American Bar Association
Section of Environment, Energy and Resources

Sediment Management Remedial Alternatives and Case Studies

Manistique Harbor, Michigan Case Study

Steven C. Nadeau
Honigman Miller Schwartz and Cohn
Detroit, MI

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MAPQUEST
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Manistique River/Harbor
Thunder Bay
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Chicago
Des Moines
Omaha
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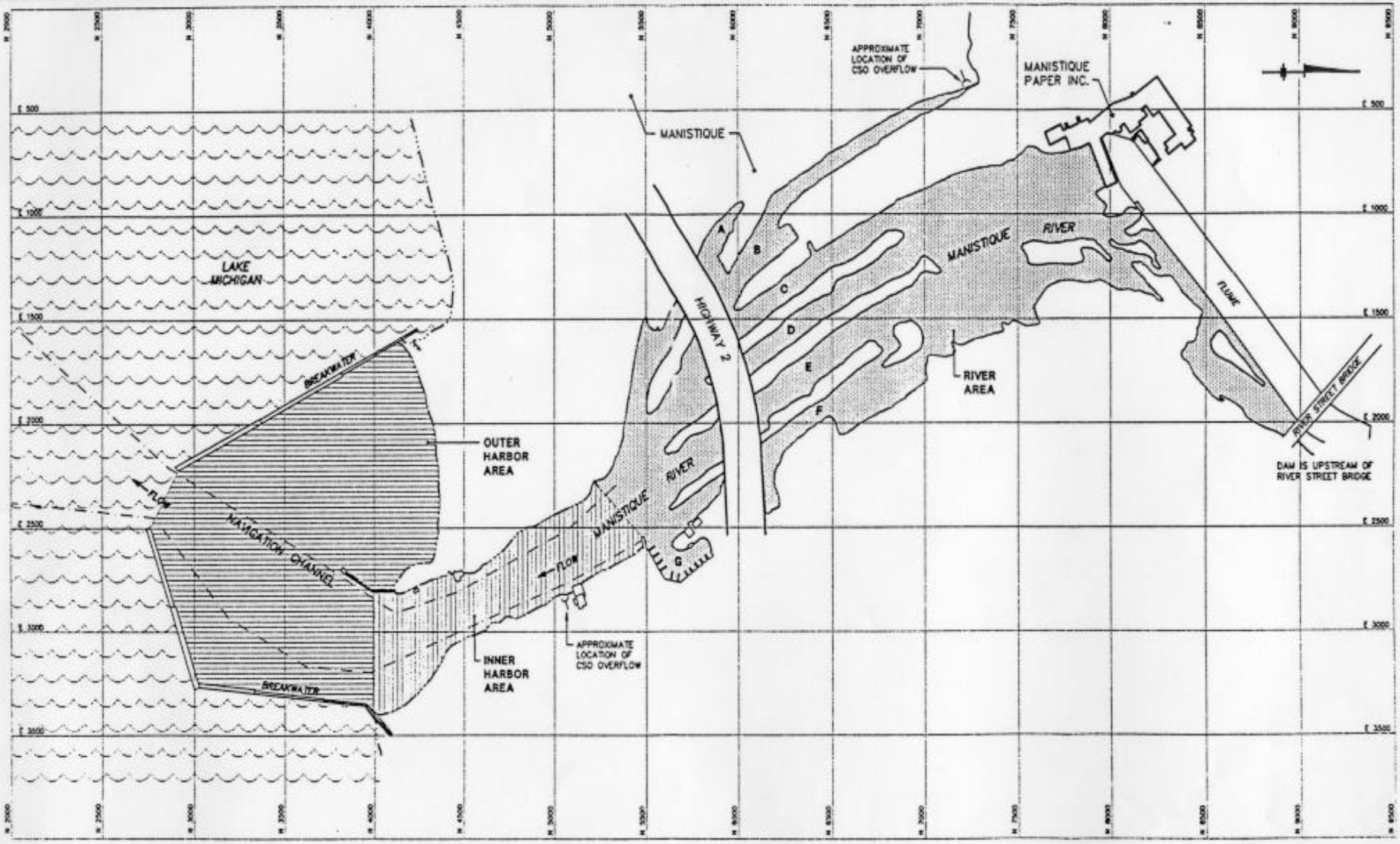

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ENGINEERS & SCIENTISTS

MANISTIQUE RIVER/HARBOR
ENGINEERING EVALUATION/
COST ANALYSIS

MANISTIQUE RIVER/ HARBOR AREAS

FIGURE **1-2**

SITE BACKGROUND

- Manistique Harbor - Upper Peninsula of Michigan
- Man-made Harbor located on Lake Michigan's northern shore
- Harbor floor historically created by blasting bedrock to achieve project depth
- Manistique River is 350 feet wide at the mouth and narrows to a channel of 200 feet
- River Current:
  - average flow of 1680 cfs
  - maximum average monthly flow of 4380 cfs (April)
  - minimum average monthly flow 890 cfs (August)
- Current use of the Harbor is pleasure craft and small, shallow-draft fishing boats and small barges only
- Harbor bustled in the 1880s through the 1920s
- Harbor is now considered obsolete for modern Great Lakes shipping
- Area of interest encompasses approximately 17 acres
- Volume of sediment at issue originally estimated to be 100,000 cubic yards, but EPA now believes the total will be closer to 135,000 cubic yards

TIMELINE TO SECURE APPROVAL OF CAPPING

August 1993	Notice Letter
August 1993	PRP offer to cap the harbor
Fall 1993	Sampling
Spring 1994	EE/CA and Qualitative Risk Assessment prepared and submitted
May 1994	PRP recommendation to cap harbor
June 1994	EPA approval of the EE/CA and Risk Assessment
August 1994	EPA releases proposed plan (dredging)
August-October 1994	Public comment period
Dec ‘94 - Mar ‘95	EPA HQ de novo review
October 1995	Region V approves capping

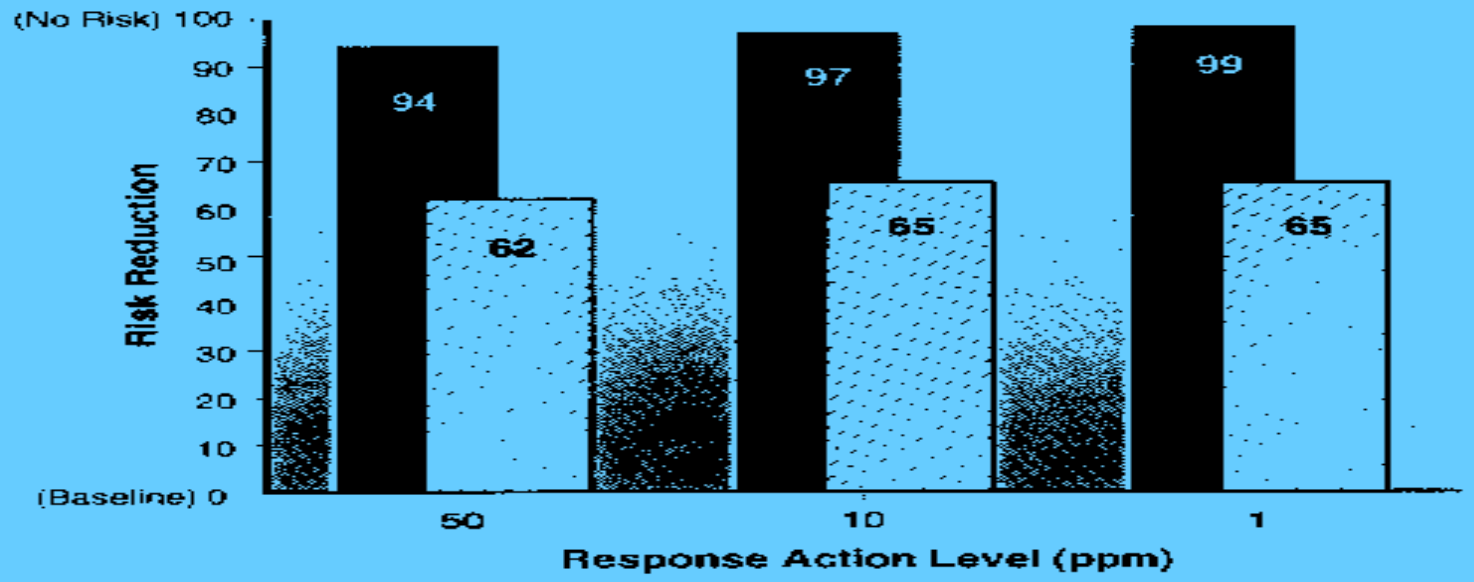
REGULATORY FRAMEWORK/DRIVERS/WHY WAS CAPPING PROPOSED?

- Regulatory Climate - 1993
- Issues raised in opposition to capping:
  - 105 lbs per year of PCBs
  - Regulatory bar to in-situ remedy
  - Cheboygan “pilot” alleged cap failure
  - Canadian/IJC concerns
  - TSCA Containment Policy
  - Unit costs for capping and dredging
  - Risk assumptions - 100% carp ingestion
  - Economic preservation of harbor
  - Precedent concerns
  - Ice scour
  - Prop wash
  - Waves
  - Floods
  - Unquantifiable natural (and unnatural!) disasters
- Natural recovery was perceived to be unsellable
- Emergency attention - initially - 10 days to commit to dredging harbor!
- SACM site- Accelerated program!
- Cost-effective remedy- originally perceived to be approximately 2.0 million
- Offer to proceed straight to remedy
- PRP circumstances
  - liability defense
  - cost to fight; risk of loss
  - good citizen

WHY WAS CAPPING APPROPRIATE?

High energy vs. low energy debate:

- River and harbor setting
- If high energy, why extensive depositional area?
- Average flow - 1680 cfs
  - max. flow - 4380 cfs (April)
  - min. flow - 890 cfs (August)
- Cap designed to withstand 17 foot waves
- Cap designed to withstand 500 year flood
- 20 inches of sand; carbon additive; geotextile base (for stability, not migration)
- PCB releases from dredging were estimated to be 46 to 183 pounds
- The average PCB concentrations at depth were 90 ppm
- The bedrock harbor floor virtually guaranteed substantial residuals would remain
- Capping would isolate 93% of the basin's PCB mass
- The 16-acre cap would reduce the surficial concentrations in the overall 56-acre basin to 1 ppm vs. the pre-remediation levels of 5.2 ppm
- Risk-reduction better - 97% capping vs. 65% dredging
- Cost effective - 5.5 million (including $1.7 million for 30 years of O & M) vs. $33-43 million for dredging
- Difficulty in siting a local CDF



NOTE:
The risk reductions presented are the percentages of the baseline additional cancer risk for an "average" recreational angler, estimated in the Risk Assessment to be 1.8E-05. Risk reduction for all of the potential capping alternatives are higher than those for any of the dredging alternatives. The risk reduction associated with capping to a 50 ppm action level is 94 percent. Capping to 10 ppm would reduce an additional 3 percent while capping to 1 ppm reduces an additional 2 percent beyond the 10 ppm alternatives.

LEGEND:
Capping (Alternative 3b)
Dredging (Alternative 4a)

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MANISTIQUE RIVER AND HARBOR
PUBLIC MEETING
JULY 21, 1994

RESIDUAL RISKS FOR DREDGING VS. CAPPING

COST SAVINGS -- CAPPING VS. DREDGING*

Engineering estimate - capping	$3.62 million
Low Bid - capping	$3.8 million
EPA dredging (to date)	$35.7 million*

* Year 2000 budget is expected to be $7-$10 million.

CONGRESSIONAL AND OTHER LEGISLATIVE BRANCH INTEREST AND INVOLVEMENT

- Communication of the issue and the problem early on
- Issue of important public policy on Superfund Reform
- Sound science and convincing risk reduction comparisons (capping would reduce risk 97%, dredging would reduce risk 65% at 10ppm action level)

U.S. EPA HEADQUARTERS DE NOVO REVIEW

- Sixteen person inter-disciplinary panel
- Report finds capping to be protective
- Review team slightly favors dredging in a “close call,” but approves capping as a “protective” remedy
- Headquarters transmittal to Region V urged consideration by the Region of the community’s views, the State’s views and the feasibility of siting a CDF locally, all of which strongly favored capping

POLICY CHANGE ON CONTAINMENT REMEDIES FOR PCBS

- April 1995 Headquarters memo extended the Standard Scrap decision permitting PCB containment remedies of greater than 50 ppm of PCBs to any remedial situation as long as the remedy is considered protective (as opposed to Standard Scrap's limitation of >50 ppm containment remedies to historical impoundments or intended disposal areas)
- A containment remedy now may be considered viable for PCBs over 50 ppm as long as it is considered protective

REMEDY SELECTION, NEGOTIATION FOR IMPLEMENTATION, DESIGN AND REMEDY IMPLEMENTATION

- Following review of the Headquarters review team report and transmittal memo, Region V concluded that capping would be an appropriate and protective remedy for Manistique Harbor
- EPA also decided to conduct a demonstration dredging program in a small portion of the river prior to the PRP implementation of the capping remedy (August Action Memo)

KEY INGREDIENTS OF THE MANISTIQUE HARBOR CASH-OUT SETTLEMENT

- Cash-out -base cost of:
  - Cost of low bid for capping from a qualified contractor — $3,936,700.00
  - Cap O&M costs projected for 30 years (reduced to present value) — $1,400,000.00
  - One-half of EPA response costs through date certain — $ 401,000.00

  $5,737,700.00

  Rounded up to total — ***$6,000,000.00***

- Following HQ/DOJ concerns on the CNTS and lack of re-openers, the PRPs' informal offers to cooperate and provide in-kind goods and services were formally incorporated into the settlement as a "premium"
  - Use of Mill property for staging and operations
  - Use of Mill's Storage Pad No. 5
  - Supply of filter fabrics
  - Rail access and rail car switching services
  - Utility poles and lighting for operating areas
  - Separate short form AOC on access and in-kind services with the Mill

KEY TERMS OF THE ADMINISTRATIVE ORDER ON CONSENT (AOC)

- Critical negotiations on scope of Covenant Not to Sue (CNTS)
- Definition of "Dredged Area" - the foundation of the protection
  - All areas actually dredged, including any unplanned expansions of work
  - All areas which had been planned to be capped - in case project not completed by EPA
- Covers all hazardous substances, not just the chemical of concern, which was PCBs
- CNTS protects settling parties from liability attributable to EPA's performance of the Dredging Remedy
- Claims resolved include CERCLA, RCRA, TSCA, the Federal Water Pollution and Control Act and the Rivers and Harbors Act
- CNTS covers all past and future costs, including any Agency overruns (key definitions - "Past Response Costs" and "Future Response Costs")
- “Site" was broadly defined geographically from upstream dam to mouth of the harbor and includes the river banks up to the mean high water mark (Upland areas are not included)
- Unlike most CNTS in Orders and Decrees (the typical "model" language), our CNTS took effect immediately upon payment of the cash-out
- Re-opener for "unknown conditions or information" which results in an environmental response action in addition to the Dredging Remedy
  - The re-opener expressly does not apply to any sediments in the Dredged Areas or any PCB sediments outside the Dredged Area impacted as a result of the Agency's Dredging Remedy
  - The Agency's knowledge was broadly defined to include everything in the Agency's files as of the date of the Order
  - Standard re-opener for criminal liability, future releases by the PRPs and natural resources damages liability

KEY TERMS OF THE ADMINISTRATIVE ORDER ON CONSENT (AOC) (continued)

- Unique protection of corporate parents, affiliates and individual officers/stockholders without any obligation under the Order
- The City of Manistique was protected by the Order without obligation (avoiding potential property tax exposure)
- Contribution protection was provided to the signatories, which was important in case of Agency overruns in the dredging budget

SIGNIFICANCE OF THE MANISTIQUE CASH-OUT SETTLEMENT

- Precedent-setting settlement: One of the first cash-outs involving the "majors" (non-de minimis parties) at a Superfund site which provided a virtually complete walk away
- Groundwork paved for others in the future: A concept and mechanism for use in other situations; the intense negotiations at the Regional level and the Region V, HQ, DOJ discussions should pave the way for others
- Prognosis for future “Manistiques”