

University of Windsor

## Scholarship at UWindsor

---

International Joint Commission (IJC) Digital  
Archive

International Joint Commission

---

1990-09-01

### Register of Great Lakes Dredging Projects 1980-1984

Great Lakes Water Quality Board. Sediment Work Group

Follow this and additional works at: <https://scholar.uwindsor.ca/ijcarchive>

---

#### Recommended Citation

Great Lakes Water Quality Board. Sediment Work Group (1990). Register of Great Lakes Dredging Projects 1980-1984. *International Joint Commission (IJC) Digital Archive*. <https://scholar.uwindsor.ca/ijcarchive/437>

This Report is brought to you for free and open access by the International Joint Commission at Scholarship at UWindsor. It has been accepted for inclusion in International Joint Commission (IJC) Digital Archive by an authorized administrator of Scholarship at UWindsor. For more information, please contact [scholarship@uwindsor.ca](mailto:scholarship@uwindsor.ca).

00437

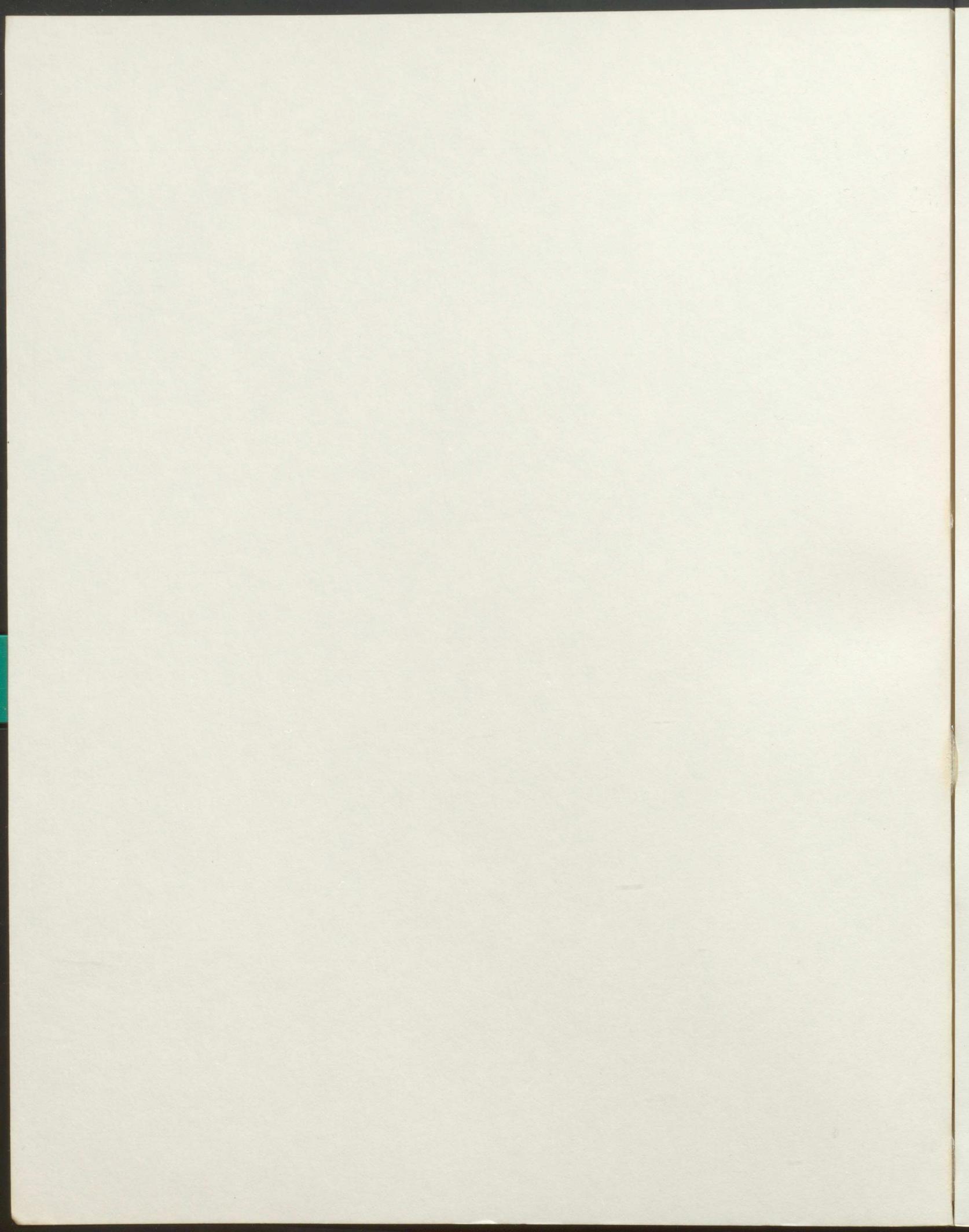
GLC 22222 607

Report of the Sediment Work Group  
to the Great Lakes Water Quality Board

**Register of**

**Great Lakes Dredging Projects**

**1980 - 1984**



Report of the Sediment Work Group  
to the Great Lakes Water Quality Board

---

CHAPTER	TITLE	PAGE
	ACKNOWLEDGEMENTS	v
1	INTRODUCTION	1
2	SUMMARY OF GREAT LAKES DREDGING ACTIVITIES, 1960-1984	9
	REFERENCES	17
	APPENDIX	
I	Register of Great Lakes Dredging Projects 1980 - 1984	19
	LAKE MICHIGAN	23
	LAKE ST. CLAIR	29
	LAKE HURON	31
	LAKE ERIE	121
	LAKE ONTARIO	173
II	SEDIMENT WORK GROUP MEMBERSHIP AND TERMS OF REFERENCE	191
	MEMBERSHIP LIST	201
	TERMS OF REFERENCE	203

International Joint Commission  
Great Lakes Regional Office  
Windsor, Ontario  
September, 1990

Report of the International Joint Commission  
to the Great Lakes Water Quality Board

Register of  
Great Lakes Dredging Projects  
1980 - 1984

International Joint Commission  
Great Lakes Region Office  
Water Quality  
Department

International Joint Commission  
Register of Great Lakes Dredging Projects 1980-1984  
ISBN 1-895085-12-8

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	ACKNOWLEDGEMENTS	v
1	INTRODUCTION	1
2	SUMMARY OF GREAT LAKES DREDGING ACTIVITIES, 1980-1984	3
	REFERENCES	17
	APPENDICES	
I	1980-1984 DREDGING PROJECTS	19
	LAKE MICHIGAN	25
	LAKE SUPERIOR	69
	LAKE HURON	93
	LAKE ERIE	121
	LAKE ONTARIO	175
II	SEDIMENT WORK GROUP MEMBERSHIP AND TERMS OF REFERENCE	199
	MEMBERSHIP LIST	201
	TERMS OF REFERENCE	203

TABLE OF CONTENTS

PAGE	CHAPTER	TITLE
v		ACKNOWLEDGMENTS
1	1	INTRODUCTION
3	2	SUMMARY OF RESEARCH AND RESEARCH ACTIVITIES 1950-1964
13		REFERENCES
		APPENDICES
18	1	1950-1964 RESEARCH REPORTS
22		LAKE MICHIGAN
28		LAKE STURGEON
31		LAKE HURON
101		LAKE ERIE
102		LAKE ONTARIO
103	II	STATEMENT WORK GROUP MEMBERSHIP AND TERMS OF REFERENCE 1960
22		INDEX
23		TERMS OF REFERENCE

## ACKNOWLEDGEMENTS

The Sediment Work Group wishes to thank Mr. Kevin McGunagle, Ms. Terry Verzosa, Ms. Mary Ann Morin and Dr. Michael Zarull for their work in putting together this report. The work group also wishes to thank the Buffalo, Detroit and Chicago District Offices of the North Central Division of the U.S. Army Corps of Engineers, and the Ontario Regional Office of Public Works Canada for providing the project data.

The publication costs for the report were provided by the United States Environmental Protection Agency, Great Lakes National Program Office, Chicago and Environment Canada, Great Lakes Environmental Office, Toronto.

## DISCLAIMER

This report to the Water Quality Board was carried out as part of the activities of the Loadings and Sources Subcommittee and its Sediment Work Group. While the Board supported this work, the specific conclusions and/or recommendations do not necessarily represent the views of the International Joint Commission, the Water Quality Board or its committees.

## 1.0 INTRODUCTION

The Dredging Subcommittee was established in 1979, according to the terms of the 1978 Great Lakes Water Quality Agreement, Annex 7. In partial fulfillment of its terms of reference, the subcommittee produced its first register in 1982 (IJC 1982). This register identified the significant dredging projects which took place on both sides of the international boundary in the Great Lakes, from 1975 through 1979 and represented the first attempt to coordinate the information on Great Lakes dredging activities.

Through its continuing review of environmental conditions in Areas of Concern and its involvement in remedial action plans for these areas, the Great Lakes Water Quality Board has become increasingly cognizant of the widespread occurrence of and problems associated with contaminated sediments. The Board found that there is considerable uncertainty and little uniformity in the techniques of assessing contaminated sediments and the technical options for alleviating their associated problems (IJC 1985 and 1987). These issues transcend dredging and disposal operations and, to date, have precluded a final resolution of environmental problems in almost all Areas of Concern.

In order to address the issue of managing contaminated sediment in the Great Lakes ecosystem, the Water Quality Board broadened the role of the Dredging Subcommittee through an expanded terms of reference which included the development of common assessment criteria and an examination of remedial options. This subcommittee has been replaced, subsequently, by the Sediment Work Group, in accordance with a reorganization of the Water Quality Board substructure. The terms of reference and present membership for the work group are provided in Appendix II.

This report provides information from 1980 through 1984 and is estimated to contain data on 95% of all dredging activities in the Great Lakes basin during this period. The remaining 5% is attributed to small, private dredging projects where volumes were not measured. The purpose of this register is to provide a compendium of the individual dredging projects - their location, volume dredged, disposal methods, and where available, the concentrations of various chemical parameters.

The regulations and policies governing dredging by each jurisdiction and federal body are provided in the previous register (IJC 1982). In addition, the approaches used for assessing contaminated sediments are described in a report of the Sediment Subcommittee (IJC 1988). Several changes in the assessment requirements and disposal practices of the various jurisdictions for dredged material are anticipated in the near future. Many jurisdictions are currently reviewing and revising their assessment procedures for navigational dredging projects. The practice of disposing of contaminated dredged materials at the present volumes, in confined disposal facilities (CDFs) is unlikely to continue because new facilities are not being constructed. The requirement for remedial actions associated with contaminated sediments in the Areas of Concern could increase the volume of material dredged in the near future; however, major changes in the annual volume of dredged material as a result of this action, would not be evident until 1990-1994.

A brief summary of the dredging information from 1980 to 1984 (inclusive) is presented in the next chapter. The summary is based upon the individual dredging project sheets, which are grouped by lake basin and provided in Appendix I. Comparisons between the 1975 to 1979 and the 1980 to 1984 dredging information were not made. The individual project data continue to be supplied by Public Works Canada and the U.S. Army Corps of Engineers for their respective countries. Further information on these projects may be obtained by contacting the pertinent agency. The contact addresses are provided at the end of the Data Summary Section, Appendix I.

The information presented in this and the previous register is maintained in an electronic data base at the IJC Great Lakes Regional Office in Windsor, Ontario. Requests for a copy of portions of the register should be directed to the Regional Office. This information can be provided on 5-1/4 or 3-1/2 inch IBM-compatible floppy disks.

Use of the chemical data provided in this register has certain limitations, which should be noted. Because sampling sites were located in areas to be dredged, the chemical analyses may not be representative of an entire harbour. This situation coupled with the use of variable analytical methods and detection limits makes comparisons between data taken from the same harbour in different years, difficult. Similarly, comparisons of the distribution and degree of contamination between one harbour and another are equally difficult as the data are representative of the material dredged, not necessarily of the entire river/harbour system. In addition, the quality of the chemical data reported have not been evaluated by the Water Quality Board or any of its committees. Therefore, those interested in specialized use of the project data should contact the originating agency for more detailed information.

In spite of these limitations, the committee feels that the register provides valuable information, not otherwise readily available to the general public.

## 2.0 SUMMARY OF GREAT LAKES DREDGING ACTIVITIES 1980-1984

A total of 321 dredging projects were reported for all of the lakes, by both Canada and the United States, over the five years from 1980 through 1984. The greatest number of projects (42%) were in Lake Erie. During this time, 270 or 84% of the total number of dredging projects were U.S., while 51 or 16% were Canadian (Table 1).

A total volume of 24,255,380 m<sup>3</sup> of dredged material was disposed of at a combined total cost of approximately 116 million dollars. U.S. activities accounted for 21,668,330 m<sup>3</sup> or 89% of the total material, while Canadian activities accounted for the remaining 11% or 2,587,042 m<sup>3</sup>. Most of the dredged material, 13,996,910 m<sup>3</sup> or 58% of the total volume, came from Lake Erie (Table 1).

The majority of projects involved dredged material less than or equal to 25,000 m<sup>3</sup> (by volume) followed by those between 25,000 to 50,000 m<sup>3</sup> in volume. Only slightly more than 20% of the total number of projects involved more than 100,000 m<sup>3</sup> (Table 2). The Canadian and U.S. projects reflected similar patterns in the distribution of their project size (Tables 3 and 4).

Five distinct categories of dredged material disposal are recognized for the purposes of this register: upland, confined, open water, beach and reuse. "Upland" disposal involves moving the material away from the shore and placing it in a preapproved disposal site. The term "confined" implies a shore-based, constructed facility containing sediments too contaminated, in terms of the jurisdictional standard, to be otherwise disposed of. "Open water" disposal usually implies barge transport of sediments which are deemed acceptable according to jurisdictional criteria, to an approved site offshore, for release into the water. The term "beach" refers specifically to the application of clean, normally sandy, dredged material to an adjacent beach site. The term "reuse" implies the application of dredged material of acceptable quality (both chemically and physically) to a suitable, nearby location. Reuses include the buildup of the littoral zone, the reinforcement of breakwall and sandspit areas and the buildup of shoreline areas which are not considered beaches in the common sense of the word.

Although mixed disposal methods may occur (e.g. dredged material is moved to the open water as well as to the adjacent beach or confined disposal facility), for the purpose of this summary, the predominant method of disposal (according to volume) is indicated. The individual project summaries indicate whether more than one disposal method is used, and the respective disposal volumes are normally included.

The major disposal method, both by the number of projects and by the total volume (52% and 72%, respectively), was confined. This method was followed by open water, beach nourishment, upland disposal and reuse (Tables 5-10).

In addition to the number of projects and the total volumes involved, Canadian and U.S. dredging projects employ disposal methods with different frequencies. While confined disposal was the main method of dredged material disposal employed, Canada did not use an upland disposal site between 1980 and 1984, and the U.S. had only one reuse of dredged material which was non-beach nourishment. In addition, none of the materials from U.S. Lake Ontario projects went to confined disposal.

If one examines the two most frequently employed dredge disposal methods: confined and open water, it can be seen that while the confined disposal method was employed a little less than twice as often as the open water, a little more than three times the material was disposed of in this way. In addition, if containment costs are included in the total, it can be seen that the cost of using confined disposal was approximately twice the cost of open water disposal (Tables 11 and 12).

TABLE 1  
U.S. AND CANADIAN DREDGING PROJECTS  
DREDGING QUANTITY AND COST BY BASIN AND YEAR  
(EXCLUDING CONFINEMENT COSTS)

BASIN	YEAR	N (TOTAL)	TOTAL QTY CMPM <sup>1</sup>	N (U.S.)	TOTAL U.S. QTY CMPM <sup>1</sup>	TOTAL COST U.S. <sup>2</sup>	N (CDN.)	TOTAL CDN. QTY CMPM <sup>1</sup>	TOTAL COST CDN. <sup>3</sup>
Michigan	1980	18	1030580.	18	1030580.	4441075.00	0	0.	.00
	1981	12	311972.	12	311972.	2258605.00	0	0.	.00
	1982	17	778935.	17	778935.	2674164.00	0	0.	.00
	1983	18	788220.	18	788220.	2970679.00	0	0.	.00
	1984	21	593103.	21	593103.	3644521.00	0	0.	.00
	All	86	3502810.	86	3502810.	15989050.00	0	0.	.00
Superior	1980	11	383327.	8	209300.	1706417.00	3	174027.	607138.10
	1981	7	524864.	5	207853.	1660907.00	2	317011.	1032171.00
	1982	5	300550.	4	152267.	1095913.00	1	148283.	532030.00
	1983	7	286190.	5	62562.	766027.10	2	223628.	929518.30
	1984	8	427953.	7	266738.	2260591.00	1	161215.	556964.50
	All	38	1922884.	29	898720.	7489854.00	9	1024164.	3657822.00
Huron	1980	8	774400.	8	774400.	2019283.00	0	0.	.00
	1981	10	602593.	7	517824.	1788449.00	3	84769.	57226.22
	1982	10	763060.	5	699009.	2251741.00	5	64051.	755358.70
	1983	8	929538.	5	853763.	2614452.00	3	75775.	369865.80
	1984	6	649001.	2	581589.	3815918.00	4	67412.	562963.30
	All	42	3718592.	27	3426585.	12489840.00	15	292007.	1745414.00
Erie	1980	36	3929416.	33	3598613.	19264600.00	3	330803.	1405600.00
	1981	27	2996485.	27	2996485.	10492320.00	0	0.	.00
	1982	22	2635521.	21	2598874.	14563830.00	1	36647.	173640.70
	1983	24	2391089.	20	2189706.	10750660.00	4	201383.	936536.90
	1984	25	2044401.	21	1887104.	10860600.00	4	157297.	1924446.00
	All	134	13996910.	122	13270780.	65932010.00	12	726130.	4440224.00
Ontario	1980	6	222605.	1	113676.	317156.00	5	108929.	388080.30
	1981	2	184971.	1	82096.	237257.50	1	102875.	.00
	1982	5	179704.	2	136260.	699477.80	3	43444.	327170.10
	1983	4	245674.	0	0.	.00	4	245674.	1016087.00
	1984	4	281226.	2	237407.	909868.80	2	43819.	323864.50
	All	21	1114180.	6	569439.	2163760.00	15	544741.	2055202.00
Totals	1980	79	6340328.	68	5726569.	27748540.00	11	613759.	2400819.00
	1981	58	4620885.	52	4116230.	16437540.00	6	504655.	1089397.00
	1982	59	4657770.	49	4365345.	21285130.00	10	292425.	1788200.00
	1983	61	4640711.	48	3894251.	17101810.00	13	746460.	3252008.00
	1984	64	3995684.	53	3565941.	21491500.00	11	429743.	3368239.00
	All	321	24255380.	270	21668330.	104064500.00	51	2587042.	11898660.00

<sup>1</sup>Cubic metres of placed material

<sup>2</sup>U.S. dollars

<sup>3</sup>Canadian dollars

TABLE 2

NUMBERS OF U.S. AND CANADIAN DREDGING PROJECTS BY QUANTITY  
(Cubic Metres of Placed Material)

BASIN	YEAR	<= 25000	25000 50000	50000 75000	75000 100000	>= 100000
Michigan	1980	8	6	2	0	2
	1981	6	4	2	0	0
	1982	6	6	2	1	2
	1983	11	1	3	0	3
	1984	11	6	3	1	0
	All	42	23	12	2	7
Superior	1980	7	2	0	0	2
	1981	3	0	0	2	2
	1982	2	0	2	0	1
	1983	5	0	1	0	1
	1984	4	0	2	1	1
	All	21	2	5	3	7
Huron	1980	5	1	0	0	2
	1981	4	3	2	0	1
	1982	6	2	0	0	2
	1983	3	1	2	0	2
	1984	4	1	0	0	1
	All	22	8	4	0	8
Erie	1980	4	11	2	8	11
	1981	5	0	2	3	7
	1982	2	7	1	3	9
	1983	5	6	5	3	5
	1984	5	6	6	1	7
	All	21	40	16	18	39
Ontario	1980	4	1	0	0	1
	1981	0	0	0	1	1
	1982	2	2	0	0	1
	1983	1	2	0	0	1
	1984	2	1	0	0	1
	All	9	6	0	1	5
Totals	1980	28	21	4	8	18
	1981	18	17	6	6	11
	1982	18	17	5	4	15
	1983	25	10	11	3	12
	1984	26	14	11	3	10
	All	115	79	37	24	66

TABLE 3

NUMBERS OF U.S. DREDGING PROJECTS BY QUANTITY  
(Cubic Metres of Placed Material)

BASIN	YEAR	<= 25000	25000 50000	50000 75000	75000 100000	>= 100000
Michigan	1980	8	6	2	0	2
	1981	6	4	2	0	0
	1982	6	6	2	1	2
	1983	11	1	3	0	3
	1984	11	6	3	1	0
	All	42	23	12	2	7
Superior	1980	6	1	0	0	1
	1981	3	0	0	2	0
	1982	2	0	2	0	0
	1983	5	0	0	0	0
	1984	4	0	2	1	0
	All	20	1	4	3	1
Huron	1980	5	1	0	0	2
	1981	2	3	1	0	1
	1982	2	1	0	0	2
	1983	1	1	1	0	2
	1984	1	0	0	0	1
	All	11	6	2	0	8
Erie	1980	4	10	2	8	9
	1981	5	10	2	3	7
	1982	2	6	1	3	9
	1983	5	4	4	2	5
	1984	4	4	5	1	7
	All	20	34	14	17	37
Ontario	1980	0	0	0	0	1
	1981	0	0	0	1	0
	1982	0	1	0	0	1
	1983	0	0	0	0	0
	1984	1	0	0	0	1
	All	1	1	0	1	3
Totals	1980	23	18	4	8	15
	1981	16	17	5	6	8
	1982	12	14	5	4	14
	1983	22	6	8	2	10
	1984	21	10	10	3	9
	All	94	65	32	23	56

TABLE 4  
 NUMBERS OF CANADIAN DREDGING PROJECTS BY QUANTITY  
 (Cubic Metres of Placed Material)

BASIN	YEAR	<= 25000	25000 50000	50000 75000	75000 100000	>= 100000
Superior	1980	1	1	0	0	1
	1981	0	0	0	0	2
	1982	0	0	0	0	1
	1983	0	0	1	0	1
	1984	0	0	0	0	1
	All	1	1	1	0	6
Huron	1980	0	0	0	0	0
	1981	2	0	1	0	0
	1982	4	1	0	0	0
	1983	2	0	1	0	0
	1984	3	1	0	0	0
	All	11	2	2	0	0
Erie	1980	0	1	0	0	2
	1981	0	0	0	0	0
	1982	0	1	0	0	0
	1983	0	2	1	1	0
	1984	1	2	1	0	0
	All	1	6	2	1	2
Ontario	1980	4	1	0	0	0
	1981	0	0	0	0	1
	1982	2	1	0	0	0
	1983	1	2	0	0	1
	1984	1	1	0	0	0
	All	8	5	0	0	2
Totals	1980	5	3	0	0	3
	1981	2	0	1	0	3
	1982	6	3	0	0	1
	1983	3	4	3	1	2
	1984	5	4	1	0	1
	All	21	14	5	1	10

TABLE 5  
 NUMBERS OF U.S. AND CANADIAN DREDGING PROJECTS  
 BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Michigan	1980	1	8	3	6	0
	1981	1	5	2	4	0
	1982	3	5	7	2	0
	1983	1	9	5	3	0
	1984	3	9	1	8	0
	All	9	36	18	23	0
Superior	1980	1	4	4	2	0
	1981	2	3	0	2	0
	1982	0	2	0	3	0
	1983	0	3	2	2	0
	1984	0	4	0	4	0
	All	3	16	6	13	0
Huron	1980	0	5	3	0	0
	1981	0	7	1	0	2
	1982	1	4	4	0	1
	1983	0	5	2	0	1
	1984	0	2	1	0	3
	All	1	23	11	0	7
Erie	1980	0	22	13	1	0
	1981	0	14	13	0	0
	1982	0	17	4	1	0
	1983	0	11	10	1	2
	1984	0	18	5	0	2
	All	0	82	45	3	4
Ontario	1980	0	4	2	0	0
	1981	0	1	1	0	0
	1982	0	1	4	0	0
	1983	0	3	1	0	0
	1984	0	1	2	0	1
	All	0	10	10	0	1
Totals	1980	2	43	25	9	0
	1981	3	30	17	6	2
	1982	4	29	19	6	1
	1983	1	31	20	6	3
	1984	3	34	9	12	6
	All	13	167	90	39	12

TABLE 6  
NUMBERS OF U.S. DREDGING PROJECTS BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Michigan	1980	1	8	3	6	0
	1981	1	5	2	4	0
	1982	3	5	7	2	0
	1983	1	9	5	3	0
	1984	3	9	1	8	0
	All	9	36	18	23	0
Superior	1980	1	2	3	2	0
	1981	2	1	0	2	0
	1982	0	1	0	3	0
	1983	0	1	2	2	0
	1984	0	3	0	4	0
	All	3	8	5	13	0
Huron	1980	0	5	3	0	0
	1981	0	7	0	0	0
	1982	1	3	1	0	0
	1983	0	4	1	0	0
	1984	0	1	1	0	0
	All	1	20	6	0	0
Erie	1980	0	21	12	0	0
	1981	0	14	13	0	0
	1982	0	17	4	0	0
	1983	0	11	9	0	0
	1984	0	15	5	0	1
	All	0	78	43	0	1
Ontario	1980	0	0	1	0	0
	1981	0	0	1	0	0
	1982	0	0	2	0	0
	1983	0	0	0	0	0
	1984	0	0	2	0	0
	All	0	0	6	0	0
Totals	1980	2	36	22	8	0
	1981	3	27	16	6	0
	1982	4	26	14	5	0
	1983	1	25	17	5	0
	1984	3	28	9	12	1
	All	13	142	78	36	1

TABLE 7

## NUMBERS OF CANADIAN DREDGING PROJECTS BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Superior	1980	0	2	1	0	0
	1981	0	2	0	0	0
	1982	0	1	0	0	0
	1983	0	2	0	0	0
	1984	0	1	0	0	0
	All	0	8	1	0	0
Huron	1980	0	0	0	0	0
	1981	0	0	1	0	2
	1982	0	1	3	0	1
	1983	0	1	1	0	1
	1984	0	1	0	0	3
	All	0	3	5	0	7
Erie	1980	0	1	1	1	0
	1981	0	0	0	0	0
	1982	0	0	0	1	0
	1983	0	0	1	1	2
	1984	0	3	0	0	1
	All	0	4	2	3	3
Ontario	1980	0	4	1	0	0
	1981	0	1	0	0	0
	1982	0	1	2	0	0
	1983	0	3	1	0	0
	1984	0	1	0	0	1
	All	0	10	4	0	1
Totals	1980	0	7	3	1	0
	1981	0	3	1	0	2
	1982	0	3	5	1	1
	1983	0	6	3	1	3
	1984	0	6	0	0	5
	All	0	25	12	3	11

TABLE 8  
U.S. AND CANADIAN DREDGING PROJECTS  
DREDGING QUANTITY (CMPM) BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Michigan	1980	36694.	805776.	48159.	139951.	0.
	1981	29053.	187956.	51247.	43716.	0.
	1982	57675.	389182.	308531.	23547.	0.
	1983	0.	528019.	191640.	68561.	0.
	1984	21023.	348915.	34483.	188682.	0.
	All	144445.	2259848.	634060.	464457.	0.
Superior	1980	29620.	312667.	35892.	5148.	0.
	1981	9939.	415110.	0.	99815.	0.
	1982	0.	217910.	0.	82640.	0.
	1983	0.	238690.	18159.	29341.	0.
	1984	0.	367535.	0.	60418.	0.
	All	39559.	1551912.	54051.	277362.	0.
Huron	1980	0.	704690.	69710.	0.	0.
	1981	0.	517824.	65000.	0.	19769.
	1982	8257.	531278.	207413.	0.	16112.
	1983	0.	877175.	35185.	0.	17178.
	1984	0.	577377.	11780.	0.	59844.
	All	8257.	3208344.	389088.	0.	112903.
Erie	1980	0.	2748193.	1005719.	175504.	0.
	1981	0.	1641130.	1355355.	0.	0.
	1982	0.	2387829.	211045.	36647.	0.
	1983	0.	1639977.	577587.	78841.	94684.
	1984	0.	1650896.	331816.	0.	61689.
	All	0.	10068030.	3481522.	290992.	156373.
Ontario	1980	0.	96282.	126323.	0.	0.
	1981	0.	102875.	82096.	0.	0.
	1982	0.	13866.	165838.	0.	0.
	1983	0.	214246.	31428.	0.	0.
	1984	0.	38924.	237407.	0.	4895.
	All	0.	466193.	643092.	0.	4895.
Totals	1980	66314.	4667608.	1285803.	320603.	0.
	1981	38992.	2864895.	1553698.	143531.	19769.
	1982	65932.	3540065.	892827.	142834.	16112.
	1983	0.	3498107.	853999.	176743.	111862.
	1984	21023.	2983647.	615486.	249100.	126428.
	All	192261.	17554320.	5201813.	1032811.	274171.

CMPM - Cubic Metres of Placed Material

TABLE 9  
U.S. DREDGING PROJECTS  
DREDGING QUANTITY (CMPM) BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Michigan	1980	36694.	805776.	48159.	139951.	0.
	1981	29053.	187956.	51247.	43716.	0.
	1982	57675.	389182.	308531.	23547.	0.
	1983	0.	528019.	191640.	68561.	0.
	1984	21023.	348915.	34483.	188682.	0.
	All	144445.	2259848.	634060.	464457.	0.
Superior	1980	29620.	148611.	25921.	5148.	0.
	1981	9939.	98099.	0.	99815.	0.
	1982	0.	69627.	0.	82640.	0.
	1983	0.	15062.	18159.	29341.	0.
	1984	0.	206320.	0.	60418.	0.
	All	39559.	537719.	44080.	277362.	0.
Huron	1980	0.	704690.	69710.	0.	0.
	1981	0.	517824.	0.	0.	0.
	1982	8257.	491492.	199260.	0.	0.
	1983	0.	820658.	33105.	0.	0.
	1984	0.	569809.	11780.	0.	0.
	All	8257.	3104473.	313855.	0.	0.
Erie	1980	0.	2623974.	974639.	0.	0.
	1981	0.	1641130.	1355355.	0.	0.
	1982	0.	2387829.	211045.	0.	0.
	1983	0.	1639977.	549729.	0.	0.
	1984	0.	1525762.	331816.	0.	29526.
	All	0.	9818672.	3422584.	0.	29526.
Ontario	1980	0.	0.	113676.	0.	0.
	1981	0.	0.	82096.	0.	0.
	1982	0.	0.	136260.	0.	0.
	1983	0.	0.	0.	0.	0.
	1984	0.	0.	237407.	0.	0.
	All	0.	0.	569439.	0.	0.
Totals	1980	66314.	4283051.	1232105.	145099.	0.
	1981	38992.	2445009.	1488698.	143531.	0.
	1982	65932.	3338130.	855096.	106187.	0.
	1983	0.	3003716.	792633.	97902.	0.
	1984	21023.	2650806.	615486.	249100.	29526.
	All	192261.	15720710.	4984018.	741819.	29526.

CMPM - Cubic Metres of Placed Material

TABLE 10  
CANADIAN DREDGING PROJECTS  
DREDGING QUANTITY (CMPM) BY DISPOSAL METHOD

BASIN	YEAR	UPLAND	CONFINED	OPEN WATER	BEACH	REUSE
Superior	1980	0.	164056.	9971.	0.	0.
	1981	0.	317011.	0.	0.	0.
	1982	0.	148283.	0.	0.	0.
	1983	0.	223628.	0.	0.	0.
	1984	0.	161215.	0.	0.	0.
	All	0.	1014193.	9971.	0.	0.
Huron	1980	0.	0.	0.	0.	0.
	1981	0.	0.	65000.	0.	19769.
	1982	0.	39786.	8153.	0.	16112.
	1983	0.	56517.	2080.	0.	17178.
	1984	0.	7568.	0.	0.	59844.
	All	0.	103871.	75233.	0.	112903.
Erie	1980	0.	124219.	31080.	175504.	0.
	1981	0.	0.	0.	0.	0.
	1982	0.	0.	0.	36647.	0.
	1983	0.	0.	27858.	78841.	94684.
	1984	0.	125134.	0.	0.	32163.
	All	0.	249353.	58938.	290992.	126847.
Ontario	1980	0.	96282.	12647.	0.	0.
	1981	0.	102875.	0.	0.	0.
	1982	0.	13866.	29578.	0.	0.
	1983	0.	214246.	31428.	0.	0.
	1984	0.	38924.	0.	0.	4895.
	All	0.	466193.	73653.	0.	4895.
Totals	1980	0.	384557.	53698.	175504.	0.
	1981	0.	419886.	65000.	0.	19769.
	1982	0.	201935.	37731.	36647.	16112.
	1983	0.	494391.	61366.	78841.	111862.
	1984	0.	332841.	0.	0.	96902.
	All	0.	1833610.	217795.	290992.	244645.

CMPM - Cubic Metres of Placed Material

TABLE 11

U.S. AND CANADIAN DREDGING PROJECTS  
DREDGING QUANTITY AND COST BY BASIN AND YEAR  
FOR OPEN LAKE DISPOSAL ONLY

BASIN	YEAR	N (TOTAL)	TOTAL QTY CMPM <sup>1</sup>	N (U.S.)	TOTAL U.S. QTY CMPM <sup>1</sup>	TOTAL COST U.S. <sup>2</sup>	N (CDN.)	TOTAL CDN. QTY CMPM <sup>1</sup>	TOTAL COST CDN. <sup>3</sup>
Michigan	1980	3	48159.	3	48159.	124736.70	0	0.	.00
	1981	2	51247.	2	51247.	211030.30	0	0.	.00
	1982	7	308531.	7	308531.	749299.00	0	0.	.00
	1983	5	191640.	5	191640.	546902.80	0	0.	.00
	1984	1	34483.	1	34483.	121035.30	0	0.	.00
	All	18	634060.	18	634060.	1753004.00	0	0.	.00
Superior	1980	4	35892.	3	25921.	155670.20	1	9971.	71672.00
	1981	0	0.	0	0.	.00	0	0.	.00
	1982	0	0.	0	0.	.00	0	0.	.00
	1983	2	18159.	2	18159.	323151.70	0	0.	.00
	1984	0	0.	0	0.	.00	0	0.	.00
	All	6	54051.	5	44080.	478821.80	1	9971.	71672.00
Huron	1980	3	69710.	3	69710.	416193.90	0	0.	.00
	1981	1	65000.	0	0.	.00	1	65000.	NA
	1982	4	207413.	1	199260.	567891.00	3	8153.	126845.50
	1983	2	35185.	1	33105.	98321.85	1	2080.	29744.00
	1984	1	11780.	1	11780.	95064.59	0	0.	.00
	All	11	389088.	6	313855.	1177471.00	5	75233.	156589.50
Erie	1980	13	1005719.	12	974639.	3156012.00	1	31080.	143836.80
	1981	13	1355355.	13	1355355.	3714785.00	0	0.	.00
	1982	4	211045.	4	211045.	863209.80	0	0.	.00
	1983	10	577587.	9	549729.	1752033.00	1	27858.	257775.90
	1984	5	331816.	5	331816.	1156951.00	0	0.	.00
	All	45	3481522.	43	3422584.	10642990.00	2	58938.	401612.70
Ontario	1980	2	126323.	1	113676.	317156.00	1	12647.	122430.40
	1981	1	82096.	1	82096.	237257.50	0	0.	.00
	1982	4	165838.	2	136260.	699477.80	2	29578.	205842.60
	1983	1	31428.	0	0.	.00	1	31428.	186707.80
	1984	2	237407.	2	237407.	909868.80	0	0.	.00
	All	10	643092.	6	569439.	2163760.00	4	73653.	514980.80
Totals	1980	25	1285803.	22	1232105.	4169769.00	3	53698.	337939.20
	1981	17	1553698.	16	1488698.	4163072.00	1	65000.	NA
	1982	19	892827.	14	855096.	2879878.00	5	37731.	332688.10
	1983	20	853999.	17	792633.	2720409.00	3	61366.	474227.70
	1984	9	615486.	9	615486.	2282920.00	0	0.	.00
	All	90	5201813.	78	4984018.	16216050.00	12	217795.	1144855.00

<sup>1</sup>Cubic metres of placed material<sup>2</sup>U.S. dollars<sup>3</sup>Canadian dollars

NA - Not available

TABLE 12

U.S. AND CANADIAN DREDGING PROJECTS  
DREDGING QUANTITY AND COST BY BASIN AND YEAR FOR  
CONFINED DISPOSAL ONLY (INCLUDING CONFINEMENT COSTS)

BASIN	YEAR	N (TOTAL)	TOTAL QTY CMPM <sup>1</sup>	N (U.S.)	TOTAL U.S. QTY CMPM <sup>1</sup>	TOTAL COST U.S. <sup>2</sup>	N (CDN.)	TOTAL CDN. QTY CMPM <sup>1</sup>	TOTAL COST CDN. <sup>3</sup>
Michigan	1980	8	805776.	8	805776.	6993080.00	0	0.	.00
	1981	5	187956.	5	187956.	1891601.00	0	0.	.00
	1982	5	389182.	5	389182.	2968365.00	0	0.	.00
	1983	9	528019.	9	528019.	4271754.00	0	0.	.00
	1984	9	348915.	9	348915.	4011904.00	0	0.	.00
	All	36	2259848.	36	2259848.	20136710.00	0	0.	.00
Superior	1980	4	312667.	2	148611.	1514283.00	2	164056.	784520.10
	1981	3	415110.	1	98099.	1113424.00	2	317011.	1530497.00
	1982	2	217910.	1	69627.	735957.40	1	148283.	775522.00
	1983	3	238690.	1	15062.	186467.60	2	223628.	1292204.00
	1984	4	367535.	3	206320.	2068907.00	1	161215.	828654.50
	All	16	1551912.	8	537719.	5619039.00	8	1014193.	5211398.00
Huron	1980	5	704690.	5	704690.	2013568.00	0	0.	.00
	1981	7	517824.	7	517824.	2357330.00	0	0.	.00
	1982	4	531278.	3	491492.	2167983.00	1	39786.	440934.40
	1983	5	877175.	4	820658.	3485613.00	1	56517.	281414.20
	1984	2	577377.	1	569809.	4581265.00	1	7568.	117734.10
	All	23	3208344.	20	3104473.	14605760.00	3	103871.	840082.70
Erie	1980	22	2748193.	21	2623974.	20190510.00	1	124219.	1887476.00
	1981	14	1641130.	14	1641130.	8641508.00	0	0.	.00
	1982	17	2387829.	17	2387829.	18526510.00	0	0.	.00
	1983	11	1639977.	11	1639977.	11164900.00	0	0.	.00
	1984	18	1650896.	15	1525762.	12801960.00	3	125134.	2474104.00
	All	82	10068030.	78	9818672.	71325380.00	4	249353.	4361580.00
Ontario	1980	4	96282.	0	0.	.00	4	96282.	305755.80
	1981	1	102875.	0	0.	.00	1	102875.	-
	1982	1	13866.	0	0.	.00	1	13866.	267752.50
	1983	3	214246.	0	0.	.00	3	214246.	906541.60
	1984	1	38924.	0	0.	.00	1	38924.	280975.50
	All	10	466193.	0	0.	.00	10	466193.	1761026.00
Totals	1980	43	4667608.	36	4283051.	30711430.00	7	384557.	2977752.00
	1981	30	2864895.	27	2445009.	14003860.00	3	419886.	1530497.00
	1982	29	3540065.	26	3338130.	24398820.00	3	201935.	1484209.00
	1983	31	3498107.	25	3003716.	19108740.00	6	494391.	2480160.00
	1984	34	2983647.	28	2650806.	23464040.00	6	332841.	3701468.00
	All	167	17554320.	142	15720710.	111686900.00	25	1833610.	12174090.00

<sup>1</sup>Cubic metres of placed material<sup>2</sup>U.S. dollars<sup>3</sup>Canadian dollars



## REFERENCES

- International Joint Commission (IJC) 1982. Guidelines and Register for Evaluation of Great Lakes Dredging Projects. Report of the Dredging Subcommittee to the Water Quality Programs Committee of the Great Lakes Water Quality Board. Windsor, Ontario, 365 pp.
- International Joint Commission (IJC) 1985. 1985 Report on Great Lakes Water Quality. Report of the Great Lakes Water Quality Board. Kingston, Ontario, 212 pp.
- International Joint Commission (IJC) 1987. 1987 Report on Great Lakes Water Quality. Report of the Great Lakes Water Quality Board. Toledo, Ohio, 236 pp.
- International Joint Commission (IJC) 1988. Procedures for the Assessment of Contaminated Sediment Problems in the Great Lakes. Report of the Sediment Subcommittee and its Assessment Work Group to the Great Lakes Water Quality Board. Windsor, Ontario, 140 pp.

REFERENCES

International Joint Commission (IJC) 1982. Guidelines and Regulations for the Control of Pollution in the Great Lakes Basin. Report of the Working Group on Water Quality Protection in the Great Lakes Basin. Windsor, Ontario. 102 pp.

International Joint Commission (IJC) 1985. 1985 Report on Great Lakes Water Quality. Report of the Great Lakes Water Quality Board. Kingston, Ontario. 212 pp.

International Joint Commission (IJC) 1987. 1987 Report on Great Lakes Water Quality. Report of the Great Lakes Water Quality Board. Toledo, Ohio. 252 pp.

International Joint Commission (IJC) 1988. Procedures for the Assessment of Contaminated Sediment Problems in the Great Lakes. Report of the Sediment Subcommittee and the Assessment Work Group to the Great Lakes Water Quality Board. Windsor, Ontario. 149 pp.



INDEX  
1901-1904  
DRESSING ROOMS

## DATA DISCUSSION

Information contained in the Dredging Register was obtained from Public Works Canada and the U.S. Army Corps of Engineers. Each dredging project is identified by a project name and further described by jurisdiction and basin. The data are organized by listing all dredging information for each project followed by the chemical summary data for these projects.

Items included in the dredging activities report are:

- o Fiscal or Calendar Year - In some cases the date range over which dredging occurred was not available. The year is included to indicate broadly the time of the dredging. The U.S. fiscal year is from October through September (e.g. fiscal year 1983 is from October 1982 through September 1983). All of the Canadian information is provided on a calendar year basis.
- o Beginning and Ending Date - Reported date range of when dredging was performed
- o Location - A further breakdown of the location of the dredging was included in some of the information received
- o Maximum Depth - Many of the dredging projects encompassed areas dredged at different depths. Unfortunately, the request for information contained only one depth field. For consistency, the maximum depth dredged is being reported
- o Equipment - A description of the equipment used to dredge the area
- o Total Quantity - The total quantity of dredged material in Cubic Metres of Placed Material (CMPM)
- o Pay Quantity - Amount of material approved (and paid for) in CMPM
- o Dredging Cost - Actual cost of dredging
- o Disposal Method
- o Latitude/Longitude - When material was not placed in a confined disposal facility (CDF), the location the material was placed
- o CDF Cost - Cost per CMPM in a CDF
- o Percent Confined - When it could be determined what percent of the dredged material was placed in a CDF, the information is provided.

The sample summary report is a statistical summary of selected compounds for each year analyses were performed. Dry density, material type, sample type, and analytical lab are also reported when the information was available. The list of parameters reflects those compounds in the previous dredging register and was requested for inclusion in this report. Definitions of statistics are included as an attachment to this report. Summary statistics flagged with an asterisk include data with a "less than" remark code qualifier. All data are reported in  $\mu\text{g/g}$  and are reported at three places after the decimal except for COD. One place after the decimal is used for COD. This reporting does not necessarily reflect accuracy. Additional information may be requested from:

Marine and Civil Resources  
Department of Public Works  
Ontario Region  
4900 Young Street  
Toronto, Ontario M2N 6A6

and

North Central Division  
U.S. Army Corps of Engineers  
536 South Clark Street  
Chicago, Illinois 60605

The summary pages of project, quantity and cost by year were produced from the individual values. The year in which dredging events were assigned is the year the event began. Several dredging events began in one year and concluded in the following year. In cases where the dates were missing, the fiscal or calendar year was used. When the fiscal year was used, the dredging was assumed to occur in the same calendar year. For example, if the fiscal year reported was 1981, the dredging was assumed to occur in calendar year 1981.

## DEFINITION OF STATISTICAL SUMMARY DATA

$n$             Number of data values reported

$x_i$             Observation  $i$   $\{ 1 \leq i \leq n \}$

Mean ( $\bar{x}$ )     $\frac{\sum_{i=1}^n x_i}{n}$

Median        when  $n$  is even     $\frac{x_{n/2} + x_{n/2+1}}{2}$

                  when  $n$  is odd     $x_{(n+1)/2}$

Std Dev         $\sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n - 1}}$

Let  $\chi$  be the set of all observations

Minimum     $\{ \text{Min} \in \chi \wedge \text{Min} \leq x_i \forall x_i \in \chi \}$

Maximum     $\{ \text{Max} \in \chi \wedge \text{Max} \geq x_i \forall x_i \in \chi \}$

DEFINITION OF STATISTICAL MEASURES

Let  $x_1, x_2, \dots, x_n$  be a set of  $n$  observations on a variable  $X$ . The mean, standard deviation, and other measures are defined as follows:

Number of data values reported	$n$
Observations $\{x_i\}_{i=1}^n$	$x_1, x_2, \dots, x_n$
Mean	$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$

The mean of a set of observations is the sum of the observations divided by the number of observations. It is a measure of central tendency. The standard deviation is a measure of dispersion, indicating how spread out the observations are from the mean.

where  $x_i$  is the  $i$ th observation

$$s = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2}$$

Standard Deviation

Let  $x$  be the set of all observations

$$\text{Minimum} = \min(x_1, x_2, \dots, x_n)$$

$$\text{Maximum} = \max(x_1, x_2, \dots, x_n)$$

FISCAL YEAR: 1984    Beginning Date: 10/1/84    Ending Date: 9/30/84  
 Maximum Depth (Feet): 7.4  
 Equipment: Hopper Dredge  
 Total Quantity (CY): 10,000  
 Dredging Cost (CY/HR): 1.50  
 Disposal Method: 01/02    Cost (CY/HR): 1.50

FISCAL YEAR: 1984    Beginning Date: 10/1/84    Ending Date: 9/30/84  
 Maximum Depth (Feet): 7.4  
 Equipment: Classifier & Turbine  
 Total Quantity (CY): 7,000  
 Dredging Cost (CY/HR): 1.20  
 Disposal Method: 01/02    Cost (CY/HR): 1.20

**LAKE MICHIGAN**  
**DREDGING PROJECTS**  
**1980-1984**

THE UNIVERSITY OF CHICAGO  
LIBRARY  
1984

PROJECT: CALUMET HARBOR AND RIVER  
JURISDICTION: ILLINOIS AND INDIANA  
BASIN: MICHIGAN

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/11/80 Ending Date: 08/30/80  
Maximum Depth (Meters): 7.1

Equipment: Hopper Dredge  
Total Quantity (M\*\*3): 36694.  
Dredging Cost (\$/CMPM): 5.11  
Disposal Method: UPLAND

Lat: 414340 Long: 873215

Fiscal Year: 1984 Beginning Date: 10/12/84 Ending Date: 11/27/84  
Maximum Depth (Meters): 7.1

Equipment: Clamshell 4 Cu Meter  
Total Quantity (M\*\*3): 75918.  
Dredging Cost (\$/CMPM): 9.28  
Disposal Method: CONFINED

CDF Cost (\$/CMCP): 7.69

PROJECT: CALUMET HARBOR AND RIVER  
 JURISDICTION: ILLINOIS AND INDIANA  
 BASIN: MICHIGAN

SAMPLE SUMMARY REPORT

Year: 1980  
 Material Type: SAND AND SILTY SAND  
 Analytical Lab: CORPS OF ENGINEERS LAB  
 Dry Density (Kg/L): 1.40  
 Sample Type: GRABS

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	Percent	0					
Oil & Grease	UG/G	0					
Total P	UG/G	0					
TKN	UG/G	0					
NH3	UG/G	0					
Total PCB	UG/G	2	1.475	1.025	0.750	2.200	1.475
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	UG/G	0					

Year: 1984  
 Material Type: SILT AND SILTY SAND  
 Analytical Lab: USGS, DAILY AND ASSOCIATES, CHICAGO  
 Dry Density (Kg/L): 2.50  
 Sample Type: GRAB

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	Percent	11	10.100	5.040	5.100	17.000	11.300
Oil & Grease	UG/G	11	5630.000	5060.000	0.000	15000.000	5500.000
Total P	UG/G	11	510.000	250.000	300.000	1000.000	400.000
TKN	UG/G	10	1620.000	1730.000	670.000	4900.000	810.000
NH3	UG/G	11	140.000	60.000	80.000	240.000	110.000
Total PCB	UG/G	10	4.420	5.620	0.690	19.000	1.750
Hg	UG/G	11	0.160	0.190	0.010	0.660	0.100
Pb	UG/G	11	297.300	150.100	50.000	520.000	320.000
As	UG/G	11	5.200	3.700	0.400	12.000	4.900
Cd	UG/G	11	2.900	1.500	0.880	5.000	2.700
Cu	UG/G	11	57.600	19.300	34.000	100.000	55.000
Zn	UG/G	11	1108.200	677.700	280.000	2300.000	1000.000
Cr	UG/G	11	34.700	12.000	23.000	60.000	34.000
Ni	UG/G	11	27.000	10.100	15.000	50.000	24.000
COD	UG/G	11	135000.0	90000.0	65000.0	290000.0	92000.0

PROJECT: WAUKEGAN HARBOR  
JURISDICTION: ILLINOIS AND INDIANA  
BASIN: MICHIGAN

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 05/29/82 Ending Date: 06/22/82  
Maximum Depth (Meters): 5.8

Equipment: CLAMSHELLS, 6 Cu Meter  
Total Quantity (M\*\*3): 65287  
Dredging Cost (\$/CMPM): 4.02  
Disposal Method: OPEN

Lat: 422150 Long: 874545

Calendar Year: 1984 Beginning Date: 09/04/84 Ending Date: 12/20/84  
Maximum Depth (Meters): 5.8

Equipment: BACKHOE  
Total Quantity (M\*\*3): 34483  
Dredging Cost (\$/CMPM): 3.51  
Disposal Method: OPEN

Lat: 421930 Long: 874945

PROJECT: WAUKEGAN HARBOR  
 JURISDICTION: ILLINOIS AND INDIANA  
 BASIN: MICHIGAN

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: FINE SAND  
 Analytical Lab: ENVIRO TEST INC, DOWNERS GROVE, IL  
 Dry Density (Kg/L): 1.67  
 Sample Type: CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	Percent	0					
Oil & Grease	UG/G	0					
Total P	UG/G	0					
TKN	UG/G	0					
NH3	UG/G	0					
Total PCB	UG/G	11	0.090	0.110	0.001	0.394	0.064
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	UG/G	0					

Year: 1984  
 Material Type: FINE SAND  
 Analytical Lab: ALLIED LABORATORIES LTD, VILLA PARK, IL  
 Dry Density (Kg/L): 1.30  
 Sample Type: PONAR GRAB

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	Percent	0					
Oil & Grease	UG/G	0					
Total P	UG/G	0					
TKN	UG/G	0					
NH3	UG/G	0					
Total PCB	UG/G	2	0.100	0.000	0.100	0.100	0.100
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	UG/G	0					

Project: Arcadia  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 06/23/80 Ending Date: 07/07/80  
Maximum Depth (Meters): 3.4  
Equipment: Hydraulic Dredge 10 Inch Contractor: King  
Total Quantity (M\*\*3): 8315.  
Dredging Cost (\$/M\*\*3): 4.75  
Disposal Method: Beach Lat: 403000.0 Long: 861500.0

Fiscal Year: 1981 Beginning Date: 06/02/81 Ending Date: 06/08/81  
Maximum Depth (Meters): 3.4  
Equipment: Hydraulic Dredge 10 Inch Contractor: C-Way  
Total Quantity (M\*\*3): 9062.  
Dredging Cost (\$/M\*\*3): 4.91  
Disposal Method: Beach Lat: 403000.0 Long: 861500.0

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 3.4  
Equipment: Hydraulic Dredge 10 Inch Contractor: C-Way  
Total Quantity (M\*\*3): 8945.  
Dredging Cost (\$/M\*\*3): 3.31  
Disposal Method: Beach Lat: 403000.0 Long: 861500.0

Fiscal Year: 1983 Beginning Date: 06/13/83 Ending Date: 06/17/83  
Maximum Depth (Meters): 3.4  
Equipment: Hydraulic Dredge 10 Inch Contractor: Harbor Marine  
Total Quantity (M\*\*3): 6055.  
Dredging Cost (\$/M\*\*3): 4.45  
Disposal Method: Beach Lat: 403000.0 Long: 861500.0

Fiscal Year: 1984 Beginning Date: 08/08/84 Ending Date: 08/17/84  
Maximum Depth (Meters): 3.4  
Equipment: Hydraulic Dredge 10 Inch Contractor: King  
Total Quantity (M\*\*3): 8234.  
Dredging Cost (\$/M\*\*3): 4.04  
Disposal Method: Beach Lat: 403000.0 Long: 861500.0

Project: Arcadia  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Sand  
 Analytical Lab: Environmental Protection Agency  
 Dry Density (Kg/L): 1.94  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.137	.119	.000	.210	.200
Vol Solids	PERCENT	3	.000	.000	.000	.000	.000
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Se	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	MG/G	3	.7	.0	.7	.7	.7

Project: Charlevoix  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 5.5  
Equipment: Crane Barge Bucket 3CuYd Contractor: RYBA Marine  
Total Quantity (M\*\*3): 688.  
Dredging Cost (\$/M\*\*3): 11.43  
Disposal Method: Upland Lat: 452000.0 Long: 831600.0

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Frankfort  
 Jurisdiction: Michigan  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: 03/01/82 Ending Date: 11/23/82  
 Maximum Depth (Meters): .0  
 Equipment: Contractor: A-Bird  
 Total Quantity (M\*\*3): 28289.  
 Dredging Cost (\$/M\*\*3): 6.22  
 Disposal Method: Upland Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L):  
 Material Type: Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.087	.060	.013	.140	.097
Vol Solids	PERCENT	4	15.550	13.100	.200	31.000	15.500
Total P	MG/G	4	.153	.092	.022	.230	.180
TKN	MG/G	4	1.885	1.441	.038	3.300	2.100
NH3	MG/G	4	.021	.024	.000	.046	.019
PCB-1016	UG/G	3	.000	.000	.000	.000	.000
PCB-1221	UG/G	3	.000	.000	.000	.000	.000
PCB-1232	UG/G	3	.000	.000	.000	.000	.000
PCB-1242	UG/G	3	.000	.000	.000	.000	.000
PCB-1248	UG/G	3	.000	.000	.000	.000	.000
PCB-1254	UG/G	3	.000	.000	.000	.000	.000
PCB-1260	UG/G	3	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	2	.050	.071	.000	.100	.050
Pb	UG/G	3	16.333	14.364	.000	27.000	22.000
As	UG/G	1	2.000	.000	2.000	2.000	2.000
Cd	UG/G	3	.800	.000	.800	.800	.800
Se	UG/G	0					
Cu	UG/G	3	14.000	2.000	12.000	16.000	14.000
Zn	UG/G	3	60.667	12.583	49.000	74.000	59.000
Cr	UG/G	3	24.667	8.021	17.000	33.000	24.000
Ni	UG/G	3	7.033	2.578	4.700	9.800	6.600
COD	MG/G	4	50.3	34.0	1.0	79.0	60.5

Project: Grand Haven  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 03/17/80 Ending Date: 04/01/80  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 48167.  
Dredging Cost (\$/M\*\*3): 3.74  
Disposal Method: Beach Lat: 430400.0 Long: 861530.0

Fiscal Year: 1981 Beginning Date: 12/15/80 Ending Date: 03/22/81  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 29485.  
Dredging Cost (\$/M\*\*3): 4.62  
Disposal Method: Confined (& Beach) Lat: 430400.0 Long: 861530.0  
Percent Confined: 50. CDF Cost (\$/M\*\*3): 2.52

Fiscal Year: 1982 Beginning Date: 12/15/81 Ending Date: 04/10/82  
Maximum Depth (Meters): 6.4  
Equipment: Hydraulic 14 Inch Contractor: Luedtke  
Total Quantity (M\*\*3): 58156.  
Dredging Cost (\$/M\*\*3): 7.32  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.52

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 6.4  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 14111.  
Dredging Cost (\$/M\*\*3): 3.21  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.52

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 32160.  
Dredging Cost (\$/M\*\*3): 3.21  
Disposal Method: Open Lat: 430400.0 Long: 861530.0

Fiscal Year: 1984 Beginning Date: 03/04/84 Ending Date: 03/31/84  
Maximum Depth (Meters): 7.0  
Equipment: Clam Shell Bucket 8CuYd Contractor: Canonie  
Total Quantity (M\*\*3): 19437.  
Dredging Cost (\$/M\*\*3): 6.97  
Disposal Method: Beach Lat: 430400.0 Long: 861530.0

Project: Grand Haven  
 Jurisdiction: Michigan  
 Basin: Michigan

Fiscal Year: 1984 Beginning Date: 06/19/84 Ending Date: 07/20/84

Maximum Depth (Meters): 7.0

Equipment: Contractor: Harbor Marine

Total Quantity (M\*\*3): 51981.

Dredging Cost (\$/M\*\*3): 4.35

Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.52

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): 1.80

Material Type: Sand Silt Sample Type: Ponar Grab

Analytical Lab: Environmental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	8	.665	.179	.360	.920	.690
Vol Solids	PERCENT	8	8.250	3.845	3.000	14.000	7.500
Total P	MG/G	8	.501	.121	.260	.650	.515
TKN	MG/G	8	3.188	1.215	1.400	5.300	3.250
NH3	MG/G	8	.143	.076	.034	.230	.160
PCB-1016	UG/G	4	.000	.000	.000	.000	.000
PCB-1221	UG/G	3	.000	.000	.000	.000	.000
PCB-1232	UG/G	3	.000	.000	.000	.000	.000
PCB-1242	UG/G	7	.000	.000	.000	.000	.000
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	8	.100	.076	.000	.200	.100
Pb	UG/G	8	45.037	21.164	7.300	63.000	54.500
As	UG/G	8	8.850	4.435	1.800	15.000	9.500
Cd	UG/G	8	3.338	.661	2.200	4.200	3.500
Se	UG/G	0					
Cu	UG/G	8	48.500	27.344	5.000	83.000	52.000
Zn	UG/G	8	160.500	82.716	24.000	240.000	190.000
Cr	UG/G	8	104.250	64.253	12.000	220.000	93.000
Ni	UG/G	8	55.000	27.449	8.000	79.000	64.000
COD	MG/G	8	39.0	19.5	.3	61.0	45.5

Project: Holland  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 04/10/80 Ending Date: 04/17/80  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 33157.  
Dredging Cost (\$/M\*\*3): 2.18  
Disposal Method: Open Lat: 424900.0 Long: 861300.0

Fiscal Year: 1981 Beginning Date: 12/08/80 Ending Date: 06/30/81  
Maximum Depth (Meters): 6.4  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 67617.  
Dredging Cost (\$/M\*\*3): 4.44  
Disposal Method: Confined (& Open) Lat: 424900.0 Long: 861300.0  
Percent Confined: 61. CDF Cost (\$/M\*\*3): 5.98

Fiscal Year: 1982 Beginning Date: 12/15/81 Ending Date: 04/10/82  
Maximum Depth (Meters): 6.4  
Equipment: Hopper Hydraulic 20 Inch Contractor: Luedtke  
Total Quantity (M\*\*3): 14148.  
Dredging Cost (\$/M\*\*3): 6.31  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 5.98

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 7594.  
Dredging Cost (\$/M\*\*3): 3.18  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 5.98

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 52807.  
Dredging Cost (\$/M\*\*3): 3.18  
Disposal Method: Beach Lat: 424900.0 Long: 861300.0

Fiscal Year: 1984 Beginning Date: 07/27/84 Ending Date: 08/18/84  
Maximum Depth (Meters): 6.4  
Equipment: Hydraulic 14 Inch Contractor: Harbor Marine  
Total Quantity (M\*\*3): 44790.  
Dredging Cost (\$/M\*\*3): 4.84  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 5.98

Project: Holland  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.90  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	9	.669	.469	.200	1.800	.630
Vol Solids	PERCENT	0					
Total P	MG/G	7	.374	.241	.120	.760	.300
TKN	MG/G	7	1.371	.335	.900	1.800	1.400
NH3	MG/G	0					
PCB-1016	UG/G	6	.000	.000	.000	.000	.000
PCB-1221	UG/G	6	.000	.000	.000	.000	.000
PCB-1232	UG/G	6	.000	.000	.000	.000	.000
PCB-1242	UG/G	6	.000	.000	.000	.000	.000
PCB-1248	UG/G	6	.000	.000	.000	.000	.000
PCB-1254	UG/G	6	.000	.000	.000	.000	.000
PCB-1260	UG/G	6	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	7	.043	.054	.000	.100	.000
Pb	UG/G	7	30.714	18.812	10.000	60.000	29.000
As	UG/G	7	1.671	1.215	.000	3.200	2.000
Cd	UG/G	7	4.786	6.647	.800	19.000	1.300
Se	UG/G	0					
Cu	UG/G	6	18.667	8.091	9.000	30.000	17.500
Zn	UG/G	0					
Cr	UG/G	6	43.500	11.862	28.000	56.000	46.000
Ni	UG/G	7	26.429	10.342	10.000	35.000	30.000
COD	MG/G	9	39.9	34.2	.6	87.0	39.0

Project: Leland  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/07/80 Ending Date: 08/20/80  
Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: King  
Total Quantity (M\*\*3): 11204.  
Dredging Cost (\$/M\*\*3): 4.73  
Disposal Method: Beach Lat: 450200.0 Long: 854500.0

Fiscal Year: 1981 Beginning Date: 06/24/81 Ending Date: 06/29/81  
Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: C-Way  
Total Quantity (M\*\*3): 10289.  
Dredging Cost (\$/M\*\*3): 4.53  
Disposal Method: Beach Lat: 450200.0 Long: 854500.0

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: C-Way  
Total Quantity (M\*\*3): 14602.  
Dredging Cost (\$/M\*\*3): 3.25  
Disposal Method: Beach Lat: 450200.0 Long: 854500.0

Fiscal Year: 1983 Beginning Date: 06/18/83 Ending Date: 06/24/83  
Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: Harbor Marine  
Total Quantity (M\*\*3): 9699.  
Dredging Cost (\$/M\*\*3): 7.43  
Disposal Method: Beach Lat: 450200.0 Long: 854500.0

Fiscal Year: 1984 Beginning Date: 08/20/84 Ending Date: 09/11/84  
Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: King  
Total Quantity (M\*\*3): 5428.  
Dredging Cost (\$/M\*\*3): 10.70  
Disposal Method: Beach Lat: 450200.0 Long: 854500.0

Project: Leland  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Sand  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Dry Density (Kg/L): 1.80  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.347	.094	.240	.420	.380
Vol Solids	PERCENT	3	1.767	.513	1.200	2.200	1.900
Total P	MG/G	3	.147	.050	.100	.200	.140
TKN	MG/G	3	.583	.153	.410	.700	.640
NH3	MG/G	0					
PCB-1016	UG/G	3	.000	.000	.000	.000	.000
PCB-1221	UG/G	3	.000	.000	.000	.000	.000
PCB-1232	UG/G	3	.000	.000	.000	.000	.000
PCB-1242	UG/G	3	.000	.000	.000	.000	.000
PCB-1248	UG/G	3	.000	.000	.000	.000	.000
PCB-1254	UG/G	3	.000	.000	.000	.000	.000
PCB-1260	UG/G	3	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	3	.000	.000	.000	.000	.000
Pb	UG/G	3	5.633	1.582	3.900	7.000	6.000
As	UG/G	3	.533	.306	.200	.800	.600
Cd	UG/G	3	1.000	.000	1.000	1.000	1.000
Se	UG/G	0					
Cu	UG/G	3	5.933	2.802	3.200	8.800	5.800
Zn	UG/G	3	68.433	99.235	9.300	183.000	13.000
Cr	UG/G	3	9.267	2.654	6.700	12.000	9.100
Ni	UG/G	3	7.733	2.301	5.400	10.000	7.800
COD	MG/G	3	13.3	4.1	8.9	17.0	14.0

Project: Ludington  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 05/16/81 Ending Date: 05/27/81  
Maximum Depth (Meters): 9.1  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 26140.  
Dredging Cost (\$/M\*\*3): 3.53  
Disposal Method: Open Lat: 435700.0 Long: 862800.0

Fiscal Year: 1982 Beginning Date: 03/15/82 Ending Date: 03/28/82  
Maximum Depth (Meters): 9.1  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 49465.  
Dredging Cost (\$/M\*\*3): 2.44  
Disposal Method: Open Lat: 435700.0 Long: 862500.0

Fiscal Year: 1983 Beginning Date: 05/13/83 Ending Date: 05/21/83  
Maximum Depth (Meters): 9.1  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 18826.  
Dredging Cost (\$/M\*\*3): 4.73  
Disposal Method: Open Lat: 435700.0 Long: 862500.0

Fiscal Year: 1984 Beginning Date: 05/13/84 Ending Date: 06/29/84  
Maximum Depth (Meters): 9.1  
Equipment: Crane Barge Bucket 8CuYd Contractor: Luedtke  
Total Quantity (M\*\*3): 33507.  
Dredging Cost (\$/M\*\*3): 4.71  
Disposal Method: Beach Lat: 435700.0 Long: 862500.0

Project: Ludington  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Sand  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Dry Density (Kg/L): 2.10  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.025	.030	.000	.052	.025
Vol Solids	PERCENT	4	.700	.872	.200	2.000	.300
Total P	MG/G	4	.060	.054	.025	.140	.037
TKN	MG/G	4	.072	.063	.026	.160	.051
NH3	MG/G	0					
PCB-1016	UG/G	4	.000	.000	.000	.000	.000
PCB-1221	UG/G	4	.000	.000	.000	.000	.000
PCB-1232	UG/G	4	.000	.000	.000	.000	.000
PCB-1242	UG/G	4	.000	.000	.000	.000	.000
PCB-1248	UG/G	4	.000	.000	.000	.000	.000
PCB-1254	UG/G	4	.000	.000	.000	.000	.000
PCB-1260	UG/G	4	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	4	.050	.058	.000	.100	.050
Pb	UG/G	4	.000	.000	.000	.000	.000
As	UG/G	4	2.000	.000	2.000	2.000	2.000
Cd	UG/G	4	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	4	1.725	.330	1.500	2.200	1.600
Zn	UG/G	4	5.425	2.364	3.600	8.800	4.650
Cr	UG/G	4	1.500	.000	1.500	1.500	1.500
Ni	UG/G	4	1.250	1.443	.000	2.500	1.250
COD	MG/G	4	6.4	9.7	1.0	21.0	1.9

Project: Manistee  
 Jurisdiction: Michigan  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/25/80 Ending Date: 05/27/80  
 Maximum Depth (Meters): 7.6  
 Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 8532.  
 Dredging Cost (\$/M\*\*3): 3.60  
 Disposal Method: Open Lat: 441700.0 Long: 862500.0

Fiscal Year: 1982 Beginning Date: 12/10/81 Ending Date: 12/18/81  
 Maximum Depth (Meters): 7.6  
 Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 25107.  
 Dredging Cost (\$/M\*\*3): 4.73  
 Disposal Method: Open Lat: 441700.0 Long: 862500.0

Fiscal Year: 1984 Beginning Date: 06/12/84 Ending Date: 06/27/84  
 Maximum Depth (Meters): 7.6  
 Equipment: Crane Barge Bucket Contractor: Luedtke  
 Total Quantity (M\*\*3): 20299.  
 Dredging Cost (\$/M\*\*3): 4.62  
 Disposal Method: Beach Lat: 441700.0 Long: 862500.0

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 2.00  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.079	.038	.050	.130	.069
Vol Solids	PERCENT	4	.750	.379	.200	1.000	.900
Total P	MG/G	4	.064	.028	.035	.100	.060
TKN	MG/G	4	.273	.217	.074	.520	.250
NH3	MG/G	0					
PCB-1016	UG/G	4	.000	.000	.000	.000	.000
PCB-1221	UG/G	4	.000	.000	.000	.000	.000
PCB-1232	UG/G	4	.000	.000	.000	.000	.000
PCB-1242	UG/G	4	.000	.000	.000	.000	.000
PCB-1248	UG/G	4	.000	.000	.000	.000	.000
PCB-1254	UG/G	4	.000	.000	.000	.000	.000
PCB-1260	UG/G	4	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	4	.000	.000	.000	.000	.000
Pb	UG/G	4	.900	1.800	.000	3.600	.000
As	UG/G	4	2.000	.000	2.000	2.000	2.000
Cd	UG/G	4	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	4	2.250	1.190	1.500	4.000	1.750
Zn	UG/G	4	18.825	27.491	3.000	60.000	6.150
Cr	UG/G	4	1.800	.600	1.500	2.700	1.500
Ni	UG/G	4	2.500	.000	2.500	2.500	2.500
COD	MG/G	4	6.5	4.4	1.7	11.0	6.7

Project: Muskegon  
 Jurisdiction: Michigan  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 03/30/80 Ending Date: 03/31/80  
 Maximum Depth (Meters): 8.8  
 Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 6470.  
 Dredging Cost (\$/M\*\*3): 3.36  
 Disposal Method: Open Lat: 431500.0 Long: 862500.0

Fiscal Year: 1982 Beginning Date: 07/04/82 Ending Date: 07/17/82  
 Maximum Depth (Meters): 8.8  
 Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 44689.  
 Dredging Cost (\$/M\*\*3): 3.72  
 Disposal Method: Open Lat: 431500.0 Long: 862500.0

Fiscal Year: 1984 Beginning Date: 06/30/84 Ending Date: 08/03/84  
 Maximum Depth (Meters): .0  
 Equipment: Contractor: Luedtke  
 Total Quantity (M\*\*3): 33961.  
 Dredging Cost (\$/M\*\*3): 4.31  
 Disposal Method: Beach Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 2.10  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.071	.049	.023	.120	.069
Vol Solids	PERCENT	0					
Total P	MG/G	3	.042	.037	.000	.070	.055
TKN	MG/G	3	.081	.030	.050	.110	.082
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Se	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	MG/G	3	1.4	.7	1.0	2.2	1.1

Project: New Buffalo  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1983 Beginning Date: 06/25/83 Ending Date: 07/08/83

Maximum Depth (Meters): .0

Equipment: Contractor: Harbor Marine

Total Quantity (M\*\*3): 17300.

Dredging Cost (\$/M\*\*3): 4.39

Disposal Method: Open Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Pentwater  
Jurisdiction: Michigan  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 07/09/80 Ending Date: 08/04/80

Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: King

Total Quantity (M\*\*3): 16154.

Dredging Cost (\$/M\*\*3): 4.51

Disposal Method: Beach Lat: 434800.0 Long: 862500.0

Fiscal Year: 1981 Beginning Date: 05/11/81 Ending Date: 05/20/81

Maximum Depth (Meters): 3.7

Equipment: Hydraulic 12 Inch Contractor: C-Way

Total Quantity (M\*\*3): 17652.

Dredging Cost (\$/M\*\*3): 3.26

Disposal Method: Beach Lat: 434800.0 Long: 862500.0

Fiscal Year: 1982 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 3.7

Equipment: Contractor: C-Way

Total Quantity (M\*\*3): 10707.

Dredging Cost (\$/M\*\*3): 4.65

Disposal Method: Open Lat: 434800.0 Long: 862500.0

Fiscal Year: 1983 Beginning Date: 06/02/83 Ending Date: 06/12/83

Maximum Depth (Meters): .0

Equipment: Contractor: Harbor Marine

Total Quantity (M\*\*3): 16285.

Dredging Cost (\$/M\*\*3): 3.70

Disposal Method: Open Lat: Long:

Fiscal Year: 1984 Beginning Date: 07/09/84 Ending Date: 08/03/84

Maximum Depth (Meters): .0

Equipment: Contractor: King

Total Quantity (M\*\*3): 15418.

Dredging Cost (\$/M\*\*3): 3.92

Disposal Method: Beach Lat: Long:

Project: Pentwater  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 2.10  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.071	.060	.030	.140	.044
Vol Solids	PERCENT	0					
Total P	MG/G	0					
TKN	MG/G	3	.019	.005	.015	.025	.016
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Se	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	MG/G	3	1.0	.0	1.0	1.0	1.0

Project: Portage Lake  
 Jurisdiction: Michigan  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/23/80 Ending Date: 09/10/80  
 Maximum Depth (Meters): 3.7  
 Equipment: Hydraulic 12 Inch Contractor: King  
 Total Quantity (M\*\*3): 7095.  
 Dredging Cost (\$/M\*\*3): 5.71  
 Disposal Method: Beach Lat: 442200.0 Long: 862000.0

Fiscal Year: 1981 Beginning Date: 06/12/81 Ending Date: 06/22/81  
 Maximum Depth (Meters): 3.7  
 Equipment: Hydraulic 12 Inch Contractor: C-Way  
 Total Quantity (M\*\*3): 6713.  
 Dredging Cost (\$/M\*\*3): 7.37  
 Disposal Method: Beach Lat: 442200.0 Long: 862000.0

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.80  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.150	.087	.050	.200	.200
Vol Solids	PERCENT	3	.233	.058	.200	.300	.200
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	0					
As	UG/G	0					
Cd	UG/G	0					
Se	UG/G	0					
Cu	UG/G	0					
Zn	UG/G	0					
Cr	UG/G	0					
Ni	UG/G	0					
COD	MG/G	3	1.0	.0	1.0	1.0	1.0

Project: Saugatuck  
 Jurisdiction: Michigan  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): .0  
 Equipment: Contractor: C-Way  
 Total Quantity (M\*\*3): 16667.  
 Dredging Cost (\$/M\*\*3): 3.18  
 Disposal Method: Open Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L):  
 Material Type: Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	0					
Vol Solids	PERCENT	2	1.500	.707	1.000	2.000	1.500
Total P	MG/G	2	.155	.021	.140	.170	.155
TKN	MG/G	2	.200	.028	.180	.220	.200
NH3	MG/G	0					
PCB-1016	UG/G	2	.000	.000	.000	.000	.000
PCB-1221	UG/G	2	.000	.000	.000	.000	.000
PCB-1232	UG/G	2	.000	.000	.000	.000	.000
PCB-1242	UG/G	2	.000	.000	.000	.000	.000
PCB-1248	UG/G	2	.000	.000	.000	.000	.000
PCB-1254	UG/G	2	.000	.000	.000	.000	.000
PCB-1260	UG/G	2	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	2	.000	.000	.000	.000	.000
Pb	UG/G	2	8.250	3.889	5.500	11.000	8.250
As	UG/G	2	1.100	1.273	.200	2.000	1.100
Cd	UG/G	2	.445	.629	.000	.890	.445
Se	UG/G	0					
Cu	UG/G	2	1.500	.000	1.500	1.500	1.500
Zn	UG/G	0					
Cr	UG/G	2	4.800	2.121	3.300	6.300	4.800
Ni	UG/G	2	3.150	.919	2.500	3.800	3.150
COD	MG/G	0					

Project: St. Joseph  
 Jurisdiction: Michigan  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): 1.90  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	9	1.254	1.286	.036	3.790	.940
Vol Solids	PERCENT	9	3.403	4.078	.090	11.800	1.180
Total P	MG/G	9	.740	.784	.049	2.069	.298
TKN	MG/G	9	2.071	1.827	.230	4.613	1.686
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	9	.200	.000	.200	.200	.200
Pb	UG/G	9	66.551	80.108	1.390	195.000	4.480
As	UG/G	9	5.147	6.663	.246	20.400	1.030
Cd	UG/G	9	.930	.884	.016	2.400	1.031
Se	UG/G	0					
Cu	UG/G	9	20.818	28.942	1.010	92.000	17.300
Zn	UG/G	0					
Cr	UG/G	9	2.442	1.886	.557	6.270	1.940
Ni	UG/G	9	2.481	2.093	.446	6.670	1.880
COD	MG/G	9	62.8	53.2	17.2	148.0	26.6

Project: Ashland  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 06/18/81 Ending Date: 10/01/81

Maximum Depth (Meters): .0

Equipment: Contractor: Roen

Total Quantity (M\*\*3): 29053.

Dredging Cost (\$/M\*\*3): 12.52

Disposal Method: Upland

Lat:

Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Green Bay  
 Jurisdiction: Wisconsin  
 Basin: Michigan

Fiscal Year: 1984 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 7.9

Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't

Total Quantity (M\*\*3): 40730.

Dredging Cost (\$/M\*\*3): 5.25

Disposal Method: Confined

CDF Cost (\$/M\*\*3): 4.63

SAMPLE SUMMARY REPORT

Year: 1982

Dry Density (Kg/L): 1.21

Material Type: Silt

Sample Type: Ponar Grab

Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	8	1.481	1.335	.258	3.400	.937
Vol Solids	PERCENT	8	.001	.000	.000	.001	.001
Total P	MG/G	8	.857	.492	.317	1.590	.634
TKN	MG/G	8	2.492	1.365	.989	5.250	2.220
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	6	.005	.004	.000	.009	.005
Hg	UG/G	8	.683	.605	.140	1.910	.490
Pb	UG/G	8	64.400	43.404	21.500	120.000	47.550
As	UG/G	8	2.851	1.306	.200	4.160	2.900
Cd	UG/G	8	9.525	6.124	2.460	19.000	9.410
Se	UG/G	0					
Cu	UG/G	8	42.200	27.088	10.800	79.900	36.200
Zn	UG/G	8	107.075	83.396	16.700	211.000	68.000
Cr	UG/G	8	52.400	34.163	23.600	106.000	31.750
Ni	UG/G	8	21.261	7.924	5.990	32.000	21.650
COD	MG/G	8	91.2	51.0	27.3	173.0	86.8

Project: Kenosha  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 05/30/80 Ending Date: 06/19/80  
Maximum Depth (Meters): 8.2  
Equipment: Crane Barge Bucket 3CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 8126.  
Dredging Cost (\$/M\*\*3): 5.93  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 8.43

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 8.2  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 37634.  
Dredging Cost (\$/M\*\*3): 2.90  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 8.43

Fiscal Year: 1984 Beginning Date: 04/16/84 Ending Date: 05/24/84  
Maximum Depth (Meters): 8.2  
Equipment: Crane Barge Bucket 3 CuY Contractor: Harbor Marine  
Total Quantity (M\*\*3): 38494.  
Dredging Cost (\$/M\*\*3): 3.44  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 8.43

Fiscal Year: 1984 Beginning Date: 11/30/83 Ending Date: 12/05/83  
Maximum Depth (Meters): 8.2  
Equipment: Contractor: Roen  
Total Quantity (M\*\*3): 3868.  
Dredging Cost (\$/M\*\*3): 12.00  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 8.43

Project: Kenosha  
 Jurisdiction: Wisconsin  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: Silt  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Dry Density (Kg/L): 1.50  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	2	.590	.382	.320	.861	.590
Vol Solids	PERCENT	5	.000	.000	.000	.001	.001
Total P	MG/G	3	.554	.278	.250	.796	.617
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	5	.001	.001	.000	.002	.002
Hg	UG/G	3	.094	.082	.017	.180	.085
Pb	UG/G	4	161.775	85.952	43.100	246.000	179.000
As	UG/G	4	9.962	6.017	1.350	14.700	11.900
Cd	UG/G	4	1.200	.283	1.000	1.600	1.100
Se	UG/G	0					
Cu	UG/G	4	62.800	51.734	9.200	122.000	60.000
Zn	UG/G	4	220.700	96.821	90.800	316.000	238.000
Cr	UG/G	4	63.975	28.801	24.000	92.700	69.600
Ni	UG/G	4	25.000	9.406	11.400	32.400	28.100
COD	MG/G	0					

Project: Kewaunee  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 6.1  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 92174.  
Dredging Cost (\$/M\*\*3): 3.36  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.08

Fiscal Year: 1983 Beginning Date: 06/24/83 Ending Date: 07/29/83  
Maximum Depth (Meters): 6.1  
Equipment: Hydraulic 14 Inch Contractor: Harbor Marine  
Total Quantity (M\*\*3): 67386.  
Dredging Cost (\$/M\*\*3): 3.24  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.08

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 6.1  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 63552.  
Dredging Cost (\$/M\*\*3): 3.93  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.08

Fiscal Year: 1984 Beginning Date: 07/31/84 Ending Date: 09/17/84  
Maximum Depth (Meters): 6.1  
Equipment: Crane Barge Bucket 2CuYd Contractor: Selvick  
Total Quantity (M\*\*3): 10599.  
Dredging Cost (\$/M\*\*3): 8.08  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.08

Project: Kewaunee  
 Jurisdiction: Wisconsin  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.50  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	13	.275	.051	.210	.371	.270
Vol Solids	PERCENT	13	.946	.904	.340	3.540	.620
Total P	MG/G	3	.418	.123	.276	.493	.485
TKN	MG/G	3	1.275	.418	.825	1.650	1.350
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	3	.000	.000	.000	.000	.000
Hg	UG/G	3	.120	.010	.110	.130	.120
Pb	UG/G	3	24.133	4.099	19.400	26.500	26.500
As	UG/G	3	1.263	1.842	.200	3.390	.200
Cd	UG/G	3	9.343	2.498	7.230	12.100	8.700
Se	UG/G	0					
Cu	UG/G	3	14.567	4.186	10.100	18.400	15.200
Zn	UG/G	3	26.467	7.508	17.800	31.000	30.600
Cr	UG/G	3	8.907	2.105	6.520	10.500	9.700
Ni	UG/G	3	17.433	5.208	12.400	22.800	17.100
COD	MG/G	13	8.7	13.9	1.0	44.5	2.0

Project: Manitowoc  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 05/27/81 Ending Date: 06/09/81

Maximum Depth (Meters): 7.6

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't

Total Quantity (M\*\*3): 32391.

Dredging Cost (\$/M\*\*3): 3.60

Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.85

Fiscal Year: 1982 Beginning Date: 03/29/82 Ending Date: 04/18/82

Maximum Depth (Meters): 7.6

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't

Total Quantity (M\*\*3): 35650.

Dredging Cost (\$/M\*\*3): 5.75

Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.85

Fiscal Year: 1983 Beginning Date: - Ending Date: -

Maximum Depth (Meters): .0

Equipment: Contractor: Luedtke

Total Quantity (M\*\*3): 10374.

Dredging Cost (\$/M\*\*3): 8.54

Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1983 Beginning Date: - Ending Date: -

Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't

Total Quantity (M\*\*3): 15984.

Dredging Cost (\$/M\*\*3): 4.86

Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1984 Beginning Date: 05/29/84 Ending Date: 06/08/84

Maximum Depth (Meters): .0

Equipment: Contractor: Harbor Marine

Total Quantity (M\*\*3): 14527.

Dredging Cost (\$/M\*\*3): 3.88

Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Manitowoc  
 Jurisdiction: Wisconsin  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.56  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	6	1.557	1.071	.410	3.390	1.250
Vol Solids	PERCENT	6	5.883	1.719	3.100	7.700	6.150
Total P	MG/G	6	.797	.413	.104	1.190	.974
TKN	MG/G	6	3.175	1.237	1.510	4.810	3.230
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	6	.000	.000	.000	.000	.000
Hg	UG/G	6	.409	.185	.252	.762	.361
Pb	UG/G	6	73.950	42.070	24.400	138.000	73.900
As	UG/G	6	1.785	.809	.460	2.520	2.095
Cd	UG/G	6	2.212	.954	1.000	3.100	2.655
Se	UG/G	0					
Cu	UG/G	6	47.500	31.799	24.300	110.000	38.700
Zn	UG/G	6	111.633	53.692	41.300	163.000	118.300
Cr	UG/G	6	28.950	10.658	15.100	46.000	28.200
Ni	UG/G	6	22.183	7.967	14.200	32.400	20.500
COD	MG/G	6	70.7	22.2	36.0	102.0	72.5

Project: Menominee  
 Jurisdiction: Wisconsin  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: 08/27/82 Ending Date: 08/29/82  
 Maximum Depth (Meters): 7.9  
 Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 4753.  
 Dredging Cost (\$/M\*\*3): 4.93  
 Disposal Method: Open Lat: 455600.0 Long: 873500.0

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.80  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	7	.776	1.128	.120	3.200	.234
Vol Solids	PERCENT	7	6.429	4.598	1.000	13.300	6.100
Total P	MG/G	7	.406	.193	.196	.813	.359
TKN	MG/G	7	1.113	1.083	.187	3.480	.797
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	6	.000	.000	.000	.000	.000
Hg	UG/G	7	.207	.176	.010	.460	.120
Pb	UG/G	7	20.686	15.588	2.190	41.000	24.300
As	UG/G	7	1.257	1.518	.100	4.600	.800
Cd	UG/G	6	1.067	.163	1.000	1.400	1.000
Se	UG/G	7	.200	.000	.200	.200	.200
Cu	UG/G	7	15.790	10.776	5.480	34.900	11.800
Zn	UG/G	7	37.943	22.179	18.500	83.600	33.900
Cr	UG/G	7	14.143	4.277	7.300	20.400	14.300
Ni	UG/G	7	7.043	4.316	4.000	13.400	4.000
COD	MG/G	7	80.2	66.1	4.5	208.0	73.5

Project: Milwaukee  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: - Ending Date: 05/15/82

Maximum Depth (Meters): .0

Equipment:

Contractor: Brennen

Total Quantity (M\*\*3): 70722.

Dredging Cost (\$/M\*\*3): 8.40

Disposal Method: Confined

CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: - Ending Date: -

Maximum Depth (Meters): .0

Equipment:

Contractor: Brennen

Total Quantity (M\*\*3): 63471.

Dredging Cost (\$/M\*\*3): 7.00

Disposal Method: Confined

CDF Cost (\$/M\*\*3):

Project: Milwaukee  
 Jurisdiction: Wisconsin  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1980  
 Material Type:  
 Analytical Lab:

Dry Density (Kg/L):  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	52	7.949	5.545	.998	23.300	7.505
Vol Solids	PERCENT	52	9.438	6.684	.000	44.300	9.450
Total P	MG/G	52	1.362	1.675	.141	8.900	1.012
TKN	MG/G	52	3.524	5.287	.220	28.400	1.925
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	52	.920	.720	.090	2.960	.755
Pb	UG/G	52	429.735	265.233	23.200	1180.000	442.000
As	UG/G	0					
Cd	UG/G	52	11.978	8.659	1.000	45.700	10.150
Se	UG/G	52	2.075	.491	2.000	5.530	2.000
Cu	UG/G	52	136.619	76.890	18.000	307.000	138.500
Zn	UG/G	52	564.421	376.137	59.000	1950.000	566.000
Cr	UG/G	52	389.904	482.258	15.000	2380.000	280.000
Ni	UG/G	0					
COD	MG/G	52	59.1	63.2	6.8	446.0	45.8

Year: 1984  
 Material Type:  
 Analytical Lab:

Dry Density (Kg/L):  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	29	4.181	9.074	.980	51.000	2.500
Vol Solids	PERCENT	29	4.276	.797	3.000	6.000	4.000
Total P	MG/G	29	.667	.224	.270	1.200	.630
TKN	MG/G	29	1.412	.489	.160	2.100	1.400
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	1	.017	.000	.017	.017	.017
PCB-1248	UG/G	27	.004	.004	.001	.020	.003
PCB-1254	UG/G	28	.000	.000	.000	.000	.000
PCB-1260	UG/G	28	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	29	.021	.082	.000	.400	.000
Pb	UG/G	29	356.552	324.789	100.000	1900.000	270.000
As	UG/G	29	6.303	1.827	3.700	11.000	6.100
Cd	UG/G	29	6.259	2.160	1.700	11.000	5.700
Se	UG/G	0					
Cu	UG/G	29	98.793	41.462	48.000	200.000	85.000
Zn	UG/G	29	621.724	963.513	270.000	5600.000	400.000
Cr	UG/G	29	399.310	170.481	150.000	850.000	370.000
Ni	UG/G	29	27.724	6.053	20.000	49.000	27.000
COD	MG/G	29	76.7	24.2	44.0	140.0	71.0

Project: Port Washington  
 Jurisdiction: Wisconsin  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 07/31/81 Ending Date: 09/30/81  
 Maximum Depth (Meters): 6.4  
 Equipment: Clam Shell Bucket 3CuYd Contractor: Gillen  
 Total Quantity (M\*\*3): 12539.  
 Dredging Cost (\$/M\*\*3): 20.74  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.99

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.40  
 Material Type: Silt Sample Type: Ponar Grab  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.889	.753	.333	1.980	.621
Vol Solids	PERCENT	4	2.378	.474	1.800	2.930	2.390
Total P	MG/G	4	.381	.141	.233	.572	.359
TKN	MG/G	4	.830	.269	.604	1.210	.753
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	4	.000	.000	.000	.000	.000
Hg	UG/G	4	.147	.080	.090	.260	.120
Pb	UG/G	4	134.275	200.156	25.200	434.000	38.950
As	UG/G	4	6.425	2.287	3.700	8.600	6.700
Cd	UG/G	4	2.850	1.878	1.000	4.850	2.775
Se	UG/G	0					
Cu	UG/G	4	29.900	4.039	25.200	33.700	30.350
Zn	UG/G	4	58.050	7.964	48.500	65.700	59.000
Cr	UG/G	4	23.600	3.550	20.300	28.500	22.800
Ni	UG/G	4	8.438	3.063	5.500	12.200	8.025
COD	MG/G	4	41.6	13.0	27.4	58.5	40.3

Project: Racine  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 1.2  
Equipment: Clam Shell Bucket 3/4CuY Contractor: Gillen  
Total Quantity (M\*\*3): 707.  
Dredging Cost (\$/M\*\*3): 32.48  
Disposal Method: Upland Lat: 424300.0 Long: 874700.0

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Contractor: Rental  
Total Quantity (M\*\*3): 0.  
Dredging Cost (\$/M\*\*3): .00  
Disposal Method: Upland Lat: Long:

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Contractor: Gillen  
Total Quantity (M\*\*3): 765.  
Dredging Cost (\$/M\*\*3): 34.50  
Disposal Method: Upland Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Sheboygan  
Jurisdiction: Wisconsin  
Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: - Ending Date: -

Maximum Depth (Meters): .0

Equipment: Contractor: Durocher

Total Quantity (M\*\*3): 28679.

Dredging Cost (\$/M\*\*3): 5.61

Disposal Method: Upland Lat: Long:

Fiscal Year: 1984 Beginning Date: 05/02/84 Ending Date: 06/15/84

Maximum Depth (Meters): 7.6

Equipment: Clam Shell Bucket 4CuYd Contractor: Gillen

Total Quantity (M\*\*3): 19570.

Dredging Cost (\$/M\*\*3): 16.91

Disposal Method: Upland Lat: 434400.0 Long: 874300.0

Project: Sheboygan  
 Jurisdiction: Wisconsin  
 Basin: Michigan

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type:  
 Analytical Lab:

Dry Density (Kg/L):  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	25	.831	.502	.250	1.780	.857
Vol Solids	PERCENT	28	5.455	3.113	.000	8.800	7.210
Total P	MG/G	28	.651	.430	.077	1.380	.721
TKN	MG/G	28	2.417	1.444	.271	4.280	2.970
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	28	.006	.005	.000	.017	.006
PCB-1248	UG/G	0					
PCB-1254	UG/G	28	.003	.002	.000	.008	.004
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	28	.184	.093	.050	.350	.190
Pb	UG/G	28	119.721	64.422	22.500	217.000	125.500
As	UG/G	28	5.392	2.621	1.700	10.500	5.215
Cd	UG/G	28	1.893	.555	1.200	3.500	1.950
Se	UG/G	0					
Cu	UG/G	28	45.836	25.734	2.900	85.900	55.050
Zn	UG/G	28	125.932	69.262	21.600	211.000	157.000
Cr	UG/G	28	70.241	42.768	8.850	226.000	66.150
Ni	UG/G	28	32.521	18.596	5.600	62.000	34.850
COD	MG/G	28	72.5	42.8	7.7	168.0	90.3

Year: 1984  
 Material Type: Sand  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Dry Density (Kg/L): 1.90  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	12	.408	.228	.200	1.000	.400
Vol Solids	PERCENT	12	8.167	1.528	5.000	10.000	8.500
Total P	MG/G	12	.527	.118	.190	.620	.540
TKN	MG/G	12	2.592	.678	1.200	3.500	2.650
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	12	.014	.012	.002	.038	.012
PCB-1248	UG/G	0					
PCB-1254	UG/G	12	.002	.001	.000	.005	.002
PCB-1260	UG/G	12	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	12	.108	.029	.100	.200	.100
Pb	UG/G	12	166.833	107.726	75.000	430.000	120.000
As	UG/G	12	5.375	1.023	3.600	7.400	5.350
Cd	UG/G	12	5.000	.000	5.000	5.000	5.000
Se	UG/G	0					
Cu	UG/G	12	128.500	224.315	49.000	840.000	64.500
Zn	UG/G	12	176.917	37.845	93.000	230.000	180.000
Cr	UG/G	12	74.500	35.824	40.000	150.000	60.000
Ni	UG/G	12	33.750	9.411	25.000	53.000	32.000
COD	MG/G	12	44.5	8.5	29.0	60.0	44.5

Project: Two Rivers  
 Jurisdiction: Wisconsin  
 Basin: Michigan

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 09/01/80 Ending Date: 09/10/81  
 Maximum Depth (Meters): 5.5

Equipment: Dragline Bucket 5CuYd Contractor: Durocher  
 Total Quantity (M\*\*3): 12157.  
 Dredging Cost (\$/M\*\*3): 15.79  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.85

Fiscal Year: 1981 Beginning Date: 09/01/80 Ending Date: 09/10/81  
 Maximum Depth (Meters): 5.5

Equipment: Dragline Bucket 5CuYd Contractor: Durocher  
 Total Quantity (M\*\*3): 163818.  
 Dredging Cost (\$/M\*\*3): 8.05  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.85

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.45  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	9	1.000	1.251	.000	3.800	.900
Vol Solids	PERCENT	9	3.067	.673	2.100	4.100	2.900
Total P	MG/G	9	.336	.064	.220	.430	.360
TKN	MG/G	9	.255	.238	.093	.870	.190
NH3	MG/G	0					
PCB-1016	UG/G	2	.000	.000	.000	.000	.000
PCB-1221	UG/G	5	.000	.000	.000	.000	.000
PCB-1232	UG/G	5	.000	.000	.000	.000	.000
PCB-1242	UG/G	5	.000	.000	.000	.000	.000
PCB-1248	UG/G	2	.000	.000	.000	.000	.000
PCB-1254	UG/G	5	.000	.000	.000	.000	.000
PCB-1260	UG/G	5	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	9	.000	.000	.000	.000	.000
Pb	UG/G	5	19.200	9.392	9.000	27.000	24.000
As	UG/G	6	18.167	3.430	15.000	24.000	17.500
Cd	UG/G	5	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	5	37.800	3.701	32.000	42.000	39.000
Zn	UG/G	5	86.200	10.426	71.000	99.000	89.000
Cr	UG/G	5	40.000	20.724	29.000	77.000	32.000
Ni	UG/G	5	27.000	5.148	21.000	35.000	26.000
COD	MG/G	9	15.6	10.9	5.1	38.0	14.0





Project: Big Bay  
 Jurisdiction: Michigan  
 Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/19/80 Ending Date: 08/25/80  
 Maximum Depth (Meters): 3.7  
 Equipment: Crane Barge Bucket 3CuYd Contractor: Gov't  
 Total Quantity (M\*\*3): 3412.  
 Dredging Cost (\$/M\*\*3): 5.73  
 Disposal Method: Beach Lat: 465000.0 Long: 875500.0

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): 1.77  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	1.524	.690	.837	2.470	1.395
Vol Solids	PERCENT	4	2.800	2.121	.500	5.600	2.550
Total P	MG/G	4	.172	.134	.026	.328	.167
TKN	MG/G	4	.978	1.509	.076	3.220	.308
NH <sub>3</sub>	MG/G	4	.020	.020	.002	.046	.015
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	4	.000	.000	.000	.000	.000
Hg	UG/G	4	.010	.000	.010	.010	.010
Pb	UG/G	4	7.242	7.377	1.130	16.000	5.920
As	UG/G	4	6.068	3.509	2.860	10.300	5.555
Cd	UG/G	4	2.950	.681	2.000	3.600	3.100
Se	UG/G	0					
Cu	UG/G	4	9.150	9.400	2.200	22.800	5.800
Zn	UG/G	4	28.350	18.380	12.700	52.700	24.000
Cr	UG/G	4	7.750	3.485	5.000	12.800	6.600
Ni	UG/G	4	11.550	3.323	8.500	16.100	10.800
COD	MG/G	4	60.1	77.6	5.5	175.0	29.9

Project: Black River  
Jurisdiction: Michigan  
Basin: Superior

### DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/30/80 Ending Date: 09/10/80  
Maximum Depth (Meters): 3.7  
Equipment: Crane Barge Bucket 3CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 3935.  
Dredging Cost (\$/M\*\*3): 9.14  
Disposal Method: Open Lat: 463800.0 Long: 901500.0

### SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Grand Traverse  
 Jurisdiction: Michigan  
 Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/26/80 Ending Date: 08/29/80  
 Maximum Depth (Meters): 3.7  
 Equipment: Crane Barge Bucket 3 CuY Contractor: Gov't  
 Total Quantity (M\*\*3): 1736.  
 Dredging Cost (\$/M\*\*3): 7.61  
 Disposal Method: Beach Lat: 471700.0 Long: 881500.0

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): 3.7  
 Equipment: Hydraulic 12 Inch Contractor: Iowa  
 Total Quantity (M\*\*3): 3113.  
 Dredging Cost (\$/M\*\*3): 11.50  
 Disposal Method: Beach Lat: 471700.0 Long: 881500.0

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.67  
 Material Type: Sand Sample Type:  
 Analytical Lab: Enviromental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	7	.214	.334	.000	.900	.000
Vol Solids	PERCENT	7	1.727	1.816	.190	5.100	.900
Total P	MG/G	7	.146	.048	.090	.200	.140
TKN	MG/G	7	.296	.329	.013	.910	.150
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	7	.057	.151	.000	.400	.000
Pb	UG/G	7	10.800	9.435	3.400	27.000	5.800
As	UG/G	7	.829	.814	.000	2.300	.500
Cd	UG/G	7	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	7	114.286	132.003	23.000	380.000	33.000
Zn	UG/G	7	30.386	20.414	6.500	54.000	25.000
Cr	UG/G	7	6.686	6.094	2.200	19.000	4.800
Ni	UG/G	7	7.614	5.287	4.400	19.000	4.800
COD	MG/G	7	5.6	9.8	.0	27.0	1.1

Project: Lac Labelle  
 Jurisdiction: Michigan  
 Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): .0  
 Equipment: Contractor: Iowa  
 Total Quantity (M\*\*3): 2103.  
 Dredging Cost (\$/M\*\*3): 4.02  
 Disposal Method: Open Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L):  
 Material Type: Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	0					
Vol Solids	PERCENT	0					
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	3	.000	.000	.000	.000	.000
Hg	UG/G	3	.139	.051	.097	.196	.124
Pb	UG/G	3	5.000	.000	5.000	5.000	5.000
As	UG/G	3	.570	.149	.400	.680	.630
Cd	UG/G	3	1.433	.751	1.000	2.300	1.000
Se	UG/G	0					
Cu	UG/G	3	2.000	.000	2.000	2.000	2.000
Zn	UG/G	3	4.497	.647	3.800	5.080	4.610
Cr	UG/G	3	13.300	8.089	4.000	18.700	17.200
Ni	UG/G	3	7.547	7.794	.040	15.600	7.000
COD	MG/G	0					

Project: Little Lake  
Jurisdiction: Michigan  
Basin: Superior

#### DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Crane Barge Bucket 3CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 14470.  
Dredging Cost (\$/M\*\*3): 5.93  
Disposal Method: Open Lat: Long:

Fiscal Year: 1981 Beginning Date: 07/27/81 Ending Date: 08/27/81  
Maximum Depth (Meters): .0  
Equipment: Bucket 2.5CuYd 10" Hyd Contractor: King  
Total Quantity (M\*\*3): 16391.  
Dredging Cost (\$/M\*\*3): 6.37  
Disposal Method: Beach Lat: Long:

Fiscal Year: 1982 Beginning Date: 07/26/82 Ending Date: 09/12/82  
Maximum Depth (Meters): .0  
Equipment: Hydraulic Contractor: Iowa  
Total Quantity (M\*\*3): 12620.  
Dredging Cost (\$/M\*\*3): 5.64  
Disposal Method: Beach Lat: Long:

Fiscal Year: 1983 Beginning Date: 07/13/83 Ending Date: 09/09/83  
Maximum Depth (Meters): .0  
Equipment: Bucket/Hydraulic Contractor: Twin City  
Total Quantity (M\*\*3): 9610.  
Dredging Cost (\$/M\*\*3): 9.88  
Disposal Method: Beach Lat: Long:

Fiscal Year: 1984 Beginning Date: 07/17/84 Ending Date: 09/08/84  
Maximum Depth (Meters): .0  
Equipment: Hydraulic Contractor: Durocher  
Total Quantity (M\*\*3): 14137.  
Dredging Cost (\$/M\*\*3): 7.75  
Disposal Method: Beach Lat: Long:

#### SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Ontonagon  
Jurisdiction: Michigan  
Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 07/25/80 Ending Date: 10/31/80  
Maximum Depth (Meters): 7.0  
Equipment: Clam Shell Bucket 2.5CuY Contractor: Lakeshore  
Total Quantity (M\*\*3): 29620.  
Dredging Cost (\$/M\*\*3): 7.40  
Disposal Method: Upland Lat: 464300.0 Long: 891800.0

Fiscal Year: 1981 Beginning Date: 05/21/81 Ending Date: 09/15/81  
Maximum Depth (Meters): 7.0  
Equipment: Hydraulic 12 Inch Contractor: C-Way  
Total Quantity (M\*\*3): 83424.  
Dredging Cost (\$/M\*\*3): 6.16  
Disposal Method: Beach Lat: 464300.0 Long: 891800.0

Fiscal Year: 1982 Beginning Date: 08/04/82 Ending Date: 08/25/82  
Maximum Depth (Meters): 7.0  
Equipment: Hydraulic 16 Inch Contractor: Zenith  
Total Quantity (M\*\*3): 66907.  
Dredging Cost (\$/M\*\*3): 5.29  
Disposal Method: Beach Lat: 464300.0 Long: 891300.0

Fiscal Year: 1983 Beginning Date: 06/27/83 Ending Date: 07/22/83  
Maximum Depth (Meters): 7.0  
Equipment: Clam Shell Bucket 4 CuYd Contractor: Zenith  
Total Quantity (M\*\*3): 19731.  
Dredging Cost (\$/M\*\*3): 9.29  
Disposal Method: Beach Lat: 464300.0 Long: 891300.0

Fiscal Year: 1984 Beginning Date: 05/30/84 Ending Date: 06/08/84  
Maximum Depth (Meters): 7.0  
Equipment: Hydraulic 16 Inch Contractor: Zenith  
Total Quantity (M\*\*3): 21323.  
Dredging Cost (\$/M\*\*3): 6.29  
Disposal Method: Beach Lat: 464300.0 Long: 891300.0

Project: Ontonagon  
 Jurisdiction: Michigan  
 Basin: Superior

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Sand  
 Analytical Lab: Envirodyne Engineers - St. Louis, MO

Dry Density (Kg/L): 1.55  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.000	.000	.000	.000	.000
Vol Solids	PERCENT	4	10.650	1.446	8.600	12.000	11.000
Total P	MG/G	4	.145	.029	.110	.179	.145
TKN	MG/G	4	.189	.250	.006	.559	.097
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	4	.000	.000	.000	.000	.000
Pb	UG/G	4	.000	.000	.000	.000	.000
As	UG/G	4	.465	.216	.240	.720	.450
Cd	UG/G	4	670.000	311.127	310.000	930.000	720.000
Se	UG/G	0					
Cu	UG/G	4	7.125	2.208	5.200	10.000	6.650
Zn	UG/G	4	10.650	1.446	8.600	12.000	11.000
Cr	UG/G	4	5.400	1.061	4.200	6.600	5.400
Ni	UG/G	4	3.075	2.377	.000	5.400	3.450
COD	MG/G	4	4.2	1.4	2.8	5.7	4.1

Project: Presque Isle  
 Jurisdiction: Michigan  
 Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1984 Beginning Date: 07/07/84 Ending Date: 08/31/84  
 Maximum Depth (Meters): 9.1  
 Equipment: Clam Shell Bucket 2.5CuY Contractor: Busch Ocean  
 Total Quantity (M\*\*3): 6346.  
 Dredging Cost (\$/M\*\*3): 13.52  
 Disposal Method: Beach Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 2.10  
 Material Type: Sand Gravel Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.275	.206	.000	.500	.300
Vol Solids	PERCENT	4	4.645	5.623	.780	13.000	2.400
Total P	MG/G	4	.255	.100	.120	.340	.280
TKN	MG/G	4	.425	.218	.099	.560	.520
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	4	.000	.000	.000	.000	.000
Pb	UG/G	4	9.325	3.891	5.600	14.000	8.850
As	UG/G	4	1.660	1.059	.340	2.700	1.800
Cd	UG/G	4	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	4	17.450	9.564	3.800	26.000	20.000
Zn	UG/G	4	33.750	15.479	11.000	44.000	40.000
Cr	UG/G	4	24.500	10.661	12.000	38.000	24.000
Ni	UG/G	4	38.250	19.449	11.000	57.000	42.500
COD	MG/G	4	22.8	11.6	7.0	35.0	24.5

Project: Whitefish Point  
Jurisdiction: Michigan  
Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Crane Barge Bucket 3CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 7516.  
Dredging Cost (\$/M\*\*3): 4.51  
Disposal Method: Open Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Cornucopia  
 Jurisdiction: Wisconsin  
 Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 04/23/81 Ending Date: 06/30/81  
 Maximum Depth (Meters): 3.0  
 Equipment: Crane Barge Bucket 3CuYd Contractor: King  
 Total Quantity (M\*\*3): 4052.  
 Dredging Cost (\$/M\*\*3): 7.82  
 Disposal Method: Upland Lat: 465200.0 Long: 910700.0

SAMPLE SUMMARY REPORT

Year: 1984 Dry Density (Kg/L): 1.60  
 Material Type: Sand Silt Sample Type: Ponar Grab  
 Analytical Lab: Environmental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.207	.015	.200	.230	.200
Vol Solids	PERCENT	4	3.500	2.082	1.000	6.000	3.500
Total P	MG/G	4	.103	.056	.036	.170	.104
TKN	MG/G	4	.745	.590	.030	1.400	.775
NH3	MG/G	4	.014	.012	.001	.029	.013
PCB-1016	UG/G	4	.000	.000	.000	.000	.000
PCB-1221	UG/G	4	.000	.000	.000	.000	.000
PCB-1232	UG/G	4	.000	.000	.000	.000	.000
PCB-1242	UG/G	4	.000	.000	.000	.000	.000
PCB-1248	UG/G	4	.000	.000	.000	.000	.000
PCB-1254	UG/G	4	.000	.000	.000	.000	.000
PCB-1260	UG/G	4	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	4	.100	.000	.100	.100	.100
Pb	UG/G	4	5.250	4.500	3.000	12.000	3.000
As	UG/G	4	1.050	.904	.000	2.200	1.000
Cd	UG/G	4	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	4	6.000	4.320	2.000	12.000	5.000
Zn	UG/G	4	20.000	13.292	7.000	38.000	17.500
Cr	UG/G	4	11.500	8.021	2.000	21.000	11.500
Ni	UG/G	4	5.000	4.546	.000	11.000	4.500
COD	MG/G	4	27.6	21.0	1.5	52.0	28.5

Project: Duluth-Superior  
Jurisdiction: Wisc & Minn  
Basin: Superior

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 04/30/80 Ending Date: 06/03/80

Maximum Depth (Meters): 8.5  
Equipment: Dipper Bucket 5 CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 146031.  
Dredging Cost (\$/M\*\*3): 8.25  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1980 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 8.5  
Equipment: Crane Bucket 3CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 2580.  
Dredging Cost (\$/M\*\*3): 36.45  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1981 Beginning Date: 05/09/81 Ending Date: 09/26/81

Maximum Depth (Meters): 8.5  
Equipment: Dipper Bucket 5CuYd Contractor: Luedtke  
Total Quantity (M\*\*3): 98099.  
Dredging Cost (\$/M\*\*3): 9.90  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1982 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 7.6  
Equipment: Crane Bucket 3.5CuYd Contractor: Gov't  
Total Quantity (M\*\*3): 69627.  
Dredging Cost (\$/M\*\*3): 9.12  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1983 Beginning Date: 09/08/83 Ending Date: 11/01/83

Maximum Depth (Meters): 8.5  
Equipment: Crane Bucket 3CuYd Contractor: Durocher  
Total Quantity (M\*\*3): 15062.  
Dredging Cost (\$/M\*\*3): 10.93  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1983 Beginning Date: 08/23/83 Ending Date: 11/16/83

Maximum Depth (Meters): 8.5  
Equipment: Contractor: Zenith  
Total Quantity (M\*\*3): 16056.  
Dredging Cost (\$/M\*\*3): 19.60  
Disposal Method: Open Lat: Long:

Project: Duluth-Superior  
Jurisdiction: Wisc & Minn  
Basin: Superior

Fiscal Year: 1984 Beginning Date: 08/15/84 Ending Date: 05/29/85

Maximum Depth (Meters): 8.5  
Equipment: Contractor: Durocher  
Total Quantity (M\*\*3): 18612.  
Dredging Cost (\$/M\*\*3): 8.67  
Disposal Method: Beach Lat: Long:

Fiscal Year: 1984 Beginning Date: 08/20/84 Ending Date: 07/03/86

Maximum Depth (Meters): 8.5  
Equipment: Crane Bucket 3CuYd Contractor: Durocher  
Total Quantity (M\*\*3): 82962.  
Dredging Cost (\$/M\*\*3): 8.37  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1984 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 8.5  
Equipment: Contractor: Durocher  
Total Quantity (M\*\*3): 56012.  
Dredging Cost (\$/M\*\*3): 10.71  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Fiscal Year: 1984 Beginning Date: - Ending Date: -

Maximum Depth (Meters): 8.5  
Equipment: Contractor: Zenith  
Total Quantity (M\*\*3): 67346.  
Dredging Cost (\$/M\*\*3): 7.06  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.45

Project: Duluth-Superior  
 Jurisdiction: Wisc & Minn  
 Basin: Superior

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Sand Mud  
 Analytical Lab: Environmental Protection Agency  
 Dry Density (Kg/L): 1.60  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	37	.574	.560	.200	2.690	.370
Vol Solids	PERCENT	37	3.607	2.888	.210	12.000	2.610
Total P	MG/G	37	.437	.207	.044	.964	.456
TKN	MG/G	37	.893	.640	.053	2.140	.857
NH3	MG/G	27	.088	.050	.020	.217	.070
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	27	.341	.237	.090	1.000	.240
Pb	UG/G	27	19.057	21.234	2.340	87.000	10.700
As	UG/G	27	16.267	7.202	.200	27.200	17.700
Cd	UG/G	27	1.619	.658	1.000	3.170	1.360
Se	UG/G	0					
Cu	UG/G	27	18.561	12.161	4.680	43.500	14.200
Zn	UG/G	27	89.444	51.184	21.000	194.000	81.100
Cr	UG/G	27	17.499	9.267	4.130	42.200	16.300
Ni	UG/G	27	22.385	9.519	7.720	40.700	23.600
COD	MG/G	37	43.7	35.6	2.2	117.0	37.2

PROJECT: THUNDER BAY CENT'L KAM & U. MISSION RIV2  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 06/27/84 Ending Date: 09/24/84  
 Maximum Depth (Meters): 7.6

Equipment: CLAMSHELL  
 Total Quantity (M\*\*3): 161,215.00 Pay Quantity (M\*\*3): 135,845.00  
 Dredging Cost (\$/CMPM): 4.10  
 Disposal Method: CONFINED (& OPEN) Lat: 481957 Long: 890930  
 CDF Cost (\$/CMPM): 2.00

SAMPLE SUMMARY REPORT

Year: < 1983 Dry Density (Kg/L): 1.50  
 Material Type: CLASS 'B' V. FINE SAND, SILT Sample Type: UNDISTURBED CORE  
 Analytical Lab: ENVIRONMENTAL APPLICATIONS GROUP LTD.

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	573.000	306.000	230.000	840.000	610.000
Vol Solids		0					
Total P	UG/G	4	799.000	53.000	725.000	850.000	810.000
TKN	UG/G	4	295.000	24.000	270.000	320.000	295.000
NH3		0					
PCB		0					
Hg	UG/G	4	0.603	8.300	0.510	0.710	0.600
Pb	UG/G	4	22.000	3.370	18.000	26.000	22.000
As		0					
Cd		0					
Cu	UG/G	4	44.000	0.816	43.000	45.000	44.000
Zn	UG/G	4	9.7000	7.0700	33.0000	106.0000	96.0000
Cr	UG/G	4	122.750	8.420	113.000	133.000	122.500
Ni	UG/G	4	38.000	4.090	33.000	43.000	38.000
COD	UG/G	4	62680.0	6810.0	54400.0	68700.0	63800.0

PROJECT: THUNDER BAY STAGE II DREDGING-MARINA IMP  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 11/22/80 Ending Date: 05/15/81  
 Maximum Depth (Meters): 2.1

Equipment: CLAM AND SCOW

Total Quantity (M\*\*3): 9,971.00 Pay Quantity (M\*\*3): 8,959.00

Dredging Cost (\$/CMPM): 8.00

Disposal Method: OPEN

Lat: 481957 Long: 890930

SAMPLE SUMMARY REPORT

Year: 1980  
 Material Type: MIXED CLASS 'B'  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.60  
 Sample Type: CORES

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	1860.000	2070.000	290.000	4200.000	110.000
Vol Solids	%	3	9.180	6.340	5.250	16.500	5.800
Total P	UG/G	3	540.000	3.000	510.000	580.000	50.000
TKN		0					
NH3		0					
PCB		0					
Hg		0					
Pb	UG/G	3	68.300	51.000	26.000	125.000	54.000
As		0					
Cd	UG/G	3	0.800	0.173	0.600	0.900	0.900
Cu		0					
Zn		0					
Cr	UG/G	3	29.300	3.700	26.200	33.400	28.300
Ni	UG/G	3	31.000	3.600	28.000	35.000	30.000
COD		0					

PROJECT: THUNDER BAY MCINTYRE RIVER  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 08/06/80 Ending Date: 10/27/80  
 Maximum Depth (Meters): 7.3

Equipment: CLAMSHELL

Total Quantity (M\*\*3): 41,439.00 Pay Quantity (M\*\*3): 30,848.00

Dredging Cost (\$/CMPM): 4.30

Disposal Method: CONFINED (& OPEN)

Lat: 481957 Long: 890930

CDF Cost (\$/CMPM): 2.00

SAMPLE SUMMARY REPORT

Year: 1979

Material Type: FINE SAND, SILT, CLAY

Analytical Lab: BEAK

Dry Density (Kg/L): 1.50

Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	16	1499.000	1368.000	235.000	3780.000	762.000
Vol Solids	%	16	5.927	4.782	1.640	16.300	3.920
Total P	UG/G	16	814.000	220.000	483.000	1220.000	732.000
TKN	UG/G	16	1650.000	1170.000	350.000	4200.000	1300.000
NH3		0					
PCB		0					
Hg	UG/G	16	0.320	0.248	0.070	0.980	0.220
Pb		0					
As		0					
Cd		0					
Cu	UG/G	16	44.800	21.300	18.900	82.700	35.700
Zn		0					
Cr	UG/G	16	28.300	3.060	23.000	32.600	28.700
Ni		0					
COD	UG/G	16	82900.0	77860.0	17000.0	301000.0	50500.0

PROJECT: THUNDER BAY UPPER MISSION TURNING BASIN2  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 08/11/83 Ending Date: 11/26/83  
 Maximum Depth (Meters): 7.6

Equipment: CLAMSHELL AND SC  
 Total Quantity (M\*\*3): 71,361.00 Pay Quantity (M\*\*3): 54,454.00

Dredging Cost (\$/CMPM): 6.98

Disposal Method: CONFINED (& OPEN)

Lat: 481957 Long: 890930

CDF Cost (\$/CMPM): 2.00

SAMPLE SUMMARY REPORT

Year: 1983

Dry Density (Kg/L): 1.50

Material Type: SAND, SILT, AND CLAY

Sample Type: CORES

Analytical Lab: ENVIRONMENTAL APPLICATIONS GROUP LTD.

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	108.000	89.000	47.000	210.000	67.000
Vol Solids	%	3	3.370	1.266	2.700	5.100	3.200
Total P	UG/G	3	662.000	76.000	610.000	750.000	625.700
TKN	UG/G	3	187.000	55.000	130.000	240.000	190.000
NH3		0					
PCB	UG/G	3	0.010	0.000	0.010	0.010	0.010
Hg	UG/G	3	0.220	0.196	0.010	0.410	0.250
Pb	UG/G	3	13.670	6.430	9.000	21.000	11.000
As		0					
Cd		0					
Cu	UG/G	3	43.670	2.080	42.000	46.000	43.000
Zn	UG/G	3	69.000	25.140	51.000	98.000	59.000
Cr	UG/G	3	109.330	56.530	65.000	173.000	90.000
Ni	UG/G	3	39.000	1.720	38.000	41.000	38.000
COD	UG/G	3	28830.0	21920.0	8000.0	51700.0	26800.0

PROJECT: THUNDER BAY WESTFORT T.B.  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 08/06/80 Ending Date: 10/27/80  
 Maximum Depth (Meters): 7.3

Equipment: CLAM  
 Total Quantity (M\*\*3): 122,617.00 Pay Quantity (M\*\*3): 93,679.00  
 Dredging Cost (\$/CMPM): 4.30  
 Disposal Method: CONFINED (& OPEN) Lat: 481957 Long: 890930  
 CDF Cost (\$/CMPM): 2.00

Calendar Year: 1981 Beginning Date: 07/12/81 Ending Date: 09/19/81  
 Maximum Depth (Meters): 7.6

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 201,641.20 Pay Quantity (M\*\*3): 170,676.00  
 Dredging Cost (\$/CMPM): 3.90  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 2.00

Calendar Year: 1982 Beginning Date: 10/21/82 Ending Date: 06/05/83  
 Maximum Depth (Meters): 7.6

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 148,283.00 Pay Quantity (M\*\*3): 121,746.00  
 Dredging Cost (\$/CMPM): 4.37  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 2.00

SAMPLE SUMMARY REPORT

Year: 1977 Dry Density (Kg/L): 1.50  
 Material Type: FINE SAND, SILT, CLAY Sample Type:  
 Analytical Lab: BEAK

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	13	160.000	110.000	20.000	390.000	140.000
Vol Solids	%	13	3.500	1.590	2.000	6.500	3.000
Total P	UG/G	13	500.000	100.000	300.000	500.000	500.000
TKN	UG/G	13	600.000	420.000	200.000	1700.000	500.000
NH3		0					
PCB		0					
Hg	UG/G	13	0.110	0.070	0.030	0.290	0.080
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD	UG/G	13	34000.0	17600.0	17000.0	80000.0	29400.0

PROJECT: THUNDER BAY WIDEN MAIN HARBOR NORTH  
 JURISDICTION: ONTARIO  
 BASIN: SUPERIOR

DREDGING ACTIVITIES REPORT

Calendar Year: 1981 Beginning Date: 09/22/81 Ending Date: 11/16/81  
 Maximum Depth (Meters): 8.2  
 Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 115,370.00 Pay Quantity (M\*\*3): 78,487.00  
 Dredging Cost (\$/CMPM): 4.67  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 2.00

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.50  
 Material Type: FINE SAND, SILT, FINE STATE Sample Type: UNDISTURBED CORE  
 Analytical Lab: BEAK

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	6	123.300	98.000	30.000	300.000	85.000
Vol Solids	%	6	4.360	1.890	0.900	6.100	4.600
Total P	UG/G	6	406.700	34.000	36.000	440.000	400.000
TKN	UG/G	6	495.000	202.000	110.000	690.000	600.000
NH3	UG/G	6	78.000	34.000	20.000	110.000	80.000
PCB	UG/G *	6	5.000	0.000	5.000	5.000	5.000
Hg	UG/G	18	0.500	0.895	0.154	3.800	0.260
Pb	UG/G	6	23.300	10.290	11.000	34.000	23.500
As		0					
Cd	UG/G	6	0.783	0.268	0.500	1.100	0.750
Cu	UG/G	6	37.730	11.180	26.900	54.700	34.900
Zn	UG/G	6	80.292	27.800	42.500	107.000	84.500
Cr	UG/G	6	31.317	9.040	20.000	45.000	30.900
Ni	UG/G	6	45.670	14.700	30.000	60.000	46.500
COD	UG/G	6	37300.0	21470.0	8000.0	57900.0	38600.0



**LAKE HURON**

**DREDGING PROJECTS**

**1980-1984**

1911  
1912  
1913

Project: Caseville  
 Jurisdiction: Michigan  
 Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): 2.4  
 Equipment: Crane Barge Bucket 3CuYd Contractor: Luedtke  
 Total Quantity (M\*\*3): 17852.  
 Dredging Cost (\$/M\*\*3): 7.74  
 Disposal Method: Open Lat: 435800.0 Long: 831800.0

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): 1.75  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Environmental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	0					
Vol Solids	PERCENT	2	.000	.000	.000	.000	.000
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	7	1.000	.000	1.000	1.000	1.000
Pb	UG/G	7	9.286	8.499	2.000	19.000	4.000
As	UG/G	6	3.000	1.414	1.000	5.000	3.000
Cd	UG/G	7	1.000	.000	1.000	1.000	1.000
Se	UG/G	0					
Cu	UG/G	7	9.714	9.552	1.000	25.000	5.000
Zn	UG/G	7	36.429	31.144	5.000	78.000	19.000
Cr	UG/G	7	5.857	4.525	2.000	11.000	3.000
Ni	UG/G	7	6.571	5.442	2.000	13.000	3.000
COD	MG/G	7	33.1	32.9	2.0	76.0	14.0

Project: Harbor Beach  
Jurisdiction: Michigan  
Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.0  
Equipment: Hopper Hydraulic 23 Inch Contractor: NATCO  
Total Quantity (M\*\*3): 199260.  
Dredging Cost (\$/M\*\*3): 2.85  
Disposal Method: Open Lat: 435100.0 Long: 823400.0

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Harrisville  
 Jurisdiction: Michigan  
 Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1983 Beginning Date: 06/01/83 Ending Date: 12/08/83

Maximum Depth (Meters): .0

Equipment:

Contractor: Lakeshore

Total Quantity (M\*\*3): 33105.

Dredging Cost (\$/M\*\*3): 2.97

Disposal Method: Open

Lat:

Long:

SAMPLE SUMMARY REPORT

Year: 1984

Dry Density (Kg/L):

Material Type:

Sample Type:

Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.367	.289	.200	.700	.200
Vol Solids	PERCENT	3	.000	.000	.000	.001	.000
Total P	MG/G	3	.177	.035	.140	.210	.180
TKN	MG/G	3	1.004	1.017	.092	2.100	.820
NH3	MG/G	0					
PCB-1016	UG/G	3	.000	.000	.000	.000	.000
PCB-1221	UG/G	3	.000	.000	.000	.000	.000
PCB-1232	UG/G	3	.000	.000	.000	.000	.000
PCB-1242	UG/G	3	.000	.000	.000	.000	.000
PCB-1248	UG/G	3	.000	.000	.000	.000	.000
PCB-1254	UG/G	3	.000	.000	.000	.000	.000
PCB-1260	UG/G	3	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	3	.067	.058	.000	.100	.100
Pb	UG/G	3	9.000	6.557	3.000	16.000	8.000
As	UG/G	3	4.000	3.629	1.200	8.100	2.700
Cd	UG/G	3	.000	.000	.000	.000	.000
Se	UG/G	0					
Cu	UG/G	3	11.000	6.245	4.000	16.000	13.000
Zn	UG/G	3	28.667	29.485	6.000	62.000	18.000
Cr	UG/G	3	13.333	4.726	8.000	17.000	15.000
Ni	UG/G	3	8.000	4.359	3.000	11.000	10.000
COD	MG/G	3	25.3	9.6	15.0	34.0	27.0

Project: Inland Route  
Jurisdiction: Michigan  
Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: 04/01/82 Ending Date: 09/09/82

Maximum Depth (Meters): .0

Equipment: Contractor: A-Mac

Total Quantity (M\*\*3): 8257.

Dredging Cost (\$/M\*\*3): 24.32

Disposal Method: Upland Lat: Long:

Fiscal Year: 1983 Beginning Date: 06/15/83 Ending Date: 09/15/83

Maximum Depth (Meters): .0

Equipment: Contractor: Lake Const

Total Quantity (M\*\*3): 4704.

Dredging Cost (\$/M\*\*3): 29.72

Disposal Method: Confined CDF Cost (\$/M\*\*3):

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Kawkawlin  
 Jurisdiction: Michigan  
 Basin: Huron

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1983

Material Type:

Analytical Lab:

Dry Density (Kg/L):

Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.285	.145	.200	.500	.220
Vol Solids	PERCENT	4	.001	.000	.000	.001	.000
Total P	MG/G	4	.308	.032	.280	.340	.305
TKN	MG/G	4	2.850	.676	2.100	3.600	2.850
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	4	.001	.001	.000	.002	.000
PCB-1248	UG/G	0					
PCB-1254	UG/G	4	.000	.000	.000	.000	.000
PCB-1260	UG/G	4	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	3	.033	.058	.000	.100	.000
Pb	UG/G	4	22.750	9.179	15.000	36.000	20.000
As	UG/G	4	8.575	2.974	6.700	13.000	7.300
Cd	UG/G	4	1.400	.245	1.200	1.700	1.350
Se	UG/G	0					
Cu	UG/G	4	19.250	10.012	13.000	34.000	15.000
Zn	UG/G	4	97.250	102.142	38.000	250.000	50.500
Cr	UG/G	4	30.750	15.108	20.000	53.000	25.000
Ni	UG/G	4	37.500	7.681	33.000	49.000	34.000
COD	MG/G	4	36.3	17.0	23.0	61.0	30.5

Project: Point Lookout  
 Jurisdiction: Michigan  
 Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): .0  
 Equipment: Contractor: Lakeshore  
 Total Quantity (M\*\*3): 11780.  
 Dredging Cost (\$/M\*\*3): 8.07  
 Disposal Method: Open Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.55  
 Material Type: Sand Clay Sample Type: Ponar Grab  
 Analytical Lab: Environmental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	5	.380	.130	.300	.600	.300
Vol Solids	PERCENT	5	7.440	7.329	1.600	19.900	5.700
Total P	MG/G	5	.450	.185	.320	.770	.380
TKN	MG/G	5	2.636	2.086	.980	6.200	1.700
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	.192	.064	.130	.290	.170
Pb	UG/G	5	7.860	5.096	2.400	15.000	8.700
As	UG/G	5	4.940	1.513	3.400	6.600	4.400
Cd	UG/G	5	.750	.000	.750	.750	.750
Se	UG/G	0					
Cu	UG/G	5	12.040	2.389	9.200	15.000	11.000
Zn	UG/G	5	55.000	29.648	22.000	88.000	60.000
Cr	UG/G	5	29.040	40.927	6.000	102.000	14.000
Ni	UG/G	5	11.760	4.775	5.100	16.000	13.000
COD	MG/G	5	58.2	54.1	20.0	150.0	35.0

Project: Saginaw  
Jurisdiction: Michigan  
Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 04/18/80 Ending Date: 04/28/80  
Maximum Depth (Meters): 8.2  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 122123.  
Dredging Cost (\$/M\*\*3): 4.44  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Fiscal Year: 1980 Beginning Date: 04/18/80 Ending Date: 04/28/80  
Maximum Depth (Meters): 8.2  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 10238.  
Dredging Cost (\$/M\*\*3): 4.44  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Contractor: Gov't  
Total Quantity (M\*\*3): 15211.  
Dredging Cost (\$/M\*\*3): 3.80  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 533854.  
Dredging Cost (\$/M\*\*3): 1.48  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: 04/06/81 Ending Date: 04/20/81  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 36874.  
Dredging Cost (\$/M\*\*3): 4.06  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 52414.  
Dredging Cost (\$/M\*\*3): 4.06  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Saginaw  
Jurisdiction: Michigan  
Basin: Huron

Fiscal Year: 1981 Beginning Date: 07/08/81 Ending Date: 08/05/81  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 14827.  
Dredging Cost (\$/M\*\*3): 4.76  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1981 Beginning Date: 07/08/81 Ending Date: 08/05/81  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 28068.  
Dredging Cost (\$/M\*\*3): 4.79  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Fiscal Year: 1981 Beginning Date: 08/15/81 Ending Date: 09/29/81  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 16480.  
Dredging Cost (\$/M\*\*3): 5.46  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1981 Beginning Date: 08/15/81 Ending Date: 09/29/81  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 43910.  
Dredging Cost (\$/M\*\*3): 5.46  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Fiscal Year: 1981 Beginning Date: 05/07/81 Ending Date: 06/24/81  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 325251.  
Dredging Cost (\$/M\*\*3): 2.74  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1982 Beginning Date: - Ending Date: 10/21/82  
Maximum Depth (Meters): 7.6  
Equipment: Clam Shell Bucket 8CuYd Contractor: Luedtke  
Total Quantity (M\*\*3): 46512.  
Dredging Cost (\$/M\*\*3): 8.58  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Project: Saginaw  
Jurisdiction: Michigan  
Basin: Huron

Fiscal Year: 1982 Beginning Date: 09/10/82 Ending Date: 09/21/82  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 12371.  
Dredging Cost (\$/M\*\*3): 8.94  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 432609.  
Dredging Cost (\$/M\*\*3): 2.25  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1983 Beginning Date: 06/30/83 Ending Date: 08/08/83  
Maximum Depth (Meters): 6.7  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 65699.  
Dredging Cost (\$/M\*\*3): 6.37  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .28

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 629859.  
Dredging Cost (\$/M\*\*3): 1.95  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1984 Beginning Date: 07/01/84 Ending Date: 09/23/84  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic Contractor: NATCO  
Total Quantity (M\*\*3): 569809.  
Dredging Cost (\$/M\*\*3): 6.53  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.51

Fiscal Year: 1984 Beginning Date: 09/17/83 Ending Date: 08/12/84  
Maximum Depth (Meters): .0  
Equipment: Contractor: NATCO  
Total Quantity (M\*\*3): 120396.  
Dredging Cost (\$/M\*\*3): 6.06  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Saginaw  
 Jurisdiction: Michigan  
 Basin: Huron

SAMPLE SUMMARY REPORT

Year: 1983  
 Material Type: Sand Silt Cl  
 Analytical Lab:  
 Dry Density (Kg/L): 1.50  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	16	2.529	2.729	.430	12.000	2.150
Vol Solids	PERCENT	48	6.813	2.540	2.000	11.000	7.000
Total P	MG/G	48	.592	.300	.190	1.500	.545
TKN	MG/G	48	3.232	2.044	.120	10.000	3.150
NH3	MG/G	48	.180	.125	.024	.480	.155
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	48	.003	.005	.000	.027	.001
Hg	UG/G	48	.087	.084	.000	.300	.100
Pb	UG/G	48	34.271	22.260	.000	96.000	32.500
As	UG/G	48	9.233	4.122	3.400	20.000	8.950
Cd	UG/G	48	1.058	.807	.000	3.500	1.100
Se	UG/G	0					
Cu	UG/G	48	39.110	31.202	1.100	150.000	32.500
Zn	UG/G	48	229.792	141.439	22.000	560.000	220.000
Cr	UG/G	48	49.208	31.940	10.000	180.000	45.500
Ni	UG/G	48	28.250	13.926	5.000	87.000	25.500
COD	MG/G	0					

Project: Sebewaing  
 Jurisdiction: Michigan  
 Basin: Huron

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 12/01/80 Ending Date: 04/15/81  
 Maximum Depth (Meters): 2.4  
 Equipment: Hydraulic 12 Inch Contractor: Luedtke  
 Total Quantity (M\*\*3): 23264.  
 Dredging Cost (\$/M\*\*3): 7.20  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 15.51

Fiscal Year: 1980 Beginning Date: 12/01/80 Ending Date: 04/15/81  
 Maximum Depth (Meters): 2.4  
 Equipment: Clam Shell Bucket 8CuYd Contractor: Luedtke  
 Total Quantity (M\*\*3): 18399.  
 Dredging Cost (\$/M\*\*3): 7.20  
 Disposal Method: Open Lat: 434700.0 Long: 833300.0

Fiscal Year: 1981 Beginning Date: 12/01/80 Ending Date: 04/15/81  
 Maximum Depth (Meters): 2.4  
 Equipment: Clam Shell Bucket 8CuYd Contractor: Luedtke  
 Total Quantity (M\*\*3): 33459.  
 Dredging Cost (\$/M\*\*3): 4.35  
 Disposal Method: Open Lat: 434700.0 Long: 833300.0

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.50  
 Material Type: Sand Sample Type: Ponar Grab  
 Analytical Lab: Enviromental Protection Agency

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	3	.600	.458	.200	1.100	.500
Vol Solids	PERCENT	3	6.067	.929	5.300	7.100	5.800
Total P	MG/G	3	.180	.035	.139	.204	.196
TKN	MG/G	3	.750	.132	.650	.900	.700
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	3	.000	.000	.000	.000	.000
Hg	UG/G	3	.117	.051	.061	.160	.130
Pb	UG/G	3	10.833	2.021	8.500	12.000	12.000
As	UG/G	3	3.467	3.350	1.100	7.300	2.000
Cd	UG/G	3	.233	.116	.100	.300	.300
Se	UG/G	0					
Cu	UG/G	3	9.300	1.868	7.300	11.000	9.600
Zn	UG/G	3	392.000	613.186	31.000	1100.000	45.000
Cr	UG/G	3	10.700	2.252	8.100	12.000	12.000
Ni	UG/G	3	16.000	2.646	13.000	18.000	17.000
COD	MG/G	3	10.9	2.2	8.4	12.4	12.0

PROJECT: BAYFIELD  
JURISDICTION: ONTARIO  
BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 10/ /82 Ending Date: 11/ /82  
Maximum Depth (Meters): 2.1

Equipment: CLAM AND SCOW

Total Quantity (M\*\*3): 1,081.00 Pay Quantity (M\*\*3): 748.00

Dredging Cost (\$/CMPM): 24.77

Disposal Method: OPEN

Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

PROJECT: BLIND RIVER  
JURISDICTION: ONTARIO  
BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 02/ /84 Ending Date: 11/ /84  
Maximum Depth (Meters): 1.8

Equipment: MECHANICAL

Total Quantity (M\*\*3): 7,568.00 Pay Quantity (M\*\*3): 6,581.00

Dredging Cost (\$/CMPM): 10.02

Disposal Method: CONFINED

CDF Cost (\$/CMPM): 7.87

SAMPLE SUMMARY REPORT

No Sampling Activities

PROJECT: BRECHIN  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 07/06/83 Ending Date: 10/08/83  
 Maximum Depth (Meters): 1.8

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 2,080.00 Pay Quantity (M\*\*3): 1,352.00  
 Dredging Cost (\$/CMPM): 22.00  
 Disposal Method: OPEN Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): 1.70  
 Material Type: SAND Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P	UG/G	1457000.000		0.000457000	0.000457000	0.000457000	0.000
TKN		0					
NH3		0					
PCB	UG/G	1	0.014	0.000	0.014	0.014	0.014
Hg	UG/G	1	0.045	0.000	0.045	0.045	0.045
Pb	UG/G	1	14.000	0.000	14.000	14.000	14.000
As		0					
Cd		0					
Cu	UG/G	1	9.000	0.000	9.000	9.000	9.000
Zn	UG/G	1	39.000	0.000	39.000	39.000	39.000
Cr		0					
Ni	UG/G	1	7.000	0.000	7.000	7.000	7.000
COD		0					

PROJECT: BRUCE MINES  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 01/ /83 Ending Date: 05/ /83  
 Maximum Depth (Meters): 1.8

Equipment: CLAM AND SCOW

Total Quantity (M\*\*3): 17,178.00 Pay Quantity (M\*\*3): 13,978.00

Dredging Cost (\$/CMPM): 4.20

Disposal Method: RE-USE

Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982

Material Type: SAND AND SILT

Analytical Lab: BEAK, EC, BONDAR CLEGG

Dry Density (Kg/L): 1.60

Sample Type: GRAB AND CORES

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	2	1085.000	318.000	860.000	1310.000	1008.500
Vol Solids		0					
Total P	UG/G	3	0.027	0.005	0.024	0.032	0.024
TKN		0					
NH3		0					
PCB	UG/G	10	0.047	0.009	0.036	0.058	.045
Hg	UG/G	3	0.060	1.730	0.050	0.080	0.055
Pb	UG/G	10	51.500	16.530	33.000	76.000	51.000
As	UG/G	10	6.400	4.630	0.000	12.000	6.500
Cd		0					
Cu	UG/G	10	500.200	267.500	221.000	989.000	428.500
Zn	UG/G	10	144.300	54.980	86.000	231.000	136.500
Cr	UG/G	10	60.700	10.070	49.000	80.000	60.000
Ni	UG/G	10	65.500	22.560	40.000	104.000	61.000
COD	UG/G	3	19300.0	1710.0	18000.0	21200.0	18700.0

PROJECT: GODERICH  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 11/15/82 Ending Date: 05/05/82  
 Maximum Depth (Meters): 7.3

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 39,786.00 Pay Quantity (M\*\*3): 36,471.00  
 Dredging Cost (\$/CMPM): 12.09  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: SAND, SILT  
 Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.60  
 Sample Type: HOMOGENIZED CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	607.000	350.000	310.000	1000.000	510.000
Vol Solids	%	3	2.800	14080	1.780	4.450	2.160
Total P	UG/G	3	190.000	35.000	160.000	230.000	180.000
TKN	UG/G	3	417.000	208.000	260.000	660.000	330.000
NH3		0					
PCB		0					
Hg	UG/G	3	0.027	0.006	0.020	0.030	0.030
Pb	UG/G *	3	2.000	0.000	2.000	2.000	2.000
As		0					
Cd	UG/G *	3	1.000	0.000	1.000	1.000	1.000
Cu		0					
Zn		0					
Cr	UG/G	3	12.670	0.570	12.000	13.000	13.000
Ni		0					
COD	UG/G	3	18670.0	10140.0	11000.0	33000.0	12000.0

PROJECT: GRAND BEND  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 10/19/82 Ending Date: 10/28/82  
 Maximum Depth (Meters): 2.1

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 4,392.00 Pay Quantity (M\*\*3): 3,313.00  
 Dredging Cost (\$/CMPM): 21.73  
 Disposal Method: OPEN Lat: 431900 Long: 814800

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L): 1.60  
 Material Type: SAND Sample Type: GRAB  
 Analytical Lab: ENVIROCLEAN

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	2	450.000	200.000	310.000	590.000	450.000
Vol Solids	%	2	0.630	0.028	0.610	0.650	0.630
Total P	UG/G	2	130.000	0.000	130.000	130.000	130.000
TKN	UG/G	2	27.500	30.000	5.000	50.000	27.500
NH3		0					
PCB		0					
Hg	UG/G *	2	0.010	0.000	0.010	0.010	0.010
Pb		0					
As		0					
Cd	UG/G *	2	1.000	0.000	1.000	1.000	1.000
Cu		0					
Zn		0					
Cr	UG/G	2	14.000	0.000	14.000	14.000	14.000
Ni		0					
COD	UG/G	2	1150.0	210.0	1000.0	1300.0	1150.0

PROJECT: KESWICK  
JURISDICTION: ONTARIO  
BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 08/17/84 Ending Date: 12/14/84  
Maximum Depth (Meters): 1.4

Equipment: CLAM AND SCOW  
Total Quantity (M\*\*3): 19,085.00 Pay Quantity (M\*\*3): 14,561.00  
Dredging Cost (\$/CMPM): 14.74  
Disposal Method: RE-USE Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

PROJECT: LITTLE CURRENT  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 03/ /82 Ending Date: 07/ /82  
 Maximum Depth (Meters): 1.8

Equipment: MECHANICAL  
 Total Quantity (M\*\*3): 16,112.00 Pay Quantity (M\*\*3): 14,319.00  
 Dredging Cost (\$/CMPM): 13.10  
 Disposal Method: RE-USE Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.60  
 Material Type: FINE SAND, SILTY CLAY Sample Type: GRAB (UNDISTURBE)  
 Analytical Lab: G.L. BIOLIMNOLOGY LAB

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB		0					
Hg		0					
Pb	UG/G	5	33.000	33.630	8.000	90.000	29.000
As	UG/G *	5	12.000	16.920	1.000	40.000	3.000
Cd		0					
Cu	UG/G *	5	23.100	32.730	1.000	80.000	15.000
Zn	UG/G	5	127.600	136.000	40.000	364.000	58.000
Cr	UG/G	5	46.400	21.810	29.000	84.000	39.000
Ni	UG/G	5	278.800	365.960	61.000	915.000	88.000
COD		0					

PROJECT: NORTH BAY  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 09/25/84 Ending Date: 11/23/84  
 Maximum Depth (Meters): 1.8

Equipment: EXCAVATOR OFF BE  
 Total Quantity (M\*\*3): 25,832.00 Pay Quantity (M\*\*3): 18,685.00  
 Dredging Cost (\$/CMPM): 7.96  
 Disposal Method: RE-USE Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1984 Dry Density (Kg/L): 1.50  
 Material Type: SAND AND SILT Sample Type: CORES AND GRABS  
 Analytical Lab: MCMASTER UNIVERSITY DEPT. OF GEOLOGY

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB		0					
Hg		0					
Pb	UG/G	7	22.860	6.030	15.000	32.000	24.000
As	UG/G	7	3.140	1.770	0.000	11.000	3.000
Cd		0					
Cu	UG/G	7	19.710	17.560	1.000	40.000	12.000
Zn	UG/G	7	36.000	9.200	26.000	73.000	34.000
Cr	UG/G	7	56.570	19.390	24.000	112.000	56.000
Ni		0					
COD		0					

PROJECT: OWEN SOUND DREDGING MARINA BASIN  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 11/11/83 Ending Date: 08/30/84  
 Maximum Depth (Meters): 2.4

Equipment: CLAMSHELL  
 Total Quantity (M\*\*3): 56,517.00 Pay Quantity (M\*\*3): 42,964.00  
 Dredging Cost (\$/CMPM): 6.55  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

Year: 1980  
 Material Type: SAND, SILT, CLAY  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.50  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	2	1300.000	100.000	1200.000	1400.000	1300.000
Vol Solids	%	2	1.600	0.800	1.000	2.200	1.600
Total P	UG/G	2	470.000	90.000	400.000	540.000	470.000
TKN	UG/G	2	215.000	130.000	120.000	310.000	215.000
NH3		0					
PCB		0					
Hg	UG/G	2	0.005	0.002	0.004	0.007	0.005
Pb	UG/G	2	0.230	4.200	20.000	26.000	0.230
As	UG/G	2	2.350	0.070	2.400	2.300	2.350
Cd	UG/G	2	3.800	0.700	3.300	4.300	3.800
Cu	UG/G	2	12.750	6.710	8.000	17.500	12.750
Zn	UG/G	2	21.150	7.840	15.600	26.700	21.150
Cr	UG/G	2	9.000	2.100	7.500	10.500	9.000
Ni	UG/G	2	17.000	5.600	13.000	21.000	17.000
COD	UG/G	2	13750.0	21990.0	8200.0	19300.0	13750.0

PROJECT: PEFFERLAW  
JURISDICTION: ONTARIO  
BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1981 Beginning Date: 06/29/81 Ending Date: 07/19/81  
Maximum Depth (Meters): 1.8

Equipment: CLAM  
Total Quantity (M\*\*3): 4,835.00 Pay Quantity (M\*\*3): 4,835.00  
Dredging Cost (\$/CMPM): 8.50  
Disposal Method: Re-Use Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities Dry Density (Kg/L): 1.50

PROJECT: PORT FRANKS  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 10/ /82 Ending Date: 11/ /82  
 Maximum Depth (Meters): 1.8

Equipment: CLAM AND SCOWS

Total Quantity (M\*\*3): 2,680.00 Pay Quantity (M\*\*3): 2,050.00

Dredging Cost (\$/CMPM): 17.72

Disposal Method: OPEN

Lat: 431452 Long: 815457

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: SAND  
 Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.70  
 Sample Type: UNDISTURBED CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	67.000	10.000	55.000	75.000	70.000
Vol Solids	%	3	1.5300	0.2510	1.3000	1.8000	1.5000
Total P	UG/G	3	95.000	18.000	75.000	110.000	100.000
TKN	UG/G	3	18.000	26.000	3.000	49.000	3.200
NH3		0					
PCB	UG/G	* 3	0.010	0.000	0.010	0.010	0.010
Hg	UG/G	* 3	0.010	0.000	0.010	0.010	0.010
Pb	UG/G	3	1.400	1.380	1.000	3.000	1.000
As		0					
Cd	UG/G	* 3	0.500	0.000	0.500	0.500	0.500
Cu	UG/G	3	5.500	1.800	4.000	7.500	5.000
Zn	UG/G	3	16.930	10.900	7.800	29.000	14.000
Cr	UG/G	3	21.670	4.100	17.000	25.000	23.000
Ni		0					
COD	UG/G	3	1827.0	1527.0	930.0	3590.0	960.0

PROJECT: SAULT STE. MARIE GREAT LAKES POWER LTD.  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1981 Beginning Date: 10/ /81 Ending Date: 12/ /81  
 Maximum Depth (Meters):

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 65,000.00 Pay Quantity (M\*\*3): 65,000.00  
 Dredging Cost (\$/CMPM):  
 Disposal Method: OPEN Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): 1.70  
 Material Type: 10% SILT&CLAY 10% VF&F SAND Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids	%		6.500		0.200	39.000	
Total P	UG/G		330.000		100.000	800.000	
TKN	UG/G				500.000	22000.000	
NH3		0					
PCB	UG/G		35.700		0.000	355.000	
Hg		0					
Pb		0					
As	UG/G		1.460		0.000	17.500	
Cd		0					
Cu		0					
Zn	UG/G		170.650		0.900	421.000	
Cr		0					
Ni		0					
COD		0					

Year: 1973 Dry Density (Kg/L): 1.70  
 Material Type: 10% SILT&CLAY 10% VF&F SAND Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB		0					
Hg		0					
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn	UG/G		157.700		0.900	421.000	
Cr		0					
Ni		0					
COD		0					

PROJECT: THORNBURY  
 JURISDICTION: ONTARIO  
 BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1981 Beginning Date: 03/ /81 Ending Date: 07/ /81  
 Maximum Depth (Meters): 2.1

Equipment: MECHANICAL  
 Total Quantity (M\*\*3): 14,934.00 Pay Quantity (M\*\*3): 14,934.00  
 Dredging Cost (\$/CMPM): 1.08  
 Disposal Method: RE-USE Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): 1.50  
 Material Type: SAND, CLAY, SILT Sample Type:  
 Analytical Lab: BEAK

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	236.000	167.000	110.000	427.000	172.000
Vol Solids	%	3	3.300	1.990	2.000	5.600	2.300
Total P	UG/G	3	500.000	200.000	290.000	670.000	400.000
TKN	UG/G	3	500.000	300.000	80.000	780.000	700.000
NH3		0					
PCB		0					
Hg		0					
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD	UG/G	3	2.0	1.6	0.0	4.0	2.0

PROJECT: VIRGINIA BEACH  
JURISDICTION: ONTARIO  
BASIN: HURON

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 07/27/84 Ending Date: 08/16/84  
Maximum Depth (Meters): 1.8

Equipment: EXCVTR. OFF BERM  
Total Quantity (M\*\*3): 14,927.00 Pay Quantity (M\*\*3): 13,501.00  
Dredging Cost (\$/CMPM): 9.90  
Disposal Method: RE-USE Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1984 Dry Density (Kg/L): 1.50  
Material Type: CLASS 'B' SAND, SILT Sample Type:  
Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G	4	0.018	0.005	0.014	0.024	0.017
Hg	UG/G	4	0.031	0.020	0.015	0.055	0.027
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD		0					

**LAKE ERIE**

**DREDGING PROJECTS**

**1980-1984**

07/17/34 - 07/18/34  
07/19/34 - 07/20/34  
07/21/34 - 07/22/34

07/23/34 - 07/24/34  
07/25/34 - 07/26/34  
07/27/34 - 07/28/34

07/29/34 - 07/30/34  
07/31/34 - 08/01/34

1934

1934

1934

Project: Bolles Harbor  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 07/01/81 Ending Date: 04/31/81  
Maximum Depth (Meters): 2.4  
Equipment: Hydraulic 12 Inch Contractor: E & E  
Total Quantity (M\*\*3): 6318.  
Dredging Cost (\$/M\*\*3): 14.99  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.72

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Detroit River  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 07/01/80 Ending Date: 07/20/81

Maximum Depth (Meters): .0  
Equipment: Contractor: NATCO  
Total Quantity (M\*\*3): 859600.  
Dredging Cost (\$/M\*\*3): 6.89  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 157759.  
Dredging Cost (\$/M\*\*3): 4.52  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 108184.  
Dredging Cost (\$/M\*\*3): 2.73  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 162311.  
Dredging Cost (\$/M\*\*3): 4.74  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0

Equipment: Contractor: Cont/E & E  
Total Quantity (M\*\*3): 25995.  
Dredging Cost (\$/M\*\*3): 8.08  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0

Equipment: Contractor: NATCO  
Total Quantity (M\*\*3): 1051800.  
Dredging Cost (\$/M\*\*3): 3.81  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Detroit River  
Jurisdiction: Michigan  
Basin: Erie

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 49781.  
Dredging Cost (\$/M\*\*3): 4.14  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 25019.  
Dredging Cost (\$/M\*\*3): 5.34  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 28812.  
Dredging Cost (\$/M\*\*3): 3.45  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: 09/29/82 Ending Date: 12/22/82  
Maximum Depth (Meters): .0  
Equipment: Contractor: C-Way  
Total Quantity (M\*\*3): 26383.  
Dredging Cost (\$/M\*\*3): 7.71  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 4628.  
Dredging Cost (\$/M\*\*3): 7.53  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 119688.  
Dredging Cost (\$/M\*\*3): 6.31  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Detroit River  
 Jurisdiction: Michigan  
 Basin: Erie

Fiscal Year: 1983 Beginning Date: 09/15/83 Ending Date: 04/30/84  
 Maximum Depth (Meters): .0

Equipment: Contractor: NATCO  
 Total Quantity (M\*\*3): 491488.  
 Dredging Cost (\$/M\*\*3): 8.14  
 Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
 Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 27419.  
 Dredging Cost (\$/M\*\*3): 9.40  
 Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1984 Beginning Date: 10/03/84 Ending Date: 11/30/84  
 Maximum Depth (Meters): .0

Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
 Total Quantity (M\*\*3): 20213.  
 Dredging Cost (\$/M\*\*3): 7.87  
 Disposal Method: Confined CDF Cost (\$/M\*\*3):

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): 1.40  
 Material Type: Sand Silt Cl Sample Type: Ponar Grab  
 Analytical Lab: Environmental Research Group - Ann Arbor, MI

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	4	.600	.216	.300	.800	.650
Vol Solids	PERCENT	4	5.575	2.384	3.900	9.000	4.700
Total P	MG/G	4	.445	.132	.300	.620	.430
TKN	MG/G	4	.942	.363	.620	1.450	.850
NH3	MG/G	4	.135	.063	.059	.200	.140
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	4	.772	.825	.240	2.000	.425
Pb	UG/G	4	7.725	2.499	4.500	9.700	8.350
As	UG/G	4	4.275	2.741	2.200	8.200	3.350
Cd	UG/G	4	.745	.010	.730	.750	.750
Se	UG/G	0					
Cu	UG/G	4	15.500	6.658	10.000	25.000	13.500
Zn	UG/G	0					
Cr	UG/G	4	16.250	3.096	12.000	19.000	17.000
Ni	UG/G	4	14.250	10.532	1.000	26.000	15.000
COD	MG/G	4	195.0	77.2	120.0	280.0	190.0

Project: Lake St. Clair  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 87897.  
Dredging Cost (\$/M\*\*3): 4.90  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 60766.  
Dredging Cost (\$/M\*\*3): 6.01  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 23495.  
Dredging Cost (\$/M\*\*3): 5.96  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Monroe  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Contractor: Gov't  
Total Quantity (M\*\*3): 91314.  
Dredging Cost (\$/M\*\*3): 2.50  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: 10/06/80 Ending Date: 11/23/80  
Maximum Depth (Meters): 6.4  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 120448.  
Dredging Cost (\$/M\*\*3): 3.37  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .94

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 189664.  
Dredging Cost (\$/M\*\*3): 3.13  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1983 Beginning Date: 10/14/83 Ending Date: 11/09/83  
Maximum Depth (Meters): 6.4  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 89635.  
Dredging Cost (\$/M\*\*3): 2.61  
Disposal Method: Confined CDF Cost (\$/M\*\*3): .76

Fiscal Year: 1984 Beginning Date: 10/06/84 Ending Date: 12/01/84  
Maximum Depth (Meters): .0  
Equipment: Contractor: E & E Const  
Total Quantity (M\*\*3): 10871.  
Dredging Cost (\$/M\*\*3): 13.80  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 64180.  
Dredging Cost (\$/M\*\*3): 6.13  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Project: Monroe  
 Jurisdiction: Michigan  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1980  
 Material Type: Silt Clay  
 Analytical Lab:

Dry Density (Kg/L): 1.40  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	5	.880	.427	.400	1.300	.900
Vol Solids	PERCENT	5	5.000	.908	3.600	6.000	5.300
Total P	MG/G	5	.454	.207	.240	.780	.450
TKN	MG/G	5	1.440	.207	1.200	1.700	1.400
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	5	.006	.006	.001	.014	.004
PCB-1254	UG/G	5	.002	.002	.000	.004	.002
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	.286	.043	.250	.350	.270
Pb	UG/G	5	88.200	75.450	39.000	220.000	71.000
As	UG/G	5	6.200	1.140	4.800	7.600	6.200
Cd	UG/G	5	1.600	.418	1.200	2.200	1.700
Se	UG/G	0					
Cu	UG/G	5	159.400	108.147	89.000	350.000	130.000
Zn	UG/G	5	576.000	581.145	220.000	1600.000	370.000
Cr	UG/G	5	57.200	24.025	34.000	94.000	46.000
Ni	UG/G	5	43.800	12.598	35.000	66.000	39.000
COD	MG/G	5	6.4	1.2	4.6	7.8	6.5

Year: 1983  
 Material Type: Silt Clay  
 Analytical Lab:

Dry Density (Kg/L): 1.40  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	5	.730	.310	.280	1.100	.810
Vol Solids	PERCENT	5	7.000	1.871	4.000	9.000	7.000
Total P	MG/G	5	.486	.057	.400	.560	.490
TKN	MG/G	5	.886	.326	.460	1.300	.840
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	5	.002	.002	.001	.005	.001
PCB-1254	UG/G	0					
PCB-1260	UG/G	5	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	5	.220	.164	.000	.400	.300
Pb	UG/G	5	45.000	20.676	14.000	63.000	51.000
As	UG/G	5	8.800	1.643	6.000	10.000	9.000
Cd	UG/G	5	1.480	1.388	.000	2.900	2.000
Se	UG/G	0					
Cu	UG/G	5	99.800	43.854	42.000	160.000	110.000
Zn	UG/G	5	210.600	67.244	93.000	260.000	240.000
Cr	UG/G	5	104.200	36.030	41.000	130.000	120.000
Ni	UG/G	5	57.600	19.347	26.000	77.000	61.000
COD	MG/G	5	37.6	5.2	30.0	44.0	38.0

Project: Monroe  
 Jurisdiction: Michigan  
 Basin: Erie

Year: 1984  
 Material Type: Silt Clay  
 Analytical Lab:

Dry Density (Kg/L): 1.40  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	30	.432	.522	.200	2.900	.200
Vol Solids	PERCENT	30	5.800	15.139	1.000	85.000	2.000
Total P	MG/G	30	.389	.108	.200	.640	.380
TKN	MG/G	30	.718	.663	.110	2.500	.415
NH3	MG/G	0					
PCB-1016	UG/G	25	.000	.000	.000	.000	.000
PCB-1221	UG/G	25	.000	.000	.000	.000	.000
PCB-1232	UG/G	25	.000	.000	.000	.000	.000
PCB-1242	UG/G	29	.000	.000	.000	.001	.000
PCB-1248	UG/G	26	.000	.000	.000	.001	.000
PCB-1254	UG/G	30	.000	.000	.000	.001	.000
PCB-1260	UG/G	30	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	30	.070	.065	.000	.300	.100
Pb	UG/G	30	16.167	15.107	3.000	50.000	9.000
As	UG/G	30	6.577	2.053	.800	10.000	6.650
Cd	UG/G	30	287.253	1570.027	.000	8600.000	.800
Se	UG/G	0					
Cu	UG/G	30	44.500	106.214	6.000	600.000	20.500
Zn	UG/G	30	89.933	81.707	12.000	440.000	67.000
Cr	UG/G	30	47.133	53.679	12.000	310.000	35.000
Ni	UG/G	30	24.300	21.050	5.000	120.000	20.000
COD	MG/G	30	27.1	15.3	9.3	65.0	21.0

Project: Rouge  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 90216.  
Dredging Cost (\$/M\*\*3): 5.38  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 11.53

Fiscal Year: 1981 Beginning Date: 04/09/81 Ending Date: 07/08/81  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 88344.  
Dredging Cost (\$/M\*\*3): 5.62  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 11.53

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): 7.6  
Equipment: Clam Shell Bucket 8CuYd Contractor: Luedtke  
Total Quantity (M\*\*3): 33878.  
Dredging Cost (\$/M\*\*3): 9.60  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 11.53

Fiscal Year: 1983 Beginning Date: 09/11/83 Ending Date: 09/30/83  
Maximum Depth (Meters): 7.6  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 22937.  
Dredging Cost (\$/M\*\*3): 8.28  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.42

Fiscal Year: 1984 Beginning Date: 06/22/84 Ending Date: 07/28/84  
Maximum Depth (Meters): 7.6  
Equipment: Clam Shell Bucket 8CuYd Contractor: Dunbar  
Total Quantity (M\*\*3): 38876.  
Dredging Cost (\$/M\*\*3): 14.08  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.42

Project: Rouge  
 Jurisdiction: Michigan  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: Silt Clay  
 Analytical Lab: QED - Ann Arbor, MI  
 Dry Density (Kg/L): 1.40  
 Sample Type: Ponar Grab

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	9	1.384	.952	.100	2.860	1.200
Vol Solids	PERCENT	9	5.690	1.306	2.464	6.865	5.943
Total P	MG/G	9	1.182	.339	.375	1.460	1.300
TKN	MG/G	9	1.505	.585	.461	2.300	1.542
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	9	.195	.156	.030	.542	.147
Hg	UG/G	9	.002	.000	.002	.002	.002
Pb	UG/G	9	156.089	65.554	1.000	226.600	172.400
As	UG/G	9	.002	.000	.002	.002	.002
Cd	UG/G	9	3.914	1.679	.100	5.770	4.240
Se	UG/G	0					
Cu	UG/G	9	65.177	29.581	6.510	108.300	58.580
Zn	UG/G	9	409.702	181.544	32.720	624.700	381.700
Cr	UG/G	9	82.958	38.946	8.150	136.100	81.340
Ni	UG/G	9	31.336	17.011	11.760	72.860	29.410
COD	MG/G	9	52.3	15.8	20.2	70.5	54.4

Project: St. Clair  
Jurisdiction: Michigan  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 16878.  
Dredging Cost (\$/M\*\*3): 6.00  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1981 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 21175.  
Dredging Cost (\$/M\*\*3): 7.86  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1982 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 28720.  
Dredging Cost (\$/M\*\*3): 6.03  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 20 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 59789.  
Dredging Cost (\$/M\*\*3): 8.32  
Disposal Method: Confined CDF Cost (\$/M\*\*3):

Fiscal Year: 1983 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 21999.  
Dredging Cost (\$/M\*\*3): 2.93  
Disposal Method: Open Lat: Long:

Fiscal Year: 1984 Beginning Date: - Ending Date: -  
Maximum Depth (Meters): .0  
Equipment: Hopper Hydraulic 23 Inch Contractor: Gov't  
Total Quantity (M\*\*3): 54892.  
Dredging Cost (\$/M\*\*3): 3.53  
Disposal Method: Open Lat: Long:

Project: St. Clair  
 Jurisdiction: Michigan  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1983

Dry Density (Kg/L):

Material Type:

Sample Type:

Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	MG/G	10	.197	.156	.030	.510	.165
Vol Solids	PERCENT	10	2.000	.667	1.000	3.000	2.000
Total P	MG/G	10	.244	.113	.120	.430	.205
TKN	MG/G	10	.631	.709	.017	2.300	.365
NH3	MG/G	0					
PCB-1016	UG/G	0					
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	10	.130	.082	.000	.300	.100
Pb	UG/G	10	9.090	8.367	.000	28.000	7.550
As	UG/G	10	5.690	2.771	2.300	11.000	5.650
Cd	UG/G	10	.240	.386	.000	.800	.000
Se	UG/G	0					
Cu	UG/G	10	52.230	132.896	2.000	430.000	10.450
Zn	UG/G	10	35.390	20.944	7.900	63.000	30.500
Cr	UG/G	10	14.010	7.193	6.700	32.000	13.000
Ni	UG/G	10	13.210	9.000	3.000	30.000	12.000
COD	MG/G	10	10.7	8.2	.5	24.0	10.2

Project: Barcelona  
Jurisdiction: New York  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 07/07/81 Ending Date: 08/11/81  
Location: Channel Maximum Depth (Meters): 2.7  
Equipment: Hopper Contractor: Gov't  
Total Quantity (M\*\*3): 29112.  
Total Cost (\$/M\*\*3): 8.83  
Disposal Method: Open Lat: 422110.0 Long: 793400.0

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Buffalo  
Jurisdiction: New York  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 08/22/80 Ending Date: 09/21/80  
Location: Harbor Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 13628.  
Total Cost (\$/M\*\*3): 19.64  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1980 Beginning Date: 08/22/80 Ending Date: 11/17/80  
Location: Harbor Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 75046.  
Total Cost (\$/M\*\*3): 2.76  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1980 Beginning Date: 08/20/80 Ending Date: 10/30/80  
Location: River & Ship Canal Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 83410.  
Total Cost (\$/M\*\*3): 5.02  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1980 Beginning Date: 08/20/80 Ending Date: 09/30/80  
Location: River & Ship Canal Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 46667.  
Total Cost (\$/M\*\*3): 6.38  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1981 Beginning Date: 09/22/81 Ending Date: 11/25/81  
Location: Harbor Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 101431.  
Total Cost (\$/M\*\*3): 2.93  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1981 Beginning Date: 08/19/81 Ending Date: 09/30/81  
Location: River & Ship Canal Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 43589.  
Total Cost (\$/M\*\*3): 6.20  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Project: Buffalo  
 Jurisdiction: New York  
 Basin: Erie

Fiscal Year: 1982 Beginning Date: 06/23/82 Ending Date: 10/23/82  
 Location: River Channel Maximum Depth (Meters): 9.1  
 Equipment: Hopper Contractor: NATCO  
 Total Quantity (M\*\*3): 116452.  
 Total Cost (\$/M\*\*3): 8.19  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1984 Beginning Date: 05/03/84 Ending Date: 05/30/84  
 Location: Harbor Maximum Depth (Meters): 9.1  
 Equipment: Hopper Contractor: NATCO  
 Total Quantity (M\*\*3): 26727.  
 Total Cost (\$/M\*\*3): 6.85  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

Fiscal Year: 1984 Beginning Date: 05/03/84 Ending Date: 05/30/84  
 Location: Harbor Maximum Depth (Meters): 9.1  
 Equipment: Hopper Contractor: NATCO  
 Total Quantity (M\*\*3): 51570.  
 Total Cost (\$/M\*\*3): 6.33  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.87

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L):  
 Material Type: Sample Type:  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	7	2.359	1.007	1.029	3.730	2.159
Oil & Grease	MG/G	7	.599	.597	.163	1.819	.350
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1221	UG/G	7	.100	.000	.100	.100	.100
PCB-1232	UG/G	7	.100	.000	.100	.100	.100
PCB-1242	UG/G	7	.100	.000	.100	.100	.100
PCB-1248	UG/G	7	.100	.000	.100	.100	.100
PCB-1254	UG/G	7	.100	.000	.100	.100	.100
PCB-1260	UG/G	7	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	7	.271	.170	.100	.500	.300
Pb	UG/G	7	43.410	53.752	4.000	154.900	28.990
As	UG/G	7	4.827	2.674	1.800	10.290	4.199
Cd	UG/G	7	.743	.513	.200	1.800	.600
Cu	UG/G	7	32.426	25.231	2.000	72.000	20.990
Zn	UG/G	7	163.656	127.364	35.990	405.900	135.900
Cr	UG/G	7	20.277	10.294	10.990	40.000	18.990
Ni	UG/G	7	18.279	8.654	10.990	35.990	14.990
COD	MG/G	0					

Project: Dunkirk  
Jurisdiction: New York  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1983 Beginning Date: 08/20/83 Ending Date: 08/31/83  
Location: Harbor Channel Maximum Depth (Meters): 5.2  
Equipment: Clamshell Contractor: Marine Con Corp  
Total Quantity (M\*\*3): 8805.  
Total Cost (\$/M\*\*3): 14.21  
Disposal Method: Open Lat: 422900.0 Long: 792000.0

SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Ashtabula  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 11/17/80 Ending Date: 12/23/80  
Location: Harbor Maximum Depth (Meters): 9.1  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 95570.  
Total Cost (\$/M\*\*3): 2.25  
Disposal Method: Open Lat: 415700.0 Long: 804700.0

Fiscal Year: 1981 Beginning Date: 08/80/81 Ending Date: 09/03/81  
Location: Harbor Channel Maximum Depth (Meters): 9.1  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 87662.  
Total Cost (\$/M\*\*3): 2.16  
Disposal Method: Open Lat: 415700.0 Long: 804700.0

Fiscal Year: 1983 Beginning Date: 07/15/83 Ending Date: 09/15/83  
Location: Harbor Channel Maximum Depth (Meters): 9.1  
Equipment: Bucket Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 74356.  
Total Cost (\$/M\*\*3): 4.27  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.76

Project: Ashtabula  
 Jurisdiction: Ohio  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type:  
 Analytical Lab:

Dry Density (Kg/L):  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	0					
Oil & Grease	MG/G	0					
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1221	UG/G	5	2.880	1.962	1.200	5.999	3.000
PCB-1232	UG/G	5	2.880	1.962	1.200	5.999	3.000
PCB-1242	UG/G	5	51.194	44.305	10.990	120.000	30.990
PCB-1248	UG/G	5	2.880	1.962	1.200	5.999	3.000
PCB-1254	UG/G	5	2.880	1.962	1.200	5.999	3.000
PCB-1260	UG/G	5	2.880	1.962	1.200	5.999	3.000
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	2.820	1.322	1.700	4.700	2.200
Pb	UG/G	5	74.996	14.884	55.990	89.000	79.000
As	UG/G	5	36.996	15.408	20.000	55.990	38.990
Cd	UG/G	5	6.599	2.302	3.000	8.999	7.000
Cu	UG/G	5	50.792	16.547	33.990	69.000	49.990
Zn	UG/G	5	180.920	56.488	138.000	277.900	171.900
Cr	UG/G	5	315.918	253.137	63.990	628.900	213.900
Ni	UG/G	5	42.392	11.843	27.990	54.990	45.990
COD	MG/G	0					

Year: 1983  
 Material Type:  
 Analytical Lab:

Dry Density (Kg/L):  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	6	2.450	.814	1.000	3.400	2.649
Oil & Grease	MG/G	6	.398	.203	.040	.600	.460
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	0					
PCB-1221	UG/G	6	.100	.000	.100	.100	.100
PCB-1232	UG/G	6	.100	.000	.100	.100	.100
PCB-1242	UG/G	6	.100	.000	.100	.100	.100
PCB-1248	UG/G	7	.226	.153	.100	.440	.130
PCB-1254	UG/G	6	.100	.000	.100	.100	.100
PCB-1260	UG/G	6	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	6	.150	.055	.100	.200	.150
Pb	UG/G	8	29.996	10.040	16.000	43.000	32.495
As	UG/G	7	11.695	3.832	7.999	19.300	10.190
Cd	UG/G	6	.833	.345	.500	1.400	.800
Cu	UG/G	8	25.746	8.742	10.000	36.990	26.000
Zn	UG/G	6	115.117	18.216	89.000	141.900	112.450
Cr	UG/G	7	16.567	4.958	10.000	25.990	16.000
Ni	UG/G	6	18.828	5.232	10.000	25.000	18.990
COD	MG/G	0					

Project: Ashtabula  
 Jurisdiction: Ohio  
 Basin: Erie

Year: 1984 Dry Density (Kg/L): .57  
 Material Type: Silty Clay Sample Type: Grab, Ponar  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	10	3.899	1.620	2.679	7.200	3.145
Oil & Grease	MG/G	13	.447	.288	.000	.940	.512
Total P	MG/G	13	.585	.170	.434	.870	.508
TKN	MG/G	13	.936	.594	.220	2.379	.974
NH3	MG/G	13	.071	.079	.001	.304	.058
PCB-1221	UG/G	10	.100	.000	.100	.100	.100
PCB-1232	UG/G	10	.100	.000	.100	.100	.100
PCB-1242	UG/G	10	.100	.000	.100	.100	.100
PCB-1248	UG/G	10	.361	.214	.170	.810	.340
PCB-1254	UG/G	10	.100	.000	.100	.100	.100
PCB-1260	UG/G	10	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	10	.260	.126	.100	.500	.250
Pb	UG/G	10	24.793	8.675	12.990	37.990	27.495
As	UG/G	10	13.482	1.957	10.000	15.390	13.990
Cd	UG/G	10	2.000	.667	1.000	3.000	2.000
Cu	UG/G	10	34.493	4.006	27.000	40.000	35.490
Zn	UG/G	10	121.300	10.700	107.900	145.900	117.900
Cr	UG/G	10	21.595	3.746	16.000	28.990	20.990
Ni	UG/G	10	34.193	3.454	27.000	37.990	34.490
COD	MG/G	13	47.8	15.9	2.4	64.3	52.8

Project: Cleveland  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 12/12/79 Ending Date: 01/16/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 28289.  
Total Cost (\$/M\*\*3): 7.13  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1980 Beginning Date: 03/26/80 Ending Date: 04/15/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 29803.  
Total Cost (\$/M\*\*3): 5.76  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1980 Beginning Date: 03/26/80 Ending Date: 06/06/80  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 254730.  
Total Cost (\$/M\*\*3): 8.23  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1981 Beginning Date: 04/09/81 Ending Date: 04/30/81  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 16998.  
Total Cost (\$/M\*\*3): 9.48  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1981 Beginning Date: 09/10/80 Ending Date: 09/04/81  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Luedtke  
Total Quantity (M\*\*3): 104857.  
Total Cost (\$/M\*\*3): 11.74  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1981 Beginning Date: 09/10/80 Ending Date: 06/02/81  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Luedtke  
Total Quantity (M\*\*3): 126230.  
Total Cost (\$/M\*\*3): 11.00  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Project: Cleveland  
Jurisdiction: Ohio  
Basin: Erie

Fiscal Year: 1982 Beginning Date: 03/25/82 Ending Date: 12/17/82  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 40055.  
Total Cost (\$/M\*\*3): 6.20  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1982 Beginning Date: 03/25/82 Ending Date: 09/25/82  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 362669.  
Total Cost (\$/M\*\*3): 8.36  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1983 Beginning Date: 10/20/82 Ending Date: 10/31/83  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 86969.  
Total Cost (\$/M\*\*3): 11.92  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1983 Beginning Date: 10/20/82 Ending Date: 10/31/83  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 251177.  
Total Cost (\$/M\*\*3): 9.74  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1984 Beginning Date: 04/17/84 Ending Date: 09/30/84  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 108751.  
Total Cost (\$/M\*\*3): 6.25  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Fiscal Year: 1984 Beginning Date: 04/17/84 Ending Date: 09/30/84  
Location: Cuyahoga & Old River Maximum Depth (Meters): 8.8  
Equipment: Clamshell Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 252848.  
Total Cost (\$/M\*\*3): 8.47  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

Project: Cleveland  
 Jurisdiction: Ohio  
 Basin: Erie

Fiscal Year: 1984 Beginning Date: 04/17/84 Ending Date: 09/30/84  
 Location: East Entrance Maximum Depth (Meters): 8.8  
 Equipment: Clamshell Contractor: Dunbar & Sullivan  
 Total Quantity (M\*\*3): 7921.  
 Total Cost (\$/M\*\*3): 6.54  
 Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.87

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): .72  
 Material Type: Silty Sand Sample Type: Grab, Ponar  
 Analytical Lab: Aquatech Environmental Consultants

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	6	3.646	1.545	1.389	5.509	4.039
Oil & Grease	MG/G	6	1.602	1.325	.135	3.239	1.469
Total P	MG/G	6	.624	.209	.440	.997	.589
TKN	MG/G	6	.537	.318	.234	.970	.469
NH3	MG/G	6	.214	.266	.024	.737	.148
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	6	.143	.082	.050	.230	.140
Pb	UG/G	6	95.932	24.813	57.990	117.900	106.400
As	UG/G	6	7.100	4.238	2.000	14.300	6.350
Cd	UG/G	6	6.033	2.587	2.799	9.099	5.949
Cu	UG/G	6	170.433	53.368	94.000	249.900	173.900
Zn	UG/G	6	490.750	115.969	349.900	626.000	495.900
Cr	UG/G	6	18.993	8.594	9.199	28.990	18.990
Ni	UG/G	6	48.158	16.299	22.000	65.990	53.490
COD	MG/G	6	35.5	30.2	2.7	63.9	37.7

Project: Conneaut  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 07/16/80 Ending Date: 07/30/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 28024.  
Total Cost (\$/M\*\*3): 3.95  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Fiscal Year: 1980 Beginning Date: 11/26/80 Ending Date: 12/22/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 34405.  
Total Cost (\$/M\*\*3): 4.63  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Fiscal Year: 1981 Beginning Date: 10/15/81 Ending Date: 10/22/81  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 84892.  
Total Cost (\$/M\*\*3): 2.79  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Fiscal Year: 1982 Beginning Date: 07/12/82 Ending Date: 07/26/82  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 42815.  
Total Cost (\$/M\*\*3): 4.10  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Fiscal Year: 1983 Beginning Date: 08/03/83 Ending Date: 09/15/83  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Bucket Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 60242.  
Total Cost (\$/M\*\*3): 4.31  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Fiscal Year: 1983 Beginning Date: 08/03/83 Ending Date: 09/16/83  
Location: Municipal Pier Acc Maximum Depth (Meters): 8.8  
Equipment: Bucket Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 48959.  
Total Cost (\$/M\*\*3): 5.75  
Disposal Method: Open Lat: 420300.0 Long: 803700.0

Project: Conneaut  
 Jurisdiction: Ohio  
 Basin: Erie

Fiscal Year: 1984 Beginning Date: 08/08/84 Ending Date: 08/20/84  
 Location: Harbor Channel Maximum Depth (Meters): 8.8  
 Equipment: Bucket Contractor: Dunbar & Sullivan  
 Total Quantity (M\*\*3): 29678.  
 Total Cost (\$/M\*\*3): 3.64  
 Disposal Method: Open Lat: 420300.0 Long: 803700.0

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): .64  
 Material Type: Silty Clay Sample Type: Grab, Ponar  
 Analytical Lab: Ecology and Environment

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	33	3.793	1.146	1.480	6.480	3.420
Oil & Grease	MG/G	33	3.336	6.483	.185	25.953	.729
Total P	MG/G	33	.675	.200	.345	1.177	.645
TKN	MG/G	33	.236	.134	.039	.698	.217
NH3	MG/G	33	.044	.083	.010	.425	.010
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	33	.000	.000	.000	.001	.000
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	31	.096	.041	.045	.188	.074
Pb	UG/G	33	21.873	7.680	13.300	46.300	20.700
As	UG/G	33	17.218	2.491	11.400	21.600	17.600
Cd	UG/G	33	5.491	10.625	.300	54.400	1.400
Cu	UG/G	33	29.030	4.476	22.000	43.000	28.000
Zn	UG/G	33	139.194	57.949	22.600	317.000	119.000
Cr	UG/G	33	28.333	11.160	20.000	67.000	24.000
Ni	UG/G	33	36.970	5.860	28.800	55.000	35.900
COD	MG/G	33	41.6	8.8	23.6	56.5	41.6

Project: Fairport  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 05/25/80 Ending Date: 07/25/80  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Clamshell Contractor: Luedtke  
Total Quantity (M\*\*3): 31344.  
Total Cost (\$/M\*\*3): 11.01  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1980 Beginning Date: 04/10/80 Ending Date: 04/16/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 6499.  
Total Cost (\$/M\*\*3): 7.94  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1981 Beginning Date: 08/05/81 Ending Date: 08/12/81  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 42127.  
Total Cost (\$/M\*\*3): 4.43  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1981 Beginning Date: 11/25/81 Ending Date: 12/22/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 30965.  
Total Cost (\$/M\*\*3): 6.33  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1981 Beginning Date: 03/30/81 Ending Date: 04/09/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 6842.  
Total Cost (\$/M\*\*3): 10.54  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1982 Beginning Date: 08/30/82 Ending Date: 09/15/82  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 47496.  
Total Cost (\$/M\*\*3): 5.02  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Project: Fairport  
Jurisdiction: Ohio  
Basin: Erie

Fiscal Year: 1982 Beginning Date: 03/25/82 Ending Date: 03/31/82  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 12249.  
Total Cost (\$/M\*\*3): 7.98  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1983 Beginning Date: 03/23/83 Ending Date: 04/01/83  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 26358.  
Total Cost (\$/M\*\*3): 6.53  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Fiscal Year: 1984 Beginning Date: 08/08/84 Ending Date: 08/24/84  
Location: Entrance Channel Maximum Depth (Meters): 8.5  
Equipment: Bucket Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 29526.  
Total Cost (\$/M\*\*3): 3.79  
Disposal Method: Re-use Lat: 414900.0 Long: 811600.0

Fiscal Year: 1984 Beginning Date: 08/08/84 Ending Date: 08/20/84  
Location: Grand River Channel Maximum Depth (Meters): 8.5  
Equipment: Bucket Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 70366.  
Total Cost (\$/M\*\*3): 4.82  
Disposal Method: Open Lat: 414900.0 Long: 811600.0

Project: Fairport  
 Jurisdiction: Ohio  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): .56  
 Material Type: Sandy Clay Sample Type: Grab, Ponar  
 Analytical Lab: Wadsworth Testing Laboratory

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	31	2.603	.266	2.040	3.110	2.630
Oil & Grease	MG/G	31	.000	.000	.000	.001	.000
Total P	MG/G	31	.263	.171	.048	.680	.220
TKN	MG/G	31	.302	.229	.068	1.200	.230
NH3	MG/G	31	.115	.068	.001	.320	.120
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	31	.100	.000	.100	.100	.100
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	31	36.258	3.907	30.000	43.000	37.000
As	UG/G	31	9.983	1.825	6.500	13.800	9.620
Cd	UG/G	31	1.612	.783	.500	3.000	1.500
Cu	UG/G	31	20.226	5.352	13.000	30.000	19.000
Zn	UG/G	31	119.581	19.486	68.000	150.000	120.000
Cr	UG/G	31	42.161	8.319	22.000	68.000	41.000
Ni	UG/G	31	34.258	6.918	23.000	65.000	33.000
COD	MG/G	31	47.7	13.4	21.0	74.0	46.7

Project: Huron  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 04/16/80 Ending Date: 05/06/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 89568.  
Total Cost (\$/M\*\*3): 1.76  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Fiscal Year: 1980 Beginning Date: 07/08/80 Ending Date: 07/30/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 29138.  
Total Cost (\$/M\*\*3): 5.13  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Fiscal Year: 1980 Beginning Date: 04/07/80 Ending Date: 04/15/80  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 60663.  
Total Cost (\$/M\*\*3): 1.76  
Disposal Method: Open Lat: 41280.0 Long: 823200.0

Fiscal Year: 1981 Beginning Date: 06/05/81 Ending Date: 08/05/81  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 105427.  
Total Cost (\$/M\*\*3): 2.90  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Fiscal Year: 1981 Beginning Date: 06/05/81 Ending Date: 08/05/81  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 26146.  
Total Cost (\$/M\*\*3): 2.88  
Disposal Method: Open Lat: 41280.0 Long: 823200.0

Fiscal Year: 1982 Beginning Date: 06/29/82 Ending Date: 08/25/82  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 103349.  
Total Cost (\$/M\*\*3): 5.09  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Project: Huron  
Jurisdiction: Ohio  
Basin: Erie

Fiscal Year: 1983 Beginning Date: 06/16/83 Ending Date: 08/26/83  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 68654.  
Total Cost (\$/M\*\*3): 5.23  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Fiscal Year: 1983 Beginning Date: 06/16/83 Ending Date: 08/26/83  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 10569.  
Total Cost (\$/M\*\*3): 2.49  
Disposal Method: Open Lat: 41280.0 Long: 823200.0

Fiscal Year: 1984 Beginning Date: 07/05/84 Ending Date: 09/11/84  
Location: Harbor Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 127190.  
Total Cost (\$/M\*\*3): 4.42  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 2.02

Fiscal Year: 1984 Beginning Date: 07/05/84 Ending Date: 09/11/84  
Location: Harbor Channel Maximum Depth (Meters): 8.8  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 68305.  
Total Cost (\$/M\*\*3): 1.80  
Disposal Method: Open Lat: 41280.0 Long: 823200.0

Project: Lorain  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 07/30/80 Ending Date: 08/20/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 48001.  
Total Cost (\$/M\*\*3): 3.52  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Fiscal Year: 1981 Beginning Date: 03/30/81 Ending Date: 04/09/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 19099.  
Total Cost (\$/M\*\*3): 3.84  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Fiscal Year: 1981 Beginning Date: 06/23/81 Ending Date: 07/31/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 57342.  
Total Cost (\$/M\*\*3): 4.46  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Fiscal Year: 1982 Beginning Date: 07/01/82 Ending Date: 08/10/82  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 81146.  
Total Cost (\$/M\*\*3): 4.42  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Fiscal Year: 1983 Beginning Date: 03/18/83 Ending Date: 04/21/83  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Clamshell Contractor: Luedtke  
Total Quantity (M\*\*3): 83763.  
Total Cost (\$/M\*\*3): 7.38  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Fiscal Year: 1984 Beginning Date: 08/31/84 Ending Date: 10/20/84  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 92596.  
Total Cost (\$/M\*\*3): 5.34  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 3.64

Project: Lorain  
 Jurisdiction: Ohio  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1983  
 Material Type: Silty Clay  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH  
 Dry Density (Kg/L): .56  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	15	4.753	2.191	1.400	8.199	4.800
Oil & Grease	MG/G	15	1.811	1.729	.240	5.980	1.339
Total P	MG/G	15	1.080	.512	.521	2.400	.890
TKN	MG/G	15	1.731	.988	.095	3.199	2.079
NH3	MG/G	15	.162	.133	.006	.389	.119
PCB-1221	UG/G	15	.100	.000	.100	.100	.100
PCB-1232	UG/G	15	.100	.000	.100	.100	.100
PCB-1242	UG/G	15	.100	.000	.100	.100	.100
PCB-1248	UG/G	15	.100	.000	.100	.100	.100
PCB-1254	UG/G	15	.140	.075	.100	.340	.100
PCB-1260	UG/G	15	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	15	.215	.089	.100	.360	.220
Pb	UG/G	15	29.663	22.004	4.000	75.990	23.000
As	UG/G	15	11.673	2.958	7.200	18.890	11.090
Cd	UG/G	15	2.853	2.457	.400	8.400	2.000
Cu	UG/G	15	39.392	19.480	14.990	73.990	32.990
Zn	UG/G	15	163.471	87.566	48.000	335.900	160.900
Cr	UG/G	15	28.593	13.531	13.990	57.990	24.000
Ni	UG/G	15	29.793	10.213	13.990	48.000	30.990
COD	MG/G	15	66.6	44.4	4.2	130.9	64.8

Project: Port Clinton  
 Jurisdiction: Ohio  
 Basin: Erie

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): .70  
 Material Type: Silty Clay Sample Type: Grab, Ponar  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	5	2.092	1.446	.560	4.200	1.800
Oil & Grease	MG/G	0					
Total P	MG/G	5	.487	.098	.373	.568	.541
TKN	MG/G	5	.455	.388	.133	.926	.215
NH3	MG/G	5	.021	.017	.005	.041	.012
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	5	.100	.000	.100	.100	.100
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	.120	.045	.100	.200	.100
Pb	UG/G	5	12.800	1.789	11.000	15.000	13.000
As	UG/G	5	5.940	2.436	4.100	10.200	5.100
Cd	UG/G	5	.360	.134	.300	.600	.300
Cu	UG/G	5	18.400	5.727	10.000	26.000	18.000
Zn	UG/G	5	44.600	12.661	26.000	55.000	51.000
Cr	UG/G	5	4.400	1.140	3.000	6.000	4.000
Ni	UG/G	5	18.800	5.069	12.000	25.000	19.000
COD	MG/G	5	14.6	9.1	3.1	23.3	17.1

Project: Rocky River  
 Jurisdiction: Ohio  
 Basin: Erie

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: Silty Sand  
 Analytical Lab: Wadsworth Testing Laboratory  
 Dry Density (Kg/L): .50  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	5	2.902	1.217	.810	3.970	3.330
Oil & Grease	MG/G	5	.000	.000	.000	.000	.000
Total P	MG/G	5	1.198	.746	.230	1.910	1.420
TKN	MG/G	5	.334	.432	.035	1.090	.165
NH3	MG/G	5	.143	.201	.001	.430	.001
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	5	.100	.000	.100	.100	.100
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	5	61.800	30.622	28.000	97.000	58.000
As	UG/G	5	10.372	2.047	7.160	12.500	10.500
Cd	UG/G	5	2.200	.908	1.000	3.000	2.500
Cu	UG/G	5	22.280	11.730	4.400	34.000	28.000
Zn	UG/G	5	174.200	75.652	61.000	240.000	190.000
Cr	UG/G	5	26.880	14.511	6.400	42.000	27.000
Ni	UG/G	5	36.800	11.904	17.000	46.000	39.000
COD	MG/G	5	60.0	58.7	1.0	149.0	66.4

Project: Sandusky  
Jurisdiction: Ohio  
Basin: Erie

#### DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 09/10/80 Ending Date: 10/01/80  
Location: Harbor Maximum Depth (Meters): 7.9  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 60694.  
Total Cost (\$/M\*\*3): 4.72  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

Fiscal Year: 1981 Beginning Date: 09/02/81 Ending Date: 09/30/81  
Location: Harbor Channel Maximum Depth (Meters): 7.9  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 220542.  
Total Cost (\$/M\*\*3): 1.95  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

Fiscal Year: 1982 Beginning Date: 07/19/82 Ending Date: 08/11/82  
Location: Harbor Maximum Depth (Meters): 7.9  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 108485.  
Total Cost (\$/M\*\*3): 3.24  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

Fiscal Year: 1983 Beginning Date: 04/25/83 Ending Date: 04/26/83  
Location: Harbor Maximum Depth (Meters): 7.9  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 9697.  
Total Cost (\$/M\*\*3): 3.57  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

Fiscal Year: 1983 Beginning Date: 06/19/83 Ending Date: 07/31/83  
Location: Harbor Maximum Depth (Meters): 7.9  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 234447.  
Total Cost (\$/M\*\*3): 2.55  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

Fiscal Year: 1984 Beginning Date: 05/05/84 Ending Date: 07/04/84  
Location: Harbor Channel Maximum Depth (Meters): 7.9  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 108575.  
Total Cost (\$/M\*\*3): 3.62  
Disposal Method: Open Lat: 413300.0 Long: 824000.0

#### SAMPLE SUMMARY REPORT

No Sampling Activities

Project: Toledo  
Jurisdiction: Ohio  
Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 10/05/80 Ending Date: 11/26/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 38293.  
Total Cost (\$/M\*\*3): 9.02  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1980 Beginning Date: 04/15/80 Ending Date: 07/09/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 496753.  
Total Cost (\$/M\*\*3): 2.19  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1980 Beginning Date: 08/19/80 Ending Date: 09/10/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 91415.  
Total Cost (\$/M\*\*3): 2.86  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1980 Beginning Date: 10/01/80 Ending Date: 10/15/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 29450.  
Total Cost (\$/M\*\*3): 4.79  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1980 Beginning Date: 12/18/80 Ending Date: 12/22/80  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 1529.  
Total Cost (\$/M\*\*3): 29.59  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1981 Beginning Date: 08/05/81 Ending Date: 08/19/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Hoffman Contractor: Gov't  
Total Quantity (M\*\*3): 33587.  
Total Cost (\$/M\*\*3): 2.98  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Project: Toledo  
Jurisdiction: Ohio  
Basin: Erie

Fiscal Year: 1981 Beginning Date: 09/29/81 Ending Date: 12/21/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 131449.  
Total Cost (\$/M\*\*3): 4.15  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1981 Beginning Date: 03/23/81 Ending Date: 05/06/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 169260.  
Total Cost (\$/M\*\*3): 3.46  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1981 Beginning Date: 08/12/81 Ending Date: 10/06/81  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 429953.  
Total Cost (\$/M\*\*3): 1.64  
Disposal Method: Open Lat: 414800.0 Long: 831700.0

Fiscal Year: 1982 Beginning Date: 08/10/82 Ending Date: 10/18/82  
Location: Outer Harbor Maximum Depth (Meters): 8.5  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 86544.  
Total Cost (\$/M\*\*3): 7.48  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1982 Beginning Date: 09/13/82 Ending Date: 11/22/82  
Location: Outer Harbor Maximum Depth (Meters): 8.5  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 129867.  
Total Cost (\$/M\*\*3): 4.49  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1982 Beginning Date: 03/31/82 Ending Date: 07/19/82  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 653660.  
Total Cost (\$/M\*\*3): 2.43  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Project: Toledo  
Jurisdiction: Ohio  
Basin: Erie

Fiscal Year: 1982 Beginning Date: 12/09/82 Ending Date: 12/20/82  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 46092.  
Total Cost (\$/M\*\*3): 3.35  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1983 Beginning Date: 07/25/83 Ending Date: 10/25/83  
Location: Outer Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Clamshell Contractor: Great Lakes  
Total Quantity (M\*\*3): 205417.  
Total Cost (\$/M\*\*3): 5.70  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1983 Beginning Date: 04/01/83 Ending Date: 06/19/83  
Location: Harbor Maximum Depth (Meters): 8.5  
Equipment: Markham Contractor: Gov't  
Total Quantity (M\*\*3): 482641.  
Total Cost (\$/M\*\*3): 2.13  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1984 Beginning Date: 04/17/84 Ending Date: 07/04/84  
Location: Outer Channel Maximum Depth (Meters): 8.5  
Equipment: Bucket Contractor: NATCO  
Total Quantity (M\*\*3): 210414.  
Total Cost (\$/M\*\*3): 5.25  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1984 Beginning Date: 04/17/84 Ending Date: 07/04/84  
Location: Outer Channel Maximum Depth (Meters): 8.5  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 144975.  
Total Cost (\$/M\*\*3): 6.43  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Fiscal Year: 1984 Beginning Date: 06/30/84 Ending Date: 11/26/84  
Location: Harbor Channel Maximum Depth (Meters): 8.5  
Equipment: Pipeline Contractor: Canonie  
Total Quantity (M\*\*3): 345135.  
Total Cost (\$/M\*\*3): 5.00  
Disposal Method: Confined CDF Cost (\$/M\*\*3): 1.35

Project: Toledo  
 Jurisdiction: Ohio  
 Basin: Erie

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): .44  
 Material Type: Silty Clay Sample Type: Grab, Ponar  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	15	5.567	.876	4.209	6.989	5.610
Oil & Grease	MG/G	15	1.491	1.656	.420	7.160	1.059
Total P	MG/G	15	1.090	.353	.749	2.119	1.029
TKN	MG/G	15	1.745	.504	.847	2.549	1.649
NH3	MG/G	15	.215	.147	.116	.716	.170
PCB-1221	UG/G	15	.100	.000	.100	.100	.100
PCB-1232	UG/G	15	.100	.000	.100	.100	.100
PCB-1242	UG/G	15	.100	.000	.100	.100	.100
PCB-1248	UG/G	15	.100	.000	.100	.100	.100
PCB-1254	UG/G	15	.100	.000	.100	.100	.100
PCB-1260	UG/G	15	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	15	.187	.091	.100	.400	.200
Pb	UG/G	15	37.661	28.628	18.990	135.000	27.990
As	UG/G	15	13.255	3.191	8.499	18.600	12.400
Cd	UG/G	15	1.680	.732	1.000	4.000	1.400
Cu	UG/G	15	43.857	11.438	29.990	75.990	42.990
Zn	UG/G	15	159.400	51.816	105.900	303.000	144.900
Cr	UG/G	15	32.993	13.009	22.000	70.990	28.990
Ni	UG/G	15	49.793	7.579	37.990	60.990	49.990
COD	MG/G	15	77.7	14.7	54.4	101.9	77.6

Project: Vermillion  
 Jurisdiction: Ohio  
 Basin: Erie

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L): .51  
 Material Type: Silty Sand Sample Type: Grab, Ponar  
 Analytical Lab: Wadsworth Testing Laboratory

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	7	8217.484	21731.550	3.110	57500.000	3.600
Oil & Grease	MG/G	8	.000	.000	.000	.001	.000
Total P	MG/G	8	.810	.410	.000	1.250	.895
TKN	MG/G	8	1.039	.980	.004	3.080	1.077
NH3	MG/G	8	.271	.183	.001	.580	.258
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	7	.100	.000	.100	.100	.100
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	0					
Pb	UG/G	7	44.286	6.701	36.000	57.000	44.000
As	UG/G	7	9.709	1.305	8.450	11.900	9.620
Cd	UG/G	7	2.114	.393	1.400	2.500	2.000
Cu	UG/G	7	21.714	4.071	16.000	27.000	21.000
Zn	UG/G	7	146.714	20.565	117.000	184.000	144.000
Cr	UG/G	7	24.571	4.429	19.000	33.000	24.000
Ni	UG/G	7	39.571	4.541	34.000	48.000	38.000
COD	MG/G	8	73.6	44.9	.1	157.0	71.9

Project: West Harbor  
 Jurisdiction: Ohio  
 Basin: Erie

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1984  
 Material Type: Silt  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH

Dry Density (Kg/L): .50  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	9	4.798	2.923	.780	8.300	5.400
Oil & Grease	MG/G	0					
Total P	MG/G	9	.445	.083	.294	.545	.474
TKN	MG/G	9	1.452	.942	.186	2.550	1.220
NH3	MG/G	9	.053	.030	.010	.086	.064
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	9	.100	.000	.100	.100	.100
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	9	.100	.000	.100	.100	.100
Pb	UG/G	10	13.600	5.777	5.000	20.000	14.500
As	UG/G	9	4.289	1.957	2.300	8.100	4.000
Cd	UG/G	10	.470	.157	.300	.700	.500
Cu	UG/G	10	25.400	11.759	5.000	39.000	30.000
Zn	UG/G	10	61.100	24.474	19.000	88.000	63.500
Cr	UG/G	10	6.800	2.658	2.000	9.000	8.000
Ni	UG/G	10	25.400	10.146	8.000	37.000	28.000
COD	MG/G	10	25.5	16.2	4.1	45.2	22.5

Project: Erie  
 Jurisdiction: Pennsylvania  
 Basin: Erie

DREDGING ACTIVITIES REPORT

Fiscal Year: 1981 Beginning Date: 05/01/81 Ending Date: 05/19/81  
 Location: Harbor Maximum Depth (Meters): 7.6  
 Equipment: Lyman Contractor: Gov't  
 Total Quantity (M\*\*3): 62818.  
 Total Cost (\$/M\*\*3): 2.15  
 Disposal Method: Open Lat: 421300.0 Long: 800400.0

Fiscal Year: 1983 Beginning Date: 07/31/83 Ending Date: 08/14/83  
 Location: Harbor Maximum Depth (Meters): 7.6  
 Equipment: Markham Contractor: Gov't  
 Total Quantity (M\*\*3): 128653.  
 Total Cost (\$/M\*\*3): 1.48  
 Disposal Method: Open Lat: 421300.0 Long: 800400.0

SAMPLE SUMMARY REPORT

Year: 1982 Dry Density (Kg/L):  
 Material Type: Sandy Silt Sample Type: Grab, Ponar  
 Analytical Lab: Applied Biology, 641 Dekalb Way, Decatur, Georgia

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	10	5.646	2.540	1.960	8.950	6.020
Oil & Grease	MG/G	10	.000	.000	.000	.001	.000
Total P	MG/G	10	.209	.295	.071	1.043	.130
TKN	MG/G	10	.557	.281	.156	.909	.669
NH3	MG/G	10	.078	.027	.035	.119	.078
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	10	2.000	.001	2.000	2.000	2.000
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	10	.001	.000	.001	.001	.001
Pb	UG/G	10	106.210	54.824	42.700	187.900	99.600
As	UG/G	10	1.730	.439	1.100	2.470	1.830
Cd	UG/G	10	5.923	3.057	2.300	11.950	5.835
Cu	UG/G	10	53.526	18.865	34.310	88.420	48.110
Zn	UG/G	10	213.080	97.272	90.000	351.900	205.750
Cr	UG/G	10	45.195	22.979	3.700	77.840	45.595
Ni	UG/G	10	52.901	27.621	26.920	116.500	47.275
COD	MG/G	10	85.6	44.9	26.9	154.8	81.7

PROJECT: BELLE RIVER  
JURISDICTION: ONTARIO  
BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 11/02/83 Ending Date: 02/15/84  
Maximum Depth (Meters): 1.8

Equipment: MECHANICAL

Total Quantity (M\*\*3): 32,544.00 Pay Quantity (M\*\*3): 31,153.00

Dredging Cost (\$/CMPM):

Disposal Method: RE-USE

Lat: Long:

SAMPLE SUMMARY REPORT

No Sampling Activities

PROJECT: KINGSVILLE DREDGING (PITTS:SUB:DEAN)  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 06/13/84 Ending Date: 08/10/84  
 Maximum Depth (Meters): 5.5

Equipment: CUTTER SUCTION

Total Quantity (M\*\*3): 32,163.00 Pay Quantity (M\*\*3): 22,929.00

Dredging Cost (\$/CMPM): 6.01

Disposal Method: RE-USE

Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982

Material Type: CLASS 'B'

Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.60

Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	1550.000	1301.000	510.000	3010.000	1130.000
Vol Solids	%	3	3.670	2.730	0.770	6.180	4.060
Total P	UG/G	3	630.000	340.000	260.000	930.000	710.000
TKN	UG/G	3	750.000	635.000	140.000	1410.000	710.000
NH3		0					
PCB		0					
Hg	UG/G	3	0.240	0.235	0.010	0.480	0.230
Pb	UG/G *	3	16.000	14.520	2.000	30.000	17.000
As		0					
Cd		0					
Cu	UG/G	3	24.300	18.150	5.000	41.000	27.000
Zn	UG/G	3	78.000	47.160	26.000	118.000	90.000
Cr	UG/G	3	33.300	21.000	12.000	54.000	34.000
Ni	UG/G *	3	33.300	36.550	2.000	73.000	26.000
COD	UG/G	3	24770.0	16480.0	6300.0	38000.0	30000.0

PROJECT: KINGSVILLE MAINTENANCE DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 09/19/80 Ending Date: 12/19/80  
 Maximum Depth (Meters): 5.5

Equipment: CLAM AND SCOW

Total Quantity (M\*\*3): 31,080.00 Pay Quantity (M\*\*3): 28,941.00

Dredging Cost (\$/CMPM): 4.97

Disposal Method: OPEN

Lat: 420100 Long: 824212

SAMPLE SUMMARY REPORT

Year: 1980 Dry Density (Kg/L): 1.70  
 Material Type: FINE TO VERY FINE SAND, CLAY Sample Type:  
 Analytical Lab: BEAK

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	360.000	374.000	30.000	750.000	330.000
Vol Solids	%	4	2.125	1.580	0.800	4.200	1.750
Total P	UG/G	4	463.000	211.800	230.000	700.000	460.000
TKN	UG/G	4	628.000	689.000	60.000	860.000	475.000
NH3		0					
PCB		0					
Hg	UG/G	4	0.100	0.124	0.005	0.269	0.063
Pb	UG/G	4	26.000	18.810	11.000	50.000	21.500
As		0					
Cd		0					
Cu	UG/G	4	15.800	15.900	2.400	36.000	12.400
Zn	UG/G	4	55.125	44.002	17.500	111.000	46.000
Cr	UG/G	4	17.500	17.720	3.500	42.000	12.250
Ni	UG/G	4	83.750	103.550	8.500	228.000	49.250
COD	UG/G	4	19850.0	1900.0	2600.0	38100.0	19350.0

PROJECT: LEAMINGTON  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 03/08/83 Ending Date: 06/07/84  
 Maximum Depth (Meters): 2.0

Equipment: CUTTER SECTION

Total Quantity (M\*\*3): 62,140.00 Pay Quantity (M\*\*3): 53,640.00

Dredging Cost (\$/CMPM): 5.94

Disposal Method: RE-USE

Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1983

Dry Density (Kg/L): 1.50

Material Type: CLASS 'B'; SAND

Sample Type: UNDISTURBED CORE

Analytical Lab: ENVIROCLEAN

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	455.000	79.000	390.000	570.000	430.000
Vol Solids	%	4	0.985	0.079	0.920	1.070	0.980
Total P	UG/G	4	306.000	100.000	230.000	460.000	268.000
TKN	UG/G	4	162.500	58.000	120.000	250.000	140.000
NH3		0					
PCB		0					
Hg	UG/G	4	0.050	1.820	0.030	0.070	0.050
Pb	UG/G	* 4	20.000	0.000	20.000	20.000	20.000
As		0					
Cd		0					
Cu	UG/G	4	3.750	1.300	3.000	6.000	3.000
Zn	UG/G	4	19.250	1.700	17.000	21.000	19.500
Cr	UG/G	4	31.250	2.500	28.000	34.000	31.500
Ni	UG/G	* 4	5.000	0.000	5.000	5.000	5.000
COD	UG/G	4	2827.0	1064.0	1480.0	4080.0	2875.0

PROJECT: PORT DOVER HARBOUR DEVEL. STAGE 2  
JURISDICTION: ONTARIO  
BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 01/ /84 Ending Date: 11/ /84  
Maximum Depth (Meters): 3.6

Equipment: DRAGLINE

Total Quantity (M\*\*3): 40,474.00 Pay Quantity (M\*\*3): 22,800.00

Dredging Cost (\$/CMPM): 7.33

Disposal Method: CONFINED

CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

No Sampling Activities

PROJECT: PORT STANLEY  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 09/15/80 Ending Date: 04/27/81  
 Maximum Depth (Meters): 7.0

Equipment: CLAMSHELL AND SC  
 Total Quantity (M\*\*3): 175,504.00 Pay Quantity (M\*\*3): 125,010.00  
 Dredging Cost (\$/CMPM): 4.46  
 Disposal Method: BEACH Lat: Long:

Calendar Year: 1983 Beginning Date: 08/16/83 Ending Date: 11/12/83  
 Maximum Depth (Meters): 7.0

Equipment: DIPPER AND SCOWS  
 Total Quantity (M\*\*3): 78,841.00 Pay Quantity (M\*\*3): 58,087.00  
 Dredging Cost (\$/CMPM): 6.20  
 Disposal Method: BEACH Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1979  
 Material Type: SAND, CLAY, SILT  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.60  
 Sample Type: GRABS

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	824.800	644.000	151.000	1570.000	789.000
Vol Solids	%	4	3.260	1.680	0.812	4.610	3.810
Total P	UG/G	4	741.500	225.000	436.000	1050.000	740.000
TKN	UG/G	4	800.000	500.000	110.000	1330.000	1000.000
NH3		0					
PCB		0					
Hg	UG/G	4	0.040	0.020	0.014	0.080	0.040
Pb		0					
As		0					
Cd	UG/G	4	3.400	1.470	1.700	5.300	3.300
Cu		0					
Zn		0					
Cr	UG/G	4	17.800	10.626	4.700	30.600	17.900
Ni		0					
COD	UG/G	4	33080.0	16650.0	8300.0	44100.0	40000.0

Year: 1982  
 Material Type: CLASS 'B'  
 Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.50  
 Sample Type: HOMOGENIZED CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	2	355.000	148.000	250.000	460.000	355.000
Vol Solids	%	2	0.765	0.091	0.700	0.830	0.765
Total P	UG/G	2	425.000	7.000	420.000	430.000	425.000
TKN	UG/G	2	205.000	35.000	180.000	230.000	205.000
NH3		0					
PCB		0					
Hg	UG/G	2	0.015	0.007	0.010	0.020	0.150
Pb	UG/G *	2	2.000	0.000	2.000	2.000	2.000
As		0					
Cd	UG/G *	2	1.000	0.000	1.000	1.000	1.000
Cu		0					
Zn		0					
Cr	UG/G	2	21.000	4.200	18.000	24.000	21.000
Ni		0					
COD	UG/G	2	5750.0	1620.0	4600.0	6900.0	5750.0

PROJECT: SARNIA MARINA DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 12/13/82 Ending Date: 04/29/83  
 Maximum Depth (Meters): 2.0

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 36,647.00 Pay Quantity (M\*\*3): 30,251.00  
 Dredging Cost (\$/CMPM): 5.74  
 Disposal Method: BEACH Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: SAND, SILT  
 Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.50  
 Sample Type: UNDISTURBED CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	819.000	152.000	655.000	1020.000	801.000
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G *	7	0.018	0.009	0.010	0.032	0.018
Hg	UG/G	7	1.046	0.375	0.350	1.440	1.130
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD		0					

PROJECT: ST. CLAIR R. SE BEND CUTOFF CHANNEL  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 08/11/80 Ending Date: 03/31/81  
 Maximum Depth (Meters): 8.3

Equipment: CLAMSHELLS AND S  
 Total Quantity (M\*\*3): 124,219.00 Pay Quantity (M\*\*3): 106,217.00  
 Dredging Cost (\$/CMPM): 6.63  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 11.14

Calendar Year: 1984 Beginning Date: 05/17/84 Ending Date: 09/12/84  
 Maximum Depth (Meters): 8.3

Equipment: CLAMSHELL  
 Total Quantity (M\*\*3): 70,681.00 Pay Quantity (M\*\*3): 56,792.00  
 Dredging Cost (\$/CMPM): 11.07  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 11.14

SAMPLE SUMMARY REPORT

Year: 1974 Dry Density (Kg/L): 1.70  
 Material Type: CLASS 'B' Sample Type:  
 Analytical Lab: JAMES F. MACLAREN LTD.

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids	%		1.380		0.840	2.620	
Total P		0					
TKN		0					
NH3		0					
PCB		0					
Hg	UG/G		0.897		0.180	2.600	
Pb		0					
As		0					
Cd	UG/G *		1.000		1.000	1.000	
Cu	UG/G		7.220		1.810	16.080	
Zn	UG/G		26.350		14.160	47.480	
Cr		0					
Ni		0					
COD		0					

Year: 1983 Dry Density (Kg/L): 1.60  
 Material Type: CLASS 'B'; SAND Sample Type: CORES  
 Analytical Lab: ENVIROCLEAN

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	1	170.000	0.000	170.000	170.000	170.000
Vol Solids	%	3	0.470	0.090	0.360	0.540	0.520
Total P	UG/G	1	46.000	0.000	46.000	46.000	46.000
TKN	UG/G	1	14.000	0.000	14.000	14.000	14.000
NH3		0					
PCB	UG/G *	1	0.010	0.000	0.010	0.010	0.010
Hg	UG/G	3	0.090	0.010	0.080	0.100	0.090
Pb		0					
As	UG/G	1	1.800	0.000	1.800	1.800	1.800
Cd	UG/G *	1	1.000	0.000	1.000	1.000	1.000
Cu	UG/G *	1	3.000	0.000	3.000	3.000	3.000
Zn	UG/G	1	7.000	0.000	7.000	7.000	7.000
Cr	UG/G *	1	5.000	0.000	5.000	5.000	5.000
Ni		0					
COD		0					

PROJECT: WHEATLEY DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ERIE

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 12/16/83 Ending Date: 05/30/84  
 Maximum Depth (Meters): 3.0

Equipment: CLAMSHELL  
 Total Quantity (M\*\*3): 27,858.00 Pay Quantity (M\*\*3): 24,810.00  
 Dredging Cost (\$/CMPM): 10.39  
 Disposal Method: OPEN Lat: 420330 Long: 822530

SAMPLE SUMMARY REPORT

Year: 1983 Dry Density (Kg/L): 1.70  
 Material Type: CLASS B, SAND Sample Type: GRAB  
 Analytical Lab: BONDAR CLEGG, MCMASTER UNIV., ENVIROCLEAR

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G	6	0.000	0.000	0.000	0.001	
Hg	UG/G	6	0.000	0.000	0.000	0.000	
Pb	UG/G	6	31.300	6.400	24.000	25.000	
As	UG/G	6	9.000	7.120	0.000	20.000	
Cd		0					
Cu	UG/G	6	28.000	14.200	11.000	43.000	
Zn	UG/G	6	169.200	102.300	54.000	269.000	
Cr	UG/G	6	108.200	27.900	75.000	139.000	
Ni	UG/G	6	27.200	6.350	17.000	34.000	
COD		0					

Year: 1984 Dry Density (Kg/L): 1.70  
 Material Type: CLASS B SAND Sample Type: GRAB  
 Analytical Lab: BONDAR CLEGG, MCMASTER UNIV., ENVIROCLEAR

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	2	9560.000	460.000	9330.000	9790.000	9560.000
Vol Solids	%	2	17.600	3.600	15.800	19.400	17.600
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G	2	1.240	1.110	0.680	1.800	1.240
Hg		0					
Pb	UG/G *	2	15.000	0.000	15.000	15.000	15.000
As	UG/G	2	7.800	2.600	6.500	9.100	7.800
Cd		0					
Cu	UG/G	2	61.500	8.990	57.000	66.000	61.500
Zn	UG/G	2	340.000	259.900	210.000	470.000	340.000
Cr	UG/G	2	43.000	15.900	35.000	51.000	43.000
Ni	UG/G	2	14.500	1.000	14.000	15.000	14.500
COD		0					



STATE OF TEXAS  
 COMMISSION ON  
 STATE FINANCE

ANNUAL REPORT

REPORT OF THE COMMISSION ON STATE FINANCE FOR THE YEAR ENDING SEPTEMBER 30, 1964

THE COMMISSION ON STATE FINANCE WAS ORGANIZED BY ACT 100, CH. 10, SECT. 1, OF THE 56TH LEGISLATIVE SESSION, 1959. THE COMMISSION'S MANDATE WAS TO STUDY THE STATE FINANCE SYSTEM AND TO RECOMMEND REFORMS TO IMPROVE THE EFFICIENCY AND EQUITY OF THE SYSTEM.

THE COMMISSION HAS COMPLETED ITS STUDY AND IS NOW PREPARING A REPORT TO THE GOVERNOR AND THE LEGISLATURE. THIS REPORT IS THE FIRST OF A SERIES OF REPORTS THAT WILL BE SUBMITTED TO THE GOVERNOR AND THE LEGISLATURE OVER THE NEXT FEW MONTHS.

THE COMMISSION'S REPORTS WILL BE SUBMITTED TO THE GOVERNOR AND THE LEGISLATURE IN THE FOLLOWING ORDER:

Item	1964	1963	1962	1961
Operating Expenses	1,200,000	1,100,000	1,000,000	900,000
Capital Expenses	500,000	450,000	400,000	350,000
Debt Service	1,500,000	1,400,000	1,300,000	1,200,000
Reserve	1,000,000	900,000	800,000	700,000
Other	200,000	150,000	100,000	50,000
<b>Total</b>	<b>4,400,000</b>	<b>4,000,000</b>	<b>3,600,000</b>	<b>3,200,000</b>

THE COMMISSION HAS IDENTIFIED SEVERAL AREAS WHERE REFORMS ARE NEEDED TO IMPROVE THE STATE FINANCE SYSTEM. THESE REFORMS WILL BE DISCUSSED IN THE FOLLOWING REPORTS:

Item	1964	1963	1962	1961
Operating Expenses	1,200,000	1,100,000	1,000,000	900,000
Capital Expenses	500,000	450,000	400,000	350,000
Debt Service	1,500,000	1,400,000	1,300,000	1,200,000
Reserve	1,000,000	900,000	800,000	700,000
Other	200,000	150,000	100,000	50,000
<b>Total</b>	<b>4,400,000</b>	<b>4,000,000</b>	<b>3,600,000</b>	<b>3,200,000</b>

Project: Great Sodus  
Jurisdiction: New York  
Basin: Ontario

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981

Material Type: Sand

Analytical Lab:

Dry Density (Kg/L):

Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	3	2.633	1.893	1.300	4.800	1.800
Oil & Grease	MG/G	3	.279	.182	.150	.487	.200
Total P	MG/G	3	.527	.146	.402	.687	.493
TKN	MG/G	3	.653	.467	.345	1.190	.424
NH3	MG/G	3	.036	.026	.017	.066	.026
PCB-1221	UG/G	1	.000	.000	.000	.000	.000
PCB-1232	UG/G	1	.000	.000	.000	.000	.000
PCB-1242	UG/G	1	.000	.000	.000	.000	.000
PCB-1248	UG/G	1	.000	.000	.000	.000	.000
PCB-1254	UG/G	1	.000	.000	.000	.000	.000
PCB-1260	UG/G	1	.000	.000	.000	.000	.000
PCB-1016	UG/G	1	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	3	.053	.012	.040	.060	.060
Pb	UG/G	3	15.667	5.508	12.000	22.000	13.000
As	UG/G	3	2.067	1.242	1.300	3.500	1.400
Cd	UG/G	3	.483	.240	.340	.760	.350
Cu	UG/G	3	10.333	6.658	6.000	18.000	7.000
Zn	UG/G	3	50.333	19.655	38.000	73.000	40.000
Cr	UG/G	3	8.000	5.292	4.000	14.000	6.000
Ni	UG/G	3	13.333	5.773	10.000	20.000	10.000
COD	MG/G	3	32.5	18.0	17.3	52.4	27.7

Project: Little Sodus  
 Jurisdiction: New York  
 Basin: Ontario

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: Silty Sand  
 Analytical Lab:  
 Dry Density (Kg/L):  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	2	.420	.184	.290	.550	.420
Oil & Grease	MG/G	2	.119	.004	.117	.122	.119
Total P	MG/G	2	.357	.079	.302	.413	.357
TKN	MG/G	2	.095	.072	.044	.146	.095
NH3	MG/G	2	.005	.003	.002	.007	.005
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	2	.040	.000	.040	.040	.040
Pb	UG/G	2	6.000	1.414	5.000	7.000	6.000
As	UG/G	2	1.000	.566	.600	1.400	1.000
Cd	UG/G	2	.170	.000	.170	.170	.170
Cu	UG/G	2	5.000	1.414	4.000	6.000	5.000
Zn	UG/G	2	19.000	5.657	15.000	23.000	19.000
Cr	UG/G	2	2.500	.707	2.000	3.000	2.500
Ni	UG/G	2	8.000	2.828	6.000	10.000	8.000
COD	MG/G	2	5.2	5.4	1.4	9.0	5.2

Project: Oak Orchard  
 Jurisdiction: New York  
 Basin: Ontatio

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1984 Dry Density (Kg/L): .60  
 Material Type: Sandy Silt Sample Type: Grab, Ponar  
 Analytical Lab: Aquatech Environmental Consultants, Melmore, OH

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	7	3.331	2.090	1.439	6.670	2.209
Oil & Grease	MG/G	7	.248	.123	.140	.481	.248
Total P	MG/G	7	.657	.134	.470	.824	.657
TKN	MG/G	7	1.440	1.057	.476	3.399	1.029
NH3	MG/G	7	.058	.034	.008	.097	.066
PCB-1221	UG/G	7	.100	.000	.100	.100	.100
PCB-1232	UG/G	7	.100	.000	.100	.100	.100
PCB-1242	UG/G	7	.100	.000	.100	.100	.100
PCB-1248	UG/G	7	.100	.000	.100	.100	.100
PCB-1254	UG/G	7	.100	.000	.100	.100	.100
PCB-1260	UG/G	7	.100	.000	.100	.100	.100
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	7	.129	.049	.100	.200	.100
Pb	UG/G	7	13.913	10.753	6.400	33.990	8.999
As	UG/G	7	3.171	1.334	1.499	5.699	3.000
Cd	UG/G	7	1.214	.924	.500	2.699	.700
Cu	UG/G	7	23.136	25.227	8.999	79.990	12.990
Zn	UG/G	7	81.550	37.847	50.990	149.900	64.990
Cr	UG/G	7	9.027	2.151	6.300	12.000	9.500
Ni	UG/G	7	17.994	2.773	13.990	20.000	18.990
COD	MG/G	7	29.4	15.3	11.8	58.0	23.2

Project: Olcott  
 Jurisdiction: New York  
 Basin: Ontario

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981  
 Material Type: Sandy Silt  
 Analytical Lab: Great Lakes Laboratory, Buffalo, NY

Dry Density (Kg/L):  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	0					
Oil & Grease	MG/G	5	.000	.000	.000	.000	.000
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	5	.078	.075	.009	.168	.042
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	5	.310	.439	.010	1.000	.020
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	.132	.037	.090	.180	.120
Pb	UG/G	5	53.860	54.838	3.800	130.300	35.300
As	UG/G	5	5.820	3.902	1.500	8.900	8.400
Cd	UG/G	5	.800	.663	.200	1.900	.500
Cu	UG/G	5	40.140	36.551	8.200	94.400	28.400
Zn	UG/G	5	175.620	120.896	60.900	335.900	153.900
Cr	UG/G	5	28.860	27.225	2.800	69.400	33.700
Ni	UG/G	5	50.960	39.039	16.400	113.200	51.600
COD	MG/G	5	.7	.7	.0	1.7	.4

Project: Oswego  
 Jurisdiction: New York  
 Basin: Ontario

DREDGING ACTIVITIES REPORT

Fiscal Year: 1982 Beginning Date: 09/09/82 Ending Date: 09/13/82  
 Location: Harbor Channel Maximum Depth (Meters): 8.2  
 Equipment: Hopper Contractor: NATCO  
 Total Quantity (M\*\*3): 27363.  
 Total Cost (\$/M\*\*3): 4.55  
 Disposal Method: Open Lat: 432900.0 Long: 773400.0

Fiscal Year: 1984 Beginning Date: 06/07/84 Ending Date: 08/29/84  
 Location: Harbor Channel Maximum Depth (Meters): 8.2  
 Equipment: Clamshell Contractor: Dunbar & Sullivan  
 Total Quantity (M\*\*3): 9434.  
 Total Cost (\$/M\*\*3): 7.76  
 Disposal Method: Open Lat: 432900.0 Long: 773400.0

SAMPLE SUMMARY REPORT

Year: 1981 Dry Density (Kg/L):  
 Material Type: Silty Sand Sample Type: Grab, Ponar  
 Analytical Lab:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	11	2.627	.890	1.100	4.500	2.800
Oil & Grease	MG/G	11	.588	.570	.240	2.230	.414
Total P	MG/G	11	.640	.173	.447	1.070	.620
TKN	MG/G	11	.885	.394	.065	1.550	1.020
NH3	MG/G	11	.042	.018	.026	.087	.036
PCB-1221	UG/G	11	.000	.000	.000	.000	.000
PCB-1232	UG/G	11	.000	.000	.000	.000	.000
PCB-1242	UG/G	11	.000	.000	.000	.000	.000
PCB-1248	UG/G	11	.000	.000	.000	.001	.000
PCB-1254	UG/G	11	.000	.000	.000	.000	.000
PCB-1260	UG/G	11	.000	.000	.000	.000	.000
PCB-1016	UG/G	11	.000	.000	.000	.000	.000
Total PCB	UG/G	0					
Hg	UG/G	11	.096	.057	.040	.220	.080
Pb	UG/G	11	37.182	30.883	14.000	125.000	28.000
As	UG/G	11	1.764	.655	.800	3.000	1.800
Cd	UG/G	11	.730	.400	.330	1.700	.650
Cu	UG/G	11	22.818	9.527	11.000	43.000	23.000
Zn	UG/G	11	63.273	22.437	34.000	108.000	63.000
Cr	UG/G	11	11.727	2.687	7.000	16.000	12.000
Ni	UG/G	11	17.455	5.681	9.000	27.000	17.000
COD	MG/G	11	36.0	16.4	15.6	76.5	28.6

Project: Rochester  
Jurisdiction: New York  
Basin: Ontario

### DREDGING ACTIVITIES REPORT

Fiscal Year: 1980 Beginning Date: 06/02/80 Ending Date: 07/15/80  
Location: Harbor Maximum Depth (Meters): 7.3  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 113676.  
Total Cost (\$/M\*\*3): 2.79  
Disposal Method: Open Lat: 431700.0 Long: 773400.0

Fiscal Year: 1981 Beginning Date: 05/19/81 Ending Date: 06/23/81  
Location: Harbor Maximum Depth (Meters): 7.3  
Equipment: Lyman Contractor: Gov't  
Total Quantity (M\*\*3): 82096.  
Total Cost (\$/M\*\*3): 2.89  
Disposal Method: Open Lat: 431700.0 Long: 773400.0

Fiscal Year: 1982 Beginning Date: 08/28/82 Ending Date: 09/13/82  
Location: Harbor Channel Maximum Depth (Meters): 7.3  
Equipment: Hopper Contractor: NATCO  
Total Quantity (M\*\*3): 108897.  
Total Cost (\$/M\*\*3): 5.28  
Disposal Method: Open Lat: 431700.0 Long: 773400.0

Fiscal Year: 1984 Beginning Date: 06/17/84 Ending Date: 09/15/84  
Location: Harbor Channel Maximum Depth (Meters): 7.3  
Equipment: Clamshell Contractor: Dunbar & Sullivan  
Total Quantity (M\*\*3): 227973.  
Total Cost (\$/M\*\*3): 3.67  
Disposal Method: Open Lat: 431700.0 Long: 773400.0

Project: Rochester  
 Jurisdiction: New York  
 Basin: Ontario

SAMPLE SUMMARY REPORT

Year: 1980

Dry Density (Kg/L): .37

Material Type: Silty Sand /  
 Analytical Lab:

Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	0					
Oil & Grease	MG/G	34	.747	.316	.248	1.553	.674
Total P	MG/G	34	.712	.066	.599	.906	.707
TKN	MG/G	34	1.143	.191	.729	1.623	1.141
NH3	MG/G	34	.130	.142	.069	.924	.103
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	34	.176	.222	.100	1.300	.100
Pb	UG/G	34	28.088	4.987	20.000	42.000	27.000
As	UG/G	34	4.341	1.586	1.900	7.800	4.150
Cd	UG/G	34	2.477	.717	1.300	4.000	2.650
Cu	UG/G	34	23.535	3.353	18.800	31.600	23.000
Zn	UG/G	34	102.982	16.999	77.400	147.600	100.700
Cr	UG/G	34	10.262	8.185	1.700	32.700	10.100
Ni	UG/G	34	14.415	2.431	9.400	18.700	14.350
COD	MG/G	34	49.6	40.1	21.2	220.4	35.8

Project: Wilson  
Jurisdiction: New York  
Basin: Ontario

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1981  
Material Type: Sandy Silt  
Analytical Lab: Great Lakes Laboratory, 1300 Elmwood Ave, Buffalo,  
Dry Density (Kg/L):  
Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	0					
Oil & Grease	MG/G	5	.000	.000	.000	.000	.000
Total P	MG/G	0					
TKN	MG/G	0					
NH3	MG/G	5	.073	.014	.055	.091	.074
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	5	.370	.199	.050	.500	.500
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	5	.260	.091	.190	.410	.210
Pb	UG/G	5	25.500	12.946	10.200	42.800	27.100
As	UG/G	5	8.460	1.412	7.000	10.300	7.700
Cd	UG/G	5	.540	.564	.200	1.500	.200
Cu	UG/G	5	26.280	6.162	19.600	34.400	23.400
Zn	UG/G	5	59.300	8.590	45.700	67.300	63.300
Cr	UG/G	5	23.880	7.785	16.500	36.200	22.900
Ni	UG/G	5	14.200	3.772	10.000	17.600	15.700
COD	MG/G	5	.6	.1	.5	.8	.7

PROJECT: BURLINGTON CHANNEL DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 10/23/84 Ending Date: 12/21/84  
 Maximum Depth (Meters): 8.8

Equipment: DIPPER  
 Total Quantity (M\*\*3): 38,924.00 Pay Quantity (M\*\*3): 36,443.00  
 Dredging Cost (\$/CMPM): 7.71  
 Disposal Method: CONFINED (& OPEN) Lat: 431800 Long: 794642  
 CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

Year: 1984 Dry Density (Kg/L): 1.60  
 Material Type: SAND Sample Type: CORES  
 Analytical Lab: ENVIRONMENTAL APPLICATIONS GROUP

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P	UG/G	3	644.000	120.000	530.000	770.000	631.000
TKN	UG/G	3	274.000	60.000	206.000	3210.00	294.000
NH3		0					
PCB	UG/G	8	0.048	0.035	0.014	0.126	0.039
Hg		0					
Pb	UG/G	3	8.330	25150	6.000	11.000	8.000
As	UG/G	3	2.300	0.424	1.700	2.600	2.600
Cd	UG/G *	3	1.000	0.000	1.000	1.000	1.000
Cu	UG/G	3	11.670	1.530	10.000	13.000	12.000
Zn	UG/G	3	99.300	4.720	94.000	103.000	101.000
Cr	UG/G	3	13.000	1.700	11.000	14.000	14.000
Ni	UG/G	3	22.000	4.580	18.000	27.000	21.000
COD	UG/G	3	2863.0	1748.0	1450.0	4820.0	2320.0

PROJECT: GRIMSBY DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1984 Beginning Date: 12/14/84 Ending Date: 06/27/85  
 Maximum Depth (Meters): 2.0

Equipment: CLAM EXCAVATOR

Total Quantity (M\*\*3): 4,895.00 Pay Quantity (M\*\*3): 3,899.20

Dredging Cost (\$/CMPM): 11.00

Disposal Method: RE-USE

Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1984  
 Material Type: SAND, SILT  
 Analytical Lab: BONDAR CLEGG, MCMASTER UNIV.

Dry Density (Kg/L): 1.50  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease		0					
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G	4	0.055	0.068	0.010	0.133	0.039
Hg	UG/G	4	0.044	0.040	0.015	0.085	0.037
Pb	UG/G	4	34.250	25.480	14.000	58.000	32.500
As	UG/G	4	2.000	0.000	2.000	2.000	2.000
Cd		0					
Cu	UG/G	4	81.000	24.510	55.000	105.000	82.000
Zn	UG/G	4	101.000	79.610	41.000	179.000	92.000
Cr	UG/G	4	66.750	26.110	40.000	92.000	67.500
Ni	UG/G	4	27.750	14.760	13.000	43.000	22.500
COD		0					

PROJECT: HAMILTON BERTH DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 08/11/83 Ending Date: 11/01/83  
 Maximum Depth (Meters): 8.2

Equipment: CLAM AND SCOWS

Total Quantity (M\*\*3): 47,514.00 Pay Quantity (M\*\*3): 33,780.00

Dredging Cost (\$/CMPM): 6.22

Disposal Method: CONFINED

CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

Year: 1983

Dry Density (Kg/L): 1.30

Material Type: CLASS 'B' SAND, V. FINE SAND Sample Type: UNDISTURBED CORE

Analytical Lab: ENVIRONMENTAL APPLICATIONS GROUP

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	6	7942.000	12410.000	400.000	33000.000	3200.000
Vol Solids	%	6	9.000	6.890	0.600	19.400	7.150
Total P	UG/G	6	1598.000	1783.000	119.000	5110.000	975.000
TKN	UG/G	6	2172.000	1971.000	160.000	5100.000	1500.000
NH3		0					
PCB	UG/G	6	7.630	12.640	0.070	32.000	1.270
Hg	UG/G	6	0.500	0.620	0.076	1.760	0.280
Pb	UG/G	6	244.170	243.550	11.000	820.000	141.500
As	UG/G	6	7.000	5.000	1.000	16.000	5.000
Cd	UG/G	6	4.080	2.610	0.500	7.000	4.000
Cu	UG/G	6	70.000	73.900	4.000	214.000	51.000
Zn	UG/G	6	1442.670	2316.690	33.000	6117.000	609.500
Cr	UG/G	6	264.170	274.500	8.000	750.000	231.500
Ni	UG/G	6	34.000	18.040	8.000	61.000	34.000
COD	UG/G	3	121600.0	79800.0	42000.0	201600.0	121200.0

PROJECT: HAMILTON CHANNEL DREDGING  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 12/14/83 Ending Date: 08/27/84  
 Maximum Depth (Meters): 8.2

Equipment: CUTTER SUCTION  
 Total Quantity (M\*\*3): 159,018.00 Pay Quantity (M\*\*3): 136,672.00  
 Dredging Cost (\$/CMPM): 3.99  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

Year: < 1983 Dry Density (Kg/L): 1.30  
 Material Type: CLASS 'B' Sample Type:  
 Analytical Lab: ENVIRONMENTAL APPLICATIONS GROUP

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	7970.000	6330.000	1080.000	15000.000	7895.000
Vol Solids	%	4	21.430	8.670	9.800	29.900	23.000
Total P	UG/G	4	3015.000	2320.000	640.000	5950.000	2735.000
TKN	UG/G	4	6413.000	3344.600	2050.000	10300.000	6650.000
NH3		0					
PCB	UG/G	4	1.710	1.510	0.740	3.100	1.820
Hg	UG/G	4	0.630	0.230	0.285	0.804	0.710
Pb	UG/G	4	169.000	97.950	47.000	264.000	182.500
As	UG/G	4	9.750	3.300	6.000	13.000	10.000
Cd	UG/G *	4	2.450	1.970	1.000	5.000	2.000
Cu	UG/G	4	107.250	73.580	26.000	195.000	104.000
Zn	UG/G	4	1036.000	659.920	85.000	1485.000	1287.000
Cr	UG/G	4	387.750	255.200	62.000	615.000	437.000
Ni	UG/G	4	49.000	12.620	38.000	66.000	46.000
COD	UG/G	4	215500.0	121800.0	58000.0	346000.0	229000.0

PROJECT: HAMILTON MAINTENANCE DREDGING EMERALD ST. SLIP  
JURISDICTION: ONTARIO  
BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 90/22/80 Ending Date: 10/31/80  
Maximum Depth (Meters): 7.9

Equipment: HYDRAULIC SUCTION  
Total Quantity (M\*\*3): 14,826.00 Pay Quantity (M\*\*3): 14,407.00  
Dredging Cost (\$/CMPM): 6.11  
Disposal Method: CONFINED CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

No Sampling Activities Dry Density (Kg/L): 1.30

PROJECT: HAMILTON MAINTENANCE DREDGING WENTWORTH ST. SLIP  
JURISDICTION: ONTARIO  
BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 08/12/80 Ending Date: 09/19/80  
Maximum Depth (Meters): 8.2

Equipment: HYDRAULIC SUCTION  
Total Quantity (M\*\*3): 14,690.00 Pay Quantity (M\*\*3): 12,712.00  
Dredging Cost (\$/CMPM): 7.14  
Disposal Method: CONFINED CDF Cost (\$/CMPM): 0.00

SAMPLE SUMMARY REPORT

No Sampling Activities

Dry Density (Kg/L): 1.30

PROJECT: OSHAWA  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 10/29/82 Ending Date: 06/06/83  
 Maximum Depth (Meters): 8.2

Equipment: HYDRAULIC  
 Total Quantity (M\*\*3): 13,866.00 Pay Quantity (M\*\*3): 13,866.00  
 Dredging Cost (\$/CMPM): 8.75  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 10.56

Calendar Year: 1983 Beginning Date: 07/15/83 Ending Date: 09/30/83  
 Maximum Depth (Meters): 6.7

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 7,714.00 Pay Quantity (M\*\*3): 7,307.00  
 Dredging Cost (\$/CMPM): 10.12  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 10.56

Calendar Year: 1980 Beginning Date: 08/09/80 Ending Date: 10/29/80  
 Maximum Depth (Meters): 8.2

Equipment: SCOWS  
 Total Quantity (M\*\*3): 12,647.00 Pay Quantity (M\*\*3): 9,261.00  
 Dredging Cost (\$/CMPM): 13.22  
 Disposal Method: OPEN Lat: 435100 Long: 784900

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: SAND, SILT, CLAY  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.50  
 Sample Type: CORE AND GRAB

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	7	1293.000	1007.000	340.000	2400.000	720.000
Vol Solids		0					
Total P	UG/G	7	448.000	187.000	114.000	720.000	415.000
TKN	UG/G	5	617.000	711.000	5.100	1590.000	240.000
NH3		0					
PCB	UG/G	5	0.267	0.203	0.020	0.500	0.320
Hg	UG/G *	7	0.028	0.029	0.005	0.070	0.015
Pb	UG/G	7	39.860	24.870	19.000	86.000	33.000
As		0					
Cd	UG/G *	7	1.000	0.000	1.000	1.000	1.000
Cu	UG/G	7	12.170	8.670	4.200	25.000	10.000
Zn	UG/G	7	49.170	36.800	11.100	116.000	35.300
Cr	UG/G	7	29.290	28.250	3.500	83.000	20.000
Ni	UG/G	7	34.143	24.670	10.500	68.000	25.000
COD	UG/G	7	24500.0	29270.0	1800.0	75800.0	7100.0

PROJECT: OSHAWA  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

Year: 1983  
 Material Type: SAND, SILT  
 Analytical Lab: ENVIROCLEAN

Dry Density (Kg/L): 1.50  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	997.000	410.000	610.000	1230.000	1150.000
Vol Solids	%	3	2.370	0.390	2.000	2.600	2.500
Total P	UG/G	3	677.000	110.000	670.000	770.000	590.000
TKN	UG/G	3	1300.000	390.000	940.000	1500.000	1470.000
NH3		0					
PCB	UG/G	3	0.070	0.090	0.010	0.161	0.042
Hg		0					
Pb	UG/G	3	32.000	3.240	30.000	35.000	31.000
As		0					
Cd	UG/G	3	4.670	0.710	4.000	5.000	5.000
Cu	UG/G	3	9.670	3.740	7.000	13.000	9.000
Zn	UG/G	3	55.000	7.640	50.000	62.000	53.000
Cr	UG/G	3	27.300	7.170	23.000	34.000	25.000
Ni	UG/G	3	27.000	5.330	24.000	32.000	25.000
COD	UG/G	3	22000.0	4420.0	18000.0	23000.0	25000.0

Year: 1980  
 Material Type: GRAVEL, SAND (80-84%)  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.70  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	4	0.400	0.300	0.200	0.700	0.300
Vol Solids	%	4	2.280	2.130	0.580	5.260	1.650
Total P	UG/G	4	385.000	106.000	255.000	510.000	385.000
TKN	UG/G	4	448.000	476.000	80.000	1140.000	285.000
NH3		0					
PCB	UG/G	4	0.033	0.020	0.015	0.056	0.030
Hg	UG/G	4	0.023	0.021	0.006	0.055	0.015
Pb	UG/G	4	39.250	24.140	19.000	71.000	33.500
As		0					
Cd		0					
Cu	UG/G	4	21.880	18.980	5.200	43.500	19.400
Zn	UG/G	4	55.550	34.570	24.100	94.000	51.550
Cr	UG/G	4	112.400	121.860	6.200	192.000	101.200
Ni	UG/G	4	42.500	33.690	13.000	82.000	37.500
COD	UG/G	4	17400.0	16720.0	5300.0	41900.0	11200.0

PROJECT: POINT CREDIT  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 06/21/82 Ending Date: 08/30/82  
 Maximum Depth (Meters): 2.1

Equipment: CLAM AND SCOWS

Total Quantity (M\*\*3): 27,161.00 Pay Quantity (M\*\*3): 20,025.00

Dredging Cost (\$/CMPM): 9.25

Disposal Method: OPEN

Lat: 403100 Long: 793130

SAMPLE SUMMARY REPORT

Year: 1981

Dry Density (Kg/L): 1.50

Material Type: SAND (APPROACH CHANNEL)

Sample Type: CORE AND GRAB

Analytical Lab: BEAK ANALYTICAL SERVICES AND W.Q.B. ENVIRON. CANADA

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	983.000	1401.000	130.000	2600.000	220.000
Vol Solids		0					
Total P	UG/G	3	424.000	175.000	320.000	626.000	327.000
TKN	UG/G	3	1722.000	2536.000	244.000	465.000	273.000
NH3		0					
PCB	UG/G	5	0.002	0.001	0.000	0.002	0.002
Hg		0					
Pb		0					
As		0					
Cd	UG/G	3	1.370	0.400	1.000	1.800	1.300
Cu	UG/G	3	9.000	9.500	2.800	20.000	4.200
Zn	UG/G	3	30.670	13.250	20.000	45.500	26.500
Cr	UG/G	3	12.170	4.240	9.000	17.000	10.500
Ni		0					
COD	UG/G	3	38400.0	62000.0	1900.0	115000.0	3200.0

PROJECT: POINT TRAVERSE  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1982 Beginning Date: 11/02/82 Ending Date: 12/21/82  
 Maximum Depth (Meters): 1.8

Equipment: CLAM AND SCOW  
 Total Quantity (M\*\*3): 2,417.00 Pay Quantity (M\*\*3): 2,156.00  
 Dredging Cost (\$/CMPM): 9.56  
 Disposal Method: OPEN Lat: 435710 Long: 765130

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: CLASS 'B'  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.60  
 Sample Type: GRAB AND CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	3	983.000	1401.000	130.000	2600.000	220.000
Vol Solids		0					
Total P	UG/G	3	424.000	175.000	320.000	626.000	327.000
TKN	UG/G	3	1723.000	2053.300	246.000	4650.000	273.000
NH3		0					
PCB	UG/G *	3	0.088	0.097	0.020	0.200	0.045
Hg		0					
Pb		0					
As		0					
Cd	UG/G	3	1.370	0.400	1.000	1.800	1.300
Cu	UG/G	3	9.000	9.500	2.800	20.000	4.200
Zn	UG/G	3	30.600	13.250	20.000	45.500	26.500
Cr	UG/G	3	12.170	4.240	9.000	17.000	10.500
Ni		0					
COD	UG/G	3	41030.0	66600.0	1900.0	118000.0	3200.0

PROJECT: TORONTO DREDGE EAST ENTRANCE  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1983 Beginning Date: 11/17/83 Ending Date: 12/20/83  
 Maximum Depth (Meters): 8.8

Equipment: DIPPER, SCOW  
 Total Quantity (M\*\*3): 31,428.00 Pay Quantity (M\*\*3): 28,505.00  
 Dredging Cost (\$/CMPM): 6.55  
 Disposal Method: OPEN Lat: Long:

SAMPLE SUMMARY REPORT

Year: 1982  
 Material Type: CLASS B SAND  
 Analytical Lab: BEAK

Dry Density (Kg/L): 1.70  
 Sample Type: CORE

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	1	142.500	0.000	142.500	142.500	142.500
Vol Solids		0					
Total P		0					
TKN		0					
NH3		0					
PCB	UG/G	1	0.020	0.000	0.020	0.020	0.020
Hg	UG/G	1	0.010	0.000	0.010	0.010	0.010
Pb	UG/G	1	15.000	0.000	15.000	15.000	15.000
As	UG/G	1	1.275	0.000	1.275	1.275	1.275
Cd	UG/G *	1	0.500	0.000	0.500	0.500	0.500
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD		0					

PROJECT: TORONTO HARBOUR  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: / /80 Ending Date: / /80  
 Maximum Depth (Meters):

Equipment: CLAM  
 Total Quantity (M\*\*3): 43,045.00 Pay Quantity (M\*\*3): 43,045.00  
 Dredging Cost (\$/CMPM):  
 Disposal Method: CONFINED Lat: Long:

Calendar Year: 1981 Beginning Date: / /81 Ending Date: / /81  
 Maximum Depth (Meters):

Equipment: CLAM  
 Total Quantity (M\*\*3): 102,875.00 Pay Quantity (M\*\*3): 102,875.00  
 Dredging Cost (\$/CMPM):  
 Disposal Method: CONFINED CDF Cost (\$/CMPM):

SAMPLE SUMMARY REPORT

Year: 1972-1978 Dry Density (Kg/L): 1.30  
 Material Type: SILT, CLAY Sample Type:  
 Analytical Lab: EC - 1978; MOE-1972, 1973, 1976

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G		4200.000		540.000	11100.000	
Vol Solids	%		7.100		6.600	9.600	
Total P	UG/G		1190.000		860.000	1600.000	
TKN	UG/G		1700.000		540.000	3940.000	
NH3		0					
PCB	UG/G		0.230		0.060	0.390	
Hg	UG/G		0.250		0.110	0.300	
Pb	UG/G		175.000		74.000	254.000	
As		0					
Cd		0					
Cu	UG/G		45.000		20.000	80.000	
Zn	UG/G		230.000		82.000	340.000	
Cr	UG/G		47.000		13.000	86.000	
Ni		0					
COD		0					

PROJECT: TRENT SEVERN WATERWAY  
 JURISDICTION: ONTARIO  
 BASIN: ONTARIO

DREDGING ACTIVITIES REPORT

Calendar Year: 1980 Beginning Date: 06/16/80 Ending Date: 10/16/80  
 Maximum Depth (Meters): 2.1

Equipment: HYDRAULIC  
 Total Quantity (M\*\*3): 23,721.00 Pay Quantity (M\*\*3): 22,158.00  
 Dredging Cost (\$/CMPM): 3.92  
 Disposal Method: CONFINED CDF Cost (\$/CMPM): 1.81

SAMPLE SUMMARY REPORT

Year: 1979  
 Material Type: SILT, CLAY  
 Analytical Lab:

Dry Density (Kg/L): 1.30  
 Sample Type:

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Oil & Grease	UG/G	1	3100.000	0.000	3100.000	3100.000	3100.000
Vol Solids	%	1	41.000	0.000	41.000	41.000	41.000
Total P	UG/G	1	660.000	0.000	660.000	660.000	660.000
TKN	UG/G	1	230.000	0.000	230.000	230.000	230.000
NH3		0					
PCB		0					
Hg	UG/G	1	0.124	0.000	0.124	0.124	0.124
Pb		0					
As		0					
Cd		0					
Cu		0					
Zn		0					
Cr		0					
Ni		0					
COD	UG/G	1	228000.0	0.000	228000.0	228000.0	228000.0

Project: Ogdensburg  
 Jurisdiction: New York  
 Basin: St. Lawr

DREDGING ACTIVITIES REPORT

No Dredging Activities

SAMPLE SUMMARY REPORT

Year: 1984  
 Material Type: Sandy  
 Analytical Lab: Great Lakes Laboratory, Buffalo, NY  
 Dry Density (Kg/L): .60  
 Sample Type: Grab, Ponar

Parameter Name	Units	N	Mean	Std Dev	Minimum	Maximum	Median
Vol Solids	PERCENT	10	6.360	5.240	1.030	13.630	4.790
Oil & Grease	MG/G	10	5.353	7.015	.142	22.043	3.136
Total P	MG/G	10	.793	.318	.417	1.391	.700
TKN	MG/G	10	1.746	1.868	.198	5.232	.972
NH3	MG/G	10	.048	.044	.011	.145	.030
PCB-1221	UG/G	0					
PCB-1232	UG/G	0					
PCB-1242	UG/G	0					
PCB-1248	UG/G	0					
PCB-1254	UG/G	0					
PCB-1260	UG/G	0					
PCB-1016	UG/G	0					
Total PCB	UG/G	0					
Hg	UG/G	10	.240	.200	.060	.680	.210
Pb	UG/G	10	33.000	33.400	4.900	89.500	14.900
As	UG/G	10	8.500	5.100	2.800	17.100	8.000
Cd	UG/G	10	1.400	.700	.500	2.200	1.400
Cu	UG/G	10	18.900	18.700	2.000	60.400	14.300
Zn	UG/G	10	298.000	458.000	41.000	1566.000	132.000
Cr	UG/G	10	19.900	20.400	2.700	64.700	11.100
Ni	UG/G	0					
COD	MG/G	10	1.0	.7	.2	2.1	.8

MEMBERSHIP LIST  
SEDIMENT WORK GROUP  
OF THE  
LOADINGS AND SOURCES SUBCOMMITTEE

Mr. Ken Orchard (Chairman)  
Engineering & Protection Service  
Ontario Region  
Environment Canada  
25 St. Clair Avenue East  
Toronto, Ontario M4T 1M2  
Tel: (416) 313-1000  
Fax: (416) 313-5142

Mr. Donald Cowie  
Great Lakes Regional Program Office  
U.S. Environmental Protection Agency  
220 W. Beaver  
Ann Arbor, Michigan 48106  
Tel: (313) 234-2320  
Fax: (313) 234-2318

Mr. Doug Brown  
Water Management Branch  
Local Government Division  
City of Toronto  
100 Adelaide Street West  
Toronto, Ontario M5H 1M2  
Tel: (416) 392-3800  
Fax: (416) 392-3800

Mr. John  
Environmental Policy  
Great Lakes Division  
U.S. Environmental Protection Agency  
220 W. Beaver  
Ann Arbor, Michigan 48106  
Tel: (313) 234-2320  
Fax: (313) 234-2318

APPENDIX II  
MEMBERSHIP  
AND  
TERMS OF REFERENCE

Mr. David King  
Environmental Officer  
Applied Earth Engineering  
Toronto  
100 King Street West  
Toronto, Ontario M5X 1C1  
Tel: (416) 593-4111  
Fax: (416) 593-4111

Mr. Robert L. Tamm  
Applied Earth Engineering  
100 King Street West  
Toronto, Ontario M5X 1C1  
Tel: (416) 593-4111  
Fax: (416) 593-4111

FOR THE  
SEDIMENT WORK GROUP  
OF THE

LOADINGS AND SOURCES SUBCOMMITTEE

Dr. Douglas Fisher  
Department of Biology  
University of Windsor  
Windsor, Ontario N9B 3P4  
Tel: (519) 253-1249  
Fax: (519) 253-1250

Dr. Michael A. Gault  
Great Lakes Regional Office  
International Great Lakes Commission  
220 W. Beaver Avenue, 5th Floor  
Ann Arbor, Michigan 48106  
Tel: (313) 234-2320  
Fax: (313) 234-2318

Dr. David  
U.S. Environmental Protection Agency  
220 W. Beaver  
Ann Arbor, Michigan 48106  
Tel: (313) 234-2320  
Fax: (313) 234-2318



MEMBERSHIP LIST  
SEDIMENT WORK GROUP  
OF THE  
LOADINGS AND SOURCES SUBCOMMITTEE

Mr. Ian Orchard (Chairman)  
Environmental Protection Service  
Ontario Region  
Environment Canada  
25 St. Clair Avenue East  
Toronto, Ontario M4T 1M2  
(416) 973-1089  
FAX: (416) 973-8342

Mr. Deo Persaud  
Water Resources Branch  
Ontario Ministry of the Environment  
1 St. Clair Avenue West  
Toronto, Ontario M4T 1M2  
(416) 323-4926  
FAX: (416) 965-9807

Mr. Ansar Khan  
Environmental Officer  
Architectural Engineering  
Services  
Public Works Canada  
Ontario Region  
4900 Yonge Street  
Willowdale, Ontario M2N 6A6  
(416) 224-4119  
FAX: (416) 224-4228

Dr. Douglas Haffner  
Department of Biology  
Great Lakes Institute  
University of Windsor  
Windsor, Ontario N9B 3P4  
(519) 253-4232, X-3449  
FAX: (519) 973-7050

Mr. David C. Cowgill  
Great Lakes National Program Office  
U.S. Environmental Protection Agency  
5GL-TUB-10  
230 South Dearborn Street  
Chicago, Illinois 60604  
(312) 353-3576  
FAX: (312) 353-2018

Mr. Roy J. Deda  
Department of the Army  
North Central Division  
Corps of Engineers  
536 South Clark Street  
Chicago, Illinois 60605  
(312) 353-6373  
FTS: 353-6373  
FAX: (312) 353-8666

Ms. Glenda L. Daniel  
Executive Director  
Lake Michigan Federation  
59 East Van Buren, Suite 2215  
Chicago, Illinois 60605  
(312) 939-0838  
FAX: (312) 939-2708

Secretary

Dr. Michael A. Zarull  
Great Lakes Regional Office  
International Joint Commission  
100 Ouellette Avenue, 8th Floor  
Windsor, Ontario N9A 6T3  
(519) 256-7821 Windsor  
(313) 226-2170 Detroit  
FTS: 226-2170  
ENVOY: IJC.Windsor/GEMS  
DIALCOM: 163:IJC002  
FAX: (519) 256-7791

MEMBERSHIP LIST  
 SEDIMENT WORK GROUP  
 OF THE  
 LOADINGS AND SOURCES SUBCOMMITTEE

Mr. David C. Conroy  
 Great Lakes National Program Office  
 U.S. Environmental Protection Agency  
 301-TUB-10  
 130 South Dearborn Street  
 Chicago, Illinois 60605  
 (312) 353-3576  
 FAX: (312) 353-3016

Mr. Roy L. Deha  
 Director of the Great  
 Lakes National Program  
 Office  
 130 South Dearborn Street  
 Chicago, Illinois 60605  
 (312) 353-3576  
 FAX: (312) 353-3016

Mr. Gerald J. David  
 Executive Director  
 Great Lakes National Program  
 Office  
 130 South Dearborn Street 1213  
 Chicago, Illinois 60605  
 (312) 353-3576  
 FAX: (312) 353-3016

Dr. Michael A. Eby  
 Great Lakes National Program  
 Office  
 International Joint Commission  
 108 Ontario Avenue, 9th Floor  
 Windsor, Ontario N9A 6T1  
 (519) 256-1711 Windsor  
 (519) 256-2170 Detroit  
 FTS: 256-2170  
 BRYOY, INC. WINDSOR, ONT.  
 BIALCOM, INC. DETROIT, MI  
 FAX: (519) 256-1711

Mr. Ian Oswald (Executive)  
 Environmental Protection Service  
 Ontario Region  
 Environment Canada  
 25 St. Clair Avenue West  
 Toronto, Ontario M6T 1A2  
 (416) 973-1059  
 FAX: (416) 973-3342

Mr. Leo Petrus  
 Water Resources Branch  
 Ontario Ministry of the Environment  
 1 St. Clair Avenue West  
 Toronto, Ontario M6T 1A2  
 (416) 323-4225  
 FAX: (416) 962-0807

Mr. Alan Ryan  
 Environmental Officer  
 Architectural Engineering  
 Services  
 Public Works Canada  
 Ontario Region  
 500 Yonge Street  
 Windsor, Ontario N6Y 0A6  
 (416) 324-4119  
 FAX: (416) 324-4228

Dr. Douglas Ralston  
 Department of Biology  
 Great Lakes Program  
 University of Windsor  
 Windsor, Ontario N9B 3P4  
 (519) 253-4232, X-3449  
 FAX: (519) 973-7050

**TERMS OF REFERENCE  
SEDIMENT WORK GROUP  
LOADINGS AND SOURCES SUBCOMMITTEE**

**BACKGROUND**

The Sediment Work Group will assist the Loadings and Sources Subcommittee (LSSC) in the review of the Parties development of strategies and technologies aimed at reducing pollution to the Great Lakes ecosystem from dredging activities and contaminated sediments.

It should be noted that the Sediment Work Group was preceded by a Dredging Subcommittee (1978-1985) and a Sediment Subcommittee (1986-1988). The role of this work group is to ensure continuity of the advancements and gains achieved by these groups. Consequently, the issues of dredging and disposal will be addressed as well as sediment management in Areas of Concern and in the overall Great Lakes ecosystem.

**TERMS OF REFERENCE**

The Sediment Work Group will report to the LSSC and be chaired by a member of the subcommittee. The work group will consist of experts from United States and Canada and representatives from the private sector and public interest groups who are involved in the mitigation of environmental effects posed by dredging activities and in the development of management options for contaminated sediments.

The work group is expected to meet between three to six times annually. Administrative and secretarial support to be provided by the Windsor Regional Office (WRO). The work group will:

1. From a loadings and sources perspective, evaluate existing protocols designed to quantify the transfer of contaminants to and from sediments so as to establish ecosystem impact.
2. Review the existing practices and policies of the Parties relating to dredging activities and their effect on the Great Lakes ecosystem. Evaluate existing criteria for the classification of contaminated sediment or designated areas of intensive and continuing dredging activities within the Great Lakes system.
3. Ensure the maintenance of a register of significant dredging projects being undertaken in the Great Lakes system with information to allow for the assessment of environmental effects of projects including the long-term effect of dredging and disposal of contaminated sediment. The register should contain statistical information which allows for the assessment of pollution loadings from dredged materials to the Great Lakes system.
4. Facilitate the exchange of sediment management information including, but not limited to, information related to: development of sediment management technology, sediment evaluation protocols, dredging technology, sediment handling and treatment techniques, procedures to characterize and quantify mass transport, and fate and effect of sediment and associated contaminants.
5. Evaluate and assess the programs and progress being made by the Parties under Annex 14 of the Agreement.
6. Develop work plans for submission to the LSSC in accordance with planning and budget requirements. Review and revise the plan once a year.
7. Prepare reports on the above and undertake specific assignments as identified by the LSSC.