Appendix E

Project Cost Analysis

HYDRAULIC DREDGING COST ESTIMATE (Geotextile Tube Dewatering)

	Estimated Piping Distance:	Estimated Distance to Upland Area:
Excavation Areas:		
Northwest Channels	5,300	3,000
West Channels	4,200	3,000
Zastrow's Bay	3,000	3,000
Bark River Inlet	5,250	3,000
Northeast Channels	6,000	3,000

Variable Costs	Quantity (Cubic yards)	Unit Cost	Extension
Dredging (w/ 6" overcut)			
Northwest Channels	44,678	$ 9.00	$ 402,098
West Channels	16,485	$ 9.00	$ 148,363
Zastrow's Bay	8,146	$ 9.00	$ 73,312
Bark River Inlet	33,590	$ 9.00	$ 302,312
Northeast Channels	4,277	$ 9.00	$ 38,493
	107,175		
		Variable Costs Subtotal:	**$ 964,578**
Fixed Costs			
Mobilization/Demobilization	2	$ 120,000	$ 240,000
Slip Rental	1	$ 25,000	$ 25,000
Booster Pump/Piping			$ 676,907
Property Restoration (acres)	10	$ 2,000	$ 20,000
Miscellaneous Expenses			$ 150,000
Dewatering Site Development			$ 1,142,036
Sed. Stockpiling/Management	49,515	$ 0.75	$ 37,136
Dewatering Polymer			$ 37,500
		Fixed Costs Subtotal:	**$ 2,328,580**
		Total - Northwest Channels	**$ 867,813**
		Total - West Channels	**$ 614,079**
		Total - Zastrow's Bay	**$ 539,028**
		Total - Bark River Inlet	**$ 768,028**
		Total - Northeast Channels	**$ 504,209**
		ESTIMATED COST:	**$ 3,293,157**

Summary

	Quantity (Cubic yards)	Total Estimated Cost
Northwest Channels	44,678	$ 867,813
West Channels	16,485	$ 614,079
Zastrow's Bay	8,146	$ 539,028
Bark River Inlet	33,590	$ 768,028
Northeast Channels	4,277	$ 504,209
ESTIMATED COST:		**$ 3,293,157**

GEOTEXTILE TUBE DEWATERING COST ESTIMATE SUBTOTAL:	**$**	**3,293,157**
15% COST CONTINGENCY:	**$**	**493,974**
TOTAL COST ESTIMATE:	**$**	**3,787,131**
Average Unit Cost/cubic yard	**$**	**35.34**

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Hydraulic Dredging Costs (Geotextile Tube Dewatering)

Site:	West Channel		
		Estimated Dredge Volume (cubic yards):	13,652
		Estimated Piping Distance (feet):	4,200
		Est. Distance From Booster Station to Upland Area (feet):	3,000
		Estimated Dredge Volume w/ 6" overcut & 5% contingency:	16,485

Description	Unit	No. of Units	Unit Cost ($)	Cost
Mobilization/Demobilization *	lump sum	2	$ 24,000	$ 48,000
Hydraulic Dredge	in-situ cy	16,485	$ 9.00	$ 148,363
Slip Rental **	lump sum/yr	1	$ 5,000	$ 5,000
Booster Pump Station	in-situ cy	16,485	$ 3.75	$ 61,818
Influent/Effluent Piping ***	lump sum/yr	2	$ 27,500	$ 55,000
Property Restoration	acre	2.0	$ 2,000	$ 4,000
Sed. Stockpiling/Management****	dewatered cy	7,616	$ 0.75	$ 5,712
Miscellaneous Expenses	lump sum	1	$ 30,000	$ 30,000
Dewatering Polymer	lump sum	1	$ 7,500	$ 7,500
		West Channel	**Total Cost:**	**$ 365,393**
		Unit Rate Cost (cubic yard):		$ 26.76

Site:	Northwest Channels		
		Estimated Dredge Volume (cubic yards):	37,000
		Estimated Piping Distance (feet):	5,300
		Est. Distance From Booster Station to Upland Area (feet):	3,000
		Estimated Dredge Volume w/ 6" overcut & 5% contingency:	44,678

Description	Unit	No. of Units	Unit Cost ($)	Cost
Mobilization/Demobilization *	lump sum	2	$ 24,000	$ 48,000
Hydraulic Dredge	in-situ cy	44,678	$ 9.00	$ 402,098
Slip Rental **	lump sum/yr	1	$ 5,000	$ 5,000
Booster Pump Station	in-situ cy	44,678	$ 3.75	$ 167,541
Influent/Effluent Piping ***	lump sum/yr	2	$ 27,500	$ 55,000
Property Restoration	acre	2.0	$ 2,000	$ 4,000
Sed. Stockpiling/Management****	dewatered cy	20,641	$ 0.75	$ 15,481
Miscellaneous Expenses	lump sum	1	$ 30,000	$ 30,000
Dewatering Polymer	lump sum	1	$ 7,500	$ 7,500
		Northwest Channels	**Total Cost:**	**$ 734,619**
		Unit Rate Cost (cubic yard):		$ 19.85

Site:	Northeast Channels		
		Estimated Dredge Volume (cubic yards):	3,542
		Estimated Piping Distance (feet):	6,000
		Est. Distance From Booster Station to Upland Area (feet):	3,000
		Estimated Dredge Volume w/ 6" overcut & 5% contingency:	4,277

Description	Unit	No. of Units	Unit Cost ($)	Cost
Mobilization/Demobilization *	lump sum	2	$ 24,000	$ 48,000
Hydraulic Dredge	in-situ cy	4,277	$ 9.00	$ 38,493
Slip Rental **	lump sum/yr	1	$ 5,000	$ 5,000
Booster Pump Station	in-situ cy	4,277	$ 3.75	$ 16,039
Influent/Effluent Piping ***	lump sum/yr	2	$ 27,500	$ 55,000
Property Restoration	acre	2.0	$ 2,000	$ 4,000
Sed. Stockpiling/Management****	dewatered cy	1,976	$ 0.75	$ 1,482
Miscellaneous Expenses	lump sum	1	$ 30,000	$ 30,000
Dewatering Polymer	lump sum	1	$ 7,500	$ 7,500
		Northeast Channels	**Total Cost:**	**$ 205,513**
		Unit Rate Cost (cubic yard):		$ 58.02

Site:	Bark River Inlet		
		Estimated Dredge Volume (cubic yards):	27,818

Estimated Piping Distance (feet):	5,250
Est. Distance From Booster Station to Upland Area (feet):	3,000
Estimated Dredge Volume w/ 6" overcut & 5% contingency:	33,590

Description	Unit	No. of Units	Unit Cost ($)		Cost
Mobilization/Demobilization *	lump sum	2	$ 24,000	$	48,000
Hydraulic Dredge	in-situ cy	33,590	$ 9.00	$	302,312
Slip Rental **	lump sum/yr	1	$ 5,000	$	5,000
Booster Pump Station	in-situ cy	33,590	$ 3.75	$	125,963
Influent/Effluent Piping ***	lump sum/yr	2	$ 27,500	$	55,000
Property Restoration	acre	2.0	$ 2,000	$	4,000
Sed. Stockpiling/Management****	dewatered cy	15,519	$ 0.75	$	11,639
Miscellaneous Expenses	lump sum	1	$ 30,000	$	30,000
Dewatering Polymer	lump sum	1	$ 7,500	$	7,500

Bark River Inlet	**Total Cost:**	**$ 589,415**
Unit Rate Cost (cubic yard):		$ 21.19

Site:	**Zastrow's Bay**	Estimated Dredge Volume (cubic yards): 6,746
		Estimated Piping Distance (feet): 3,000
		Est. Distance From Booster Station to Upland Area (feet): 3,000
		Estimated Dredge Volume w/ 6" overcut & 5% contingency: 8,146

Description	Unit	No. of Units	Unit Cost ($)		Cost
Mobilization/Demobilization *	lump sum	2	$ 24,000	$	48,000
Hydraulic Dredge	in-situ cy	8,146	$ 9.00	$	73,312
Slip Rental **	lump sum/yr	1	$ 5,000	$	5,000
Booster Pump Station	in-situ cy	8,146	$ 3.75	$	30,547
Influent/Effluent Piping ***	lump sum/yr	2	$ 27,500	$	55,000
Property Restoration	acre	2.0	$ 2,000	$	4,000
Sed. Stockpiling/Management****	dewatered cy	3,763	$ 0.75	$	2,823
Miscellaneous Expenses	lump sum	1	$ 30,000	$	30,000
Dewatering Polymer	lump sum	1	$ 7,500	$	7,500

Zastrow's Bay	**Total Cost:**	**$ 256,181**
Unit Rate Cost (cubic yard):		$ 37.98

Estimated Cost (Geotextile Tube Dewatering):	**$**	**2,151,121**
Dewatering Pad Construction:	**$**	**1,142,036**
Total Estimated Cost (Geotextile Tube Dewatering):	**$**	**3,293,157**
Average Cost per cubic yard:	**$**	**30.73**

* Assume $120,000/yr for 2 years for mob/demob = total cost of $240,000
Mob/demob cost distributed over the dredge areas equally.
** Slip Rental costs will be incurred once. These costs are distributed over the dredge areas equally.
*** Influent/Effluent Piping costs will be incurred annually (6,000 lf/yr x $20/lf x 2 years = $240,000). These costs also include driveway and road crossing costs ($35,000) and are distributed over the dredge areas equally.
**** Assume dewatered fines at 38% solids (49,482 cy/107,175 cy = 0.462).

Description	Unit	No. of Units	Unit Cost ($)		Cost
Site Preparation	cy	12,000	$ 2.00	$	24,000
30 mil PVC Liner Installation	sf	200,000	$ 0.37	$	74,000
6 oz/sy geotextile cushion	sf	200,000	$ 0.09	$	18,000
Granular protection layer	cy	7,500	$ 10.00	$	75,000
Geotextile Tubes	ea	94	$ 5,000	$	468,892
Sediment Management/Screening	cy	107,175	$ 1.50	$	160,763
Geotextile Tube Management *	cy	49,515	$ 4.00	$	198,060
Effluent Pumping Station	lump sum	1	$ 7,500	$	7,500
Miscellaneous Construction	lump sum	1	$ 12,000	$	12,000
		Subtotal:		$	1,038,215
		10% Contingency		$	103,821
		Total Cost Estimate:		$	1,142,036

* Assume 38% solids