

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: FRALMA TECHNOLOGIES INC (mobile incinerator manufacturer) City: Montréal Country: Québec Canada <i>(Provide address information in Block IV)</i></p>
2	<p>Licence / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? Yes X No</p> <p>If "Yes":</p> <p>(i) Nature of licence / authorization: Test performance to establish destruction capacity of the FRALMA MOBILE INCINERATOR</p> <p>(ii) lease submit the licensing history Please see attachment .The certificate is granted after demonstration of the technology and independent verification.</p> <p>Issuing authority Ministère du Développement durable de l'Environnement et des Parcs. Québec Canada</p> <p>National <input checked="" type="checkbox"/> Local or <input type="checkbox"/> Independent</p>
3	<p>Please provide information on storage at the facility including:</p> <p>Capacity for the various PCB waste and equipment types: Method</p> <p>Fralma supply a mobile Incinerator easily displace from one site to the other. It is a batch system fully dedicated to the destruction of PCB contaminated oils with a capacity of one metric ton per day.</p> <p>Holding time: Maximum duration is the complete destruction of the accumulated stock. No residue liquid or solid remains.</p>
4	<p>Worker protection <i>(Please summarize protective measures applied during treatment of PCB wastes)</i></p> <p>Current protective clothing, pants, cover up, gloves and glasses. Protective gutters to prevent spills.</p> <p>Does the facility have an accident book? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Most frequent cause(s) of incidents involving PCBs: No accidents have occurred to date.</p>

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Opinion box - PCB Management issues *(Please describe briefly)*

What are your major concerns?

Prejudice against incineration as known actually disregarding this new method of destruction by combustion, batch system totally dedicated to PCB and completely secure.

Can you identify research and development needs in PCB management that would be beneficial for your region and waste managers worldwide?

A more comprehensive approach giving the possibility to eliminate the accumulation of non registered stock utilizing the new application of existing technology.

Block II Types of PCB wastes

Part A: Treatment of PCB containing equipment/material

Part A1: Metallic Parts

A1.1	Types of metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>	Quantity <i>(specify the unit)</i>	
		unit:		unit:
		min	max	
	<input type="checkbox"/> Equipment containing 100 % PCB			
<input type="checkbox"/> Equipment containing mineral oil contaminated by PCB				
<input type="checkbox"/> Others:				
<i>Please specify any other limitation on waste accepted:</i>				
A1.2	<p>Presentation of metallic equipment/material</p> <p>In what form must the metallic PCB equipment/material be presented:</p> <p><input type="checkbox"/> Drums</p> <p><input type="checkbox"/> Other packaging:</p> <p><input type="checkbox"/> Other constraints:</p>			

A1.3

Treatment of metallic PCB equipment/material

Immediate destruction of metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and recycling)

Part A: Treatment of PCB containing equipment/material

Part A2: Non-metallic Parts

A2.1	Types of non-metallic PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>	Quantity <i>(specify the unit)</i>	
		unit:		unit:
		min	max	
	<input type="checkbox"/> PCB-containing materials (clothes, cables, etc.)			
	<input type="checkbox"/> PCB-contaminated residues, sludges			
	<input type="checkbox"/> PCB-contaminated soils and sediments			
<input type="checkbox"/> Packaged / drummed waste				
<input type="checkbox"/> Other:				
<i>Please specify any other limitation on waste accepted:</i>				
A2.2	<p>Presentation of non-metallic equipment/material</p> <p>In what form must the non-metallic PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging:</p> <p><input type="checkbox"/> Other constraints:</p>			

A2.3

Treatment of non-metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? Yes No

If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated non-metallic equipment/material subjected to reuse/recycling? Yes No

If 'Yes', please specify in **Block II Part C** (Reuse and Recycling)

Part B: Treatment of PCB oils and PCB waste oils

B1	Types of PCB oils and PCB waste oils treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>		
		Concentration <i>(specify the unit)</i>		Quantity <i>(specify the unit)</i>
		unit:		unit:
		min	max	
	<input checked="" type="checkbox"/> 100 % PCB oils		100%	1 t0n/day
	<input checked="" type="checkbox"/> Mineral oils contaminated by PCB		100%	1 t0n/day
	<input checked="" type="checkbox"/> Waste oils contaminated by PCB		100%	1 t0n/day
	<input checked="" type="checkbox"/> Other: All POP's			1 t0n/day
	<i>Please specify any other limitation on waste accepted:</i>			
B2	<p>Presentation of PCB oils and PCB waste oils</p> <p>In what form must the PCB oils and PCB waste oils be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: Any type of container. The oil is pump and filtered from the container into the batch system reservoir. Capacity one metric ton.</p> <p><input type="checkbox"/> Other constraints:</p>			
B3	<p>Treatment of PCB oils and PCB waste oils</p> <p>Please specify the applied technology for the destruction of PCB oils and PCB waste oils in Part III</p>			

Part C: Reuse & Recycling of decontaminated PCB equipment/material

C1	Types decontaminated PCB equipment/material treated:	Limitation on waste accepted <i>(please specify, if appropriate)</i>
		Quantity <i>(specify the unit)</i> unit:
	<input type="checkbox"/> Transformers	
	<input type="checkbox"/> Capacitors	
	<input type="checkbox"/> Materials (clothes, cables, etc.)	
	<input type="checkbox"/> Residues, sludges	
	<input type="checkbox"/> Soils and sediments	
	<input checked="" type="checkbox"/> Other: PCB contaminated oils	Must be liquid
<i>Please specify any other limitation on waste accepted:</i>		
C2	<p>Presentation of decontaminated PCB equipment/material</p> <p>In what form must the decontaminated PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: Any type of container.</p> <p><input type="checkbox"/> Other constraints:</p>	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? Yes No

If 'Yes', please specify the applied technology in Part III

Is the decontaminated PCB equipment/material disposed of? Yes No

If 'Yes', please specify:

Transport to the disposal site? Yes No

If 'Yes':

International transport

National transport

Location of disposal site:

Please provide a short description of disposal site:

Block III Detailed information on applied technologies		
1	The following description refers to Block II, Part:	Type of PCB waste or decontaminated equipment/material:
	<input type="checkbox"/> A1 (Treatment of metallic PCB equipment/material)	
	<input type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	
	<input checked="" type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	All type of PCB contaminated oils
	<input type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	
2	<p>Applied technologies (Please specify the technology used for disposal):</p> <p><input type="checkbox"/> Pyrolysis / gasifiers</p> <p><input type="checkbox"/> Gas Phase Chemical Reduction (GPCR)</p> <p><input type="checkbox"/> Base Catalysed Decomposition (BCD)</p> <p><input type="checkbox"/> Sodium Reduction</p> <p><input type="checkbox"/> Super-Critical Water Oxidation (SCWO)</p> <p><input type="checkbox"/> Plasma Arc</p> <p><input type="checkbox"/> Molten Salt Oxidation</p> <p><input type="checkbox"/> Solvated Electron Technology</p> <p><input type="checkbox"/> Retrofilling</p> <p><input checked="" type="checkbox"/> Other: Incineration high temperature 850°C and 1200°C with dry scrubber for filtering gas with a continuous gas analyzer and registration.</p> <p>Type of technology (1-sentence description):</p> <p>Mobile PCB contaminated oils incinerator, batch system dedicated for PCB.</p> <p>Description of the technology please provide additional information as appropriate (summarize here and, if necessary, attach documentation)</p> <p>Mobile High temperature incineration process giving 99.9999% min. destruction and equip with a dry scrubber eliminating contaminated water and salt.</p> <p>Commissioned? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Year: 2007/2008</p> <p>Can the technology be used in a mobile facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Totally mobile</p>	
3	<p>State of development</p> <p>Does the technology exist as an industrial unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If "No", please indicate when it will become operational:</p> <p>If "Yes", please indicate how many units exist: one</p> <p>In what countries: Canada</p>	

4	<p>Pretreatment:</p> <p>Does the technology require any pretreatment procedures? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes", please specify required pretreatment procedures:</p> <p><input type="checkbox"/> Thermal Desorption</p> <p><input type="checkbox"/> Dilution</p> <p><input type="checkbox"/> Low Temperature Rinsing</p> <p><input type="checkbox"/> Electro-osmosis</p> <p><input type="checkbox"/> Draining/Solvent washing</p> <p><input type="checkbox"/> Dismantling/Shredding</p> <p><input type="checkbox"/> Other:</p>												
5	<p>Byproducts</p> <p>What byproducts does the technology produce? <i>(please specify below)</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Byproduct</th> <th style="width: 30%;">Kind</th> <th style="width: 45%;">Amount</th> </tr> </thead> <tbody> <tr> <td>Liquids:</td> <td style="text-align: center;">no</td> <td>Nil L per ton of waste treated</td> </tr> <tr> <td>Solids:</td> <td style="text-align: center;">Ashes</td> <td>0.25 kg per ton of waste treated</td> </tr> <tr> <td>Air:</td> <td style="text-align: center;">Clean exhaust gas</td> <td>45,000 m³ per ton of waste treated</td> </tr> </tbody> </table> <p>Does the technology allow all byproducts to be monitored for POPs*/PTS** before release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Are any of the byproducts classified as other sorts of hazardous wastes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes" please specify:</p> <p>What volumes of such byproducts are generated by handling a unit volume of PCB wastes:</p> <p>Can third party monitoring data be provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If "Yes", please attach to this questionnaire.</i></p> <p style="text-align: right;">* POPs: Persistent Organic Pollutants ** PTS: Persistent Toxic Substances</p> <p>How are byproducts disposed of? <i>(please describe briefly)</i></p> <p>Not contaminated ashes are disposed in land filling</p>	Byproduct	Kind	Amount	Liquids:	no	Nil L per ton of waste treated	Solids:	Ashes	0.25 kg per ton of waste treated	Air:	Clean exhaust gas	45,000 m ³ per ton of waste treated
Byproduct	Kind	Amount											
Liquids:	no	Nil L per ton of waste treated											
Solids:	Ashes	0.25 kg per ton of waste treated											
Air:	Clean exhaust gas	45,000 m ³ per ton of waste treated											

<p>6</p>	<p>Efficiency <i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): 99.99998%</p>
<p>7</p>	<p>Monitoring & Control of releases</p> <p>What technologies are used to monitor releases: Air: In-line sampling Effluents: N/A Solids: Sampling analysis</p> <p>Are all releases monitored for POPs/PTS before release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Feeding of contaminated PCB oil is automatically stop and reverses to diesel feeding.</p> <p>Are any of the releases classified as hazardous wastes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If "Yes" please specify:</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release:</p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes:</p> <p>Is third party monitoring data available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><i>If "Yes", please attach to this questionnaire.</i></p> <p style="text-align: right;">* POPs: Persistent Organic Pollutants ** PTS: Persistent Toxic Substances</p>
	<p>How are releases disposed of? <i>(please describe briefly)</i></p>

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Disposal costs

What are the *approximate* costs for applying the technology per unit[‡], **including** costs for all technical pretreatment steps, **excluding** all costs **not** related to the technical application of the technology (transport costs, costs for disposal of decontaminated transformers/capacitors/materials, etc.)?

Please specify type of treated/disposed PCB equipment/material/oil below:

	Costs per unit [‡]	Currency
a) PCB contaminated oils	500/ton	USD
b)		
c)		
d)		
e)		
f)		
g)		

[‡] Specify the unit for a) to g): **metric ton**

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Treatment capacities and scaling (*tonnes per year for main waste & equipment types*)

Capacity of existing facilities: **300** units[‡] per year

Can the technology be adapted to higher or lower capacities? Yes No

If "Yes":

- (i) What is the capacity of the smallest commercially viable facility: units[‡] per year
- (ii) What is the capacity of the largest commercially viable facility: units[‡] per year

Does the adaptation will cause additional costs? Yes No

If "Yes" specify the increase in costs for the adaptation (%) of the initial costs:

- (i) For smaller plants: %
- For larger plants: %

[‡] Please specify the unit: **Metric ton**

Block IV**Facility: Address and Service Information****1**Facility Name: **Fralma Technologies Inc.**Address: **91 Chemin des Patriotes**City/Town: **St-Mathias**

P.O. Box:

District/State: **Quebec**Country: **Canada**Telephone: **514-820-2954**Fax: **450-584-2169**Email: **rcornellier@fralma.com**Web site: **ww.fralma.com**

Person completing form

Name: **Cornellier René**Position: **President**Parent Company (*if different*)

Address:

City/Town:

P.O. Box:

District/State:

Country:

Telephone:

Fax:

Email:

2	<p>Other Services offered by the company</p> <ul style="list-style-type: none"><input type="checkbox"/> Laboratory analysis / testing<input type="checkbox"/> PCB waste packaging for shipment<input type="checkbox"/> PCB classification / labeling<input type="checkbox"/> Clean-up of PCB contaminated sites<input type="checkbox"/> PCB wastes transport<input type="checkbox"/> Other PCB-related services:
3	<p>Further information</p> <p>Identify any company information (brochures, notes etc...) provided separately and if you wish provide additional comments on your services in not more than 50 words:</p> <p>The FRALMA MOBIL incinerator is a batch thermal process that can be moved easily to the various sites where the PCB contaminated oils are stock thus eliminating or reducing the transport of the hazardous material. The unit is dedicated to incinerate PCB with a destruction capacity of 99.99998%</p>