

Block I General details	
1	<p>Location of the PCB disposal facility:</p> <p>Name of Facility: Clean Harbors PPM, LLC City: Twinsburg Country: USA <i>(Provide address information in Block IV)</i></p>
2	<p>Licence / 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 licence / authorization: Commerical Storage and Destruction (ii) Please submit the licensing history <i>(please attach to this questionnaire)</i></p> <p>Issuing authority <i>(name)</i>: USEPA 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: 120,340 gallons/1.3 million pounds</p> <p>Method: Approved Commercial Storage Facility</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 or D depending on job task</p> <p>Does the facility have an accident book? xYes <input type="checkbox"/> No</p> <p>Most frequent cause(s) of incidents involving PCBs: Cuts and bumps</p>

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

What are your major concerns?

none

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

See other submittals

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
		min	max
	<input type="checkbox"/> Equipment containing 100 % PCB		
<input checked="" type="checkbox"/> Equipment containing mineral oil contaminated by PCB	0	500	1.2 million
<input type="checkbox"/> Others:			
<i>Please specify any other limitation on waste accepted:</i>			
A1.2	Presentation of metallic equipment/material		
In what form must the metallic PCB equipment/material be presented:			
xDrums			
xOther packaging: any packaging authorized by the DOT. Rail available			
<input type="checkbox"/> Other constraints:			

A1.3

Treatment of metallic PCB equipment/material

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

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

Extraction of PCB? Yes No x

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>	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:		
<p><i>Please specify any other limitation on waste accepted:</i></p>			
A2.2	<p>Presentation of non-metallic equipment/material</p> <p>In what form must the non-metallic PCB equipment/material be presented:</p> <input type="checkbox"/> Drums <input type="checkbox"/> Other packaging: <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

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 type="checkbox"/> 100 % PCB oils			
	<input type="checkbox"/> Mineral oils contaminated by PCB			
	<input type="checkbox"/> Waste oils contaminated by PCB			
	<input type="checkbox"/> Other:			
<p><i>Please specify any other limitation on waste accepted:</i></p>				
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 type="checkbox"/> Drums</p> <p><input type="checkbox"/> Other packaging:</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: pounds
	xTransformers	150,000 pounds
	x Capacitors	75,000 pounds
	<input type="checkbox"/> Materials (clothes, cables, etc.)	
	<input type="checkbox"/> Residues, sludges	
	<input type="checkbox"/> Soils and sediments	
	<input type="checkbox"/> Other:	
<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>xDrums</p> <p>xOther packaging: any authorized 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

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 metals and electrical equipment
	<input type="checkbox"/> A2 (Treatment of non-metallic PCB equipment/material)	
	<input type="checkbox"/> B (Treatment of PCB oil and PCB waste oil)	
	<input checked="" type="checkbox"/> C (Reuse and recycling of decontaminated PCB equipment/material)	Electrical equipment
2	Applied technologies (Please specify the technology used for disposal): <input type="checkbox"/> Pyrolysis / gasifiers <input type="checkbox"/> Gas Phase Chemical Reduction (GPCR) <input type="checkbox"/> Base Catalysed Decomposition (BCD) <input type="checkbox"/> Sodium Reduction <input type="checkbox"/> Super-Critical Water Oxidation (SCWO) <input type="checkbox"/> Plasma Arc <input type="checkbox"/> Molten Salt Oxidation <input type="checkbox"/> Solvated Electron Technology <input type="checkbox"/> Retrofilling <input checked="" type="checkbox"/> Other: scrap metal recovery oven and/or physical separation Type of technology (1-sentence description): <500 ppm metals are either burned in the permitted scrap metal recovery oven or decontaminated and testing using physical separation equipment Description of the technology please provide additional information as appropriate (summarize here and, if necessary, attach documentation) Oven, granulator and aqueous rinse are primary technologies Commissioned? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Year: Can the technology be used in a mobile facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3	State of development Does the technology exist as an industrial unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "No", please indicate when it will become operational: If "Yes", please indicate how many units exist: 4 In what countries: US	

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Pretreatment:

Does the technology require any pretreatment procedures? Yes No

If "Yes", please specify required pretreatment procedures:

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

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Byproducts

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

Byproduct	Kind	Amount
Liquids:		L per tonnes of waste treated
Solids:	debris	5 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? Yes No

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

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

If "Yes" please specify:

What volumes of such byproducts are generated by handling a unit volume of PCB wastes: 5 kg/tonne

Can third party monitoring data be provided? Yes No

If "Yes", please attach to this questionnaire.

* POPs: Persistent Organic Pollutants

** PTS: Persistent Toxic Substances

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

TSCA Landfill

6	<p>Efficiency <i>(please specify, if appropriate)</i></p> <p>Destruction efficiencies (DEs): 99.5 %</p>
7	<p>Monitoring & Control of releases</p> <p>What technologies are used to monitor releases: Air: CEMS Effluents: Solids:</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? <input type="checkbox"/> Yes xNo</p> <p>If "Yes" please specify:</p> <p>What technologies are used/ required to monitor and treat any such releases prior to release: CEMS for air</p> <p>What volumes of such releases are generated by handling a unit volume of PCB wastes: actual release concentrations are in ppt</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> <hr/> <p>How are releases disposed of? <i>(please describe briefly)</i></p> <p>Not applicable</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) Thermal destruction	\$.75	US Dollars
b) Physical separation	\$.50	US Dollars
c)		
d)		
e)		
f)		
g)		

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

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

Capacity of existing facilities: 1.2 million units[‡] per year

Can the technology be adapted to higher or lower capacities? Yes xNo

If "Yes":

- (i) What is the capacity of the smallest commercially viable facility: 50,000 units[‡] per year
- (ii) What is the capacity of the largest commercially viable facility: 5 million 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: 10 %
- For larger plants: 5%

[‡] Please specify the unit: pounds

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

Facility Name: Clean Harbors PPM, LLC

Address: 1672 E Highland Rd

City/Town: Twinsburg

P.O. Box:

District/State: OH

Country: USA

Telephone: 330-425-3825

Fax: 330-487-5784

Email: halling.daniel@cleanharbors.com

Web site: www.cleanharbors.com

Person completing form

Name: Walt 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

<p>2</p>	<p>Other Services offered by the company</p> <ul style="list-style-type: none">x Laboratory analysis / testingx PCB waste packaging for shipmentxPCB classification / labelingx Clean-up of PCB contaminated sitesx PCB wastes transportx Other PCB-related services: PCB oil dechlorination, TSCA landfills, TSCA incineration
<p>3</p>	<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 www.cleanharbors.com for complete information and details</p>