sediments in a boat slip. If, after Phase I, it is determined that the volume of contaminated sediments exceeds the capacity of Boat Slip 6 and contaminated sediments must be managed in Boat Slip 7, they will be addressed in a manner that will provide protection of public health and welfare and the environment. Environmental Restrictive Covenants filed with the property records will reduce future exposure by preventing access to the confined disposal facility and any sediment management areas, and by placing use limitations on the boat slips. A monitoring plan will be implemented to ensure remedial actions remain protective of public health and welfare and the environment."

More specifically, as stated in the ROD; "Monitoring programs shall be developed for:

- Post dredging benthic invertebrate recolonization.

- Post dredging wetland reestablishment.

- Confined Aquatic Disposal facility and sediment management areas. Routine operation and maintenance along with monitoring the integrity of the containment facility will be conducted to ensure the remedy remains protective of human health and the environment. If containment is compromised it shall be repaired immediately and monitoring for release of contaminants of concern shall be conducted. If a release has been detected, additional monitoring may be necessary to determine adverse impacts to the benthic community and, if necessary, PRPs shall evaluate remedial measures to mitigate this problem."

The ROD has subsequently been set aside (in 2000) and the RI/FS process has been reopened.

Agency Position on Sediment Removal (and Source):

I. As described by the MPCA in the ROD (Reference A-466): "Dredging is routinely used to remediate contaminated sediments. With the selection of proper equipment, an experienced operator and care in operation of the dredging equipment, contaminated sediments can be effectively removed and transported to the containment facility. Dredging may be conducted by hydraulic or mechanical methods. Both types have inherent strengths and weaknesses. With hydraulic dredging there is better control of the dredge head allowing more precise dredging and is expected to take less time than mechanical. Resuspension and odor problems of sediments at the dredge head are better controlled by hydraulic dredging than by mechanical dredging. However, larger volumes of water needing treatment would be generated with hydraulic dredging. Also, hydraulic dredging would involve a dredgewater discharge to the St. Louis

River. Dredge water treatment may be very costly, and a discharge to the St. Louis River may require a variance."

"The stability of the CDF structure in the short and long term is dependent on the stability of the dikes constructed to hold the sediments. The ability of a CDF to contain contaminated sediments has been demonstrated in containment projects carried out throughout the United States."

II. With regard to rejection of a capping remedy, the ROD (Reference A-466) describes the MPCA position as follows: "Alternative 3 consists of limited mechanical dredging on the west side of Stryker Embayment, part of Boat Slip 6 and Boat Slip 7, construction of a small confined aquatic disposal facility in the head of Boat Slip 7 and placing a six inch to one foot cap over the remaining portions of the Site including the majority of Stryker Embayment."
"The MPCA had asked the PRPs to eliminate this option during review of the Alternatives Screening document. The MPCA staff concluded that Stryker Embayment was not an appropriate site for capping. The protectiveness of this remedy relies on the ability to install a uniform cap to isolate contaminated sediments and the long-term stability of the cap, if it can be properly installed. Comments from outside reviewers substantiate many of the MPCA staff concerns regarding cap stability and have raised additional concerns relating to the construction or placement of the cap. In addition, there are no known case studies where a six inch cap was used to contain contaminated sediments. The following paragraphs discuss specific concerns associated with this alternative."

"The cap installation method is not a proven technology, and the proposed method has never been used to install an in-situ cap in shallow depths. It is highly likely that the capping material would mix with contaminated sediments rather than cover or isolate the contaminated sediments. This mixing would potentially result in dilution, or even worse, an increased exposure to human health and the environment to highly contaminated sediments. In addition, capping contaminated sediments would significantly increase the volume of contaminated sediments by mixing and contaminated pore water migration upward into the capping material. This increase in volume may make future removal, if necessary, cost prohibitive."

"There was not adequate information presented by the PRPs to demonstrate the stability and uniformity of a cap in this setting. The integrity of the cap would be compromised due to the effects of propwash, bioturbation, waves, currents, seiche, ice and human activities including wading, swimming and boating activities. The FS report indicated that scouring could be expected. The FS failed to consider the cumulative effects of boats repeatedly scouring the cap. The FS presented continued recreational use in the capped areas. The wisdom of attempting to place an in-situ cap in an area that encouraged an increase in recreational activities was seriously questioned. This would increase the likelihood of human exposure to contaminated sediments and the activities could increase the likelihood that the cap would be compromised by prop wash, boat anchors, swimmers, and waders."

"Although capping is a viable alternative for containing contaminated sediments at some sites, the MPCA has determined that Alternative 3 would not be protective of human health and the environment."

III. From the Issue Statement by the MPCA in Reference A-466: " . . . the FS discusses two types of dredging methods, hydraulic and mechanical dredging. These dredging methods will be evaluated further to determine their effectiveness at contaminated sediment removal. A pilot study may be necessary to demonstrate effectiveness of the chosen dredging method to provide adequate removal of contamination, control of odors, minimization of resuspension and water generation, and to fully develop the dredging specifications. Both types have inherent strengths

and weaknesses. Hydraulic dredging in Stryker Embayment is the preferred dredging method because of potential resuspension and odor problems associated with mechanical dredging. With hydraulic dredging there is better control of the dredge head allowing more precise dredging, and it is expected to be much quicker than mechanical dredging. Resuspension and odor problems of sediments at the dredge head are better controlled by hydraulic dredging than by mechanical dredging. However, larger volumes of water needing treatment would be generated with hydraulic dredging. Also, hydraulic dredging may involve a dredge water discharge to the St. Louis River. Dredge water treatment may be very costly, and a discharge to the St. Louis River may require a variance."

IV. As described by the MPCA in the Responsiveness Summary of the ROD: " . . . a final decision on how to address potential residual contamination can not be defined until actual residual data has been obtained. This, of course, leaves some level of uncertainty and the MPCA acknowledges the PRPs comfort level is strained. The MPCA will make every attempt to fairly and reasonably assess each situation while maintaining protection of human health and the environment. The MPCA staff agree with Interlake's statement, 'redredging should be used only when health or environmental risks require it.' NOAA comments on the FS stated that, 'The success of dredging to remove contamination is dependent upon the dredge operator and will only succeed if the operator considers this the primary performance criterion, rather than production rates and budget constraints. Monitoring during and following dredging is the best mechanism for ensuring compliance with contaminant safety and design criteria.' NOAA also stated that multiple passes are not unusual in environmental dredging. In addition, the USACE commented, 'The limitations of dredging and the irregularities of any sediment surface make it unreasonable to not expect some small pockets or microlayers of contamination to remain.' The MPCA staff realizes these limitations and agrees to develop a flexible approach."

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RA Type: Human Health and Ecological

RA Status: Complete

RA Objectives: The human health screening risk evaluation (Appendix II in the ROD) states: "A screening evaluation was conducted to assist in focusing future site activities. The evaluation was based on potential toxic effects resulting from the exposure to contaminated sediment and surface water in Stryker Embayment. The results of the screening evaluation are based on very limited site data and should be utilized in a semi-quantitative manner."

The ecological screening risk evaluation (Appendix III in the ROD) states: "The results (of the assessment of sediment contamination) will be used, along with the human health site screening analysis, to make a risk management decision for the derivation of site remediation goals that are protective of human health and the environment. The conclusions of the assessment of potential sediment contamination impacts are based on the weight of evidence using the Sediment Quality Triad (Triad) approach and comparison of site contaminant levels to Sediment Effects Concentrations (SECs) calculated from regional sediment toxicity data."

Company Performing RA: Minnesota Dept. of Health (human health screening risk evaluation); Minnesota Pollution Control Agency (ecological screening risk evaluation)

RA Reference Report: Human Health: Appendix II in the ROD ("SLRIDT Surface Water and Sediment Screening Evaluation, 9/9/1997")

Ecological: Appendix III in the ROD ("Minnesota Pollution Control Agency Assessment of Sediment Contamination at the St. Louis River/Interlake/Duluth Tar Superfund Site Using the Sediment Quality Triad Approach and Sediment Effects Concentrations")

RA Summary and Conclusions: The Conclusions in the MPCA's human health screening risk evaluation are as follows: "Both the child wader scenario and the swimmer scenario evaluation produced risk estimates which exceeded the target risk levels. These results indicate that additional action at the site, based on potential human contact with sediments, is warranted. The main conclusions that can be drawn from the screening evaluation are:

1) the contaminants of health concern are cPAHs. Mercury may be a concern in localized areas;
2) the child wader receptor results in the highest exposure to contaminated sediments;
3) the BBL (Layer 102) is the major source of risk, however, the wader screening evaluation of Layer 101 still exceeded the target ECR of 1E-5 by a factor of three; and
4) dermal exposure to contaminated sediments is the driving exposure pathway."

"A quantitative risk assessment is not necessary if the conclusions from the screening evaluation are sufficient to guide future site activities. If remediation activities result in removing or containing Layer 102 such that the potential exposure (including future) is eliminated or interrupted there is no need to perform a quantitative risk evaluation. Utilizing the child wader scenario to back calculate a preliminary cleanup goal corresponding to a target risk of 1E-5 results in a sediment concentration of 4 ppm as benzo(a)pyrene equivalents."

"The screening evaluation also identified the importance of dermal contact with contaminated surface water. Dermal exposure to surface water during swimming could not be accurately assessed since surface water and suspended sediments were not separated prior to chemical analysis and because of the detection limits. Due to analytical limitations (i.e., detection limit) this pathway cannot be fully evaluated and the preliminary cleanup goal would be the detection limit."

The conclusions in the MPCA's ecological screening risk evaluation are as follows:

"Sediment tPAH concentrations at the site are elevated compared to randomly selected R-EMAP locations."

"Reduced survival occurred frequently (7 of 14 stations) in acute toxicity tests at the site, but was rarely observed at randomly selected R-EMAP locations. Sublethal effects (reduced growth) occurred in 10 of the 14 stations at the site."

"Observed toxicity was most strongly correlated with tPAH concentrations and there appeared to be a concentration-response relationship. The basal tar layer in Stryker Bay (with the highest tPAH concentrations) is highly toxic."

"Surface sediments in both embayments with tPAHs greater than or equal to 22 ppm caused sublethal toxic effects (growth inhibition); sediments with tPAHs greater than or equal to 54 ppm caused reduced survival in both C. tentans and H. azteca in laboratory tests. Increased mortality was observed at all stations exceeding 50 ppm tPAHs, but at no stations with less than 31 ppm."

"Benthic invertebrate indices suggested that communities at the site were degraded, comprising more pollution tolerant taxa than the R-EMAP reference envelope."

"With the reference envelope approach, the majority of site stations with tPAHs greater than or equal to 54 ppm exhibited concordance between chemistry, reduced survival and benthic community effects, although benthic indices were not as closely related to tPAH concentrations as was toxicity."

"There was concordance between elevated chemistry, toxicity and benthic community effects at all but one station exceeding 13 ppm tPAHs (growth reduction) or 31 ppm (reduced survival) when using an on-site reference location."

"Lethality-based SECs for the most sensitive organism (C. tentans), calculated using all the available St. Louis River data, were TEL = 14, PEL = 53, ERL = 22, and ERM = 128 ppm tPAHs. SECs predicted observed toxicity at the site quite well. Most site sample locations exceeded one or more of the SECs, indicating that widespread toxic effects are likely."

"The weight-of-evidence indicates that adverse impacts to benthic organisms due to sediment contamination by coal tar have occurred and are still occurring at the site."

"Based on the above conclusions, it is recommended that sediment tPAH concentrations should be below 23 ppm to be protective for sublethal effects and below 54 ppm to protect from increased mortality to benthic invertebrates."

"There are a number of uncertainties that may have affected the results and conclusions of this study: The data set for the site was too limited to reliably characterize such a large area of contaminated sediment."

"Even though attempts were made to use similar methods of sample collection, handling and analyses as were used for the R-EMAP study, there were differences such as season, year and depth of sampling, laboratories used, and levels of QA/QC which may have compromised data comparability. Use of a reference site(s) would have simplified the evaluation."

"Only acute benthic invertebrate toxicity data were collected. Inclusion of a chronic test(s) may have

resulted in lower effect levels. Bioaccumulation and photo-induced toxicity also were not evaluated."

"Effects levels for metals and other contaminants of concern were not determined. Seasonal variation or bioturbation effects on metal bioavailability were not evaluated."

"Effects on other organisms such as fish, wildlife or aquatic plants were not directly evaluated so site-specific conclusions about negative effects or protective levels cannot be drawn."

"In light of these uncertainties, it is recommended that contaminated sediments be removed down to native sediment layers wherever feasible; native sediments have tPAH and metals concentrations at or below typical R-EMAP reference envelope concentrations. Removal of contaminated sediments would reduce residual tPAH concentrations to near background levels, and would thus reduce or eliminate impacts on tPAHs on fish, wildlife or plants, as well as reduce or eliminate potential impacts from other contaminants such as metals."

POTENTIALLY RESPONSIBLE PARTIES

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

PRP Name: **PRP INFORMATION NOT RELEASED** ***PRPID:***

Street Address:

City:

State:

KEY CONTACTS

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

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:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

ReferenceID: 134

Reference Type: A

Title: ***EPA Superfund Record of Decision: St. Louis River/Interlake/Duluth Tar Site, MN (EPA / ROD / R05-90/139)***

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: US EPA HQ

Preparer/Author Address: 401 M Street, S.W.
Washington, DC 20460

Prepared For: General Public

Date Published: September 1990

Key Words and Phrases:

ReferenceID: 466

Reference Type: A

Title: ***Record of Decision: St. Louis River/Interlake/Duluth Tar Site - Sediment Operable Unit***

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155

Prepared For: General Public

Date Published: October 1999

Key Words and Phrases: HHRA is Appendix II; Eco RA is Appendix III

ReferenceID: 783

Reference Type: A

Title: ***Fact Sheet: MN Pollution Control Agency: St. Louis River Area of Concern: Contaminated Sediment Issues***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155-4194

Prepared For: General Public

Date Published: November 1999

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

ReferenceID: 807

Reference Type:	A
Title:	***Fact Sheet: St. Louis River Site***
Location:	AEM
Category:	Site Update
Prepared by/Author:	US EPA Region V
Preparer/Author Address:	
Prepared For:	General Public
Date Published:	November 2000
Key Words and Phrases:	

ReferenceID: 808

Reference Type:	A
Title:	***Dredging Elutriate Test Report for St. Louis River/Interlake/Duluth Tar Site, Duluth, Minnesota (Executive Summary and Section 1.0 only)***
Location:	AEM
Category:	Resuspension
Prepared by/Author:	Service Environmental & Engineering
Preparer/Author Address:	675 Vandalia Street St. Paul, MN 55114
Prepared For:	Minnesota Pollution Control Agency
Date Published:	June 18, 2001
Key Words and Phrases:	water quality impacts from debris removal and dredging

ReferenceID: 809

Reference Type:	A
Title:	***Fact Sheet: Site FAQs***
Location:	AEM
Category:	Site Update
Prepared by/Author:	Website
Preparer/Author Address:	
Prepared For:	General Public
Date Published:	2001 circa
Key Words and Phrases:	

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: A ***ReferenceID:*** 810

Title: ***Fact Sheet: Site News***

Location: AEM

Category: Site Update

Prepared by/Author: Website

Preparer/Author Address:

Prepared For: General Public

Date Published: December 2001

Key Words and Phrases:

Reference Type: A ***ReferenceID:*** 811

Title: ***Bench Test Report for St. Louis River/Interlake/Duluth Tar Site, Duluth, Minnesota (Executive Summary only)***

Location: AEM

Category: Capping/Placement

Prepared by/Author: Service Environmental & Engineering

Preparer/Author Address: 675 Vandalia Street
St. Paul, MN 55114

Prepared For: Unknown

Date Published: April 12, 2002

Key Words and Phrases:

Reference Type: A ***ReferenceID:*** 1016

Title: ***Draft Feasibility Study***

Location: AEM

Category: RI/FS

Prepared by/Author: Service Engineering Group

Preparer/Author Address: 675 Vandalia Street
St. Paul, MN 55114

Prepared For: XIK Corporation, Honeywell International, Inc., and Domtar, Inc.

Date Published: November 24, 2003

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: A ***ReferenceID:*** 1017

Title: ***Proposed Plan for the Sediment Operable Unit at the St. Louis River/Interlake/Duluth Tar Superfund Site***

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155-4194

Prepared For: General Public

Date Published: November 1998

Key Words and Phrases:

Reference Type: A ***ReferenceID:*** 1018

Title: ***Assessment Plan for the Natural Resource Damage Assessment at the St. Louis River/Interlake/Duluth Tar Site***

Location: AEM

Category: Natural Resource Damages

Prepared by/Author: National Resource Trustees:
Minnesota Pollution Control Agency
Minnesota Department of Natural Resources
Fond du Lac Band of Lake Superior Chippewa
1894 Authority
United States Department of the Interior
United States Department of Commerce

Preparer/Author Address:

Prepared For: General Public

Date Published: September 24, 2002

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: A ***ReferenceID:*** 1051

Title: ***Proposed Plan for the Sediment Operable Unit St. Louis River/Interlake/Duluth Tar Superfund Site***

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address:

Prepared For: General Public

Date Published: April 2004

Key Words and Phrases:

Reference Type: B ***ReferenceID:*** 106

Title: ***PLP Site Information - St. Louis River/Interlake/Duluth Tar***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address:

Prepared For: General Public

Date Published: Undated

Key Words and Phrases:

Reference Type: B ***ReferenceID:*** 242

Title: ***News Release: MPCA Board Takes Action on Stryker Embayment Superfund Site***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road, North
St. Paul, MN 55155

Prepared For: General Public

Date Published: December 17, 1999

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: B ***ReferenceID:*** 497

Title: ***Public Notice for St. Louis River/Interlake/Duluth Tar Superfund Site***

Location: AEM

Category: Natural Resource Damages

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road
St. Paul, MN 55155-4194

Prepared For: General Public

Date Published: June 2002

Key Words and Phrases:

Reference Type: B ***ReferenceID:*** 508

Title: ***Table 1: Contaminated Sediment Studies Conducted in the St. Louis River AOC Since 1992.***

Location: AEM

Category: Contaminated Sediments: Investigation/Delineation

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155
http://www.pca.state.mn.us/water/sediments/studies-stlouis.html#asessment

Prepared For: General Public

Date Published: March 19, 2001

Key Words and Phrases:

Reference Type: B ***ReferenceID:*** 509

Title: ***St. Louis River Area of Concern: Contaminated Sediment Issues***

Location: AEM

Category: Contaminated Sediments: Overview of Issues

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155
http://www.pca.state.mn.us/water/sediments/studies-stlouis.html#asessment

Prepared For: General Public

Date Published: November 1999

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: B ***ReferenceID:*** 709

Title: ***Letter re: Minnesota Pollution Control Agency Sediment Preliminary Remediation Goals and Draft Proposed Performance Requirements for the Re-Opened Remedial Investigation/Feasibility Study, Sediment Operable Unit, St. Louis River/Interlake/Duluth Tar Superfund Site, Duluth, Minnesota***

Location: AEM

Category: Dredging: Remedial (Contaminated Sediments)

Prepared by/Author: Jane Mosel

Preparer/Author Address: Minnesota Pollution Control Agency

Prepared For: PRPs

Date Published: August 15, 2001

Key Words and Phrases: performance standards; performance requirements

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Reference Type: B ***ReferenceID:*** 710

Title: ***Letter re: no title (re reopened RI/FS process)***

Location: AEM

Category: Site Update

Prepared by/Author: Jane Mosel

Preparer/Author Address: Minnesota Pollution Control Agency

Prepared For: The Interlake Corporation

Date Published: September 26, 2001

Key Words and Phrases:

Reference Type: B ***ReferenceID:*** 711

Title: ***Schedule for Remedy Selection at SLRIDT Site***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address:

Prepared For: Unknown

Date Published: January 2002 (circa)

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: B ***ReferenceID:*** 792

Title: ***Realizing Remediation I - Great Lakes Contaminated Sediments St. Louis River - Interlake Duluth Tar Site (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:

Reference Type: B ***ReferenceID:*** 954

Title: ***e-mail re: Sediment Quality Targets report for the St. Louis River Area of Concern***

Location: AEM

Category: Cleanup Levels and Risks

Prepared by/Author: Judy Crane, Ph.D

Preparer/Author Address: Environmental Research Scientist
Environmental Outcomes Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Prepared For: CoSAT Members and Interested Parties

Date Published: January 31, 2001

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: C ***ReferenceID:*** 230

Title: ***Minnesota wants USX to fix Duluth Steel site***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Superfund Week

Date Published: November 11, 1994

Key Words and Phrases:

Reference Type: C ***ReferenceID:*** 231

Title: ***Interlake Duluth site may get thermal fix***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Superfund Week

Date Published: November 11, 1994

Key Words and Phrases:

Reference Type: C ***ReferenceID:*** 675

Title: ***'SQTs' Will Help Assess Water Quality In St. Louis Area of Concern***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Hazardous Waste/Superfund Week

Date Published: April 23, 2001

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: C ***ReferenceID:*** 884

Title: ***More Sampling for PRPs as State Looks Further into Options for St. Louis River***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Superfund Week

Date Published: February 11, 2000

Key Words and Phrases:

Reference Type: C ***ReferenceID:*** 1040

Title: ***Duluth design to get spring bid***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Superfund Week

Date Published: July 21, 1995

Key Words and Phrases:

Reference Type: C ***ReferenceID:*** 1109

Title: ***Cleanup deal struck for Stryker Bay***

Location: AEM

Category: Site Update

Prepared by/Author:

Preparer/Author Address:

Prepared For: Dredging News Online

Date Published: May 7, 2004

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: D ***ReferenceID:*** 114

Title: ***MPCA, Interlake Superfund Site Responsible Parties Reach Remedy Selection Processs Agreement***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address:

Prepared For: Press Release

Date Published: February 22, 2000

Key Words and Phrases:

Reference Type: E ***ReferenceID:*** 219

Title: ***Evaluation of Naphthalene Emissions During Dredging at the St. Louis River/Interlake/Duluth Tar NPL Site, Duluth, Minnesota***

Location: AEM

Category: Dredging: Miscellaneous

Prepared by/Author: (1) M. Costello, (2) H. Huls, (3) J. Berdahl, (4) G. Schewe, (5) M. Zimmer

Preparer/Author Address: (1), (2), (3) Service Engineering Group
675 Vandalia Street
St. Paul, MN 55114
(4), (5) Environmental Quality Management
1800 Carillion Boulevard
Cincinnati, OH 45240

Prepared For: Proceedings - Unknown

Date Published: 2003

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Reference Type: H ***ReferenceID:*** 16

Title: ***St. Louis River Area of Concern***

Location: AEM

Category: Site Update

Prepared by/Author: Minnesota Pollution Control Agency

Preparer/Author Address: 520 Lafayette Road North
St. Paul, MN 55155
http://www.pca.state.mn.us/water/sediments/studies-stlouis.html#asessment

Prepared For: General Public

Date Published: March 19, 2001

Key Words and Phrases:

Reference Type: N ***ReferenceID:*** 33

Title: ***Conversation Log (Contact: Jane Mosel)***

Location: AEM

Category: Site Update

Prepared by/Author: Jamie Prichard

Preparer/Author Address: Blasland, Bouck & Lee, Inc.

Prepared For: File

Date Published: January 22, 2002

Key Words and Phrases:

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1117
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	PCBs (total)		
Species:	carp-common		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1118
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	crappie-black		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1119
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	crappie-black		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1120
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	perch-yellow		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1121
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
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:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1122
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	pike-northern		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1123
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
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:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1124
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	PCBs (total)		
Species:	sturgeon-lake		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1125
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	PCBs (total)		
Species:	sturgeon-lake		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1126
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	sucker-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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1127
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
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:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1128
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	walleye		
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:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1129
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	mercury		
Species:	walleye		
Population:	NCGP		
Population Definition:	No Consumption-General Population: Advise against consumption by the general population.		
Advisory Type:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1130
Extent:	Fond du Lac Dam to Lake Superior		
Pollutant:	PCBs		
Species:	walleye		
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:***	1902
Status (Active or Rescinded):	Rescinded	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Advisory:	St. Louis River	***AdvisoryID:***	1131
Extent:	Fond du Lac Dam to Lake Superior		
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:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923

Project Name ***St. LOUIS RIVER/INTERLAKE/DULUTH TAR*** ***ProjectID:*** 05-31

Advisory:	St. Louis River	***AdvisoryID:***	1132
Extent:	Fond du Lac Dam to Lake Superior		
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:	River	***Advisory Number:***	1902
Status (Active or Rescinded):	Active	***Date Rescinded:***	
Contact Name:	Pat McCann	***Contact Number:***	651-215-0923