## INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES – DESIGN DOCUMENTATION REPORT

COST ENGINEERING
APPENDIX H

U.S. Army Corps of Engineers, Chicago District Cost Engineering Branch

March 2000

## **COST ENGINEERING APPENDIX**

## APPENDIX H

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## NDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES

#### APPENDIX H

#### **COST ENGINEERING**

#### BASIS OF ESTIMATE

1. The basis of this cost estimate is the Comprehensive Management Plan (CMP) of January 1999, modified where necessary to reflect changes to the CMP Plan. The cost estimates include allowances for contingencies, escalation, engineering and design, and construction management.

### **UNIT COSTS**

2. The unit costs derived for this project are considered fair and reasonable to a well-equipped contractor and include contractor's mobilization and demobilization, overhead, profit and bonds. The unit costs were developed by personnel in the Design and Cost Engineering Branches of the Engineering Division, Chicago District.

#### CONTINGENCIES

- 3. Since uncertainty exists in all estimates, contingencies are used to forecast the risk of time growth associated with individual cost elements. The normal contingency for this size project is found in the Engineering Instruction, Construction Cost Estimates, EI01D010 paragraph 13.5. Factors considered include the status of design, site conditions, bidding climate and state of economy.
- 4. The design contingencies used in this report were normal because of design elements involved. In general a factor of 15 percent was used to assume a high probability that the estimated project cost will not exceed the actual cost. A contingency of 20 percent was used for the railroad relocation and cut off wall because of site conditions.

## PLANNING, ENGINEERING AND DESIGN

5. The costs for planning, engineering, and design include all engineering and design activities that are required both before and during construction. This is 12% of the total construction cost.

## CONSTRUCTION MANAGEMENT

6. The cost of construction management is 7.5% of the total construction cost. The cost includes supervision, administration, inspection, and overhead for for the duration of construction.

## OPERATION, MAINTENANCE, REPLACEMENT

7. The operation and maintenance (O&M) costs are shown summarized in Tables H-2 and H-3 of the project costs. The O & M costs are escalation of the previous report dated September 1998.

### **COST SUMMARIES**

8. The project costs are summarized in Table 1.



## Table 1 - Project Cost Summary

# INDIANA HARBOR AND CANAL CONFINED DISPOSAL FACILITY Sequence of Construction and Dredging

Activity	Amount*
A. Railroad Relocation	\$ 1,242,300
B. Cut Off Wall	\$ 3,445,000
C. Seal Stage I Dike	\$ 1,804,700
D. Stage I Dike	\$ 7,283,700
E. Seal Perimeter Areas Parcels 1, 2a & 2b	\$ 1,698,300
F. Stage II Dikes	\$ 14,544,700
G. Hydraulic Gradient	\$ 1,283,200
H. Treatment Plant	\$ 9,260,200
I. CDF Cap	\$ 18,884,100
Dredging Year 1	\$ 2,150,200
Dredging Year 2	\$ 4,943,800
Dredging Year 3	\$ 2,201,000
TSCA Dredging	\$ 5,884,000
Dredging (Yearly 2007 – 2013)	\$ 24,421,000
Dredging (2014 - 2022)	\$ 18,285,200
Dredging (2023 – 2033)	\$ 18,454,500
TOTAL PROJECT COST	135, 786, 000

<sup>\*</sup> Note: Based on October 1998 price levels.

## Table 2 - O & M Cost Summary



## Cooperative Dredging Program - Estimated O & M

Subtotal	\$1,910,621
Post Closure	\$83,121
CDF & Dredging Pre-Closure	\$1,827,500
Subtotal	\$725,890
Post Closure	\$157,780
RCRA Features Pre-Closure	\$568,110
Activity	Amount*

<sup>\*</sup> Note: Based on October 1998 price levels.

		27-Aug-99
<i>#</i>	O & M COST ESTIMATE	Sheet 1 of 2
7.56		
PROJE		
	INDIANA HARBOR AND CANAL	
	COOPERATIVE DREDGING PROGRAM – ESTIMATED RCRA	
ITEM	FEATURES O & M	ESTIMATED
NO.	DESCRIPTION	AMOUNT
		12.700111
	PRE CLOSURE O & M COSTS	
	A. Water Treatment	6290 404
	B. Gradient Control System	\$389,490
	1.Pumping	\$2
	2. Analytical Testing	\$21
	3. Sample Collection	<del> </del>
	C. Ground Water Monitoring	+
	1. Analytical Testing	\$82,500
	2. Sample Collection	\$6,300
	D. CDF Surface Water Collection	
	1.Pumping	\$1,45
	2. Analytical Testing	
	3. Sample Collection	
	E. Erosion Control Repair, Mowing	ļ
	Subtotal	
	Escalation OCT 93 to OCT 98 13%	1
	TOTAL	\$568,110
	POST CLOSURE O & M COSTS	
	A. Water Treatment	\$76,000
	B. Gradient Control System	
	1.Pumping	\$456
	2. Treatment Surcharge	
	3. Analytical Testing	
	4. Sample Collection	
	C. Ground Water Monitoring	
	1. Analytical Testing	\$41,250
	2. Sample Collection	\$3,150
	D. Erosion Control Repair, Mowing	
	Subtotal	\$139,628
	Escalation OCT 93 to OCT 98 13%	\$18,152
	TOTAL	\$157,780



		27-Aug-99
	O & M COST ESTIMATE	Sheet 1 of 2
PROJE	A MARTINE	
ITEM NO.	DESCRIPTION	ESTIMATED AMOUNT
	PRE CLOSURE O & M COSTS	
	71 703 M & 0 350	
	A. Water Treatment	\$1,233,370
	B. Gradient Control System	72,230,010
	1.Pumping	\$912
	2. Analytical Testing	\$27,360
A CONTRACTOR OF THE PARTY OF TH	3. Sample Collection	\$3,192
	C. Ground Water Monitoring	
	1. Analytical Testing	\$82,500
	2. Sample Collection	A-,
	D. CDF Surface Water Collection	
	1.Pumping	\$4,600
116	2. Analytical Testing	\$36,000
	3. Sample Collection	\$4,200
	E. Erosion Control Repair, Mowing	\$3,420
	F. Dredged Material Management	\$185,400
	G. Air Monitoring Plan Implementation	\$30,000
	Subtotal	\$1,617,254
	Escalation OCT 93 to OCT 98 13%	\$210,243
	TOTAL	\$1,827,497
	POST CLOSURE O & M COSTS	
	A. Water Treatment	\$24,000
	B. Gradient Control System	
	1.Pumping	\$144
	2. Analytical Testing	*
	3. Sample Collection	1
	C. Ground Water Monitoring	
	1. Analytical Testing	\$41,250
	2. Sample Collection	\$3,150
	D. Erosion Control Repair, Mowing	\$190
818	Subtotal	\$73,558
	Escalation OCT 93 to OCT 98 13%	\$9,563
de desire di chi	TOTAL	\$83,121



PROJECT COS	ST ESTIMATE	0.80	(254/4)	Sheet 1 of 19			
PROJECT: INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES							
		DOG	UNIT	ESTIMATED			
DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT			
A. RAILROAD RELOCATION			IAW VIO				
Railroad Relocation	1	LS	W consideration	\$866,319			
SubTotal		s general acception plants and a					
Contingency, 20%			_ 55Co 1/2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$173,264			
Total Construction Cost				\$1,039,583			
Planning, Engrg. & Design, 12%				\$124,750			
Construction Management, 7.5%			istaal Testin	\$77,969			
Total Cost Railroad Relocation				\$1,242,302			
		3852					
1							
		7.13 (3.13)					
		IIsV	no-no sec				
	-						
	INDIANA HARBOR AND COMAINTENANCE DREDGING  DESCRIPTION  A. RAILROAD RELOCATION  Railroad Relocation  SubTotal  Contingency, 20%  Total Construction Cost  Planning, Engrg. & Design, 12%  Construction Management, 7.5%  Total Cost Railroad Relocation	INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPO  ESTIMATED  DESCRIPTION QUANTITY  A. RAILROAD RELOCATION  Railroad Relocation 1  SubTotal  Contingency, 20%  Total Construction Cost  Planning, Engrg. & Design, 12%  Construction Management, 7.5%  Total Cost Railroad Relocation	INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACT  ESTIMATED  DESCRIPTION QUANTITY UNIT  A. RAILROAD RELOCATION  Railroad Relocation  1 LS  SubTotal  Contingency, 20%  Total Construction Cost  Planning, Engrg. & Design, 12%  Construction Management, 7.5%  Total Cost Railroad Relocation  Total Cost Railroad Relocation	INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES  ESTIMATED UNIT DESCRIPTION QUANTITY UNIT PRICE  A. RAILROAD RELOCATION  Railroad Relocation 1 LS  SubTotal  Contingency, 20%  Total Construction Cost  Planning, Engrg. & Design, 12%  Construction Management, 7.5%  Total Cost Railroad Relocation  Total Cost Railroad Relocation			

			100	4	27-Aug-99
	PROJECT COS	r estimate			Sheet 2 of 19
ROJE					
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	B. CUT-OFF WALL			200	
1	Bentonite Slurry Wall-Site	356,400	SF	\$6.00	\$2,138,400
	Perimeter		to you supplied to be appared		
2	Inspection Trench	10,800	LF	\$17.90	\$193,320
3	Initial Groundwater Drawdown			GE 07-14	
	a. Pumping	1	LS		\$8,75
	b. Treatment Surcharge	1	LS		\$35,44
	c. Analytical Testing	1	LS	5 9 5 9 6	\$26,05
	d. Sample Collection	1	LS		\$83
	SubTotal				\$2,402,80
	Contingency, 20%				\$480,56
	Total Construction Cost				\$2,883,36
	Planning, Engrg. & Design, 12%				\$346,00
	Construction Management, 7.5%				\$216,25
	Total Cost Cut-Off Wall				\$3,445,62
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# PROJECT COST ESTIMATE

27-Aug-99 Sheet 3 of 19

## PROJECT:

# INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES

	MAINTENANCE DREDGING		AL ACII		
ITEM.		ESTIMATED	and the second of the second o	UNIT	<b>ESTIMATED</b>
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	C. SEAL STAGE I DIKE				
1	Perimeter Dike, Stage I - Sta.				
	0+00-8+75 & 71+10-86+72				
	a. Clay liner under dike	58,127	CY	\$15.64	\$909,10
2	Dike between North & South				
	Areas, first 10 ft. lift				
	a. Clay Liner	8,820	CY	\$15.64	\$137,94
3	Dike between East & West	***************************************			
	Areas, first 10 ft. lift				
	a. Clay Liner	17,019	CY	\$15.64	\$266,17
	SubTotal				\$1,313,228
	Contingency, 15%				\$196,98
	Total Construction Cost				\$1,510,21
	Planning, Engrg. & Design, 12%		~	NOUNES, V.	\$181,22
	Construction Management, 7.5%				\$113,266
	Total Cost Seal Stage I Dike				\$1,804,70
	60.419			7570,21	
	1043.603		136.02	7. 88 3 E 88; 2078	
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	PROJECT COS	T ESTIMATE		#15 #15 #17	27-Aug-99 Sheet 4 of 19
PROJE	VITIES				
ITEM		ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	D. STAGE I DIKE				
1	Clearing & Grubbing within boundary of Slurry Wall	166	AC	\$2,000.00	\$332,000
2	Topsoil Stripping top 6 inches of ditch and dike footprint	33,373	CY	\$3.75	\$125,149
3	Additional Stripping of ditch and dike footprint to 587.5	86,824	CY	\$3.75	\$325,590
4	Perimeter Ditch a. Excavation for ditch and clay liner below 587.5	67,604	CY	\$5.00	\$338,020
	b. Topsoil for perimeter ditch	5,923	CY	\$5.20	\$30,800
	c. Seeding for perimeter ditch	7	AC	\$3,240.00	\$22,680
	d. Geotextile	28,430	SY	\$1.50	\$42,645
	e. 42" RCP	263	LF	\$100.00	\$26,300
	1. Excavation	1,054	CY	\$3.00	\$3,162
	2. Bedding	33	CY	\$30.00	\$990
2	3. Backfill	980	CY	\$6.80	\$6,664
	4. Riprap	24	TON	\$45.00	\$1,080
5	Stone for Access Road	1,190	TON	\$25.00	\$29,750
6	Geotextile for Access Road	6,300	SY	\$1.50	\$9,450
7	Perimeter Dike, Stage I - Sta. 0+00-8+75 & 71+10-86+72				



	PROJECT COS	T ESTIMATE		131	27-Aug-99 Sheet 5 of 19
PROJE					
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	D. STAGE I DIKE continue				
	a. Dike Material (clean fill)	85,385	CY	\$10.35	\$883,735
	b. Topsoil	3,882	CY	\$5.20	\$20,186
	c. Seeding	5	AC	\$3,240.00	\$16,200
	d. Stone for Access Road	3,529	TON	\$25.00	\$88,225
	e. Geotextile for Access Road	14,351	SY	\$1.50	\$21,527
8	Dike between North & South Areas, first 10 ft. lift				
	a. Dike Material (Stripped material)	7,290	CY	\$8.27	\$60,288
	b. Stone for Access Road	600	TON	\$25.00	\$15,000
	c. Geotextile for Access Road	2,430	SY	\$1.50	\$3,645
9	Dike between East & West Areas, first 10 ft. lift				
	a. Dike Material (Stripped material)	14,967	CY	\$8.27	\$123,777
	b. Stone for Access Road	1,205	TON	\$25.00	\$30,125
	c. Geotextile for Access Road	4,749	SY	\$1.50	\$7,124
10	Perimeter Dike, Stage I - Sta. 8+75 to 71+10				
	a. Dike Material (clean fill)	218,456	CY	\$10.35	\$2,261,020
	b. Topsoil	9,930	CY	\$5.20	\$51,636



	PROJECT COS	T ESTIMATE	,		27-Aug-99 Sheet 6 of 19
PROJE					
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	D. STAGE I DIKE continue			· Sara rasa,	
1222	c. Seeding	12	AC	\$3,240.00	\$38,880
0.002	d. Stone for Access Road	7,045	TON	\$25.00	\$176,125
1013	e. Geotextile for Access Road	31,584	SY	\$1.50	\$47,376
11	Dike between North & South Areas, Sta. 0+00 to 8+75			2000114, 2003-01	
	a. Dike material (stripped material)	17,025	CY	\$8.27	\$140,797
	b. Stone for Access Road	648	TON	\$25.00	\$16,200
	c. Geotextile for Access Road	2,625	SY	\$1.50	\$3,986
	SubTotal		<u> </u>	no for Account	\$5,300,132
	Contingency, 15%			A Ball and French	\$795,020
	Total Construction Cost			America acquaryerson	\$6,095,152
	Planning, Engrg. & Design, 12%			3 4 0 4 4 5 5 5	\$731,418
	Construction Management, 7.5%			i) incress (v	\$457,136
	Total Cost Stage I Dike		- A	0000/-001000	\$7,283,706
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133	100,000			e e transcription de la company de production de la company de la company de la company de la company de la co La company de la company d	



					27-Aug-99
	PROJECT COS	T ESTIMATE			Sheet 7 of 19
PROJE					
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	E. SEAL PERIMETER AREAS	PARCELS 1,	2a & 2b		
1	Perimeter Ditch				
	b. Clay liner for perimeter	79,015	CY	\$15.64	\$1,235,795
	ditch				
	SubTotal				\$1,235,795
	Contingency, 15%				\$185,369
	Total Construction Cost				\$1,421,164
	Planning, Engrg. & Design, 12%				\$170,540
	Construction Management, 7.5%			20.0	\$106,587
	Total Cost Seal Perimeter Areas Parcels 1, 2a & 2b		Acres 1		\$1,698,291
	;				
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	PROJECT COS	ST ESTIMATE			27-Aug-99 Sheet 8 of 19
PROJE					
ITEM		ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	F. STAGE II DIKES		48.53	Tawnson .	
1	Perimeter Dike, Stage II				
	Sta. 0+00 to 86+72				
	a. Remove Topsoil from Stage I Dike	13,811	CY	\$3.75	\$51,791
	b. Remove & Replace Access Road Stone	10,621	CY	\$9.00	\$95,589
134,18	c. Dike Material (clean fill)	514,761	CY	\$10.35	\$5,327,776
	d. Clay Liner	23,768	CY	\$15.64	\$371,732
0018	e. Topsoil	9,373	CY	\$5.20	\$48,740
878,18	f. Seeding	29	AC	\$3,240.00	\$93,960
	g. Remove & Replace Geotextile	41,423	SY	\$1.00	\$41,423
2	Subcell Dikes - final height = 30 feet				
	a. Dike Material (dried dredged material)	806,402	CY	\$4.25	\$3,427,209
3	Four additional lifts of 5 feet each for interior dikes				
	a. Remove & Replace Stone Access Road	9,812	TON	\$9.00	\$88,308
	b. Add lift of dike material (dried dredged material)	234,820	CY	\$4.25	\$997,985
	c. Remove & Replace Geotextile for Access Road	39,216	SY	\$1.00	\$39,216





	PROJECT COS	T ESTIMATE			27-Aug-99 Sheet 9 of 19
PROJE	VITIES				
ITEM		ESTIMATED			
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	F. STAGE II DIKES continue				
	SubTotal				\$10,583,729
	Contingency, 15%				\$1,587,55
	Total Construction Cost				\$12,171,28
	Planning, Engrg. & Design, 12%		3.		\$1,460,55
	Construction Management, 7.5%				\$912,84
	Total Cost Stage II Dikes				\$14,544,69
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Augusta Inc.					
	POSITION CONTRACTOR CONTRACTOR A CONTRACTOR			and the supplementation of the supplementatio	

## PROJECT COST ESTIMATE

Sheet 10 of 19



## PROJECT:

# INDIANA HARBOR AND CANAL MAINTENANCE DREDGING AND DISPOSAL ACTIVITIES

ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
				2000 March 1990 March	
	G. HYDRAULIC GRADIENT C	ONTROL			
1	Well Points	221	EA	\$364.00	\$80,444
2	Header Piping	11,025	LF	\$57.20	\$630,630
3	Pumps	11	EA	\$13,006.00	\$143,066
4	Groundwater Monitoring Wells	12	EA	\$3,381.00	\$40,572
5	Discharge Pipe - Indiana Ave.	500	LF	\$78.00	\$39,000
	SubTotal				\$933,712
	Contingency, 15%				\$140,057
	Total Construction Cost				\$1,073,769
	Planning, Engrg. & Design, 12%			Page 1	\$128,852
	Construction Management, 7.5%				\$80,533
	Total Cost Hydraulic Gradient Control			Section	\$1,283,154
	•			2009	
				2000 1	
				Service	
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				Programme and the second	



					27-Aug-99
	PROJECT COST	r estimate			Sheet 11 of 19
PROJE					
ITEM	MAINTENANCE DREDGING	<b>ESTIMATED</b>		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	H. WATER TREATMENT SYS	STEM			
1	Water Treatment System	1	LS		\$6,491,404
2	Grading Subcells	69	AC	\$665.00	\$45,885
3	Decant Structures	11	EA	\$8,123.00	\$89,353
4	Piping	1	LS		\$77,942
5	Ditch Crossings	1	LS		\$33,763
	SubTotal				\$6,738,347
1	Contingency, 15%				\$1,010,752
7.	Total Construction Cost				\$7,749,099
	Planning, Engrg. & Design, 12%				\$929,812
	Construction Management, 7.5%				\$581,182
	Total Cost Water Treatment System				\$9,260,173
	7				



	PROJECT CO	ST ESTIMATE		gar. S	Sheet 12 of 19
PROJE	CT: INDIANA HARBOR AND C MAINTENANCE DREDGING		AL ACTIV	/ITIES	2000 (15) 224 (15) 24 (15)
ITEM		ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
	I. CAP		7 2 7 4	ACOT BOY	
1	3 ft. Clay	504,148	CY	\$15.64	\$7,884,875
2	6 in. Sand	84,205	CY	\$15.30	\$1,285,583
3	2 ft. Clean Fill	336,099	CY	\$10.35	\$3,478,625
4	6 in. Topsoil	84,025	CY	\$13.00	\$1,092,325
	SubTotal			237323	\$13,741,408
	Contingency, 15%				\$2,061,21
	Total Construction Cost				\$15,802,619
	Planning, Engrg. & Design, 12%			1922/01/20	\$1,896,314
	Construction Management, 7.5%				\$1,185,196
	Total Cost Cap			masW is	\$18,884,129



	PROJECT COS				27-Aug-99 Sheet 13 of 19
PROJE					
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging Year 1	127,000	CY	\$12.32	\$1,564,640
	SubTotal				\$1,564,640
	Contingency, 15%				\$234,696
	Total Construction Cost				\$1,799,336
	Planning, Engrg. & Design, 12%				\$215,920
	Construction Management, 7.5%				\$134,950
	Total Cost Dredging Year 1				\$2,150,206
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	contribution (contribution)				27-Aug-99
	PROJECT COS	T ESTIMATE	3.8		Sheet 14 of 19
ROJE	SPEEL.				
ITEM	MAINTENANCE DREDGING	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging Year 2	292,000	CY	\$12.32	\$3,597,440
	SubTotal				\$3,597,440
	Contingency, 15%				\$539,610
	Total Construction Cost		800		\$4,137,05
	Planning, Engrg. & Design, 12%				\$496,44
	Construction Management, 7.5%				\$310,27
	Total Cost Dredging Year 2				\$4,943,78
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			- March - Lott Corner Spiriters (1989)		





	PROJECT COS	Т ЕЅТІМАТІ	E		27-Aug-99 Sheet 15 of 19
PROJE					
ITEM	DESCRIPTION	ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging Year 3	130,000	CY	\$12.32	\$1,601,600
	SubTotal				<b>\$1,601,</b> 600
	Contingency, 15%				\$240,240
	Total Construction Cost				\$1,841,840
	Planning, Engrg. & Design, 12%				\$221,021
	Construction Management, 7.5%				\$138,138
	Total Cost Dredging Year 3				\$2,200,999
	į.				

	PROJECT COST ESTIMATE							
PROJE								
ITEM		ESTIMATED		UNIT	ESTIMATED			
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT			
1	TSCA Dredging	186,000	CY	\$23.02	\$4,281,609			
	SubTotal				\$4,281,609			
	Contingency, 15%				\$642,241			
	Total Construction Cost				\$4,923,850			
	Planning, Engrg. & Design, 12%				\$590,862			
	Construction Management, 7.5%				\$369,288			
	Total Cost TSCA Dredging				\$5,884,000			
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	PROJECT COS	T ESTIMATE	0		27-Aug-99 Sheet 17 of 19
PROJE	And the second				
ITEM		ESTIMATED		UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging (Yearly 2007-2013)	1,442,400	CY	\$12.32	\$17,770,368
	G 177 4 1				
	SubTotal				\$17,770,368
	Contingency, 15%				<b>\$</b> 0.665.555
	Contingency, 1376				\$2,665,555
·	Total Construction Cost				\$20,435,923
					420,100,520
	Planning, Engrg. & Design, 12%				\$2,452,311
	Construction Management, 7.5%				\$1,532,694
	Total Cost TSCA Dredging				\$24,420,928
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	PROJECT COS	т ретилот			27-Aug-99
	Sheet 18 of 19				
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ITEM	MAINTENANCE DREDGING A	ESTIMATED	the state of the s	UNIT	ESTIMATED
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging	1,080,000	CY	\$12.32	\$13,305,60
	SubTotal				\$13,305,60
	Contingency, 15%				\$1,995,8
	Total Construction Cost				\$15,301,44
	Planning, Engrg. & Design, 12%				\$1,836,17
	Construction Management, 7.5%				\$1,147,60
	Total Cost Dredging				\$18,285,2
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	PROJECT COS	T ESTIMATE			27-Aug-99 Sheet 19 of 19
PROJE	100				
ITEM		ESTIMATED			
NO.	DESCRIPTION	QUANTITY	UNIT	PRICE	AMOUNT
1	Dredging	1,090,000	CY	\$12.32	\$13,428,800
	SubTotal				\$13,428,800
	Contingency, 15%				\$2,014,320
	Total Construction Cost				\$15,443,120
	Planning, Engrg. & Design, 12%				\$1,853,174
	Construction Management, 7.5%				\$1,158,234
	Total Cost Dredging				\$18,454,528
					Total
					1

