

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: Clean Harbors PPM, LLC City: Coffeyville, KS Country: USA <i>(Provide address information in Block IV)</i></p>
2	<p>License / authorization:</p> <p>Is this facility licensed or authorized to handle PCBs? x Yes <input type="checkbox"/> No</p> <p>If "Yes": (i) Nature of license / authorization: PCB Destruction (ii) Please submit the licensing history <i>(please attach to this questionnaire)</i></p> <p>Issuing authority <i>(name)</i>: United States Environmental Protection Agency x National <input 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: 8.7 million pounds</p> <p>Method: Storage inside authorized storage area, with 6" berm, cement walls and a solid roof.</p> <p>Holding time: 1 Year</p>
4	<p>Worker protection <i>(Please summarize protective measures applied during treatment of PCB wastes)</i></p> <p>Level C protection</p> <p>Does the facility have an accident book? x Yes <input type="checkbox"/> No</p> <p>Most frequent cause(s) of incidents involving PCBs: Industrial type injuries including cuts and sprains.</p>

5	<p>Opinion box - PCB Management issues <i>(Please describe briefly)</i></p> <p>What are your major concerns?</p> <p>None</p> <p>Can you identify research and development needs in PCB management that would be beneficial for your region and waste managers worldwide?</p> <p>Identify conclusively real medical concerns if any. Have not read any reports that definitively show a cause and effect relationship between PCBs and long term health issues, except those related to acute issues from chloracne and incomplete burning of byproducts.</p>

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: PPM		unit: pounds (US)
		min	max	
	X Equipment containing 100 % PCB	0	100%	3,000,000
	X Equipment containing mineral oil contaminated by PCB	0	100%	3,000,000
	Others:	0	100%	
<p><i>Please specify any other limitation on waste accepted:</i></p>				
A1.2	<p>Presentation of metallic equipment/material</p> <p>In what form must the metallic PCB equipment/material be presented:</p> <p><input checked="" type="checkbox"/> Drums</p> <p><input checked="" type="checkbox"/> Other packaging: any allowed by DOT</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 x

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

Extraction of PCB? Yes x No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated metallic equipment/material subjected to reuse/recycling? Yes x 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> unit: %		Quantity <i>(specify the unit)</i> unit: lbs
		min	max	
	<input checked="" type="checkbox"/> PCB-containing materials (clothes, cables, etc.)	0	100%	2,000,000
	<input type="checkbox"/> PCB-contaminated residues, sludges			
	<input type="checkbox"/> PCB-contaminated soils and sediments			
	<input checked="" type="checkbox"/> Packaged / drummed waste	0	100%	2,000,000
	Other:			
<i>Please specify any other limitation on waste accepted:</i>				
A2.2	Presentation of non-metallic equipment/material In what form must the non-metallic PCB equipment/material be presented: <input checked="" type="checkbox"/> drums <input checked="" type="checkbox"/> Other packaging: any allowed by DOT <input type="checkbox"/> Other constraints:			

A2.3

Treatment of non-metallic PCB equipment/material

Immediate destruction of non-metallic equipment/material containing PCB? Yes No x
If 'Yes', please specify the applied technology in Part III

Extraction of PCB? Yes x No

If 'Yes':

- please specify the applied technology in Part III
- Is the decontaminated non-metallic equipment/material subjected to reuse/recycling? Yes x 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: ppm		unit: lbs
		min	max	
	<input type="checkbox"/> 100 % PCB oils			
	X Mineral oils contaminated by PCB	0	4100	1,800,000
	<input type="checkbox"/> Waste oils contaminated by PCB			
	<input type="checkbox"/> Other:			
	<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>x Drums</p> <p>x Other packaging any allowed by DOT</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

<p>C1</p>	<p>Types decontaminated PCB equipment/material treated:</p>	<p>Limitation on waste accepted <i>(please specify, if appropriate)</i></p> <p>Quantity <i>(specify the unit)</i></p> <p>unit: lbs</p>
	x Transformers	3,000,000
	x Capacitors	400,000
	x Materials (clothes, cables, etc.)	2,000,000
	<input type="checkbox"/> Residues, sludges	
	<input type="checkbox"/> Soils and sediments	
	<input type="checkbox"/> Other:	
	<p><i>Please specify any other limitation on waste accepted:</i></p>	
<p>C2</p>	<p>Presentation of decontaminated PCB equipment/material</p> <p>In what form must the decontaminated PCB equipment/material be presented:</p> <p>xDrums</p> <p>xOther packaging: any package allowed by DOT</p> <p><input type="checkbox"/> Other constraints:</p>	

C3

Treatment of decontaminated PCB equipment/material

Reuse and Recycling of decontaminated PCB equipment/material? Yes xNo

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

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

It is clean metal sold to smelters.

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 checked="" type="checkbox"/> A1 (Treatment of metallic PCB equipment/material)	All electrical eqmt/pipes/cables
	<input type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	
	<input type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	
	<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>x Other: solvent decontamination</p> <p>Type of technology (1-sentence description):</p> <p>Solvent decontamination. Distillation bottoms are incinerated.</p> <p>Description of the technology please provide additional information as appropriate (<i>summarize here and, if necessary, attach documentation</i>)</p> <p>Process decontaminates PCB metals and concentrates PCB in still bottoms, from which the solvent is distilled repeatedly. Ultimately the final residuals are sent to a USEPA-approved incinerator for destruction. However over 90% of the total weight in the door is recycled.</p> <p>Commissioned? <input type="checkbox"/> Yes x No Year:</p> <p>Can the technology be used in a mobile facility? <input type="checkbox"/> Yes x No</p>	
3	<p>State of development</p> <p>Does the technology exist as an industrial unit? x 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: 3</p> <p>In what countries: USA</p>	

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Pretreatment:

Does the technology require any pretreatment procedures? Yes x No

If "Yes", please specify required pretreatment procedures:

- Thermal Desorption
 Dilution
 Low Temperature Rinsing
 Electro-osmosis
 Draining/Solvent washing
 Dismantling/Shredding
 Other:

5

Byproducts

What byproducts does the technology produce? *(please specify below)*

Byproduct	Kind	Amount
Liquids:	x	4.1 L per tonne of waste treated
Solids:		kg per tonnes of waste treated
Air:		m ³ per tonnes of waste treated

Does the technology allow all byproducts to be monitored for POPs*/PTS** before release? xYes No

If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? x Yes No

Are any of the byproducts classified as other sorts of hazardous wastes? x Yes No

If "Yes" please specify: distillation bottoms containing halogenated solvents (F02)

What volumes of such byproducts are generated by handling a unit volume of PCB wastes: 4.1 L / tonne

Can third party monitoring data be provided? Yes x No

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants
 ** PTS: Persistent Toxic Substances

How are byproducts disposed of? *(please describe briefly)*

Incineration

6	<p>Efficiency <i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): na %</p>
7	<p>Monitoring & Control of releases</p> <p>What technologies are used to monitor releases: Air: mass balance Effluents: none Solids: none</p> <p>Are all releases monitored for POPs/PTS before release? x Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? x Yes <input type="checkbox"/> No</p> <p>Are any of the releases classified as hazardous wastes? x Yes <input type="checkbox"/> No</p> <p>If "Yes" please specify: Solvent HAP</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release: Engineering and Operational controls and process monitoring</p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes: .003 pound/pound of material processed</p> <p>Is third party monitoring data available? <input type="checkbox"/> Yes x 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> <p>Not applicable</p>

8

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) Solvent decontamination	\$1/pound	US
b)		
c)		
d)		
e)		
f)		
g)		

[‡] Specify the unit for a) to g): pounds US

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

Capacity of existing facilities: 3946 tonnes (units[‡]) per year

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

If "Yes":

- (i) What is the capacity of the smallest commercially viable facility: 680 tonnes (units[‡]) per year
- (ii) What is the capacity of the largest commercially viable facility: 4000 tonnes (units[‡]) per year

Does the adaptation will cause additional costs? x Yes No

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

- (i) For smaller plants: 10 %
- For larger plants: 0%

[‡] Please specify the unit:

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)	PCB Oil up to 4100 ppm
	<input type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	

2

Applied technologies (Please specify the technology used for disposal):

- Pyrolysis / gasifiers
- Gas Phase Chemical Reduction (GPCR)
- Base Catalysed Decomposition (BCD)
 - Sodium Reduction
- Super-Critical Water Oxidation (SCWO)
- Plasma Arc
- Molten Salt Oxidation
- Solvated Electron Technology
- Retrofilling
- x Other: detoxification

Type of technology (1-sentence description):
dechlorination

Description of the technology please provide additional information as appropriate (*summarize here and, if necessary, attach documentation*)

Chemical Treatment of PCB Dielectric Fluid

Commissioned? Yes x No Year:

Can the technology be used in a mobile facility? X Yes No

3

State of development

Does the technology exist as an industrial unit? x Yes No

If "No", please indicate when it will become operational:

If "Yes", please indicate how many units exist: 6

In what countries: USA, Canada, Jamaica

4

Pretreatment:

Does the technology require any pretreatment procedures? Yes x No

If "Yes", please specify required pretreatment procedures:

- Thermal Desorption
 Dilution
 Low Temperature Rinsing
 Electro-osmosis
 Draining/Solvent washing
 Dismantling/Shredding
 Other:

5

Byproducts

What byproducts does the technology produce? *(please specify below)*

Byproduct	Kind	Amount
Liquids:	Sodium Hydroxide Solution	28 L per tonnes of waste treated
Solids:		kg per tonnes of waste treated
Air:		m ³ per tonnes of waste treated

Does the technology allow all byproducts to be monitored for POPs*/PTS** before release? x Yes No

If POPs*/PTS** are discovered, can the byproducts be returned to the process for further treatment? x Yes No

Are any of the byproducts classified as other sorts of hazardous wastes? x Yes No

If "Yes" please specify: sodium hydroxide solution

What volumes of such byproducts are generated by handling a unit volume of PCB wastes: 28 L / tonne

Can third party monitoring data be provided? Yes x No

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants

** PTS: Persistent Toxic Substances

How are byproducts disposed of? *(please describe briefly)*

Used in water neutralization process for acidic water.

6	<p>Efficiency <i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): 99.9999 %</p>
7	<p>Monitoring & Control of releases</p> <p>What technologies are used to monitor releases: Air: mass balance and administrative record keeping Effluents: none Solids: none</p> <p>Are all releases monitored for POPs/PTS before release? x Yes <input type="checkbox"/> No</p> <p>If POPs*/PTS** are discovered, can the releases be returned to the process for further treatment? Yes <input type="checkbox"/> No</p> <p>Are any of the releases classified as hazardous wastes? Yes x No</p> <p>If "Yes" please specify:</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release: collected and shipped for use in water treatment process</p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes: loses are about 4 pounds/day</p> <p>Is third party monitoring data available? <input type="checkbox"/> Yes x 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> <p>None</p>

8

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) detoxification	\$1/pound	US
b)		
c)		
d)		
e)		
f)		
g)		

[‡] Specify the unit for a) to g): pounds

9

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

Capacity of existing facilities: 2,000,000 gallons (units[‡]) per year

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

If "Yes":

- (i) What is the capacity of the smallest commercially viable facility: 60,000 gallons per year
- (ii) What is the capacity of the largest commercially viable facility: 216,000 gallons per year

Does the adaptation will cause additional costs? x Yes No

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

- (i) For smaller plants: 10 %
- For larger plants: 10%

[‡] Please specify the unit: gallons US

Block IV**Facility: Address and Service Information****1**

Facility Name: Clean Harbors PPM, LLC

Address: Rt 169 North Industrial Park

City/Town: Coffeyville

P.O. Box:

District/State: KS

Country: USA

Telephone: 620-252-1304

Fax: 620-251-2822

Email: Sidebottom.james@cleanharbors.com

Web site: www.cleanharbors.com

Person completing form

Name: Walter Chambers

Position: Sr. Compliance Manager

Parent Company (*if different*)

Address: 1501 Washington ST

City/Town: Braintree

P.O. Box:

District/State: MA

Country: USA

Telephone: 781-849-1800

Fax: 781-848-1632

Email: customerservice@cleanharbors.com

2	<p>Other Services offered by the company</p> <ul style="list-style-type: none">x Laboratory analysis / testingx PCB waste packaging for shipmentx PCB classification / labelingx Clean-up of PCB contaminated sitesx PCB wastes transportx Other PCB-related services: On site detoxification where authorized
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>See web site for all company capabilities and sites at www.cleanharbors.com</p>