APPENDIX A

MORROW ENVIRONMENTAL CONSULTANTS INC

2002 06 17

Project V0-823

City of Vancouver
300 - 515 West 10th Avenue
VANCOUVER, BC
V5Z 4A8

ATTENTION: Mr. Bruce Maitland, Director Real Estate Services

REFERENCE: **Southeast False Creek 2002/2003 Proposed Work**

This letter provides an estimated budget for proposed work at Southeast False Creek. Morrow Environmental Consultants Inc.'s (Morrow's) most recent budget approval is for $420,000 given in a letter dated 2001 08 23. The approved budget covers work proposed and undertaken between July 2001 and May 2002 and includes: regulatory liaison; additional intrusive investigations at Areas 1, 3 and 4; preparation of comprehensive preliminary and detailed site investigation reports at Areas 1, 3 and 4; ongoing groundwater quality monitoring and reporting at Area 1 (former batch plant) and Area 3 (former Canron site); and completion of additional remedial excavation at Area 3. To the end of April 2002, we have invoiced about $401,000, or about 95% of the approved budget.

In completing work against the approved budget, our scope of work included some additional work as described below. In addition, based on recent meetings with federal and provincial regulators and new City of Vancouver (COV) objectives, further work is being considered, including pile and deck removal at the Canron barge slip and subsequent barge slip sediment assessment, making application to BERC for remediation and redevelopment of the barge slip, development of an overall site remediation action plan (RAP) including human health and ecological risk assessments, and submission of the RAP to Ministry of Water, Land and Air Protection (MWLAP) with an application for a Approval In Principal (AIP).

Attached Table 1 summarizes major tasks already completed (Tasks 1 to 4) or planned for 2002/2003 based on discussions with the City (Tasks 5 to 15). In preparing this table, we note the following.

1) All subcontractors will contract directly with Morrow, and all third party invoices will be processed by Morrow with a 5% markup in accordance with our existing Professional Services Agreement with the City.

2) Cost estimates for deck removal were obtained from two contractors (Fraser River Pile and Dredge [FRPD] and Vancouver Pile Driving [VPD]). The recommended contractor is FRPD whose estimated costs were significantly less (50%) than VPD. A copy of the FRPD proposal and correspondence is provided in Attachment A. We have included an additional allowance for provision of temporary fencing, re-instatement of the existing fencing and restoration of the bike path around the barge slip.

3) The EVS Environment Consultants (EVS) estimated cost for sediment assessment in the barge slip is based on their proposal submitted to the City in 2001, updated for current personnel and costs. Their revised proposal is provided in Attachment B. For this proposal, we have included an additional allowance as a contingency for additional sediment testing to facilitate delineating the contaminated sediments.

4) Based on discussions with Department of Fisheries and Oceans (DFO) representatives, the deck removal work can proceed without any formal BERC application. The estimated costs provided herein include an allowance for making a BERC application following the results of the sediment assessment.

5) An allowance has been made for a further year of groundwater monitoring at the Canron facility and City Works Yard. A conservative monitoring program has been considered for the period June 2002 to May 2003.

6) We based the cost estimate for the completion of overall human health (HH) and ecological (E) risk assessments (RA) at the SEFC properties (Tasks 6 and 7) on broad conservative assumptions intended for developing a budget value only. A detailed scope of work will be developed prior completion of the work. Most importantly, we have assumed for purposes of this cost estimate that there will be less than 1 m cover of clean (uncontaminated) material at the final ground surface. As such, the scope of work includes bioassay work (soil toxicity testing, groundwater toxicity testing, worm bioaccumulation testing) in support of the ERA, and completion of a soil vapour survey and bioavailability testing of soils for arsenic and lead in support of the HHRA. In actuality, the scope of work completed may not include all the components considered for this cost estimate, but will vary subject to the results of various stages of the work.

7) We have assumed that MWLAP review costs for the AIP application will be included as part of Morrow's budget. The estimated MWLAP review fees are based on separate applications for each site (four total) considered as large complex sites. Submissions will include Preliminary Site Investigation (PSI), Detailed Site Investigation (DSI) and risk-based RAPs for each site.

1.1. Project Staff

All project work will be managed by Alan Walker, P.Eng., Senior Project Manager, who has been involved in work at the site since 1994. Much of the proposed work to be completed by Morrow, will be completed by the same Morrow team of hydrogeologists and engineers that has managed work at the SEFC site in the past (Eric Mewhinney, M.Sc., and Tim Bennett, M.Sc., and Edna Wong, EIT). Elements of the human health risk assessment will be completed by Ross Wilson, M.Sc., DABT, Senior Toxicologist.

EVS will be responsible for undertaking the ecological components of two tasks (overall SEFC ecological risk assessment – Task 7, and Canron Barge Slip Sediment Assessment – Task 14). The overall SEFC ERA will be managed by Audrey Wagenaar, M.Sc., Project Manager/Senior Risk Assessor and completed by John Wilcockson, Environmental Scientist or Chessy Langford, Environmental Scientist. The Canron Barge Slip Sediment Assessment will be managed by Lee Nikl, M.Sc., Project Manager/Environmental Scientist and completed primarily by Blair MacDonald, B.Sc., Environmental Scientist.

Hourly rates for 2002 for key staff are summarized in Table 2.

1.2. Schedule

A general schedule for Tasks 5 to 15 is indicated in Figure 1. The City has indicated that it would like an application made by the beginning of the fourth quarter to MWLAP for an AIP. This target may or may not be achievable depending on the actual scope of work completed for the overall SEFC human health and ecological risk assessments. If the full scope of work is completed that is provided for in the attached budget, then it will be difficult to complete these tasks before the end of this year if approval is received imminently.

Other restrictions in schedule for completing the work include access to the barge slip by equipment for removing the pile and decking. Equipment access is restricted until after the infrastructure for Molson Indy is removed.

We trust this provides the information you require at this time. Please call if you have any questions or require further information.

Alan D. Walker, P.Eng.
Associate/Senior Project Manager

MORROW ENVIRONMENTAL CONSULTANTS INC.

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- Attachments:
  - 1: Fraser River Pile and Dredge Cost Estimate
  - 2: EVS Proposed Work Plan for Barge Slip Sediment Assessment
- Figure 1: Work Schedule
- Tables
  - 1: Estimated Costs For Proposed 2002/2003 Work
  - 2: 2002 Hourly Rates

ATTACHMENT 1

Fraser River Pile and Dredge Cost Estimate

FRPD
FRASER RIVER PILE & DREDGE LTD.

J12745

FACSIMILE

To: Alan Walker
Associate/Senior Project Manager

Firm: Morrow Environmental
Consultants Inc.

Fax: (604) 473-2063
☎ (604) 473-2073

Date: 4/23/2002
From: George Boyd
☎ (604) 522-7971
FAX: (604) 521-7530

Number of pages including cover: 4

Dear Alan:

Re: Wooden Pile and Deck Removal, False Creek

Please find attached our letter of quotation for the above noted project, along with a copy of our Insurance coverage.

We trust you will find the attached in order.

Should you have any questions or require further information please do contact us.

Yours truly,

FRASER RIVER PILE & DREDGE LTD.

George Boyd
Project Manager/Estimator

FRPD

FRASER RIVER PILE & DREDGE LTD.

April 19, 2002

Morrow Environmental Consultants Inc.
5151 Canada Way
Burnaby, BC, V5E 3N1

Attention: *Alan Walker*
Associate / Senior Project Manager

Dear Sir:

Re: Wooden Pile & Deck Removal
False Creek

We are pleased to provide our lump sum price for the above project:

➢ Mob & Demob ($7,900.00 x 2)	***$ 15,800.00 plus GST***
➢ Remove decking and dispose of	***$ 99,700.00 plus GST***
➢ Remove piles and dispose of	***$ 36,700.00 plus GST***
Total Lump Sum Price	***$152,200.00 plus GST***

Our offer is based upon the following:

1. Using 80 ton crane on land with clam bucket to remove timber decking.
2. Using 80 ton crane on land with 216 vibro hammer to remove timber piles.
3. Loading all material into disposal container and trucking to Richmond Landfill for disposal.
4. Existing fence will have to be removed and reinstalled when job is complete.
5. We will have a log boom across the barge slip to keep debris from getting into False Creek, also a crew in a work boat picking up any loose material that may fall into the water.
6. ACCESS AND SITE: The ***Owner*** shall:
   a) Provide suitable firm, all weather access in a timely manner to and about the site for rubber tired equipment, crawler cranes and trucks. Provide acceptable storage and work areas.
   b) Remove or protect any existing overhead or underground services and obstructions prior to commencement of pile driving. Any work or standby work required due to existing services or obstructions shall be treated and paid for as extra work.
   c) Do all shoring, dewatering and excavation (including that required for pile cut-offs).
   d) Satisfy W.C.B. safety requirements and provide sanitary facilities for our crew.
   e) Schedule the work so that our work can be performed in one continuous uninterrupted operation.
7. TAXES: Our pricing includes Provincial Taxes applicable at the date of this offer, but Federal Goods and Services Taxes are extra at 7%.

8. INDEMNITY: The ***Owner*** acknowledges that vibrations from normal pile driving operations may damage property and agrees to indemnify F.R.P.D. against any such claims.

9. PERMITS, LICENSES AND APPROVALS: The ***Owner*** shall be responsible for providing all Permits/Licenses and Temporary Works as required by Federal/Provincial/ City/Municipality Bylaws.

10. INSURANCE AND BONDS: F.R.P.D. shall provide General Liability Insurance; the ***Owner*** shall be responsible for providing Builders Risk Insurance. The cost of any Bonds that may be required shall be extra to our price.

11. AGREEMENT AND TERMS OF PAYMENT: If requested, satisfaotory credit references shall be provided and a Standard Agreement in a form approved by the Canadian Construction Association, which incorporates the conditions of this offer, shall be executed prior to commencement of the work. F.R.P.D. will submit invoices on a monthly basis and payment shall be due within 30 (thirty) days of date of submission. Interest at the rate of TD prime plus 5% will be chargeable on overdue accounts. Holdback monies shall be payable within 55 (fifty-five) days of completion of work.

12. LAPSE OF OFFER: Our offer is valid for 30 (thirty) days from the date of this tender.

13. SCHEDULE: We anticipate that we could commence work within 5 weeks of acceptance of this offer and complete the work within a further 3 weeks on site.

We trust you will find the above in order. We thank you for the opportunity to provide a quote on this work.

Should you have any questions or require further information, please feel free to contact us.

Yours truly,
FRASER RIVER PILE & DREDGE LTD.

George Boyd
Project Manager/Estimator
02121

Aon Reed Stenhouse Inc.
900 Howe Street, 8th Floor
P.O. Box 3228
Vancouver, B.C. V6B 3X6
Tel: (604) 688-4442 Fax: (604) 682-4026

Memorandum of Insurance

No. 030807

Memorandum Holder Morrow Enviromental Consultants
5151 Canada Way
Burnaby, BC
V5E 3N1

THIS IS TO CERTIFY THAT THE INSURANCE POLICIES LISTED BELOW HAVE BEEN ARRANGED FOR THE INSURED NAMED BELOW. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS MEMORANDUM MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS CONTAINED IN THE POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Named Insured(s) Fraser River Pile & Dredge Ltd.
1830 River Drive
New Westminster, BC
V3M 2A8

COMMERCIAL BUSINESS INSURANCE

Policy Type(s)	Insurer(s)	Policy No.	Eff. Date	Exp. Date	Limit/Conditions
1 Commercial General Liability Insurance	Royal & Sun Alliance Insurance Company of Canada	60328919	Jun 30 01	Jun 30 02	$2,000,000 inclusive limit each occurrence & annual aggregate for products and completed operations
2 Umbrella Liability Insurance	Royal & Sun Alliance Insurance Company of Canada	60337932	Jul 31 01	Jun 30 02	Limits As Shown Below
3 Builders' Risk Insurance	Allianz Insurance Company of Canada	RSL108545/8	Jun 30 01	Jun 30 02	$5,000,000 "All Risks" incl Flood & Earthquake; Valuation: New Replacement Cost

Additional Details
Policy 2: $8,000,000 Excess of Commercial General Liability limit(s) noted above Automobile Insurance coverage as per APV47

This memorandum constitutes a statement of the facts as of the date of issuance and is issued at the request of the Insured and for the benefit of the Insured and the Memorandum Holder. Aon Reed Stenhouse Inc. shall have no liability to any other party who places any reliance hereon.

Aon Reed Stenhouse Inc.

per

Doreen Egger

April 18, 2002

FRPD

FRASER RIVER PILE & DREDGE LTD.

V2745

April 24, 2002

Fax: 473-2063

Morrow Environmental Consultants Inc.
5151 Canada Way
Burnaby, BC
V5E 3N1

Attention: *Alan Walker*
Associate / Senior Project Manager

Dear Sir:

Re: Wooden Pile & Deck Removal
False Creek

In reference to your fax dated April 23, 2002 and further to our offer of the same date, please find the following clarifications.

1. We have allowed for Item 6 d) of our offer as part of our base bid.
2. Our cost estimate is based on approximately 3,000m^3 of deck and approximately 200 timber piles. We have allowed for 60 demolition boxes for the timbers and 12 demolition boxes for the piling.
3. Our offer does include for the removal and disposal of the supporting structure (ties, stringers, caps).
4. We have assumed that the piles, decking and stringers are all untreated timbers. We have assumed that some of the pile caps and all of the rail ties are creosote treated.
5. The premium for FRPD to provide Builder's Risk Insurance is an additional $500.00 to our quoted price.

Should you have any further questions or require further clarification, please feel free to contact us.

Yours truly,
FRASER RIVER PILE & DREDGE LTD.

for George Boyd
Project Manager/Estimator
B2121

FRPD
FRASER RIVER PILE & DREDGE LTD.

FACSIMILE

To: Alan Walker
Associate/Senior Project Manager
Firm: Morrow Environmental
Consultants Inc.

Fax: 473-2063
☎ 473-2073

Date: 4/25/2002
From: George Boyd
☎ (604) 522-7971
FAX: (604) 521-7530

Number of pages including cover: 1

Dear Alan:

Re: **Wooden Pile & Deck Removal, False Creek**

If the timber to be removed is all creosote, there will be an extra cost of $250.00 per bin for removal.

72 bins @ $250.00/bin = ***$18,000.00 plus GST***

. Should you have any questions please contact us.

Yours truly,
FRASER RIVER PILE & DREDGE LTD.

George Boyd
Project Manager/Estimator

1830 River Drive, New Westminster, B.C., Canada V3M 2A8

ATTACHMENT 2

EVS Proposed Work Plan for Barge Slip Sediment Assessment

V2745.

EVS environment consultants

Our File: 03-8422-01

April 25, 2002

Alan Walker
Morrow Environmental Consultants
VIA ELECTRONIC MAIL

Dear Alan,

Re: Sediment Quality Investigation and Review of Shoreline Design at the former Canron Site, Southeast False Creek

Further to our recent discussions, please find attached a copy of our letter proposal originally addressed to Anne Bancroft-Jones at the City of Vancouver for a sediment quality investigation and a review of shoreline design at the former Canron Site in southeast False Creek:

In our experience, the presence of contaminants at a site does not necessarily result in unacceptable adverse effects to ecological components. To determine the potential for adverse effects, we propose the use of a sediment quality triad (SQT) approach that integrates sediment chemistry, sediment toxicity and benthic community analysis to address both spatial extent and magnitude of impacts associated with potential site-specific contaminants (e.g., zinc). EVS Environment Consultants (EVS) is pleased to provide you with the following information:

- A statement of our project-related experience, summarizing our work in sediment assessment and management.
- A conceptual approach to evaluate and manage any contaminated marine sediments at the study site.
- A proposed cost structure for the completion of the described project components (Figure 1; sent to MECI separately).

To assist in the review of the shoreline design and the preparation of a habitat compensation plan, we have retained the services of ECL Envirowest Environment Consultants (Envirowest). We believe that Envirowest is very well qualified for these tasks and their work has, to our knowledge, been well received by regulatory agencies. This shoreline component of the project has been included as part of our conceptual approach (see below) and associated costs are included in our estimates (Figure 1).

195 Pemberton Avenue
North Vancouver, BC
Canada V7P 2R4

Tel: 604.986.4331
Fax: 604.662.8548
www.evsenvironment.com
ino@evsenvironment.com

EVS environment consultants

Project-Related Experience

Members of our team have successfuly completed this type of work for several clients in Burrard Inlet (e.g., for Vancouver Wharves Ltd., Aoki Corporation/Bayshore Gardens site, Marathon Development, Coopers & Lybrand/Versatile Shipyards site, Seaspan International Ltd., and Greystone for the new trade and convention centre), which gives us insight into current expectations of the regulatory agencies with respect to managing contaminated lands and their relationship to aquatic environments. Furthermore, we have previously teamed with Morrow Environmental Consultants (MECI) and Envirowest to complete ecological risk assessments throughout the Lower Mainland.

We employ technically defensible approaches to support various sediment and shoreline management strategies. We understand that the long-term goal of this work would be to support the development of sediment management plans for the site, which could involve any number of remediation activities as deemed appropriate to fit with future development plans and regulatory requirements. We strongly advocate following a team approach where regulatory liaison and stakeholder consultation occur early in the process in order to build consensus on the overall approach prior to allocating staff and resources.

Conceptual Approach

The intent of this technical memorandum is to provide an overview of the proposed strategy for assessing the marine sediments and evaluating shoreline design and habitat compensation options at the former Canron Site. A detailed description of the Problem Formulation (PF) is provided below, followed by brief descriptions of the remaining phases.

Task 1 – Problem Formulation/Sampling and Analysis Plan (PF/SAP): The PF is a systematic planning and scoping exercise which serves to identify the key information required to understand the nature of the problem at the site. The SAP is essentially the "road map" stemming from the PF and will be followed to obtain the appropriate information to make conclusions regarding the potential ecological risks posed by the sediments. Every effort will be made to maximize the use of existing data sources to support the risk assessment. The main components of the PF/SAP are listed below:

- *Historical Data Review* – An understanding of historical industrial activities (including groundwater quality investigations conducted by MECI) and municipal discharges (e.g., stormwater outfalls) in the area is essential to adequately assessing the risks posed by the site. Historical site information and relevant effluent, groundwater and sediment chemistry contained in other reports will be used as a starting point for identifying relevant contaminants of potential concern (COPCs).

- *Preliminary COPC Review* - General information on the mode of action and types of toxic effects associated with each COPC will be documented to guide in the selection of appropriate ecological receptors (e.g., sensitive species) and biological response measurements (e.g., survival, reproduction or development).

- *Conceptual Model Development* - Once the PF components described above have been completed, the information is integrated into a conceptual model for the site. A conceptual model is a description (written or pictorial) of the contaminant sources, pathways, exposure media, and receptors deemed important at the site. A key part of the conceptual model is the identification of assessment endpoints (i.e., protective goals) for the risk assessment. These are decided up front to ensure that everyone agrees on the focus and scope of the study.

- *Sampling and Analysis Plan* - The SAP delineates the sampling design and the methods proposed to collect all the data needed to support the risk assessment. Data quality objectives (i.e., analytical detection limits, minimum control survival and level of taxonomic identification) are also specified. The SAP also outlines proposed statistical techniques, including a clear determination of the hypotheses to be tested. Once agency approval has been obtained, the SAP will serve as the work plan for data collection and analysis by the EVS Study Team. The SAP also specifies additional tiers of investigation, such as toxicity identification evaluations (TIEs), that could be considered should subsequent work be necessary. TIEs are often an important part of sediment quality assessments because they allow the identification of specific chemicals causing observed effects. Such information may prove very useful if toxicity is observed at far-field stations that could be associated with background contamination in False Creek (i.e., petroleum hydrocarbons) as opposed to more site-specific contaminants (i.e., zinc).

A draft PF/SAP approach will be presented to the client and BERC agencies and any comments or revisions will be incorporated prior to submission for the final review.

Task 2 – Sediment Investigation: EVS will conduct a field investigation following the objectives specified in the PF/SAP. Since marine sediments near industrial operations typically exceed regulatory chemical screening, a site-specific SQT approach is needed to determine the actual impact of sediment contaminants.

A sediment quality triad has three major components:

- *Sediment Chemistry:* Bulk sediment concentration for selected COPCs (e.g., metals and polycyclic aromatic hydrocarbons [PAHs]) provide critical information on the extent and magnitude of potential impacts; an analysis of acid volatile sulphides/simultaneously extractable metals (AVS/SEM) also provides an indication of metal bioavailability.

- *Sediment Toxicity:* Toxicity resulting from exposure to sediment contaminants are measured through the use of a battery of different species and endpoints. In this study, we recommend the use of two toxicity tests: a 10-day amphipod survival test using *Eohaustorius estuarius* and a 48-hour bivalve larval development test. The selection of these tests provides for multiple exposure pathways (i.e., toxicity associated with direct sediment contact and porewater), multiple endpoints (i.e., survival and percent normal development) and multiple trophic levels (i.e., amphipods and bivalve larvae). Other toxicity tests may be appropriate based on the results of discussion with appropriate regulators.

- *Benthic Community Analysis:* The diversity and abundance of benthic organisms provides an *in-situ*, integrated assessment of habitat conditions, and are an important component for assessing fish habitat quality.

Additional measurements (i.e., grain size, ammonia, organic carbon) are conducted to reduce the effect of confounding factors during data analysis.

We propose that a total of 10 surface sediment samples be collected for the sediment quality triad (i.e., chemistry, toxicity and benthic community analysis): six near-field stations located within the small embayment (to allow sufficient resolution to guide any remediation activities) and four far-field stations located outside the embayment (to assess the extent of any contamination gradient)

Given that one of the study's objectives is to assess the spatial extent (horizontal and vertical) of site-associated contaminants, it is recommended that additional sediments be collected and archived in the event that additional analyzes are required. Three sets of archival samples are anticipated:

- Additional surface sediments from all 10 stations will be analyzed only if TIEs are required.

- Four surface samples from further outside the embayment's mouth, analyzed only if a site-specific contaminant gradient is not detected with the original 10 samples. Only chemical analyzes would be performed on these samples.

- Subsurface sediment samples from three depth intervals from cores located within the embayment. Subsurface samples will be analyzed in a tiered design where deeper sediments will only be analyzed if contamination in higher intervals exceed applicable criteria. As a result, the number of subsurface analyzes could range from zero to 18 (based on six cores matching the surface stations, each with three depth intervals). Only chemical analyzes would be performed on these samples.

In our experience, the use of a tiered approach (i.e., further levels of investigations being triggered only if earlier phases indicate potential risk) is a very cost-effective manner of conducting sediment quality investigations. It allows costs to be broken down and avoids conducting unnecessary laboratory analyzes when low risk conclusions can be reached with data from earlier phases. The total cost estimates provided in Figure 1 reflect the "core" components of the program. The shaded portion of Figure 1 reflects costs associated with additional tiers (i.e., TIEs, chemical analysis of additional far-field or subsurface sediments) assuming that all samples require analysis – an unlikely scenario based on our experience at similar sites. Please note that none of these additional analyses will be conducted without receiving prior approval by the City of Vancouver.

Task 3 – Shoreline Design and Habitat Compensation Plan: The long-term remediation plan for the site will require a review of the proposed shoreline design and the development of a habitat compensation plan. The habitat compensation plan will review existing documentation of environmental resources and habitat types at the project location.

Detailed designs of compensation habitat will be provided. The design may be simply an element of the conventional shoreline design of the project, or may include a feature independent of the project shoreline (e.g., the construction of

"offsite" habitats). Further, the design may explore a compensation scenario whereby a variety of habitat types are constructed to offset impacts to a single habitat type; an "apples for oranges" approach may provide a practical means of achieving an overall no net loss of fish habitat.

Given that habitat compensation and sediment remediation activities would likely occur as part of the same construction plan, measures to minimize construction impacts associated with habitat compensation will be incorporated into the overall sediment assessment and management plan (see below).

Task 4 – Development of a Sediment Assessment and Management Plan (SAMP): Preparation of the SAMP will first involve analysis and interpretation of the sediment investigation results using a weight-of-evidence approach. Based on these findings, a sediment management plan will be developed to address the following:

- Identification of proposed areas for remediation
- Review of remediation options and mitigation strategies
- Preparation of a water quality monitoring program

The preparation of detailed engineering descriptions of the remediation program is not included in the proposed SAMP since the scope of remediation is dependent on the results of the sediment investigation as well as consultation with the City and relevant agencies.

Task 5 – Project Management and Meetings: Our cost proposal provides for a total of 3.5 days of meetings involving the EVS project manager (Mr. Lee Nikl) and senior advisors, reflecting a process of agency review and liaison throughout the life of the project. One of the keys to our success elsewhere has been to adopt a consultative approach involving key individuals at major decision points, thus maximizing our study team's effectiveness and client satisfaction with our work.

Proposed Cost Structure

We have attached a proposed cost structure as an appendix to this document (Figure 1). We anticipate completion of the described project for a total cost of $94,451.04 including labour and disbursements.

We trust that we have provided sufficient detail regarding the proposed investigations. Please let us know how you wish to proceed, and do not hesitate to contact us if you have any questions or need additional information.

Sincerely,

EVS Environment Consultants Ltd.

Blair McDonald, B.Sc.
Environmental Scientist

BGM:bgm

Figure 1: Proposed cost structure for City of Vancouver (Former Canron Site - SE False Creek)

			Task 1		Task 2				Task 3		Task 4		Task 5			
			PF/SAP		Sediment Investigation		Additional Sediment Investigation		Shoreline Design and Habitat Compensation		SAMP Development		Project Management & Meetings		TOTALS	
Item	unit	cost/unit	unit	cost ($)	unit	cost ($)			unit	cost ($)	unit	cost ($)	unit	cost ($)	unit	cost ($)
LABOUR																
L. Nikl, M.Sc., Project Manager/Environmental Scientist	day [1]	$1,008	5.0	$5,040.00	1.0	$1,008.00					7.0	$7,056.00	5.0	$5,040.00	18.0	$18,144.00
G. Lawrence, M.Sc., Project Advisor	day	$896	1.0	$896.00	0.5	$448.00					2.0	$1,792.00			3.5	$3,136.00
J. Wilcockson, M.Sc., Environmental Scientist	day	$560	5.0	$2,800.00	3.0	$1,680.00					5.0	$2,800.00			13.0	$7,280.00
B. McDonald, B.Sc., Environmental Scientist	day	$496	3.0	$1,488.00	3.0	$1,488.00					10.0	$4,960.00			16.0	$7,936.00
D. Gass, B.Sc., Project Biologist	day	$464			5.0	$2,320.00	2	$928.00							5.0	$2,320.00
M. Adams, M.Sc. (Envirowest)	day	$1,100							6.5	$7,150.00			2.0	$2,200.00	8.5	$9,350.00
Clerical/Graphics	day	$432	1.0	$432.00							3.5	$1,512.00			4.5	$1,944.00
Subtotal for Labour				**$10,656.00**		**$6,944.00**		**$928.00**		**$7,150.00**		**$18,120.00**		**$7,240.00**		**$50,110.00**
DISBURSEMENTS																
Office Expenses																
Fax & courier	estimate			$50.00								$100.00		$50.00		$200.00
Document copying and acquisition	estimate			$100.00								$50.00		$100.00		$250.00
Field Work																
Field Equipment Rental	estimate	$400				$400.00										$400.00
Truck Rental	day	$32			3	$96.00										$96.00
Boat and Crew Rental	day	$990			3	$2,970.00										$2,970.00
Core Sampler and Crew Rental	estimate							$3,850.00								$0.00
Laboratory Analyses																
Surface Sediment Chemistry [2,4]	sample	$448			11	$4,928.00	4	$1,792.00								$4,928.00
Subsurface Sediment Chemistry [4]	sample	$448					18	$8,064.00								$1,218.00
Chemistry QA/QC (2 blanks, 2 swipes, 1 field duplicate)	estimate	$1,218				$1,218.00										$19,600.00
Toxicity Bioassays [3]	sample	$1,875			10	$19,600.00										
Toxicity Identification Evaluation (TIE) [4]	estimate							$15,000.00								$8,500.00
Benthic Community Structure	sample	$850			10	$8,500.00										
Subtotal for Disbursements				**$150.00**		**$37,712.00**		**$28,706.00**		**$0.00**		**$150.00**		**$150.00**		**$38,162.00**
SUBTOTAL (Labour + Disbursements)				**$10,806.00**		**$44,656.00**		**$29,634.00**		**$7,150.00**		**$18,270.00**		**$7,390.00**		**$88,272.00**
GST (7%)																**$6,179.04**
TOTAL COST ESTIMATE (Inc. GST) [4]																**$94,451.04**

[1] Note: One day = 8 hours

[2] Chemistry analyzes include metals, PAHs, SEM:AVS, TOC and grain size. Archive samples from surface sediments outside the study area and will be analyzed if additional delineation of COPC distribution is required. Subsurface sediment samples will be collected from six cores within the study area and analyzed if necessary

[3] Toxicity bioassays include 10 day amphipod (*Eohaustorius estuarius*) survival and 48-h bivalve larval development. All toxicity test prices include interstitial ammonia and sulphide analyses at initiation and termination. The price also includes one additional reference station added to bivalve test for grain size control.

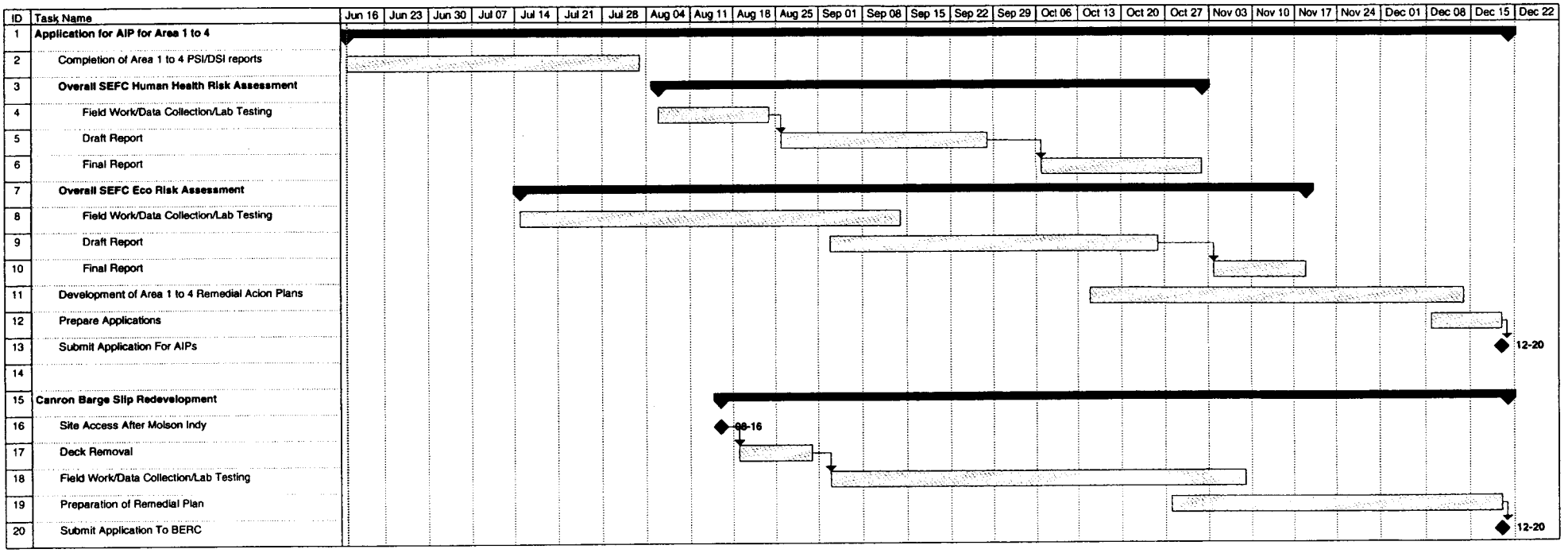
[4] The total cost estimate does not include disbursements associated with the additional sediment investigation.

Please note that a 10% surcharge has been added to subconsultant charges.

FIGURE

1: Work Schedule

Figure 1: Work Schedule



TABLES

1: Estimated Costs For Proposed 2002/2003 Work
2: 2002 Hourly Rates

TABLE 1: Estimated Costs For Proposed 2002/2003 Work

	Task	Estimated Cost				Comments/Notes
		Professional Services		Disbursements		
		Morrow	Sub-consultant	Internal and Subcontractors	Sub-consultant	
1.	Completion of a Stage 1 Preliminary Site Investigation (PSI) at Area 2	$ 4,000	n/a	1,000	n/a	
2.	Completion of a Stage 2 PSI at Area 2	10,500	n/a	17,500	n/a	Disbursements are largely drilling contractor and analytical laboratory.
3.	Installation of 12 additional monitoring wells at Area 1 not budgeted for in the original 2001/2002 estimate. The additional wells have been required to delineate dissolved groundwater contamination adjacent to False Creek.	17,000	n/a	26,000	n/a	Disbursements are largely drilling contractor and analytical laboratory.
4.	Installation of one additional monitoring wells at Area 4 not budgeted for in the original 2001/2002 estimate. The additional wells were required to replace previously existing wells that were lost or destroyed during Indy in 2001.	2,000	n/a	3,000	n/a	
5.	Reassessment of Data With Respect To the CSR Stage 2 Amendments (updating tables, drawings for draft report).	5,000	n/a	n/a	n/a	CSR second stage amendments became effective 4 Feb. 2002.
6.	Overall SEFC human health risk assessment.	35,000	n/a	12,000	n/a	Disbursements are largely analytical laboratory; costs based on assumption that contaminated material is present in the upper 1 m of soil.
7.	Overall SEFC ecological risk assessment.	5,000	42,000	n/a	137,000	Subconsultant (EVS) disbursements are largely lab costs for bioassay work and assumption that contaminated material is present in the upper 1 m of soil.
8.	Preparation of overall SEFC remedial action plan (RAP).	33,000	n/a	2,000	n/a	
9.	Overall SEFC data statistics in support of HH and ERAs.	1,000	n/a	6,000	n/a	
10.	Submission of RAP for WLAP review for AIP.	5,000	n/a	170,500	n/a	Disbursements are WLAP review fees for PSI/DSI and RA reports for four large complex sites, assumed submitted through Morrow.
11.	Works Yard groundwater monitoring (June 2002 to May 2003).	25,000	n/a	35,000	n/a	Professional services and disbursements largely labour to collect samples and analytical testing.
12.	Area 3 groundwater monitoring (June 2002 to May 2003).	20,000	n/a	20,000	n/a	Professional services and disbursements largely labour to collect samples and analytical testing.
13.	Area 3 barge slip timber deck and pile removal.	5,000	n/a	195,000	n/a	Subcontractor (FRPD) costs include an allowance for removal/reinstatement of fence around inlet, and City bike path.
14.	Area 3 barge slip sediment assessment.	5,000	54,000	n/a	70,000	Subconsultant (EVS) disbursements are largely lab costs for chemistry, benthic and toxicity testing.
15.	Submit BERC application for barge slip redevelopment.	5,000	5,000	n/a	n/a	
	Subtotal	**$ 278,500**		**$ 695,000**		
	Total Without Contingency	**$ 973,500**				
	Total With 15% Contingency	**1,120,000**				

TABLE 2: 2002 Hourly Rates

Key Staff	Hourly Rate
Morrow Staff	
Alan Walker	$120
Eric Mewhinney and Tim Bennett	$86
Ross Wilson	$120
Edna Wong	$66
EVS Staff	
Lee Nikl	$126
Audrey Wagenaar	$115
John Wilcockson	$70
Chessy Langford	$72
Blair McDonald	$62