

## **MODIFICATION** AGREEMENT

Min Contract No.: CEMB11-106-08 Resp: 2943T Serv. Line: 30510 Slob; 60 Projecl: 2900000 WCB No.: 643026 AA (093) Modification No.: 2

BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by

The Minister of Environment (the "Province", "we", "us" or "our", as applicable)

AND

Franz Environmental Inc. (the "Contractor", "you" or "your" as applicable)

BACKGROUND

The parties entered into an agreement dated December 5, 2011, contract number CEMB11-106-08, an external Α. review contract.

B. The parties have agreed to modify the Agreement.

AGREEMENT

The parties agree as follows:

1) To extend the term of the contract to end December 21, 2012,

In all other respects, the Agreement is confirmed. 2)

SIGNED AND DELIVERED on the day of June, 2012 on behalf of the Province by its duly authorized representative;

SIGNATURE

**PRINT NAME** 

IL. SIGNED AND DELIVERED on the 5 day of June, 2012 by or on behalf of the Contractor (or by its authorized signatories if the Contractor is a corporation);

SIGNATURE	1.6	amswicht
PRINT NAME	1140	LAMBRECHT

## PART C – MODIFICATIONS

(Complete for modifications of an existing contract only if there is an increase to the dollar value or if the contract is being extended into another fiscal year – See Instructions)

CONTRACT NUMBER:	CEMB11-106-08
MODIFICATION #:	2

REASON FOR MODIFICATION: To change the end date of the contract (extend the contract).

ORIGINAL CONTRACT TOTAL	5
PREVIOUS CONTRACT TOTAL:	5
MODIFICATION AMOUNT:	5
NEW CONTRACT TOTAL:	\$

PREVIOUS CONTRACT TERM:	From: December 5, 2011	To: June 21, 2012
NEW CONTRACT TERM:	From: December 5, 2011	To: December 21, 2012

CORE POLICY COMPLIANCE – MODIFICATIONS (See instructions)				N/A
1.	Is the existing contract still open? Contracts cannot be modified after they have expired. CPPM 6.3.2.a.11	$\boxtimes$		
2.	Does the modification format comply with the <u>Modification Agreement</u> and the clauses as stated in <u>CPPM</u> <u>6.3.3.e.9</u> ?			

### **BEST PRACTICES CHECKLIST**

3.	The modification amount(s) must be added to the original amount of the contract to determine the new total for approval requirements. Has the appropriate <u>expense authority</u> approved the Modification Agreement?		$\boxtimes$
4.	Is the modification compliant with the terms of the contract solicitation process (RFP etc.) or within 20% of original value? If no, include documentation to explain why the opportunity has not been offered to other vendors.		
5.	If this contract has been modified more than twice, have you included documentation to explain why the opportunity has not been offered to other vendors?		

EXPENSE AUTHORITY APPROVAL email approval acceptable Signatu Date PRINT NAM

EXECUTIVE APPROVAL (if required) email approval acceptable

Signature PRINT NAME Date



## MODIFICATION AGREEMENT

Min Contract No.: CEMB11-106-08 Resp: 2943T Serv. Line: 30510 Stop: 60 Project: 2900000 WCB No.: 643026 AA (093) Modification No.: 1

#### DETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by

The Minister of Environment (the "Province", "we", "us" or "our", as applicable)

AND

Franz Environmental Inc. (the "Contractor", "you" or "your" as applicable)

#### BACKGROUND

- The parties entered into an agreement dated December 5, 2011, contract number CEMB11-108-08, an external Α. review contract.
- B. The parlies have agreed to modify the Agreemant.

#### AGREEMENT

The parties agree as follows:

- To extend the term of the contract to end June 21, 2012. 1)
- In all other respects, the Agreement is confirmed. 2)

SIGNED AND DELIVERED on the 12 day of March, 2012 on behalf of the Province by its duly authorized representativa:

SIGNATURE

PRINT NAME

SIGNED AND DELIVERED on the  $\mathscr{OB}$  day of March, 2012 by or on behalf of the Contractor (or by its authorized signatories if the Contractor is a corporation):

amSrechA SIGNATURE 160 LAMBRECHT PRINT NAME

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## PART C - MODIFICATIONS

(Complete for modifications of an existing contract only if there is an increase to the dollar value or if the contract is
being extended into another fiscal year – See Instructions)

CONTRACT NUMBER:	CEMB11-106-08				
MODIFICATION #:	1				

## REASON FOR MODIFICATION: To change the end date of the contract (extend the contract).

ORIGINAL CONTRACT TOTAL	\$		• <u>-</u>							
PREVIOUS CONTRACT TOTAL:	\$						· · · · · · · · · · · · · · · · · · ·			
MODIFICATION AMOUNT:	·\$	· _ ·		• •	 	·	· · ·	с 9		 
NEW CONTRACT TOTAL:	\$	•							 	 

PREVIOUS CONTRACT TERM:	From: December 5, 2011	To: March 21, 2012			
NEW CONTRACT TERM:	From: December 5, 2011	To: June 21, 2012			

	CORE POLICY COMPLIANCE – MODIFICATIONS (See instructions)	Y	N	N/A
1.	Is the existing contract still open? Contracts cannot be modified after they have expired. <u>CPPM 6.3.2.a.11</u>	$\boxtimes$		
2.	Does the modification format comply with the <u>Modification Agreement</u> and the clauses as stated in <u>CPPM</u> <u>6.3.3.e.9</u> ?	$\boxtimes$		

### **BEST PRACTICES CHECKLIST**

3.	The modification amount(s) must be added to the original amount of the contract to determine the new total for approval requirements. Has the appropriate <u>expense authority</u> approved the Modification Agreement?		$\boxtimes$
4.	Is the modification compliant with the terms of the contract solicitation process (RFP etc.) or within 20% of original value? If no, include documentation to explain why the opportunity has not been offered to other vendors.		
<b>5</b> .	If this contract has been modified more than twice, have you included documentation to explain why the opportunity has not been offered to other vendors?		$\boxtimes$

EXPENSE AUTHORITY APPROVAL email approval acceptable Mar 12/12 Signature Date PRINT NAME

EXECUTIVE APPROVAL (if required) email approval acceptable

Signature PRINT NAME Date

*pt* 

## **GENERAL SERVICE AGREEMENT**



For Administrative Purposes Only						
Ministry Contract No.: CEMB11-106-08 Requisition No.:	Financial Information					
Solicitation No.(if applicable): RFQEMB11-106	Client:	048				
Commodity Code:	Responsibility Centre:	· 2943T				
-	Service Line:	30510				
Contractor Information	STOB.	6001				
, ,	Project:	2900000				
Supplier Name: Franz Environmental Inc.						
Supplier No.:	Template version: October	21, 2010				
Telephone No.: 250-479-5103						
E-mail Address: ilambrecht@franzenvironmental.com						
Website:		· .				

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#### SCHEDULE A – SERVICES

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#### SCHEDULE B - FEES AND EXPENSES

Part 1 - Maximum Amount Payable Part 2 - Fees Part 3 - Expenses Part 4 - Statements of Account Part 5 - Payments Due

SCHEDULE C - APPROVED SUBCONTRACTOR(S)

SCHEDULE D - INSURANCE

SCHEDULE E - PRIVACY PROTECTION SCHEDULE

SCHEDULE F - ADDITIONAL TERMS

SCHEDULE G - SECURITY SCHEDULE

APPENDIX 1 - EXTERNAL REVIEW REPORT TEMPLATE

Part 1 Page 8 12/05/2011 MON 15:28 [TX/MORX018:0983]9 THIS AGREEMENT is dated for reference the 5th day of December, 2011.

BETWEEN:

<u>Franz Environmental Inc.</u> (the "Contractor") with the following specified address and fax number: 761-F Enterprise Crescent Victoria, BC V82.6P7 Fax: 250-479-5134

AND;

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the Minister of Environment (the "Province") with the following specified address and fax number: BC Ministry of Environment PO Box 9342 Stn Prov Govt Victoria, BC V8W 9M1 Fax: 250-387-8897

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

#### 1 DEFINITIONS

General

- 1.1 In this Agreement, unless the context otherwise requires:
  - (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
  - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
  - (c) "Material" means the Produced Material and the Received Material;
  - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
  - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
  - (f) "Services" means the services described in Part 2 of Schedule A;
  - (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
  - (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

#### Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

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#### 2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Term

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

- 2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.
- Standard of care
- 2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

#### 3 PAYMENT

#### Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
  - (a) the fees described in that Schedule;
  - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services; and
  - (c) any applicable taxes payable by the Province under law or agreement with the relevant taxation authorities on the fees and expenses described in paragraphs (a) and (b).

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

Statements of accounts 77

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

#### Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

#### Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

#### Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

#### Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

#### Refunds of taxes

- 3.8 The Contractor must:
  - (a) apply for, and use reasonable efforts to obtain, any available refund, credit, rebate or remission of federal, provincial or other tax or duty imposed on the Contractor as a result of this Agreement that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement; and
  - (b) immediately on receiving, or being credited with, any amount applied for under paragraph (a), remit that amount to the Province.

#### 4 REPRESENTATIONS AND WARRANTIES

- 4.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
  - (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,
    - (i) all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and
    - (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
  - (b) if the Contractor is not an individual,
    - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
    - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

### 5 PRIVACY, SECURITY AND CONFIDENTIALITY

Privacy

5.1 The Contractor must comply with the Privacy Protection Schedule attached as Schedule E.

#### Security

- 5.2 The Contractor must:
  - (a) make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration or disposal; and
  - (b) comply with the Security Schedule attached as Schedule G.

#### Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
  - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
  - (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
  - (c) If it is information in any Incorporated Material.

#### Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

#### 6 MATERIAL AND INTELLECTUAL PROPERTY

#### Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

Matters respecting intellectual property

- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
  - (a) Received Material that the Contractor receives from the Province; and
  - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:

- a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify (a) and distribute that Incorporated Material; and
- the right to sublicense to third-parties the right to use, reproduce, modify and distribute that (b) Incorporated Material.

#### 7 **RECORDS AND REPORTS**

#### Work reporting

Upon the Province's request, the Contractor must fully inform the Province of all work done by the 7.1 Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and youchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

AUDIT 8

- 8.1 In addition to any other rights of inspection the Province may have under statute or othersvise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.
- 9 INDEMNITY AND INSURANCE

#### Indemnity

The Contractor must indemnify and save harmless the Province and the Province's employees and agents 9.1 from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any lime, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

#### Insurance

9,2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

#### Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the Workers Compensation Act in British Columbia or similar laws in other jurisdictions.

Personal optional protection

The Contractor must apply for and maintain personal optional protection insurance (consisting of income 9.4 replacement and medical care coverage) during the Term at the Contractor's expense if:

- (a) the Contractor is an individual or a partnership of individuals and does not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* or similar laws in other jurisdictions; and
- (b) such personal optional protection insurance is available for the Contractor from WorkSafeBC or other sources.

Evidence of coverage

9.5 Within 10 Business Days of being requested to do so by the Province, the Contractor must provide the Province with evidence of the Contractor's compliance with sections 9.3 and 9.4.

#### 10 FORCE MAJEURE

#### Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
  - (a) "Event of Force Majeure" means one of the following events:
    - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
    - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
    - (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
    - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

Duties of Affected Party

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

#### 11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
  - (a) "Event of Default" means any of the following:
    - (i) an Insolvency Event,
    - the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
    - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and

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- (b) "Insolvency Event" means any of the following:
  - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
  - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
  - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by the Contractor,
  - (iv) a compromise or arrangement is proposed in respect of the Contractor under the *Companies' Creditors Arrangement Act* (Canada),
  - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or
  - (vi) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
  - (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

Delay not a waiver

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' swritten notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
  - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

#### 12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
  - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
  - (b) If the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
  - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by 'arbitration under the *Commercial Arbitration Act*.

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

#### 13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
  - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

[TX/RartN(Pa**54.78**] MOE-2012-00219 Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

#### Assignment

13.3 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.

#### Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
  - (a) any person retained by the Contractor to perform obligations under this Agreement; and
  - (b) any person retained by a person described in paragraph (a) to perform those obligations
  - fully complies with this Agreement in performing the subcontracted obligations.

#### Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

#### Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

#### Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.

#### Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

#### Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
  - (a) an employee or partner of the Province; or

(b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

Time

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
  - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, altached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
  - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

#### Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

#### Remainder not affected by invalidity

13,18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

Further assurances

Each party must perform the acts, execute and deliver the writings, and give the assurances as may be 13.19 reasonably necessary to give full effect to this Agreement.

Additional terms

Any additional terms set out in the attached Schedule F apply to this Agreement. 13,20

Governing law

This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws 13.21 applicable in British Columbia.

#### 14 INTERPRETATION

14.1 In this Agreement:

- "includes" and "including" are not intended to be limiting; (a)
- unless the context otherwise requires, references to sections by number are to sections of this (b) Agreement;
- the Contractor and the Province are referred to as "the parties" and each of them as a "party"; (c)
- "attached" means attached to this Agreement when used in relation to a schedule; (d)
- unless otherwise specified, a reference to a statute by name means the statute of British Columbia (e) by that name, as amended or replaced from time to time;
- the headings have been inserted for convenience of reference only and are not intended to (f) describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
- "person" includes an individual, partnership, corporation or legal entity of any nature; and (g)
- unless the context otherwise requires, words expressed in the singular include the plural and vice (h) versa.

#### EXECUTION AND DELIVERY OF AGREEMENT 15

This Agreement may be entered into by a separate copy of this Agreement being executed by, or on 15.1 behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

SIGNED on the 5 day of December, 2011 on behalf of the SIGNED on the <u>S</u> day of <u>JECEM BEIR</u> 20<u>11</u> by the Contractor (or, if not an individual, Province on its behalf by its authorized by its duly authorized representative: signatory or signatories): Kch Signature(s) Signature INGO LAMBRECHT Print Mame SENIOR HYDROGEOLOGIS and lanano Print Title(s) Print Title ation

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#### PART 1, TERM:

1. The term of this Agreement commences on December 5, 2011 and ends on March 21, 2012.

#### PART 2. SERVICES:

Outputs

- 1. The Contractor must complete an external review of the following reports for the Province and make recommendations on issuance of three certificates of compliance.
  - a) Summary of Site Condition, Site ID 6459
  - b) Preliminary Site Investigation
  - c) Detailed Site Investigation
  - d) Confirmation of Remediation
  - e) Risk Assessment
- 2. The Contractor must liaise and seek clarification from report authors as required. (Author names and contact information will be provided by the Province).
- 3. The Contractor must keep all recommendations made in regards to the reviews and resulting reports confidential, including but not limited to, sharing results with the report authors.
- 4. The Contractor must maintain detailed records of all conversations and correspondence with report authors.
- 5. Upon completion of the reviews, the Contractor must complete a report in the format specified in the attached Appendix 1. The report must include, but is not limited to:
  - a) Summary of the reports reviewed summary of site condition, preliminary site investigation, detailed site investigation, remediation plan, confirmation of remediation, human health risk assessment and ecological risk assessment, as applicable;
  - b) Summary of the adequacy of data presentation and interpretation in the reports reviewed;
  - c) Discussion and conclusions to include a summary of substances remediated to numeric based standards and/or risk based standards;
  - d) Recommendations clearly stating the recommendation regarding the issuance of the requested instrument or recommendations for subsequent work to be carried out;
  - e) Completed preliminary site investigation report and detailed site investigation report checklists (appended if applicable);
  - f) Documentation of the nature and outcomes of discussions between the Contractor and client (appended if applicable);
  - g) Signature and stamp of the Contractor's sign off authority; and
  - h) Reviewers who worked on the review and the general area of expertise of each.
- 6. The Contractor must submit the external review report to the Province's Representative no later than March 21, 2012,
- The Contractor must submit copies of all communications with the report authors to the Province's Representative no later than March 21, 2012.

- 8. If the Contractor's review recommendation is that the Province should issue five certificates of compliance, the Contractor must complete five "Certificates of Compliance", and submit to the Province's Representative with the reports. The certificates must be completed to the signature stage.
- 9. The Contractor must provide all deliverables in one hard copy and one electronic copy in Word format. Electronic copies must be submitted on CD, DVD or memory stick.
- 10. The Contractor must use current anti-virus software when providing information in electronic form to the Province.

#### Reporting

The Contractor must:

- 1) advise the Province's Representative within 72 hours of any unusual or unexpected developments or complications in respect of the services
- 2) if a request for extension to the delivery date is anticipated, make the request in writing to the Province's Representative no later than March 14, 2012.
- 3) provide an update on the service activities to date, when requested to do so by the Province, within 2 calendar days of the request.

#### PART 3. RELATED DOCUMENTATION:

The following are Appendices to this Schedule A:

Appendix 1 as attached: External Review Report Template

#### PART 4. KEY PERSONNEL:

1. The Key Personnel of the Contractor are as follows:

(a) Ingo Lambrecht (Reviewer)

(b) Ross Wilson (Reviewer)

(c) Patrick Allard (Reviewer)

[TX/RartN(Page 23)] MOE-2012-00219

#### PART 1 MAXIMUM AMOUNT PAYABLE

Despite sections 2 and 3 of this Schedule, \$29,250.00 is the maximum amount which the Province is obliged to pay to the Contractor for fees (exclusive of applicable taxes) and expenses under this Agreement.

#### PART 2 FEES

The Province must pay the Contractor \$165 per hour for:

a) Review of Summary of Site Condition to a maximum of \$1,500.00;

- b) Review of Preliminary Site Investigation report to a maximum of \$3,750;
- c) Review of Detailed Site Investigation report to a maximum of \$11,250; \*
- d) Review of Confirmation of Remediation report to a maximum of \$5,250; and
- e) Review of a Risk Assessment report to a maximum of \$7,500.

performed during the term.

#### PART 3 EXPENSES

None,

#### PART 4 STATEMENTS OF ACCOUNT

In order to obtain payment of any fees and expenses under this Agreement, the Contractor must deliver to the Province at the end of the Term or, if the Contractor completes the Services before that time, on the completion of the Services, a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement;
- (c) the Contractor's calculation of all fees claimed and hours worked, under this Agreement, including a declaration that the Services for which the Contractor claims fees have been completed;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor with receipts attached, if applicable;
- (e) the Contractor's calculation of all applicable taxes payable by the Province in relation to the Services;
- (f) a description of this Agreement to which the statement relates;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

#### PART 5 PAYMENTS DUE

Within 30 days of the Province's receipt of the Contractor's written statement of account delivered in accordance with this Schedule, the Province must pay the Contractor the fees and expenses (plus all applicable taxes) claimed in the statement if they are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by the Province as required to obtain the discount.

[TX/Rǎrt N@a**5d 2**4] MOE-2012-00219 1. Ross Wilson, Wilson Scientific Consulting Inc.

2. Patrick Allard, Azimuth Consulting Group Inc.

#### Schedule D - Insurance

- The Contractor must, without limiting the Contractor's obligations or liabilities and at the Contractor's own expense, purchase and maintain throughout the Term the following insurances with insurers licensed in Canada in forms and amounts acceptable to the Province:
  - a) Commercial General Liability in an amount not less than \$2,000,000.00 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this Agreement and this insurance must
    - i) include the Province as an additional insured,
    - ii) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change, and
    - iii) include a cross liability clause;
  - b) Professional Liability insuring your liability resulting from errors or omissions in the performance of the Services in an amount per occurrence and in the aggregate not less than \$1,000,000.00.
- 2) All insurance described in section 1 of this Schedule must:
  - a) be primary; and
  - b) not require the sharing of any loss by any insurer of the Province.
- 3) The Contractor must provide the Province with evidence of all required insurance as follows:
  - a) within 10 Business Days of commencement of the Services, the Contractor must provide to the Province evidence of all required insurance in the form of a completed Province of British Columbia Certificate of Insurance;
  - b) if any required insurance policy expires before the end of the Term, the Contractor must provide to the Province within 10 Business Days of the policy's expiration, evidence of a new or renewal policy meeting the requirements of the expired insurance in the form of a completed Province of British Columbia Certificate of Insurance; and
  - c) despite paragraph (a) or (b) above, if requested by the Province at any time, the Contractor must provide to the Province certified copies of the required insurance policies.
- 4) The Contractor must obtain, maintain and pay for any additional insurance which the Contractor is required by law to carry, or which the Contractor considers necessary to cover risks not otherwise covered by insurance specified in this Schedule in the Contractor's sole discretion.

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## Schedule E – Privacy Protection Schedule Not applicable.

## Schedule F – Additional Terms Not applicable.

Schedule G - Security Schedule Not applicable.

#### Appendix 1 – External Review Report Template

### ON EXTERNAL CONTRACT REVIEWER'S LETTERHEAD

Contractor's File: Victoria File <as applicable>: 26250-20/\*\*\*\* Regional File <as applicable>: 26250-20/\*\*\*\* SITE ID #: \*\*\*\*

(DATE)

Client Information Officer **Contaminated Sites Program** Ministry of Environment. PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1

Attention: Client Information Officer

#### EXTERNAL CONTRACT REVIEWER REPORT REVIEW RE: Application for <insert instrument or report review applied for> External Contract Review Authorization No. \*\*\*\*

The following reports were reviewed:

- A preliminary site investigation report entitled \_\_\_\_\_, prepared by \_\_\_\_\_ and ٠ dated <as applicable>
- A detailed site investigation report entitled \_\_\_\_\_\_, prepared by \_\_\_\_\_\_ and dated . \_\_\_\_\_ <as applicable>
- A remediation plan entitled \_\_\_\_\_\_ prepared by \_\_\_\_\_\_ and dated \_\_\_\_\_\_ . <as applicable>
- A confirmation of remediation report enlitled \_\_\_\_\_\_ prepared by \_\_\_\_\_\_ and . dated \_\_\_\_\_ <as applicable>.
- A human health risk assessment report entitled \_\_\_\_\_\_, prepared by \_\_\_\_\_\_ and dated \_\_\_\_\_\_ <as applicable>.
- An ecological risk assessment report entitled \_\_\_\_\_\_, prepared by \_\_\_\_\_\_ and dated \_\_\_\_\_\_ <as applicable>.
  - 1. Background
    - Application details
    - Site details
      - o Registered Owner
        - o Site's civic address:

- o Legal description
- o Site's PID/PIN:
- o Latitude/Longitude:
- o CSR Land Use:
- Applicable Legislation and Guidance Documents
- Applicable Standards
- 2. Site Description
  - Site Location and General Description
  - Surrounding Land Use
  - · Topography and Stratigraphy
  - Surface Water and Groundwater
- 3. Site Investigations
  - Preliminary Site Investigation
    - The areas of potential environmental concern (APECs) and associated potential contaminants of concern (PCOCs) and the medium with which each is associated (soil,
    - groundwater, surface water, sediment, vapour) in table form.
    - o Site investigations (identify investigations completed)
    - o Investigation results
    - o Adequacy of investigation
  - Detailed Site Investigation
    - o The areas of environmental concern (AECs) and the contaminants of concern (COCs) associated with each area in table form.
    - o Site investigations (identify investigations completed)
    - o Investigation results
    - o Adequacy of investigation
- 4. Contamination
  - Soil
  - Groundwater
  - Vapour
- 5. Confirmation of Remediation
  - Site remediation (identify remediation completed)
  - Results
  - Adeguacy of remediation
- 6, Risk Assessment
  - Site setting
    - Human Health Risk Assessment
      - o Problem Formulation
      - o Exposure Assessment
      - Effects Assessment
      - o Risk Characterization
      - o Adequacy of HHRA
    - Ecological Risk Assessment
      - o Problem Formulation
      - o Exposure Assessment
      - o Effects Assessment
      - o Risk Characterization
      - o Adequacy of ERA

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#### 7. Recommendation

We, the undersigned, have reviewed the subject report(s) and in our professional opinion:

<The following paragraphs should be included, as applicable>

With respect to the reports submitted for this assignment, the reports substantially meet <or do not meet> the applicable key report deliverable requirements described in Part F (Key Information Requirements) of the Ministry's Contaminated Sites Services Application form.

With respect to the stage 1 preliminary site investigation report reviewed for this assignment, all APECs and associated PCOCs have <or have not> been satisfactorily identified for the site.

With respect to the stage 2 preliminary site investigation report reviewed for this assignment, all AECs and associated COCs have <or have not> been satisfactorily identified for the site.

With respect to the detailed site investigation report reviewed for this assignment, all AECs and associated COCs have <or have not> been satisfactorily investigated to determine the full lateral and vertical extent of contamination with due regard to the *Environmental Management Act*, Contaminated Sites Regulation (CSR), Hazardous Waste Regulation (HWR) and associated protocols, procedures, and guidance documents.

With respect to the remediation plan reviewed for this assignment, there is <or is not> a high probability that the remediation plan, if implemented with any recommended conditions, will result in the site meeting the applicable remediation standards of section 17 of the Contaminated Sites Regulation and/or the hazardous waste standards of the Hazardous Waste Regulation, as applicable. These standards comprise the \_\_\_\_\_\_\_ use numerical soil standards for \_\_\_\_\_\_\_<name substances> in soil, the \_\_\_\_\_\_\_ use numerical water standards for \_\_\_\_\_\_\_<name substances> in water, the \_\_\_\_\_\_\_ use numerical vapour standards for \_\_\_\_\_\_\_<name substances> in vapour and the \_\_\_\_\_\_\_ site <or "use" as applicable> numerical sediment criteria <or standards as applicable> for \_\_\_\_\_\_\_<name substances> in sediment. <Also include reference to Schedule 10 substances' numerical standards, as applicable>.

With respect to the confirmation of remediation report reviewed for this assignment, the site has <or has not> been satisfactorily remediated to the applicable standards. These standards comprise the \_\_\_\_\_\_ use numerical soil standards for \_\_\_\_\_\_ <name substances> in soil, the \_\_\_\_\_\_ use numerical water standards for \_\_\_\_\_\_ <name substances> in water, the \_\_\_\_\_\_ use numerical vapour standards for \_\_\_\_\_\_ <name substances> in vapour and the \_\_\_\_\_\_\_ site <or "use" as applicable> numerical sediment criteria <or standards as applicable> for \_\_\_\_\_\_ <name substances> in sediment. <Also include reference to Schedule 10 substances' numerical standards and Hazardous Waste Regulation standards, as applicable>.

As based on the above and our review summary, it is our professional opinion that:

<Select one of the following paragraphs — provide any commentary where responses in the negative were provided for the above paragraph items>

The report(s) reviewed are in satisfactory compliance with the requirements of the Environmental Management Act and Contaminated Sites and Hazardous Waste Regulations.

The report(s) reviewed are not in satisfactory compliance with the requirements of the Environmental Management Act and Contaminated Sites and Hazardous Waste Regulations and resubmission is required.

Our recommendations are as follows:

<Select one of the following paragraphs>

The report(s) are considered acceptable and no further work is required <include any recommended conditions, as applicable, if review of a remediation plan was conducted>.

The report(s) are considered deficient. Further work should be conducted to address the outstanding issues as identified in the review summary report.

Yours truly,

Signatory (Contractor's sign off authority) Title

Signatory (other reviewer(s)) Title

Attachments:

- Completed preliminary site investigation report and detailed site investigation report checklists (appended if applicable).
- Documentation of the nature and outcomes of discussions between the Contractor and client (appended if applicable).



WORKING TO MAKE A DIFFERENCE

Assessment DepartmentLocationMailing Address6951 WestPO Box 5350RichmondStation TerminalV7C.1C6Vancouver BC V6B 515www.work

6951 Westminster Highway Richmond BC V7C.1C6 www.worksafebc.com Clearance Section Telephone 604 244 6380 Toll Free within Canada 1 888 922 2768 Fax 604 244 6390

Franz Environmental Inc. 4005 Hickory Drive MISSISSAUGA, ON L4W 1L1

December 03, 2011

#### Person/Business : FRANZ ENVIRONMENTAL INC 643026 AA (093)

This letter provides clearance information for the purposes of Section 51 of the Workers Compensation Act.

We confirm that the above-referenced firm is active, in good standing, and has met WorkSafeBC's criteria for advance clearance. Accordingly, if the addressee on this letter is the prime contractor, the addressee will not be held liable for the amount of any assessment payable for work undertaken by the above-referenced firm to January 01, 2012.

This firm has had continuous coverage with us since January 01, 2000.

Employer Service Centre Assessment Department

Clearance Reference # : s.21 CLRAAA-7

For more Information about Section 51 and clearance letters visit WorkSafeBC.com

Please refer to your account number in your correspondence or when contacting the Assessment Department.

To alter this document constitutes fraud.

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Preadom of Information and Protection of Privacy Act
The parsonal information requested on this familia adjocted under
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Financial Adultisimilian Act. Oxissions (2001) the collection and tixe
of this information can be directed to the Director, Citiont Services.
Corp Government and Growns & 250 348-6910. PO Box 8406 81N
PROV GOVY, Viciola BO V&W IVI.
Please rolar all allier questions to the contest named in Part 1.

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Part 1 To be completed by the Province				
This centilians is nearestably and issued to many a case) Ministry of Environment, Corporate Services Division	CEMB11-106-00			
PROVINCE'S CONTACT PERSON	PHONE NO (250) 358-9021			
Raymond Ho. Financial Analyst	FAX HO (260) 368-9230			
P.O. Box 9378 Stn Prov Govi, Victoria, BC	V8W 9M8			
องกลุ่งอากพิมธ Franz Environmenial Inc.				
communication ADDR#88 701-F Enterprise Creacent, Victoria, BC	ΡΟΞΤΑΙ GODE   VBZ θΡ7			

761-F Enterprise Creacent, Victoria, BC

Fart:	2	To be completed by the insurance Agent or	Broker	
INSURED	HANNE	Franz Euvlronmentai Inc.		
	<b>XUIMESS</b>	4005 Hickory Dr., Mississauga, ON	,,	POSTAL 6000 L4W 1L1
OPERATIONS INSURED	PROVIDED	YAU3		
TYPE OF INBU List caoli sope	rance mioly	CORPANY NAME; POLICY NO. & BINEF DEBCRIPTION	EXPIRY DATE YYYY/MM/DD	LIMIT OF
Commercial General Liability		Zurich Insurance Company, Policy No. 8592343 Botlly Injury/Property Damage Bach Occurrence General Aggregato Preducts/Completed Operations Aggregate Non-Owned Automobile	2012/04/30	\$2 <b>,000,</b> 000,
Professional Linb	ility	Zurich Insurance Company, Policy No. 8434396	2012/04/30	\$1,000,000. cach cinin \$1,000,000. nggregate

This vertificate certifica that policies of insurance described herein are in full force and effective as of the date of this certificate and comply with the insurance requirements of the Agreement identified above, except as follows:

AGENT OF DROKEN Pro-Porm Sincinic Professional	ADDRESS 15 Albiale Parkway, Suile 310, Markham, ON L3R 5B4	MOMENO ( 202 ) 302-1054
DICKED BY THE AGENT OIL DICKER ON DEWLY O	e Jue vooat menueure)	CERICAE ATAI
Philippine 2	Incloir Professional	· · · · · · · · · · · ·

FIN 173 Roy, 2007/03/01

http://www.fln.gov.bo.oz/PThmblioma.shtml

# **REQUEST TO CONTRACT**

PART A – PLANNING (See Instructions)																
DIVISION/BRANCH EPD/ Environmental Management Branch LOCATION/ REGION: Victoria																
PRO	JECT	TITLE: Co	ontaminated si	te exter	nal	review	v	·								
CO MA		CT R/MONITOR	R NAME:	Ardith	Gin	gell			P	HONE		250	-387-81	20		. <u></u>
DESCRIBE THE LOCATION/SERVICES/PURPOSE OF NEED:				Reviev Detaile Asses	v a S ed S sme	Summ ite Inv ent rep	ary of Site restigation ort in supp	Condition r report, Con port of issui	eport, ifirmati ing five	Prelin ion of certil	ninary Reme licates	Site Inve diation re of comp	estigati eport a pliance.	on i nd l	repo Risk	rt,
WH RES NEB	Y CAN Sour( ED?	I EXISTING CES NOT F	STAFF ILL THE	Insuffi	cier	nt capa	acity						- 			
DES PRO API	SCRIB DGRA PROVI	E THE IMP/ M DELIVER ED	ACT ON NY IF NOT	Review	vw	ould b	e complete	ed at a much	h later (	date w	/hich	is too late	e for th	e cl	ient	• ·
			co	RE POL	ICY	COM		HECKLIST					- N		Ν	n/a
1.	lf a <u>C</u> (CPP	orporate Sup M 6.3.2.c.2)	ply Arrangement	(CSA) is	ava	ilable, a	are the good	s or services l	being pu	irchase	d throu	igh the CS	Α? [	]		
2.	2. For service contracts over \$100,000, has a Cost Benefit Justification (CBJ) been prepared? If yes, attach the CBJ															
3.	If this contract is being direct awarded to a contractor that has been used for similar work in the previous 3 months (3 3. months from previous expiry date), the new contract must be approved by an expense authority with authority for the combined total of the contracts. Has the appropriate expense authority approved the contract? (CPPM 6.3.1.4)															
4.	Can y	ou confirm th	nis contract does	not cons	titute	e an <u>em</u>	ployer/empl	oyee relations	hip? (C	PPM 6	<u>.3,1.7</u> )		2	3		
<u> </u>				BEST	PR	ACTIC	ES CHECI	KLIST								
1.	Has a	a <u>Risk Assess</u>	<u>sment</u> been prep	ared to d	eterr	nine the	e possible ne	eed for additio	nal insu	rance r	equire	ments?	Σ	3		
			PROCURE	MENT P	ROC	CESS -	SEE FOO	NOTES FOI	R CODE	E DES	CRIPT	ION				
	100	OPEN COMP	PETITIVE PROCES	ss (		204	DIRECT AW	ARD TALITY			400	SELECTE PRE-QUA	D VENDO	OR F	ROM	
	200	DIRECT AWA	ARD – PUBLIC Ig.	[		205	DIRECT AW	ARD - NOTICE	OF		401	COMPETI VENDORS QUALIFIC	TION AM S ON A P ATION L	IONO RE- IST	j 	
	201	DIRECT AW	ARD - SOLE SOU	RCE [		206	DIRECT AW JUSTIFICAT	ard - No Ion			500	PURCHAS CORPOR ARRANGE	SE FROM ATE SUP EMENT	IA PLY		
	202	DIRECT AW	ARD – EMERGEN	CY		207	DIRECT AW	ARD - UNDER	\$25,000		600		URCHAS		ROCE	SS
	203	DIRECT AW/ ORDER	ARD – SECURITY,	·   [		300	DIRECT INV	VENDORS			601	AGREEM	ENTS			
if D	irect A	ward, Contr	actor's legal na	ame: Fra	nz E	Enviror	nmental Inc	•								
Rat	ional f	or Direct Aw	vard to this con	tractor: 0	Cont	tractor	is the next	available on	the pre	e-qualit	ied lis	t.				
lfa	Direct	Award was	selected under	r <u>201, 20</u>	) <u>6</u> 0	r <u>207</u> a	bove, has	your progran	n used	these	servic	es in the	Y [		Ν	

past year?

• Please state the end date of the previous contract and the contract value:

Please state if the opportunity was competitively bid or direct awarded:

Will a Direct Award purchase obligate government to this vendor for future purchases or	Y	Ν		N/A	$\boxtimes$
services? (e.g. licensing, maintenance, etc.)					
Provide details:		 ·	<u>.</u>		_

AGRICULTURE AND LANDS

ok M

# PART A CONTINUED - PLANNING

(See Instructions)

### CONTRACT DETAILS

ANTICIPA	TED TERM OF AGRE	EMENT: FROM D	ATE: December 5, 2011	TO DATE: Mar	ch 21, 2012
RECOVER	RABLE? YES	NO 🛛	•		, 
	RED FROM (FULL NAM OF RECOVERY: \$	<b>ЛЕ)</b> :			
ESTIMAT	ED		NOTE: LEGAL REVIEW IS OVER \$250,000 OR WHEN APPROVED TEMPLATES	REQUIRED FOR <u>SE</u> N MODIFICATIONS A	<u>RVICE</u> CONTRACTS RE MADE TO THE
CONTRA	F \$25,250.00 CT:		HAS A LEGAL REVIEW BE OBTAINED?	EEN Y	🗆 N 🗆 N/A 🛛
CLIENT	RESPONSIBILITY	SERVICE LINE	STOB	PROJECT	AMOUNT
048	2943T	30510	6001	2900000	\$29,250.00
	CONI	RACT CATEGOR	( - SEE FOOTNOTES FOR CO	DDE DESCRIPTION	
□ GM	A		PRA	🖾 BSA	

HR/L	R 🗇 PM			
IT	СОМ		ОТН	
 	AIT/TILMA EXCLUSION LIST - SE	E FOOT	NOTES FOR CODE DESCRIPTION	
100	PURCHASE SUBJECT TO AIT	500	EXCLUDED - SECURITY, ORDER, ETC	
200	PURCHASE BELOW APPLICABLE AIT THRESHOLD	600	EXCLUDED – PRODUCT COMPATIBILITY/EXCLUSIVE RIGHTS	
300	PURCHASE OF AN EXEMPTED COMMODITY/SERVICE	700	EXCLUDED - PROCUREMENT OF PROTOTYPE	

NOTE: If your Procurement Process changes to reduce the number of vendors given the opportunity to bid from that indicated in 'Procurement Process' section above, then the EA must approve the change in Part B before awarding the contract. EA approval can be by email as long as this document is included as an attachment to the email from the EA.

800

Provide details of Procurement Process change:

EXCLUDED - EMERGENCY

EXPENSE AUTHORITY APPROVAL email approval acceptable

exec. pre-approval

EXECUTIVE APPROVAL (if required) email approval acceptable

EXCLUDED - REGIONAL /ECONOMIC

DEVELOPMENT

400

See

SIGNATURE

PRINT NAME

SIGNATURE

DATE

PRINT NAME

MINISTRY OF ENVIRONMENT REPEMBII - 106



# EXECUTIVE CONTRACT PRE-APPROVAL REQUEST

(TO BE APPROVED BY ADM OR EXEC DIRECTOR REPORTING TO ADM)

# NEW CONTRACT OR CONTRACT AMENDMENT

	Environmental Pro	ection	BRANCH	Environ	nmental Man	agment		
SECTION	Land Remediation		LOCATION	: Victoria	Victoria Headquarters			
CONTRACTOR (F	ull legal name if known):				PHONE:	-		
ADDRESS:					FAX:			
EMAIL:						withto acco file review		
DESCRIPTION OF	SERVICES / PURPOSE	Request for Qualification	is (RFQ) for external i	eview cont		RFQEMBII-106		
RATIONALE/JUS A) WHY A CONTRAC B) JUSTIFY IF DIREC C) IF DIRECT AWAR D) RISKS OF NOT PI P) OTHER ISSUES	TIFICATION: IT VS IN HOUSE OT AWARD D, WHY THIS CONTRACTO ROCEEDING	Will utilize external review capacity (too busy).	w contractors to com	plete case f	file review o	nly if internal staff do not have		
TERM OF AGREE	MENT FROM: April	1, 2010	TO: March 31, 2013	•		FEE (HOUR/DAY ETC) \$ 165 per hour		
MAX FEE PAYABLE: \$			MAX EXPENSES PAY	\BLE: \$		TOTAL VALUE: \$		

PLANNED METHOD OF SELECTION			CATEGÓRIES		STOB		INSTRUCTION .	
		SEE BACK OF FORM FOR CODE DESCRIPTION		(CHECK ONE)		(CHECK ONE)		
				$\boxtimes$	60	$\boxtimes$	NO	
	DIRECT AWARD				61	Π	YES (Indicate % and describe source)	
$\boxtimes$	INVITATION TO QUOTE							
	INVITATION TO TENDER		IT					
	REQUEST FOR PROPOSAL		PRA		69		i	
	NOTICE OF INTENT		PM		2000			
	PHONE BIDS		COM		OTHER:	l		
			BSA	-				
		$\boxtimes$	OP					
			отн					

### SIGNOFF

**REQUESTED BY:** 

Mike Macfarlane Manager, Land Remediation

Jim Hofweber DIRECTOR, ENVIRONMENTAL MANAGEMENT

NAME EXEC DIRECTOR, TITLE

APPROVED INOT APPROVED

Lynn Bailey ADM, Environmental Protection

SIGNATURE Æ Ŷ SIGNATURE

 $\mathcal{O}$ eb 12 DATE DATE

DATE

SIGNATURE

SIGNATURE

19/10 DATE

Part 1 Page 36 MOE-2012-00219

QR: Aralith Gingell
	(C)	PART B · omplete for new contra	– AWARD cts only- See I	nstructions)			
CONT		AME): Franz Environmental					
	TRACTOR'S 'DOING BUSI	NESS AS' NAME (IF APPLIC	ABLE):				
ADDR Victor PHON	RESS: 761-F Enterprise Cres ria, BC V8Z 6P7 NE NUMBER: 604-479-5103	cent		1BER: CEMB11-106-08			
EMAII	L ADDRESS: ilambrecht@fra	nzenvironmental.com		WCB NUM	BER:(	5430	126
		CONFIRMATION OF CONTR	ACT DETAILS FRO	OM PART A			çor:
Has the	ere been any changes to the <u>value</u>	or term of the contract from the 'Con	ntract Details' section in	n Part A? Y		Ν	$\boxtimes$
lf no, tł If yes, date ex	hen the Qualified Receiver/Contrac Expense Authority and Executive a xtending into an additional fiscal ye	t Monitor is the only approval require approval (if required in Part A) is requ ear.	d below. ired for an increase to	the dollar value and an end			
TERN	OF AGREEMENT:	From Date: December 5, 201	[	To Date: March 21, 2012			
Total	Value: \$ 29,250.00	-		-			
		CORE POLICY COMPLIANC			Y	N	N/A
	(1	for construction contracts click n/a	where appropriate)	ns. did vou advertise on BC Bid ?			
1.	For service contracts with an agg (CPPM_6.3.2.c.4)	regate value over \$75,000, inclusive					<u> </u>
2.	For <u>service</u> contracts between \$2 and profile of the business opport <u>6.3.2.c.5</u> ) Documentation of the p	5,000 and \$75,000 did you use a con unity? Opportunities must be posted procurement process is required in the	npetitive process that is on BC Bid or at least th working file.	s appropriate to the value, complexity hree quotes must be obtained. ( <u>CPPM</u>			$\boxtimes$
3.	For all contracts under \$25,000, c	did you compete to the extent reason	able and cost-effective	? Documentation is required in the file.			X
4.	If a pre-qualification list of contract	ctors was used, was the contract awa	rded through a compet he list) ? (CPPM 6.3.2	itive process as described in the list .c.4)	$\boxtimes$		
5.	If the General Services Agreement Management approval? Docume	nt or approved construction template entation of approval must be kept i	was not used, did you n the contract file. ( <u>C</u>	obtain Legal Services and <u>Risk</u> PP <u>M 6.3.3.e.5</u> )			
6.	Does Schedule A clearly identify	specific and measurable contract de	liverables? (CPPM 6.3	<u>.6.c)</u>	$\boxtimes$		
7.	Does Schedule A clearly identify of reporting requirements)? (CPP	the process the ministry will use to π M 6.3.6.c)	nonitor the contractor's	performance (e.g. frequency & format			
8.	If sub-contractors will be providing	g any services, are they identified in \$	Schedule C?		$\boxtimes$		
9.	Has a Certificate of Insurance be	en requested confirming all applicable	e insurance as required	d in Schedule D? ( <u>CPPM 6.3.3.e.11</u> )	$\boxtimes$		
10.	Will the contract be signed by bo	th parties before the start date of the	contract (the contracto	r must sign first)? (CPPM 6.3.3.e.2)	$\boxtimes$		
11.	Is the contract written in the legal an organization)? ( <u>CPPM 6.3.3.e</u>	I name of the contractor (do not write 3)	the contract in the nam	ne of an individual if the contract is with			
		BEST PRACTICES CHI	ECKLIST				
1.	If a contractor is ineligible for WC	B (including Personal Optional Protect	ction), has the EA giver	n approval to proceed?	$\boxtimes$		
2.	If the contract crosses fiscal years have confirmed appropriation?	s, does Schedule A include language	e that work must not pr	oceed in the new fiscal year until you			
3.	Has a WorkSafe BC (WCB) <u>clear</u>	ance letter been obtained for inclusio	n in the contract file?				
4.	For contracts including travel exp Schedule B?	enses, have you attached the per die	m rates as an appendi	x and referenced the appendix in			
	IFIED RECIEVER/ TRACT MONITOR	EXPENSE AUTHORI approval acceptable	TY (if required) email	EXECUTIVE APPROVAL (if approval acceptable	require	d) er	nail
<u>71/1(</u>	ULTO CAMPEL NOV.	24/14 Cosered	van	- / Signature		Date	,

# **GENERAL SERVICE AGREEMENT**



For Administrative Purposes Only							
Ministry Contract No.: GS12EPD-132	Financial Information						
Requisition No.: Solicitation No.(if applicable): RFPGS12EPD-132 Commodity Code: Contractor Information	Client: Responsibility Centre: Service Line: STOB: Project:	048 2941F 30534 6001 2900000					
Supplier Name: Mustel Research Group Ltd. Supplier No.: <u>136465</u> <u>2#2</u> . Telephone No.: 604-733-4213 E-mail Address: <u>emustel@mustelgroup.com</u> Website: <u>http://www.mustelgroup.com/</u>	Template version: Octol	ber 21, 2010					

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#### **SCHEDULE A – SERVICES**

Part 1 - Term Part 2 - Services Part 3 - Related Documentation Part 4 - Key Personnel

SCHEDULE B – FEES AND EXPENSES

Part 1 - Maximum Amount Payable Part 2 - Fees Part 3 - Expenses Part 4 - Statements of Account Part 5 - Payments Due

SCHEDULE C – APPROVED SUBCONTRACTOR(S)

SCHEDULE D – INSURANCE

SCHEDULE E – PRIVACY PROTECTION SCHEDULE

SCHEDULE F - ADDITIONAL TERMS

SCHEDULE G - SECURITY SCHEDULE

THIS AGREEMENT is dated for reference the 16th day of January, 2012.

#### BETWEEN:

<u>Mustel Research Group Ltd.</u> (the "Contractor") with the following specified address and fax number: #402 – 1505 West 2nd Avenue, Vancouver, BC

V6H 3Y4 Fax: 604.733.5221

#### AND:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the BC Ministry of Environment (the "Province") with the following specified address and fax number: 3rd Floor - 2975 Jutland Road, Victoria, BC (Mailing Address: P.O. Box 9341 Stn. Prov Govt, Victoria, BC) V8W 9M1 Fax: 250 356-5496

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

#### 1 DEFINITIONS

#### General

- 1.1 In this Agreement, unless the context otherwise requires:
  - (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
  - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
  - (c) "Material" means the Produced Material and the Received Material;
  - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
  - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
  - (f) "Services" means the services described in Part 2 of Schedule A;
  - (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
  - (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

#### 2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Term

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.

Standard of care

2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

#### 3 PAYMENT

Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
  - (a) the fees described in that Schedule;

- (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services; and
- (c) any applicable taxes payable by the Province under law or agreement with the relevant taxation authorities on the fees and expenses described in paragraphs (a) and (b).

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

#### Statements of accounts

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

#### Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

#### Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

#### Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

#### Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

#### Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

#### Refunds of taxes

- 3.8 The Contractor must:
  - (a) apply for, and use reasonable efforts to obtain, any available refund, credit, rebate or remission of federal, provincial or other tax or duty imposed on the Contractor as a result of this Agreement that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement; and
  - (b) immediately on receiving, or being credited with, any amount applied for under paragraph (a), remit that amount to the Province.

#### 4 **REPRESENTATIONS AND WARRANTIES**

- 4.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
  - (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,
    - all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and
    - (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
  - (b) if the Contractor is not an individual,
    - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
    - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

#### 5 PRIVACY, SECURITY AND CONFIDENTIALITY

Privacy

5.1 The Contractor must comply with the Privacy Protection Schedule attached as Schedule E.

#### Security

- 5.2 The Contractor must:
  - (a) make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration or disposal; and
  - (b) comply with the Security Schedule attached as Schedule G.

#### Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
  - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
  - (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
  - (c) if it is information in any Incorporated Material.

#### Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

#### Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

#### 6 MATERIAL AND INTELLECTUAL PROPERTY

Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

- 6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.
- Matters respecting intellectual property
- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
  - (a) Received Material that the Contractor receives from the Province; and
  - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

- 6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:
  - (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify and distribute that Incorporated Material; and
  - (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

#### 7 RECORDS AND REPORTS

#### Work reporting

7.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

#### 8 AUDIT

8.1 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

#### 9 INDEMNITY AND INSURANCE

Indemnity

9.1 The Contractor must indemnify and save harmless the Province and the Province's employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

#### Insurance

9.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

#### Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.

#### Personal optional protection

- 9.4 The Contractor must apply for and maintain personal optional protection insurance (consisting of income replacement and medical care coverage) during the Term at the Contractor's expense if:
  - (a) the Contractor is an individual or a partnership of individuals and does not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* or similar laws in other jurisdictions; and
  - (b) such personal optional protection insurance is available for the Contractor from WorkSafeBC or other sources.

#### Evidence of coverage

9.5 Within 10 Business Days of being requested to do so by the Province, the Contractor must provide the Province with evidence of the Contractor's compliance with sections 9.3 and 9.4.

#### 10 FORCE MAJEURE

(a)

Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
  - "Event of Force Majeure" means one of the following events:
    - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
    - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
    - (iii). a strike (including illegal work stoppage or slowdown) or lockout, or
    - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

**Duties of Affected Party** 

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

#### 11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
  - (a) "Event of Default" means any of the following:
    - (i) an Insolvency Event,
    - (ii) the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
    - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and
  - (b) "Insolvency Event" means any of the following:
    - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
    - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
    - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by the Contractor,
    - (iv) a compromise or arrangement is proposed in respect of the Contractor under the *Companies' Creditors Arrangement Act* (Canada),
    - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or

(vi) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
  - (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

Delay not a waiver

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' written notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
  - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

#### 12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
  - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
  - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
  - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

#### 13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
  - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

#### Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

#### Assignment

13.3 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.

#### Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
  - (a) any person retained by the Contractor to perform obligations under this Agreement; and
  - (b) any person retained by a person described in paragraph (a) to perform those obligations

fully complies with this Agreement in performing the subcontracted obligations.

#### Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

#### Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

#### Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

#### Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.

#### Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

#### Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
  - (a) an employee or partner of the Province; or
  - (b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

#### Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

#### Time

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

#### Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
  - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, attached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
  - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

#### Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

#### Remainder not affected by invalidity

13.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

#### Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

#### Governing law

13.21 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

#### 14 INTERPRETATION

- 14.1 In this Agreement:
  - (a) "includes" and "including" are not intended to be limiting;
  - (b) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
  - (c) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
  - (d) "attached" means attached to this Agreement when used in relation to a schedule;
  - (e) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
  - (f) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
  - (g) "person" includes an individual, partnership, corporation or legal entity of any nature; and
  - (h) unless the context otherwise requires, words expressed in the singular include the plural and *vice versa*.

#### 15 EXECUTION AND DELIVERY OF AGREEMENT

15.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

SIGNED on the day of Contractor (or, if not an individual, on its behalf by its authorized signatory or signatories):	SIGNED on the $4\frac{7}{2}$ day of $2012$ on behalf of the Province by its duly authorized representative:
Ein Mustel Signature(s)	Signature
Print Name(s)	<u>Glen Okrainetz</u> Print Name
Print Title(s)	Manager Air Protection Print Title

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

#### Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

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- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
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     to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
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#### Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

#### Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

#### PART 1. TERM:

1. The term of this Agreement commences on January 12<sup>th</sup>, 2012 and ends on March 31<sup>st</sup>, 2012

#### PART 2. SERVICES:

A survey of British Columbia residents (excluding residents of Metro Vancouver) to investigate their use of wood-burning appliances and their opinion on wood-burning will be conducted. The survey will have sufficient sample size to provide results valid for interpretation at both the provincial and regional scales.

#### Outputs

The Contractor must:

- 1) Assist the province in designing the questionnaire to be used, as outlined in the Mustel Group Proposal
- 2) Develop a final sampling plan in consultation with the Province as outlined in the Methodology Section of the Mustel Group Proposal
- 3) Conduct the survey by telephone and web as outlined in the Mustel Group Proposal. The number of people surveyed and regional coverage will be as outlined in the Methodology Section of the Mustel Group Proposal with the additional proviso that if the user survey can be shortened from 18 to 12 minutes the number surveyed will increase by approximately 100 (telephone survey) OR 200 (web survey).
- 4) Organize the survey responses in an electronic database that will be delivered to the province
- 5) Write and deliver to the Province a draft report on the results including an executive summary, methodology and findings of the survey.
- 6) Write and deliver to the Province a final report on the results including an executive summary, methodology and findings of the survey. The final report will take into account comments from the Province on the draft report.

#### Inputs

The Contractor must dedicate resources (staff, telephone and web interviewing operations, computer hardware and software) as outlined in the Mustel Group Proposal and sufficient to achieve the above outputs

#### Outcomes

Through the delivery of the Services the Province wishes to realize the following outcomes and, without limiting the obligation of the Contractor to comply with other provisions of this Part, the Contractor must use commercially reasonable efforts to achieve them:

Reliable information to guide provincial efforts to reduce wood smoke pollution.

The parties acknowledge that the Contractor does not warrant that these outcomes will be achieved.

#### **Reporting requirements**

The following reporting requirements will be met by the contractor:

- biweekly progress update reports in MS-Word format or any other widely readable electronic format
- draft report that includes an executive summary, methodology and detailed findings including charts and graphs illustrating the results

- final report that includes an executive summary, methodology and detailed findings including charts and
  graphs illustrating the results and that takes into account comments from the Province on the draft report
- final and draft reports to be delivered electronically in MS Word and Adobe pdf formats
- in addition three bound copies of final report to be delivered by mail or courier.
- electronic database of responses including verbatim responses to open-ended questions
- detailed computer tabulations of the results of the survey

#### PART 3. RELATED DOCUMENTATION:

- 1. The Contractor must perform the Services in accordance with the obligations set out in this Schedule A including any engagement letter, Solicitation document excerpt, proposal excerpt or other documentation attached as an Appendix to, or specified as being incorporated by reference in, this Schedule.
- 2. The following documentation is incorporated by reference into this Schedule A:

Mustel Research Group Ltd. Response to RFPGS12EPD-132 – Inventory of Wood-burning Appliance Use in British Columbia (the "Mustel Group Proposal")

#### PART 4. KEY PERSONNEL:

The Key Personnel of the Contractor are as follows:
 As listed in the Mustel Group Proposal or substitutions as agreed by the Ministry and the Contractor

#### Schedule B – Fees and Expenses

#### **<u>1. MAXIMUM AMOUNT PAYABLE:</u>**

<u>Maximum Amount</u>: Despite sections 2 and 3 of this Schedule, \$57,450 is the maximum amount which the Province is obliged to pay to the Contractor for fees and expenses under this Agreement (exclusive of any applicable taxes described in section 3.1(c) of this Agreement).

#### 2. FEES:

#### Flat Rate

Fees: \$57,450 for performing the Services during the Term.

#### 3. EXPENSES:

None

#### 4. STATEMENTS OF ACCOUNT:

<u>Statements of Account</u>: In order to obtain payment of any fees and expenses under this Agreement, the Contractor must deliver to the Province at the end of the Term or, if the Contractor completes the Services before that time, on the completion of the Services, a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement;
- (c) the Contractor's calculation of all fees claimed under this Agreement, including a declaration that the Services for which the Contractor claims fees have been completed;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor with receipts attached, if applicable, and, if the Contractor is claiming reimbursement of any HST or other applicable taxes paid or payable by the Contractor in relation to those expenses, a description of any credits, rebates, refunds or remissions the Contractor is entitled to from the relevant taxation authorities in relation to those taxes;
- (e) the Contractor's calculation of all applicable taxes payable by the Province in relation to the Services;
- (f) a description of this Agreement to which the statement relates;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

#### 5. PAYMENTS DUE:

**Payments Due**: Within 30 days of the Province's receipt of the Contractor's written statement of account delivered in accordance with this Schedule, the Province must pay the Contractor the fees and expenses (plus all applicable taxes) claimed in the statement if they are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by the Province as required to obtain the discount.

#### Schedule C – Approved Subcontractor(s)

Not applicable

#### Schedule D – Insurance

- 1. The Contractor must, without limiting the Contractor's obligations or liabilities and at the Contractor's own expense, purchase and maintain throughout the Term the following insurances with insurers licensed in Canada in forms and amounts acceptable to the Province:
  - (a) Commercial General Liability in an amount not less than \$2,000,000.00 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this Agreement and this insurance must
    - (i) include the Province as an additional insured,
    - (ii) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change, and
    - (iii) include a cross liability clause;
- 2. All insurance described in section 1 of this Schedule must:
  - (a) be primary; and
  - (b) not require the sharing of any loss by any insurer of the Province.
- 3. The Contractor must provide the Province with evidence of all required insurance as follows:
  - (a) within 10 Business Days of commencement of the Services, the Contractor must provide to the Province evidence of all required insurance in the form of a completed Province of British Columbia Certificate of Insurance;
  - (b) if any required insurance policy expires before the end of the Term, the Contractor must provide to the Province within 10 Business Days of the policy's expiration, evidence of a new or renewal policy meeting the requirements of the expired insurance in the form of a completed Province of British Columbia Certificate of Insurance; and
  - (c) despite paragraph (a) or (b) above, if requested by the Province at any time, the Contractor must provide to the Province certified copies of the required insurance policies.
- 4. The Contractor must obtain, maintain and pay for any additional insurance which the Contractor is required by law to carry, or which the Contractor considers necessary to cover risks not otherwise covered by insurance specified in this Schedule in the Contractor's sole discretion.

#### Schedule E – Privacy Protection Schedule

Not applicable

Schedule F – Additional Terms

Not applicable

Schedule G – Security Schedule

Not applicable.



# The Best Place on Earth Request for Proposals Inventory of Wood-burning Appliance Use in British Columbia

Ministry of Environment Request for Proposals Number: RFPGS12EPD-132

Issue date: Dec 9th, 2011

Closing Time: Proposal must be received before 2:00 PM Pacific Time on: January 3rd, 2012

GOVERNMENT CONTACT PERSON: All enquiries related to this Request for Proposals (RFP), including any requests for information and clarification, are to be directed, in writing, to the following person who will respond if time permits. Information obtained from any other source is not official and should not be relied upon. Enquiries and any responses will be recorded and may be distributed to all Proponents at the Province's option.

Jawant Carignan, Administrative Coordinator PO Box 9341 Stn Prov Govt Victoria, BC, V8W 9M1 Fax: 250-356-5496 / Phone: 250 387-9938 Jawant.Carignan@gov.bc.ca

#### **DELIVERY OF PROPOSALS:**

Proposals must not be sent by mail, facsimile or e-mail. Proposals are to be submitted to the closing location as follows:

A. (3) complete hard-copies (and 1 copy on a CD, DVD or memory stick) must be delivered by hand or courier to:

Ministry of Environment, Environmental Standards Branch

3<sup>rd</sup> Floor, 2975 Jutland Road, Victoria, BC, V8T 5J9

Attention: Jawant Carignan

Proposal envelopes should be clearly marked with the name and address of the Proponent, the Request for Proposals number, and the project or program title.

#### OR

**B.** Proposals can be sent via e-mail to the following c-mail address:

Jawant.Carignan@gov.bc.ca

#### PROPONENTS' MEETING:

A Proponents' meeting will not be held.

#### **PROPONENT SECTION:**

For hard-copy proposals, a person authorized to sign on behalf of the Proponent must complete and sign the Proponent Section (below), leaving the rest of this page otherwise unaltered, and include the originally-signed and completed page with the first copy of the proposal. For electronic proposals, all parts of the Proponent Section (below) must be completed except the signature field, as the BC Bid e-bidding key is deemed to be an original signature. The rest of this page must be otherwise unaltered and submitted as part of your proposal.

The enclosed proposal is submitted in response to the above-referenced Request for Proposals, including any addenda. Through submission of this proposal we agree to all of the terms and conditions of the Request for Proposals and agree that any inconsistent provisions in our proposal will be as if not written and do not exist. We have carefully read and examined the Request for Proposals, including the Administrative Section, and have conducted such other investigations as were prudent and reasonable in preparing the proposal. We agree to be bound by statements and representations made in our proposal.

Signature of Authorized Representative:	Legal Name of Proponent (and Doing Business As Name, if
EUL MUSTON	appricable). I Ibstep Mescar(V) 6000
Printed Name of Authorized Representative:	Address of Proponent:
EVINDITE	Sud @ 400
Tille: Piesident	Loncouver, BC V6H374
Date:	Authorized Representative phone, fax or email address (if
Hannar 2, 200	available): 664 - 742 - 2240
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(OMG)



MUSTEL GROUP MARKET RESEARCH

# RFPGS12EPD-132 Inventory of Wood-burning Appliance Use in British Columbia

- Proponent: Mustel Research Group Ltd. #402 – 1505 West 2<sup>nd</sup> Avenue Vancouver, BC V6H 3Y4
- Telephone: 604-733-4213 (Main)
- Contact: Evi Mustel, Principal 604-742-2240 (Direct) emustel@mustelgroup.com

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4.	Project Firm and Staff Qualifications	.6
5.	Budget	11

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### 1. Proposal Summary

**Mustel Group Market Research** 

Mustel Group is pleased to submit a proposal to conduct a survey of British Columbia residents regarding the use of wood-burning appliances. As we designed and conducted the 2003 Survey, we are familiar with the requirements and challenges of this initiative. In addition, Mustel Group has conducted many large scale research projects with complicated sampling plans to provide such entities as BC Hydro, Fortis BC and Translink reliable data measuring residents' behavior.

We propose a hybrid design using both telephone and web surveys to maximize the number of interviews that can be completed within the budget, while still providing accurate data that is representative of BC households' wood-burning appliance use. The telephone survey, using both land line and cell sample (to insure the inclusion of households without landlines) will be used to determine the overall incidence of use of wood-burning appliances, and will be used to survey non-users as well as a proportion of users. Web surveys provide a cost efficient way to oversample and target wood-burning appliance users.

We have suggested a range of 1950 to 2250 interviews (depending on the incidence of users which is estimated to be 25% to 30%). As in the past one-third of the interviews (1300 to 1500 interviews) will be conducted with users. We have proposed that 500 of the user interviews be conducted by web using Mustel Group's randomly recruited web panel supplemented by a reputable panel supplier (Research Now) as needed. If the Ministry is amenable, more interviews may be able to be conducted by web (and fewer by telephone) to boost the overall number of completions.

Our proposal provides several options for sampling: disproportionate sampling by region (215 to 248 interviews per region with users depending on incidence), by sub-region (50-57 interviews with users per sub-region), or by collapsing smaller sub-regions to 13-15 sub-regions to enable a minimum of 100 interviews per (newly defined) sub-region. We will review with the Ministry which sampling plan best suits its needs.

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### 2. Project Design and Timelines

We understand that the main purpose of the survey is to obtain data that enables the Ministry of Environment:

- To determine the number of domestic wood-burning appliances in use in the province,
- To estimate emissions of air pollutants from wood-burning, and
- To guide outreach and education campaigns targeting wood-burners.

Currently domestic wood-burning is estimated to account for approximately 15% of total fine particulates matter emissions in BC. While use of wood heating may have changed considerably since 2003, as other sources of air pollutants begin to use cleaner fuels, wood heating may in fact account for a larger proportion of remaining air pollutants than in the past.

A mixed-mode approach is recommended to maximize the number of interviews that can be completed within the budget of \$58,000. We recommended that the main method of data collection be via a telephone survey to accurately determine the incidence of woodburning appliance users. A web survey would be used to boost the sub-sample of users as it is a more cost efficient method than a telephone survey to target low incidence respondents. As in the past, we have assumed that one-third of all interviews will be conducted with users although they are likely to account for 25% to 30% of households.

~	January				February			March				April				
Task Description	2	10	17	24	6	13	20	27	5	12	19	26	2	9	16	23
Project Initiation												ļ	<u> </u>			ļ
Finalize Questionnaire				1									L		<u> </u>	ļ
Conduct interviews							}								1	
Data Processing	1										ļ					ļ
Top-line Results													 		ļ	
Draft Report									<u> </u>					L	-	
Finalize Report											***					

2

The anticipated schedule for the project is as follows:

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### 3. Methodology

#### Sampling

The number of interviews that can be completed is dependent on the incidence of users. If a 30% incidence of qualifiers is obtained, a total of 2250 interviews can be completed within budget, 1500 with users and 750 with non-users. If a 25% incidence of qualifiers is obtained, a total of 1950 interviews can be completed, 1300 with users and 650 with nonusers. The number of completions will be adjusted according to the final incidence but the above provides a range.

Both sample sizes assume that a maximum of 500 interviews with users will be obtained through a web survey. If the Ministry is amenable, more interviews may be able to be conducted by web (and fewer by telephone) to boost the overall number of completions.

Assuming disproportionate sampling by either regions or sub-regions (to be determined) with equal number of interviews per region or sub-region, the breakdown would be as follows:

30% incidence	of users	Margin of Error*	25% incidence	Margin of Error*	
Total	2250	+/-2.1	Total	1950	+/-2.2
Users	1500	+/-2.5	Users	1300	+/-2.7
Non-users	750	+/-3.6	Non-users	650	+/-3.8
Pe <b>r</b> region	375	+/-5.1	Per region	325	+/-5.4
- Users	248	+/-6.2	- Users	215	+/-6.7
- Non-users	127	+/-8.7	- Non~users	110	+/-9.3
Per sub-region	86-87	+/-10.6	Per sub-region	75	+/-11.3
- Users	56-57	+/-13.1	- Users	50	+/-13.9
- Non-users	30	+/-17.9	- Non-users	25	+/-19.6

\* 95% level of confidence

An alternative sampling plan to consider is to combine the smaller sub-regions to limit the number of sub-regions surveyed to 13 to 15 to ensure a base of 100 users per (newly defined) sub-region (+/-9.8 margin of error).

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Regardless of the sample plan adopted, the cost will remain the same.

The sample for the telephone survey will be obtained through SM Research, one of Canada's leading sampling experts. Their database of listed telephone numbers is updated on a regular basis insuring the inclusion of new listings.

The telephone sample will be stratified by region or sub-region (depending on final sample plan). Postal codes will be used to identify the location of the household.

The sample for the web survey of users will be drawn from Mustel Group's *Giving Opinions* panel, which is entirely randomly recruited (rather than opt-in). The sample will be supplemented as needed with sample from Research Now, a reputable and established provider of web panel sample.

The person interviewed in both the telephone and web survey will be the person knowledgeable about home heating equipment used in the household. To minimize potential bias due to non-response, up to 6 calls will be made to each selected household to complete an interview (and several reminders sent to web panel participants).

Note that once the quota of non-users has been reached, we will continue to monitor the incidence rate of non-users while oversampling for users through a simple yes/no question to the use of wood-burning appliances.

#### Data Collection

Interviewing would be conducted by Mustel Group professional interviews who are continuously supervised and monitored. Interviewing will take place weekday evenings and daytime on weekends. Normally we also interview on Sundays from noon to 8 p.m.

#### Questionnaire

Our costing is based on a questionnaire similar in length to the previous survey but with approximately 10% fewer questions. Mustel Group will assist in the redesign of the questionnaire in close consultation with the Ministry. A pre-test of the survey will be conducted among 10 residents to fine-tune the wording. The client is welcome to monitor the pretest and interviewing while in progress either at Mustel Group's offices or remotely.

#### Data Processing

The results will be tabulated in total, by region, sub-region and by household and demographic characteristics of interest (e.g., homeowners/renters, type of home, etc). Estimates of the number of households in each region and sub-region will be determined with the data weighted by number of households when combined to form totals.

#### **Deliverables**:

- bi-weekly progress up-date reports
- survey questionnaire
- electronic database of responses including verbatim responses to open-ended questions
- detailed computer tabulations
- draft and final report that includes:
  - o an executive summary
  - o methodology

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o detailed findings including charts and graphs illustrating the results

## 4. Project Firm and Staff Qualifications

#### **Mustel Group Profile**

**Mustel Group Market Research** 

Mustel Group Market Research is a full-service British Columbia-based marketing and social research firm serving public and private sector clients across North America, Europe and Asia. Founded in 1980, the firm is wholly owned and operated in British Columbia.

The firm operates its own telephone interviewing operations from Vancouver that is supported by a multi-lingual field staff of over 50 interviewers, including a dedicated team of personal and executive level interviewers. In addition we have full web interviewing capabilities. Our online panel of BC residents "Giving Opinions" is unique in being entirely randomly recruited (rather than opt-in) and offering donations to local charities as incentives for completing surveys. We also provide a full range of qualitative research services (focus groups, in-depth interviews, recruiting, etc.).

Mustel Group enjoys on-going, long-term relationships with many clients. Our clients include private and public sector organizations, governments, Crown corporations and not-for-profit organizations. We have presented our results to City councils, government commissions and task forces. The firm's principals frequently appear as guests on radio, television, special interest programs, and are often quoted in BC and national newspapers.-Mustel Group has an enviable record of accuracy for political polling. Our 'Proven Record of Accuracy' can be found on our website at: www.mustelgroup.com/accuracy.php

Mustel Group is a Corporate Gold Seal member of the Marketing Research and Intelligence Association (MRIA) Canada's professional research body developing guidelines and issuing individual professional and corporate certification. We adhere to the rigorous procedures and practices associated with the Gold Seal standing and to the privacy guidelines, as set out in the MRIA's extensive Privacy (PIPEDA) manual.

For more information please visit our website @ www.mustelgroup.com.



### **Research Team**

Evi Mustel will lead the research team for this project and be responsible for designing the research program and questionnaire, act as primary client liaison, and analyze the results. Evi will be assisted by Matthew Shepherd as day-to-day Project Manager.

Evi Mustel, CMRP Principal and Senior Research Consultant

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### Matt Shepherd Research Consultant & Senior Project Manager

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#### Budget 5.

The breakdown of cost are as follows:

# 30% Qualifying Incidence 1500 users/750 non-users

Role	Project Leader	Ртојесt Manager	Data Processing	Clerical	Data Collection	Expenses	Totals
Name	E.Mustel	M.Shepherd	Various	Various	Various	Various	
Hourty Rate							
Questionnaire/ Study Design							
Sampling/data collection				s.21			
Data Processing							
Analysis							
Person Hours							
Costs	\$6,650	\$1,700	\$3,850	\$1,000	\$44,000	\$ 250	\$ 57,450

# 25% Qualifying Incidence 1300 users/650 non-users

Role	Project Leader	Project Manager	Data Processing	Clerical	Data Collection	Expenses	Totals
Name	E.Mustel	M.Shepherd	Various	Various	Various	Various	
Hourly Rate							
Questionnaire/ Study Design							
Sampling/data collection				s.21			
Data Processing							
Analysis							
Person Hours							
Costs	\$6,650	\$1,700	\$3,500	\$1,000	\$44,000	\$ 250	\$ 57,100

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## **REQUEST TO CONTRACT FORM**

## Instructions for Use

# Note: This form is an internal document to be used by the Ministries of Environment (MOE) and Agriculture and Lands (MAL).

The <u>Request to Contract Form</u> must be completed to initiate all contracts as well as to modify contracts that increase the dollar value of the contract or extend the contract into a new fiscal year. This form replaces the current MOE/MAL Request for Approval – Contract Services Form and the MOE Executive Contract Pre-Approval Form. It is intended to be completed in 3 phases of the contract process:

- Part A: Planning;
- Part B: Awarding;
- Part C: Modifying.

As this is an internal form, email approvals are acceptable as long as this document is included in the email stream.

The goal of this form is to reduce the paperwork of those contracts that conform to policy and to highlight the most common policy errors which sometimes occur. A 'no' answer on any of the policy compliance questions may indicate an additional risk in proceeding and additional documentation may be required.

A quarterly compliance report will be completed by the Finance and Administration Branch and reported to the Executive.

## Do not print out the "Instructions for Use" page or the "Footnotes" page for inclusion in the contract file.

#### Part A - Pre-Approval (Planning)

Part A provides the Expense Authority (EA) with the information required to make an informed decision whether or not to proceed with a contract. **EA approval must be obtained** <u>before</u> the procurement process is initiated.

At this point, some divisions **MAY** also require Executive approval (ADM or Executive Director). At their discretion, Executive may require a pre-approval signature in Part A. The Executive member should advise their Client Services Branch (CSB) and branch directors of any pre approval requirements and related thresholds.

Part A also provides the coding data needed by administrative staff.

#### Part B - Contract Approval (Award)

Part B is to be completed after the selection of the vendor but **before** the vendor signs the contract. If the awarded contract matches the figures and details provided in Part A, the EA's signature is <u>not</u> required in Part B as the EA will sign the contract. If the contract does not match the figures and details provided in Part A, the EA must sign Part B to approve any increase in the dollar value of the contract, and/or when a change in the procurement process reduces the number of vendors given the opportunity to bid.

### Example of Change in the Procurement Process:

If the original Procurement Process chosen in Part A was the Open Competitive Process (100), then later changed to a Direct Award (200-207), the EA must approve the new Procurement Process as it reduces the number of potential vendors. However, if the original Procurement Process chosen in Part 2 was a Direct Award, then later changed to an Open Competitive Process allowing more vendors to participate, no additional approval is required from the EA.

### Part C - Modifications

Part C must be completed to modify an existing contract when the modification will increase the dollar value of the contract or when it will extend the contract into another fiscal year. As these situations have budgetary implications, the EA's signature is required to verify that policy compliance questions have been considered. If a modification does not have any budgetary implications, then Part C does not need to be completed. If a Division's Executive requires pre-approval signature in Part A, then their signature is required in Part C.

# **REQUEST TO CONTRACT**

AGRICULTURE AND LANDS

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## PART A – PLANNING (See Instructions)

PART A – PLANNING (See Instructions)									
DIVISION/E	RANCH	EPD / ESB		LOCATION/ REGION:	Victoria				
	PRO	JECT TITLE: ]	Inventory of Wood	l-burning Appliance U	Jse in Britisł	Columbia			
CONTRACT MANAGER/MONITOR NAME:			Markus Kellerhals	Markus Kellerhals PHONE: 250-387-8432					
DESCRIBE THE LOCATION/SERVICES/PURPOSE OF NEED:			Need to obtain an updated inventory of wood-burning appliances in BC to estimate the air pollution impact from this sector and to help design programs to reduce emissions from this sector						
WHY CAN RESOURCI NEED?	EXISTING ES NOT FI	STAFF ILL THE	Do not have staff t	lime or expertise to do t	his study				
DESCRIBE THE IMPACT ON PROGRAM DELIVERY IF NOT APPROVED			Will not have recent strategies will hav	nt emission inventory fo e to be based on 9 year	or this import old data	ant sector. Ma	nage	ment	
	siyaa ya ya	CO	RE POLICY COMPL	IANCE CHECKLIST	a na san ta	i e state	20 <b>Y</b> - 0	- <b>N</b>	n/a
1. If a <u>Cor</u> ( <u>CPPM</u>	porate Sup 6.3.2.c.2)	oly Arrangement	(CSA) is available, are	the goods or services being	purchased thro	ugh the CSA?			
2. For ser and inc	vice contrac lude in the c	ts over \$100,000 contract file. ( <u>CP</u>	0, has a Cost Benefit Ju PM 6.3.1.5)	ustification (CBJ) been prepa	ared? If yes, atta	ich the CBJ			
3. If this c months	If this contract is being direct awarded to a contractor that has been used for similar work in the previous 3 months (3 months from previous expiry date), the new contract must be approved by an expense authority with authority for the combined total of the contracts. Has the appropriate expense authority approved the contract? (CPPM 6.3.1.4)								
4. Can yo	4. Can you confirm this contract does not constitute an employer/employee relationship? (CPPM 6.3.1.7).				).				
			BEST PRACTICES	S CHECKLIST				<u>.</u>	
1. Has a <u>F</u>	Risk Assess	<u>ment</u> been prepa	ared to determine the p	ossible need for additional ir	surance require	ements?			$\boxtimes$
		PROCURE	MENT PROCESS - S	EE FOOTNOTES FOR CO	DE DESCRIP	ΓΙΟΝ	· · ·		in ng tin t

100	OPEN COMPETITIVE PROCESS	204	DIRECT AWARD – CONFIDENTIALITY	400	SELECTED VENDOR FROM PRE-QUALIFICATION LIST
200	DIRECT AWARD – PUBLIC SECTOR ORG.	205	DIRECT AWARD - NOTICE OF	401	COMPETITION AMONG VENDORS ON A PRE- QUALIFICATION LIST
201	DIRECT AWARD - SOLE SOURCE	206	DIRECT AWARD – NO JUSTIFICATION	500	PURCHASE FROM A CORPORATE SUPPLY ARRANGEMENT
202	DIRECT AWARD - EMERGENCY	207	DIRECT AWARD - UNDER \$25,000	600	OTHER PURCHASE PROCESS
203	DIRECT AWARD – SECURITY, ORDER	300	DIRECT INVITATION TO SELECTED VENDORS	601	OTHER CONTINUING AGREEMENTS
201       202       203	DIRECT AWARD – SOLE SOURCE DIRECT AWARD – EMERGENCY DIRECT AWARD – SECURITY, ORDER	206 207 300	DIRECT AWARD – NO JUSTIFICATION DIRECT AWARD – UNDER \$25,000 DIRECT INVITATION TO SELECTED VENDORS	500 600 601	CORPORATE SUPPLY ARRANGEMENT OTHER PURCHASE PRO OTHER – CONTINUING AGREEMENTS

If Direct Award, Contractor's legal name: n/a			 	
Rational for Direct Award to this contractor: n/a			 	
If a Direct Award was selected under 201, 206 or 207 above, has your program used these services in past year?	the	Y	N	
<ul> <li>If yes:</li> <li>Please state the end date of the previous contract and the contract value:</li> </ul>				
Please state if the opportunity was competitively bid or direct awarded:			 	
Will a Direct Award purchase obligate government to this vendor for future purchases or Y services? (e.g. licensing, maintenance, etc.)		Ν	N/A	$\boxtimes$

Provide details::

## PART A CONTINUED – PLANNING

(See Instructions)

#### CONTRACT DETAILS

ANTICIPAT	ED TERM OF AGRE	EMENT: FRO	OM DATE: Jan 13 <sup>th</sup> , 2012	ATE: Jan 13 <sup>th</sup> , 2012 TO DATE: March 31 <sup>st</sup> , 2012					
RECOVER	ECOVERABLE? YES D NO 🛛								
RECOVERED FROM (FULL NAME): n/a AMOUNT OF RECOVERY: \$ n/a PERCENTAGE: % n/a									
ESTIMATED VALUE OF \$58,000.00 CONTRACT:			NOTE: LEGAL REVIEW IS REC OVER \$250,000 OR WHEN MO APPROVED TEMPLATES.	NOTE: LEGAL REVIEW IS REQUIRED FOR <u>SERVICE</u> CONTRACTS OVER \$250,000 OR WHEN MODIFICATIONS ARE MADE TO THE APPROVED TEMPLATES.					
			HAS A LEGAL REVIEW BEEN OBTAINED?	Y	🗆 N 🗆 N/A 🖾				
CLIENT	RESPONSIBILITY	SERVICE LIN	NE STOB	PROJECT	AMOUNT				
048	2941F	30534	60	2900000					
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~									

	CONTRACT CATEGORY - SEE FOOTNOT	ES FOR CODE DESCRIPTION
GM/	A PRA	D BSA
HR/	R DPM	
П ІТ	СОМ	П ОТН

 	AIT/TILMA EXCLUSION LIST - SE	E FOOT	NOTES FOR CODE DESCRIPTION	
100	PURCHASE SUBJECT TO AIT	500	EXCLUDED - SECURITY, ORDER, ETC	
200	PURCHASE BELOW APPLICABLE AIT THRESHOLD	600	EXCLUDED – PRODUCT COMPATIBILITY/EXCLUSIVE RIGHTS	
300	PURCHASE OF AN EXEMPTED COMMODITY/SERVICE	700	EXCLUDED - PROCUREMENT OF PROTOTYPE	
400	EXCLUDED – EMERGENCY	800	EXCLUDED – REGIONAL /ECONOMIC DEVELOPMENT	

**NOTE:** If your Procurement Process changes to reduce the number of vendors given the opportunity to bid from that indicated in 'Procurement Process' section above, then the EA must approve the change in Part B before awarding the contract. EA approval can be by email as long as this document is included as an attachment to the email from the EA.

Provide details of Procurement Process change:

EXPENSE AUTHORITY APPRO	VAL email approval acceptable
Multice	2012/01/18
SIGNATORE	DATE
PRINT NAME Glen Okrainetz -	- Manager Air Protection

EXECUTIVE APPROVAL (if required) email approval acceptable

DATE

PRINT NAME

SIGNATURE

## PART B – AWARD

(Complete for new contracts only- See Instructions)

CON	TRACTOR (FULL LEGAL NAME): Mustel Research Gro	up			<u></u> *		
CON	CONTRACTOR'S 'DOING BUSINESS AS' NAME (IF APPLICABLE):						
ADDF V6H 3 P	DRESS: #402 – 1505 West 2 <sup>nd</sup> Avenue, Vancouver, BC, H 3Y4 CONTRACT NUMBER: GS12EPD-132 PHONE NUMBER: 604-733-4213						
EMAI	L ADDRESS: emustel@mustegroup.com		WCB NUMBER:				
	CONFIRMATION OF CONTRA		I PART A	· · · ·			
Has th	ere been any changes to the <b>value</b> or <b>term</b> of the contract from the 'Cont	ract Details' section in l	Part A? Y		Ν	$\boxtimes$	
lf no, t lf yes, date e	nen the Qualified Receiver/Contract Monitor is the only approval required Expense Authority and Executive approval (if required in Part A) is require tending into an additional fiscal year.	below. ed for an increase to th	e dollar value and an end				
TER	A OF AGREEMENT: From Date: 2012-01-16		To Date: 2012-03-31				
Total	Value: \$ 58,000						
	CORE POLICY COMPLIANCE (for construction contracts click n/a v	CHECKLIST where appropriate)		Y	N	N/A	
1.	For service contracts with an aggregate value over \$75,000, inclusive of (CPPM 6.3.2.c.4)	all potential extensions	s, did you advertise on <u>BC Bid</u> ?				
2.	For <u>service</u> contracts between \$25,000 and \$75,000 did you use a comp and profile of the business opportunity? Opportunities must be posted or <u>6.3.2.c.5</u> ) Documentation of the procurement process is required in the v	petitive process that is a n BC Bid or at least thre working file.	appropriate to the value, complexity ee quotes must be obtained. ( <u>CPPM</u>				
3.	For all contracts under \$25,000, did you compete to the extent reasonable	le and cost-effective?	Documentation is required in the file.			$\boxtimes$	
4.	If a pre-qualification list of contractors was used, was the contract awarded through a competitive process as described in the list (for contracts over \$75,000, the opportunity must go to all vendors on the list) ? (CPPM 6.3.2,c,4)					$\boxtimes$	
5.	If the General Services Agreement or approved construction template was not used, did you obtain Legal Services and Risk - <u>Management</u> approval? <b>Documentation of approval must be kept in the contract file.</b> (CPPM 6.3.3.e.5)						
6.	Does Schedule A clearly identify specific and measurable contract deliv	erables? (CPPM 6.3.6	. <u>c</u> )	$\boxtimes$			
7.	Does <b>Schedule A</b> clearly identify the process the ministry will use to mo of reporting requirements)? ( <u>CPPM 6.3.6.c</u> )	nitor the contractor's p	erformance (e.g. frequency & format	$\boxtimes$			
8.	If sub-contractors will be providing any services, are they identified in So	hedule C?				$\boxtimes$	
9.	Has a Certificate of Insurance been requested confirming all applicable i	nsurance as required in	n Schedule D? ( <u>CPPM 6.3.3.e.11</u> )	$\boxtimes$			
10.	Will the contract be signed by <b>both</b> parties before the start date of the co	ontract (the contractor r	must sign first)? ( <u>CPPM 6.3.3.e.2</u> )	$\boxtimes$			
11.	Is the contract written in the <b>legal</b> name of the contractor (do not write th an organization)? ( <u>CPPM 6.3.3.e.3</u> )	e contract in the name	of an individual if the contract is with	$\boxtimes$			
	BEST PRACTICES CHE	CKLIST					
1.	If a contractor is ineligible for WCB (including Personal Optional Protecti	on), has the EA given a	approval to proceed?			$\boxtimes$	
2.	If the contract crosses fiscal years, does Schedule A include language that work must not proceed in the new fiscal year until you have confirmed appropriation?					$\boxtimes$	
3.	Has a WorkSafe BC (WCB) clearance letter been obtained for inclusion in the contract file?					$\boxtimes$	
4.	4. For contracts including travel expenses, have you attached the per diem rates as an appendix and referenced the appendix in Schedule B?						
QUALIFIED RECIEVER/ CONTRACT MONITOR       EXPENSE AUTHORITY (if required) email approval acceptable       EXECUTIVE APPROVAL (if approval acceptable         Much       Much       Much       Executive approval acceptable         Signature       Much       Much       Signature					d) er Date	nail :	
PRINT NAME KOlchals 20/2012 PRINT NAME GLON UKrainer Dazoliz PRINT NAME							

## PART C - MODIFICATIONS

(Complete for modifications of an existing contract only if there is an increase to the dollar value or if the contract is being extended into another fiscal year – See Instructions)

CONTRACT NUMBER:

MODIFICATION #:

**REASON FOR MODIFICATION:** 

ORIGINAL CONTRACT TOTAL	\$			
PREVIOUS CONTRACT TOTAL:	\$ 	 	 	
	\$ 	 	 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	
NEW CONTRACT TOTAL:	\$ 	 	 	

PREVIOUS CONTRACT TERM:	From:	То:
NEW CONTRACT TERM:	From:	То:

	CORE POLICY COMPLIANCE - MODIFICATIONS (See instructions)	Y	Ν	N/A
1.	Is the existing contract still open? Contracts cannot be modified after they have expired. CPPM 6.3.2.a.11			
2.	Does the modification format comply with the <u>Modification Agreement</u> and the clauses as stated in <u>CPPM</u> 6.3.3.e.9?			

## BEST PRACTICES CHECKLIST

3.	The modification amount(s) must be added to the original amount of the contract to determine the new total for approval requirements. Has the appropriate expense authority approved the Modification Agreement?		
4.	Is the modification compliant with the terms of the contract solicitation process (RFP etc.) or within 20% of original value? If no, include documentation to explain why the opportunity has not been offered to other vendors.		
5.	If this contract has been modified more than twice, have you included documentation to explain why the opportunity has not been offered to other vendors?		

EXPENSE AUTHORITY APPROVAL email approval a	acceptable	EXECUTIVE APPROVAL (if required) email	approval acceptable
Signature	Date	Signature	Date
		PRINT NAME	
PRINTNAME			

#### FOOTNOTES FOR CODE DESCRIPTIONS

#### Procurement Process DFF - List of Values

#### Code Description

- 100 Open competitive process: An open competitive process (e.g., Invitation to Quote, Request for Proposal, Joint Solution Procurement, invitation to Tender, or other) has been utilized, normally by advertising the opportunity on BC Bid. Core policy requires an open competitive process for amounts over \$75,000.
- 200 Direct Award Public sector organization: Contracts for acquisitions (of goods, services, and construction) and disposals may be negotiated and directly awarded without competitive process where the contract is with another government organization.
- 201 Direct Award Sole source: Contracts for acquisitions (of goods, services, and construction) and disposals may be negotiated and directly awarded without competitive process where the ministry can strictly prove that only one contractor is qualified to provide the goods, services or construction or is capable of engaging in a disposal opportunity.
- 202 Direct Award Emergency: Contracts for acquisitions (of goods, services, and construction) and disposals may be negotiated and directly awarded without competitive process where an unforeseeable emergency exists and the goods, services or construction could not be obtained in time by means of a competitive process.
- 203 Direct Award Security, order, etc.: Contracts for acquisitions (of goods, services, and construction) and disposals may be negotiated and directly awarded without competitive process where a competitive process would interfere with a ministry's ability to maintain security or order or to protect human, animal or plant life or health.
- 204 Direct Award Confidentiality: Contracts for acquisitions (of goods, services, and construction) and disposals may be negotiated and directly awarded without competitive process where the acquisition is of a confidential or privileged nature and disclosure through an open bidding process could reasonably be expected to compromise government confidentiality, cause economic disruption or be contrary to the public interest.
- 205 Direct Award Notice of Intent: A Notice of Intent must be posted on BC Bid when a contract for goods valued at more than \$10,000, or a contract for services or construction valued at more than \$50,000, is to be directly awarded on the basis that there is only one vendor that can provide the services required
- 206 Direct Award No justification: Where a direct award has been made which is not justified under one of the exceptional conditions specified in the Core Policy Manual section 6.3.3 a (1), or a Notice of Intent has not been issued, or it is provided for under another policy.
- 207 Direct Award Under \$25,000 Contracts for acquisitions may be negotiated and directly awarded without competitive process where the value is less than \$25,000 for services and construction or less than \$10,000 for goods, and it is not reasonable or cost effective to openly compete the acquisition.
- 300 Direct Invitation to selected vendors: A competitive solicitation which is issued to a limited list of vendors and not advertised on BC Bid.
- 400 Selected vendor from pre-qualification list: A contract that is issued to a vendor on a pre-qualification list without undertaking a competitive process.
- 401 Competition among vendors on a pre-qualification list: A competitive solicitation which is issued to a limited list of vendors selected from a pre-qualification list.
- 500 Purchase from a Corporate Supply Arrangement: A purchase from a pre-established corporate supply arrangement such as a MSO, SO, the Queen's Printer or other as identified in <u>CPPM 6.3.2 a (1)</u>.
- 600 Other Purchase Process: Other recognized procurement process, such as the purchase card.
- 601 Other Continuing Agreements: For second and subsequent years of multi-year agreements.
- 602 Other Transfer Under Agreement: For grants (both Conditional and Unconditional), Transfers and Entitlements.

#### Agreement on Internal Trade DFF - List of Values

#### Code Description

- 100 Purchase subject to AIT: The purchase is over the AIT thresholds (\$25K for goods and \$100K for services and construction) and is not excluded or exempted under any other provision of the AIT or other category below.
- 200 Purchase below applicable AIT threshold: The purchase is under the AIT thresholds (\$25K for goods and \$100K for services and construction).
- 300 Purchase of an exempted commodity/service: The purchase is for goods, services or construction that is exempted from coverage of the AIT by virtue of its specific reference in Chapter 5 of the agreement (e.g., health and social services).
- 400 Excluded Emergency: A purchase where an unforeseeable situation of urgency exists and the goods, services or construction cannot be obtained in time by means of an open procurement.
- 500 Excluded Security, order, etc.: A purchase where compliance with the open tendering provisions set out in Chapter 5 of the AIT would interfere with the Province's ability to maintain security or order or to protect human, animal or plant life or health.
- 600 Excluded Product compatibility/exclusive rights: A purchase which must: ensure compatibility with existing products; recognize exclusive rights, such as exclusive licenses, copyright and patent rights; or maintain specialized products that must be maintained by the manufacturer or its representative.
- 700 Excluded Procurement of prototype: The procurement of a prototype or a first good or service to be developed in the course of and for a particular contract for research, experiment, study or original development, but not for any subsequent purchases.
- 800 Excluded Regional/Economic development: A purchase which, under exceptional circumstances, may be excluded by the Province from the application of Chapter 5 of the AIT for regional and economic development purposes.

#### Code Descriptions for STOB 60, 61, and 63

The following definitions are to be used to classify contracts in STOBs 60, 61, and 63 which fall into the categories listed. If the contract does not fit into one of these broad categories, it should be excluded from the analysis. If the contract falls into more than 1 category, choose the predominant category.

Recoverable contracts should be identified as such and will be excluded from the information submitted to central agencies if submission is required.

GMA (General Management Advice) - Contracts providing information for, or advice on, the planning and/or management of programs.

HR/LR (Human Resources & LR) - Contracts providing Human Resources services or human resource related services such as coaching/facilitation and organizational design.

IT (IT Consulting) - Consulting services related to information technology. This would include contracts consulting on systems development or management of systems. It would not include the work done to develop the system, writing code, data entry etc.

PRA (Policy, Research and Analysis) – Contracts providing planning services that contribute to or recommend policy, or consultation on policy issues; contracts that provide research and analysis to advise in program management.

PM (Project Management) - Contracts where an external project manager is hired to run a project or facilitate activities.

COM (Communications) - Contracts proving professional services related to the planning writing, preparation or distribution of communications

BSA (Business Support & Administrative) - Contracts where administrative support is supplied such as administrative service, filing, cataloguing, records administration, etc. Also includes Secretariat support services.

OP (Operational) – Contracts where non consulting type work is being performed that is performing a service that does not fit into one of the categories above. Examples include data entry, building fences, maintenance activities, writing and delivery of training program

OTH (Other) - Contracts which do not fall into any of the above categories.

k

# ORACLE' iProcurement

Shopping Cart Home Logout Preferences

Shop Requisitions Receiving

## Confirmation

Requisition 22099 has been submitted to OKRAINETZ, GLEN for approval.

To check on this requisition's status, click on the Requisitions tab or look in My Requisitions on the Shop page.

(Continue Shopping)

Shop | Requisitions | Receiving | Shopping Cart | Home | Logout | Preferences Copyright (c) 2006, Oracle. All rights reserved.



## MODIFICATION AGREEMENT

Min Contract No.: **GS12EPD-132** Resp: 2941F Serv. Line: 30534 Stob: 60 Project: 2900000 WCB No.: Modification No.: 1

BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by

#### **Ministry of Environment**

(the "Province", "we", "us" or "our", as applicable)

AND

#### Mustel Research Group

(the "Contractor", "you" or "your" as applicable)

#### BACKGROUND

- A. The parties entered into an agreement dated 16<sup>th</sup> January, 2012, contract number GS12EPD-132, for an inventory of wood-burning appliance use in British Columbia
- B. The parties have agreed to modify the Agreement.

#### AGREEMENT

The parties agree as follows:

- 1) Schedule A is modified as follows:
  - a) 60 additional wood burning users will be surveyed in the Cranbrook-Kimberley sub-region
  - b) 90 additional wood burning users will be surveyed in the Buikley Valley Lakes District airshed sub-region
     c) Princeton will be added as a new sampling sub-region. Within that sub-region 70 wood-burning users and
  - 30 non users will be surveyed
  - d) The results of the additional surveys will be added to the databases and reports specified in Schedule A
- 2) Schedule B is modified as follows:
  - a) Section 1 "Maximum Amount Payable" is increased by \$17500 from \$57450 to \$74950
  - b) Section 2 "Fees" is increased by \$17500 from \$57450 to \$74950
- 3) In all other respects, the Agreement is confirmed,

SIGNED AND DELIVERED on the 2nd day of March, 2012 on behalf of the Province by its duly authorized representative:

10my Wakel SIGNATURE

(FOR GUEN OFRAINETZ)

PRINT NAME Glen Okrainetz

SIGNED AND DELIVERED on the 2<sup>nd</sup> day of March, 2012 by or on behalf of the Contractor (or by its authorized signatories if the Contractor is a corporation):

E- Mustel En: Mostel SIGNATURE PRINT NAME

# **GENERAL SERVICE AGREEMENT**



For Administrative Purposes Only				
Ministry Contract No.: <u>PA12CAS-009</u>	Financial Information			
Solicitation No.:	Client.	048		
Commoditu Code:	Responsibility Centre:	29907		
	Service Line:	30355		
Contractor Information	STOB:	6001		
	Project:	2900000		
Supplier Name: Peters Sharp Consulting Inc.				
Supplier No.: 2333327 & #/				
Telephone No.: (604) 880-7047				
Email Address: Jotham@naviusresearch.com				
Website:				

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#### **SCHEDULE A – SERVICES**

Part 1 - Term Part 2 - Services Part 3 - Related Documentation Part 4 - Key Personnel

SCHEDULE B – FEES AND EXPENSES

Part 1 - Maximum Amount Payable Part 2 - Fees Part 3 - Expenses Part 4 - Statements of Account Part 5 - Payments Due Part 6 - Goods and Services Tax

SCHEDULE C - APPROVED SUBCONTRACTOR(S)

SCHEDULE D – INSURANCE

SCHEDULE E – PRIVACY PROTECTION SCHEDULE

SCHEDULE F – ADDITIONAL TERMS

SCHEDULE G – SECURITY SCHEDULE

THIS AGREEMENT is dated for reference the 30th day of September, 2011.

#### BETWEEN:

```
Peters Sharp Consulting Inc. with the following specified address and fax number:
450 East 10<sup>th</sup> Avenue, Vancouver, B.C. - See attached for new address.
V5T 2A1
Fax:
```

#### AND:

<u>HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA</u>, as represented by Minister of Environment (the "Province") with the following specified address and fax number:

Climate Action Secretariat 2<sup>nd</sup> Floor, 395 Waterfront Crescent, Victoria V8W 9W6 Fax: (250) 356-7286

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

#### 1 DEFINITIONS

#### General

- 1.1 In this Agreement, unless the context otherwise requires:
  - (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
  - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
  - (c) "Material" means the Produced Material and the Received Material;
  - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
  - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
  - (f) "Services" means the services described in Part 2 of Schedule A;
  - (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
  - (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

#### 2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Term

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.

#### Standard of care

2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

Finance & Admin. Services Branch 2nd Floor – 2975 Jutland Rd. Victoria, B.C. Fax # 356-5358

Nov 1/2011

Request for Vendor:

Peters Sharp Consulting Inc 520-580 Hornby Street Vancouver, B.C. V6C 3B6

Thanks Robin 387-9976

### 3 PAYMENT

#### Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
  - (a) the fees described in that Schedule, plus any applicable taxes; and
  - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services.

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

#### Statements of accounts

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

#### Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

#### Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

#### Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

#### Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

#### Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

#### Refunds of taxes

3.8 The Contractor must apply for and, immediately on receipt, remit to the Province any available refund, rebate or remission of federal or provincial tax or duty that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement.

#### 4 **REPRESENTATIONS AND WARRANTIES**

- 4.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
  - (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,
    - (i) all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and
    - (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
  - (b) if the Contractor is not an individual,
    - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
    - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

### 5 PRIVACY, SECURITY AND CONFIDENTIALITY

Privacy

5.1 The Contractor must comply with the Privacy Protection Schedule attached as Schedule E.

#### Security

- 5.2 The Contractor must:
  - (a) make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration or disposal; and
  - (b) comply with the Security Schedule attached as Schedule G.

#### Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
  - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
  - (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
  - (c) if it is information in any Incorporated Material.

#### Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

#### Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

#### 6 MATERIAL AND INTELLECTUAL PROPERTY

#### Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

Matters respecting intellectual property

- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
  - (a) Received Material that the Contractor receives from the Province; and
  - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

- 6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:
  - (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify and distribute that Incorporated Material; and
  - (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

#### 7 RECORDS AND REPORTS

Work reporting

7.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

#### 8 AUDIT

8.1 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

#### 9 INDEMNITY AND INSURANCE

Indemnity

9.1 The Contractor must indemnify and save harmless the Province and the Province's employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

#### Insurance

9.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

#### Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.

#### Personal optional protection

- 9.4 The Contractor must apply for and maintain personal optional protection insurance (consisting of income replacement and medical care coverage) during the Term at the Contractor's expense if:
  - (a) the Contractor is an individual or a partnership of individuals and does not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* or similar laws in other jurisdictions; and
  - (b) such personal optional protection insurance is available for the Contractor from WorkSafeBC or other sources.

#### Evidence of coverage

9.5 Within 10 Business Days of being requested to do so by the Province, the Contractor must provide the Province with evidence of the Contractor's compliance with sections 9.3 and 9.4.

#### 10 FORCE MAJEURE

Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
  - (a) "Event of Force Majeure" means one the following events:
    - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
    - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
    - (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
    - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

Duties of Affected Party

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and inake all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

### 11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
  - (a) "Event of Default" means any of the following:
    - (i) an Insolvency Event,
    - (ii) the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
    - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and
  - (b) "Insolvency Event" means any of the following:
    - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
    - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
    - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by the Contractor,
    - (iv) a compromise or arrangement is proposed in respect of the Contractor under the *Companies' Creditors Arrangement Act* (Canada),
    - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or

(vi) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
  - (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

Delay not a waiver

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' written notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
  - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to address, or Default must specify the steps the Contractor proposes to take to address.

#### 12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
  - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
  - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
  - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

#### 13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
  - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

#### Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

#### Assignment

13.3 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.

#### Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
  - (a) any person retained by the Contractor to perform obligations under this Agreement; and
  - (b) any person retained by a person described in paragraph (a) to perform those obligations

fully complies with this Agreement in performing the subcontracted obligations.

#### Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

#### Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

#### Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

#### Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.

#### Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

#### Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
  - (a) an employee or partner of the Province; or
  - (b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

#### Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

#### Time

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

#### Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
  - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, attached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
  - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

#### Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

### Remainder not affected by invalidity

13.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

#### Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

#### Governing law

13.21 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

### 14 INTERPRETATION

- 14.1 In this Agreement:
  - (a) "includes" and "including" are not intended to be limiting;
  - (b) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
  - (c) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
  - (d) "attached" means attached to this Agreement when used in relation to a schedule;
  - (e) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
  - (f) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
  - (g) "person" includes an individual, partnership, corporation or legal entity of any nature; and
  - (h) unless the context otherwise requires, words expressed in the singular include the plural and *vice versa*.

#### 15 EXECUTION AND DELIVERY OF AGREEMENT

15.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

4 SIGNED on the 12 day of SIGNED on the day of \_\_, 20<u>\(</u> by the Uctober aber 20 H on behalf of the Contractor (or, if not an individual, Province on its behalf by its authorized by its duly authorized representative: signatory or signatories): Signature lature(s) THES () other Print Name(s) Print Name Print Title(s) Print Title

#### Schedule A – Services

#### PART 1. TERM:

1. The term of this Agreement commences on September 30, 2011 and ends on March 31, 2012.

#### PART 2. SERVICES:

#### Outputs

#### THE CONTRACTOR MUST:

- 1. Undertake and complete, for the duration of the contract, Work Orders (see template attached as Appendix A) as, if and when requested by the Province.
- 2. Not exceed the budget amount specified in the Work Order, including compliance with all budget restrictions identified in the Work Order, unless approved, in advance, in writing by the Province.
- 3. Prior to commencing work on a Work Order, contact the designated Contract Monitor to develop an implementation plan in consultation with the Contract Monitor. Each implementation plan must include:
  - The name of the project representative assigned by the Contractor;
  - The manner in which the work is to be carried out and the means to be employed in completing the Work Order;
  - An estimate of the cost and breakdown of expenditure types for the Work Order, including the names and projected work hours for each resource; and,
  - A timeframe for milestones and completion.
- 4. Obtain written approval from the Contract Monitor before commencing any work.
- 5. Liaise with the Contract Monitor and others if identified, to monitor progress, resolve issues, successfully deal with conflicts and complete quality control.
- 6. Provide all deliverables and research by email to the Contract Monitor in approved formats, and up to 12 (twelve) hard copies of final material, if requested; Additional notes and information may also be required to back up the reports.
- 7. Provide an update on the Work Order activities to date, either in writing or orally, when requested to do so by the Province, within 2 (two) business days of the request.
- 8. Provide services in streams of activities within Work Order scope including but not limited to:
  - Holding a kick off meeting to ensure that they clearly understand the Province's expectations for the contractor's services.
  - Fulfilling the tasks listed within the Work Order that both parties agree to, that defines the delivery schedule, staff and materials for each of following tasks:
    - Incorporate BC-specific input from the industry engagement process on economic modeling assumptions and utilize it to develop Report #1 that updates assumptions and the environmental and economic effects (including GHG emissions, GDP, jobs, net exports, government revenue, physical demand of products, and tax and energy costs for households and industry) on the province as a whole and individual sectors (including forestry, manufacturing, lime, cement, smelting, mining, electricity and oil and gas)
    - Develop Report # 2 that summarizes the economic modeling of different cap and trade allocation scenarios and other carbon pricing scenarios' environmental and economic effects (including GHG emissions, GDP, jobs, net exports, government revenue, physical demand of products, and tax and energy costs for households and industry) on the province as a whole and on individual sectors (see list of sectors above). The contractor will work with the Secretariat to develop an approach to assessing competitiveness for each sector of interest as listed above. This report must identify which sectors may have

competitiveness challenges under cap and trade and/or carbon pricing that could lead to carbon leakage.

- Develop a report summarizing the economic modeling of other climate policy actions' (see list in Work Order) economic and environmental effects (including GHG emissions, GDP, jobs, net exports, government revenue, physical demand of products, and tax and energy costs for households and industry upon the Province as a whole and the uncapped sectors of the economy (including agriculture, waste and transportation).
- Cooperate with an assigned third party reviewer in their assessment of the validity and accuracy of the inputs, outputs and assumptions of the economic analysis. This will include ensuring access to the data, assumptions and formulas that are incorporated into the economic model.

#### Outcomes

Through the delivery of the Services the Province wishes to realize the following outcomes and, without limiting the obligation of the Contractor to comply with other provisions of this Part, the Contractor must use commercially reasonable efforts to achieve them:

Based on the extensive body of economic analysis on BC's climate policy's effect on the provincial economy and emission levels, this project will begin a new phase of modeling for BC's climate policy. This study will forecast potential economic effects of different cap and trade allocation scenarios and carbon pricing policies on those sectors that are capped and those that are uncapped under a cap and trade program.

The parties acknowledge that the Contractor does not warrant that these outcomes will be achieved

#### **Reporting requirements**

The contractor must submit, via email to the Province:

- All deliverables and research by e-mail to the contract monitor in approved formats, and in hard copy, if requested. Additional notes and information may also be required to back-up the reports.
- An update on the Work Order activities to date, either in writing or orally, when requested to do so by the Province, within 2 (two) business days of the request.

Advise the designated Contract Monitor, wherever possible within 72 hours, of any unusual or unexpected developments or complications in respect of the Services.

#### PART 3. RELATED DOCUMENTATION:

- 1. The Contractor must perform the Services in accordance with the obligations set out in this Schedule A including any engagement letter, Solicitation document excerpt, proposal excerpt or other documentation attached as an Appendix to, or specified as being incorporated by reference in, this Schedule.
- The following are Appendices to this Schedule A: Work Order Template

ATTACHED as Appendix A

#### PART 4. KEY PERSONNEL:

- 1. The Key Personnel of the Contractor are as follows:
  - (a) Jotham Peters, Senior Managing Partner/Director
  - (b)
  - (C)

2.

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The Key Personnel of the Ministry are as follows:(a) The Contract Monitor in respect of this Agreement is Hurrian Peyman, unless an alternate is assigned by the Province.

The Financial Monitor in respect of this Agreement is Denise Moreau, unless an alternate is (b) assigned by the Province.

#### Schedule B – Fees and Expenses

#### 1. MAXIMUM AMOUNT PAYABLE:

<u>Maximum Amount</u>: Despite sections 2 and 3 of this Schedule, \$55,000 is the maximum amount which the Province is obliged to pay to the Contractor for fees (exclusive of applicable taxes) and expenses under this Agreement.

#### 2. FEES:

#### Rate per Work Order

Fees: at the amount defined in the Work Order for each Work Order completed by the Contractor as Services during the Term

#### 3. EXPENSES:

Expenses: None

#### 4. STATEMENTS OF ACCOUNT:

<u>Statements of Account</u>: In order to obtain payment of any fees and expenses under this Agreement for deliverables listed in the Work Order, the Contractor must deliver to the Province a written statement of account in **a** form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement, and the Work Order to which the statement pertains;
- (c) the Contractor's calculation of all fees claimed for that Work Order, including a declaration by the Contractor of all deliverables provided under the Work Order for which the Contractor claims fees and a description of the applicable fee rates;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor for the Work Order with receipts attached, if applicable;
- (e) the Contractor's calculation of any applicable taxes payable by the Province in relation to the Services for the Work Order;
- (f) a description of this Agreement;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

#### 5. PAYMENTS DUE:

**Payments Due**: Within 30 days of our receipt of your written statement of account delivered in accordance with this Schedule, we must pay you the fees (plus all applicable taxes) and expenses, claimed in the statement if they are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by us as required to obtain the discount.

Schedule C – Approved Subcontractor(s)

Not applicable

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#### Schedule D – Insurance

- 1. The Contractor must, without limiting the Contractor's obligations or liabilities and at the Contractor's own expense, purchase and maintain throughout the Term the following insurances with insurers licensed in Canada in forms and amounts acceptable to the Province:
  - (a) Commercial General Liability in an amount not less than \$2,000,000.00 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this Agreement and this insurance must
    - (i) include the Province as an additional insured,
    - (ii) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change, and
    - (iii) include a cross liability clause;
- 2. All insurance described in section 1 of this Schedule must:
  - (a) be primary; and
  - (b) not require the sharing of any loss by any insurer of the Province.
- 3. The Contractor must provide the Province with evidence of all required insurance as follows:
  - (a) within 10 Business Days of commencement of the Services, the Contractor must provide to the Province evidence of all required insurance in the form of a completed Province of British Columbia Certificate of Insurance;
  - (b) if any required insurance policy expires before the end of the Term, the Contractor must provide to the Province within 10 Business Days of the policy's expiration, evidence of a new or renewal policy meeting the requirements of the expired insurance in the form of a completed Province of British Columbia Certificate of Insurance; and
  - (c) despite paragraph (a) or (b) above, if requested by the Province at any time, the Contractor must provide to the Province certified copies of the required insurance policies.
- 4. The Contractor must obtain, maintain and pay for any additional insurance which the Contractor is required by law to carry, or which the Contractor considers necessary to cover risks not otherwise covered by insurance specified in this Schedule in the Contractor's sole discretion.

#### Schedule E – Privacy Protection Schedule

#### Definitions

- 1. In this Schedule,
  - (a) "access" means disclosure by the provision of access;
  - (b) "Act" means the Freedom of Information and Protection of Privacy Act (British Columbia);
  - (c) "contact information" means information to enable an individual at a place of business to be contacted and includes the name, position name or title, business telephone number, business address, business email or business fax number of the individual;
  - (d) "personal information" means recorded information about an identifiable individual, other than contact information, collected or created by the Contractor as a result of the Agreement or any previous agreement between the Province and the Contractor dealing with the same subject matter as the Agreement but excluding any such information that, if this Schedule did not apply to it, would not be under the "control of a public body" within the meaning of the Act.

#### Purpose

- 2. The purpose of this Schedule is to:
  - (a) enable the Province to comply with the Province's statutory obligations under the Act with respect to personal information; and
  - (b) ensure that, as a service provider, the Contractor is aware of and complies with the Contractor's statutory obligations under the Act with respect to personal information.

#### Collection of personal information

- 3. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor may only collect or create personal information that is necessary for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.
- 4. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must collect personal information directly from the individual the information is about.
- 5. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must tell an individual from whom the Contractor collects personal information:
  - (a) the purpose for collecting it;
  - (b) the legal authority for collecting it; and
  - (c) the title, business address and business telephone number of the person designated by the Province to answer questions about the Contractor's collection of personal information.

#### Accuracy of personal information

6. The Contractor must make every reasonable effort to ensure the accuracy and completeness of any personal information to be used by the Contractor or the Province to make a decision that directly affects the individual the information is about.

#### Requests for access to personal information

7. If the Contractor receives a request for access to personal information from a person other than the Province, the Contractor must promptly advise the person to make the request to the Province unless the Agreement expressly requires the Contractor to provide such access and, if the Province has advised the Contractor of the name or title and contact information of an official of the Province to whom such requests are to be made, the Contractor must also promptly provide that official's name or title and contact information to the person making the request.

#### Correction of personal information

- 8. Within 5 Business Days of receiving a written direction from the Province to correct or annotate any personal information, the Contractor must correct or annotate the information in accordance with the direction.
- 9. When issuing a written direction under section 8, the Province must advise the Contractor of the date the correction request to which the direction relates was received by the Province in order that the Contractor may comply with section 10.
- 10. Within 5 business days of correcting or annotating any personal information under section 8, the Contractor must provide the corrected or annotated information to any party to whom, within one year prior to the date the correction request was made to the Province, the Contractor disclosed the information being corrected or annotated.
- 11. If the Contractor receives a request for correction of personal information from a person other than the Province, the Contractor must promptly advise the person to make the request to the Province and, if the Province has advised the Contractor of the name or title and contact information of an official of the Province to whom such requests are to be made, the Contractor must also promptly provide that official's name or title and contact information to the person making the request.

#### Protection of personal information

12. The Contractor must protect personal information by making reasonable security arrangements against such risks as unauthorized access, collection, use, disclosure or disposal, including any expressly set out in the Agreement.

#### Storage and access to personal information

13. Unless the Province otherwise directs in writing, the Contractor must not store personal information outside Canada or permit access to personal information from outside Canada.

#### Retention of personal information

14. Unless the Agreement otherwise specifies, the Contractor must retain personal information until directed by the Province in writing to dispose of it or deliver it as specified in the direction.

#### Use of personal information

15. Unless the Province otherwise directs in writing, the Contractor may only use personal information if that use is for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.

#### Disclosure of personal information

- 16. Unless the Province otherwise directs in writing, the Contractor may only disclose personal information inside Canada to any person other than the Province if the disclosure is for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.
- 17. Unless the Agreement otherwise specifies or the Province otherwise directs in writing, the Contractor must not disclose personal information outside Canada.

#### Notice of foreign demands for disclosure

- 18. In addition to any obligation the Contractor may have to provide the notification contemplated by section 30.2 of the Act, if in relation to personal information in the custody or under the control of the Contractor, the Contractor:
  - (a) receives a foreign demand for disclosure;
  - (b) receives a request to disclose, produce or provide access that the Contractor knows or has reason to suspect is for the purpose of responding to a foreign demand for disclosure; or
  - (c) has reason to suspect that an unauthorized disclosure of personal information has occurred in response to a foreign demand for disclosure

the Contractor must immediately notify the Province and, in so doing, provide the information described in section 30.2(3) of the Act. In this section, the phrases "foreign demand for disclosure" and "unauthorized disclosure of personal information" will bear the same meanings as in section 30.2 of the Act.

#### Notice of unauthorized disclosure

19. In addition to any obligation the Contractor may have to provide the notification contemplated by section 30.5 of the Act, if the Contractor knows that there has been an unauthorized disclosure of personal information in the custody or under the control of the Contractor, the Contractor must immediately notify the Province. In this section, the phrase "unauthorized disclosure of personal information" will bear the same meaning as in section 30.5 of the Act.

#### Inspection of personal information

20. In addition to any other rights of inspection the Province may have under the Agreement or under statute, the Province may, at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect any personal information in the possession of the Contractor or any of the Contractor's information management policies or practices relevant to the Contractor's management of personal information or the Contractor's compliance with this Schedule, and the Contractor must permit and provide reasonable assistance to any such inspection.

#### Compliance with the Act and directions

- 21. The Contractor must in relation to personal information comply with:
  - (a) the requirements of the Act applicable to the Contractor as a service provider, including any applicable order of the commissioner under the Act; and
  - (b) any direction given by the Province under this Schedule.
- 22. The Contractor acknowledges that it is familiar with the requirements of the Act governing personal information that are applicable to it as a service provider.

#### Notice of non-compliance

23. If for any reason the Contractor does not comply, or anticipates that it will be unable to comply, with a provision in this Schedule in any respect, the Contractor must promptly notify the Province of the particulars of the non-compliance or anticipated non-compliance and what steps it proposes to take to address, or prevent recurrence of, the non-compliance or anticipated non-compliance.

#### **Termination of Agreement**

24. In addition to any other rights of termination which the Province may have under the Agreement or otherwise at law, the Province may, subject to any provisions in the Agreement establishing mandatory cure periods for defaults by the Contractor, terminate the Agreement by giving written notice of such termination to the Contractor, upon any failure of the Contractor to comply with this Schedule in a material respect.

#### Interpretation

- 25. In this Schedule, references to sections by number are to sections of this Schedule unless otherwise specified in this Schedule.
- 26. Any reference to the "Contractor" in this Schedule includes any subcontractor or agent retained by the Contractor to perform obligations under the Agreement and the Contractor must ensure that any such subcontractors and agents comply with this Schedule.
- 27. The obligations of the Contractor in this Schedule will survive the termination of the Agreement.
- 28. If a provision of the Agreement (including any direction given by the Province under this Schedule) conflicts with a requirement of the Act or an applicable order of the commissioner under the Act, the conflicting provision of the Agreement (or direction) will be inoperative to the extent of the conflict.
- 29. The Contractor must comply with the provisions of this Schedule despite any conflicting provision of this Agreement or, subject to section 30, the law of any jurisdiction outside Canada.
- 30. Nothing in this Schedule requires the Contractor to contravene the law of any jurisdiction outside Canada unless such contravention is required to comply with the Act.

## Schedule F – Additional Terms

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Not applicable
## Schedule G – Security Schedule

Not applicable

## Appendix A: Work Order Template

Work Order Number	
Work Order Title	
Work Order Purpose	
Contract Number	
Work Order Monitor	
Contractor	
Project Representative	

#### **Deliverables & Timeline**

Deliverable	Description/Milestone	Target Date
А		
В		
С		

**Resources & Budget** 



October 20, 2011

Re: Contract PA12CAS-009

To Whom It May Concern

This is to notify you that Hurrian Peyman will no longer be the Ministry's Contract Monitor for Contract PA12CAS-009 as of October 20, 2011. He will be replaced by Laura Lapp. She can be contacted by phone at 250 953-4884 or by email at laura.lapp@gov.bc.ca.

If you have any questions about this contract in the future, please contact Laura Lapp.

Sincerely,

Hurrian Peyman Low Carbon Analyst Climate Action Secretariat (250) 356-7015

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# **REQUEST TO CONTRACT**

## PART A – PLANNING (See Instructions)

DIVISION/BRANCH Climate Act	on Secretariat	LOCATION/ REGION:	Victoria					
PROJECT TITLE: Climate Action Business CaseEconomic Analysis of Different Allocation Systems' Impact on BC's Sectors								
CONTRACT MANAGER/MONITOR NAME:	Hurrian Peyman Laura LA	ρρ	PHONE:	250 356-7015				
DESCRIBE THE LOCATION/SERVICES/PURPOSE OF NEED:	In April, 2011 the C Climate Action Se different emission including the com under the propose This economic and province's GDP, e	Cabinet committee of Plar cretariat to perform an ec allowance allocation sys petitiveness of those sec ed cap and trade program alysis would also determi mployment and governm	nning and Pri onomic analy tems on BC's tors that are and those th ne each syst ent revenue.	orities directed the ysis on the impact of s overall economy capped and uncapped at could provide offsets. em's impacts on the				
WHY CAN EXISTING STAFF RESOURCES NOT FILL THE NEED?	CAS lacks the soft for the project. The perspective on the competitiveness in	tware and resources to rune province will also bene e different emission alloca mpact.	in the input/o fit from havin ation systems	utput analysis necessary ng an external independent s' economic and				
DESCRIBE THE IMPACT ON PROGRAM DELIVERY IF NOT APPROVEDWithout approval, we will be unable to fulfill Cabinet Direction. An incomplete study will limit the effectiveness of offsets and the proposed Cap & Trade program.								
CO	RE POLICY COMPL	IANCE CHECKLIST		Y N n/a				
1. If a <u>Corporate Supply Arrangement</u> ( <u>CPPM 6.3.2.c.2</u> )	(CSA) is available, are	the goods or services being p	urchased throu	gh the CSA? □ □ ⊠				
2. For service contracts over \$100,00 and include in the contract file. (CP	0, has a Cost Benefit Ju <u>PM 6.3.1.5</u> )	ustification (CBJ) been prepare	ed? If yes, attac	h the CBJ				
<ul> <li>If this contract is being direct award</li> <li>months from previous expiry date),</li> <li>combined total of the contracts. Has</li> </ul>	led to a contractor that the new contract must as the appropriate expe	has been used for similar work be approved by an expense a nse authority approved the con	in the previous uthority with au ntract? (CPPM	3 months (3 thority for the ⊠ □ □ 6.3.1.4)				
4. Can you confirm this contract does	not constitute an emplo	oyer/employee relationship? (	<u>CPPM 6.3.1.7</u> ).					
	BEST PRACTICE	S CHECKLIST						
1. Has a <u>Risk Assessment</u> been prep	ared to determine the p	ossible need for additional inst	urance requiren	nents?				
PROCURE	MENT PROCESS - S	EE FOOTNOTES FOR COD	E DESCRIPTI	ON				
	SS 204 DI	IRECT AWARD - ONFIDENTIALITY	400	SELECTED VENDOR FROM PRE-QUALIFICATION LIST				
DIRECT AWARD – PUBLIC SECTOR ORG.	205 DI	IRECT AWARD - NOTICE OF	401	COMPETITION AMONG VENDORS ON A PRE- QUALIFICATION LIST				
201 DIRECT AWARD – SOLE SOU		IRECT AWARD NO JSTIFICATION	500	PURCHASE FROM A CORPORATE SUPPLY ARRANGEMENT				
202 DIRECT AWARD - EMERGEN	CY 🗌 207 DI	RECT AWARD - UNDER \$25,000	0 🗌 600	OTHER PURCHASE PROCESS				
203 DIRECT AWARD – SECURITY, ORDER	⊠ 300 DI SE	RECT INVITATION TO ELECTED VENDORS	601	OTHER – CONTINUING AGREEMENTS				
If Direct Award, Contractor's legal pa	ıme <sup>.</sup>	•		······				
Rational for Direct Award to this con	tractor:							
If a Direct Award was selected under past year?	r <u>201,</u> <u>206</u> or <u>207</u> abo	ove, has your program used	these service	s in the Y I N I				
If yes: • Please state the end date of th	e previous contract a	ind the contract value:						
<ul> <li>Please state if the opportunity</li> </ul>	was competitively bid	or direct awarded:						
Will a Direct Award purchase obligat services? (e.g. licensing, maintenan	e government to this ce, etc.)	vendor for future purchases	S OF	Y D N N/A A Part 1 Page 118 MOE-2012-00219				

## PART A CONTINUED - PLANNING

(See Instructions)

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CONTRACT

CONTRACT DETAILS

ANTICIPA	TED TERM OF AGRE	EMENT: FROM D	ATE: September 30, 2011	TO DATE: Mar	ch 31, 2012			
RECOVEF	ABLE? YES	NO 🛛						
RECOVER	RED FROM (FULL NAM OF RECOVERY: \$	<b>ЛЕ</b> ):						
PERCENT	AGE: %				-			
ESTIMATED			NOTE: LEGAL REVIEW IS REQUIRED FOR <u>SERVICE</u> CONTRACTS OVER \$250,000 OR WHEN MODIFICATIONS ARE MADE TO THE APPROVED TEMPLATES.					
CONTRAC	CT:		HAS A LEGAL REVIEW BEEN Y IN N/A X OBTAINED?					
CLIENT	RESPONSIBILITY	SERVICE LINE	STOB	PROJECT	AMOUNT			
048	29907	30355	6001	2900000	\$55000			

	CONTRACT CATEGOR	RY - SEE FOOTNOTES FOR CODE I	DESCRIPTION
GMA		PRA	🗋 BSA
HR/LR		РМ	□ OP
IT		СОМ	

	AIT/TILMA EXCLUSION LIST -	SEE FOOT	NOTES FOR CODE DESCRIPTION	
100	PURCHASE SUBJECT TO AIT	500	EXCLUDED - SECURITY, ORDER, ETC	
200	PURCHASE BELOW APPLICABLE AIT THRESHOLD	600	EXCLUDED – PRODUCT COMPATIBILITY/EXCLUSIVE RIGHTS	
300	PURCHASE OF AN EXEMPTED COMMODITY/SERVICE	700	EXCLUDED – PROCUREMENT OF PROTOTYPE	
400	EXCLUDED - EMERGENCY	800	EXCLUDED REGIONAL /ECONOMIC DEVELOPMENT	

**NOTE:** If your Procurement Process changes to reduce the number of vendors given the opportunity to bid from that indicated in 'Procurement Process' section above, then the EA must approve the change in Part B before awarding the contract. EA approval can be by email as long as this document is included as an attachment to the email from the EA.

Provide details of Procurement Process change:

EXPENSE AUTHORITY APPROVAL email approval acceptable	EXECUTIVE
SIGNATURE DATE	SIGNATURE
PRINT NAME	PRINT NAME

APPROVAL (if required) email approval acceptable ØATÉ TIM LESIUK

÷.	PART B – AWARD (Complete for new contracts only- See Instructions)				
CON	TRACTOR (FULL LEGAL NAME): Peters Sharp Consulting				
CON	TRACTOR'S DOING BUSINESS AS' NAME (IF APPLICABLE):	$\overline{)}$			
	ADDRESS: Jotham@navilueresearch.com WCB NUMBER: N/A see note to file				
EMAI					
	CONFIRMATION OF CONTRACT DETAILS FROM FARTA		N		
If no, t If yes, date e	hen the Qualified Receiver/Contract Monitor is the only approval required below. Expense Authority and Executive approval (if required in Part A) is required for an increase to the dollar value and an end xtending into an additional fiscal year.				
TERI	M OF AGREEMENT: From Date: September 30, 2011 To Date: March 31, 2012				
Total	Value: \$ 55000				
	CORE POLICY COMPLIANCE CHECKLIST	Y	N	N/A	
1.	For service contracts with an aggregate value over \$75,000, inclusive of all potential extensions, did you advertise on <u>BC Bid</u> ? (CPPM 6.3.2.c.4)				
2.	For <u>service</u> contracts between \$25,000 and \$75,000 did you use a competitive process that is appropriate to the value, complexity and profile of the business opportunity? Opportunities must be posted on BC Bid or at least three quotes must be obtained. ( <u>CPPM 6.3.2.c.5</u> ) Documentation of the procurement process is required in the working file.				
3.	For all contracts under \$25,000, did you compete to the extent reasonable and cost-effective? Documentation is required in the file			$\boxtimes$	
4.	If a pre-qualification list of contractors was used, was the contract awarded through a competitive process as described in the list (for contracts over \$75,000, the opportunity must go to all vendors on the list) ? (CPPM 6.3.2.c.4)				
5.	If the General Services Agreement or approved construction template was not used, did you obtain Legal Services and <u>Risk</u> Management approval? Documentation of approval must be kept in the contract file. (CPPM 6.3.3.e.5)				
6.	Does Schedule A clearly identify specific and measurable contract deliverables? (CPPM 6.3.6.c)	$\boxtimes$			
7.	Does Schedule A clearly identify the process the ministry will use to monitor the contractor's performance (e.g. frequency & format of reporting requirements)? (CPPM 6.3.6.c)				
8.	If sub-contractors will be providing any services, are they identified in Schedule C?		·	$\boxtimes$	
9.	Has a Certificate of Insurance been requested confirming all applicable insurance as required in Schedule D? (CPPM 6.3.3.e.11)	$\boxtimes$			
10.	Will the contract be signed by both parties before the start date of the contract (the contractor must sign first)? (CPPM 6.3.3.e.2)	$\boxtimes$			
11.	Is the contract written in the legal name of the contractor (do not write the contract in the name of an individual if the contract is wit an organization)? (CPPM 6.3.3.e.3)				
	BEST PRACTICES CHECKLIST				
1.	If a contractor is ineligible for WCB (including Personal Optional Protection), has the EA given approval to proceed?	$\boxtimes$			
2.	If the contract crosses fiscal years, does Schedule A include language that work must not proceed in the new fiscal year until you have confirmed appropriation?			X	
3.	Has a WorkSafe BC (WCB) clearance letter been obtained for inclusion in the contract file?				
4.	For contracts including travel expenses, have you attached the per diem rates as an appendix and referenced the appendix in			X	
		if require	ed) e	mail	
QUA CON	ITRACT MONITOR		1	/	
Signa	ture Date Signature Date Signature		1 <u>09</u> Dát	1 <u>22</u> e	

## PART C - MODIFICATIONS

# (Complete for modifications of an existing contract only if there is an increase to the dollar value or if the contract is being extended into another fiscal year – See Instructions)

CONTRACT NUMBER:

**MODIFICATION #:** 

**REASON FOR MODIFICATION:** 

ORIGINAL CONTRACT TOTAL	\$
PREVIOUS CONTRACT TOTAL:	\$
MODIFICATION AMOUNT:	\$
NEW CONTRACT TOTAL:	\$

PREVIOUS CONTRACT TERM:	From:	То:
NEW CONTRACT TERM:	From:	То:

	CORE POLICY COMPLIANCE – MODIFICATIONS (See instructions)	Y	N	N/A
1.	Is the existing contract still open? Contracts cannot be modified after they have expired. CPPM 6.3.2.a.11			
2.	Does the modification format comply with the <u>Modification Agreement</u> and the clauses as stated in <u>CPPM</u> 6.3.3.e.9?			

#### BEST PRACTICES CHECKLIST

З.	The modification amount(s) must be added to the original amount of the contract to determine the new total for approval requirements. Has the appropriate expense authority approved the Modification Agreement?		
4,	Is the modification compliant with the terms of the contract solicitation process (RFP etc.) or within 20% of original value? If no, include documentation to explain why the opportunity has not been offered to other vendors.		
5.	If this contract has been modified more than twice, have you included documentation to explain why the opportunity has not been offered to other vendors?		

EXPENSE AUTHORITY APPROVAL email approval acceptable				
Signature	Date			

EXECUTIVE APPROVAL (if required) email approval acceptable
Signature
Date
PRINT NAME

# Notes to file on Peters Sharp Consulting Inc. contract - from Hurrian Reyman.

I spoke with about the contract position on July 18, 2011 about the economic analysis RTC that will be issued to Peters Sharp Consulting Inc. About Box # 1 in Best Practices (Risk assessment), she stated that the conversation that we were having constituted a risk assessment. The only recommendation that she provided is to have a copy of the professional liability insurance with coverage of at least \$1 million. (We already have a copy of their Commercial General Liability). Professional Liability insurance is the same as errors and omissions insurance which we have received from Peters Sharp. I received confirmation from Barbara Burrage that this is equivalent to professional liability insurance.

Since 6 companies were surveyed in an open competition for the previous economic analysis project (RFP 0922-02), only MKJA had the economic and allocation experience necessary for the contract. Since that time, the group of people who owned the intellectual property of the GEEM model split off from MKJA and started Peters Sharp consulting. MKJA was contacted and asked if they could still fulfill the contract within the time and price range. They could not. Since there had been a previous survey of potential vendors and MKJA was also contacted for the contract and the contract was under \$75,000 it was determined that this should be a direct invitation to selected vendors (code 300). Barbara Burrage confirmed this.

Peters Sharp consulting is in the process of securing Errors and Emissions insurance. They have been told by WCB on August 18 or 19<sup>th</sup> that because they had not contract (except one) and no employees they would not be granted a WCB number.

Because they are in the process of hiring employees, they will need to secure a WCB number by September 22<sup>nd,</sup> 2011. They have been notified by email of this on September 8<sup>th</sup>, 2011.

On September 8<sup>th</sup>, Barbara Burrage confirmed that Section 4 or Schedule B of the GSA could be reworded to arrange payment by deliverables as long as the list of essential information is included. She also stated that the full list of employees whose time will be charged within invoices do not need to be included in part 4 of Schedule A of the GSA—only those whose work is required to be included within the project.

Barbara Burrage also stated that the WCB clearance letter should be listed as not applicable if they are unable to secure one by the time of the contract is issued

In an email on September 9<sup>th</sup>, Barbara Burrage clarified that Appendix C should be listed as Not applicable

In a phone call on September 22, Barbara Burrage stated that the checking with multiple businesses constituted a competitive process that is appropriate to the value, completxity and profile of the business opportunity

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# ORACLE iProcurement

Shopping Cart Home Logout Preferences

Shop Requisitions Receiving

Confirmation 21763

Requisition 21757 has been submitted to THIESSEN, LEROY for approval.

To check on this requisition's status, click on the **Requisitions** tab or look in **My Requisitions** on the Shop page.

Continue Shopping)

Shop | Requisitions | Receiving | Shopping Cart | Home | Logout | Preferences Copyright (c) 2006, Oracle. All rights reserved.

Set to James March.

06/06/2012 13:12 6044193801

NEXT ENVIRONMENTAL



## **MODIFICATION** AGREEMENT

Min Contract No.: CEMB11-106-07 Resp; 2943T Serv. Line: 30510 Stob: 60 Project: 2900000 WCB No.: 609176 (AQ) 005 Modification No.: 2

BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by

The Minister of Environment (the "Province", "we", "us" or "our", as applicable)

AND

Next Environmental Inc. (the "Contractor", "you" or "your" as applicable)

#### BACKGROUND

- Α. The parties entered into an agreement dated December 5, 2011, contract number CEMB11-106-07, an external review contract.
- В. The parties have agreed to modify the Agreement.

AGREEMENT

The parties agree as follows:

- 1) To extend the term of the contract to end December 21, 2012.
- 2) In all other respects, the Agreement is confirmed.

SIGNED AND DELIVERED on the day of June, 2012 on behalf of the Province by its duly authorized representative:
SIGNATURE Legge Cuau
PRINT NAME PERFORMEVANS
SIGNED AND DELIVERED on the the day of June, 2012 by or on behalf of the Contractor (or by its author

by its authorized signatories if the Contractor is a corporation):

SIGNATURE DUNCAN WOOD DIRECTOR PROJECTS. PRINT NAME

## PART C - MODIFICATIONS

(Complete for modifications of an existing contract only if there is an increase to the dollar value or if the contract is being extended into another fiscal year – See Instructions)

CONTRACT NUMBER:	CEMB11-106-07
MODIFICATION #:	2

REASON FOR MODIFICATION: To change the end date of the contract (extend the contract).

ORIGINAL CONTRACT TOTAL	\$
PREVIOUS CONTRACT TOTAL:	\$
MODIFICATION AMOUNT:	\$
NEW CONTRACT TOTAL:	\$

PREVIOUS CONTRACT TERM:	From: December 5, 2011	To: June 21, 2012
NEW CONTRACT TERM:	From: December 5, 2011	To: December 21, 2012

CORE POLICY COMPLIANCE – MODIFICATIONS (See instructions)			N	N/A
1.	Is the existing contract still open? Contracts cannot be modified after they have expired. CPPM 6.3.2.a.11	$\boxtimes$		
2.	Does the modification format comply with the <u>Modification Agreement</u> and the clauses as stated in <u>CPPM</u> <u>6.3.3.e.9</u> ?			

#### **BEST PRACTICES CHECKLIST**

3.	The modification amount(s) must be added to the original amount of the contract to determine the new total for approval requirements. Has the appropriate expense authority approved the Modification Agreement?		
4.	Is the modification compliant with the terms of the contract solicitation process (RFP etc.) or within 20% of original value? If no, include documentation to explain why the opportunity has not been offered to other vendors.		
5.	If this contract has been modified more than twice, have you included documentation to explain why the opportunity has not been offered to other vendors?		

EXPENSE AUTHORITY APPROVAL email approval acceptable N 0 Date

EXECUTIVE APPROVAL (if required) email approval acceptable

PRINT NAME

Signature

Date

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Revised APR 27/10 (BB)

NEXT ENVIRONMENTAL

PAGE 02/02



## MODIFICATION AGREEMENT

Min Contract No.; CEMB11-106-07 Resp: 2943T Serv. Line; 30510 Stob: 60 Project: 2900000 WCB No.: 609176 (AQ) 005 Modification No.; 1

#### BETWEEN

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by

The Minister of Environment (the "Province", "we", "us" or "our", as applicable)

AND

Next Environmental Inc, (the "Contractor", "you" or "your" as applicable)

#### BACKGROUND

- A. The parties entered into an agreement dated December 5, 2011, contract number CEMB11-106-07, an external review contract.
- B. The parties have agreed to modify the Agreement.

#### AGREEMENT

The parties agree as follows:

- 1) To extend the term of the contract to end June 21, 2012.
- 2) In all other respects, the Agreement is confirmed.

SIGNED AND DELIVERED on the_	Lday of March 2012 on behalf of the Province by its duly authorized
representative:	

SIGNATURE

PRINT NAME

SIGNED AND DELIVERED on the authorized day of March, 2012 by or on behalf of the Contractor (or by its authorized signatories if the Contractor is a corporation):

SIGNATURE MOD PRINT NAME

DIRECTOR, PROJECTS.

#### MODIFICATIONS . DADTC

(Complete for modifications of a being	PART C – MODIFICATI n existing contract only if there is an ir ng extended into another fiscal year – S	ONS acrease to the dollar value of See Instructions)	or if the c	ontra	ict is
		CONTRACT NUMBER:	CEMB1	1-106	-07
		MODIFICATION #:	1		
REASON FOR MODIFICATION: 1	o change the end date of the contract	(extend the contract).			
ORIGINAL CONTRACT TOTAL	\$				
PREVIOUS CONTRACT TOTAL:	\$				
MODIFICATION AMOUNT:	\$	an san a	<b>_</b>		
NEW CONTRACT TOTAL:	\$				
PREVIOUS CONTRACT TERM: From: December 5, 2011 To: March 21, 2012					
NEW CONTRACT TERM: From: December 5, 2011 To: June 21, 2012			<u> </u>		
CORE POLICY C	OMPLIANCE - MODIFICATIONS (See i	nstructions)	Y	N	N/A
1. Is the existing contract still open?	Contracts cannot be modified after they have	expired. <u>CPPM 6.3.2.a.11</u>	$\boxtimes$		
2. Does the modification format com <u>6.3.3.e.9</u> ?	ply with the <u>Modification Agreement</u> and the c	lauses as stated in <u>CPPM</u>			
	BEST PRACTICES CHECKL	IST	-		
3. The modification amount(s) must	be added to the original amount of the contrac	t to determine the new total for dification Agreement?			$\boxtimes$
<ul> <li>4. Is the modification compliant with original value? If no. include docu</li> </ul>	the terms of the contract solicitation process (	RFP etc.) or within 20% of not been offered to other vendors	 ₃. □		$\boxtimes$
5. If this contract has been modified opportunity has not been offered	more than twice, have you included document to other vendors?	tation to explain why the			$\boxtimes$
EXPENSE AUTHORITY APPBOVAL email	approval acceptable EXECUTIVE	APPROVAL (if required) email appro	val accept	able	
Signature gg War	= March 12/12 Date Signature		Date		
PRINT NAME YEGGY EVC	PRINT NAME				

# **GENERAL SERVICE AGREEMENT**



For Administrative Purposes Only			
Ministry Contract No.: CEMB11-106-07 Reguisition No.:	Financial Information		
Solicitation No.(if applicable): RFQEMB11-106	Client:	048	
Commodity Code:	Responsibility Centre:	2943T	
	Service Line:	30510	
Contractor Information	STOB:	6001	
· · · · · · · · · · · · · · · · · · ·	Project:	2900000	
Supplier Name: Next Environmental Inc. Supplier No.: Telephone No.: 604-419-3800 E-mail Address: hgross@next.bc.ca Website:		21, 2010	

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SCHEDULE A - SERVICES

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SCHEDULE B - FEES AND EXPENSES

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SCHEDULE G - SECURITY SCHEDULE

APPENDIX 1 - EXTERNAL REVIEW REPORT TEMPLATE

[TX

THIS AGREEMENT is dated for reference the 5th day of December, 2011.

BETWEEN:

<u>Next Environmental Inc. (</u>the "Contractor") with the following specified address and fax number: 215-2550 Boundary Road Burnaby, BC V5M 3Z3 Fax: 604-419-3801

AND:

HER MAJESTY THE OUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the Minister of Environment (the "Province") with the following specified address and fax number: BC Ministry of Environment PO Box 9342 Stn Prov Govt Victoria, BC V8W 9M1 Fax: 250-387-8897

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

#### 1 DEFINITIONS

General

1.1 In this Agreement, unless the context otherwise requires:

- (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
- (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
- (c) "Material" means the Produced Material and the Received Material;
- (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
- (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
- (f) "Services" means the services described in Part 2 of Schedule A;
- (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
- (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

1

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#### 2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Тепп

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.

Standard of care

2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

#### Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

#### 3 PAYMENT

#### Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
  - (a) the fees described in that Schedule;
  - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services; and
  - (c) any applicable taxes payable by the Province under law or agreement with the relevant taxation authorities on the fees and expenses described in paragraphs (a) and (b).

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

#### Statements of accounts

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

#### Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

#### Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

#### Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

#### Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

#### Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

З.

#### Refunds of taxes

- The Contractor must: 3.8
  - apply for, and use reasonable efforts to obtain, any available refund, credit, rebate or remission of (a) federal, provincial or other tax or duty imposed on the Contractor as a result of this Agreement that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement; and
  - immediately on receiving, or being credited with, any amount applied for under paragraph (a), (b) remit that amount to the Province.

#### REPRESENTATIONS AND WARRANTIES 4

- As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor 4.1 represents and warrants to the Province as follows:
  - except to the extent the Contractor has previously disclosed otherwise in writing to the Province, (a)
    - all information, statements, documents and reports furnished or submitted by the (i) Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and (ii) approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and
    - the Contractor holds all permits, licenses, approvals and statutory authorities issued by any (iii) government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
  - if the Contractor is not an individual, (b)
    - the Contractor has the power and capacity to enter into this Agreement and to observe, (i) perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
    - this Agreement has been legally and properly executed by, or on behalf of, the Contractor (ii) and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

#### PRIVACY, SECURITY AND CONFIDENTIALITY 5

Privacy

The Contractor must comply with the Privacy Protection Schedule attached as Schedule E. 5.1

#### Security

- 5.2 The Contractor must:
  - make reasonable security arrangements to protect the Material from unauthorized access, (a) collection, use, disclosure, alteration or disposal; and
  - comply with the Security Schedule attached as Schedule G. (b)

#### Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
  - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
  - (b) If it is information that is generally known to the public other than as result of a breach of this Agreement; or
  - (c) if it is information in any Incorporated Material.

#### Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

## 6 MATERIAL AND INTELLECTUAL PROPERTY

Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

Matters respecting intellectual property

- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
  - (a) Received Material that the Contractor receives from the Province; and
  - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:

(a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify and distribute that Incorporated Material; and

(b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

#### 7 RECORDS AND REPORTS

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## Work reporting

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7.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

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7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

#### 8 AUDIT

8.1 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

#### 9 INDEMNITY AND INSURANCE

#### Indemnity

9.1 The Contractor must indemnify and save harmless the Province and the Province's employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

#### Insurance

9.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

#### Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the Workers Compensation Act in British Columbia or similar laws in other jurisdictions.

#### Personal optional protection

9.4 The Contractor must apply for and maintain personal optional protection insurance (consisting of income replacement and medical care coverage) during the Term at the Contractor's expense if:

- (a) the Contractor is an individual or a partnership of individuals and does not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* or similar laws in other jurisdictions; and
- (b) such personal optional protection insurance is available for the Contractor from WorkSafeBC or other sources.

Evidence of coverage

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9.5 Within 10 Business Days of being requested to do so by the Province, the Contractor must provide the Province with evidence of the Contractor's compliance with sections 9.3 and 9.4.

#### 10 FORCE MAJEURE

## Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
  - (a) "Event of Force Majeure" means one of the following events:
    - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
      - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
      - (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
      - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

Duties of Affected Party

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

#### 11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
  - (a) "Event of Default" means any of the following:
    - (i) an Insolvency Event,
    - the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
    - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and

- (b) "Insolvency Event" means any of the following:
  - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
  - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
  - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the Bankruptcy and Insolvency Act (Canada) is made by the Contractor,
  - (iv) a compromise or arrangement is proposed in respect of the Contractor under the Companies' Creditors Arrangement Act (Canada),
  - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or
  - (vi) the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
  - (a) by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

Delay not a waiver

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' written notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
  - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default. A notice under this section as to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

#### 12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
  - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
  - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
  - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act.*

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

#### 13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
  - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

#### Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

#### Assignment

13.3 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.

#### Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
  - (a) any person retained by the Contractor to perform obligations under this Agreement; and
  - (b) any person retained by a person described in paragraph (a) to perform those obligations
  - fully complies with this Agreement in performing the subcontracted obligations.

#### Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

#### Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

#### Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.

#### Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

#### Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
  - (a) an employee or partner of the Province; or

(b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

#### Tîme

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
  - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, attached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
  - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

Remainder not affected by invalidity

13.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

#### Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

#### Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

Governing law

13.21 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

#### 14 INTERPRETATION

#### 14.1 In this Agreement:

- (a) "includes" and "including" are not intended to be limiting;
- (b) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
- (c) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
- (d) "attached" means attached to this Agreement when used in relation to a schedule;
- (e) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
- (f) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
- (g) "person" includes an individual, partnership, corporation or legal entity of any nature; and
- (h) unless the context otherwise requires, words expressed in the singular include the plural and vice versa.

## 15 EXECUTION AND DELIVERY OF AGREEMENT

15.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

SIGNED on the 5 day of December 2011 on behalf of the SIGNED on the 29 day of Noverage \_\_\_\_\_ tay of Noverage \_\_\_\_\_ 2011 by the Contractor (or, if not an individual, on its behalf by its authorized Province by its duly authorized representative: signatory or signatories): 121 Alla Signatu Signature(s) ant JUNCAN WOOD Print Name Print Name(s) PROTECT MANAGER na Μ 0 Print Tifle Print Title(s)

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#### PART 1. TERM:

1. The term of this Agreement commences on December 5, 2011 and ends on March 21, 2012.

#### PART 2. SERVICES:

Outputs

- 1. The Contractor must complete an external review of the following reports for the Province and make recommendations on issuance of three certificates of compliance.
  - a) Summary of Site Condition, Site ID 9150
  - b) Preliminary Site Investigation
  - c) Detailed Site Investigation
  - d) Confirmation of Remediation
  - e) Risk Assessment
- 2. The Contractor must liaise and seek clarification from report authors as required. (Author names and contact information will be provided by the Province).
- 3. The Contractor must keep all recommendations made in regards to the reviews and resulting reports confidential, including but not limited to, sharing results with the report authors.
- 4. The Contractor must maintain detailed records of all conversations and correspondence with report authors.
- 5. Upon completion of the reviews, the Contractor must complete a report in the format specified in the attached Appendix 1. The report must include, but is not limited to:
  - a) Summary of the reports reviewed summary of site condition, preliminary site investigation, detailed site investigation, remediation plan, confirmation of remediation, human health risk assessment and ecological risk assessment, as applicable;
  - b) Summary of the adequacy of data presentation and interpretation in the reports reviewed;
  - c) Discussion and conclusions to include a summary of substances remediated to numeric based standards and/or risk based standards;
  - Recommendations clearly stating the recommendation regarding the issuance of the requested instrument or recommendations for subsequent work to be carried out;
  - e) Completed preliminary site investigation report and detailed site investigation report checklists (appended if applicable);
  - f) Documentation of the nature and outcomes of discussions between the Contractor and client (appended if applicable);
  - g) Signature and stamp of the Contractor's sign off authority; and
  - h) Reviewers who worked on the review and the general area of expertise of each.
- 6. The Contractor must submit the external review report to the Province's Representative no later than March 21, 2012.
- 7. The Contractor must submit copies of all communications with the report authors to the Province's Representative no later than March 21, 2012.

- 8. If the Contractor's review recommendation is that the Province should issue three certificates of compliance, the Contractor must complete three "Certificates of Compliance", and submit to the Province's Representative with the reports. The certificates must be completed to the signature stage.
- 9. The Contractor must provide all deliverables in one hard copy and one electronic copy in Word format. Electronic copies must be submitted on CD, DVD or memory stick.
- 10. The Contractor must use current anti-virus software when providing information in electronic form to the Province.

#### Reporting

The Contractor must:

- 1) advise the Province's Representative within 72 hours of any unusual or unexpected developments or complications in respect of the services
- 2) if a request for extension to the delivery date is anticipated, make the request in writing to the Province's Representative no later than March 14, 2012.
- 3) provide an update on the service activities to date, when requested to do so by the Province, within 2 calendar days of the request.

#### **RELATED DOCUMENTATION:** PART 3.

The following are Appendices to this Schedule A:

Appendix 1 as attached: External Review Report Template

#### **KEY PERSONNEL:** PART 4.

The Key Personnel of the Contractor are as follows: 1.

- (a) Chuck Jochems (Reviewer)
- (b) Phil Lowery (Reviewer)
- (c) Reidar Zapf-Gilje (Reviewer)

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## PART 1 MAXIMUM AMOUNT PAYABLE

Despite sections 2 and 3 of this Schedule, \$29,250.00 is the maximum amount which the Province is obliged to pay to the Contractor for fees (exclusive of applicable taxes) and expenses under this Agreement.

#### PART 2 FEES

The Province must pay the Contractor \$165 per hour for:

- a) Review of Summary of Site Condition to a maximum of \$1,500.00;
- b) Review of Preliminary Site Investigation report to a maximum of \$3,750;
- c) Review of Detailed Site Investigation report to a maximum of \$11,250;
- d) Review of Confirmation of Remediation report to a maximum of \$5,250; and
- e) Review of a Risk Assessment report to a maximum of \$7,500.

performed during the term.

PART 3 EXPENSES

None.

#### PART 4 STATEMENTS OF ACCOUNT

In order to obtain payment of any fees and expenses under this Agreement, the Contractor must deliver to the Province at the end of the Term or, if the Contractor completes the Services before that time, on the completion of the Services, a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement;
- (c) the Contractor's calculation of all fees claimed and hours worked, under this Agreement, including a declaration that the Services for which the Contractor claims fees have been completed;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor with receipts attached, if applicable,
- (e) the Contractor's calculation of all applicable taxes payable by the Province in relation to the Services;
- (f) a description of this Agreement to which the statement relates;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

#### PART 5 PAYMENTS DUE

Within 30 days of the Province's receipt of the Contractor's written statement of account delivered in accordance with this Schedule, the Province must pay the Contractor the fees and expenses (plus all applicable taxes) claimed in the statement if they are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by the Province as required to obtain the discount.

1. Reidar Zapf-Gilje, GeoEnviroLogic Consulting Ltd.

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#### Schedule D – Insurance

- The Contractor must, without limiting the Contractor's obligations or liabilities and at the Contractor's own expense, purchase and maintain throughout the Term the following insurances with insurers licensed in Canada in forms and amounts acceptable to the Province:
  - a) Commercial General Liability in an amount not less than \$2,000,000.00 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this Agreement and this insurance must
    - i) include the Province as an additional insured,
    - ii) be endorsed to provide the Province with 30 days advance written notice of cancellation or material change, and
    - iii) include a cross liability clause;
  - b) Professional Liability insuring your liability resulting from errors or omissions in the performance of the Services in an amount per occurrence and in the aggregate not less than \$1,000,000.00.
- 2) All insurance described in section 1 of this Schedule must:
  - a) be primary; and
  - b) not require the sharing of any loss by any insurer of the Province.
- 3) The Contractor must provide the Province with evidence of all required insurance as follows:
  - a) within 10 Business Days of commencement of the Services, the Contractor must provide to the Province evidence of all required insurance in the form of a completed Province of British Columbia Certificate of Insurance;
  - b) if any required insurance policy expires before the end of the Term, the Contractor must provide to the Province within 10 Business Days of the policy's expiration, evidence of a new or renewal policy meeting the requirements of the expired insurance in the form of a completed Province of British Columbia Certificate of Insurance; and
  - c) despite paragraph (a) or (b) above, if requested by the Province at any time, the Contractor must provide to the Province certified copies of the required insurance policies.
- 4) The Contractor must obtain, maintain and pay for any additional insurance which the Contractor is required by law to carry, or which the Contractor considers necessary to cover risks not otherwise covered by insurance specified in this Schedule in the Contractor's sole discretion.
## Schedule E – Privacy Protection Schedule Not applicable.

## Schedule F – Additional Terms Not applicable.

Schedule G – Security Schedule Not applicable.

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Appendix 1 –External Review Report Template

## ON EXTERNAL CONTRACT REVIEWER'S LETTERHEAD

Contractor's File: Victoria File <as applicable>: 26250-20/\*\*\*\* Regional File <as applicable>: 26250-20/\*\*\*\* SITE ID #: \*\*\*\* (DATE) **Client Information Officer** Contaminated Sites Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Attention: Client Information Officer EXTERNAL CONTRACT REVIEWER REPORT REVIEW Application for <insert instrument or report review applied for> External Contract Review Authorization No. \*\*\*\* The following reports were reviewed: A preliminary site investigation report entitled \_\_\_\_\_\_ prepared by \_\_\_\_\_\_ and Ð dated \_\_\_\_\_\_ <as applicable> \_\_\_\_\_, prepared by \_\_\_\_ and dated A detailed site investigation report entitled \_\_\_\_ \_\_\_\_<as applicable> A remediation plan entitled \_\_\_\_\_\_, prepared by \_\_\_\_\_\_ and dated \_\_\_\_\_ <as applicable> A confirmation of remediation report entitled \_\_\_\_\_\_ prepared by \_\_\_\_\_\_ and dated \_\_\_\_\_ <as applicable>. A human health risk assessment report entitled \_\_\_\_\_\_ prepared by \_\_\_\_ and dated \_\_\_\_\_\_ <as applicable>. An ecological risk assessment report entitled \_\_\_\_\_\_ prepared by \_\_\_\_\_ and dated \_\_\_\_\_ <as applicable>. 1. Background Application details

Site details

RE:

- o Registered Owner
- o Site's civic address:

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- o Legal description
- o Site's PID/PIN:
- o Latitude/Longitude:
- o CSR Land Use:
- Applicable Legislation and Guidance Documents
- Applicable Standards
- 2. Site Description
  - Site Location and General Description
  - Surrounding Land Use
  - Topography and Stratigraphy
  - Surface Water and Groundwater
- 3. Site Investigations
  - Preliminary Site Investigation
    - o The areas of potential environmental concern (APECs) and associated potential
    - contaminants of concern (PCOCs) and the medium with which each is associated (soil,
      - groundwater, surface water, sediment, vapour) in table form.
      - o Site investigations (identify investigations completed)
      - o Investigation results
      - o Adequacy of investigation
    - Detailed Site Investigation
      - The areas of environmental concern (AECs) and the contaminants of concern (COCs) associated with each area in table form.
        - o Site investigations (identify investigations completed)
        - o Investigation results
        - Adequacy of investigation
- 4. Contamination
  - Soil
  - Groundwater
  - Vapour
- 5. Confirmation of Remediation
  - Site remediation (identify remediation completed)
  - Results
  - Adequacy of remediation
- 6. Risk Assessment

#### Site setting

- Human Health Risk Assessment
  - Problem Formulation
  - o Exposure Assessment
  - o Effects Assessment
  - o Risk Characterization
  - o Adequacy of HHRA
- Ecological Risk Assessment
  - o Problem Formulation
  - o Exposure Assessment
  - o Effects Assessment
  - o Risk Characterization
  - o Adequacy of ERA

#### 7. Recommendation

We, the undersigned, have reviewed the subject report(s) and in our professional opinion:

<The following paragraphs should be included, as applicable>

With respect to the reports submitted for this assignment, the reports substantially meet <or do not meet> the applicable key report deliverable requirements described in Part F (Key Information Requirements) of the Ministry's Contaminated Sites Services Application form.

With respect to the stage 1 preliminary site investigation report reviewed for this assignment, all APECs and associated PCOCs have <or have not> been satisfactorily identified for the site.

With respect to the stage 2 preliminary site investigation report reviewed for this assignment, all AECs and associated COCs have <or have not> been satisfactorily identified for the site.

With respect to the detailed site investigation report reviewed for this assignment, all AECs and associated COCs have <or have not> been satisfactorily investigated to determine the full lateral and vertical extent of contamination with due regard to the *Environmental Management Act*, Contaminated Sites Regulation (CSR), Hazardous Waste Regulation (HWR) and associated protocols, procedures, and guidance documents.

With respect to the remediation plan reviewed for this assignment, there is <or is not> a high probability that the remediation plan, if implemented with any recommended conditions, will result in the site meeting the applicable remediation standards of section 17 of the Contaminated Sites Regulation and/or the hazardous waste standards of the Hazardous Waste Regulation, as applicable. These standards comprise the \_\_\_\_\_\_\_\_ use numerical soil standards for \_\_\_\_\_\_\_\_ <name substances> in soil, the \_\_\_\_\_\_\_\_ use numerical water standards for \_\_\_\_\_\_\_ <name substances> in water, the \_\_\_\_\_\_\_\_ use numerical vapour standards for \_\_\_\_\_\_\_ <name substances> in vapour and the \_\_\_\_\_\_\_ site <or "use" as applicable> numerical sediment criteria <or standards as applicable> for \_\_\_\_\_\_\_ <name substances> in sediment. <Also include reference to Schedule 10 substances' numerical standards, as applicable>.

With respect to the confirmation of remediation report reviewed for this assignment, the site has <or has not> been satisfactorily remediated to the applicable standards. These standards comprise the \_\_\_\_\_\_ use numerical soil standards for \_\_\_\_\_\_<name substances> in soil, the \_\_\_\_\_\_ use numerical water standards for \_\_\_\_\_\_<name substances> in water, the \_\_\_\_\_\_ use numerical vapour standards for \_\_\_\_\_\_<name substances> in vapour and the \_\_\_\_\_\_\_ site <or "use" as applicable> numerical sediment criteria <or standards as applicable> for \_\_\_\_\_\_<name substances> in sediment. <Also include reference to Schedule 10 substances' numerical standards and Hazardous Waste Regulation standards, as applicable>.

As based on the above and our review summary, it is our professional opinion that:

<Select one of the following paragraphs — provide any commentary where responses in the negative were provided for the above paragraph items>

The report(s) reviewed are in satisfactory compliance with the requirements of the *Environmental Management Act* and Contaminated Sites and Hazardous Waste Regulations.

The report(s) reviewed are not in satisfactory compliance with the requirements of the Environmental Management Act and Contaminated Sites and Hazardous Waste Regulations and resubmission is required.

Our recommendations are as follows:

<Select one of the following paragraphs>

The report(s) are considered acceptable and no further work is required <include any recommended conditions, as applicable, if review of a remediation plan was conducted>.

The report(s) are considered deficient. Further work should be conducted to address the outstanding issues as identified in the review summary report.

Yours truly,

Signatory (Contractor's sign off authority) Title

Signatory (other reviewer(s)) Title

Attachments:

- Completed preliminary site investigation report and detailed site investigation report checklists (appended if applicable).
- Documentation of the nature and outcomes of discussions between the Contractor and client (appended if applicable).

LEIUIILUI

0044100001



Mailing Address PO Box 5350 Station Terminal Vancouver BC V6B 5L5 6951 Westminster Highway Richmond BC V7C 1C6 www.worksafebc.com

#### **Clearance Section**

Telephone 604 244 6380 Toll Free within Canada 1 888 922 2768 Fax 604 244 6390

Minister Of Environmant PO Box 9378 Stn Prov Govt VICTORIA, BC V8W 9M6

WORKING TO MAKE A DIFFERENCE

#### November 26, 2011

#### Person/Business : NEXT ENVIRONMENTAL INC 609176 AQ (005)

This letter provides clearance information for the purposes of Section 51 of the Workers Compensation Act.

We confirm that the above-referenced firm is active, in good standing, and has met WorkSafeBC's criteria for advance clearance. Accordingly, if the addressee on this letter is the prime contractor, the addressee will not be held liable for the amount of any assessment payable for work undertaken by the above-referenced firm to **January 01, 2012**.

This firm has had continuous coverage with us since May 09, 1998.

Employer Service Centre Assessment Department

Clearance Reference # : s.21 CLRAAA-7

## For more information about Section 51 and clearance letters visit WorkSafeBC.com

Prease refer to your account number in your correspondence or when contacting the Assessment Department. To alter this document constitutes fraud.

-1-

NEXT ENVIRUNMENTAL

	A CONTRACT	
	BRITISH	
C	OLUMBIA	
The	Best Place on Earth	3

Part 1



Freedom of Information and Protection of Privacy Act The personal information requested on this form is collected under the authority of and used for the purpose of administering the *Enancial Administration Act*. Questions about the collection and use of this information can be directed to the Director, Citent Services, Care Government and Crowns at 250 358-8815, PO Box 9406 STN PROV GOVT, Victoria BC V8W 9V1. Please refer all other questions to the contact named in Part 1.

#### To be completed by the Province

THIS CERTIFICATE IS REQUESTED BY and ISSUED TO (Name of office) HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA,	CEMB11-106-07
as represented by the willister of chytomnent, outporate derwood printer	PHONE NO (250) -356-9821
PROVINCE'S CONTACT PERSON	FAX NO (250) 356-9239
Raymond Ho, Financial Analyst	POSTAL CODE
PO Box 9378 Stn Prov Govt, Victoria, BC	V8W 9M6
CONTRACTOR NAME Next Environmental Inc.	
CONTRACTOR ADDRESS Suite 215, 2550 Boundary Road, Burnaby BC	V5M.3Z3
	and the second

## Part 2 To be completed by the Insurance Agent or Broker

NAME OF	Next Er	vironmental Inc.		POSTAL CODE		
Insured on Policy	ADDRESS Policy Suite 215, 2550 Boundary Road, Burnaby BC					
OPERATIONS INSURED	PROVIDE O Externa	RTAILS A contract review		r		
TYPE OF INSU List each sep	IRANCE arately	COMPANY NAME, POLICY NO. & BRIEF DESCRIPTION	EXPIRY DATE YYYY/MM/DD	LIMIT OF LIABILITY/AMOUNT		
Professional L Insurance	iability	Zurich Insurance Company Policy No. 8434420	2012/06/07	\$1,000,000 Each Claim \$1,000,000 Annual Aggregate \$ 10,000 Deductible		
General Liability Including Non-Owned Automobile Liability		Lombard General Insurance Company of Canada Policy No. CBC 1910660	2012/05/08	Bodily Injury and Property Damage \$2,000,000 per Occurrence \$2,000,000 General Aggregate \$2,000,000 Products/Completed Operation Aggregate		
				the second she water of this portificat		

This certificate certifies that policies of insurance described herein are in full force and effective as of the date of this certificate and comply with the insurance requirements of the Agreement identified above, except as follows:

We agree that Her Majesty the Queen in Right of the Province of British Columbia as represented by the Minister of Environment is added as Additional Insured to the General Liability Policy but only with respect to the Named Insured operations.

Should the General Liability policy be cancelled or endorsed to reduce the Limit of Liability before the expiration date thereof, the issuing company will endeavour to mail 30 days written notice to the Certificate Holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.

AGENT OR BROKER COMMENTS:

AGENT OR BROKER	ADDRESS 16 <sup>th</sup> Floor, 1111 West Georgia Street, Vancouver, BC V6E 4GZ	рноле но 604-882-4211
SIGNED BY THE AGENT OR BROKER	ON BEHALF OF THE ABOVE INSURER(S)	DATE SIGNED
JARDINE LUNYD THOMPSON CANADA	INC.	November 25, 2011

# **REQUEST TO CONTRACT**

AGRICULTURE AND LANDS

#### . . . . . 41 .

								·					0	K.	
				PART	A -	- PLA	NNING (See Instruct	tions)							<u>М</u>
DIVISION/BRANCH EPD/ Environmental Management Branch LOCATION/ REGION: Victoria										. <u></u>					
PR	JECI	TTITLE: Co	ontaminated si	te exter	mal	review	/								
	NTRA	CT R/MONITOI	R NAME:	Ardith	Gin	igell		PHON	E:		250-3	387-8	120		
DES LOC OF	CRIB CATIO NEED	E THE N/SERVICE	S/PURPOSE	Reviev Detaile Asses	va ed S sme	Summa ite Inv ent rep	ary of Site Condition repo estigation report, Confirm ort in support of issuing f	ort, Prelin nation of two certi	ninary Reme ificates	Site diations of co	Inves on re ompl	stiga port ianc	tion and e.	repo Risk	rt,
WH RES NEE	Y CAN Sour D?	N EXISTING CES NOT F	STAFF ILL THE	insuffi	cier	nt capa	acity								
DES PRO API	SCRIB DGRA PROV	BE THE IMP. M DELIVER ED	ACT ON Y IF NOT	Reviev	N W	ould b	e completed at a much lat	er date v	which	is too	late	for t	he c	lient	
			CO	RE POL	ICY	COM	PLIANCE CHECKLIST						Y	N	n/a
1.	lf a <u>C</u> (CPP	orporate Sup M 6.3.2.c.2)	ply Arrangement	(CSA) is	ava	ilable, a	are the goods or services being	) purchase	ed throu	ugh the	CSA	.?			
2.	2. For service contracts over \$100,000, has a Cost Benefit Justification (CBJ) been prepared? If yes, attach the CBJ and include in the contract file. (CPPM 6.3.1.5)														
If this contract is being direct awarded to a contractor that has been used for similar work in the previous 3 months (3 months from previous expiry date), the new contract must be approved by an expense authority with authority for the combined total of the contracts. Has the appropriate expense authority approved the contract? (CPPM 6.3.1.4)															
4. Can you confirm this contract does not constitute an <u>employer/employee relationship</u> ? (CPPM 6.3.1.7). ⊠							$\boxtimes$								
	i			BEST	PR	ACTIC	ES CHECKLIST		f						
1.	Has a	a <u>Risk Asses</u> s	sment been prepa	ared to de	eterr	nine the	e possible need for additional i	nsurance	require	ments	?				
		» ··	PROCURE		ROC	CESS -	SEE FOOTNOTES FOR CO	DDE DES	CRIPT	ION					
	100	OPEN COMP	ETITIVE PROCES	s [		204	DIRECT AWARD - CONFIDENTIALITY		400	SELE PRE-		VEN		FROM LIST	 
	200	DIRECT AW	ARD – PUBLIC G.	[		205	DIRECT AWARD - NOTICE OF		401		DORS		PRE-	· ·	
	201	DIRECT AW	ARD - SOLE SOUF	RCE [		206	DIRECT AWARD - NO JUSTIFICATION		500		PORA	TE SU MENT		(	
	202	DIRECT AW	ARD - EMERGENO	) YC		207	DIRECT AWARD - UNDER \$25,	000	600	OTH		RCH/	ASE P	ROCE	SS
	203	DIRECT AW/ ORDER	ARD - SECURITY,	[		300	SELECTED VENDORS		601	AGR	EEME	NTS			
if D	irect A	ward, Contr	actor's legal na	me: Ne>	xt Er	nvironn	nental Inc.								
Rat	ional f	or Direct Aw	ard to this cont	ractor: C	Cont	ractor	is the next available on the	pre-qual	ified lis	t	<u> </u>			<u> </u>	
If a pas	Direct t year	t Award was ?	selected under	<u>201, 20</u>	<u>)6</u> oi	r <u>207</u> a	bove, has your program us	ed these	servic	es in f	he	Y		N	
lf ye ●	es: Plea	ase state the	e end date of the	e previo	us c	contract	t and the contract value:								
• Will ser Pro	Plea a Dire vices? vide d	ase state if t ect Award p ' (e.g. licens letails::	he opportunity v urchase obligate ng, maintenanc	was com e goverr ce, etc.)	npet	itively t nt to th	bid or direct awarded: is vendor for future purchas	ses or		Y		N		N/A	
								-						-	

# PART A CONTINUED – PLANNING

(See Instructions)

#### CONTRACT DETAILS

ANTICIPA	TED TERM OF AGRE	EMENT: FROM D	ATE: December 5, 2011	TO DATE: Ma	rch 21, 2012
RECOVER	RABLE? YES	NO 🖾			
RECOVER AMOUNT	RED FROM (FULL NAM OF RECOVERY: \$ TAGE: %	ΛE):			
ESTIMATED VALUE OF \$29,250.00 CONTRACT:			NOTE: LEGAL REVIEW I OVER \$250,000 OR WHE APPROVED TEMPLATES HAS A LEGAL REVIEW B OBTAINED?	S REQUIRED FOR <u>SI</u> IN MODIFICATIONS A 5. IEEN Y	ERVICE CONTRACTS
CLIENT	RESPONSIBILITY	SERVICE LINE	STOB	PROJECT	AMOUNT
048	2943T	30510	6001	2900000	\$29,250.00
<u></u>				· .	
······		1			

CONTRACT CATEGORY - SEE FOOTNOTES FOR CODE DESCRIPTION						
GMA		□ BSA				
HR/LR	D PM	OP OP				
	СОМ	ОТН				

AIT/TILMA EXCLUSION LIST - SEE FOOTNOTES FOR CODE DESCRIPTION								
100	PURCHASE SUBJECT TO AIT	500	EXCLUDED - SECURITY, ORDER, ETC					
200	PURCHASE BELOW APPLICABLE AIT THRESHOLD	600	EXCLUDED – PRODUCT COMPATIBILITY/EXCLUSIVE RIGHTS					
300	PURCHASE OF AN EXEMPTED COMMODITY/SERVICE	700	EXCLUDED - PROCUREMENT OF PROTOTYPE					
400	EXCLUDED EMERGENCY	800	EXCLUDED – REGIONAL /ECONOMIC DEVELOPMENT					

**NOTE:** If your Procurement Process changes to reduce the number of vendors given the opportunity to bid from that indicated in 'Procurement Process' section above, then the EA must approve the change in Part B before awarding the contract. EA approval can be by email as long as this document is included as an attachment to the email from the EA.

Provide details of Procurement Process change:

EXPENSE AUTHORITY APPROVAL email approval acceptable

See attached Exec. pre-approval SIGNATURE

PRINT NAME

EXECUTIVE APPROVAL (if required) email approval acceptable

SIGNATURE

DATE

PRINT NAME

MINISTRY OF ENVIRONMENT KFQEMBII - 10 6

# EXECUTIVE CONTRACT PRE-APPROVAL REQUEST

(TO BE APPROVED BY ADM OR EXEC DIRECTOR REPORTING TO ADM)

## NEW CONTRACT OR CONTRACT AMENDMENT

	r					-					
DIVISION:	Environmental Pro	ection	· · · · · · · · · · · · · · · · · · ·		BRANCH:	Environ	mental mai	lagine	IIL		
SECTION:	Land Remediation		•		LOCATION:	Victoria	Headquart	ers			
CONTRACTOR (F	ull legai name if known):						PHONE:		-		
ADDRESS:	· · · · · · · · · · · · · · · · · · ·	·····					FAX:				
							[	[			
EMAIL:					······						
DESCRIPTION OF	SERVICES / PURPOSE	: Request for C	alification	ns (RFQ) fo	r external rev	view contr	actors to c	omplet	e case file review.		
	÷							R	FQEMBII-106		
	TIGICATION		tornal revie	w.confract	ors to comple	ete case fi	lle review o	nly if i	nternal staff do not have		
A) WHY A CONTRAC		capacity (too	busy). 🦈			. • · ·					
B) JUSTIFY IF DIRE(	CT AWARD					:					
C) IF DIRECT AWAR	D, WHY THIS CONTRACTOR	ι									
D) RISKS OF NOT PI	ROCEEDING			·							
E) OTHER ISSUES	. •										
TERM OF AGREE	MENT FROM: April	1, 2010		TO: Marc	h 31, 2013	-		FEE	(HOUR/DAY ETC) \$ 165 per hour		
	MAX FEE PAY	ABLE: \$	.E: \$ . MAX EXPI			NSES PAYABLE: \$			TOTAL VALUE: \$		
PLANNED I	METHOD OF SELECTION		CATEGORIES			STOB			RECOVERABLE		
	(CHECK ONE)	. SEE BACK OF J	FORM FOR CODE	DESCRIPTION	(0	HECK ONE)			(CHECK ONE)		
	TAWARD		GMA		$\boxtimes$	60		$\boxtimes$	NO		
	TION TO QUOTE		IRILR			61			YES (indicate % and describe source)		
	TION TO TENDER		T			63			i í		
REQUE	EST FOR PROPOSAL		PRA			69			1		
NOTIC	E OF INTENT	F	РМ			200	0				
	EBIDS		СОМ	,		OTHER:					
	BSA BSA				· ·			•			
			0P								
					]						
	·		ЛВ								

#### **REQUESTED BY:**

COLUMBIA

The Best Place on Earth

Mike Macfarlane Manager, Land Remediation

Jim Hofweber DIRECTOR, ENVIRONMENTAL MANAGEMENT

NAME EXEC DIRECTOR, TITLE

APPROVED D NOT APPROVED

Lynn Bailey ADM, Environmental Protection

SIGNATURE  $\varphi_{\cdot}$ SIGNATURE

SIGNATURE

10. DATE DATE

DATE

19/10 DATE SIGNATURE

QR: Ardith Gingell

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Revised June 2009

; '				• ••••••••••••••••••••••••••••••••••••			
		PART B -	- AWARD				
	(C	omplete for new contra	cts only- See In	structions)			
CON	TRACTOR (FULL LEGAL 1	NAME): Next Environmental In	<b>C</b> .				
CON	TRACTOR'S 'DOING BUSI	INESS AS' NAME (IF APPLIC	ABLE):				
ADDF	RESS: 215-2550 Boundary Re	oad					
Burna	aby, BC V5M 3Z3			ER: CEMB11-106-07			
PHO	NE NUMBER: 604-419-3800			WCB NUMBER: 609176	AQ	(00	5
					110	00	
Line th	ore been ony changes to the value	a or term of the contract from the 'Con	tract Details' section in P	Part A? Y		N	$\boxtimes$
	hen the Qualified Receiver/Contract	et Monitor is the only approval required	below				
If yes, date e	Expense Authority and Executive a xtending into an additional fiscal ye	approval (if required in Part A) is require ear.	red for an increase to the	dollar value and an end			
TER	OF AGREEMENT:	From Date: December 5, 2011	Т	o Date: March 21, 2012	. *		
Total	Value: \$ 29,250.00						
	(	CORE POLICY COMPLIANCE	E CHECKLIST where appropriate)	-	Y	N	N/A
1.	For service contracts with an agg (CPPM 6.3.2.c.4)	regate value over \$75,000, inclusive o	f all potential extensions,	, did you advertise on <u>BC Bid</u> ?			
2.	For <u>service</u> contracts between \$25,000 and \$75,000 did you use a competitive process that is appropriate to the value, complexity and profile of the business opportunity? Opportunities must be posted on BC Bid or at least three quotes must be obtained. ( <u>CPPM</u> 6,3,2,c,5) Documentation of the procurement process is required in the working file.						
3.	. For all contracts under \$25,000, did you compete to the extent reasonable and cost-effective? Documentation is required in the file.						$\boxtimes$
4.	4. If a pre-qualification list of contractors was used, was the contract awarded through a competitive process as described in the list (for contracts over \$75,000, the opportunity must go to all vendors on the list) ? ( <u>CPPM 6.3.2.c.4</u> )						
5.	5. If the General Services Agreement or approved construction template was not used, did you obtain Legal Services and <u>Risk</u> <u>Management</u> approval? Documentation of approval must be kept in the contract file. ( <u>CPPM 6.3.3.e.5</u> )						
6.	Does Schedule A clearly identify	specific and measurable contract deli	verables? (CPPM 6.3.6.c	2)	$\boxtimes$		
7.	7. Does Schedule A clearly identify the process the ministry will use to monitor the contractor's performance (e.g. frequency & format of reporting requirements)? (CPPM 6.3.6.c)						
8.	If sub-contractors will be providing	g any services, are they identified in S	chedule C?				
9.	Has a Certificate of Insurance be	en requested confirming all applicable	insurance as required in	Schedule D? ( <u>CPPM 6.3.3.e.11</u> )	$\boxtimes$		
10.	Will the contract be signed by bot	th parties before the start date of the c	contract (the contractor m	oust sign first)? (CPPM 6.3.3.e.2)	$\boxtimes$		
11.	Is the contract written in the legal an organization)? (CPPM 6.3.3.e.	I name of the contractor (do not write t	he contract in the name of	of an individual if the contract is with	$\boxtimes$		
		BEST PRACTICES CHE	CKLIST				
1.	If a contractor is ineligible for WC	B (including Personal Optional Protect	lion), has the EA given a	pproval to proceed?	$\boxtimes$		
2.	2. If the contract crosses fiscal years, does Schedule A include language that work must not proceed in the new fiscal year until you have confirmed appropriation?						
3.	Has a WorkSafe BC (WCB) <u>clear</u>	ance letter been obtained for inclusion	in the contract file?			· ·	
4.	For contracts including travel exp Schedule B?	enses, have you attached the per dien	n rates as an appendix a	nd referenced the appendix in			
QUAL CONT	IFIED RECIEVER/ RACT MONITOR	EXPENSE AUTHORIT approval acceptable	Y (if required) email	EXECUTIVE APPROVAL (if r approval acceptable	equire	d) en	nail
And Signatu PRINT I	iame Ardith Gingell	24/// Signature PRINT NAME COGY	Evans Date Nor	24 Signature PRINT NAME		Date	
	-	· / /		Ч			

<u>.</u> .

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# **GENERAL SERVICE AGREEMENT**

х.ee



For Administrative Purposes Only						
Ministry Contract No.: PD12CAS-015 Requisition No.:	Financial Information					
Solicitation No.(if applicable):	Client:	048				
Commodity Code:	Responsibility Centre:	29910				
Contractor Information	Seroice Line: STOB: Project:	30533 6001 290000				
Supplier Name: Tara Holding Inc.						
Supplier No.:						
Telephone No.: 250-370-9777						
E-mail Address: maureen.murphy@telus.net						
Website: <u>http://www.communicationsbc.ca/about/maureen-</u> murphy-principal						

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#### **SCHEDULE A – SERVICES**

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SCHEDULE B -- FEES AND EXPENSES

Part 1 - Maximum Amount Payable Part 2 - Fees Part 3 - Expenses Part 4 - Statements of Account Part 5 - Payments Due Part 6 - Goods and Services Tax

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SCHEDULE D – INSURANCE

SCHEDULE E – PRIVACY PROTECTION SCHEDULE

SCHEDULE F - ADDITIONAL TERMS

SCHEDULE G - SECURITY SCHEDULE

THIS AGREEMENT is dated for reference the 4th day of November 2011.

#### BETWEEN:

Tara Holdings Inc. (the "Contractor") with the following specified address and fax number: Attn: Maureen Murray 2279 Lincoln Road Victoria, BC V8R 6A3

#### AND:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by The Minister of Environment (the "Province") with the following specified address and fax number: Climate Action Secretariat PO Box 9486 Stn Prov Govt Victoria BC V8W 9W6 250-356-7286 (Fax)

The Province wishes to retain the Contractor to provide the services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those services, on the terms and conditions set out in this Agreement.

As a result, the Province and the Contractor agree as follows:

#### 1 **DEFINITIONS**

General

- 1.1 In this Agreement, unless the context otherwise requires:
  - (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
  - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
  - (c) "Material" means the Produced Material and the Received Material;
  - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
  - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
  - (f) "Services" means the services described in Part 2 of Schedule A;
  - (g) "Subcontractor" means a person described in paragraph (a) or (b) of section 13.4; and
  - (h) "Term" means the term of the Agreement described in Part 1 of Schedule A subject to that term ending earlier in accordance with this Agreement.

Meaning of "record"

1.2 The definition of "record" in the *Interpretation Act* is incorporated into this Agreement and "records" will bear a corresponding meaning.

#### 2 SERVICES

Provision of services

2.1 The Contractor must provide the Services in accordance with this Agreement.

Term

2.2 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.

Supply of various items

2.3 Unless the parties otherwise agree in writing, the Contractor must supply and pay for all labour, materials, equipment, tools, facilities, approvals and licenses necessary or advisable to perform the Contractor's obligations under this Agreement, including the license under section 6.4.

#### Standard of care

2.4 Unless otherwise specified in this Agreement, the Contractor must perform the Services to a standard of care, skill and diligence maintained by persons providing, on a commercial basis, services similar to the Services.

#### Standards in relation to persons performing Services

2.5 The Contractor must ensure that all persons employed or retained to perform the Services are qualified and competent to perform them and are properly trained, instructed and supervised.

#### Instructions by Province

2.6 The Province may from time to time give the Contractor reasonable instructions (in writing or otherwise) as to the performance of the Services. The Contractor must comply with those instructions but, unless otherwise specified in this Agreement, the Contractor may determine the manner in which the instructions are carried out.

#### Confirmation of non-written instructions

2.7 If the Province provides an instruction under section 2.6 other than in writing, the Contractor may request that the instruction be confirmed by the Province in writing, which request the Province must comply with as soon as it is reasonably practicable to do so.

#### Effectiveness of non-written instructions

2.8 Requesting written confirmation of an instruction under section 2.7 does not relieve the Contractor from complying with the instruction at the time the instruction was given.

Applicable laws

2.9 In the performance of the Contractor's obligations under this Agreement, the Contractor must comply with all applicable laws.

#### 3 PAYMENT

#### Fees and expenses

- 3.1 If the Contractor complies with this Agreement, then the Province must pay to the Contractor at the times and on the conditions set out in Schedule B:
  - (a) the fees described in that Schedule, plus any applicable taxes; and
  - (b) the expenses, if any, described in that Schedule if they are supported, where applicable, by proper receipts and, in the Province's opinion, are necessarily incurred by the Contractor in providing the Services.

The Province is not obliged to pay to the Contractor more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.

#### Statements of accounts

3.2 In order to obtain payment of any fees and expenses under this Agreement, the Contractor must submit to the Province a written statement of account in a form satisfactory to the Province upon completion of the Services or at other times described in Schedule B.

#### Withholding of amounts

3.3 Without limiting section 9.1, the Province may withhold from any payment due to the Contractor an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to the Contractor upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.

#### Appropriation

3.4 The Province's obligation to pay money to the Contractor is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.

#### Currency

3.5 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.

#### Non-resident income tax

3.6 If the Contractor is not a resident in Canada, the Contractor acknowledges that the Province may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on the Contractor's behalf.

#### Prohibition against committing money

3.7 Without limiting section 13.10(a), the Contractor must not in relation to performing the Contractor's obligations under this Agreement commit or purport to commit the Province to pay any money except as may be expressly provided for in this Agreement.

#### Refunds of taxes

3.8 The Contractor must apply for and, immediately on receipt, remit to the Province any available refund, rebate or remission of federal or provincial tax or duty that the Province has paid or reimbursed to the Contractor or agreed to pay or reimburse to the Contractor under this Agreement.

#### 4 **REPRESENTATIONS AND WARRANTIES**

- 4.1 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, the Contractor represents and warrants to the Province as follows:
  - (a) except to the extent the Contractor has previously disclosed otherwise in writing to the Province,
    - (i) all information, statements, documents and reports furnished or submitted by the Contractor to the Province in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
    - (ii) the Contractor has sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable the Contractor to fully perform the Services, and
    - (iii) the Contractor holds all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of the Contractor's obligations under this Agreement; and
  - (b) if the Contractor is not an individual,
    - (i) the Contractor has the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, the Contractor, and
    - (ii) this Agreement has been legally and properly executed by, or on behalf of, the Contractor and is legally binding upon and enforceable against the Contractor in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

#### 5 PRIVACY, SECURITY AND CONFIDENTIALITY

#### Privacy

5.1 The Contractor must comply with the Privacy Protection Schedule attached as Schedule E.

#### Security

- 5.2 The Contractor must:
  - (a) make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration or disposal; and
  - (b) comply with the Security Schedule attached as Schedule G.

#### Confidentiality

- 5.3 The Contractor must treat as confidential all information in the Material and all other information accessed or obtained by the Contractor or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without the Province's prior written consent except:
  - (a) as required to perform the Contractor's obligations under this Agreement or to comply with applicable laws;
  - (b) if it is information that is generally known to the public other than as result of a breach of this Agreement; or
  - (c) if it is information in any Incorporated Material.

#### Public announcements

5.4 Any public announcement relating to this Agreement will be arranged by the Province and, if such consultation is reasonably practicable, after consultation with the Contractor.

#### Restrictions on promotion

5.5 The Contractor must not, without the prior written approval of the Province, refer for promotional purposes to the Province being a customer of the Contractor or the Province having entered into this Agreement.

#### 6 MATERIAL AND INTELLECTUAL PROPERTY

Access to Material

6.1 If the Contractor receives a request for access to any of the Material from a person other than the Province, and this Agreement does not require or authorize the Contractor to provide that access, the Contractor must promptly advise the person to make the request to the Province.

Ownership and delivery of Material

6.2 The Province exclusively owns all property rights in the Material which are not intellectual property rights. The Contractor must deliver any Material to the Province immediately upon the Province's request.

Matters respecting intellectual property

- 6.3 The Province exclusively owns all intellectual property rights, including copyright, in:
  - (a) Received Material that the Contractor receives from the Province; and
  - (b) Produced Material, other than any Incorporated Material.

Upon the Province's request, the Contractor must deliver to the Province documents satisfactory to the Province that irrevocably waive in the Province's favour any moral rights which the Contractor (or employees of the Contractor) or a Subcontractor (or employees of a Subcontractor) may have in the Produced Material and that confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

Rights in relation to Incorporated Material

- 6.4 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, the Contractor grants to the Province:
  - (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify and distribute that Incorporated Material; and
  - (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

#### 7 **RECORDS AND REPORTS**

Work reporting

7.1 Upon the Province's request, the Contractor must fully inform the Province of all work done by the Contractor or a Subcontractor in connection with providing the Services.

Time and expense records

7.2 If Schedule B provides for the Contractor to be paid fees at a daily or hourly rate or for the Contractor to be paid or reimbursed for expenses, the Contractor must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to the Province. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

#### 8 AUDIT

8.1 In addition to any other rights of inspection the Province may have under statute or otherwise, the Province may at any reasonable time and on reasonable notice to the Contractor, enter on the Contractor's premises to inspect and, at the Province's discretion, copy any of the Material and the Contractor must permit, and provide reasonable assistance to, the exercise by the Province of the Province's rights under this section.

#### 9 INDEMNITY AND INSURANCE

#### Indemnity

9.1 The Contractor must indemnify and save harmless the Province and the Province's employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by the Contractor or by any of the Contractor's agents, employees, officers, directors or Subcontractors in connection with this Agreement, excepting always liability arising out of the independent acts or omissions of the Province and the Province's employees and agents.

#### Insurance

9.2 The Contractor must comply with the Insurance Schedule attached as Schedule D.

#### Workers compensation

9.3 Without limiting the generality of section 2.9, the Contractor must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of the Contractor's obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.

#### Personal optional protection

- 9.4 The Contractor must apply for and maintain personal optional protection insurance (consisting of income replacement and medical care coverage) during the Term at the Contractor's expense if:
  - (a) the Contractor is an individual or a partnership of individuals and does not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* or similar laws in other jurisdictions; and
  - (b) such personal optional protection insurance is available for the Contractor from WorkSafeBC or other sources.

#### Evidence of coverage

9.5 Within 10 Business Days of being requested to do so by the Province, the Contractor must provide the Province with evidence of the Contractor's compliance with sections 9.3 and 9.4.

#### 10 FORCE MAJEURE

(a)

Definitions relating to force majeure

- 10.1 In this section and sections 10.2 and 10.3:
  - "Event of Force Majeure" means one the following events:
    - (i) a natural disaster, fire, flood, storm, epidemic or power failure,
    - (ii) a war (declared and undeclared), insurrection or act of terrorism or piracy,
    - (iii) a strike (including illegal work stoppage or slowdown) or lockout, or
    - (iv) a freight embargo

if the event prevents a party from performing the party's obligations in accordance with this Agreement and is beyond the reasonable control of that party; and

(b) "Affected Party" means a party prevented from performing the party's obligations in accordance with this Agreement by an Event of Force Majeure.

Consequence of Event of Force Majeure

10.2 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of section 10.3.

Duties of Affected Party

10.3 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

#### 11 DEFAULT AND TERMINATION

Definitions relating to default and termination

- 11.1 In this section and sections 11.2 to 11.4:
  - (a) "Event of Default" means any of the following:
    - (i) an Insolvency Event,
    - (ii) the Contractor fails to perform any of the Contractor's obligations under this Agreement, or
    - (iii) any representation or warranty made by the Contractor in this Agreement is untrue or incorrect; and
  - (b) "Insolvency Event" means any of the following:
    - (i) an order is made, a resolution is passed or a petition is filed, for the Contractor's liquidation or winding up,
    - (ii) the Contractor commits an act of bankruptcy, makes an assignment for the benefit of the Contractor's creditors or otherwise acknowledges the Contractor's insolvency,
    - (iii) a bankruptcy petition is filed or presented against the Contractor or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by the Contractor,
    - (iv) a compromise or arrangement is proposed in respect of the Contractor under the Companies' Creditors Arrangement Act (Canada),
    - (v) a receiver or receiver-manager is appointed for any of the Contractor's property, or

 the Contractor ceases, in the Province's reasonable opinion, to carry on business as a going concern.

#### Province's options on default

- 11.2 On the happening of an Event of Default, or at any time thereafter, the Province may, at its option, elect to do any one or more of the following:
  - by written notice to the Contractor, require that the Event of Default be remedied within a time period specified in the notice;
  - (b) pursue any remedy or take any other action available to it at law or in equity; or
  - (c) by written notice to the Contractor, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under section 11.2(a).

Delay not a waiver

11.3 No failure or delay on the part of the Province to exercise its rights in relation to an Event of Default will constitute a waiver by the Province of such rights.

Province's right to terminate other than for default

11.4 In addition to the Province's right to terminate this Agreement under section 11.2(c) on the happening of an Event of Default, the Province may terminate this Agreement for any reason by giving at least 10 days' written notice of termination to the Contractor.

Payment consequences of termination

- 11.5 Unless Schedule B otherwise provides, if the Province terminates this Agreement under section 11.4:
  - (a) the Province must, within 30 days of such termination, pay to the Contractor any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to the Province's satisfaction before termination of this Agreement; and
  - (b) the Contractor must, within 30 days of such termination, repay to the Province any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that the Province has notified the Contractor in writing was not completed to the Province's satisfaction before termination of this Agreement.

#### Discharge of liability

11.6 The payment by the Province of the amount described in section 11.5(a) discharges the Province from all liability to make payments to the Contractor under this Agreement.

Notice in relation to Events of Default

11.7 If the Contractor becomes aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, the Contractor must promptly notify the Province of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps the Contractor proposes to take to prevent the occurrence of the anticipated Event of Default.

#### 12 DISPUTE RESOLUTION

Dispute resolution process

- 12.1 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
  - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
  - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
  - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.

Location of arbitration or mediation

12.2 Unless the parties otherwise agree in writing, an arbitration or mediation under section 12.1 will be held in Victoria, British Columbia.

Costs of mediation or arbitration

12.3 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under section 12.1 other than those costs relating to the production of expert evidence or representation by counsel.

#### 13 MISCELLANEOUS

Delivery of notices

- 13.1 Any notice contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
  - (a) by fax to the addressee's fax number specified on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day;
  - (b) by hand to the addressee's address specified on the first page of this Agreement, in which case it will be deemed to be received on the day of its delivery; or
  - (c) by prepaid post to the addressee's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing.

Change of address or fax number

13.2 Either party may from time to time give notice to the other party of a substitute address or fax number, which from the date such notice is given will supersede for purposes of section 13.1 any previous address or fax number specified for the party giving the notice.

#### Assignment

13.3 The Contractor must not assign any of the Contractor's rights under this Agreement without the Province's prior written consent.

#### Subcontracting

- 13.4 The Contractor must not subcontract any of the Contractor's obligations under this Agreement to any person without the Province's prior written consent, excepting persons listed in the attached Schedule C. No subcontract, whether consented to or not, relieves the Contractor from any obligations under this Agreement. The Contractor must ensure that:
  - (a) any person retained by the Contractor to perform obligations under this Agreement; and
  - (b) any person retained by a person described in paragraph (a) to perform those obligations

fully complies with this Agreement in performing the subcontracted obligations.

#### Waiver

13.5 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.

#### Modifications

13.6 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

#### Entire agreement

13.7 This Agreement (including any modification of it) constitutes the entire agreement between the parties as to performance of the Services.

Survival of certain provisions

13.8 Sections 2.9, 3.1 to 3.4, 3.7, 3.8, 5.1 to 5.5, 6.1 to 6.4, 7.1, 7.2, 8.1, 9.1, 9.2, 9.5, 10.1 to 10.3, 11.2, 11.3, 11.5, 11.6, 12.1 to 12.3, 13.1, 13.2, 13.8, and 13.10, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.

#### Schedules

13.9 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.

Independent contractor

- 13.10 In relation to the performance of the Contractor's obligations under this Agreement, the Contractor is an independent contractor and not:
  - (a) an employee or partner of the Province; or
  - (b) an agent of the Province except as may be expressly provided for in this Agreement.

The Contractor must not act or purport to act contrary to this section.

Personnel not to be employees of Province

13.11 The Contractor must not do anything that would result in personnel hired or used by the Contractor or a Subcontractor in relation to providing the Services being considered employees of the Province.

#### Key Personnel

13.12 If one or more individuals are specified as "Key Personnel" of the Contractor in Part 4 of Schedule A, the Contractor must cause those individuals to perform the Services on the Contractor's behalf, unless the Province otherwise approves in writing, which approval must not be unreasonably withheld.

#### Pertinent information

13.13 The Province must make available to the Contractor all information in the Province's possession which the Province considers pertinent to the performance of the Services.

#### Conflict of interest

13.14 The Contractor must not provide any services to any person in circumstances which, in the Province's reasonable opinion, could give rise to a conflict of interest between the Contractor's duties to that person and the Contractor's duties to the Province under this Agreement.

#### Time

13.15 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

Conflicts among provisions

- 13.16 Conflicts among provisions of this Agreement will be resolved as follows:
  - (a) a provision in the body of this Agreement will prevail over any conflicting provision in, attached to or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise; and
  - (b) a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.

#### Agreement not permit nor fetter

13.17 This Agreement does not operate as a permit, license, approval or other statutory authority which the Contractor may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

#### Remainder not affected by invalidity

13.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.

Further assurances

13.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.

#### Additional terms

13.20 Any additional terms set out in the attached Schedule F apply to this Agreement.

#### Governing law

13.21 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

#### 14 INTERPRETATION

- 14.1 In this Agreement:
  - (a) "includes" and "including" are not intended to be limiting;
  - (b) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
  - (c) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
  - (d) "attached" means attached to this Agreement when used in relation to a schedule;
  - (e) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
  - (f) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
  - (g) "person" includes an individual, partnership, corporation or legal entity of any nature; and
  - (h) unless the context otherwise requires, words expressed in the singular include the plural and *vice versa*.

#### 15 EXECUTION AND DELIVERY OF AGREEMENT

15.1 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in section 13.1 or any other method agreed to by the parties.

The parties have executed this Agreement as follows:

SIGNED on the \_\_\_\_ day of SIGMED on the 🕇 day of OVEMBR201 by the November , 20<u>1/</u> on behalf of the Contractor (or, if not an individual, Province on its behalf by its authorized by its duly authorized representative: signatory or signatories): Signature(s) Signature Print Name Print Name(s) Noad Print Title(s) Print Title

#### Schedule A – Services

#### PART 1. TERM:

The term of this Agreement commences on November 4, 2011 and ends on March 31, 2012.

#### PART 2. SERVICES:

To provide Communication expertise, planning, product development and support for two aspects of the Carbon Neutral Government (CNG) file.

#### Outputs

The Contractor must deliver the following:

Phase One: Develop a plan for Phase One by Nov. 11/2011 to create and/or edit materials as required to communicate updates to program requirements, including a new verification program, to over 200+ directly impacted stakeholders who support successful achievement of Carbon Neutral Government. The plan for Phase One must include:

- Developing communication or key messaging (agreeing on the best way to communicate important information the key messages we want the stakeholders to understand); and
- Confirming communications and training timeline (within our parameters); and
- Development and/or feedback on resources/tools/presentations (e.g. provide advice on newsletter, and a Webinar); and
- Review and suggest improvements to our high level self-certification materials to ensure clear and simple; and
- Developing a FAQ and Q & A for staff; and
- Distribution plans to all Stakeholders; and
- Identifying communication issues/approaches as required.

Phase One must be completed by Jan. 31/2012.

Phase Two: Develop and support a broader communication and brand strategy for Carbon Neutral Government, based on Ministry of Environment Executive and Government Communication and Public Engagement (GCPE) direction and guidelines to include:

- Developing a new communication plan, building on the work developed in spring of 2011 around CNG and brand; and
- Developing tools/inaterials as required may include supporting development and planning of twothree events; and also
- May include brand development, testing and roll-out strategy, building on work already completed.

Timeline for Phase Two will be determined jointly with Executive and Government Communication and Public Engagement (GCPE), but development must be completed by March 31, 2012.

#### Inputs

Contractor must consider or be provided:

- CNG revised timeline
- Self-certification training and guidance material to be used by CAS as part of the outreach
- Original CNG communication and brand materials developed in Spring 2011

#### Outcomes

Through the delivery of the Services the Province wishes to realize the following outcomes and, without limiting the obligation of the Contractor to comply with other provisions of this Part, the Contractor must use commercially reasonable efforts to achieve them:

This project aligns with the Ministry of Environment Service Plan Goal 1: Effective action on climate change and Objective 1.1: Reduced provincial greenhouse gas emissions. By supporting implementation of an important aspect of the Carbon Neutral Government (CNG) initiative and successfully communicating the benefits and outcomes of the initiative – the contractor will assist the province in:

- Demonstrating leadership of a credible climate policy that has lead to significant greenhouse gas emission reductions; and
- Raising the level of understanding about how the CNG initiative is linked to best practices in energy and capital asset management – ie conservation and energy efficiency as the first and best way to save money, lower emissions and avoid new power generation; and
- Supporting behavior change that will both drive down energy use across the public sector and across the broader public sector as public sector employees (nurses, teachers, staff) share the message with their families and friends across BC; and
- Minimizing the risk of catastrophic climate change on future generations.

The parties acknowledge that the Contractor does not warrant that these outcomes will be achieved.

#### **Reporting Requirements**

All plans and materials must be provided in electronic format (expected to be MS Office compatible – unless otherwise agreed).

Contractor must hold weekly team meetings and debrief calls and produce an electronic weekly summary of key progresses and next steps.

#### PART 3. RELATED DOCUMENTATION:

#### PART 4. KEY PERSONNEL:

- 1. The Key Personnel of the Contractor are as follows:
  - (a) Maureen Murphy
  - (b) Katrina Nash

#### Schedule B – Fees and Expenses

#### **<u>1. MAXIMUM AMOUNT PAYABLE:</u>**

<u>Maximum Amount</u>: Despite sections 2 and 3 of this Schedule, \$25,000.00 is the maximum amount which the Province is obliged to pay to the Contractor for fees (exclusive of applicable taxes) and expenses under this Agreement.

Phase One: Not to exceed \$7,000

Phase Two: Not to exceed \$20,000

The total invoice of both phases, including expenses will not exceed the Maximum amount mentioned above,

#### 2. FEES:

**Hourly Rate** 

#### <u>Fees</u>:

s.22 : at a rate of \$1300 per day or \$175.00 per hour for those hours during the Term when the Contractor provides the Services.

s.22 at a rate of \$400 per day or \$55.00 per hour for those hours during the Term when the Contractor provides the Services.

#### 3. EXPENSES:

#### <u>Expenses</u>:

the Contractor's actual long distance telephone, fax, postage and other identifiable communication expenses – not to exceed \$ 100.00, exclusive of applicable taxes.

#### 4. STATEMENTS OF ACCOUNT:

**Statements of Account**: In order to obtain payment of any fees and expenses under this Agreement a period from and including the 1st day of a month to and including the last day of that month (each a "Billing Period"), the Contractor must deliver to the Province on a date after the Billing Period (each a "Billing Date"), a written statement of account in a form satisfactory to the Province containing:

- (a) the Contractor's legal name and address;
- (b) the date of the statement, and the Billing Period to which the statement pertains;
- (c) the Contractor's calculation of all fees claimed for that Billing Period, including a declaration by the Contractor of all hours worked during the Billing Period for which the Contractor claims fees and a description of the applicable fee rates;
- (d) a chronological listing, in reasonable detail, of any expenses claimed by the Contractor for the Billing Period with receipts attached, if applicable;
- (e) the Contractor's calculation of any applicable taxes payable by the Province in relation to the Services for the Billing Period;
- (f) a description of this Agreement;
- (g) a statement number for identification; and
- (h) any other billing information reasonably requested by the Province.

#### 5. PAYMENTS DUE:

<u>Payments Due</u>: Within 30 days of our receipt of your written statement of account delivered in accordance with this Schedule, we must pay you the fees (plus all applicable taxes) and expenses, claimed in the statement if they

are in accordance with this Schedule. Statements of account or contract invoices offering an early payment discount may be paid by us as required to obtain the discount.

#### Schedule C - Approved Subcontractor(s)

Not applicable.

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Schedule D – Insurance

Not Applicable (Risk Management was consulted- continuation of previous work - see GSA- CAS1140)

Schedule E – Privacy Protection Schedule

Not applicable

Schedule F – Additional Terms

Not applicable

Schedule G – Security Schedule

Not applicable



# Inventory of Wood-burning Appliance Use in British Columbia

**Report of Findings** 

March 2012

## **Presented to:**



British Columbia Ministry of Environment

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# **Executive Overview**

## Introduction

The British Columbia Ministry of Environment commissioned Mustel Group to conduct a province-wide survey of British Columbia residents regarding the use of residential wood-burning appliances. The questionnaire is largely based on that used in a similar survey conducted in 2003, and is designed primarily to assist the Ministry in better understanding the incidence of wood-burning appliances across the province and frequency of use.

Key findings are summarized briefly in this executive overview. Further details are presented in the *Detailed Findings* section.

## Summary of Key Survey Findings

## Incidence of Wood Burning Appliances

Among British Columbia households outside of Metro Vancouver the most common main source of domestic heat is natural gas (45%). For about one-third of homes electricity is the main source, while one-in-ten relies on wood or wood pellets.

However, a total of 30% of homes across British Columbia outside of Metro Vancouver currently burn wood or wood pellets in a fireplace, wood stove or other wood burning appliance, with about two-thirds of those located in rural areas (63%).

Regionally the highest incidence of domestic use of wood burning appliances is found in the Cariboo region where almost half of all homes currently burn wood or pellets. Lowest incidence is in the Thompson Okanagan and South Coast regions at less than one-quarter of homes.

Homes that use wood burning appliances use them to generate on average approximately 43% of their domestic heat. This varies across BC from about 36% in the Thompson Okanagan and South Coast Regions to more than 50% in the Kootenay Boundary and Cariboo regions.

The most common wood burning appliance in use is a wood stove (58%), with about fourin-ten using a fireplace or insert (42%). A pellet stove or furnace is used by just 7% as is a wood burning central heating system. The large majority has just one wood stove (92%), or one fireplace or insert (72%). Among users of fireplaces or inserts 40% are known to be certified low emissions, compared with 64% of wood burning furnaces or boilers, 71% of wood stoves and 89% of pellets stoves.

## Wood as a Fuel

On average, users of pellet stoves burn about eighty standard (40 pound) bags of pellets over the course of twelve months. Among those who use a wood burning appliance the median average for the province as a whole is one and a half to two cords of wood over the past twelve months.

Of all wood burned in homes over the past year on average more than half was burned in wood stoves (57%), with about one-third burned in fireplaces. The most common species of wood burned in BC are Douglas Fir (59%) and Pine (40%).

Among those who burn wood the majority gathers it themselves (64%); about one-third buys their wood, mostly pre-bucked and delivered to them buy truck.

Those who burn wood at home most commonly gather or purchase their wood during the fall (55%) or summer (40%) months, with about one-third who do so in spring and just 18% in winter. Most will then dry or season the wood for six months or more (65%), storing it outside but covered.

### Wood Burning Behaviour

On average, users of wood burning appliances have been burning wood for more than fifteen years (mean average 15.6 years), with pellet stoves used on average for about 10 years. The major reasons for using a wood burning appliance include the reliability of using wood as a heat source in the event of power outages (61% rated as a major reason), that wood supply is readily available (61% also rate this as a major reason) and remains cheaper compared with other types of fuel (59% rate as a major reason).

During winter months those with a wood burning appliance have a fire going an average of 5 days a week compared with about two days per week in spring and fall, and less than one day a week in summer. During winter the majority will burn wood most of the day, with almost half who burn overnight (44%). At other times of the year the mornings and evenings are the most common times for using wood burning equipment.

Of the various materials other than wood that might be burned in a wood burning appliance it is only newspaper and cardboard or other paper products that are burned with any regularity. Just over half of all users burn newspapers at least sometimes in their appliances (58%), with about one-third that burns cardboard and other paper products at least sometimes (32%).
### Installation of New Appliances

In all, about one-in-ten users of wood burning appliances has installed new equipment in the past two years, the majority of whom having installed a wood stove (57%). More than three-guarters of those who installed new equipment have found that the new equipment produces less smoke that the equipment it replaced.

About one-quarter of all users expect to install new wood or wood pellet burning equipment, either as replacement or as brand new installation within the next three years; of those almost half expect to install a wood stove (47%), with one-in-five opting for a pellet stove.

The most common reasons for installing new equipment are out of need to replace or upgrade failing older equipment for more fuel efficient new equipment.

### Incentives, Bylaws and Programs

About half of all users of wood burning appliances are currently aware of the cash incentives available in many BC communities for upgrading to newer, more efficient, cleaner burning wood or pellet stoves, with awareness highest in the Kootenay Boundary (72%) and Cariboo (62%) regions.

About one-third of users are currently aware of the provincial wood stove exchange program, with just 4% that has actually taken part in the program.

If a \$250 incentive were made available a total of 41% of users of wood burning appliances would feel more likely to upgrade or replace their existing wood or pellet burning equipment, with 14% "very likely".

A total of six-in-ten users are currently aware that most new stoves sold in British Columbia are mandated by law to have low smoke emissions rates.

### Smoke Emissions

Chimney smoke is currently a concern for about one-in-five residents across the province (21%), with the main concerns generally being its impact on health, the environment and the smell.

Of the suggested actions to reduce the amount of smoke from wood burning equipment strongest support is expressed for "Provincial Regulations that only allow clean burning wood appliances to be sold in BC" (77% support vs. 13% oppose). This is closely followed by support for "Providing a cash back incentive for removing old wood stoves and wood inserts" (71% support vs. 16% oppose).

Other measures such as restricting burning on poor air quality days, fines for excessive smoke production, required removal of all appliances upon the sale of a property and establishing a bylaw to reduce smoke emissions each receive support from approximately half of all residents, with about one-third opposed.

Currently "Transportation, including vehicles, trains, aircraft and ships" is most commonly rated as a medium to high contributor (55%), followed by Industry in general (40%); households (including wood stoves and backyard burning) and the forestry industry, including land clearing and agricultural burning are each rated medium to high contributors to air pollution by about one-third of residents (36% and 32% respectively).

Overall the large majority of British Columbians outside of Metro Vancouver perceive the air quality in the area in which they live as "almost always good" (57%) or "good most of the time, poor on occasion" (31%).



# Foreword

## **Background & Objectives**

The British Columbia Ministry of Environment commissioned Mustel Group to conduct a province-wide survey of British Columbia residents regarding the use of residential woodburning appliances. The questionnaire is largely based on that used in a similar survey conducted in 2003, and is designed primarily to assist the Ministry better understand the incidence and frequency of use of wood-burning appliances across the province.

More specifically, the objectives of the survey are to enable the Ministry:

- To determine the number of domestic wood-burning appliances in use in the province,
- To estimate emissions of air pollutants from wood-burning, and
- To guide outreach and education campaigns targeting wood-burners.

Currently domestic wood-burning is estimated to account for approximately 15% of total fine particulates matter emissions in BC. While use of wood heating may have changed considerably since 2003, as other sources of air pollutants begin to use cleaner fuels, wood heating may in fact account for a larger proportion of remaining air pollutants than in the past.

### Methodology

A mixed-mode approach was employed for this survey in order to maximize the number of interviews completed within budget.

The main method of data collection was a random telephone survey, used initially to determine the incidence of wood-burning appliance users across the province. A web survey, which can be a more cost efficient method than a telephone survey to target low incidence respondents, was also used to boost the sub-sample of users.

### Sampling

The approach to sampling was to set disproportionate targets for each region and subregion, with an approximate ratio of two-thirds users to one-third non users. In order to establish the actual incidence of users, surveys were conducted at random with both users and non-users and proportions of completed surveys were monitored up until the point that the smaller non-user targets were reached. Once the non-user targets were reached those quota cells closed and surveys were only completed with users (an over-sample).

While the incidence of users of wood-burning appliances varies by region, the overall incidence for the province as a whole (excluding Metro Vancouver) is 30%.



The six main regions and twenty-five sub-regions, as defined by the Ministry, were geomapped and random samples of households were drawn for each area, using a regularly up-dated database of published, residential telephone listings. Within each household the eligible respondent was identified as the person most knowledgeable about their home heating equipment. Up to six calls were made in attempting to complete an interview with each household/respondent selected, a measure to minimize potential non-response bias.

While the telephone survey was being conducted, a total of 500 surveys were completed among users via a web survey, programmed and hosted by Mustel Group and utilizing a reputable, reliable Canadian panel sample.

About halfway through the fieldwork period additional budget was made available in order to complete a boosted telephone sample of users in two of the existing sub-regions (Bulkley Valley and Cranbrook/Kimberly), along with the creation of a new sub-region (Princeton), in which a target of 70 users and 30 non-users was set.

### Results

In the end a total of 2,527 interviews were completed, 1,765 with users and 762 with nonusers. The following disproportionate sampling distribution was achieved by major region:

	Total	MoE*	Users	MoE*	Non-Users	MoE*
Total	2527	+/-1.9	1765	+/-2.3	762	+/-3.6
Northern Region (Omineca, Skeena and Northeast)	459	+/-4.6	343	+/-5.3	116	+/-9.1
Cariboo Region	280	+/-5.9	187	+/-7.2	93	+/-10.2
Thompson/Okanagan Region	481	+/-4.5	334	+/-5.4	147	+/-8.1
Kootenay/Boundary Region	381	+/-5.0	274	+/-5.9	107	+/-9.5
South Coast Region	284	+/-5.8	193	+/-7.1	91	+/-10.3
West Coast Region	642	+/-3.9	434	+/-4.7	208	+/-6.8

\* Margin of Error at the 95% level of confidence

Statistical tolerance limits (or sampling margin of error) are displayed in the table above at the 95% confidence level (or 19 times out of 20, if the study were to be repeated).

At the data processing stage results were weighted back into proportion according to known incidence levels of users versus non-users and according to known estimates from Statistics Canada of the number of households in each region and sub-region. Base sizes shown in graphs and tables of this report reflect the actual (rather than weighted) number of interviews completed.

		Total		Users		Non-Users	
		Actual	Weighted	Actual	Weighted	Actual	Weighted
Total		2546	2546	1765		781	
	Prince George	101	86	67	13	34	73
Northern Region (Omineca, Skeena	Bulkley Valley Lakes District Airshed	235	35	188	19	47	16
and Northeast)	Other Northern Region	126	172	88	66	38	106
	Quesnel	91	26	60	9	31	16
Cariboo Region	Williams Lake	90	22	60	8	30	14
	Other Cariboo Region	100	34	67	21	33	12
	Kelowna	81	148	54	14	27	133
	Kamloops	80	102	54	8	26	94
Thompson/	Shuswap	80	30	54	8	26	23
Okanagan Region	Princeton	122	6	71	3	51	4
	Other Thompson/ Okanagan Region	128	357	102	117	26	240
	Grand Forks	81	11	54	4	27	7
Kootenay/	Cranbrook and Kimberley	141	40	112	9	29	31
Boundary Region	Golden	82	10	54	5	28	4
	Other Kootenay/ Boundary Region	81	152	54	56	27	96
	Sea to Sky Corridor	90	62	60	26	30	36
South Coast Region	Fraser Valley Regional District	103	289	72	30	31	260
	Other South Coast Region	91	54	60	26	31	28
	Capital Regional District	91	429	56	140	35	289
	Nanaimo	83	104	56	19	27	85
	Cowichan Valley	97	73	63	26	34	46
West Coast Region	Comox Valley	87	65	54	13	33	51
	Campbell River	81	39	55	8	26	31
	Port Alberni	81	28	54	7	27	21
	Other West Coast Region	123	173	96	113	27	60

Following is a more detailed table of completed surveys by sub-region (unweighted vs. weighted):



## **Detailed Findings**

### 1. Wood Burning Appliances

### 1.1 As a Main Heat Source

Among British Columbia households outside of Metro Vancouver the most common main source of domestic heat, for more than four-in-ten homes, is natural gas (45%). For about one-third of homes electricity is the main source of heat, while one-in-ten relies on wood or wood pellets.

Regionally, residents of the west coast are more likely to heat with electricity (51%) or fuel oil (13%) compared on average with other regions, while those in the Cariboo region are more likely than others on average to heat with wood or wood pellets (24%).

When it comes to urban versus rural residents, those in an urban area are more likely to heat with natural gas (55% vs. 28% of rural residents), with those living in rural communities more likely than their urban counterparts to heat with wood or wood pellets (22% and 3% respectively). Use of electricity is the same in both settings (34%).



#### Main Heat Source for Home

Base: Total (n=2,546)

Q.8) What is the main source of heat in your home?

### 1.2 Incidence of Wood Burning Appliances

Across British Columbia, approximately 30% of homes outside of Metro Vancouver currently burn wood or wood pellets in a fireplace, wood stove or other wood burning appliance, and about two-thirds of those are located in rural areas (63%).

Regionally, the incidence is highest in the Cariboo where almost half of all homes currently burn wood (47%); least likely are residents of the Thompson Okanagan and South Coast regions where the incidence falls to less than one quarter.

Households more likely to burn wood or wood pellets include those in a rural setting (49% vs. 18% urban) and those who currently rent (53% vs. 25% of owners).



#### Incidence of Burning Wood or Pellets Across British Columbia

Base: Total (n=2,546)

*Q.9)* Do you burn wood or wood pellets at all in a fireplace, woodstove or other wood burning appliance?



Among users of wood burning appliances in BC, approximately 43% of heat generated inhome comes from burning wood or pellets. This ranges across BC from about 36% in the Thompson Okanagan and South Coast Regions to more than 50% in the Kootenay Boundary and Cariboo regions.

It also varies according to the type of appliance used from about one-quarter of the home's heat for those with a fireplace or insert (27%), to just over half of the home's heat for those with a wood stove or pellet stove (52-54%), to approximately 71% of those that use a wood burning central heating system.



#### Proportion (%) of Household Heat from Burning Wood or Pellets

Base: Users (n=1,765)

*Q.11) Of all the heat used in your home, approximately what percentage comes from burning wood or pellets:* 

### 1.3 Inventory

When it comes to the type of wood burning appliance most commonly used over the past twelve months, more than half of all users burned wood in a wood stove (58%), with more than four-in-ten using a fireplace or insert. A pellet stove or furnace was used by just 7%, as was a wood burning central heating system.

Wood stoves are more commonly used in rural settings (66% vs. 44% urban homes), while fireplaces or inserts are more likely to be used in urban homes (58% vs. 33% or rural homes).



#### Wood Burning Appliances Used in Past 12 Months

Base: Users (n=1,765)

Q.12) Which of the following types of wood burning fixtures or equipment did you use in your home in the past 12 months?

Use of a wood stove is somewhat more common in the West Coast and Kootenay Boundary regions (63-64%), while use of pellet stoves or furnaces are a little more common in the Cariboo and Northern regions, and wood burning central heating systems also more common in the Cariboo.

	Region						
	West <u>Coast</u> (434) %	South <u>Coast</u> (192) %	Kootenay <u>Boundary</u> (274) %	Thompson <u>Okanagan</u> (335) %	<u>Cariboo</u> (187) %	<u>Northern</u> (343) %	
Wood stove	63	46	64	53	54	53	
Wood fireplace insert	45	53	29	48	25	29	
Pellet stove or furnace	5	5	8	7	16	14	
Wood burning central heating system	3	6	8	9	19	12	



### 1.4 Fireplace or Insert

Of those who currently have a fireplace or insert the majority has just one in their home (72%), with about one-quarter that has two, and 2% with 3 or more.



#### Number of Wood Burning Fireplaces or Inserts

Base: Total have a wood fireplace or insert (n=641)



On average, users of fireplaces or inserts have had them for about thirty years or so (mean average 34 years). About one quarter of users have had their fireplace or insert for less than ten years, with 14% less than 5 years.

Urban homes which are more likely to be older and owned by the residents have, on average older fireplaces or inserts (mean 39 years) compared with homes in rural areas (mean 29 years).

#### **Approximate Age of Fireplace or Insert**







Approximately 40% of fireplaces or inserts are known to be cleaner burning low-emission appliance which are certified, with about one-third that are not, however one-quarter did not know if they were or not.

Regionally, awareness is lowest among residents of the South Coast and Thompson Okanagan (35% and 31% respectively don't know).

More than half of all fireplaces found in rural homes are known to be certified cleaner burning (57% vs. 22% of urban homes), with awareness also considerably higher compared to those living in an urban setting (19% of rural residents answered "don't know" compared with 32% of urban).



#### **Certified Low-Emission Appliance**

Base: Total have a wood fireplace or insert (n=639)

*Q.15)* Is your fireplace or insert a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).



### 1.5 Wood Stoves

Of those who currently have a wood stove the large majority has just one in their home (92%), with about 7% that has two or more.



#### **Number of Wood Stoves**

Base: Total have a woodstove (n=1,000)

Q.16) How many wood stoves do you currently have in your home?

On average, users of wood stoves have had them for about fourteen years (mean average 14 years). About four-in-ten users have had their fireplace or insert for less than ten years, with one-in-five less than 5 years.

#### Approximate Age of Wood Stove



Base: Total have a woodstove (n=998)

Q.17) Approximately how old is your woodstove?

More than two-thirds of wood stoves are known to be certified cleaner burning lowemission appliances (71%), with about one-in-ten that are not (12%); a further 17% did not know if they were or not.

Awareness of the certification of their wood stove is just somewhat higher amongst rural residents (15% of rural residents answered "don't know" compared with 21% of urban).





Base: Total have a woodstove (n=998)

*Q.18)* Is your woodstove a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).



### 1.6 Wood Burning Central Heating

Of those who use a wood burning central heating system the majority currently has a warm air furnace (73%), with about one-in-five that has a boiler (22%).

Most furnaces and boilers are located inside (79%), with one-in-five outside.



Type of Wood Burning Central Heating Appliance and Location

Base: Total have a wood burning furnace or boiler (n=168)

*Q.19)* Is your wood burning central heating system a warm air furnace or a boiler? *Q.20)* Is your wood burning furnace or boiler located inside or outside your house?



On average, users of wood burning furnaces or boilers have had them for about fifteen years (mean average 14.8 years). About four-in-ten users have had their fireplace or insert for less than ten years, with about one-in-five less than 5 years.



#### Approximate Age of Wood Burning Furnace or Boiler

Base: Total have a wood burning furnace or boiler (n=168) Q.21) Approximately how old is your wood burning furnace or boiler?

Almost two-thirds of wood burning furnaces and boilers are known to be certified cleaner burning low-emission appliances (64%), with about 16% that are not; however, a further 20% did not know if they were or not.





Base: Total have a wood burning furnace or boiler (n=168)

*Q.22)* Is your furnace or boiler a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).

### 1.7 Pellet Stoves

Of those who currently have a pellet stove the large majority has just one in their home (89%), with about one-in-ten that has two, and just 1% with 3.



#### Number of Pellet Stoves



Q.23) How many pellet stoves do you currently have in your home?

Most pellet stoves are known to be certified cleaner burning low-emission appliances (89%), with just 3% that are not; a further 8% did not know if they were or not.



#### **Certified Low-Emission Appliance**

Base: Total have a pellet stove (n=159)

*Q.24)* Is your pellet stove a cleaner burning low-emission appliance which is certified? It could be certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).

### 2. Wood as a Fuel

### 2.1 Volume Burned – Pellet Stoves

On average, users of pellet stoves burn about eighty-one standard (40 pound) bags of pellets over the course of twelve months. More than half of pellet stove users will burn 100 or more standard bags in a year, while about one quarter will burn fewer than ten.

Homes situated in a more rural setting burn considerably more pellets than those in an urban community (approximately 92 vs. 60 standard bags over 12 months), as do home owners versus renters (98 bags vs. 55 respectively).



### Amount of Pellets Burned Over the Past 12 Months

Base: Total have a pellet stove (n=159)

*Q.25)* A standard bag of pellets weighs 40 pounds. Approximately how many bags of pellets did you burn over the past 12 months?



### 2.2 Volume Burned – Other Wood Burning Appliances

About one-third of those who use a wood burning appliance will burn one cord of wood or less over the course of a year (31%), while about four-in-ten will burn between one and three cords (38%); a little more than one-quarter of users burn three or more cords.

The median average for the province as a whole is one and a half to two cords of wood over the past twelve months.

Perhaps not surprisingly those more likely to burn a larger volume of wood, 3 or more cords each year, reside in the Northern (40%), Cariboo (45%) or Kootenay Boundary regions (46%). Homes in rural areas are also likely to burn a larger volume of wood (36% burns 3 or more cords per year compared with 13% of homes in urban areas).



#### Cords of Wood Burned in Past 12 Months

Base: Total wood burners (n=1,640)

*Q.27)* Approximately how many cords of wood did you burn in your wood-burning equipment over the past 12 months? Please stop me when I have reached your category. Would you say you used?

Of all wood burned in homes over the past year on average more than half was burned in wood stoves (57%), with about one-third burned in fireplaces, with the remaining 6% or so burned in a wood furnace or boiler.

In the Cariboo region, where use of wood burning furnaces or boilers are somewhat more commonplace, wood stoves are still the main appliance used for burning wood (60%), but use of a fireplace and wood furnace or boiler are more evenly divided (proportion of wood burned in these appliances over the year is 22% and 18% respectively).

		Region by Wood Burners						
	<u>Total</u> (1,651) %	West <u>Coast</u> (416) %	South <u>Coast</u> (187) %	Kootenay <u>Boundary</u> (264) %	Thompson <u>Okanagan</u> (314) %	<u>Cariboo</u> (164) %	<u>Northern</u> (306) %	
Wood stove(s)	57	60	44	67	50	60	59	
Wood fireplaces (s)	38	38	51	27	44	22	28	
Wood furnace or boiler(s)	6	3	5	6	6	18	13	
<i>Q.28) Of all the wood burned in your home over the past year, excluding pellets, approximately what percentage did you burn in your:</i>								

#### Approximate Overall Percentage of Wood Burned – Past Year



### 2.3 Species of Wood Burned

The most common species of wood burned BC are Douglas Fir (59%) and Pine (40%). Next most popular are Alder, Spruce and Birch, each burned by about one quarter of wood burning appliance users; burned somewhat less are Hemlock (17%) and Cedar (12%). Various other woods such as Arbutus, Maple or wood from fruit trees are each burned by 7% or less.

Among those people that burn multiple types of wood the proportions of each type burned generally follow the order of popularity (proportions shown as "Average by Type").



#### Types of Wood Burned

Base: Total wood burners (n=1,651)

*Q.29)* Which if any of the following types of wood do you burn? *Q.30)* And of those different types of wood that you burn, what percentage would be:

### 2.4 Methods of Collecting Wood

The majority of users of wood burning appliances, about two-thirds, obtain firewood themselves, with one-third that purchases their wood.

Residents in rural areas are more likely to gather their own wood (69%) compared with those in more urban areas (56%). Those in the Cariboo region are least likely to purchase their wood (16%).

The large majority of those that purchase their wood buy it pre-bucked and have it delivered (80%). About 12% buy logs or waste wood and have it delivered, with the same proportion that pick up and buck their own wood. Just 4% say they use artificial logs.



Base: Total wood burners who purchase wood (n=524)

Q.32) How do you purchase wood?

### 2.5 Timing of Wood Collection and Seasoning

More than half of users of wood burning appliances gather or purchase their wood during the Fall (55%) while 40% do so during the Summer and about one-third in the Spring; less than one-in-five will do so during the winter.



#### **Frequency of Gathering Firewood by Season**

Q.33) In what season(s) do you mainly gather or purchase your firewood?

The majority of those who burn wood will typically dry or season the wood for six months or more (65%); while about 17% will dry their wood for less than six months a similar proportion will not bother with this process at all (16%). Urban residents are less likely to dry or season their wood (21% "not at all" vs. 13% of those in rural areas).

#### Length of Time to Dry/Season Firewood



Base: Total wood burners (n=1,651)

*Q.34)* How long do you typically dry/season your firewood before the heating season?

Base: Total wood burners (n=1,651)

### 2.6 Splitting and Storage

Most of those who dry or season their wood prior to the burning season will usually have it split before they dry or season it (86%).



#### Have Firewood Split Before Drying/Seasoning

Base: Total wood burners who dry/season wood before burning (n=1,269)Q.35) Do you usually have your firewood split before drying/seasoning it?

The most common method of storing firewood is to keep it outside but undercover (84%), with just one-in-ten who will keep it outside uncovered. Those in the Okanagan are somewhat more likely than other regions to keep their wood outside uncovered (22%), perhaps due to the relatively drier climate of that region.

Storage of Wood



In all, a total of 14% keeps their wood inside, either heated or unheated.

Q.36) How do you store the majority of your wood? Would it be:

Base: Total wood burners (n=1,651)

### 3. Wood Burning Behaviour

### 3.1 Time Spent Using Wood Burning Appliances

On average, users of wood burning appliances have been burning wood for more than fifteen years (mean average 15.6 years). Users of pellet stoves have been burning pellets for an average of about 11 years (mean average 10.8 years), while those with wood burning central heating systems have been burning wood for closer to 20 years on average (mean average 18.8 years).



#### Number of Years Burning Wood or Pellets

Base: Total users (n=1,765)

Q.37) How many years, in total, have you been burning wood or pellets in your home?



### 3.2 Reasons for Using Wood Burning Appliances

Of the various reasons tested for why people burn wood in their homes, three stand out equally strong, with about six-in-ten people citing them as major reasons for their choice of fuel.

Respondents value the reliability of using wood as a heat source in the event of power outages, they appreciate that wood supply is readily available and remains cheaper compared with other types of fuel.

Just less than half consider the smell or beauty of a fire a major reason for continuing to burn wood in their homes, while for less than one-third a major reason is that they consider it an environmentally friendly option (29%). Finally, for about one-quarter a major reason is that natural gas is simply not available in their area (23%).

Those living in rural communities are more likely than their urban counterparts to rate each of the following a major reason: wood readily available, cheaper than other fuels, environmentally friendly and reliable during power outages, while urban residents are more likely than rural residents to rate the smell or beauty as a major reason.



#### 61% 28% 11%61% 25% 13% 59% 21% 18% 44% 36% 20% 29% 37% 31% 4 23% 13% 62% Major Minor Not a reason Refused/DK

#### **Reasons for Burning Wood or Pellets**

Base: Total users (n=1,765)

*Q.38)* People have mentioned to us several reasons for burning wood or pellets in their home. As I read each reason, please tell me if this is NOT A REASON, A MINOR REASON OR A MAJOR REASON for burning wood in your home.

The only other reason of note mentioned by those that burn wood is the uniqueness of the heat produced by a real fire (16%).



#### **Other Reasons for Burning Wood or Pellets**

Base: Total users (n=1,765)

Q.38) Any other reasons?



### *3.3 Frequency of Using Wood Burning Appliances – Time of Year*

Throughout the past year those with wood burning appliances in their home would have a fire burning an average of five days per week during the winter months, and about half as much during the fall (2.5 days per week on average) and spring (2.2 days per week on average), with little or no use during the summer months.

Those living in a rural setting are more likely to keep their fires going longer on average than those in urban areas, 2.9 days in fall compared with 1.8 days for urban residents, 5.6 days during winter versus 4.0 for urban residents in winter, and 2.6 versus 1.4 days in spring.

#### Average # Days Per Week Burning a Fire - by Season



Base: Total users (n=1,765)

*Q.39)* Thinking back over the seasons in the past year, approximately how many days per week would you have had a fire going in your wood burning equipment (at least one of your wood or pellet burning appliances):



### *3.4 Frequency of Using Wood Burning Appliances – Time of Day*

The majority of users of wood burning appliances tend to have a fire going throughout the day during the winter months, about six-in-ten doing so morning and afternoon, increasing to 90% in the evening and 44% keeping the fire going overnight.

Fire use lessens in both fall and spring, though the majority still has them in the evening they are used almost half as much during the afternoons and overnight. While also less, use of fires in the morning does not drop as much, likely as it is used to warm the dwelling after the colder overnight temperatures.

While fires are rarely used in the summer months, those that do tend to burn them either in the evening or first thing in the morning.

Those living in rural areas are more likely than those in urban areas to burn fires in the morning and overnight during the winter, spring and fall.

		Time of Day for Fire					
	Fall <u>season</u> (1,293) %	Winter <u>season</u> (1,688) %	Spring <u>season</u> (1,215) %	Summer <u>season</u> (112) %			
Morning	37	59	41	36			
Afternoon	29	59	24	9			
Evening	79	90	68	41			
Overnight	28	44	22	8			
Refused/don't know	1	<1	1	12			
Q.40) And in the seasons when you used your wood burning equipment, generally what times							

of day would you have had a fire going, beginning with:

### 3.5 Other Types of Material Burned

Of the various other materials that might be burned in a wood burning appliance it is only newspaper and cardboard or other paper products that are burned with any regularity. The large majority of users claim never to burn other materials such as magazines, manufactured, painted or treated wood or plastics. Very few burn driftwood in their appliances either; even on the coast about 85% of the South and West coast regions say they never burn driftwood.

Those burning manufactured wood products are somewhat more likely to live in urban communities (12% do so at least sometimes or more often vs. 8% of rural residents).



#### Frequency of Burning Various Types of Materials

Base: Total users (n=1,765)

*Q.41)* Next I'm going to read a list of materials and for each one I'd like you to tell me if you burn them always, often, sometimes, rarely or never in your wood or wood pellet burning equipment.

### 4. Installation of New Appliances

### 4.1 Past Two Years Behaviour

In all, a total of 11% of users have installed new wood or wood pellet burning appliances in the past two years. Rural residents are somewhat more likely to have done so than urban (14% rural versus 7% urban).

Among those who have installed new equipment in the past two years the most popular equipment is, by far, a wood stove (57%), with about one-in-ten installing a fireplace insert, pellet stove or wood fireplace.



Installation of New Equipment – Past 2 Years

*Q.43)* Which, if any of the following types of equipment did you install:

In the majority of cases, where residents are aware of the status of their appliance, most are EPA certified low emissions. Wood stoves and inserts tend to include baffles rather than catalysts in the fireboxes to burn smoke. However, due to the low base sizes in most of these questions results should be interpreted with caution.

Low Emissions Certification Status	
Wood Fireplace	<u>Base</u> (19*) %
EPA Certified Refused/don't know	95 5
Wood Stove	<u>Base</u> (124) %
EPA Certified with baffles EPA Certified with catalysts Neither Refused/don't know	64 11 1 25
Fireplace Insert	<u>Base</u> (35*) %
EPA Certified with baffles EPA Certified with catalysts Neither Refused/don't know	58 9 2 31
Wood Furnace	<u>Base</u> (9*) %
Conventional wood furnace EPA Certified furnace Refused/don't know	15 38 46
Wood Boiler	<u>Base</u> (7*) %
Outside the house White Tag — Low emissions Orange Tag — Low emissions Neither Refused/don't know	100 25 4 11 61
Pellet Stove	<u>Base</u> (34*) %
EPA Certified *Caution: Very low base sizes	100

### 4.2 Reasons for Installing New Equipment

The most common reasons for installing new equipment revolve around the need to replace older failing equipment, to upgrade to more fuel efficient new equipment; cost savings through improved efficiency and concerns for the environment tend to be more secondary considerations.

Reasons for Installing New Equipment				
	Total who have installed new equipment			
	First Mention (232) %	<u>Total Mentions</u> (232) %		
Fuel efficiency – old equipment	28	41		
Failure of old equipment	17	19		
Cost savings	13	20		
Age of old equipment	11	17		
Environmental/air quality concerns	5	10		
High prices for electricity	5	5		
Home insurance purposes	4	5		
Inconvenient to use old equipment	2	3		
Appearance	2	3		
Electricity supply unreliable	2	3		
Health or safety reasons	2	4		
Enjoy burning wood	1	3		
Gas is not available in my area	1	1		
Other	1	1		
Refused/don't know	6	6		
<i>Q.44/45)</i> What was the single most important reason you installed this new equipment? Any other reasons?				



### 4.3 Smoke Production

More than three-quarters of those who installed new equipment have found that the new equipment produces less smoke that the equipment it replaced.



#### New Equipment Found to Produce Less Smoke

Base: Total who have installed new equipment (n=232)

*Q.46)* Does your new wood burning appliance produce less smoke than your older wood burning equipment?



### 4.4 Intentions to Install New Equipment

Currently more than one-quarter of all users expect to install new wood or wood pellet burning equipment, either as replacement or as brand new installation within the next three years (27%), with one-in-ten that says they are "very likely" to do so.

Regionally those living in the Kootenay Boundary (33%), Thompson Okanagan (33%) and Northern (39%) regions are more likely to be considering new equipment in the next 3 years, compared with those living on the West Coast (20%), South Coast (23%) or Cariboo (24%).

Those living in more rural communities are also somewhat more likely than those in urban areas (30% likely vs. 21% respectively).



#### Likelihood of Installing New Equipment – Next 3 Years

Base: Total users (n=1,765)

*Q.47)* How likely do you think you will be to install any new wood or wood pellet burning equipment – either as a replacement for old equipment or as a brand new installation – over the next three years? Will you be very likely, somewhat likely, somewhat unlikely or very unlikely?



Among those likely to purchase and install new equipment over the next three years almost half will most likely choose a wood stove (47%), with about one-in-five opting for a pellet stove (21%), and 16% a fireplace insert.

In many of these cases the choice corresponds with the equipment they already have, and so likely anticipation of renewing or replacing the same type of existing appliance.



Appliance Most Likely to Install – Next 3 Years

Base: Total users who are likely to purchase new equipment over the next three years (n=470)

*Q.48)* Which ONE of the following types of equipment do you think you would most seriously consider installing in the next 3 years? Would it be a:



As anticipated, the main reason for considering installing the new equipment is due to the age of current, older equipment and improved fuel efficiency of the replacement equipment.

Other reasons include health or safety concerns regarding the aging equipment, the benefit to the environment of upgrading to newer, more fuel efficient equipment and cost savings resulting from the improved efficiency.

Reasons for Installing New Equipment Over Next Three Years				
	Total likely to purchase new equipment over the next three year			
	First Mention (470) %	Total Mentions (470) %		
Fuel efficiency – old equipment	31	42		
Age of old equipment	31	33		
Cost savings	7	10		
Health or safety reasons	7	11		
Failure of old equipment	6	7		
Environmental/air quality concerns	5	11		
Inconvenient to use old equipment	2	4		
Enjoy burning wood	2	5		
Appearance	2	4		
High prices for electricity	1	5		
Electricity supply unreliable	1	1		
Home insurance purposes	<1	<1		
Gas is not available in my area	<1	<1		
Other	3	3		
Refused/don't know	3	3		
0.40/F0) What was the single meet important reason you insta	lad this new service	ant? Any other		

*Q.49/50)* What was the single most important reason you installed this new equipment? Any other reasons?


# 5. Incentives, Programs and Bylaws

# 5.1 Cash Incentives

About half of all users of wood burning appliances are currently aware of the cash incentives available in many BC communities for upgrading to newer, more efficient, cleaner burning wood or pellet stoves.

Awareness is somewhat higher in the Kootenay Boundary (72%) and Cariboo (62%) regions.



#### Awareness of Cash Incentives

*Q.51)* Are you aware that there are cash incentives in many BC communities for upgrading to newer, more efficient, cleaner burning wood or pellet stoves?

			Reg	jion		
	West <u>Coast</u> (434) %	South <u>Coast</u> (192) %	Kootenay <u>Boundary</u> (274) %	Thompson <u>Okanagan</u> (335) %	<u>Cariboo</u> (187) %	Northern (343) %
Yes	46	36	72	49	62	51
No	51	59	25	41	38	43
Refused/don't know	4	5	3	10	<1	6



Base: Total users (n=1,765)

# 5.2 Provincial Wood Stove Exchange Program

About one-third of users are currently aware of the provincial wood stove exchange program, with just 4% that has actually taken part in the program.

Participation in the program is somewhat higher in the Kootenay Boundary (10%) and Cariboo (10%) regions.



### Aware of/Participated in Provincial Wood Stove Exchange Program

*Q.52)* Are you aware of or have you participated in the Provincial Wood Stove Exchange Program?

	Region					
	West <u>Coast</u> (434) %	South <u>Coast</u> (192) %	Kootenay <u>Boundary</u> (274) %	Thompson <u>Okanagan</u> (335) %	<u>Cariboo</u> (187) %	<u>Northern</u> (343) %
Aware and have participated	3	3	10	3	10	4
Aware of	26	19	48	31	39	36
Not aware of	70	77	41	64	51	56
Refused/don't know	1	2	1	2	<1	4

Base: Total users (n=1,765)

# 5.3 Upgrade Incentive

If a \$250 incentive were made available a total of 41% of users of wood burning appliances would feel more likely to upgrade or replace their existing wood or pellet burning equipment, with 14% "very likely".



## Likelihood to Upgrade/Replace with \$250 Incentive

Base: Total users (n=1,765)

*Q.53)* Assuming there was a \$250 incentive available in your community how would this affect your decision to upgrade or replace your existing wood or pellet burning equipment?



# 5.4 Smoke Emission Bylaw

In all, six-in-ten users are aware that most new stoves sold in British Columbia are mandated by law to have low smoke emissions rates, with awareness somewhat higher in the Kootenay Boundary (72%), Cariboo (72%) and Northern (66%) regions.

Those living in rural areas are also more likely to be aware of this bylaw (63% vs. 55% of urbanites), as are home owners compared with renters (62% and 55% respectively).



Awareness of Mandated Low Smoke Emission Rates for Wood Stoves in BC

*Q.54)* Were you aware that most new stoves sold in British Columbia are mandated by law to have low smoke emissions rates?



Base: Total users (n=1,765)

# 6. Smoke Emissions

# 6.1 Chimney Smoke

Chimney smoke is currently a concern for about one-in-five residents across the province, while more than three-quarters states it is either not much of a concern (26%) or not a concern at all (53%).

Those living in urban areas are just somewhat more likely to express a concern about chimney smoke in their community than those living in a more rural setting (23% concerned vs. 18% of those in rural areas).





Q.55) To what extent is chimney smoke in your local area a concern to you and your family?

The three most common concerns regarding chimney smoke are health concerns (60%) particularly expressed by those living in the West Coast region (72%), concern for the impact on the environment (38%) and finally the smell from the smoke (25%).

#### **Concerns Regarding Chimney Smoke**



Base: Total respondents who are concerned about chimney smoke (n=602)

Q.56) Why is chimney smoke a concern to you?

Of the suggested actions to reduce the amount of smoke from wood burning equipment strongest support is expressed for "Provincial Regulations that only allow clean burning wood appliances to be sold in BC" (77% support, 50% strongly and 27% somewhat). This is closely followed by support for "Providing a cash back incentive for removing old wood stoves and wood inserts" (71% support, 42% strongly and 29% somewhat).

A little more than half of all respondents then expresses support for three of the other suggested actions, "Restricting wood burning on poor air quality days" (56% support), "Requiring the removal or upgrade of older high polluting appliances when a house is sold" and "Fines for generating excessive smoke" (each supported by 53%).

There is a little less support for "Establishing a local bylaw to reduce the amount of smoke" (46% support versus 35% opposed).

Support for the idea of fines for those producing excessive smoke is highest amongst residents of the South Coast region (64%), while residents of the Cariboo are more divided, with 41% that supports the measure versus 46% opposed to it.

A similar pattern exists when it comes to support for establishing the local bylaw, with support strongest on the South Coast (54%) while more divided in the Cariboo (38% support vs. 47% opposed) and Northern region (44% support vs. 42% opposed).

Residents of the Cariboo region are also less supportive than other regions when it comes to restricting wood burning on poor air quality days (43% support vs. 44% opposed), and requiring removal of older appliances when a house is sold (45% support vs. 40% opposed).



#### Support/Oppose Smoke Reduction Measures

*Q.57)* There are a number of actions that can be taken to reduce the amount of smoke from wood burning equipment. Please tell me if you would support or oppose the following measures:

# 6.2 Sources of Air Pollution

Asked to rate the perceived level of pollution from each of four potential contributors, more than half rate "Transportation" (including vehicles, trains, aircraft and ships) as a medium to high contributor. Next, "Industry" (in general) is rated medium to high by 40%, while about one-third rates "Forestry" (including land clearing and agricultural burning, 36%), and "Households" (32%) as medium to high contributors.

Residents of the Cariboo and Northern regions are more likely than others to rate industry as a "high" contributor to air pollution (34% each), while those living on the West Coast are most likely to rate industry as a "low" contributor (66%).

Residents of the South Coast (which excludes Metro Vancouver) are more likely than other regions to rate transportation as a "high" contributor (36%), while those in the Cariboo and Kootenay Boundary regions are more likely to rate it as "low" (54% each). Also, those living in urban communities are more likely to consider transportation a "medium to high" contributor compared with those living more rurally (63% versus 45% respectively).



# **Rating of Sources of Air Pollution**

Base: Total (n=2,546)

*Q.58)* How would you rate the following sources – Low, Medium or High – for their contribution to air pollution in your area?

# 6.3 General Attitudes to Air Quality

Almost nine-in-ten residents across the province describes the air quality in the area in which they live as good, including 57% that rate it as "almost always good" and 31% as "good most of the time, poor on occasion".

Attitudes do vary somewhat by region, with perception of air quality particularly positive on the West Coast (98% good, including 72% almost always good), while it is least positive among residents of the South Coast (though excluding Metro Vancouver), where 67% rate their air quality as good, including just 28% almost always good and 39% good most of the time.

Perhaps not surprisingly, those living in rural areas are more positive about their air quality than those living in a more urban setting, with 68% of rural residents describing their air quality as "almost always good" and 26% as "good most of the time, poor on occasion". This is compared with 51% of urban residents describing their air quality as "almost always good" and 34% as "good most of the time, poor on occasion".



# Statement to Best Describe Local Air Quality

Base: Total (n=2,546)

Q.59) Which of the following statements best describes how you feel about the air quality in the area where you live? The air quality in the area where I live is:

# 7. Demographic Profiles

Demographic Profile				
	<u>Total</u> (2,546) %	<u>Users</u> (1,765) %	Non- <u>Users</u> (781) %	
Rural Area				
Yes	39	63	29	
No	60	36	70	
Refused/don't know	1	1	1	
Type of Residence				
Detached house	81	92	77	
Manufactured trailer or mobile home	6	5	7	
Apartment building	4	<1	5	
Condominium	4	1	5	
Duplex, triplex or semi-detached	3	1	4	
Rowhouse or townhouse	2	1	2	
Refused/don't know	<1	<1	<1	
Home Tenure				
Own	79	64	85	
Rent	20	36	14	
Refused/don't know	1	1	1	
Square Footage of Residence				
Less than 1,000 sq ft	11	9	13	
1,000 to 1,500 sq ft	28	27	28	
1,500 to 2,500 sq ft	36	39	35	
More than 2,500 sq ft	21	23	20	
Refused/don't know	4	2	5	
Year Residence Built				
Since 2010	1	2	1	
2000-2009	12	10	13	
1990-1999	18	13	20	
1980-1989	18	22	16	
1970-1979	24	24	23	
1960-1969	10	12	9	
1940-1959	11	10	11	
1920-1939	3	2	3	
Before 1920	2	2	2	
Refused/don't know	3	3	2	

Continued

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Demographic Profile (cont'd)				
	<u>Total</u> (2,546) %	<u>Users</u> (1,765) %	Non- <u>Users</u> (781) %	
Main Source of Heat				
Natural gas	45	25	54	
Electricity	34	30	35	
Wood or wood pellets	10	34	-	
Fuel oil or heating oil	6	7	5	
Heat pump	2	2	2	
Propane	2	2	2	
Other	1	1	2	
Refused/don't know	<1	<1	<1	
Burn Wood or Pellets				
Yes	30	100	-	
No	70	-	100	
Unused Wood Burning Appliances				
Yes	20	n/a	20	
No	80	n/a	80	

# Appendix

Questionnaire



# British Columbia Woodstove and Residential Heating Survey

Good afternoon/evening, my name is NAME, and I am calling from company name on behalf of the British Columbia Ministry of Environment. May I please speak to the person in your household who is most knowledgeable about your home heating equipment? Please be assured that we are not selling or soliciting anything.

# IF NECESSARY, REINTRODUCE SELF, THEN READ:

We are conducting a province-wide survey to gather information on wood heating equipment use. This information will assist in the design of programs and services to help residents use their equipment more efficiently, save money on fuel costs and keep our air clean. All participants in this survey will remain anonymous.

**IF ASKED:** The survey takes between 10 and 20 minutes to complete, depending on the type and number of wood burning appliances you use in your home.

- 1) To ensure that we are representing all areas of the province, may I please have your postal code?
- 2) N/A
- 3) Please note that the questions I am going to be asking you refer to the residence you are in right now. Is the residence you are in right now in a rural area, that is, in a country setting?
   1 Yes
   2 No
   9 Don't know
- 4) Is your residence a home, an apartment, condominium, something else? READ IF NECESSARY, CHECK ONE ONLY
  1 Detached house
  2 Duplex, triplex or semi-detached
  3 Apartment building
  4 Rowhouse or townhouse
  5 Condominium
  6 Manufactured trailer or mobile home
  99 Don't know
- 5) Do you own or rent this residence? 1 Rent 2 Own 9 Don't know
- 6) Approximately how large is your residence (in square feet)?1 Less than 1000 square feet
  - 2 1000 to 1500 square feet
  - 3 1500 to 2500 square feet
  - 4 More than 2500 square feet
  - 9 Don't know

7) In approximately what decade or year was your residence built?

1 Since 2010	6 1960-1969
2 2000 2009	7 1040 1050
2 1000 1000	× 1020 1020
3 1990-1999	8 1920-1939 0 D 6 1020
4 1980-1989	9 Before 1920
5 1970-1979	99 Don't Know

8) What is the main source of heat in your home? (**READ LIST**) [**ACCEPT 1 MENTION**] [**RANDOMIZE**]

1 Electricity
2 Natural gas
3 Fuel oil or heating oil
4 Wood or wood pellets
5 Propane
6 Heat Pump
96 Other [specify] [ALWAYS LAST]
99 Don't Know
If Wood or Wood Pellets is main source go to question 11 otherwise continue

9) Do you ever burn wood or wood pellets in a fireplace, woodstove or other wood burning appliance?

1 Yes 2 No 9 Don't know

# IF YES TO WOOD or PELLETS go to question 11 IF NO (or DK) TO WOOD or PELLETS continue

10) You indicated that you do not heat with wood or pellets at all. Does your home have any wood burning appliances, such as fireplaces, woodstoves, that you don't use?
1 Yes
2 No
9 Don't know

# Go to question 55

11) Of all the heat used in your home, approximately what percentage comes from burning wood or pellets:

Percentage \_\_\_\_\_% 999 Don't know

# You indicated that you heat your home at least partly with wood or pellets. I am now going to ask you some questions about the types of wood burning equipment you have in your home.

12) Which of the following types of wood burning fixtures or equipment did you use in your home in the past 12 months? READ, CHECK ALL THAT APPLY

Wood fireplace or insert	1 YES	2 NO	9 Don't know
Wood stove	1 YES	2 NO	9 Don't know
Wood burning central			
heating system (furnace or boiler)	1 YES	2 NO	9 Don't know
Pellet stove or furnace	1 YES	2 NO	9 Don't know
Other wood burning appliance	1 Specify	2 NO	9 Don't know

# If YES to fireplace or insert in 12 ask questions 13-15, otherwise skip

13) How many wood burning fireplaces or inserts do you currently have in your home? (This includes fireplaces that have an open hearth [HARRTH] and also fireplaces with doors. A fireplace insert is a cast iron or steel device that is inserted into an existing wood burning fireplace and has glass doors that allow the flames of the fire to be viewed while the insulated doors remain closed)
Descend number

Record number\_\_\_\_\_

- 14) A pproximately how old is your fireplace or insert? Record years\_\_\_\_\_\_ 999 Don't Know
- 15) Is your fireplace or insert a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).
  1 Yes
  2 No
  9 Don't know

#### Repeat question 14 and 15 if the respondent indicated more than one fireplace or insert.

## If YES to wood stove in 12 ask questions 16-18, otherwise skip.

- 16) How many wood stoves do you currently have in your home? Record number\_\_\_\_\_
- 17) Approximately how old is your woodstove? Record years 999 Don't Know
- 18) Is your woodstove a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).
  1 Yes
  2 No
  9 Don't know

#### Repeat question 17 and 18 if the respondent indicated more than one wood stove.

#### If YES to wood burning central heating in 12 ask questions 19-22, otherwise skip.

- 19) Is your wood burning central heating system a warm air furnace or a boiler1 Boiler2 Furnace9 Don't Know
- 20) Is your wood-burning furnace or boiler located inside or outside your house?1 Inside 2 Outside 9 Don't know
- 21) Approximately how old is your wood-burning furnace or boiler? Record years\_\_\_\_\_\_ 999 Don't Know
- 22) Is your furnace or boiler a cleaner burning low-emission appliance which is certified? It could be emissions certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).

1 Yes 2 No 9 Don't know

# If YES to pellet stove in 12 ask questions 23-25, otherwise skip.

- 23) How many pellet stoves do you currently have in your home? Record number\_\_\_\_\_
- 24) Is your pellet stove a cleaner burning low-emission appliance which is certified? It could be certified with either the United States Environmental Protection Agency (EPA) or the Canadian Standards Association (CSA).

1 Yes 2 No 9 Don't know

25) A standard bag of pellets weighs 40 pounds. Approximately how many bags of pellets did you burn over the past 12 months?ENTER NUMBER OF BAGS OF PELLETS: 998 Don't know

### Repeat question 24 and 25 if the respondent indicated more than one pellet stove.

### AMOUNT OF WOOD BURNED

# (ASK IF ANY WOOD BURNING EQUIPMENT OTHER THAN A PELLET STOVE IDENTIFIED IN QUESTION 12. If a pellet stove is the only appliance then go to Number 37):

### I am now going to ask you a few questions about the wood you burn in your home

26) First I would like to know how much fire wood, in total, you burned in your wood burning equipment(s) over the past 12 months. In answering this question, I would like you to express the amount of wood in 'cords', which is the standard measure of firewood volume. As you may know, one full cord is a stack of firewood that measures 4 feet in width, 8 feet in length, and 4 feet in height.

A) Is the amount of wood in one full cord clear to you?

1 YES (GO TO QUESTION 27) 2 NO or 9 Don't know (Continue)

B) Okay, forgetting about "cords", can you tell me in your own words approximately how much wood you burned in your wood-burning equipment over the past 12 months?
96 MISCELLANEOUS 97 NO, CAN'T EXPLAIN 98 Don't know
Skip to question 28

27) Approximately how many cords of wood did you burn in your wood-burning equipment over the past 12 months? Please stop me when I have reached your category. Would you say you used?

1) less than $\frac{1}{4}$ of a cord	2) $\frac{1}{4}$ to $\frac{1}{2}$ cord	3) $\frac{1}{2}$ to 1 cord	4)1 to $1\frac{1}{2}$ cords
5) 1 $\frac{1}{2}$ to 2 cords	6) 2 to 2 $\frac{1}{2}$ cords	7) 2 <sup>1</sup> / <sub>2</sub> to 3 cords	8) 3 to 3 <sup>1</sup> / <sub>2</sub> cords
9) 3 ½ to 4 cords	96)More than 4 cords	98 Don't know	

28) Of all the wood burned in your home over the past year, excluding pellets, approximately what percentage did you burn in your: ASK ONLY THOSE THAT APPLY FROM QUESTION 12

%

A Wood fireplace(s)\_%B Wood stove(s)\_%C Wood furnace or boiler(s)\_%D Other appliance (named in 12)998 Don't know

29) Which if any of the following types of wood do you burn? (READ)

- 1 Pine 2 Spruce 3 Douglas fir 4 Birch
- 5 Alder
- 6 Hemlock

- 10. Cedar
- 11. Larch
- 12. Maple
- 13. Poplar
- 14. Arbutus
- 15. Fruit wood (apple, cherry, etc.)
- 95. Varies, no specific
- 96. Miscellaneous species
- 98. Don't know varieties
- 30) And of those different types of wood that you burn, what percentage would be: THOSE MENTIONED IN Q29 (**READ**)

A Pine	%
B Spruce	%
C Douglas fir	%
D Birch	%
E Alder	%
F Hemlock	%
G Other 1	%
H Other 2	%
998 DON'T KNOW	

- 31) Do you purchase the majority of your firewood or get it yourself?1 PURCHASE2 GET FIREWOOD OURSELVES
  - 9 Don't Know

# ASK QUESTION 32 TO PARTICIPANTS WHO ANSWERED "PURCHASE" TO QUESTION 31 OTHERWISE CONTINUE TO 33

32) How do you purchase wood? (READ)
1 PRE-BUCKED, DELIVERED BY TRUCK
2 I/WE BUCK AND PICK UP
3 PURCHASE LOAD OF LOGS OR WASTE WOOD DELIVERED
4 ARTIFICIAL FIRELOGS
96 OTHER
98 DON'T KNOW

33) In what season(s) do you mainly gather or purchase your firewood?1 WINTER2 SPRING3 SUMMER4 FALL9 Don't Know

<ul> <li>34) How long do you typica</li> <li>READ, ONE ANSWEI</li> <li>1 NOT AT ALL</li> <li>2 LESS THAN SIX MO</li> <li>3 SIX TO TWELVE MO</li> <li>4 MORE THAN ONE Y</li> <li>9 Don't know</li> </ul>	lly dry/season your firewood befor <b>R ONLY</b> ONTHS ONTHS ZEAR	re the heating season? <b>DO NOT</b>
35) Do you usually have you	ur firewood split before drying/seas	soning it?
1 Yes 2 No	9 Don't know	
<ul><li>36) How do you store the m</li><li>READ, CHECK ALL</li><li>1 Outside, covered</li><li>4 Inside, unheated</li></ul>	ajority of your wood? Would it be: <b>THAT APPLY</b> 2 Outside, uncovered 9 Don't know	3 Inside, heated

#### I am now going to ask you a few questions on wood burning practices

- 37) How many years, in total, have you been burning wood or pellets in your home?ENTER NUMBER OF YEARS: 998 Don't know
- 38) People have mentioned to us several reasons for burning wood or pellets in their home. As I read each reason, please tell me if this is NOT A REASON, A MINOR REASON OR A MAJOR REASON for burning wood in your home. First...READ
  - a) A wood supply is readily available
  - b) It is cheaper compared to other fuels
  - c) I like the smell or beauty of a fire
  - d) I think it is an environmentally friendly option
  - e) Natural gas is not available in my area
  - f) Reliability in event of power outages

1 NOT A REASON	2 MINOR	3 MAJOR	9 NOT SURE

g) Any other reasons?

- 1. Enjoy the heat/unique dry heat produced by burning wood/ consistent
- 2. Supplemental source of heating
- 3. Exercise (i.e. splitting, hauling)
- 4. Only source of heat
- 96. MISCELLANEOUS REASONS
- 97. NO OTHER REASONS

39) Thinking back over the seasons in the past year, approximately how many days per week would you have had a fire going in your wood burning equipment (at least one of your wood or pellet burning appliances): **READ, ONE ANSWER ONLY FOR EACH SEASON** 

	NUMBER OF DAYS PER WEEK
A Fall Season (September through October)	0 1 2 3 4 5 6 7 (9 DK)
B Winter Season (November through February)	0 1 2 3 4 5 6 7 (9 DK)
C Spring Season (March through May)	0 1 2 3 4 5 6 7 (9 DK)
D Summer Season (June through August)	0 1 2 3 4 5 6 7 (9 DK)

- 40) And in the seasons when you used your wood burning equipment, generally what times of day would you have had a fire going, beginning with: **READ, RECORD TIMES FOR EACH SEASON IN WHICH EQUIPMENT WAS USED (FROM QUESTION 39)** 
  - A Fall Season (September through October):
  - B Winter Season (November through February
  - C Spring Season (March through May)
  - D Summer Season (June through August)

### FOR EACH SEASON SELECT ALL THAT APPLY:

- 1 Morning
- 2 Afternoon
- 3 Evening
- 4 Overnight
- 9 Don't know
- 41) Next I'm going to read a list of materials and for each one I'd like you to tell me if you burn them always, often, sometimes, rarely or never in your wood or wood pellet burning equipment. Starting with... READ

	1 Always 2 O	ften 3 Sometimes	4 Rarely	5 Never	9 Don't know
--	--------------	------------------	----------	---------	--------------

- a) Newspapers
- b) Magazines
- c) Cardboard or other paper products (junk mail, office paper, etc.)
- d) Manufactured wood products such as plywood, chipboard, fibreboard, etc.
- e) Painted or treated wood
- f) Plastics
- g) Driftwood
- 42) In the past two years, have you installed any new wood or wood pellet burning equipment either as a replacement for old equipment or as a brand new installation?
  - 1 Yes CONTINUE
  - 2 No GO TO QUESTION 47
  - 9 Don't know GO TO QUESTION 47

43) Which, if any of the following types of equipment did you install: **READ, CHECK AS MANY AS APPLY** 

2. NO

- a. Wood fireplace
- b. Woodstove
- c. Fireplace insert 1. YES
- d. Wood furnace
- e. Wood boiler 9. REFUSED
- f. Wood pellet stove
- g. UPDATED/REPLACED PARTS (PIPES, BAFFLES, ETC)

IF Q43a=1: Was the wood fireplace EPA certified? 1 YES 2 NO 9 Don't know

IF Q43b=1: Was the Woodstove:

1 EPA certified with baffles inside the firebox to burn the smoke

2 EPA certified with catalysts inside the firebox that burn off the smoke

**3 NEITHER** 

9 Don't know

IF Q43c=1: Was the Fireplace insert:

1 EPA certified with baffles inside the firebox to burn the smoke

2 EPA certified with catalysts inside the firebox that burn off the smoke

- **3 NEITHER**
- 9 Don't know

IF Q43d=1: Was the Wood furnace: 1 A Conventional Wood Furnace 2 An EPA Certified Furnace 9 Don't know

IF Q43e=1: Was the Wood boiler: 1 Inside 2 Outside 9 Don't know

IF Q43e=1: And was the Wood boiler: 1 White Tag – Low Emissions Boiler 2 Orange Tag – Low Emissions Boiler 3 NEITHER 9 Don't know

IF Q43f=1: Was the Wood pellet stove EPA certified? 1 YES 2 NO 9 Don't know

- 44) What was the single most important reason you installed this new equipment? (Do Not Read, Check One Only)
- 45) Any other reasons? (DO NOT READ, CHECK AS MANY AS APPLY. PROBE) **01 APPEARANCE** 02 AGE OF OLD EQUIPMENT 03 ELECTRICITY SUPPLY UNRELIABLE 04 ENVIRONMENTAL/AIR OUALITY CONCERNS 05 FAILURE OF OLD EQUIPMENT 06 GAS ISN'T AVAILABLE IN MY AREA 07 HIGH PRICES FOR ELECTRICITY, GAS OR OTHER FUEL **08 HOME INSURANCE PURPOSES** 09 INCONVENIENT TO USE OLD EQUIPMENT **10 ENJOY BURNING WOOD** 11 HEALTH OR SAFETY REASON S 12 FUEL EFFICIENCY - OLD EQUIPMENT USES TOO MUCH FUEL **13 COST SAVINGS 96 MISCELLANEOUS** 98 Don't know
- 46) Does your new wood burning appliance produce less smoke than your older wood burning equipment?
  1 Yes
  2 No
  3 Sometimes
  9 Don't know
- 47) How likely do you think you will be to install any new wood or wood pellet burning equipment either as a replacement for old equipment or as a brand new installation over the next three years? Will you be very likely, somewhat likely, somewhat unlikely or very unlikely?

VERY LIKELY CONTINUE
 SOMEWHAT LIKELY CONTINUE
 SOMEWHAT UNLIKELY GO TO QUESTION 51
 VERY UNLIKELY GO TO QUESTION 51
 DON'T KNOW GO TO QUESTION 51

- 48) Which <u>ONE</u> of the following types of equipment do you think you would most seriously consider installing in the next 3 years? Would it be a: **READ**, **CHECK ONE ANSWER ONLY**
  - Wood fireplace
     Woodstove
     Fireplace insert
     Wood furnace or boiler
     Wood pellet stove
     Replace/Upgrade parts
     BON'T KNOW
- 49) What would be the single most important reason why you would install new equipment? (Do Not Read, Check One Only)

50) Any other reasons? DO NOT READ, CHECK AS MANY AS APPLY. PROBE **01 APPEARANCE** 02 AGE OF OLD EOUIPMENT **03 ELECTRICITY SUPPLY UNRELIABLE** 04 ENVIRONMENTAL/AIR QUALITY CONCERNS 05 FAILURE OF OLD EQUIPMENT 06 GAS ISN'T AVAILABLE IN MY AREA 07 HIGH PRICES FOR ELECTRICITY, GAS OR OTHER FUEL **08 HOME INSURANCE PURPOSES** 09 INCONVENIENT TO USE OLD EQUIPMENT **10 ENJOY BURNING WOOD** 11 HEALTH OR SAFETY REASONS 12 FUEL EFFICIENCY - OLD EQUIPMENT USES TOO MUCH FUEL **13 COST SAVINGS 96 MISCELLANEOUS** 98 Don't know

- 51) Are you aware that there are cash incentives in many BC communities for upgrading to newer, more efficient, cleaner burning wood or pellet stoves?
  1 Yes
  2 No
  9 Don't know
- 52) Are you aware of or have you participated in the Provincial Wood Stove Exchange Program? 1 Aware and have participated 2 Aware of 3 Not aware of 9 Don't know
- 53) Assuming there was a \$250 incentive available in your community how would this affect your decision to upgrade or replace your existing wood or pellet burning equipment?
  - 1 Much more likely to replace
  - 2 Slightly more likely to replace
  - 3 No more likely to replace
  - 4 Less likely to replace
  - 9 Don't know
- 54) Were you aware that most new stoves sold in British Columbia are mandated by law to have low smoke emissions rates?1 YES, AWARE 2 NO, NOT AWARE 9 Don't Know

# **Opinion – ASK EVERYONE**

55) To what extent is chimney smoke in your local area a concern to you and your family? Is it... **READ** 

1 A strong concern	CONTINUE
2 Somewhat of a concern	CONTINUE
3 Not much of a concern	<b>GO TO QUESTION 57</b>
4 Not at all a concern	<b>GO TO QUESTION 57</b>
9 DON'T KNOW	<b>GO TO QUESTION 57</b>

56) Why is chimney smoke a concern to you? **DO NOT READ, CHECK AS MANY AS APPLY. PROBE** 

1 HEALTH-RELATED CONCERNS

# 2 APPEARANCE 3 SMELL 4 ENVIRONMENTAL CONCERNS (POLLUTION, AIR QUALITY, ETC.) 96 MISCELLANEOUS 98 DON'T KNOW

- 57) There are a number of actions that can be taken to reduce the amount of smoke from wood burning equipment. Please tell me if you would support or oppose the following measures:**READ** 
  - 1 Strongly support2 Somewhat support3) Neutral4 Somewhat oppose5 Strongly oppose
  - a) Establishing a local bylaw to reduce the amount of smoke.
  - b) Providing a cash back incentive for removing old woodstoves and wood inserts.
  - c) Provincial regulations that only allow clean burning wood appliances to be sold in BC
  - d) Fines for generating excessive smoke
  - e) Restricting wood burning on poor air quality days
  - f) Requiring the removal or upgrade of older high polluting appliances when a house is sold
- 58) How would you rank the following sources Low, Medium or High for their contribution to air pollution in your area?
  - a) Industry
  - b) Transportation (includes vehicles, trains, aircraft, ships)
  - c) Households (includes woodstoves & backyard burning)
  - d) Forestry, Land Clearing, Agricultural Burning
  - 1 LOW 2 MEDIUM 3 HIGH 9 DON'T KNOW
- 59) Which of the following statements best describes how you feel about the air quality in the area where you live? The air quality in the area where I live is: **READ AND ROTATE,ONE**

# **ANSWER ONLY**

- 1 Almost always good
- 2 Good most of the time, poor on occasion
- 3 Good about half of the time, poor the other half
- 4 Poor most of the time, good on occasion
- 5 Almost always poor
- 9 DON'T KNOW

# **Economic Analysis of Climate Action in BC** Economic Modeling Report

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# Background

The purpose of the modeling for the Economic Analysis of Climate Action in BC is to:

- Update the modeling done previously to provide comparable results;
- Involve industry to deliver credible analysis based on real experience; and
- Examine key economic indicators of importance to government policy objectives and industry's investment decisions, including:
  - $_{\circ}$  Emissions
    - Economy-wide emissions
    - Sector by sector emissions
  - o Jobs
    - Economy -wide employment
    - Sector by sector employment
  - Government revenues
    - Carbon tax
    - Allowance auction
    - Royalties
    - Personal and corporate income taxes
  - Provincial and sector by sector GDP
  - Changes in import and export flows

There are three phases of modeling:

- Phase 1: Economic assessment of Climate Action measures to date
- Phase 2: Analysis of carbon pricing scenarios on industrial sectors of BC's economy
- Phase 3 (optional): Analysis of other policy tools on non-industrial sectors of BC's economy

This report describes the first two phases that will help inform government's decision-making on carbon pricing.

# Methodology

# **GEEM Framework**

To complete the analysis, Navius Research Inc. (Navius) employed a computable general equilibrium model called GEEM. This section introduces how the model operates and how it determines the impact of climate policy on BC's economy.

Computable general equilibrium (CGE) models simulate how commodities and factors of production (i.e., capital, labour and land/resources) are allocated throughout the economy. Each industrial sector is characterized by what it produces (e.g., natural gas or paper) and inputs required in production (i.e., capital, labour, energy and materials). Households are the final consumers of goods produced in the economy and are characterized by the commodities they consume. Households are further endowed with primary factors of production (labour, capital and land/resources) which they lend to industry in return for personal and corporate income. As the model steps through time, it ensures the demand for all commodities and factors matches supply by adjusting prices. For example, growth in natural gas production requires additional cement inputs which must be produced by the cement manufacturing sector or imported. The price for cement increases or decreases until the supply of cement matches demand. The key economic flows in GEEM are captured schematically in

**Modeling Report - Economic Analysis of Climate Action in BC** 

### Figure 1.

Figure 1: Overall Structure of the GEEM model for a single region (e.g., BC)



Due to their framework, CGE models show how policies or different economic conditions alter the structure and growth of the economy. A policy leading to the contraction of one sector has a ripple effect throughout the economy as all sectors of the economy return to equilibrium. For a simple example, a policy causing an increase in the cost of natural gas production would reduce the supply of natural gas (assuming the price for natural gas is held constant). In turn, lower production would reduce the output from sectors that supply natural gas production with goods and services, and capital and labour would be reallocated throughout the economy. The impact of this simple example on BC's economic structure and growth is determined by 1) where capital and labour are re-allocated to, and 2) whether the new allocation of capital and labour generates the same or different incomes in the region.

The majority of metrics in this analysis (i.e., gross domestic product, net exports, government revenues and greenhouse gas emissions) are directly projected by the model. The estimates of how climate policy affects employment are inferred from the model's results. The GEEM model produces an index of employment (i.e., number of hours worked). From this index and historic levels of employment by sector, we estimate how employment in BC changes in response to climate policy. For example, if employment in a sector was 1,000 jobs in the base year and index produced from GEEM suggests employment increased by 50% by 2020, employment in the sector would be estimated at 1,500 jobs in 2020.

To simulate how climate policy affects BC, Navius and the Climate Action Secretariat have consulted with industry working groups to reflect dynamics in their sectors. This consultation has been extensive, and many changes have been made to accommodate industry input. The following sections summarize the major adjustments that have been made based on this consultation.

# **Utility electricity generation**

BC Hydro supplied Navius with information that characterizes the costs of developing new renewable electricity generation in BC.<sup>1</sup> This information revealed that the costs of new renewable electricity generation in BC are significantly greater than the costs generating electricity from heritage hydroelectric resources.

Based on this information, Navius separated the electricity sector into three sectors that have different characteristics and dynamics:

- 1) Fossil fuel generation (i.e., natural gas) is not directly constrained by the availability of a resource, but is based on the price for natural gas. As the price for natural gas increases, the share of natural gas generation declines as new renewable resources become economically viable.
- 2) Heritage hydroelectric generation is constrained by the availability of existing hydroelectric assets and cannot increase in output. Generation from this sector is constrained to about 49 TWh.<sup>2</sup>
- 3) New renewable resources can be added to increase generation from renewable resources, but adding additional resources becomes increasingly more costly. Figure 2 shows the data received from BC Hydro on the cost of new renewable resources and the calibration of the GEEM model to this data. The figure shows that the model is reasonably well calibrated to BC Hydro's supply curve.

Also note that this renewable supply curve does not include generation from new large hydroelectric facilities (e.g., site C). Large hydro is only likely to begin operation after 2020, while the timeframe of the present analysis is to 2020.



Figure 2: Cost curve for new renewable electricity generation (2002\$ per MWh)

To accommodate the renewable supply curve received from BC Hydro, we use average cost pricing for electricity in each of the scenarios. There are tradeoffs between using average versus marginal cost pricing for electricity, and previous analyses used marginal cost pricing. Our previous justification for using marginal cost pricing was that BC Hydro uses two-tiered

<sup>&</sup>lt;sup>1</sup> The information on the renewable supply curve was provided directly to the BC Climate Action Secretariat and Navius in October 2011.

<sup>&</sup>lt;sup>2</sup> Generation from heritage hydro may vary on an annual basis based on water levels, but the analysis is based on an average water level year. **Modeling Report - Economic Analysis of Climate Action in BC** 5

electricity rates for households so marginal electricity consumption is approximately priced at its marginal cost. The majority of electricity consumption by households is priced at the lower rate, but if consumption exceeds a specific threshold any incremental consumption is priced at the higher (conservation) rate. Therefore, using marginal cost pricing more effectively captures the behavioural response of households and industry to changes in the marginal price for electricity. The disadvantage of using marginal cost pricing is that it does not accurately represent how real income levels change when the marginal price for electricity changes. With BC Hydro's two tiered electricity prices, the majority of household electricity consumption is priced at the lower rate, with a smaller portion of electricity priced at the higher (marginal) rate. With the majority of electricity consumption priced at the lower rate, marginal cost pricing for electricity would overestimate the impact of rate changes on real household income.

The renewable supply curve from BC Hydro revealed that the cost of new renewable generation is significantly greater than the cost of heritage hydroelectric generation. Therefore, using marginal cost pricing would significantly overestimate change in real household income from climate policies, and we began to use average cost pricing for electricity. As noted above, using average cost pricing means that household and industry response to increases in conservation rates may be more muted than would occur in reality.

Finally, although the analysis assumes BC uses average cost pricing, it assumes BC's main export and import markets in the United States use marginal cost pricing. This assumption is based on input from BC Hydro.

# Liquefied natural gas (LNG)

The utilities and natural gas working groups recommended the addition of a liquefied natural gas sector. This sector can either be fuelled by natural gas or electricity. The characterization of this sector is based on assumptions received from BC Hydro, and Table 1 highlights the most important assumptions.

#### Table 1: Key assumptions used to characterize the liquefied natural gas sector

Key assumptions used to characterize the liquefied natural gas sector				
	Gas-fired	Electric		
Capital Cost (2002\$ million)	3,765	3,765		
Inlet natural gas (Bcf per day)	1.4	1.4		
Capacity Utilization	88%	90%		
Fuel Requirements				
Electricity (MW)	58	550		
Electricity (GWh)	448	4,336		
Portion of natural gas used for fuel gas (%)	7.5%			
Greenhouse gas emissions (Mt CO <sub>2</sub> e per year)				
Combustion	1.8			
Non-combustion	0.5	0.5		

Source: BC Hydro, 2011

# Natural gas production

Extensive consultations took place with the natural gas sector to best integrate the GEEM results and the Canadian Association of Petroleum Producers' (CAPP) investment analysis. Three major changes were made to the GEEM model based on the input from the natural gas industry. First, the model has been calibrated and compared to the long-run elasticity of supply for natural gas production; second, the capital allocation methodology in GEEM has been adjusted to reflect industry input; and third, the model includes the option for any captured carbon dioxide from using carbon capture and storage (CCS) to be sold for enhanced oil recovery (EOR). At the end of this section we highlight why results from the investment analysis are different from what is shown here, and what this means to decision makers.

# Elasticities of supply

Long-run elasticities of supply refer to the sensitivity of natural gas production to changes in natural gas price. For example, an elasticity of supply of 2.0 indicates that a 1% decline in natural gas price would cause a 2% decline in natural gas production. These elasticities were estimated from two industry sources:

1) Price sensitivity runs by EnCana. These runs were provided to Navius in August 2010 as a part of project on the greenhouse gas management from the natural gas industry. In these runs, EnCana provided estimates for how output would vary depending on the price for natural gas. As EnCana operates a long-run model, these points are ideal for estimating the long-run elasticity of supply for natural gas from different resources. The long-run elasticity of supply is given by the following formula:  $\sigma_s = \frac{\% Q}{2}$ 

$$\sigma_s = \frac{\sqrt{2}}{\% P}$$

which indicates that the elasticity is equal to the percent change in output that results from a percent change in price. From the information provided by EnCana, the elasticities inferred for each resource are available in Table

Elasticities estimated from Encana, 2010							
	Activity Ratios f	rom EnCana					
	\$5/Mcf	\$6/Mcf	Elasticity estimated by Navius				
Horn River NPI	0.72	1.00	1.97				
Horn River Conv	0.78	1.00	1.44				
Horn River Avg	0.75	1.00	1.70				
Montney & Conventional	0.89	1.00	0.63				

Table 2: Elasticities estimated from Encana, 2010

Source: EnCana, 2010

CAPP's natural gas production forecast. CAPP produces a natural gas production forecast under two assumptions about natural gas prices: 1) prices remain below \$4 per mmBTU, and 2) prices rise above \$5.5 per mmBTU. From personal communication with CAPP, this forecast was based on a survey of natural gas producers operating in BC and Alberta. Therefore, this forecast provides insight into how natural gas producers alter investment and production levels under different natural gas prices or under different costs of production. The forecast also disaggregates production profiles by major resource in BC, i.e., conventional, Montney and the Horn River. From these forecasts of production and prices, we can econometrically estimate the long-run elasticities of supply for each resource (shown in Table 4).<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> Information on how to econometrically estimate long-run elasticities of supply can be provided upon request.

#### Table 3: Elasticities estimated from CAPP, 2011<sup>4</sup>

Elasticities estimated from CAPP, 2011 <sup>5</sup>			
Conventional	0.55		
Montney	1.24		
Horn River	2.05		

The GEEM model has been calibrated to this information, and yields similar changes to activity due to changes in natural gas prices. Table 4 compares the calibrated elasticities from the GEEM model to the estimated values from EnCana and CAPP's analysis and survey. It shows that the GEEM model is slightly more sensitive to changes in natural gas prices than either the EnCana model or the results from CAPP's survey.

#### Table 4: Comparison between elasticities from GEEM and industry

Comparison between elasticities from GEEM and industry					
	EnCana	CAPP	GEEM		
Montney	0.63	1.25	1.38		
Horn River	1.70	2.07	2.55		

### Capital allocation

Analysis conducted by EnCana indicates that a carbon policy is likely to have larger impact on natural gas production than an equivalent change in natural gas price. For example, the analysis conducted by EnCana in August 2010 shows that a \$0.16 per Mcf increase in the cost of producing natural gas in the Horn River due to climate policy would lead to a 13% decline in production. An equivalent decline in the price for natural gas would yield a 4.5% decline in production. The difference is attributed to the way capital is allocated to the natural gas sector and how the price for capital goods changes in response to changes in the price for natural gas.

The natural gas industry uses factors to characterize how a change in the price for natural gas yields a change in the price for capital goods. The implicit assumption behind these factors is that if the price for natural gas increases, activity in both BC and Alberta is likely to increase. In turn, this increases the cost of constructing and operating new gas wells and processing plants, as producers compete for access to transportation and construction services. Based on information received from EnCana, a 1% increase in the price for natural gas would increase the price for capital goods by 0.7%.

We have redesigned the capital allocation methodology in GEEM to reflect this dynamic. In the current version of GEEM, capital goods invested anywhere in Western Canada's oil and gas sector have the same price. This means that activity in Alberta's oil sands and natural gas sector affects the price for investment goods in BC. In the current version of GEEM, a 1% increase in the price for oil and gas leads to a 1% increase in the price for investment goods (i.e., it is more sensitive than the EnCana model). This also leads to different responses from a carbon policy and a change in the price for natural gas affects producers in Alberta and BC alike; therefore, carbon pricing, because of the resuting production decreases, may slightly lower the price of investment goods.

The table below compares the response to carbon pricing and changes in the price for natural gas in the GEEM model. It shows that the GEEM model is more sensitive to carbon pricing policy than to a change in the natural gas price.

 <sup>&</sup>lt;sup>4</sup> Canadian Association of Petroleum Producers, 2011, Canadian Natural Gas Production Forecast. Available from: <u>www.capp.ca</u>
 <sup>5</sup> Canadian Association of Petroleum Producers, 2011, Canadian Natural Gas Production Forecast. Available from: <u>www.capp.ca</u>

#### Table 5: Comparison between elasticities from a change to natural gas

Comparison between elasticities from a change to natural gas price and carbon policy				
	Natural Gas Price	Carbon Policy		
Montney	1.38	2.04		
Horn River	2.55	4.36		

### Enhanced oil recovery (EOR)

The model includes the option to sell captured carbon dioxide for enhanced oil recovery (EOR). The sale of  $CO_2$ -EOR has the potential to offset some of the costs of CCS if the price for  $CO_2$ -EOR is sufficiently high. The decision on whether to build CCS or CCS+EOR is based on costs which were provided by industry. The cost for CCS is based on a report commissioned by EnCana and is approximately \$60 per tonne  $CO_2$ e in current dollars.<sup>6</sup> The cost for transporting captured  $CO_2$  to an EOR site in Alberta is approximately \$30 per tonne.<sup>7</sup> Therefore the combined cost of CCS and EOR is approximately \$90 per tonne  $CO_2$ e.

The willingness to pay for  $CO_2$  is based on a report by the Alberta Carbon Capture and Storage Development Council (2009).<sup>8</sup> This report indicated that there is a small market for high priced  $CO_2$  at high oil prices. At an oil price of \$100 per barrel and a price for  $CO_2$ -EOR at \$60 per tonne, there is a demand of about 6 Mt  $CO_2$  per year. To put this amount into context, total vented formation  $CO_2$  from the Horn River is expected to reach 4.3 Mt  $CO_2$  by 2020 under current policies.

# Other changes based on input from the natural gas industry

In addition to the major changes described above, Navius has incorporated information on the emissions intensity of natural gas production from industry; the assumption that the sector does not improve its energy intensity over time; the assumption that the natural gas industry operating in BC does not pay corporate income taxes to the government of BC (and therefore does not benefit from the "revenue recycling" from the carbon tax); among other changes.

# What explains the differences between the GEEM and CAPP analysis?

The analysis from the natural gas sector indicates that the industry is more sensitive to carbon policy than is indicated in GEEM, despite GEEM using more extreme assumptions for the elasticity of supply and changes in the price for capital goods. There are several reasons that partially explain the discrepancy, although, as the case with any two analytical tools, differences are likely to remain even if these discrepancies are accounted for.

1) The CAPP analysis does not account for abatement. In GEEM, the adoption of technologies to reduce emissions can alleviate exposure to carbon pricing policies. For example, if the net cost of carbon capture and storage is less than \$45 per tonne (i.e., net of sales of CO<sub>2</sub> for EOR), the sector would benefit from adopting the technology if the price on non-combustion emissions rises to \$45 per tonne. CAPP analysis does not account for abatement options, so any increase in carbon price leads to a direct decline in activity.

<sup>&</sup>lt;sup>6</sup> DHP Focus, 2008.

<sup>&</sup>lt;sup>7</sup> Personal communication with EnCana and Spectra Energy (2010 and 2011).

<sup>&</sup>lt;sup>8</sup> Alberta Carbon Capture and Storage Development Council, 2009, Accelerating carbon capture and storage implementation in Alberta.

- 2) The inclusion of natural gas liquids in GEEM makes production from the Montney and conventional plays more resilient to climate policy. Although carbon policy becomes more stringent under the scenarios explored in this analysis, the forecasted rise in the price for natural gas liquids (which is coupled with the price for crude oil based on recommendations by the industry) partially offsets greater costs of production. As higher prices improves the profitability of liquids-rich plays, production from the Montney and Conventional resources become less vulnerable to changes in climate policy (the Horn River is not assumed to produce liquids). In economic terms, the rising price for liquids moves these resources to a steeper part of the supply curve as they become less marginal. The effect of natural gas liquids was not included in the CAPP analysis.
- 3) Conventional plays have little to no new investment in GEEM. In GEEM, conventional natural gas production is declining due to resource depletion. Therefore, existing wells gradually decline in output with little to no investment in new wells in any of the scenarios. This results in little difference in the production of conventional natural gas in any of the scenarios.
- 4) There are differences in policy specification. The CAPP analysis cannot fully simulate the dynamics under an economy wide cap-and-trade systems or alternative methods of permit allocation.
- 5) The GEEM model does not account for economies of scale. At lower levels of production, the cost per unit of natural gas increases within the industry analysis.

Beyond these methodological differences, differences are likely to remain between GEEM and CAPP analysis, as with any two different analytical tools.

# How should the results from GEEM and the CAPP analysis be interpreted?

As discussed above, Navius used information from industry to inform GEEM. Differences between GEEM and CAPP analysis highlight that the magnitude of carbon policy's impact on natural gas production is uncertain. The strength of GEEM is to provide a comparison between policy options in BC. Navius has recognized that the magnitude of impact on individual sectors is uncertain, but the comparison between policies is the primary rationale for using GEEM. In other words, the key finding from this analysis is not whether the Climate Action Plan will reduce activity in the Horn River by 7% or 13%, but how policies can be designed to improve the competitiveness of the sector while maintaining the incentive to reduce emissions.

# Goods transport

The Ministry of Transportation expressed interest in disaggregating goods transport into 1) truck, 2) rail, 3) water, and 4) other goods transport. To examine the potential impact of carbon pricing, the model also includes the option to substitute from trucking to rail. The substitutability of trucking for rail is based on Oum et al (2007).<sup>9</sup>

<sup>&</sup>lt;sup>9</sup> Oum, T.H., Waters II, W.G. and Fu, X, 2007, "Transport Demand Elasticities", *Handbook of Transport Modeling*.

# **Model Regions**

The version of GEEM used in this analysis has been disaggregated into three regions: 1) BC, 2) the remaining Canadian provinces, and 3) the United States.

Regional disaggregation allows for the representation of three dynamics:

- The trade of commodities and services: BC exports a large portion of its industrial production (specifically natural gas and pulp and paper products). As a result, industrial production is contingent on policies and economic conditions in other jurisdictions in addition to policies and conditions in BC. Policies implemented in BC could also affect the competitiveness of domestic production in international and interprovincial markets.
- The competition for capital between regions: Capital is assumed to be perfectly mobile among regions, meaning that the rate of return to capital would eventually become equalized across all sectors in North America if prices for all commodities and factors are stable over a period of time. The assumption about capital has implications for economic growth in BC as policies and economic conditions alter the allocation of capital between regions. A greater allocation of capital typically stimulates economic growth.
- Price level changes in different regions: One of the impacts of climate policy or economic development is price levels may diverge between regions. For example, the rapid expansion of oil sands in Alberta has implications for price levels in BC's natural gas industry (which shares many of the same services). Furthermore, countries with greater economic growth can experience greater increases in price levels in comparison to countries with slower growth (i.e., the exchange rate appreciates). These changes are reflected in the analysis as prices are determined by the level of economic activity in a specific region.

# **Model Sectors**

For modeling allocation within the capped sectors, 22.5 Mt CO<sub>2</sub>e are included. Of these total capped emissions, 13.8 Mt are combustion and 8.6 Mt are non-combustion. Emissions from electricity imports into BC are also capped but not included in this analysis.

The model's forecast emissions were calibrated against BC's 2010 reported emissions, industry's growth assumptions and publicly available sources.

The model has been designed to provide a high degree of disaggregation of the most energy and emissions intensive sectors of the economy. The sectors modeled are listed below:

- Oil and Natural Gas Extraction and Processing
  - Conventional natural production
  - $_{\odot}$  Unconventional natural gas production from resources with low concentrations of formation CO\_2 (e.g., Montney)
  - $_{\odot}$  Unconventional natural gas production from resources with high concentrations of formation CO\_2 (e.g., Horn River)
  - Mined bitumen extraction
  - In-situ bitumen extraction
  - Bitumen upgrading
  - Conventional light/medium oil production
  - Conventional heavy oil production

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- Electricity
  - Electric power generation from Heritage hydroelectric resources
  - Generation from new renewable generation based on the renewable supply curve received from BC Hydro
  - Generation from fossil fuels (i.e., natural gas)
- Forestry
  - o Lumber
  - Pulp and paper
  - Silviculture
- Manufacturing
  - Cement and lime manufacturing
  - Metal smelting and refining
  - Petroleum refining
  - Chemicals manufacturing
  - Liquefied natural gas production
- Mining
  - Mineral mining
  - Coal mining
  - Support activities for mining and oil and gas extraction
- Agriculture
- Services sector
- Transportation
  - Truck transport
  - Rail transport
  - Water transport
  - o **Transit**
  - o Other goods transportation

Note that the disaggregation of the oil and gas sector includes some sectors that do not directly affect BC (e.g., there is no bitumen extraction or upgrading in BC); however, they affect BC through the demand for commodities (e.g., natural gas) as well as the cost for certain services (e.g., oil and gas services).

For modeling allocation within the capped sectors, 22.5 Mt CO<sub>2</sub>e are included. Of these total capped emissions, 13.8 Mt are combustion and 8.6 Mt are non-combustion. Emissions from electricity imports into BC are also capped but not included in this analysis.

The model's forecast emissions were calibrated against BC's 2010 reported emissions, industry's growth assumptions and publicly available sources. The discrepancies between reported emissions and forecasted emissions in the forestry sector will be resolved in the final set of results.

# **Model Timeframe**

The analysis begins in 2002 runs to the year 2020. The analysis begins in 2002 for three reasons. First, beginning the modelling from a historic period provides an opportunity to *backcast* – run the model through historic data to see how it compares to historic data. As discussed above, the objective of the analysis is to reflect long-term trends in economic activity, rather than reflect short-term dynamics related to the business cycle. Therefore, the forecast from the model diverges from historic data in some instances.

The second reason for starting the analysis in 2002 is that it enables the model to capture how increases in the price for natural gas and crude oil have driven innovation in production from unconventional resources. After 2002, natural gas and crude oil prices increased rapidly due to the depletion of conventional resources and increasing demand. This fuelled innovation and investment in unconventional sources of natural gas (i.e., tight and shale formations) and crude oil (i.e., oil sands). The considerable expansion of unconventional natural gas resources has led to a significant decline in natural gas prices since 2008.

The final reason for starting the analysis in 2002 is that it is the most recent year the United States Department of Commerce provides comprehensive data on the production and consumption of commodities and factors by sectors and households.<sup>10</sup>

# **Commodity Prices**

The results are also sensitive to assumptions about world oil prices and North American natural gas prices. For example, the price for oil affects household decisions on the energy efficiency of vehicles and the economic viability of enhanced oil recovery. The price for natural gas may determine how households heat their homes and also the level of natural gas production. These assumptions are shown in Table 6, along with other price assumptions. The price for oil is assumed to rise to \$96 per barrel by 2020, while the price for natural gas is assumed to remain low at around \$4.3 per mmBTU (2002\$).<sup>11</sup> In real 2010 dollars, the price for natural gas rises to \$5.1 per mmBTU in 2010.

Some prices are particularly sensitive to policy. In particular, the price for electricity is significantly greater under the Climate Action Plan than under the no policy scenario. Under the Climate Action Plan, the price for electricity is expected to reach around \$79 per MWh (2002\$), whereas it is \$50 per MWh in the absence of the Climate Action Plan. The difference is primarily due to the interaction of two policies: 1) the Clean Energy Act which required 93% of generation to be from renewable resources, and 2) the electricity self-sufficiency policy which encourages BC Hydro to purchase domestic power to comply with the Clean Energy Act. The price for goods and services under each policy are provided as an appendix to this report.

#### Table 6: Oil and natural gas price forecast (2002 CDN)

Oil and natural gas price forecast (2002 CDN)						
	Unit	No	САР	CA	٩P	
	onne	2015	2020	2015	2020	
Oil and gas extraction						
Crude oil	2002\$ per barrel	83.2	96.2	83.2	96.2	
Natural gas	2002\$ per mmBTU	4.3	4.3	4.3	4.3	

<sup>&</sup>lt;sup>10</sup> United States Department of Commerce, Bureau of Economic Analysis, 2011, U.S. Economic Accounts, available from: <u>http://www.bea.gov/</u>

<sup>&</sup>lt;sup>11</sup> Price for natural gas and oil have been calibrated to EIA, 2011, Annual Energy Outlook 2011.

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Other resource extraction					
Forestry	index 2002 = 1	1.0	1.0	1.0	1.0
Coal	index 2002 = 1	1.1	1.1	1.1	1.1
Mined minerals	index 2002 = 1	1.2	1.3	1.2	1.3
Other	index 2002 = 1	1.0	1.0	1.0	1.0
Electricity					
Marginal cost	2002\$ per MWh	53.4	52.3	101.4	97.4
Average cost price	2002\$ per MWh	51.0	49.7	78.0	78.9
Manufactured goods					
Pulp and paper	index 2002 = 1	1.0	1.0	1.0	1.0
Wood products	index 2002 = 1	1.0	1.0	1.0	1.0
Refined petroleum	index 2002 = 1	1.5	1.6	1.5	1.6
Chemicals	index 2002 = 1	1.1	1.1	1.1	1.1
Non-metallic minerals					
Cement	index 2002 = 1	1.0	1.0	1.1	1.1
Lime	index 2002 = 1	1.0	1.0	1.0	1.0
Other non-metallic minerals	index 2002 = 1	1.0	1.0	1.0	1.0
Primary metals					
Aluminum	index 2002 = 1	1.0	1.1	1.0	1.1
Other primary metals	index 2002 = 1	1.0	1.0	1.0	1.0
Other manufacturing	index 2002 = 1	1.0	1.0	1.0	1.0
Transportation services					
Goods transport					
Truck	index 2002 = 1	1.1	1.1	1.1	1.1
Rail	index 2002 = 1	1.0	1.0	1.0	1.0
Water	index 2002 = 1	1.4	1.5	1.3	1.5
Transit	index 2002 = 1	1.0	1.0	1.0	1.0
Other	index 2002 = 1	1.0	1.1	1.0	1.1
Services	index 2002 = 1	1.0	1.0	1.0	1.0
Government	index 2002 = 1	1.0	1.0	1.0	1.0

When BC participates in the Western Climate Initiative (WCI) administered cap-and-trade system, the results are also sensitive to the price for emissions permits. The price assumptions in this analysis are based on modeling conducted by the WCI, and assumes the price for permits begins at \$13 per tonne  $CO_2e$  in 2013 in real 2002\$ or \$15 per tonne in real 2011\$. By 2020, the price for permits reaches \$28 per tonne (2002\$) or \$33 per tonne (2011\$).
# **Advantages and Disadvantages of using GEEM**

# Does the modelling reflect the economic downturn after 2008?

The objective of the analysis is to assess the long-term implications of climate policy in BC. The GEEM model is designed to assess the implications of policy options on economic activity, greenhouse gas emissions, and government revenues in addition to other indicators. Specifically, the analysis compares policy options in terms of government objectives to maintain strong economic performance and reduce greenhouse gas emissions.

As the model aims to show the long-term implications of climate policy, it does not show short-term dynamics related to fluctuations in the business cycle. This is particularly important given the economic downturn in the United States since 2008 has short-term implications for several sectors. For example, cement exports to the United States have declined considerably since 2006 while cement imports have increased, leading to an overall decline in net exports of 41% between 2006 and 2009.<sup>12</sup> This decline is likely due to three factors. First, the housing recession in the United States significantly reduced the demand for cement, leading to a decline in exports from BC. Physical production of cement (a good indicator of demand) in the United States declined by 29% between 2007 and 2009.<sup>13</sup> Second, idle capacity in the United States may have reduced prices for cement manufactured in the United States and increased imports into Canada. Third, the implementation of the carbon tax raised the cost of manufacturing cement by 4.4% in 2009. This dynamic would have further reduced the competitiveness of cement manufacturing in BC.

The purpose of this analysis is to isolate the effect of the carbon tax and other climate policies on industrial competitiveness, rather than account for all dynamics that affect production. Therefore, the analysis does not follow historic data for all sectors and commodities between 2006 and 2010. For example, the analysis shows a 17% decline in the net exports of cement between 2006 and 2010, whereas historic data shows a 41% decline. This indicates that approximately 42% of the decline in net exports of cement is attributed to the carbon tax, with the remainder attributed to the recession.

It is not possible to conclude the relative contributions of the carbon tax and the recession on the change in net exports of cement or other commodities. While the initial analysis shows that a portion of the decline in net exports is due to the carbon tax, that portion can be greater or smaller depending on assumptions. The impact on different sectors from a full range of assumptions can be tested through sensitivity analyses.

Although the modeling does not reflect the slowdown of the United States economy between 2008 and the present, it does reflect lower long-term growth rates for the United States economy and Canada due to the recession. These growth rates have been revised during consultation with the Ministry of Finance.

# How does the analysis reflect sectors of the economy, which are comprised of heterogeneous facilities?

As the analysis reflects all economic activity in BC, the rest of Canada and the United States, the representation of each sector is homogenous to make the modeling tractable. The analysis does not explicitly represent individual pulp mills or cement plants, but aggregates these into a representative sector. Similarly renewable electricity generation is characterized by a renewable supply curve rather than a portfolio of resources. A main objective of the stakeholder engagement process has been to allow industry and utilities to provide feedback on the characterization of their respective sectors.

<sup>&</sup>lt;sup>12</sup> Cement Association of Canada, 2010, DATA IS CONFIDENTIAL. Note that we picked 2006 as the base for comparison because net exports in 2007 were significantly above trend.

<sup>&</sup>lt;sup>13</sup> United States Department of Commerce, Bureau of Economic Analysis, 2011, U.S. Economic Accounts, available from: <u>http://www.bea.gov/</u>

# Assumptions

# **Climate Policies**

In the 2008 Climate Action Plan, the province contracted a consultant to independently model the policies in the Climate Action Plan to measure the effect of the policies on the 33% emissions reduction target by 2020 from 2007 levels. This analysis is publicly available as an appendix to the Climate Action Plan. The following table describes how climate policies are modeled in GEEM. For reference, the last column compares the current modeling in GEEM to the past modeling using CIMS.

#### Table 7: Phase 1 Modeling Assumptions

Phase 1 Modeling Assu	Imptions		
Policy	Current modeling using GEEM	Level of Effort to include in GEEM	Past modeling using CIMS
To be modeled			
Carbon tax with accompanying tax cuts	Tax starts in 2008 and is flat after 2012 at \$30 per tonne. Revenues used for personal and corporate income tax reductions starting with a split of 2/3 personal to 1/3 corporate.	None	Carbon tax. Applied for all sectors from 2008 and 2012. After 2012, large final emitters are covered by the cap-and- trade.
Green Building Code	Shadow price on energy requires residential housing stock to be more energy efficient. New space heating and water heating equipment must be about 35% more efficient by 2020 from standard practice in 2005. Appliances must be about 10% more efficient.	None	Building code requiring all new houses to meet new energy efficiency standards equivalent to EnerGuide 77, effective September 2008.
Carbon Trading (cap- and-trade)	Not included in phase 1. See phase 2 scenarios.	None	Large emitters covered by cap-and-trade after 2012.
Tailpipe emissions standards	Federal standard to 2016 then flat. By 2016, the average greenhouse gas intensity of new passenger vehicles sold must be 155 g CO₂ per km.	None	Set an average vehicle emissions standard for the vehicle fleet.
All electric generation to be zero net emissions	All new electricity generation projects developed in BC and connected to the grid will have zero net GHG emissions (an offset requirement).If a cap-and-trade scenario is implemented, a commitment not to double-regulate facilities will prevail over existing policies.	None	Zero emissions standard for new electricity generation facilities, including the requirement for new coal-fired generation stations to employ carbon capture and storage.
100% carbon sequestration for new coal-fired	Any new electricity generated from coal must meet the more stringent standard of zero GHG emissions. Require any new coal	None	Zero emissions standard for new electricity generation facilities,

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electricity projects	plants to sequester carbon.		including the requirement for new coal-fired generation stations to employ carbon capture and storage.
Eliminate all routing flaring at oil and gas wells by 2016	Eliminate flaring emissions from the oil and gas industry from 2016 to 2020. The 26.5.5% reduction achieved from 2007- 2009 will be reflected.	None	
Regulation promoting more than 75% capture efficiency of methane from landfills	To reflect landfill gas capture equipment already in place at the 6 largest landfills in BC, additional landfill emissions capture efficiency is considered as 70%. Propose to reduce emissions and increase value of waste. Suggest to disaggregate waste as a sector and add two technology options: one to capture landfill gas and one to use the gas in cogeneration.	Moderate	Requires landfills in BC to capture and flare landfill gas by 2015.
Provincial transit plan aim to increase Vancouver market share from 12 to 17% and Victoria from 7 to 9.5% by 2020	Provincial Transit plan aim to increase Vancouver market share from 12 to 17% and Victoria from 7 to 9.5% by 2020.	Moderate	Investment in public transit and clean transit technologies.
Low carbon fuel standard (10% reduction by 2020)	Included Low carbon fuel standard in transportation modes.	Difficult	Renewable content for transportation gasoline and diesel fuels - 5% renewable content by volume after 2010, and 10% renewable content by energy in 2020.
Electricity self- sufficiency by 2016	By 2016, exports of electricity from BC must be 1,000 GWh greater than electricity imports (considering an average water year). This leads to a net trade surplus for electricity.	Moderate	
Energy efficient building strategy	Further increase building efficiency.	Moderate	
Carbon neutral government	After 2010, government must purchase offsets to cover any greenhouse gas emissions. The price for offsets will be based on a supply curve geographically restricted to BC.	Moderate	
Potentially to be modeled			
Supporting anti-idling	Not currently included. If desired, could	Difficult	

policies and electrified truck stops	subsidize electricity in the freight sector.	
Not modeled but emissions reductions included		
Net zero deforestation	The Zero Net Deforestation Act requires BC to achieve no net deforestation by December 31, 2015 and maintain this goal onwards. Support of ZND would be voluntary for industry/private sector. Not modeled, to be included in emission reduction total after modeling.	
Livesmart refunds for energy efficiency	CEA requires BC Hydro to meet 66 % of its future incremental power demand from conservation and efficiency improvements by 2020. FortisBC is targeting meeting half of its energy load increases through DSM measures. Not modeled, to be included in emission reduction total after modeling.	Double the size of subsidies under federal ecoENERGY Retrofit program AND PST exemption for ENERGY STAR residential appliances.
Not modeled		
Supporting keeping organic waste out of landfills	GEEM is not sensitive enough to capture incremental effect of this policy.	
Gateway program to facilitate transportation	GEEM is not sensitive enough to capture incremental effect of this policy.	
Innovative clean energy fund	GEEM is not sensitive enough to capture incremental effect of this policy.	\$25 million investment divided among zero emissions technologies in the electricity generation, commercial, residential and manufacturing sectors.
\$25 million bio- energy network	GEEM is not sensitive enough to capture incremental effect of this policy.	\$25 million investment divided among zero emissions technologies in the electricity generation, commercial, residential and manufacturing sectors.
\$161 million "Forests	GEEM is not sensitive enough to capture	
for Tomorrow"	incremental effect of this policy.	
Trees for Tomorrow	GEEM is not sensitive enough to capture incremental effect of this policy.	
Carbon neutral local	GEEM is not sensitive enough to capture	
government	incremental effect of this policy.	
\$15 million expansion	GEEM is not sensitive enough to capture	
of vehicle scrapping	incremental effect of this policy.	

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program		
\$110 million to support hydrogen and fuel cell technology	GEEM is not sensitive enough to capture incremental effect of this policy.	
50% of expected increased energy demand to be met through demand management (66% in the Clean Energy Act)	GEEM is not sensitive enough to capture incremental effect of this policy.	
Remote community clean energy program	GEEM is not sensitive enough to capture incremental effect of this policy.	
BC Hydro installation of smart meters by 2012	GEEM is not sensitive enough to capture incremental effect of this policy.	
Installation of 100,000 solar roofs	Not currently included. If desired, could strengthen Green Building Code.	
\$30 million for BC Green Ports initiative	Not currently included. If desired, could build electrified ports in into electrification scenario.	
Commercial building code	No longer applicable.	Commercial building code that requires new commercial buildings built after 2010 to meet ASHRAE 90.1-2004 standards (energy efficiency improvement of roughly 10%).
Sales tax exemption for low emission vehicles	No longer applicable.	PST reductions for low emissions vehicles (e.g., hybrid cars) sold in BC - a sales tax exemption up to \$2,000 (2005\$) until 2011.

# **Key Assumptions**

Although the analysis uses many assumptions to simulate how sectors of the economy interact, the results are most sensitive to a subset of these. This section highlights assumptions to which the results are most sensitive.

Two of the most important assumptions that influence the rate of economic growth in BC are the rate of labour force growth and the rate of productivity growth in the economy. These are assumed to be 1.5% and 0.75%, respectively, and are based on a forecast from BC Finance.<sup>14</sup>

The parameter that describes the extent to which prices in BC can diverge from prices in other jurisdictions is called an "armington elasticity", which is commonly used in this type of modeling. This parameter relates to the level of barriers to trading of a good or service. If there are significant barriers to trading a good or service (e.g., restaurant services), producers

<sup>&</sup>lt;sup>14</sup> BC Finance, 2011, *Budget and Fiscal Plan 2011-12 – 2013-14*. **Modeling Report - Economic Analysis of Climate Action in BC** 

can raise prices in response to higher costs from a climate policy and pass their costs onto consumers. However, if there are fewer barriers to trade with other jurisdictions (e.g., natural gas or aluminum), firms in BC cannot pass costs onto consumers through higher prices. Economic activity from a sector is highly sensitive to this parameter because if firms can pass costs onto consumers, the profitability of the industry is likely to be unaffected by policy and the sector would only experience a decline/increase in output if the domestic consumption were to change. If a sector produces a commodity without barriers to trade, levels of investment are highly sensitive to changes in the cost of production.

Table 7 shows the elasticities used for this analysis, indicating the percentage decline in exports or increase in imports for a percentage increase in the price for the domestically produced commodity, everything else held constant. For example, if the armington elasticity for a commodity is 2.5, a 1% increase in the cost of producing that commodity domestically would lead to a 2.5% reduction in exports and a 2.5% increase in imports. Elasticities range from infinity (i.e., crude oil and natural gas in North American markets) which means that prices in BC cannot diverge from prices elsewhere in North America to 2.5. GEEM uses higher elasticity parameters for some commodities than elsewhere in the literature.<sup>15</sup> Many studies aggregate commodities into bundles which consist of goods with varying levels of barriers. For example, concrete and cement are often bundled together as non-metallic minerals; however concrete is significantly less traded than raw cement. As this analysis provides a high level of disaggregation for commodities and sectors relative to other studies, we have judgmentally used higher elasticities for highly traded goods. The highest elasticities we found in the literature were from Baylor and Beausejour (2004), which use elasticities of 4.0.<sup>16</sup>

#### Table 8: Armington elasticities for goods and services

Armington elasticities for goods and services in BC							
	Armington Elasticity						
Crude oil and natural gas*	∞						
Highly traded goods φ	4.0						
Other goods	2.5						

\* The armington elasticity for natural gas is assumed to be 2.5 for trade with jurisdictions outside North America.

Highly traded goods consist of grains, raw forest products, other primary products, mined minerals, all coal products, wood products, pulp and paper, steel, aluminum, other primary metal products, fabricated metal products, vehicles, appliances, cement, lime, refined petroleum products, chemicals and biofuels.

The results are also sensitive to industrial costs of production and the emissions intensity of production. The costs of production for most sectors have been derived from Statistics Canada's Input-Output accounts.<sup>17</sup> Industries have also been provided with an opportunity to review and recommend changes to these assumptions, and feedback has been incorporated into the model. The input-output accounts are also less effective at characterizing the costs for some sectors, such as natural gas production where costs can vary significantly from region to region. We have supplemented the data from Statistics Canada with additional information from other sources; for example the costs of natural gas production from the National Energy Board (2010).<sup>18</sup>

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<sup>&</sup>lt;sup>15</sup> The MIT EPPA model, for example, uses armington elasticities between 2.0 and 3.0 for all commodities. Paltsev, 2005, *The MIT Emissions Prediction and Emissions Analysis Model: Version 4*.

<sup>&</sup>lt;sup>16</sup> Baylor M, Beausejour L, 2004, "Taxation and Economic Efficiency: Results from a Canadian CGE model", *Department of Finance*.

<sup>&</sup>lt;sup>17</sup> Statistics Canada, CANSIM tables 381-0009 through 381-0014.

<sup>&</sup>lt;sup>18</sup> National Energy Board, 2010, Natural gas supply costs in Western Canada in 2009.

One of the most important determinants of the effect of climate policy on a sector is its emissions intensity. BC's carbon tax is recycled by reducing corporate and personal income taxes. Therefore, sectors with low levels of emissions per unit of corporate and personal income are expected to receive a net reduction in taxes while sector with high emissions intensities experience a net increase in taxes. Information on the greenhouse gas intensity of industry is derived from several sources, including Environment Canada's *National Inventory Report 1990-2008* (2010); Statistics Canada's *Report on Energy Supply and Demand* (2010); CIEEDAC (2011) and information provided directly from industry.

As the share of carbon tax revenue recycled towards corporate income taxes has increased since 2008, it has become increasingly important to simulate how much corporate income tax is paid by each sector. In this analysis, we have assumed that the natural gas industry does not pay corporate income taxes to BC's provincial government. This assumption is based on input from the industry, who suggested they do not pay corporate income taxes to the government of BC because their headquarters are located in Alberta. If information on corporate income taxes paid by each industry becomes available, the model can be customized to account for this information.

The following section summarizes the input received from ministries and industry working groups on the modeling assumptions and how that input was incorporated.

# Agriculture

• To capture offset opportunities, need to add abatement activities, costs and the potential amount of emission reductions.

# Cement

- Describe how exchange rates are handled by the model.
- Confirm that the backcasting reflects the trend of increasing cement imports to BC.
- Capture input from CAC on how much imports are transhipped through Seattle and whether the Chinese imports are constrained by quality or price.
- The cement industry provided Navius with detailed information on fuel consumption, production levels, and exports and imports from 2002 to 2009. The information on fuel intensity has been directly incorporated into the analysis, and the model has been calibrated to activity and net exports from 2002 to 2009. The analysis shows that a portion of the decline in net exports after 2008 is attributed to the implementation of the carbon tax, however the recession in the United States likely also contributed to the decline in net exports. As the objective of the analysis is to explore the long-term implications of climate policy alternatives, as opposed to the short-term implications of the recession in the United States, the model does not match historic production levels after 2008 and the difference is well understood.

# Electricity

- Add liquefied natural gas.
- Refine electricity self-sufficiency policy assumption to reflect recent IRP.
- Add Clean Energy Act target of 93% clean domestically generated electricity.
- Consider doing sensitivities on different electricity rates.
- Add renewable energy supply curve from IRP.
- Refine offset price assumptions for phase 1 to reflect a BC-only price.

# Forestry

- To capture offset opportunities, add abatement activities, costs and the potential amount of emission reductions.
- Add assumptions on consumers of biofuels.
- Revise production forecasts.
- Add cogeneration assumptions.
- Compare greenhouse gas emissions numbers to 2010 facility data.
- Confirm whether pulp is included in the paper category results.
- Specify what is included in the GDP for forestry-related categories.
- Specify what "forestry" net exports are.
- Assess why there is a bump up to 2012 (e.g., on jobs) and then decline e.g. does it relate to a fibre supply issue from the mountain pine beetle.
- The forestry sector provided information on the costs of cogeneration in the pulp and paper sector. The costs of new cogeneration are approximately \$100 per MWh (2010\$). The model has also been approximately calibrated to changes in activity between 2002 and 2007.

# **Natural Gas**

- Revise the liquids royalty.
- Add an assumption on the effect CCS would have on the GCA and royalties.
- Update the emissions intensities by different basin with fuel gas (liquids) removed.

# Mining

- Add commodity prices for other metals where appropriate.
- The costs of production have been reviewed by the mining and smelting sector. Industry recommended alternative
  costs of production for mining that have been incorporated into the analysis. Industry also suggested that the
  smelting sector is not sensitive to changes in electricity prices because the aluminum smelter in Kitimat and the
  lead-zinc smelter in Trail produce their own power. The model has also been calibrated to the production forecast
  provided by industry.

# **Transportation**

- Disaggregate to show effects of policies on truck vs. rail.
- Add assumptions on natural gas vehicles and biogas.

# Waste

- Disaggregate as a separate sector from services.
- To capture offset opportunities, need to add abatement activities, costs and the potential amount of emission reductions.

# Phase 1: Scenarios

Two scenarios were modeled:

- 1) Scenario of BC economy without climate policies.
- 2) Scenario of BC economy with climate policies listed in the Assumptions section.
  - Only those policies that have been implemented to date were included, and among those, the policies that had a significant enough impact to be captured by the modelling.
  - The carbon tax is assumed to rise in \$5/tonne CO<sub>2</sub>e annual increments until July 2012 and then remain flat at \$30/tonne until 2020.

# Phase 1: Results

The analysis illustrates how climate policy in BC affects economic activity based on several indicators, including provincial gross domestic product, government revenues, employment and greenhouse gas emissions. As discussed above, two scenarios were analyzed for this analysis – BC does not implement the Climate Action Plan, and BC implements the climate polices listed in the Assumptions section. The difference between the two scenarios is the change in economic activity due to the implementation of the Climate Action Plan.

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# **Net exports**

In response to the Climate Action Plan, total net exports from BC decline by \$0.6 billion (2002\$) or by 5% from what net exports would have been in the absence of the Climate Action Plan in 2020. Net exports from the pulp and paper sector decline by \$0.6 billion in 2020. The pulp and paper sector is particularly exposed to policies that raise the costs of production because they operate close to the margin due to low output prices. The result is that small rises in the costs of production have a significant impact on activity and net exports.

The impact of the Climate Action Plan on net exports of other commodities are less extreme in comparison to BC's total net exports, but still extreme relative to sector size. For example, the cement industry is particularly affected by the Climate Action Plan, leading to a 39% decline in net exports due to the policy.

Net exports of other commodities increase due to the Climate Action Plan. Natural gas exports increase despite a decline in production. This is because domestic consumption of natural gas declines more rapidly than production, leading to an increase in exports. Likewise, BC consumes and imports less refined petroleum products (e.g., gasoline) from Alberta due to the Climate Action Plan while other sectors of the economy actually become more competitive under the Climate Action Plan (e.g., services). As discussed above, the carbon tax benefits sectors that produce fewer emissions per unit of corporate and personal income, therefore leading to an improvement in competitiveness. For example the energy intensive paper sector experiences a decrease in net exports of \$600 million (\$2002) in 2020 whereas the less emission intensive service sector increases net exports by \$520 million (2002\$).

#### Table 11: Net exports by commodity (2002\$ billion)

Net exports by commodity (2002\$ billion)								
					Cumulative - (2007 to 2020)			
	2016		2020					
	No CAP	САР	No CAP	САР	No CAP	САР		
Oil and gas extraction								
Crude oil	0.6	0.6	0.8	0.9	5.7	6.5		
Natural gas	6.3	6.4	7.6	7.7	78.1	79.4		
Other resource extraction								
Forestry	1.8	1.8	1.7	1.8	22.9	23.3		
Coal	1.4	1.4	1.7	1.6	18.9	18.3		
Mined minerals	2.6	2.4	4.4	4.2	22.1	21.2		
Other	1.4	1.4	1.3	1.3	18.1	18.2		
Electricity	0.1	0.1	0.1	0.2	1.3	0.4		
Manufactured goods								
Paper	2.5	1.6	2.1	1.4	39.0	30.5		
Wood products	9.0	9.0	8.1	8.0	122.3	123.4		
Refined petroleum	-4.7	-4.4	-5.3	-4.7	-61.9	-59.3		
Chemicals	-5.3	-5.3	-5.9	-5.9	-71.0	-70.8		
Non-metallic minerals								
Cement	0.2	0.1	0.2	0.1	2.2	1.5		
Lime	0.0	0.0	0.0	0.0	0.3	0.2		
Other non-metallic	-0.1	-0.1	-0.1	-0.1	-0.7	-0.8		
minerals								
Primary metals								
Aluminum	0.7	0.7	0.5	0.6	11.2	11.5		
Other primary metals	-0.5	-0.5	-0.7	-0.7	-5.9	-6.3		
Liquefied natural gas	3.5	3.5	3.5	3.5	24.7	24.6		
Other manufacturing	-29.4	-29.9	-33.5	-34.4	-375.9	-380.8		
Transportation services								
Goods transport								
Truck	0.9	0.8	0.9	0.8	12.4	11.4		
Rail	0.4	0.4	0.4	0.4	4.6	4.7		
Water	0.0	0.0	0.0	0.0	0.8	1.0		
Transit								
Other	1.5	1.5	1.4	1.4	21.9	22.0		
Services	-0.2	0.4	-1.3	-0.8	-0.1	7.0		
Government	0.0	0.0	0.0	0.0	0.0	0.0		
Total	-7.5	-7.9	-12.2	-12.8	-109.9	-113.7		

# Employment<sup>20</sup>

The Climate Action Plan is estimated to lead to a small increase in the job creation rate in BC. Between 2007 and 2020, employment is forecasted to increase at an annual rate of 1.53% under the Climate Action Plan compared to 1.52% if the Climate Action Plan was not implemented. By 2020, we estimate that the number of jobs will increase by 500 thousand to 2.7 million from 2.2 million in 2007 with the Climate Action Plan.

Increased employment under the Climate Action Plan is due primarily to an increase in the number of jobs in the service and electricity generation sectors – an increase of 11,300 and 4,700 people employed by 2020, respectively. These additions are caused by an increase in the physical production of both these sectors. The increase in the demand for electricity is driven largely by increased electrification and the electricity self-sufficiency requirement. A primary driver of the shift towards service sectors is their lower costs under the carbon tax. The less emission intensive a sector is, the less carbon tax it will pay and the greater benefit it will receive from revenue recycling. This effect occurs primarily in the service and utility sectors which show the largest gains in physical production and employment. On the other hand, many sectors in BC experience an increase in their operating costs under the carbon tax which reduces the demand for their products and services. Overall, we estimate that BC will add 5,000 jobs in 2020 under the Climate Action Plan compared to if it was not implemented.

#### Table 12: Employment in BC (1000s of jobs)

Employment in BC (1000s of jobs)									
	20	16	2020						
	No CAP	САР	No CAP	САР					
Oil and gas extraction	4.3	4.3	4.8	4.7					
Other resource extraction									
Forestry	26.3	26.2	24.7	24.4					
Coal	18.5	17.6	22.8	21.7					
Other	54.9	54.8	56.8	56.7					
Utilities – Electricity generation	10.2	13.7	10.1	14.8					
Manufacturing									
Paper	13.5	11.0	12.5	10.5					
Wood products	45.2	45.2	41.8	41.1					
Petroleum refining	0.7	0.6	0.5	0.3					
Chemicals	3.5	3.7	2.8	3.2					
Non-metallic minerals	9.4	8.8	9.7	9.2					
Primary metals	5.0	4.9	4.1	4.0					
Other manufacturing	120.8	116.6	118.1	112.0					
Transportation	136.1	134.4	142.8	140.7					
Services	1,985.6	1,994.4	2,125.3	2,136.6					
Government	113.4	115.5	125.0	127.0					
Total	2,547.4	2,551.6	2,701.9	2,707.0					

# <sup>20</sup> As a long-run equilibrium model, GEEM does not account for temporary changes in jobs due to changes in the business cycle. These fluctuations are important for industries such as construction.

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# **Greenhouse Gas Emissions**

Figure 4 shows the forecast of BC's greenhouse gas emissions under both scenarios, with detailed data on the emissions by sector are available in Table 12. Note that non-combustion emissions from landfills and agriculture are not included in the forecast, leading to slightly lower levels of emissions than in the Environment Canada's National Inventory Report (2010).

In the absence of the Climate Action Plan, emissions are forecast to grow to 17, s.2Mt CO<sub>2</sub>e by 2020. The Climate Action Plan stems this growth with emissions growing to 62.9 Mt  $CO_2e$  by 2020; therefore the policy reduces emissions by 14.2 Mt  $CO_2e$ in 2020. Despite the policies, emissions continue to increase primarily due to the rapid expansion of natural gas production in northeastern BC. Natural gas production accounts for 78% of the increase in emissions between 2010 and 2020, with the increase in emissions from the Horn River accounting for the majority of the increase. The Horn River has high emissions intensity relative to other natural gas resources, with a concentration of formation  $CO_2$  in raw gas at 12% whereas Montney is less than 2% on average. Production from Horn River also requires 80% more fuel gas than the Montney region.<sup>21</sup>

Despite the rise in emissions between 2007 and 2020, the natural gas sector contributes to about 1.5 Mt CO<sub>2</sub>e of reductions from the implementation of the Climate Action Plan (i.e., reductions from the no policy scenario). These reductions are the result of actions to reduce the emissions intensity of natural gas production (which account for about 50% of total reductions), but also due to reduced competivity and declines in output from the sector (the remaining 50%).

Of the remaining sectors, households contribute most significantly to the reduction in emissions. Actions taken by households to reduce emissions from passenger vehicles and space heating contribute to a 3.7 Mt CO<sub>2</sub>e reduction from what emissions would have been in the absence of the policy. Emissions from households are 9% below 2007 levels by 2020. Emissions from households are targeted through several policies, including the carbon tax, vehicle emissions standard, low-carbon fuel standard and the green building standard. Together, these policies significantly reduce household emissions.

The Clean Energy Act limits generation from fossil fuels to 7% of total utility generation in BC. This leads to a significant reduction in the greenhouse gas emissions from the utilities sector (3.7 Mt  $CO_2e$ ). Furthermore, the electricity sector is required to have net zero emissions, therefore all remaining emissions are required to be offset by reductions elsewhere in the economy.

The service and government sectors are affected by the green building standard, which requires significant declines in the energy intensity of building shells. Based on work conducted for the Ministry of Energy and Mines, new commercial shells are required to be about 30% more efficient than the existing stock after 2011, and 50% more efficient after 2016. Similar to the electricity sector, government is required to purchase offsets to cover any remaining emissions. Total offset purchases from the electricity and government sectors lead to about 2.1 Mt of reductions from sectors such as landfills, forestry, etc.

<sup>&</sup>lt;sup>21</sup> Information on the emissions intensity of natural gas production was received from the Canadian Association of Petroleum Producers. **Modeling Report - Economic Analysis of Climate Action in BC** 31

#### Figure 4: Forecast of greenhouse gas emissions (Mt CO2e)



#### Table 13: Greenhouse gas emissions (MtCO2e)

Greenhouse gas emissions (MtCO2e)								
	201	6	202	0	Cumulative - (2	2007 to 2020)		
	No CAP	CAP	No CAP	CAP	No CAP	CAP		
Oil and gas extraction								
Crude oil	0.6	0.6	0.6	0.5	9.3	9.0		
Natural gas	0.0	0.0	0.0	0.0	0.0	0.0		
Conventional	4.8	4.7	4.1	4.0	74.2	73.1		
Montney	4.2	3.5	5.2	4.5	43.8	36.2		
Horn River	6.5	6.0	7.9	7.3	57.9	52.8		
Other resource extraction								
Forestry	1.0	1.0	0.9	0.9	13.9	13.7		
Coal mining	2.2	2.0	2.4	2.2	29.7	28.4		
Other	1.1	1.1	1.1	1.1	15.3	15.3		
Utilities - Electricity generation	4.7	1.5	5.2	1.6	49.2	18.7		
Manufacturing								
Paper	1.7	1.4	1.6	1.2	25.0	21.6		
Wood products	0.8	0.8	0.8	0.8	11.7	11.5		
Petroleum refining	0.2	0.2	0.1	0.1	3.5	3.2		
Chemicals	0.4	0.4	0.3	0.4	6.5	6.6		
Non-metallic minerals								
Cement	2.7	2.0	2.8	2.1	35.8	29.0		
Lime	0.4	0.2	0.4	0.3	4.7	3.4		
Other non-metallic minerals	0.2	0.2	0.2	0.2	2.7	2.6		
Primary metals								
Aluminum	1.4	1.4	1.2	1.2	21.6	21.8		
Other primary metals	0.4	0.4	0.3	0.3	5.9	5.6		
Liquefied natural gas	0.5	0.5	0.5	0.5	3.6	3.6		
Other manufacturing	2.5	2.4	2.5	2.3	36.4	35.4		
Transportation								
Goods transport								
Truck	6.9	6.6	7.0	6.6	96.3	92.9		
Rail	1.0	1.0	1.0	1.0	13.5	13.3		
Water	0.3	0.3	0.3	0.3	4.6	4.6		
Transit	0.2	0.2	0.2	0.2	3.2	3.3		
Other	2.0	2.0	2.0	2.0	28.2	27.8		
Services	9.3	8.9	9.8	9.0	125.6	121.7		
Government	1.3	1.1	1.5	1.1	17.3	15.3		
Households	14.7	12.5	15.6	11.9	199.5	179.6		
Offsets and Permits	0.0	-2.0	0.0	-2.1	0.0	-13.6		
Total	73.4	62.2	77.1	62.9	951.8	849.0		

# **Phase 2: Scenarios**

The scenarios that were run in Phase 2 were intended to assess the long-term implications of a wide range of policy options and sensitivies. The scenarios do not reflect current government decisions, nor do they indicate future government decisions or precisely how policies might be implemented should government chose to implement any of them in the future. The model does not forecast specific future outcomes under the scenarios, but rather provides an indication of the range of potential effects.

The following table consolidates government and industry feedback into several scenarios.

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#### Table 14: Phase 2 scenarios

2.1	Baseline Scenarios	Target	Carbon tax on uncapped
			emissions sources
	2.1a	15% below 2012 by 2020	\$30/tonne flat
	2.1b	15% below 2012 by 2020	\$30/tonne plus \$5/year to 2020
	2.1c	33% below 2012 by 2020	\$30/tonne flat
	2.1d	33% below 2012 by 2020	\$30/tonne plus \$5/year to 2020
	Capped combustion emissions are aucti	oned. Capped non-combustion emiss	ions are allocated for free.
	The offset limit is 10%.		
	The price is WCI's modelled price starting	ng at \$15/permit in 2013 and rising to	\$33/permit in 2020.
	The carbon tax only covers the uncappe	d sectors at the rates specified above	e. Those emission sources in cap-
	and-trade are exempted from the carbo	n tax.	
2.2	All free at		
	a) 15% target below 2012 by 20	20 and	
	b) 33% target below 2012 by 20	20	
	The offset limit is 10%.		
	The price is WCI's modelled price starting	ng at \$15/permit in 2013 and rising to	\$33/permit in 2020.
	The carbon tax only covers the uncappe	d sectors at \$30/tonne flat. Those en	nission sources in cap-and-trade
	are exempted from the carbon tax.		
2.3	All auctioned at		
	a) 15% target below 2012 by 20	20 and	
	b) 33% target below 2012 by 20	20	
	The offset limit is 10%.		
	The price is WCI's modelled price starting	ng at \$15/permit in 2013 and rising to	\$33/permit in 2020.
	The carbon tax only covers the uncappe	d sectors at \$30/tonne flat. Those en	nission sources in cap-and-trade
	are exempted from the carbon tax.		
2.4	Carbon tax increasing $5/tonne CO_2e$ and	nually to 2020 on combustion emissi	ons, with no cap-and-trade.
	This scenario serves a dual purpose. It a	lso simulates a carbon tax and cap-ar	nd-trade integration approach in
	which emitters pay for the carbon tax as	s described above and do not face a c	cost under cap-and-trade.
2.5	Carbon tax increasing \$5/tonne CO <sub>2</sub> e an	nually to 2020 on combustion emissi	ons, and starting on non-
	combustion emissions at \$10/tonne CO	<sub>2</sub> e in 2013 and increasing \$5/tonne C	$O_2$ e annually on non-combustion
	emissions to 2020, with no cap-and-trac	le.	
	This scenario serves a dual purpose. It a	lso simulates a carbon tax and cap-ar	nd-trade integration approach in
2.6	which emitters pay for the carbon tax as	s described above and do not face a c	cost under cap-and-trade.
2.6	Imports taxed at \$30/tonne flat to 2020	(as requested by the cement sector)	
2.7	BC Version of SGER		
		larget	
	2./a	33%	
	2.70	33%	\$30/tonne plus \$5/year to 2020
	2./c	15%	\$30/tonne flat
	2.7d	15% (2020)	\$30/tonne plus \$5/year to 2020
2.8	Offset limit adjusted to 15% of a facility'	s compliance obligation using Scenar	io 2.1a and b as a base.

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Part 3 Page 35 MOE-2012-00219 OtherProposed: Output-based benchmark using industry preference that forestry and cement provided. Given<br/>similarities to Scenario 2.2, this scenario was not run. Output-based calculations can be done as part of an<br/>allocations plan should cap and trade proceed. Further industry consultation would occur.

The list of scenarios explored in this analysis is extensive, so this report highlights specific scenarios to answer questions about how new climate policies affect the economy and greenhouse gas emissions. The scenarios discussed in detail in this report are described in Table 13.

At the request of the Climate Action Secretariat, scenario 2.1c is used as the basis for comparison. The characteristics of this scenario are:

- Large emitters in BC participate in a WCI administered cap-and-trade system in which they are reduce emissions by 33% from 2012 levels by 2020.
- Permits for combustion emissions are auctioned by the BC government with the revenue used to cut corporate and personal income taxes and provide transfers to low and northern communities. This is the current method for recycling revenue from the carbon tax.
- Permits for non-combustion emissions are allocated for free to industry based on a greenhouse gas intensity-based benchmark.
- Sectors not covered by the cap-and-trade system remain under the carbon tax on combustion emissions, which remains flat at \$30 per tonne CO<sub>2</sub>e in nominal terms until 2020. In real 2002 dollars, the carbon tax declines to \$21 per tonne CO<sub>2</sub>e by 2020.

The remaining scenarios aim to explore the following dynamics:

- Scenario 2.1a examines the effect of a lower target for large emitters under the cap-and-trade system. In this scenario, large emitters reduce their emissions by 15% below 2012 levels by 2020.
- Scenario 2.1d examines the effect of raising the carbon tax on combustion emissions for sectors that are not covered under the cap-and-trade system. By 2020, the carbon tax rises to an average of \$67.5 per tonne CO<sub>2</sub>e (\$48 per tonne in 2002\$).
- Scenario 2.2b examines the effect of allocating all permits under the cap-and-trade system for free based on a greenhouse gas intensity-based benchmark.
- Scenario 2.4 examines the effect of not participating in the cap-and-trade system, but raising the carbon tax on combustion emissions after 2012 in \$5 per tonne CO<sub>2</sub>e increments.
- Scenario 2.5 examines the effect of extending the carbon tax to non-combustion emissions in 2013. The tax begins at \$10 per tonne CO<sub>2</sub>e and rises in \$5 per tonne CO<sub>2</sub>e increments until 2020.
- Scenario 2.7a examines the effect of establishing an Alberta-style specified gas emitter's regulation in BC as opposed to participating in the cap-and-trade system or raising the carbon tax.

Table 15: Scenarios examined in detail

Scenarios examined in detail									
		2.1a	2.1c	2.1d	2.2b	2.4	2.5	2.7a	
Target for la GHG in 2020	rge emitter	15%	33%	33%	33%				
Allocation	Combustion	Auctioned	Auctioned	Auctioned	Free				
of Permits	Non- combustion	Free	Free	Free	Free				
Carbon tax	Combustion	\$30	\$30	\$67.5	\$30	\$67.5	\$67.5	\$30	
in 2020	Non- combustion					\$45			
Specified gas	Target							33%	
emitters regulation	Tech fund price							\$30	

While this report describes a subset of the results in detail, the discussion can be used to understand the full list of scenarios. For example, while scenario 2.2a is not described in detail, the results can be understood as a combination of the dynamics under 2.1a (lower target for large emitters) and 2.2b (free allocation of combustion emissions). Also, some scenarios are not discussed because they affect a small subset of sectors. For example, scenarios 2.3a and 2.3b only affect sectors with non-combustion emissions and scenarios 2.6, 2.8 and 2.9 only affect cement manufacturing or have a small impact on the results. The results from scenarios not discussed in detail are provided as an appendix to this report.

# **Phase 2: Results**

# **Gross Domestic Product (GDP)**<sup>22</sup>

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#### **Net exports**

Changes in net exports are primarily driven by two dynamics, which do not necessarily give results in the same direction: 1) changes in the costs of producing a good or service (i.e., competitiveness), and 2) changes in the domestic consumption of a good or service. Services under scenario 2.7a show how these dynamics can offset each other. In this scenario, the costs of services decline due to lower electricity prices; however greater provincial income leads to an increase domestic consumption and a reduction in the availability of services available for export (see scenario 2.7a). The discussion in this section highlights how the net exports should be interpreted in light of changes in sector activity (see impacts on gross domestic product). Figure 7 and Table 16 show the change in net exports for each major commodity in BC.

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# How are fossil fuel net exports affected by alternative climate policies?

Changes to the net exports of fossil fuels (i.e., natural gas, coal, crude oil and refined petroleum product) are closely correlated with changes in activity. Most of the policies implemented on the rest of the economy have little impact on the domestic consumption of these commodities. Most coal produced in BC is exported, while the alternative climate policies have less impact on the consumption of natural gas and refined petroleum products (see the greenhouse gas emissions section for a discussion on the incremental impact of raising the carbon tax on fossil fuel consumption in non-capped sectors). Therefore these sectors are mostly affected by how the policies affect competitiveness:

Scenarios in which allowances are distributed for free (scenario 2.2b and 2.7a) improve competitiveness and net exports. Under these scenarios, cumulative net exports of fossil fuels increase by between \$1.0 and \$1.8 billion (2002\$).

- The cap-and-trade scenarios (2.1a, 2.1c and 2.1d) lead to a smaller increase in net exports from current because, on average from 2013 to 2020, the price for allowances is lower than the carbon tax. Over this period, the carbon tax averages \$23 per tonne CO<sub>2</sub>e (2002\$) while the price for permits averages \$20 per tonne. There are also differences between the cap-and-trade scenarios:
  - Competitiveness is reduced further when large emitters achieve the deeper target for emissions (33% below 2012 levels in scenario 2.1c as opposed to 15% in scenario 2.1a). Under the deeper target, the natural gas sector receives fewer permits for free to cover non-combustion emissions and must therefore purchase permits to comply with the policy. Under these scenarios, combustion emissions are auctioned, so it makes little difference to firms whether to purchase from the government or on the open market.
  - The difference between scenario 2.1c and 2.1d is attributed to slightly greater reductions in natural gas consumption from the rest of the economy due to the higher carbon tax. This increases the availability of natural gas for export.
- Raising the carbon tax on combustion emissions (scenario 2.4) and extending the carbon tax to non-combustion emissions (scenario 2.5, leads to the most significant decline in net exports (\$0.7 and \$1.9 billion, respectively). This decline is primarily due to reduced competitiveness from the sector.

# How are net exports of manufactured goods affected by alternative climate policies?

Similar to fossil fuels, net exports of manufactured goods are primarily determined by how the alternative policies affect competitiveness. However, industrial manufacturing is comprised of energy and emissions intensive sectors (e.g., pulp and paper or cement manufacturing) and sectors with low energy and emissions intensities (e.g., other manufacturing or wood products manufacturing). Therefore some sectors benefit from alternative policies while others do not.

- Sectors with low energy and emissions intensities benefit from large emitters remaining under the carbon tax and from a rise in the carbon tax (scenarios 2.4 and 2.5). The revenue from the carbon tax is used to cut corporate and personal income taxes. Therefore, sectors with low emissions intensities per unit of corporate and personal income benefit from an expansion of the carbon tax. When permits are allocated for free (scenarios 2.2b and 2.7a) or when large emitters experience a lower auction price for permits (scenarios 2.1a through d), less emissions intensive industries experience a net cost from carbon pricing.
- Sectors with high energy and emissions intensities benefit most from a free allocation of permits (scenarios 2.2b and 2.7a) and experience the greatest cost when they are exposed to a rising carbon tax on combustion (scenario 2.4) or non-combustion emissions (scenario 2.5).

# Explaining net exports of other goods and services

As services are less greenhouse gas intensive, the trends in net exports match those for industrial sectors with low energy and emissions intensities. Net exports are greater in scenarios in which cuts to corporate and personal income taxes are greatest (e.g., scenario 2.4 and 2.5) and lowest when permits are allocated for free (scenario 2.2b and 2.7a).

As a significant portion of other goods and services produced in BC are consumed domestically (e.g., restaurant services), changes in domestic consumption are also important in determining net exports. The result is net exports are not correlated with economic activity in some scenarios (e.g., scenario 2.4). In some scenarios, the reduction in provincial income and lower domestic consumption offsets any improvement to the competitiveness of the sector.

# 5.0 4.0 3.0 2.4 2.5 2.7a 3.0 2.0 1.0 -2.0 -3.0 -4.0 -4.0

GHG Intensive

Man.

Fossil Fuels

Total

non-GHG

Intensive Man.

Other goods

and services

#### Figure 7: Increase in cumulative net exports due to alternative policies from 2007 to 2020 (2002\$ million)

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#### Table 18: Cumulative net exports from 2007 to 2020 (2002\$ billion)

Cumulative net exports from 2007 to 2020 (2002\$ billion)								
	CAP	2.1a	2.1c	2.1d	2.2b	2.4	2.5	2.7a
Oil and gas extraction								
Crude oil	6.5	6.5	6.5	6.6	6.4	6.6	6.6	6.4
Natural gas	79.4	79.7	79.6	79.7	81.0	78.7	77.6	80.2
Other resource								
extraction								
Forestry	23.3	23.3	23.3	23.2	23.2	23.3	23.3	23.2
Coal	18.3	18.3	18.3	18.4	18.5	18.3	18.2	18.4
Mined minerals	21.2	21.2	21.2	21.4	21.3	21.4	21.4	21.3
Other	18.2	18.2	18.2	18.1	18.1	18.2	18.2	18.1
Electricity	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.6
Manufactured goods								
Pulp and paper	30.5	31.2	31.2	32.0	34.4	29.5	29.7	33.2
Wood products	123.4	123.2	123.2	124.2	122.6	124.7	124.9	123.0
Refined petroleum	-59.3	-59.3	-59.3	-59.2	-59.0	-59.4	-59.4	-59.2
Chemicals	-70.8	-70.8	-70.8	-70.9	-70.9	-70.8	-70.8	-70.9
Non-metallic minerals								
Cement	1.5	1.4	1.4	1.4	1.8	1.3	1.0	1.6
Lime	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other non-metallic	-1.8	-1.8	-1.8	-1.8	-1.7	-1.8	-1.8	-1.7
minerals								
Primary metals								
Aluminum	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
Other primary metals	-6.3	-6.3	-6.3	-6.2	-6.2	-6.3	-6.3	-6.2
Liquefied natural gas	24.6	24.6	24.6	24.6	24.6	24.7	24.7	24.6
Other manufacturing	-380.8	-381.3	-381.3	-382.5	-383.1	-380.4	-379.9	-382.6
Transportation services								
Goods transport								
Truck	11.4	11.4	11.4	11.0	11.4	11.1	11.1	11.4
Rail	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.7
Water	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Transit								
Other	22.0	21.9	22.0	21.7	21.8	21.9	21.9	21.8
Services	7.0	6.8	6.8	7.8	5.7	8.9	9.1	5.7
Government								
Total	-113.7	-113.6	-113.8	-112.6	-112.6	-112.7	-112.9	-113.6

# Employment<sup>23</sup>

Table 17 shows the impact of alternative climate policies on employment in BC. The impacts range from the addition of 2,600 jobs annually in 2020 to a loss of 900 jobs from current policies. To put this range into perspective, the alternative climate policies change total employment by a maximum of 0.1%.

Employment is largely sensitive to two factors. First, activity levels in each sector respond differently under the alternative policies. This dynamic needs to be differentiated between a sector's contribution to provincial income. Policies affect physical production in addition to income produced per unit of production. For example, higher electricity prices can reduce income generated per unit of production. This means that income produced from a sector may decline in spite of an increase or no change in physical production. Second, sectors have different labour intensities. If activity increases in a sector with a high labour intensity (e.g., services) while activity declines in a sector with low labour intensity (e.g., natural gas production), employment may increase.

As small manufacturing (i.e., "other manufacturing" in Table 17) and the service sector are more labour intensive than most large emitters, policies that lead to an expansion of their production increase levels of employment in BC:

- Labour intensive sectors benefit most from the cut to corporate and personal income taxes. Therefore, employment is highest in scenarios with high levels of revenue recycling (scenarios 2.4 and 2.5).
- When permits are allocated for free to large emitters (scenarios 2.2b and 2.7a), total revenue recycling is reduced, therefore leading to less employment in small manufacturing. In scenario 2.2b, this reduction in employment is offset by increases in employment in the service sector (which increases due to greater economic activity).
- In between the extremes, the cap-and-trade scenarios (scenarios 2.1a through d) yield a slight increase in employment – between 700 and 1,500 jobs in 2020. The increase is mostly attributed to increased employment in the service sector.

<sup>&</sup>lt;sup>23</sup> As a long-run equilibrium model, GEEM does not account for temporary changes in jobs due to changes in the business cycle. These fluctuations are important for industries such as construction.

#### Table 19: Employment in BC in 2020 (1000s of jobs)

Employment in BC in 2020 (1000s of jobs)									
	CAP	2.1a	2.1c	2.1d	2.2b	2.4	2.5	2.7a	
Oil and gas extraction	4.7	4.7	4.7	4.7	4.9	4.6	4.5	4.9	
Other resource extraction									
Forestry	24.4	24.4	24.4	24.7	24.3	24.8	24.9	24.3	
Mining	21.7	21.7	21.7	21.8	22.0	21.7	21.6	22.0	
Other	56.7	56.7	56.7	56.7	56.6	56.7	56.7	56.6	
Utilities - Electricity generation	14.8	14.9	14.9	15.1	14.8	15.1	15.1	15.1	
Manufacturing									
Pulp and paper	10.5	10.2	10.2	10.7	11.4	9.8	10.0	11.3	
Wood products	41.1	41.1	41.1	41.9	40.9	42.2	42.4	41.0	
Petroleum refining	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	
Chemicals	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
Non-metallic minerals	9.2	8.9	8.8	8.9	9.2	8.9	8.4	9.3	
Primary metals	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Other manufacturing	112.0	112.7	112.7	111.3	110.1	113.8	114.7	110.5	
Transportation	140.7	140.8	140.8	139.6	140.7	139.7	139.8	140.5	
Services	2,136.6	2,137.1	2,137.1	2,139.2	2,137.7	2,138.6	2,137.7	2,136.1	
Government	127.0	127.0	127.0	126.5	127.1	126.1	125.9	127.0	
Total	2,707.0	2,707.8	2,707.7	2,708.5	2,707.3	2,709.5	2,709.3	2,706.1	

#### **Greenhouse Gas Emissions**

Figure 8 shows the projection of greenhouse gas emissions under each of the policy scenarios, with detailed sector-level data provided in Table 18. Under the Climate Action Plan, greenhouse gas emissions continue to rise after 2012 to reach 63 Mt CO<sub>2</sub>e by 2020. Each of the new policies reduces the trajectory of BC's greenhouse gas emissions from current policies – in the most aggressive policy, emissions are reduced by 12 M while in the least aggressive policy, emissions are reduced by 0.8 Mt CO<sub>2</sub>e from the Climate Action Plan. However, none of the policies achieve BC's target for emissions at 33% below 2007 levels by 2020.

# What is the impact of cap-and-trade policies on greenhouse gas emissions?

When cap-and-trade policies are implemented in BC (i.e., scenarios 2.1a, 2.1c, 2.1d and 2.2b), large emitters are required to reach a set target for greenhouse gas emissions below 2012 levels in 2020. Under scenario 2.1a, the policy calls for a 15% reduction by 2020, whereas the remaining cap-and-trade scenarios call for a 33% reduction below 2020. Large emitters have three main options to comply with the policy: 1) directly reduce greenhouse gas emissions, 2) purchase emissions permits from other sectors or jurisdictions that have reached their emissions targets, or 3) purchase offsets, however offsets are capped at 10% in each of the scenarios below.

The final level of emissions is mostly sensitive the target for emissions and less sensitive to other policy considerations (e.g., whether to auction or allocate permits for free). In the scenarios in which the target calls for a 33% reduction, final levels of emissions are within 0.3 Mt  $CO_2e$  of each other. If permits are allocated for free, activity in several sectors remains more robust (e.g., natural gas production in the Horn River) and direct emissions levels in BC are higher.

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Part 3 Page 49 MOE-2012-00219 To offset these higher levels of emissions, industry complies with the emissions target by purchasing permits or offsets. So emissions levels from large emitters are determined by the emissions target.

# What is the effect of raising the carbon tax on combustion emissions under the cap-and-trade policy?

In scenario 2.1d, the carbon tax on combustion emissions rises in \$5 per tonne  $CO_2e$  annual increments after 2012 until it reaches an average of \$67.5 per tonne in 2020. The impact of this rise on greenhouse gas emissions is relatively small – it achieves an additional reduction of 0.3 Mt  $CO_2e$  – because of two main factors. First, the scope of this carbon tax is reduced (i.e., the rise in carbon tax affects fewer sectors of the economy). Under the cap-and-trade policy, large emitters do not participate in the carbon tax program, so the rise only affects smaller point sources of emissions from transportation, buildings, small industrial processes and households. Second, most of the remaining sectors covered by the carbon tax are subject to regulatory policies to reduce emissions, and the incremental effect of raising the carbon tax is small. For example, there are two ways of reducing emissions from household transportation: 1) households can purchase less greenhouse gas intensive vehicles, and 2) households can drive less or take public transit. The first action is already targeted by the vehicle emissions standard, and raising the carbon tax does not achieve an incremental improvement in the greenhouse gas intensity of passenger vehicles. So raising the carbon tax only induces incremental changes in the second action which has a small impact on emissions. Similar to passenger vehicles, buildings, household appliances and goods transportation are subject to various regulations, which limit the effectiveness of raising the carbon tax.

# If BC does not participate in the WCI cap-and-trade program, what is the impact of greenhouse gas emissions?

In this analysis we examined several scenarios in which BC does not participate in the cap-and-trade program, but instead implements the following policies to achieve additional reductions:

Raise the carbon tax on combustion emissions in \$5 per tonne CO<sub>2</sub>e annual increments after 2012 (scenario 2.4). This policy achieves a 1.4 Mt CO<sub>2</sub>e incremental reduction from current policies. These reductions are concentrated in two sectors – natural gas production (0.6 Mt) and cement manufacturing (0.3 Mt). Most of these reductions are from a loss of competitiveness to the industry (i.e., the result of declines in net exports). In other words, the decline in emissions in BC likely leads to an increase in emissions in other jurisdictions (i.e., emissions leakage).

As discussed above, smaller point sources of emissions are mostly covered under other regulatory policies and a rise in the carbon tax does not yield significantly greater reductions.

2) Raise the carbon tax on combustion emissions as described above and introduce a carbon tax on non-combustion emissions (scenario 2.5). In this scenario, the tax on non-combustion emissions begins at \$10 per tonne CO<sub>2</sub>e in 2013 and rises in \$5 per tonne increments until 2020. This policy achieves greater incremental reductions – 3.9 Mt CO<sub>2</sub>e – with the natural gas and cement sectors accounting for 2.6 and 0.8 Mt, respectively. The reductions are also from a loss of competitiveness, but carbon capture in natural gas processing may become economically viable under this carbon pricing policy. The decision on whether to adopt carbon capture and storage is likely based on several dynamics: 1) technology costs, 2) the price for non-combustion emissions, and 3) the price oil producers are willing to pay for any captured CO<sub>2</sub> for use in enhanced oil recovery (EOR). This latter dynamic is largely determined by the price for oil (higher oil prices are associated with a greater willingness to pay for CO<sub>2</sub>-EOR). The cost for CCS and \$30 per tonne to transport the CO<sub>2</sub> to an EOR site). When the price for non-combustion emissions rises to \$45 per tonne by 2020, there is a small market for CO<sub>2</sub>-EOR that would be willing to pay more than \$45 per tonne of CO<sub>2</sub>. This makes CCS and EOR marginally viable under this scenario.

3) Develop an Alberta-style specified gas emitters regulation for large emitters (scenario 2.7a). In this scenario, large emitters are required to reduce their emissions intensities by 33% below 2010 levels after 2020. Industry has several options for complying with the policy, including: 1) direct reductions in emissions intensity, 2) purchase emissions performance credits from other sectors that have achieved their reductions in emissions intensity, 3) purchase offsets (which is limited), and 4) contribute to a technology fund that can be accessed at \$30 per tonne CO<sub>2</sub>e. This policy yields a 0.8 Mt reduction from current policies, and the reductions are concentrated in the natural gas sector. As discussed above, this scenario also shows that CCS with EOR may become economically viable for Horn River processing plants.

Despite achieving incremental reductions from current policies, none of the policies achieved BC's target for greenhouse gas emissions, indicating that additional policies not yet contemplated, would be required to reach the target.



Figure 8: Greenhouse gas emissions (Mt CO2e)

#### Table 20: Greenhouse gas emissions in 2020 (Mt CO2e)

Greenhouse gas emissions in 2020 (Mt CO <sub>2</sub> e)								
	CAP	2.1a	2.1c	2.1d	2.2b	2.4	2.5	2.7a
Oil and gas extraction								
Crude oil	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Natural gas								
Conventional	4.0	4.0	4.0	4.0	4.0	4.0	3.8	4.0
Montney	4.5	4.6	4.6	4.6	4.6	4.4	4.4	4.6
Horn River	7.3	6.7	6.6	6.6	6.5	6.8	4.9	6.2
Other resource extraction								
Forestry	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Coal mining	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2
Mineral mining	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Other	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Utilities – Electricity generation	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Manufacturing								
Pulp and paper	1.2	1.2	1.2	1.3	1.4	1.2	1.2	1.3
Wood products	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.7
Petroleum refining	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Chemicals	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Non-metallic minerals								
Cement	2.1	1.9	1.8	1.8	2.2	1.8	1.4	2.3
Lime	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.3
Other non-metallic minerals	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Primary metals								
Aluminum	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Other primary metals	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Liquefied natural gas	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Other manufacturing	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Transportation services								
Goods transport								
Truck	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Rail	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Water	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Transit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Services	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Government	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Households	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
Offsets + Permits	-2.1	-8.9	-12.7	-12.8	-13.2	-2.1	-2.1	-2.1
Total	62.9	55.4	51.3	51.0	51.3	61.6	59.1	62.1

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Pages 53 through 70 redacted for the following reasons: s.21

# CONFIDENTIALITY AGREEMENT

BETWEEN: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA AS REPRESENTED BY THE MINISTER OF ENVIRONMENT (THE "PROVINCE")

AND:

(THE "Operator")

- A. The Operator operates a facility or facilities (the "Operations") which are a reporting operation or reporting operations under the BC *Reporting Regulation*, BC Reg 272/2009.
- B. In order to develop policy related to a proposed cap and trade program for greenhouse gases being developed by the Province ("Cap and Trade Policy"), the Province has requested the Operator to voluntarily provide the Province with a forecast of certain greenhouse gas emissions from the Operations for a period of up to December 31, 2015, including supporting data, and assumptions related to matters such as production, capacity, expansions, closures, energy use and costs ("the Emission Forecast").
- C. Section 36 of the Greenhouse Gas Reduction (Cap and Trade) Act provides, subject to limitations, for the confidentiality of information under the control of government through inspections under that Act or reports that are required to be provided by an operator of a reporting operation ("Mandatory Information"), but does not apply to any additional information that is provided voluntarily.
- D. The Operator wishes to have its Emission Forecast considered in the development of policy, but considers the Emission Forecast confidential.

Therefore, the Operator has agreed to provide the Emission Forecast, and the Province has agreed to consider the Emission Forecast in the development of policy subject to the following terms and conditions:

# Definition:

- 1. In this Agreement "Confidential Information" means
  - all information in the Emission Forecast disclosed to the Province, provided that each page or worksheet of the Emission Forecast is clearly identified as "Confidential – Subject to Confidentiality Agreement -- Do Not Copy", and

- all information provided by the Operator to the Province that is supplemental to the Emission Forecast, including corrections, more detailed forecasts, additional supporting data, and clarification of assumptions and methodologies ("Supplemental Information"), provided that
  - (i) if the Supplemental Information is provided in writing, each page of any written communication is clearly identified as "Confidential – Subject to Confidentiality Agreement -- Do Not Copy"
  - (ii) if the information is provided orally, the Operator clearly asserts at the meeting or telephone call at which the information is provided that the information being provided is subject to this confidentiality agreement and requests that the provincial employees or contractors participating in such discussion make a written note that the information provided is subject to this agreement and should not be copied
- but, notwithstanding the generality of the above, Confidential Information does not include
  - c) information that is or later becomes generally available to the public other than by way of unauthorized disclosure by the Province;
  - d) information the Operator authorizes in writing the Province to disclose;
  - e) information which the Province can demonstrate it had knowledge of prior to the time it was disclosed by the Operator;
  - f) Mandatory Information or other information obtained by the Province under statutory authority; or
  - g) information which the Province can demonstrate that it acquired
    - (i) independently of any information sharing contemplated by this agreement; and
    - (ii) from a source that did not obtain the information directly or indirectly from the Province.

# Accuracy of Emissions Forecast

- 2. The Province acknowledges that the Emissions Forecast may include historical emissions and production data which have not been subject to validation, verification, audit, or accounting to provide assurance of accuracy.
- 3. The Province acknowledges that the Confidential Information will contain future emissions estimates and may include projected production estimates and other forward looking statements that are based on uncertain information and uncertain assumptions and other factors that may cause actual emissions or other relevant facts to be materially different from that indicated in the Emissions Forecast.
- 4. The Province acknowledges that the Operator does not make any representation or warranty regarding the completeness or accuracy of the Emissions Forecast or other Confidential Information.

### Use, Reproduction, and Disclosure:

- 5. The Province acknowledges that
  - a) the Confidential Information will be supplied in confidence,
  - b) disclosure of facility or corporate emission forecasts and supporting data and assumptions may be harmful to industrial emitters, and
  - c) the Operator asserts that disclosure of the Confidential Information to a Third Party will or may cause harm to the Operator.
- 6. Except to the extent otherwise required by lawful authority, the Province undertakes
  - a) to make use of the Confidential Information only for the purposes of developing Cap and Trade Policy;
  - b) except as expressly permitted by this Agreement, not to disclose any Confidential Information to any person outside of the government of BC;
  - c) if the Operator provides the Province with at least five hard copies of the documents containing Confidential Information, to not reproduce the documents provided;
  - d) if the Operator provides the Province with electronic copies of documents containing the Confidential Information that are encrypted and password protected, and provides the password to the Province by separate written communication requesting that the passwords be kept separate from the document, not to reproduce the documents other than by forwarding the documents electronically with passwords sent by separate communication; and
  - e) if the Operator provides Confidential Information to the Province orally, the Province undertakes not to reproduce the notes of such conversations.
- 7. If the Province is legally required to disclose any Confidential Information by a lawful authority, the Province shall give notice to the Operator as soon as reasonably possible of the required disclosure, and the Confidential Information to be disclosed. The Province will, if practicable, give the Operator this notice before making the required disclosure.
- 8. The Province may disclose the Confidential Information to employees or contractors of the Province solely for purposes of developing Cap and Trade Policy, provided those persons are obligated to maintain the confidentiality of information supplied in confidence.
- 9. The Province may aggregate Confidential Information with similar information from other sources and present the aggregated information publicly for purposes of consultations related to Cap and Trade Policy, provided that the Province will not disclose aggregated data if it would reveal Confidential Information. Without limiting the foregoing, the Province , will not without written agreement of the Operator
  - (a) disclose data that is aggregated from less than three independent sources;

- (b) disclose aggregated production or cost data.
- 10. The Province shall instruct any Provincial employee or contractor receiving the Confidential Information of the terms of this Agreement, and shall instruct such employees or contractors not to disclose the Confidential Information, and to observe and maintain the confidentiality provisions of this Agreement for the benefit of the Operator.
- 11. For greater certainty, nothing in this Agreement:
  - (a) limits the authority of the Province to disclose or use Mandatory Information,
  - (b) constitutes consent by the operator to the release of Mandatory Information,
  - (c) otherwise affects the management of Mandatory Information.

#### **Release and Indemnity**

- 12. The Province releases the Operator from and against all actions, claims, or liabilities indirectly or directly arising out of the Province's use of the Emissions Forecast or other Confidential Information.
- 13. The Province will indemnify and save harmless the Operator from any losses or damages, that the Operator may suffer where such losses or damages arise out of or occur by reason of any act or omission by the Province that constitutes a breach of this Agreement, excepting always losses or damages arising out of acts or omissions of the Operator and the Operator's employees and agents.

#### <u>Other</u>

14. Any notice or other communication to be given in connection with this Agreement must be directed to the following representatives of the Parties:

The Province:

Jessica Verhagen Director, Business Development/Lead Negotiator Climate Action Secretariat British Columbia Ministry of Environment PO BOX 9486 Victoria, B.C. V8W 9W6

The Operator:

15. This Agreement comes into force on the date of execution by both Parties, and remains in effect until December 31, 2015, unless extended by mutual written agreement of the Parties, except sections 12 through 16 which remain in effect indefinitely.

16. This Agreement is to be governed by the laws of the Province of British Columbia.

Date					
Date					
Per:					