

**2002 - 2003 Disposal at Sea Program Consultations**

# Review of the Monitoring Fee for the Disposal at Sea Program

Disposal at Sea Program  
Marine Environment Branch  
Toxics Pollution Prevention Directorate  
Environmental Protection Service  
Environment Canada

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## **ACKNOWLEDGMENTS**

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## SUMMARY

In 1999, Environment Canada implemented a permit fee for the disposal at sea of dredged and excavated material at a rate of \$470 per 1,000 cubic metres. The fee was estimated to be the fair market value of the right or privilege of permitting access to suitable disposal sites under the *Canadian Environmental Protection Act, 1999*. A key commitment by Environment Canada to the regulated community was to review the fee three years after its implementation.

This paper was prepared for that review and will support public meetings over January and February 2003, in Vancouver, Calgary, Inuvik, Ottawa, Quebec City, Halifax, Moncton, Miramichi, Sydney and St. John's. It focuses on the issue of cost recovery through monitoring fees and presents an analysis of the fees paid, who paid them, how they have been spent, and an update on the costs of disposal site monitoring. This document follows previous discussion papers on regulatory proposals and incorporates the results of a Client Cost Recovery Survey conducted in 2002.

Based on only three years of data, it would be premature to take action on changing the fees in any way. Revenues reached expected levels after three years and Environment Canada has successfully begun to phase-in its full monitoring guidelines. The quantities disposed and permit numbers are approaching pre-fee levels, suggesting impediments to business are small, on a national basis. Client input from the surveys returned, suggests that the fees represent about 6% of project costs, which is only slightly higher than the 5% predicted during the fee development assessments. Based on permits issued, the quantities of waste disposed of at sea are likely to continue to increase in 2002-2003. It will be important therefore, for Environment Canada to continue to work with clients so that the length and variability associated with the normal dredging business cycle can be better defined. This information can help to determine when and whether the fees should be altered. Current monitoring costs are about 11% higher than estimated in 1996, but the increased revenues may mean that fees can remain at current levels. Environment Canada will also need to fine tune estimates of monitoring expenses for a major site in the Arctic to determine whether the current fee structure is sufficient to cover those costs.

Comments on this document are invited either in writing or by attending one of the consultation meetings. Questions and comments on the monitoring program itself should be directed to regional offices, while questions on the fees and their status can be forwarded to the offices in Ottawa. Contact information is presented in Appendix 1.

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# Review of Monitoring Fee for the Disposal at Sea Program

## 1. Introduction

In 1999, Environment Canada introduced a fee regulation under the *Financial Administration Act*. The fee recovers \$470 per 1,000 cubic metres of dredged material or excavated geological matter disposed of at sea through a permit issued under the *Canadian Environmental Protection Act, 1999*.

The fee was estimated to be the fair market value of the right or privilege of permitting access to suitable disposal sites under the *Canadian Environmental Protection Act, 1999*. This value was estimated as being approximately equal to the cost of maintaining that right and privilege through disposal site monitoring. The revenue is returned to the Disposal at Sea Program to cover Environment Canada's costs for monitoring, so that users can have continued access to suitable sites and the sites can be managed in an environmentally acceptable manner.

At the time the fee was introduced, Environment Canada committed to a review of the fee three years after its implementation. This discussion paper was prepared to support that review. This document follows discussion and report documents from 1996-1998 detailing the initial fee development by Environment Canada for the Disposal at Sea Program. Comments from past consultations have provided a better understanding of the priorities and concerns of Canadians with respect to managing ocean disposal and have helped to shape the present document. This document will look at the following areas:

- Performance of the fee
- Use of the revenue
- Client survey results on regional issues
- An update of costing

### 1.1 Getting Involved

In the summer of 2002, two surveys were sent to permittees to gauge impacts of the fee and other costs on their activities. One survey was circulated to permittees disposing of dredged material and excavated geological matter, the other survey was circulated to permittees disposing of fish waste or vessels. Both questionnaires are available from the Environment Canada Disposal at Sea Program office in Ottawa.

To date, 12 responses have been received from permittees disposing of dredged material, excavated material and fisheries waste, representing about 10% of current permittees. The program recognizes the effort involved in providing Environment Canada with this information and has made every effort to take comments into consideration. A summary is presented in section 3 and a further assessment will be made in the consultation report that will be produced once all input is received.

This discussion paper has been distributed to individuals and organizations likely to be affected by, or interested in, any decisions by Environment Canada with respect to fees for disposal at sea. It will be followed by public meetings in January and February 2003, in Vancouver, Calgary, Inuvik, Ottawa, Quebec City, Halifax, Moncton, Miramichi, Sydney and St. John's to allow all those interested to participate. Anyone may comment either in writing or by attending a meeting. All comments will be addressed and a Consultation Report will be sent to all those sending written comments or participating in the meetings. The consultation meetings will be combined with related discussions on the process for setting boundaries of the sea with respect to ocean disposal. Anyone wishing a copy of that document should send an e-mail to David Taillefer (david.taillefer@ec.gc.ca) or contact the Disposal at Sea Program as indicated below.

Written comments on the consultations should be submitted no later than February 28, 2003. Correspondence should be sent to:

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## **2. Performance of the Fees**

### **2.1 Revenues**

National revenues were reported in the introduction to the 2002 cost survey. The figures were preliminary and have been revised as presented by region in Table 1. As predicted in the Regulatory Impact Analysis Statement, revenues in the first year were low (\$200,000-\$400,000) as permittees applied for permits in advance of the fees. In that year, Environment Canada's Disposal at Sea Program covered the shortfalls from within its own budgets and other planned activities were postponed. In the second year, revenues essentially covered direct costs of a partial monitoring program and in 2001-2002 the target revenue of \$1,000,000 was achieved.

Based on permits issued to date, revenues are expected to reach or even exceed the \$1,000,000 target in 2002-2003. Revenues "in hand" as of November 25, 2002, are in Table 1. As the first three years have been an adjustment period, it is too early to determine if revenues will continue to meet the targets in coming years. Continued monitoring will be necessary to determine the length of the natural business cycle and to adequately predict the degree to which revenues will fluctuate annually.

**Table 1. Net monitoring income<sup>1</sup> 1999-2002**

Region	Current <sup>2</sup>			
	1999-2000	2000-2001	2001-2002	2002-2003
Atlantic	\$142,880	\$185,738	\$293,628	\$126,783
Quebec	\$18,330	\$19,270	\$42,300	\$134,420
Pacific and Yukon	\$65,937	\$420,153	\$653,888	\$506,660
Prairie and Northern	\$0	\$34,780	\$28,670	\$0
<b>Total</b>	<b>\$227,147</b>	<b>\$659,941</b>	<b>\$1,018,486</b>	<b>\$767,863</b>

<sup>1</sup>Net monitoring income is the actual fees received in a fiscal year less the refunds paid.

<sup>2</sup>The 2002 figures only represent net payments in hand as of November 25, 2002 and are not final

#### *Future considerations*

Oil and gas activity in the Arctic has the potential to increase the quantities of dredged material disposal and create new, major sites that would require monitoring and increase program costs significantly. To date, no disposal applications have been received. In Quebec, the monitoring needs of one major site were higher than originally estimated and added to the monitoring of the annual minor site. Larger volumes were disposed of in 2002, but quantities are expected to return to lower levels for the next five years. It is expected there will be a need to monitor a major site once every five years in Quebec. Pacific and Yukon Region levels have been increasing over the past three years and the spring freshet of 2002 will likely result in quantities which exceed the 2001-2002 levels.

## 2.2 Effects of the Fee on Disposal Activities

Table 2 shows the Regional breakdown of permits in 1997, before the fee was proposed and in 2001, three years after the fee was introduced. Atlantic and Quebec show a slight decrease in permit numbers while Pacific and Yukon Region show a slight increase. As of 2001-2002, the number of permits issued nationally for dredged material and excavated geological matter was approximately the same as the number issued before the permit fee was introduced, suggesting that overall, the fee has not reduced the demand for disposal at sea permits.

**Table 2. Dredged and excavated material permits before and after the fee**

Timeframe	Atlantic	Quebec	Pacific and Yukon	Prairie and Northern	National
<b>Permits Issued</b>					
1997(Before Fee)	16	13	21	0	50
2001(After Fee)	14	10	26	1	51
Percent change	-13%	-23%	24%	100%	2%

In 1999, the Regulatory Impact Analysis Statement, which accompanied the monitoring fee regulation, stated that the average quantities of dredged and excavated geological material reported as disposed of at sea between 1991 and 1995 was about 2.1 million cubic metres per year. The fee was calculated assuming these quantities would be disposed of in the future. In the first two years after the fee, quantities disposed were less than the predicted estimate. In the 2001-2002 fiscal year, the actual quantity disposed reached 2.17 million cubic meters (as calculated by revenues).

Although 2001-2002 was the first year in which the number of permits and the quantity disposed of returned to pre-fee levels, the data suggest that the fee is not likely to cause ongoing reductions in disposal activities and that navigable channels and harbours will continue to be maintained. Year to date information for 2002-2003, indicates that the higher level of activity is continuing and that quantities disposed of may surpass those of 2001-2002.

### 2.3 Amendments to Permits

As permittees do not wish to pay more than needed, it was anticipated that the usual practice of overestimating the permit quantity by 30-50% would be largely discontinued once the fee was introduced. This was in fact the case. It was also expected that this would result in an increase in amendments to adjust the quantities, thus increasing administrative costs. Table 3 presents details of the amendments required before and after the fee was introduced. The percentage of permits issued for dredged and excavated material that required amendments increased only in 2001-2002. Data remains too limited to determine if the long-term costs of administering amendments will increase. Information collected in the coming years should clarify if a trend exists that warrants a re-examination of the application fees.

**Table 3. Summary of amendments to permits issued for dredged or excavated geological material in 1994 to 2001**

By Region	Year Permit Issued								
	2001	2000	1999	1998	1997	1996	1995	1994	1994
Atlantic	9	6	7	4	7	5	3	2	2
Quebec	0	2	4	1	6	3	2	2	2
Pacific and Yukon	16	5	2	3	1	4	3	1	1
Prairie and Northern	1	1	0	0	0	0	0	0	0
<b>Canada</b>	<b>26</b>	<b>14</b>	<b>13</b>	<b>8</b>	<b>14</b>	<b>12</b>	<b>8</b>	<b>5</b>	<b>5</b>
<b>By Permits Issued</b>									
Dredged and Excavated Material Permits Issued	51	47	37	63	50	50	56	64	
Percent Amended	51%	30%	35%	13%	28%	24%	14%	8%	
<b>By Type</b>									
Increase Quantity	12	9	8	2	4	5	3	0	
Change Term	6	3	3	2	1	0	3	3	
Change Sites	3	1	1	2	1	3	1	1	
Change Other Conditions	5	1	1	2	8	4	1	1	



## 2.4 Client Distribution

From the disposal at sea database, records show that, since 1999, there has been a shift in the volume disposed of by the private and public sectors. The current split is about 30% government and 70% non-government for the disposal of dredged and excavated material. This is almost the reverse of the balance in the mid 1990's and is likely a result of the ongoing devolution of ports and the selling of small craft harbours to harbour authorities.

With respect to fees, Environment Canada had agreed in 1999 to reduce the amount of indirect (overhead) costs recovered in the fees by 30% to account for costs already covered by our government clients. As government clients represented the majority at the time, the reduction was applied across the board. One of the possible considerations in the review of the fees is whether Environment Canada should reconsider this 30% reduction. By itself, this would not be sufficient to cause a fee revision, but it may be considered if the fee is adjusted for other reasons.

The majority (72%) of the fees continue to be paid by the large volume clients. Regionally, in two of the three years, the Pacific and Yukon Regions generated about twice the revenue of the other regions.

## 3. 2002 Survey results

Six dredgers and excavators replied to the 2002 survey, two from each of Pacific and Yukon, Atlantic and Quebec Regions. Reported project costs ranged from less than two dollars per cubic metre to more than \$46 per cubic metre. Ignoring the extremes, the average was about \$7 per cubic metre, with the disposal site monitoring fees averaging less than 6% of total project costs. One permittee reported a 10% cost impact from the fee.

Most respondents identified inflation and higher fuel costs as key elements increasing their operating costs. One respondent also identified provincial impact assessments as an increasing cost. Most indicated that disposal would remain stable although one indicated a drive to maximize sales and beneficial uses of the material and thus reduce disposal at sea.

Pacific and Yukon Region permittees continued to request a regional fee. This region pays more fees than other regions as it needs to dispose of larger quantities of waste in most years due to sediment loading from the Fraser River. From the few surveys returned, there were no obvious regional differences in the percentage impact on clients in the different regions. All were between 5-6% except for one client. That client was in the Pacific and Yukon Region however, and more extensive data would be required to adequately assess regional impacts.

In other regions, some clients indicated the fees were working well and should not be changed. Other clients indicated that a slight increase in fees, but not a large one, could be tolerated.

Given that the total revenue only reached stated targets in 2001-2002, it is premature to suggest any changes to the fee levels or any alternative fee structures. The Program continues to maintain that the intent of the fee is to get a fair return for Canadians on the use of a right

and privilege and that charging a national fee per quantity disposed is the most equitable way to achieve that return.

One respondent was concerned that monitoring had not been directed to their disposal site. Environment Canada conducts representative disposal site monitoring. Under this approach, results of monitoring activities from a given site guide future permit decisions for other similar sites. In this way, the right or privilege for disposal at sea is maintained. The first three years were admittedly focused on establishing base lines on the largest, most used sites. In the coming years, a greater focus on the minor sites and less studied major sites will be sought.

Other respondents commented that the payment of fees up front was unfair. This stemmed from a contractor engaged in a bidding process where it was not known if land or sea disposal would be chosen. To ensure readiness, the contractor applied for a disposal at sea permit. As Environment Canada does not control such contracting processes, this will likely remain a difficult situation for contractors. While half the fees must be paid before the permit is published, these fees can be refunded in full if the permit is not used. The \$2,500 application fee, however, is not refundable. Environment Canada may be contacted for advice on timing for the permit review process and requirements for particular situations.

The Program also circulated a separate survey to those who have disposed of fish waste or vessels, asking them for their current costs and their views on monitoring and cost recovery. Environment Canada currently conducts some research-based post disposal assessments but has no formal monitoring program for these wastes so no monitoring fees are levied against these clients. The purpose of the survey was to assess baseline client costs should a need arise to monitor more frequently, and where further cost recovery might be considered.

No vessel disposal proponents replied but responses were received from 6 fish plant operators representing about 10% of the fish waste client base. The responses came from both the commercial and non-profit sectors and their current cost of operation ranged from \$11-\$55 per tonne for the disposal of fish waste under a permit. One of the respondents also reported new federal and provincial permit fees had been added recently, but most suggested no additional fees have been levied since their last permit. Only two of the six provided comments on the proposal to introduce monitoring fees, indicating their operational costs were already so high that they felt they could not handle further increases. When questioned on their strategies for coping if fees were introduced, most indicated they would adjust the amount they applied for to more closely reflect the minimum amount possible. One company indicated it would seek land disposal.

## **4. Use of Revenues**

### **4.1 Monitoring Activities**

Environment Canada is committed to providing opportunities for client input both at the planning and at the reporting stage of monitoring. The priorities and plans are discussed annually with the regulated community, where interest warrants, to allow input into the

planning process and to keep them informed on revenue use. A roll-up of ocean disposal site monitoring data with a financial summary is presented annually in the Annual Compendium of Monitoring Activities. This compendium is distributed nationally to clients and internationally to the parties of the London Convention (without the financial summary). Environment Canada has received high praise on these reports, which are now used by other countries as a format on which to base their reporting.

Details can be found in annual regional reports (see Appendix 1 for contact information). The Disposal at Sea Program's *National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites* are used to set the expected number of sites (two major and 5 minor) and to decide on which sites should be monitored, within the limits of expected revenues. Monitoring activities were reduced in the first two years as revenues were expected to be low. In the first three years, monitoring resulted in one site being closed and disposal restrictions placed on another site. Most sites continue to function as intended. Appendix 2 lists the sites and monitoring goals.

## 4.2 Program Spending

Program spending follows an annual process where, at the beginning of each fiscal year, maximum funding levels are set based on predicted revenues. Each region is allocated funding for monitoring activities from a credit account after submitting detailed monitoring plans. During the fiscal year, collected revenues are deposited in a receiving account, which is then reconciled against the credit account at the end of the fiscal year. When collected revenues are less than costs, the deficits are paid from the regular Disposal at Sea Program budget and other planned activities are postponed. If sufficient revenues are collected to meet direct costs, the remainder may either be applied to indirect costs or may be held to enable refunds.

**Table 4. Summary of monitoring costs 1999-2002**

<b>Overall Monitoring Expenses</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>
Atlantic Region	\$187,000	\$269,000	\$309,000
Quebec Region	\$124,000	\$97,000	\$108,000
Pacific and Yukon Region	\$192,000	\$229,000	\$229,000
Prairie and Northern Region	-	-	\$46,000
Headquarters	\$20,000	\$20,000	\$20,000
70% of Environment Canada's Indirect Costs	\$153,000	\$180,000	\$208,000
<b>Costs borne by Environment Canada</b>	<b>\$676,000</b>	<b>\$795,000</b>	<b>\$920,000</b>
In-kind support from other government departments	\$361,000	\$348,000	\$420,000
<b>Costs to Government</b>	<b>\$1,037,000</b>	<b>\$1,143,000</b>	<b>\$1,340,000</b>
<b>Collected Revenues from the Fee</b>			
Revenues collected	<b>\$227,147</b>	<b>\$659,941</b>	<b>\$1,018,486</b>

A summary of monitoring costs by region is presented in Table 4. (Note: This table has been updated since it was presented in the 2002 survey). The cost to government includes direct

cost (salary, benefits and operating costs) and 70% of indirect costs. (Note that Environment Canada calculates its indirect costs as 41.8% of the direct costs.) In-kind support is estimated based on charge out rates of equipment etc. and may not include all of that department's costs.

For two of the three years, revenue remained below the cost to Environment Canada, of monitoring ocean disposal sites. In those years, virtually all revenues were used to support the direct costs of monitoring. In 2001-2002, revenue reached the cost recovery target described in the impact analysis on the fee regulation. From that revenue, \$712,000 went to direct program costs, and the remainder was held until year-end to accommodate refunds, with the intention of carrying it forward to guard against future shortfalls.

The costs of disposal site monitoring are directly related to the particular concerns at each site and could vary substantially, depending on size, depth, season, and the particular questions being examined. A conservative estimate of the direct costs to monitor two major (greater than 100,000 m<sup>3</sup> a year) and 5 minor disposal sites was presented in the 1996 discussion document. The total direct costs were estimated at \$821,000 per year, excluding the reporting expenses at headquarters. The estimated per site costs were compared to actual per site costs for 1999 to 2001 where appropriate (Appendix 2). A summary is found in Table 5, which clearly shows a high variability in the costs of monitoring. The costs incurred per site varied from those predicted in 1996, on average by -5% in 1999, by +41% in 2000, and by -4% in 2001. It should be noted that, although per site costs often exceeded the estimates, the Program's direct spending has never exceeded the total 1996 estimated costs. The Program has kept costs manageable either by reducing the scope of the monitoring, reducing the number of sites or leveraging additional funds through partnerships with other government bodies. As can be seen, the full guidelines have yet to be implemented. The Program refrained from spending the full amount earned to preserve the ability to cover refunds.

**Table 5 Comparison of Monitoring Activity over Costs**

	<b>% of Guidelines</b>	<b>EC Direct Costs (\$)</b>	<b>Value (EC\$ +In Kind \$)</b>	<b>Avg % cost over Estimates</b>
1999-2000	33%	\$503,000	\$864,000	-5%
2000-2001	44%	\$595,000	\$943,000	41%
2001-2002	78%	\$692,000	\$1,087,550	-4%
				11%

Figures presented in Appendix 2 suggest that the program underestimated the cost of physical analyses using side scan sonar and multibeam bathymetry. There was often a need to collect additional samples as well which, at times, increased the costs of chemical analyses. Averaged, the actual costs appear to be about 11% greater than those estimated, which would give a revised estimate of the cost of full implementation of about \$1.33 million, including the 41.8% for indirect costs.

If full monitoring guidelines are followed, revenues of \$1,000,000 will not cover indirect costs and any reduction in disposal activity will give a reduced capacity to monitor in the following year. As revenues appear to be increasing, fees at their current level may be able to

accommodate the true costs. Environment Canada will continue to monitor the true costs and revenues.

## **5. Conclusions and Recommendations on Monitoring Fees**

Based on only three years of data, it would be premature to take action on changing the fees in any way. Revenues reached expected levels after three years and Environment Canada has successfully begun to phase-in its full monitoring guidelines. The quantities disposed and permit numbers are approaching pre-fee levels, suggesting impediments to business are small, on a national basis. The limited surveys returned suggest that the fees represent about 6% of project costs, which is only slightly higher than the 5% predicted during the fee development assessments. Based on permits issued, the quantities of waste disposed of at sea are likely to continue to increase in 2002-2003. It will be important, therefore, for Environment Canada to continue to work with clients so that the length and variability associated with the normal dredging business cycle can be better defined. This information can help to determine when and whether the fees should be altered. Current monitoring costs are about 11% higher than estimated in 1996, but the increased revenues may mean that fees can remain at current levels. Environment Canada will also need to fine-tune estimates of monitoring expenses for a major site in the Arctic to determine whether the current fee structure is sufficient to cover those costs.

## **6. Next Steps**

We invite comment on this document either in writing or by attending one of the consultation meetings. Questions and comments on the monitoring program itself should be directed to our regional offices while questions on the fees and their status can be forwarded to the offices in Ottawa.

## Appendix 1. Addresses and Telephone Numbers of Program Offices

Marine Environment Branch  
Environmental Protection Service  
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351 St. Joseph Blvd., 12th Floor  
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Pacific and Yukon Region  
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Environment Canada  
224 West Esplanade  
North Vancouver, British Columbia.  
V7M 3H7  
Tel: 604-666-2730

Quebec Region  
Environmental Protection Service  
Environment Canada  
105 McGill St., 4th Floor  
Montreal, Quebec  
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Tel: 514-283-0183

Prairie & Northern Region  
Environmental Protection Service  
Environment Canada  
Scotia Centre, 3rd Floor  
P.O. Box 370  
Yellowknife, North West Territories  
X1A 2N3  
Tel: 403-920-6062

Atlantic Region  
Environmental Protection Service  
Environment Canada  
15th Floor, Queen Square  
45 Alderney Drive  
Dartmouth, Nova Scotia  
B2Y 2N6  
Tel: 902-426-8304

Newfoundland District  
Environmental Protection Service  
Environment Canada  
6 Bruce Street  
Mount Pearl, Newfoundland and  
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Tel: 709-772-4269

## Appendix 2 – Summary of Monitoring Activities and Costs from 1999-2001

### How to Read the Appendix Tables.

**Guidelines:** Refers to *the National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites*. The guidelines state that annual monitoring activities should be conducted as follows:

- 1 major and 1 minor site in the Pacific and Yukon Region.
- 1 major and 2 minor sites in the Atlantic Region
- 1 minor site in the Quebec Region
- 1 minor site in the Prairie and Northern Region

Monitoring also has three components: physical, chemical and biological. Sites were awarded 2 points for each component done for a major site and 1 point on each component done on a minor site. The total is the percentage completed of the recommended guidelines.

**EC Direct costs:** These are the costs reported by the region and include operating, salaries and benefits but no indirect costs (overheads).

**1996 Estimated Cost:** These are the theoretical direct costs the program calculated in 1996 to guide its fee decisions. They were presented in the 1996 discussion document on cost recovery.

**% Over Site Estimate:** Where possible a direct comparison is made between the actual direct costs and the 1996 estimates. Positive percentages mean the site was more expensive to monitor than the 1996 estimate, negative percentages mean it was less expensive.

**Average Difference from Estimates:** This is simply an average of the percentages to give a general estimate of the cost fluctuations.

**Value:** This is the Environment Canada direct costs plus any “in kind” support. This gives an idea of the total direct costs and shows the areas where co-operation between departments is producing more value for the client’s investment.

## Appendix 2. Summary of Monitoring Activities and Costs from 1999-2001

1999 Site	Details	Guideline elements	EC Direct cost	1996 Estimates	% Over Estimate	Value(EC +In Kind)	
Atlantic	Large		2	\$187,000	\$203,000	-8%	\$498,000
	Small			\$0	\$89,000		
	Small			\$0	\$89,000		
P&Y	Large		4	\$192,000	\$178,000	8%	\$242,000
	Small				\$84,000		
Quebec	Large		2	\$75,800	\$89,000	-15%	\$124,000
	Small		1	\$48,200			
North	Small				\$89,000		
	% of Guidelines		33%	\$503,000	\$821,000	-39%	\$864,000
					<u>Avg. % Difference from Estimates</u>		<u>-5%</u>



2000 Site	Details	Guideline elements	EC Direct cost	1996 Estimates	% Over Estimate	Value (EC +In Kind)	
Atlantic	Large	Major site, Black Point - Physical survey with Geological Survey of Canada to confirm 1999 results and to ensure no significant changes of the disposal site boundary. More data were collected to develop sediment transport model to predict off-site transport.	4	\$269,000	\$203,000	33%	\$567,000
	Small	not funded		\$0	\$89,000		
	Small	not funded		\$0	\$89,000		
P&Y	Large	canceled	0		\$178,000		
	Small	Minor site, Malaspina Strait - Physical survey of the seafloor with sampling and analysis for trace contaminants and biological testing. Vessel time provided by Fisheries and Oceans.	3	\$181,000	\$84,000	115%	\$231,000
	Small	Minor site, Snake Island - Physical survey of the seafloor with sampling and analysis for trace contaminants and tissue residues. Some trace contaminant analysis from Cape Mudge was also undertaken. Vessel time provided by Fisheries and Oceans.	3	\$48,000			\$48,000
Quebec	Small	Minor site, Sainte-Thérèse-de-Gaspé (ST-4) - Sediment sampling and analysis for PAH contaminants. Levels found to be below acceptable limits and biological testing was not necessary.	1	\$68,000	\$89,000	-24%	\$68,000
	Large	Major site, disposal mound "D"- Physical survey of the seafloor to further assess fate and off-site transport of disposed sediments as follow up to site closure.	1	\$29,000			\$29,000
North	small	not funded			\$89,000		\$0
		% of Guidelines	44%	\$595,000	\$821,000	-28%	\$943,000

			Avg. % Difference from Estimates				41%
2001	Site	Details	Guideline elements	EC Direct cost	1996 Estimates	% Over Estimate	Value (EC +In Kind)
Atlantic	Large	Major site, Black Point - Repetitive physical survey to assess movement of materials. Sampling and analysis for sediment contaminants. Benthic community surveys to assess impacts of the disposal site to surrounding habitat.	6	\$228,000	\$203,000	12%	\$374,150
	Small	Major site, Confederation Bridge, Amherst Cove - Physical survey to delineate disposal site. Bottom photographs and sediment sampling were conducted to assess the objectives of crab and lobster habitat creation at the disposal site.	3	\$81,000	\$89,000	-9%	\$305,400
	Small	not funded		\$0	\$89,000		
P&Y	Large	Major site, Sand Heads - Sampling and analysis for trace contaminants. Vessel time provided by Fisheries and Oceans Swath bathymetry provided by Pacific Geoscience Centre.	4	\$100,500	\$178,000	-44%	\$125,500
		Point Grey and Porlier pass - Video survey of the seafloor by remote operated vehicle (ROV) to examine condition of site and marine life present	1	\$30,000			\$30,000
	Small	Minor site, Watts Point - Sampling and analysis for trace contaminants. Video survey of the seafloor by remote operated vehicle (ROV) to examine condition of site and marine life present. Vessel time provided by Fisheries and Oceans.	2	\$98,500	\$84,000	17%	\$98,500

Quebec	Small	Major site, disposal mound "D"- Physical monitoring of the disposal site as follow up to site closure. Lead to site being reopened, with conditions. Also - Sampling and analysis of benthos to assess community recovery.	4	\$91,000	\$89,000	2%	\$91,000
	Small	5 minor sites around the Magdalan Islands - Physical surveys of the seafloor to examine the presence of disposed material at the sites.	1	\$17,000			\$17,000
North	small	not funded Design		\$46,000	\$89,000		\$46,000
% of Guidelines			78%	\$692,000	\$821,000	-16%	\$1,087,550
<u>Avg. % Difference from Estimates</u>							<u>-4%</u>