UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

6/8/23

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Mr. Brad Joseph
President
Environmental Protection Services, Inc.
4 Industrial Park Drive
Wheeling, West Virginia 26003-0091

Dear Mr. Joseph:

The Office of Resource Conservation and Recovery (ORCR) of the U.S. Environmental Protection Agency (EPA) grants renewed approval to Environmental Protection Services, Inc. (EPS) to operate two PCBX™ chemical dechlorination (CD) units (i.e., rigs number, 6 and 8), a non-thermal alternative Polychlorinated Biphenyls (PCBs) disposal method, to destroy PCBs in mineral oil dielectric fluid (MODEF) subject to the terms and conditions specified in the enclosed Approval. This Approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) and 40 CFR 761.60(e) of the federal PCB regulations. This Approval is applicable on a nationwide basis since EPS's PCBX™ treatment units are mobile and could potentially operate in any state. The Approval is effective upon EPA's signature and, unless specified otherwise in Condition 23, expires five (5) years after the date of signature.

EPS conducted a PCB treatment and disposal demonstration for PCB-contaminated MODEF at its facility in Wheeling, West Virginia, during the week of December 6, 2022, using its PCBX™ CD technology. The EPA representatives observed three successful runs of the PCBX™ CD technology during the demonstration and collected split samples of the PCB-contaminated MODEF waste feed, the treated MODEF, and the condensate byproduct waste stream produced by the PCBX™ CD units. Results of the analysis from the demonstration, which are summarized in Appendix IV of this Approval, indicated that the EPS PCBX™ mobile units achieved a final Destruction and Removal Efficiency (DRE) of at least 99.9999%. EPA considers this level of performance to be equivalent to that achieved by incineration, which is required by the PCB regulations (see § 761.60(e)). The Agency finds that the use of EPS's PCBX™ CD units, when operated in accordance with the applicable PCB regulations and in accordance with the terms and conditions of this Approval, poses no unreasonable risk of injury to health or the environment.

EPS must comply with all applicable terms and conditions of the Approval and all other applicable provisions in Part 761. A violation of any condition of this Approval or any applicable federal regulations may subject EPS to enforcement action and may be grounds for modification, revocation, or suspension of this Approval. Modification, revocation, or suspension of this Approval may also result from future EPA rulemaking(s) with respect to PCBs, or from new information gathered by EPS and/or EPA.

Please contact Luke Weber of my staff at weber.luke@epa.gov or by phone at (202) 564-6576 or if you have any questions pertaining to this Approval.

Sincerely,

Digitally signed by SONYA SASSEVILLE
Date: 2023.06.08 12:35:33 -04'00'

Sonya M. Sasseville, Director
Program Implementation and Information Division
Office of Resource Conservation and Recovery

Enclosure

cc: EPA Regional PCB Coordinators

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF	)	APPROVAL TO DISPOSE
	)	
ENVIRONMENTAL PROTECTION	)	OF POLYCHLORINATED
	)	
SERVICES, INC.	)	BIPHENYLS (PCBs)
	)	
4 INDUSTRIAL PARK DRIVE	)	
	)	
WHEELING, WEST VIRGINIA	)	

AUTHORITY

This Approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) and 40 CFR § 761.60 of the federal Polychlorinated Biphenyls (PCB) regulations.

Failure to comply with the Approval conditions specified herein shall constitute a violation of §§ 761.60(e) and 761.50(a) and may also be a violation of other provisions of the federal PCB regulations in Part 761. A violation of the regulations is a prohibited act under Section 15 of TSCA.

SUMMARY AND FINDINGS

Background information, process descriptions, demonstration test result summaries, and the Environmental Protection Agency's (EPA's) findings related to this Approval are included in Appendices I through IV.

Environmental Protection Services, Inc. (EPS) is the sole owner of two (2) PCBX™ chemical dechlorination (CD) units which are designed to chemically destroy PCBs in mineral oil dielectric fluid (MODEF) so that the MODEF can be recycled and reused. EPA has carefully assessed EPS's operations and has audited and observed demonstrations of the PCBX™ CD units' treatment process capabilities and efficiency. EPA finds that the EPS PCBX™ CD units, when treating MODEF containing PCBs in accordance with the conditions of this Approval, provide PCB destruction equivalent to an approved TSCA incinerator, as required by 40 CFR § 761.60(e).[1] Further, EPA finds that the EPS process and sampling methods, when performed in accordance with this Approval, will pose no unreasonable risk of injury to health or the environment.

[1] 40 CFR § 761.60(e) allows for the destruction of PCBs using methods other than incineration, provided the alternative method can achieve a level of performance equivalent to an incinerator approved under § 761.70 or a high efficiency boiler operating in compliance with § 761.71. The level of performance required for non-thermal destruction is measured differently than for thermal methods. It is the Agency's policy that non-thermal methods operating under § 761.60(e) that destroy 99.9999% of PCBs as calculated by the Destruction and Removal Efficiency (DRE) meet an equivalent level of performance to an incinerator approved under § 761.70 or a high efficiency boiler operating in compliance with § 761.71. See "Guidance for Applicants Requesting To Treat/Dispose of PCBs Using Incineration or an Alternative Method," October 2019.

EFFECTIVE DATE

This Approval is effective upon signature by the Director of the Program Implementation and Information Division (PIID) and shall expire five (5) years after the date of signature, unless otherwise specified in Condition 23.

CONTENTS

DEFINITIONS AND ACRONYMS

Definitions found in 40 CFR § 761.3 apply unless otherwise noted below.

"Analytical data" means: (a) a formal report from a chemical analysis laboratory; or (b) appropriate chemical instrument printouts from a chemical instrument that has appropriate controls, standards, and written instrumental operating parameters and conditions. Technical judgment or experience is not considered analytical data.

"Application" means all data and materials upon which EPA based its decision to approve the EPS PCBX™ CD units (e.g., information submitted to EPA by EPS to define, represent, or describe proposed testing protocols, proposed design and operations, and operational limits of the PCBX™ CD units). This includes the request for approval renewal required by § 761.60(e) and such data and materials submitted in relation to both the demonstration and operating approval applications, as well as EPS's "PCB Disposal by Non-Thermal Alternative Method Permit Application," dated March 11, 2022.

"Approval" means the content of this document, the conditions within, and the application.

"Calendar year" or "year" means any 365 consecutive days except in the occurrence of a leap year, which contains 366 days. The calendar year does not necessarily begin on January 1st.

"CD" means the process of chemical dechlorination.

"CFR" means the Code of Federal Regulations.

"Day(s)" means a calendar day(s), unless otherwise specified.

"Director of PIID" means the Director of the Program Implementation and Information Division (PIID), Office of Resource Conservation and Recovery (ORCR), Office of Land and Emergency Management (OLEM), U.S. EPA, Washington, DC. Mailing address: USEPA Headquarters, 1200 Pennsylvania Avenue, N.W., OLEM/ORCR/PIID, Mail Code: 5303T, Washington, DC 20460. Phone Number: (202) 566-1007. Email: ORCRPCBs@epa.gov.

"EB solvent" refers to glycol ether EB solvent manufactured by Univar Solutions USA, Inc.

"Facility" means all contiguous land and structures (such as a single manufacturing plant) at which the EPS PCBX^{TM} CD unit(s) disposal operations are conducted.

"Facility location" means a street address or a directional description which would allow a facility to be found by an EPA inspector, as opposed to a P.O. Box that is not indicative of the location of the facility where the treatment unit(s) will be located.

"HQ" means EPA Headquarters.

"Job" means all EPS PCBX^{TM} CD unit(s) disposal operations for a single customer within fifty road miles of a central location. A job may consist of the EPS PCBX^{TM} CD unit(s) disposal operations at several different facilities for a single customer.

"Lost-time injury" means an injury related to the operation of the EPS PCBX^{TM} CD unit(s) which results in an employee not performing their normal assignments during the workday and/or any successive workday following the day of injury.

"Major modification" means any change or upgrade to equipment that is not functionally equivalent to the components it replaces, thereby changing the capacity, design, or operation of the process, or any other changes significantly affecting, or having the potential to significantly affect, overall PCB destruction efficiency, performance, or health or environmental impact of the EPS PCBX^{TM} CD unit(s) or process.

"Mobile operations" means those operations where the EPS PCBX^{TM} CD unit(s) operates at a facility for less than 60 total cumulative days in any calendar year. Cumulative days do not have to be consecutive to count towards the 60 days. The 60-cumulative day compilation starts on the first day any component of the EPS PCBX^{TM} CD unit(s) begins operating at the facility.

"MODEF" means mineral oil dielectric fluid.

"Operations" means the process of treating PCBs in concentrations equal to or greater than 50 parts per million (ppm), including start-up (e.g., powering up, running any oil through the equipment) of the EPS PCBX^{TM} CD unit(s), preparation of PCB waste feed, and decontamination of the EPS PCBX^{TM} CD unit(s) and supporting components once treatment is terminated.

"ORCR" means the Office of Resource Conservation and Recovery, located at the EPA Headquarters.

"PCB" means polychlorinated biphenyls as defined in § 761.3.

"PCB Regulations" are the regulations at 40 CFR part 761.

"Permanent operations" means those operations where the EPS PCBX™ CD unit(s) operate(s) at a facility for 60 total cumulative days or longer in the same year. The 60-cumulative day compilation starts on the first day any component of the EPS PCBX™ CD unit(s) begins operating at the facility. Cumulative days do not have to be consecutive to count towards the 60 days.

"PIID" means the Program Implementation and Information Division within the Office of Resource Conservation and Recovery, in EPA Headquarters.

"Process waste" means wastes generated by EPS's PCBX™ process.

"Regional EPA Administrator" means the Regional Administrator in the Region in which EPS PCBX™ CD unit(s) is/are or will be operating.

"Regional PCB Coordinator" means the contact listed on the following website for the EPA Region in which the EPS PCBX™ CD unit(s) is/are or will be operating:
https://www.epa.gov/pcbs/epa-regional-polychlorinated-biphenyl-pcb-programs#pcb coordinator

"Site" has the same definition as "Facility."

"SDS" means safety data sheets.

"Spill" has the same meaning as "Spill" as defined in EPA's PCB Spill Cleanup Policy in § 761.123.

CONDITIONS OF APPROVAL

Per 40 CFR § 761.60(e), this Approval waives otherwise applicable requirements of §§ 761.60(a) and 761.70. This alternative disposal Approval may reference additional requirements of 40 CFR part 761, but EPS should not rely solely on this Approval for all requirements related to PCBs or the disposal of PCB waste. In the event that the information contained in the application or other supporting documents differs from the conditions specified in this Approval, the conditions of this Approval shall govern.

1. Feedstock Restrictions

a) The EPS PCBX™ CD units shall only treat MODEF.

b) Except as described in Condition (1)(e) below, EPS shall not treat MODEF containing PCBs in concentrations greater than 5,000 ppm.

    1) EPS shall not blend or dilute MODEF containing PCBs to reduce the PCB concentration of the feedstock material to meet treatment levels (i.e., to within the appropriate maximum permissible concentration for treatment). EPS shall not dilute MODEF containing PCBs in concentrations equal to or greater than 50 ppm with MODEF containing PCBs in concentrations less than 50 ppm.

c) Prior to treatment, EPS shall characterize the feedstock for PCBs by Aroclor type and concentration using EPA Method 8082A (SW-846). The feedstock shall be sampled and analyzed by gas chromatography in accordance with the procedures described in EPS's March 11, 2022, application.

d) Whenever feedstock is handled through an intermediate tank(s) or tote(s) prior to entering the treatment pipes of the PCBX™ CD unit, such as when treating bulk quantities of MODEF, the tanks must be clearly labeled. Feed tanks must be labeled so as to distinguish them from treated product tanks. Example labels include "Feed Tank," "Treated Product Tank," and "Intermediate, In-Process Holding Tank."

e) EPS may propose a modification to Condition 1 in the future, should EPS successfully demonstrate to EPA through an approved demonstration test that EPS's PCBX™ CD process is capable of treating higher concentrations of PCBs. Authorized EPA representatives will witness the demonstration and obtain split samples for verification of analytical results.

2. Operating Conditions

Operation of the PCBX™ CD unit(s) shall be subject to the conditions of this Approval and shall be consistent with the information included in EPS's March 11, 2022, application.

Compliance with the parameter limits in Conditions 2(f) and 2(j) is required at all times, including during the 30-minute interval between recorded values specified in Condition 8(a)(5).

a) Treatment Units Covered by this Approval

EPS shall only conduct PCB treatment operations, under the conditions of this Approval, with the following PCBX™ CD unit(s). See Condition 19 on how to incorporate additional units.

Name of the Unit	Vehicle Identification Number (VIN)	License Plate
Rig 6 Processing Trailer	1H2V04524EB002201	OH TMC-9608
Rig 8 Processing Trailer	1JJV532Y8VL412739	OH TQM-5003

b) Start-up Phase

During the start-up phase of a treatment batch (i.e., prior to initiating treatment operations), EPS shall circulate MODEF with PCB concentrations of less than two (2) ppm through the PCBX™ CD unit(s) and visually inspect the unit(s) for leaks, including any leaking or dripping connections. If any leaks are identified, EPS shall perform the appropriate maintenance procedures (e.g., tighten connections; replace gaskets, packings or any other type of mechanical seal) such that any leak is corrected before the unit(s) is/are put on line in the treatment phase for processing. PCB waste shall not be fed for treatment until the system exhibits no leaks and is operating pursuant to the conditions of this Approval. During the visual inspection, EPS shall also check that the hydrogen gas detector is working and that no hydrogen gas, or any flammable gas, is present inside the trailer unit(s); that the equipment, including alarms and other safety devices, does not show any signs of failure; that the sodium line and failsafe do not show any signs of damage or failure; and that all process materials (e.g., quench water supply level, nitrogen tank level) are present at the manufacturer's recommended levels. EPS shall document this start-up phase inspection in a paper or electronic log.

c) Leak Inspection

Periodically during treatment operations, EPS shall visually inspect the unit(s) for leaks, including any leaking or dripping connections. If any leaks are identified, EPS shall perform the appropriate maintenance procedures (e.g., tighten connections; replace gaskets, packings, or any other type of mechanical seal) such that any leak is corrected.

d) Flow Rate

The feed oil flow rate of the PCBX™ CD unit(s) shall be in the range of 12 gal/min to 16 gal/min.

e) Nitrogen

EPS shall operate the PCBX™ CD unit(s) using an oxygen-free, nitrogen-filled internal environment.

f) Minimum Furnace Temperature

EPS shall maintain a minimum temperature of 245°F in the furnace during the reaction time. This value shall be recorded every 30 minutes during operations of the PCBX™ CD unit(s).

g) Processing of Energized Transformers

Pursuant to recommended conditions included in EPS's March 11, 2022, application, EPS shall not process transformers while energized unless the following criteria are met:

1) Transformer voltage rating: 69 KV maximum

2) Transformer capacity: 200 gallons minimum

3) Dielectric constant: 22 KV minimum

4) Level gauge: properly working

5) Water concentration: 60 ppm maximum

6) Flow rate:
   - 200 to 350 gallons 10 GPM maximum
   - 350 to 500 gallons 13 GPM maximum
   - Over 500 gallons 15 GPM maximum

7) Safe access to all valves

h) Fuller's Earth Tanks

EPS shall continuously monitor the Fuller's Earth tank's pressure gauge during operation. The active Fuller's Earth tank is determined to need replacement when the pressure rises to 60 psi or above. At or before the point when the pressure gauge reads 60 psi, the operator shall switch the system's flow to the second Fuller's Earth tank to continue operation and shall take the first Fuller's Earth tank offline.

i) Use of EB Solvent

EPS may add glycol ether EB solvent to the feedstock to help catalyze treatment of PCB-contaminated MODEF. EB solvent flow rate shall be in the range of 0.2 gal/hr to 2.5 gal/hr. The SDS for the EB solvent is provided in Appendix VIII.

j) Treatment Unit Shutdown

EPS shall monitor the following operating parameters (e.g., by use of an alarm system) and immediately take corrective actions if any of the limits are exceeded.

The PCBX^{TM} CD unit(s) shall be shut down (i.e., stop the feed and run oil with PCB concentrations of less than two (2) ppm through the system) if the corrective actions fail to bring the operating parameters back to the following maximum or minimum limits at the time of the next 30-minute recorded value:

1) Maximum reactor temperatures of 286°F (141°C);

2) A maximum reactor pressure of 22 psi;

3) A maximum pressure build-up of 80 psi at the Fuller's Earth tank's pressure gauge in the system; and

4) Nitrogen blanket pressure minimum of 90 psi.

EPS shall document in a paper or electronic log the time and date of each shutdown due to exceedance of any of these limits. After a shutdown due to exceedance of any of these limits, EPS shall also take additional corrective measures to prevent further exceedances before resuming operations. If a shutdown due to exceedance of any of these limits occurs, EPS shall follow the requirements in Condition 5.

EPS shall also shut down the PCBX^{TM} CD unit(s) upon failure of the monitoring and/or recording equipment for the parameters specified in Condition 8(a) for more than five (5) minutes. After such a shutdown is triggered, EPS shall not resume treatment operations until the equipment is repaired or replaced with functional equipment.

After any non-routine shutdown, EPS shall check for the presence of any flammable gases inside each trailer, and document whether any flammable gases are detected. EPS shall not resume treatment operations until no flammable gases are detected inside each trailer.

EPS shall also ensure that the main electrical disconnect providing power to each PCBX^{TM} CD unit is turned off after any power outage and at any time when the unit is either shut down or unattended.

Routine shutdown procedure for PCBX^{TM} CD unit(s) is provided in Appendix VI.

3. <u>Sampling Plan and Feedstock Concentration</u>

EPS shall follow the sampling plan in the EPS's March 11, 2022, application for sampling contaminated feedstock at each facility to ensure compliance with Condition 8(a) of this permit.

4. <u>Treatment Verification and Disposal of MODEF That Could Not Be Adequately Treated</u>

a) EPS shall sample each batch of treated MODEF at the facility where the PCBX^{TM} CD unit(s) is/are conducting the treatment and analyze the samples by gas chromatography for the concentration of PCBs. The treated MODEF shall be sampled and analyzed by gas chromatography in accordance with the procedures described in EPS's March 11, 2022, application.

b) If the concentration of PCBs in a batch of treated MODEF is equal to or greater than two (2) ppm PCBs, EPS shall either:

1) Repeat treatment (each time sodium is added to a batch is considered one treatment) of that batch of MODEF in the PCBX^{TM} CD unit(s) until the MODEF is reduced to less than two (2) ppm PCBs. If sample analysis does not indicate that the PCB concentration is decreasing in the batch for three (3) consecutive treatments, EPS shall cease operation and dispose of the batch according to Condition 4(b)(2);; or

2) Dispose of that batch of MODEF in accordance with 40 CFR part 761 subpart D as if it contains the PCB concentration of the pre-treated feedstock prior to any dilution that may have occurred. The burden of ensuring proper disposal (including shipment to an appropriate disposal facility) shall be on EPS. Disposal of a batch of MODEF according to this condition constitutes a failure to achieve PCB treatment levels for purposes of Condition 5.

5. Requirements Upon Repeated Failure to Achieve PCB Treatment Levels of < Two (2) ppm or Exceedance of Operating Parameter Limits

Upon the third incidence of failure within any year to achieve the required treatment levels, as described in Condition 4(b), or after any exceedance of the operating parameters and failure of corrective actions to bring the operating parameters back within the limits described in Condition 2(j), EPS shall immediately cease operation of the PCBX^{TM} CD unit(s) and shall notify the ORCR HQ contact identified in Condition 13 and the Regional PCB Coordinator by phone or email within three (3) business days of ceasing operation. EPS shall also submit a written report to the ORCR HQ contact identified in Condition 13 and the Regional PCB Coordinator within seven (7) days of ceasing operation. The written report shall include information on the conditions under which the treatment failed, the likely cause(s) of the treatment failure, the operating parameter(s) exceeded, the corrective actions taken in attempt to correct the exceedance(s), the final disposal location of the waste, steps being taken to improve the performance of the unit(s), and the estimated time before the unit(s) is/are able to perform as specified in this Approval. In such instances, the malfunctioning PCBX^{TM} CD unit(s) shall not resume operation until the problem has been corrected to the satisfaction of the ORCR HQ contact identified in Condition 13 and until EPS receives approval to resume operation from ORCR via written or email correspondence.

6. Unit Damage or Malfunction

EPS shall report any incident (e.g., operator error, fire, weather event, etc.) causing damage to or malfunction of the PCBX^{TM} CD unit(s) that may impact the unit(s) ability to operate in accordance with this Approval within two (2) business days by phone or email to the PCB Regional Coordinator and the ORCR HQ contact identified in Condition 13. Within five (5) business days, EPS shall submit a written report to the Director of PIID and the PCB Regional Coordinator that shall include information on the incident causing the damage or malfunction, the cause(s) of the incident, steps being taken to repair the unit(s), and the estimated time before the unit(s) is/are able to perform as specified in this Approval. In such instances, the damaged or malfunctioning PCBX^{TM} CD unit(s) shall not resume operation until the problem has been corrected to the satisfaction of the ORCR HQ contact identified in Condition 13 and until EPS receives approval to resume operation from ORCR via letter or email correspondence. Before EPS may resume operations, EPA may require a performance demonstration or submittal of appropriate data and/or information, such as test results and/or performance data, to confirm that the unit(s) has/have been fully repaired.

7. Generated Waste Disposal and Handling Requirements

a) EPS shall sample and analyze any non-liquid and non-aqueous liquid wastes generated by the EPS PCBX^{TM} CD unit(s), except as provided in Condition 7(a)(3) below.

1) EPS shall dispose of non-liquid and non-aqueous liquid wastes (e.g., sludge, Fuller's Earth filter media, and disposable personal protective equipment (PPE)) with PCB

concentrations equal to or greater than two (2) ppm as if they contained the PCB concentration of the pre-treated feedstock prior to any dilution that may have occurred (see 40 CFR §§ 761.50 and 761.60 for disposal options).

2) EPS may dispose of non-liquid and non-aqueous liquid wastes generated by the PCBX™ CD unit with pre-diluted (if applicable) concentrations of less than two (2) ppm as non-regulated PCB materials, but final disposition of such waste must comply with all local, state, and federal regulations.

3) If any non-liquid or non-aqueous liquid wastes are not sampled for PCB concentrations, EPS shall assume that these wastes contain the PCB concentration of the pre-treated feedstock and dispose of the wastes according to the PCB Regulations (see 40 CFR §§ 761.50 and 761.60 for disposal options).

b) EPS shall sample and analyze any aqueous liquid wastes generated by the EPS PCBX™ CD unit(s).

1) For aqueous liquid wastes (e.g., condensate) containing PCBs at concentrations equal to or greater than 0.5 parts per billion (ppb) and less than three (3) ppb, EPS shall dispose of these wastes in compliance with 40 CFR § 761.50(a)(3). For aqueous liquid wastes containing PCBs at concentrations equal to or greater than three (3) ppb, EPS shall dispose of these wastes as if they contained the PCB concentration of the pre-treated feedstock that was being treated at the time the aqueous liquid process waste was generated.

2) For aqueous liquid wastes containing PCBs at concentrations less than 0.5 ppb (pre-diluted concentrations, if applicable), EPS may manage these wastes as non-regulated PCB materials, but final disposition of such aqueous liquid wastes must comply with all local, state, and federal regulations.

c) EPS shall comply with the labeling and marking requirements for storage, holding, and process tanks (PCB Containers) at 40 CFR §§ 761.40 and 761.45 for all aqueous liquid wastes which contain PCB levels equal to or greater than three (3) ppb and for non-liquid and non-aqueous liquid wastes that contain PCB levels equal to or greater than two (2) ppm.

8. Monitoring, Recordkeeping, and Reporting Requirements

a) EPS shall monitor, record, and maintain the following PCBX™ CD unit(s) operating parameters and information:

1) Estimated quantity of MODEF treated in each treatment batch;

2) Concentration of PCBs in the MODEF feedstock, including both the highest known pre-diluted PCB concentration (if applicable) as well as the actual PCB concentration, for each treatment batch;

3) Amount of dechlorination reagent used in each treatment batch and per job, and the number of times each treatment batch is circulated through the PCBX™ CD unit(s);

4) Post-treatment concentrations of PCBs in the MODEF for each treatment batch;

5) Any parameters measured during operations, including but not limited to temperature and pressure of reaction in the EPS PCBX^{TM} CD unit(s), which shall be recorded every 30 minutes during each treatment batch beginning before any heating is done and ending when the treated MODEF is about to be removed;

6) Any exceedance of any of the operating parameter limits in Conditions 2(f) and 2(j), including during the 30-minute interval between recorded values specified in Condition 8(a)(5);

7) A copy of the analytical report (including the associated gas chromatogram) used to determine the final concentration of decontamination solvent or condensate not sent for disposal;

8) Quantity of PCB wastes generated at each job, including MODEF that could not be successfully treated to achieve levels of below two (2) ppm PCBs;

9) Identification of facilities used to dispose of the PCB wastes listed in Condition 4(b) and Condition 7, and method of disposal;

10) Date, time, and duration of treatment batches;

11) Name and business address of the PCBX^{TM} CD unit(s) operator and supervisor for each treatment batch;

12) The name and address of each client whose MODEF was treated by the PCBX^{TM} CD unit(s);

13) A copy of the gas chromatograms from the tests required by Conditions 1, 4, and 7;

14) A summary of the total number of gallons of MODEF treated by the PCBX^{TM} CD unit(s) during the previous year;

15) Any and all reports required by Conditions 5, 6, and 10; and

16) Documentation that EPS and the facility at which EPS is operating have obtained any necessary approvals, permits, and other authorizations from federal, state, and local agencies.

b) EPS shall develop, compile, and maintain the records in Condition 8(a), above, in a paper log or electronically, as follows:

1) EPS shall maintain and make available for inspection, the records for all ongoing and past PCB treatment jobs conducted by each PCBX^{TM} CD unit in the previous five (5) years in the trailer for that unit;

2) Within three (3) days of the end of treatment at that facility (i.e., the end of a job), EPS shall compile the records for treatment conducted at each facility and keep these records at its main office in Wheeling, West Virginia, or another secure location, from the three-day point until at least ten (10) years after the disposal/treatment date of the last job at that facility;

3) If records are electronic, EPS shall create a backup of all records in a manner that would prevent them from being destroyed if the original records were destroyed; and

4) EPS shall make the original records or, for electronic files, backup records if the originals have been destroyed, available for inspection by authorized representatives of EPA upon request.

c) If EPS initiates and completes closure of the PCBX^{TM} CD unit(s) while this Approval is in force or if the Approval expires, EPS shall electronically submit all records to the Director of PIID within 90 days of certifying closure or expiration, whichever comes first.

d) EPS shall maintain annual records on the disposition of all PCBs treated by the PCBX^{TM} CD unit(s) and submit them annually to the Director of PIID in compliance with 40 CFR § 761.180(a).

9. Advance Notification of Operations

a) 30-Day Advance Notification of Operations

EPS shall, at least 30 days prior to locating its PCBX^{TM} CD unit(s) at a facility, send a 30-day advance notification of operations by submitting the information specified in condition 9(b) to the ORCR HQ contact identified in Condition 13, and to the appropriate EPA Regional PCB Coordinator, state environmental agency, and local government environmental entities (if applicable) based on the location where operations will occur. An example of an acceptable 30-day advance written notification of operations is included in Appendix V.

b) Information to Be Contained in the 30-Day Advance Notification of Operations

The following information shall be included in the 30-day advance notification of operations discussed in Condition 9(a). The information specified in Conditions 9(b)(1) and 9(b)(2) will be available to the public and may be used to schedule EPA TSCA inspections and facilitate oversight of operations.

1) EPS contact information: name, address, contact person name and phone number, the vehicle identification number (VIN), state Department of Motor Vehicle license plate number for the mobile unit(s), and the number to a phone that is dedicated to the EPS operations at the facility.

2) When and where the disposal/treatment will occur, including: street address, a name/phone number for the facility manager (if applicable), a brief description of the facility, the date the PCB activity is scheduled to begin, and the estimated duration (in days) of the operations.

3) Name of the company that owns the facility where the unit will be operating, as well as its mailing address, and a contact person name and phone number;

4) A name, title, and phone number for: the EPA ORCR contact, EPA Regional contact, State contact, and local contact; and

5) Description of the nature of the PCB activity, including: the type of disposal/treatment process, estimates of the amount of MODEF treated and estimates of PCB concentration in the MODEF before treatment. These estimates shall be based on analytical data provided by the customer and/or analytical data from EPS.

c) Changes to 30-Day Advance Notifications of Operations

1) If a change or changes to the information submitted in the original 30-day advance notification of operations for a particular facility is, or are, necessary before operations have begun under that notification (with the exceptions of changing the schedule to an earlier treatment operations start date and changing the facility location pursuant to Condition 9(c)(3) below), EPS shall send an email that describes the change or changes to those required to be notified by Condition 9(a) in advance of the operating start date that is stated in the original 30-day advance notification of operations. EPS may initiate the PCB activities as originally scheduled after it has submitted the change(s), provided the change(s) does/do not require modification of this operating Approval.

2) If a change or changes to the information submitted in the original 30-day advance notification of operations for a particular facility is, or are, necessary after operations have begun under that notification (with the exception of changing the facility location pursuant to Condition 9(c)(3) below), EPS shall send an email that describes the change or changes to those required to be notified by Condition 9(a). EPS may continue the treatment/disposal activities after submitting the change(s), provided the change(s) does/do not require modification of this operating Approval.

3) If EPS wishes to operate at a facility other than the facility identified in the submitted 30-day advance notification of operations or change the scheduled start date to an earlier date, EPS shall submit a new 30-day advance notification of operations to those required to be notified by Condition 9(a) (which may differ from those notified by the original 30-day advance notification of operations). EPS shall also notify those individuals to whom the original 30-day advance notification of operations was submitted of the date or location change. In such circumstance, EPS shall not initiate activities earlier than 30 days after submitting the new 30-day advance notification of operations.

d) Additional Notifications

In addition to the 30-day advance notification of operations prescribed in Condition 9(a) of this Approval, EPS shall provide three (3) types of additional notifications:

1) EPS shall provide the following information to local fire departments and other applicable local emergency response authorities prior to operating in the jurisdiction where EPS intends to operate.

A. The 30-day advance notification of operations described in Condition 9(b).

B. SDS for the principal chemicals in the treatment unit, and/or to be treated in the treatment unit, including PCBs, chemical reagents (e.g., sodium), and any other chemicals (e.g., nitrogen gas), if applicable;

C. The approximate quantities of principal chemicals in each treatment unit, and/or to be used or treated in the treatment unit; and

D. General location of where the EPS PCBX^{TM} CD unit(s) will be at the facility.

2) EPS shall provide a 30-day advance written notification of intent to operate posted in a location where the community located nearest the facility will likely see it (for example, the local newspaper, news website). However, when the PCBX^{TM} CD treatment unit(s) will operate at the same location multiple times during the same calendar year, EPS may provide the 30-day advance written notification of intent to operate required under this condition on a yearly basis, so long as the information included in the notification does not significantly change. This notification shall include the following information:

A. Contact information for an EPS representative;

B. Contact information for a facility representative;

C. General location of where the EPS PCBX^{TM} unit(s) will be situated at the facility;

D. Brief description of the type of waste being treated;

E. Brief description of the EPS treatment process;

F. Anticipated dates of operation at the facility; and

G. Link to EPA website where this Approval document and the 30-day advance notifications of operations are posted.

3) Before treating MODEF in the PCBX^{TM} CD unit(s), EPS shall either post this Approval document prominently (or provide a link) on its website where visitors would reasonably expect to see announcements on environmental projects, or link to the EPA website where this Approval document is posted. Also, EPS shall either post (or provide a link to) the information specified in Conditions 9(b)(1) and 9(b)(2) on the same web page as the Approval, or link to the EPA website where these notifications are posted. Both the Approval and the information in Conditions 9(b)(1) and 9(b)(2) of the 30-day advance notifications of operations shall remain posted until 60 days after:

A. This Approval is terminated and permanent closure has been completed in accordance with Condition 17(d);

B. This Approval expires (provided EPS has not followed the procedures described in Condition 23 to allow the Approval to continue in force); or

C. The unit(s) is/are closed in accordance with Condition 17(d).

10. <u>PCB Spills</u>

a) In the event EPS believes, or has reason to believe, that a spill (as defined in EPA's PCB Spill Cleanup Policy in 40 CFR § 761.123) of PCBs has, or may have, occurred from any activities or devices related to EPS's operations, EPS shall notify the Regional PCB Coordinator and the

ORCR HQ contact identified in Condition 13 by phone immediately after initial response actions have been taken to ensure the protection of human health and the environment. EPS shall control and clean up any spills of PCBs or other fluids as provided in the Spill Prevention, Control and Countermeasure Plan provided in the application.

b) In addition, EPS shall submit a written report to the appropriate Regional PCB Coordinator and the Director of PIID no later than 15 business days after the spill occurred that describes the: 1) spill; 2) known or suspected cause(s) of the spill; 3) operations that were being conducted prior to, and during, the spill; 4) cleanup actions conducted; and 5) changes in operations that EPS implemented to prevent such spills from occurring in the future.

c) EPS shall not resume operations until the cause of the spill has been determined and corrected to the satisfaction of EPA, and EPS has received a written or emailed approval to resume operations from the ORCR HQ contact identified in Condition 13.

d) EPS shall also report PCB spills in accordance with applicable federal, state, and local requirements.

11. <u>Safety Provisions</u>

a) EPS shall maintain and operate its PCBX^{TM} CD mobile unit(s) in a way that minimizes the possibility of a fire, explosion, or any unauthorized release of PCBs which may pose an unreasonable risk of injury to health or the environment.

    1) The Hydrocarbon-based oil sorbent pads described in Appendix VII, or comparable ones, may be used to fully surround connections in the piping or tubing where oil leaks may occur. The purpose of wrapping the connections with the sorbent pads is to identify leaks. If pads are used in this manner, they must be replaced if visibly damaged, saturated, or soiled. Wrapping leaky hose or pipe connections in absorbent material for the purpose of maintenance or leak control is not an appropriate procedure under this Approval. Additional requirements for connections outside of the PCBX^{TM} CD unit(s) are described in Condition 11(o).

    2) Use of cardboard is permitted for focusing light on transparent sections of piping to allow the operator to ensure flow and observe the color of the oil moving through the pipes. Use of cardboard is not permitted for any purpose related to spill or leak prevention, control, or cleanup or other safety measure.

b) EPS shall take all necessary precautionary measures to ensure its operations are in compliance with applicable health and safety standards, as required by this Approval and other applicable federal, state, and local requirements, including PPE requirements according to Occupational Safety and Health Administration (OSHA) standards.

c) EPS shall report by phone to the Regional PCB Coordinator and the ORCR HQ contact identified in Condition 13 by the end of the business day immediately following an incident that resulted in any lost-time injury occurring as a result of the EPS PCBX^{TM} CD equipment or operations. EPS shall submit a written report describing the incident to the Director of PIID within five (5) business days of the incident.

d) At all times, EPS personnel operating any EPS PCBX^{TM} CD unit(s) shall have a device such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio capable of summoning emergency assistance from local fire departments, police departments, or state or local emergency response teams.

e) At least once a year, EPS shall test and maintain (to the extent necessary to assure its proper operation in time of emergency) all unit and/or facility communications or alarm systems, fire protection equipment and spill control equipment.

f) Site-Specific Safety Plan

1) Before treating any MODEF, EPS shall develop and maintain at the facility a site-specific safety plan for the activities covered by this Approval. EPS shall also provide a copy of the site-specific safety plan to the emergency coordinator of the facility where it intends to operate prior to the EPS PCBX^{TM} CD unit(s) arriving at the facility. EPS shall notify the facility where it will operate of the possible fire hazards associated with using the EPS PCBX^{TM} CD unit(s). At a minimum, EPS shall include the following site-specific information in each site-specific safety plan:

A. Scope of work, including a description of the treatment process, maximum volume of contaminated oil that might be found at any given time within the EPS PCBX^{TM} CD unit(s) or in directly associated storage containers, and any hazardous materials to be used;

B. Project personnel, including roles, responsibilities and qualifications, name of on-site safety coordinator, and name(s) of any on-site cardiopulmonary resuscitation (CPR)/First-Aid certified person(s);

C. Emergency contact information, including local authorities (e.g., local fire and police departments) and nearest medical building that would accept patients contaminated with chemicals;

D. Hazard identification (e.g., potential for sodium reactions/fires) and control/mitigation measures;

E. Names of all chemicals used at the facility by EPS in its PCBX^{TM} CD unit(s) along with approximate quantities and the corresponding SDS;

F. Emergency action plan(s) specifying the following:

i. Contact information – name(s) and contact information for EPS personnel responsible for mobile unit(s) operation and facility personnel responsible for oversight of EPS's operations at the facility, and the persons responsible for handling emergencies (with 24-hour a day contact in the event of an emergency), including both phone numbers (office and home) and email addresses. This list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates;

ii. Evacuation plan(s);

iii. Response procedures for reasonable emergency scenarios;

iv. First aid location(s);

v. Eye-wash station location(s);

vi. Fire extinguisher and any other fire-fighting equipment location(s);

vii. Location of SDS;

viii. Flammable storage area(s); and

ix. Smoking/non-smoking areas.

2) EPS shall submit a copy of any site-specific safety plan to the ORCR HQ contact identified in Condition 13 or the applicable EPA Regional office upon request.

3) EPS shall immediately revise the site-specific safety plan if any of the relevant information in this Approval or the safety plan changes.

g) Emergency Coordinator

EPS shall, at all times, have at least one (1) designated employee either at the operating site premises or on call (i.e., available to respond to an emergency by reaching the operating site within 30 minutes) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the site-specific safety plan, operations and activities at the site, the location and characteristics of waste handled, and the facility layout, including the hazards associated with the facility location where the PCBX^{TM} CD unit(s) is/are operated.

h) Emergency Procedures

1) Whenever there is an imminent or actual release of PCBs, or an incident that results or may result in injury to health or the environment, for example from fire, spill, or explosion, the EPS emergency coordinator (or his/her designee when the emergency coordinator is on call) shall immediately:

A. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel;

B. Notify appropriate federal, state, and/or local emergency response entities (e.g., fire departments) if their help is needed; and

C. Use the Emergency Action Plan described in Condition 11(f)(1)(F) as a resource to expedite the emergency coordinator's response.

2) Whenever there is an imminent or actual release of PCBs, or an incident that results or may result in injury to health or the environment, for example, from fire, spill, or

explosion, the emergency coordinator shall as soon as practical identify the character, exact source, amount, and real extent of any released materials. The emergency coordinator shall also assess possible hazards to health or the environment that may result from the release or emergency incident. This assessment shall consider both direct and indirect effects of the release or emergency incident (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any PCB surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

3) If the emergency coordinator determines that the PCBX^{TM} CD unit(s) has/have had a release of PCBs or emergency incident which presents or may pose an unreasonable risk of injury to health or the environment outside the site or facility, he/she shall report the findings as follows:

   A. If the assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities; and

   B. The emergency coordinator shall immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 1-800-424-8802). The notification must include:

      i. Name and telephone number of reporter;

      ii. Name and address of facility;

      iii. Time and type of incident (e.g., release, fire);

      iv. Name and quantity of material(s) involved, to the extent known;

      v. The extent of injuries, if any; and

      vi. The possible hazards to human health, or the environment, outside the facility.

4) During an emergency, the emergency coordinator shall coordinate with the facility emergency coordinator and take all reasonable measures necessary to ensure that releases or emergency incidents do not recur or spread to other PCB waste at the operating site. These measures must include, where applicable and when possible, safely shutting down the CD treatment unit(s), collecting and containing released waste, removing, or isolating containers and equipment, and other measures that can be implemented to protect health and the environment.

5) The emergency coordinator shall coordinate with the facility's emergency coordinator to assess if any facility operations/processes need to be suspended or if any immediate measures should be taken to minimize the risk of injury (e.g., from the release of toxics or the spread of fire) that could occur due to the nature of facility operations and chemicals/products stored at the facility.

6) Immediately after a release or emergency incident has been contained, EPS shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release or emergency incident at the facility.

7) EPS shall notify the Regional PCB Coordinator and the ORCR HQ contact identified in Condition 13 of the release or emergency incident by phone immediately after initial response actions have been taken to ensure the protection of health and the environment.

8) EPS shall submit a written report to the appropriate EPA Regional PCB Coordinator, ORCR HQ contact identified in Condition 13, and the Director of PIID no later than 15 business days after the PCB release or emergency incident occurred that describes the: a) release or incident; b) cause(s) of the release or incident; c) operations that were being conducted prior to, and during, the release or emergency; d) cleanup actions conducted; and e) changes in operations that EPS implemented or will implement to prevent such releases or incidents from occurring in the future.

9) EPS shall not feed any MODEF into the EPS PCBX^{TM} CD unit until the cause of the PCB release or emergency incident has been determined and corrected to the satisfaction of EPA. EPS shall not resume PCB treatment operations until it receives written or emailed approval to resume operations from the ORCR HQ contact identified in Condition 13.

10) EPS shall also report PCB releases or emergency incidents in accordance with applicable federal, state, and local requirements.

i) Fire Suppression System

If operating indoors, EPS shall locate and operate its PCBX^{TM} CD unit(s) only at a facility that has adequate fire suppression capabilities (e.g., sprinkler, standpipe, or other specialized system). Separate and distinct fire suppression systems may be necessary based on the location of the EPS PCBX^{TM} CD unit(s) relative to the location of the other chemicals in the building and based on the compatibility of the fire suppression system with the fire risk that is being mitigated in that particular area. It is the responsibility of EPS to evaluate whether the fire suppression system is appropriate to address the specific hazards based on chemical compatibility and the design and location of the EPS PCBX^{TM} CD unit(s) at the facility, and taking also into account the materials that may be stored at the facility. EPS also shall only operate in a building that is in compliance with applicable federal, state, and/or local fire suppression requirements.

j) Fire Detection System

If operating indoors, EPS is only permitted to locate and operate its PCBX^{TM} CD unit(s) at a facility that has an active (24 hours/day) fire detection system (such as smoke alarms) that immediately notifies facility workers, occupants, facility emergency responders (whether they are on-site or off-site), and local emergency responders (e.g., fire department) of a fire emergency. Each of the EPS PCBX^{TM} CD units shall have its own active (24 hours/day) fire detection system that also meets the requirements discussed in this paragraph, for all indoor and outdoor operations.

k) Fire Fighting Equipment

EPS shall maintain and clearly label fire extinguishers and other firefighting equipment that are capable of suppressing: 1) fires that may be associated with materials treated by the EPS PCBX^{TM} CD unit(s) and; 2) fires that may be associated with materials used by the EPS PCBX^{TM} CD unit(s) (e.g., sodium reagent). Labeling shall be based on the compatibility of the extinguisher or equipment with the fire hazard and shall be available at each PCBX^{TM} CD unit and within 25 feet of all work activities and operations. Multiple types of fire extinguishers and firefighting equipment may be necessary to address different fire hazards posed by the EPS PCBX^{TM} CD unit(s) and the wastes that it/they treat(s). All fire extinguishers shall have the following:

1) Annual inspection tag;

2) A gauge indicating the fire extinguisher is fully charged;

3) Pin with security seal; and

4) Instructions on how to use.

l) Mobile Unit Placement

The PCBX^{TM} CD unit(s) shall be placed at a location where operations will pose no unreasonable risk of injury to health or the environment. When not operating at EPS's facility in Wheeling, West Virginia, the PCBX^{TM} CD unit(s) shall be located at least 20 feet away from any storage area for flammable or combustible materials or the minimum necessary to prevent releases and emergency incidents, whichever is greater. When operating at EPS's facility in Wheeling, West Virginia, the unit(s) may be placed at less than 20 feet away from any storage area for flammable or combustible materials as long as the fire suppression system is operational, and the location does not pose unreasonable risk of injury to health or the environment. The PCBX^{TM} CD unit(s) shall not be located next to a sensitive ecosystem if the treatment unit is operated outdoors.

m) Required Aisle Space

EPS shall not locate or operate the CD unit(s) and associated equipment, storage containers, pipes, hoses, and other materials, in an area that does not allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and disposal/treatment equipment operation in an emergency.

n) Sodium Preparation System

EPS shall adequately maintain and locate the sodium preparation system at a safe distance from, but no less than 10 feet from, any flammable or combustible materials (e.g., mineral oils, oily rags) inside the EPS PCBX^{TM} CD unit(s), and no less than 20 feet away from any storage area for flammable or combustible materials (e.g., flammable liquid storage tanks or drums). While the sodium preparation unit(s) is/are in operation, EPS personnel shall be on site monitoring the unit(s) from within 30 feet at all times.

o) Spill Containment

Each PCBX™ CD unit has a welded steel floor with a 2-inch steel berm around the entire interior of the unit that serves as a secondary containment system for spills. When the PCBX™ CD unit(s) is/are not operating at EPS's facility in Wheeling, West Virginia, for each intermediate pipe or hose connection outside of the PCBX™ CD unit(s), EPS shall place directly under each connection a portable line pipe tray, spill containment berm, or any other portable spill containment device while the pipe or hose contains liquid regulated under this Approval. Such spill containment system shall be reasonably sheltered from rainwater with a covering or shelter. Any liquid or waste collected in such spill containment systems shall be disposed in accordance with Condition 7(b). Because the EPS facility in Wheeling, West Virginia, provides secondary containment (covered area with concrete floors and walls) for spills, the PCBX™ CD unit(s) in operation at that facility do not require additional portable secondary spill containment devices to be placed under each connection outside of the PCBX™ CD unit(s).

12. Security

EPS shall ensure its PCBX™ CD unit(s) is/are secure (e.g., with a fence, alarm system, signage) such that only those individuals participating in the operations and approved visitors are allowed in the area of the EPS PCBX™ CD unit(s) regardless of whether the unit(s) is/are operating.

13. Notifications and Reports

Notifications or reports required to be mailed to the Director of PIID shall be mailed to:

Director of PIID
Office of Resource Conservation and Recovery
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W. (Mail Code: 5303T)
Washington, DC 20460

For electronic submission to the Director of PIID or ORCR HQ contact, EPS shall email the information to ORCRPCBs@epa.gov. Wherever practical, email is preferable to phone and mail communication, except where specified otherwise.

Phone numbers for the EPA Regional PCB Coordinators can be found on the following website: https://www.epa.gov/pcbs/epa-regional-polychlorinated-biphenyl-pcb-programs. The ORCR HQ contact is Luke Weber, 202-564-6576 or ORCRPCBs@epa.gov.

14. Agency Approvals/Permits

Operation of the EPS PCBX™ CD unit(s) may not commence until EPS and the facility at which the PCBX™ CD unit(s) will operate have obtained all required approvals, permits, and other authorizations from federal, state, and local agencies that apply to EPS's operation. EPS is responsible for obtaining such approvals, permits, and other authorizations for the PCBX™ CD unit(s). Once EPS has verified that both it and the facility (as applicable) have been issued all required approvals, permits, and other authorizations, EPS shall document that verification in their operating records, as described in Condition 8.

15. Personnel Training

a) EPS shall ensure that the personnel directly involved with the operation of the PCBX™ CD unit(s) are familiar with the requirements of this Approval. In this regard, EPS shall keep copies of the following documents with the PCBX™ CD unit(s) at all times:

1) This operating Approval,

2) EPS's application,

3) EPS's demonstration test approval requests and associated demonstration test approvals issued by EPA,

4) The Spill Prevention, Control, and Countermeasure Plan, and

5) EPS's sampling and analytical procedures.

b) EPS shall also maintain a copy of the sampling and analytical procedures in the laboratory conducting the analyses.

c) At a minimum, EPS shall annually train personnel and document the training on the following:

1) The operating parameter limits of the EPS PCBX™ CD unit(s) and the corrective actions required to bring the operating parameters back within the limits in the event the limits are exceeded, as described in Condition 2(j);

2) The type of fluid which may be treated using the EPS PCBX™ CD unit(s) (i.e., MODEF), and the upper PCB concentration limits for the fluids which may be treated;

3) The recordkeeping, notification, and reporting requirements identified in Condition 8 and required by this Approval, and the location of records and retention times;

4) The handling and/or disposal requirements for process waste and other materials generated during the operation of the EPS PCBX™ CD unit(s);

5) The safety, operating, and maintenance procedures for the EPS PCBX™ CD unit(s), with an emphasis on the safe handling and use of the sodium reagent to prevent harmful sodium reactions;

6) The procedures for using, inspecting, repairing, and replacing EPS's (and the facility's, if applicable) mobile unit(s) equipment, including emergency and monitoring equipment, with an emphasis on the fire suppression equipment;

7) The Spill Prevention, Control, and Countermeasure Plan; and

8) The safe handling of gases that are generated during the operation of the unit(s), and the protocols for proper unit start-up and shutdown.

16. <u>Waste and Equipment Transport Between Job Sites</u>

EPS shall not transport untreated PCB fluids or contaminated material offsite on the EPS PCBX™ CD unit(s). EPS shall comply with any applicable U.S. Department of Transportation (US DOT) requirements in 49 CFR part 172 when transporting PCB-contaminated equipment (e.g., reactors,

tanks) off-site inside the unit(s). EPS shall comply with applicable marking requirements for PCB containers in 40 CFR § 761.40, and decontaminate the unit by:

a) Rinsing all hoses and pipes with clean solvent three (3) times prior to transporting the PCBX™ CD unit(s) from the site, and treating the spent solvent in accordance with Condition 7; or

b) Flushing all hoses and pipes at least two (2) times with MODEF containing PCBs in concentrations less than 50 ppm into the reactor of the EPS PCBX™ CD unit(s) and treating the flushed MODEF in the reactor in accordance with Condition 7.

17. <u>Closure Cost Estimate and Plan, Financial Assurance, and Permanent Closure</u>

a) <u>Closure Cost Estimate and Plan</u>

1) Prior to issuance of this Approval, EPS submitted to ORCR a written closure plan and closure cost estimate that identified the steps and quantified the estimated costs for the activities EPS shall conduct to permanently close the PCBX™ CD unit(s). The provisions of 40 CFR § 761.65(e)(4)-(8) and (f)(2)-(4) shall apply, except as otherwise provided in the conditions of this Approval.

2) EPA may require EPS to adjust the closure plan or closure cost estimate to ensure there will be no unreasonable risk of injury to health or environment.

b) <u>Financial Assurance</u>

1) EPS shall obtain and submit financial assurance for closure to the Director of PIID 60 days prior to commencing PCB treatment operations at any facility. Within 60 days of receiving the financial assurance, the Director of PIID will respond in writing approving or disapproving the financial assurance. If the Director of PIID does not respond within 60 days of receiving the financial assurance, EPS may assume that it is complete and acceptable and proceed with their operations. EPS shall apply the financial assurance requirements in 40 CFR § 761.65(g) for commercial storage facilities to its PCBX™ CD units and comply with such requirements. EPS shall not operate any of its PCBX™ CD units without the necessary financial assurance. 40 CFR § 761.65(g) references the financial assurance mechanisms specified in 40 CFR part 264, subpart H under the Resource Conservation and Recovery Act (RCRA). EPS may choose any of the financial assurance mechanisms or combination of mechanisms provided for in the regulations. EPA may require variations in the wording of the instruments from that found at 40 CFR § 264.151. EPS shall maintain financial assurance until closure activities have been completed.

2) EPS shall provide evidence of the increased value of the financial assurance mechanism whenever necessary (e.g., annual inflation adjustment, change in closure cost estimate triggered by modification of closure plan) as required in 40 CFR § 264.143, which is incorporated by reference in 40 CFR § 761.65(g).

3) EPS shall also obtain financial assurance for the compensation of third parties for bodily injury and property damage caused by sudden and nonsudden accidental occurrences from, or related to, the EPS PCBX™ CD unit(s) operations and submit to the Director of

PIID at least 60 days prior to commencing operations. Within 60 days of receiving the financial assurance, the Director of PIID will respond in writing approving or disapproving of the financial assurance. If the Director of PIID does not respond within 60 days of receiving the financial assurance, EPS may assume that it is complete and acceptable and proceed with their operations. EPS shall comply with the RCRA regulations that address third-party financial assurance liability requirements (i.e., 40 CFR § 264.147).

c) Changes to the Closure Plan, Closure Cost Estimate, or Financial Assurance Mechanisms

If EPS wishes to change the closure plan, closure cost estimate, or financial assurance mechanisms due to factors other than inflation, EPS may submit an adjusted plan, cost estimate, or financial assurance mechanism (as applicable) to the ORCR HQ contact. EPA will review the proposed change(s) and may require EPS to revise the adjusted closure plan, closure cost estimate, or financial assurance mechanism prior to approving it.

d) Permanent Closure

1) Failure to submit a request for renewal as described in Condition 23 will be treated as evidence of EPS intent to close the PCBX^{TM} CD unit(s). If EPS does not submit a request for renewal before the time specified in Condition 23, EPS shall initiate closure procedures within 60 days of the last treatment of MODEF containing concentrations of PCBs equal to or greater than 50 ppm by the EPS PCBX^{TM} CD unit(s).

2) In the event that EPS expects to cease operation permanently or for the remaining duration of the Approval, EPS shall initiate closure procedures within 60 days of the last treatment of MODEF by the PCBX^{TM} CD unit(s).

3) EPS shall notify the Director of PIID, in writing, at least 60 days prior to the date on which final closure of its PCBX^{TM} CD unit(s) is expected to begin (see 40 CFR § 761.65(e)(6)(i)).

4) Within 60 days of completion of closure of the EPS PCBX^{TM} CD unit(s), EPS shall submit by registered mail, a certification to the Director of PIID that the PCBX^{TM} CD unit(s) has been closed in accordance with the closure plan (see 40 CFR § 761.65(e)(8)).

5) During the closure activity period, EPS shall dispose of all contaminated system component equipment in accordance with the disposal requirements of 40 CFR part 761 subpart D or decontaminate the equipment in accordance with 40 CFR § 761.79.

6) EPS shall submit records to the Director of PIID within 90 days of concluding closure as required in Condition 8(c).

18. Ownership Transfer

a) If EPS intends to transfer ownership of the EPS PCBX^{TM} CD unit(s) and the transferee wants to operate the PCBX^{TM} CD unit(s) under the same or similar terms as this Approval, EPS shall notify the Director of PIID, in writing, at least 90 days before transferring ownership of the EPS PCBX^{TM} CD unit(s). EPS shall also submit to the Director of PIID, at least 90 days before such

transfer, a notarized affidavit signed by the transferee that states the transferee is seeking an approval to operate the PCBX™ CD unit(s). Failure of EPS to provide EPA with this required written documentation of the transfer within the specified time frame would be a violation of this Approval and the Approval would immediately terminate upon the transfer of ownership.

b) After receiving notification, EPA may:

1) Issue an amended operating approval substituting the transferee's company name for EPS's name;

2) Require the transferee to conduct a demonstration test and/or apply for a new PCB disposal approval by submitting either a complete application request or a partial application request (e.g., that focuses on information that demonstrates the transferee has the ability to comply with the terms and conditions of this Approval, such as a summary of company personnel qualifications and previous training that are relevant to complying with the terms and conditions of this Approval, or a summary of previous compliance history, if applicable); or

3) A combination thereof.

c) So that there will be no lapse in financial assurance for the transferred PCBX™ CD unit(s), the transferee shall establish financial assurance for closure compliant with Condition 17 and submit it to the ORCR HQ contact before the Approval will be amended to transfer ownership. The transferee shall select one of the financial assurance mechanisms listed in the PCB Regulations at 40 CFR § 761.65(g). EPA may require variations in the wording of the instruments from that found at 40 CFR § 264.151. The financial assurance mechanism shall be effective as of the date of final approval of the transfer (i.e., the date the amended approval is signed by the Director of PIID).

d) The transferee shall not operate the mobile unit(s) unless EPA either has amended this Approval to allow for such operation or has issued a new approval to the transferee.

19. <u>Additional Unit(s)</u>

a) EPS shall only conduct PCB treatment operations, under the conditions of this Approval, with the PCBX™ CD units covered by this Approval. EPS shall not conduct PCB treatment operations in other PCBX™ CD units not covered by this Approval until EPS submits a request to the Director of PIID to modify this Approval (i.e., to add the new PCBX™ CD unit(s) to this Approval) and EPS receives approval from the Director of PIID. EPA may require EPS to conduct a demonstration test prior to receiving approval to conduct treatment operations in the new PCBX™ CD unit(s).

b) Requests under Condition 19(a) to modify this Approval shall include a written pre-operation report containing, at a minimum, the following information:

1) Date of manufacture of the new PCBX™ CD unit;

2) Identification and/or serial number of the new PCBX™ CD unit;

3) Certification by an independent, registered professional engineer that the new PCBX^{TM} CD unit is substantially identical to the original demonstrated PCBX^{TM} CD unit in terms of engineering design, hardware, process capacity, quality, and workmanship;

4) Certification by the Chief Executive Officer of EPS that the construction of the new PCBX^{TM} CD unit has been completed in accordance with condition 19(b)(3); and

5) A list of all non-substantive changes made to the design and construction of the new PCBX^{TM} CD unit which are not identical to the original PCBX^{TM} CD unit(s) (i.e., changes made to the unit even though the unit is considered substantially identical as described in Condition 19(b)(3) above).

c) EPA, at its discretion, may:

1) Request additional information about the new PCBX^{TM} CD unit(s);

2) Require EPS to conduct a demonstration test for the new PCBX^{TM} CD unit(s) prior to making a determination on the modification request to ensure the new PCBX^{TM} CD unit(s) is/are capable of complying with the terms and conditions of this Approval;

3) Approve the modification request by relying on engineering information and other data/information provided in Condition 19(a) and (b) and determine demonstration testing is not required prior to, or after, the new PCBX^{TM} CD unit(s) begin(s) treatment operations; or

4) Deny EPS's approval modification request to add new PCBX^{TM} CD unit(s) to this Approval because EPA, based on available data and information, concludes the new PCBX^{TM} CD unit(s) is/are not capable of, or has/have not demonstrated the capability of, achieving the required performance standards and operating in a manner that does not pose unreasonable risk of injury to health and the environment.

20. Process/Equipment Modifications

EPS shall not make major modifications (e.g., changes of engineering design or process capacity) to its PCBX^{TM} CD unit(s) prior to receiving written approval from the Director of PIID to implement such major modifications. If EPS desires such major modifications, EPS shall submit an approval modification request to the Director of PIID. The Director may, depending on the nature of the major modification request, require EPS to conduct a demonstration test to ensure the PCBX^{TM} CD unit(s) continues to be in compliance with the applicable performance standards included in this Approval and to ensure the PCBX^{TM} CD unit(s) will continue to operate in a manner that does not pose unreasonable risk of injury to health and the environment.

21. Unit Operators

Operation of EPS's PCBX^{TM} CD unit(s) shall be managed and overseen by a qualified EPS employee at all times the PCBX^{TM} CD unit(s) is/are operated.

22. Approval Expiration Date

This Approval shall become effective upon signature of the Director of PIID and expire five (5) years from the date of signature, except as otherwise specified in Condition 23.

23. Approval Continuation and Renewal

If EPS intends to continue to operate beyond the expiration date of this Approval, EPS shall submit a complete operating approval renewal application request to the Director of PIID at least 180 days prior to the expiration date of this Approval. Upon submission of a complete approval renewal application, EPA will inform EPS if a demonstration test plan will be required. The demonstration test plan shall be submitted at least 90 days prior to the expiration date of this Approval. If EPS submits the approval renewal application to EPA at least 180 days prior to the expiration date of this Approval, this Approval continues in force (i.e., does not expire) until EPA either issues an approval renewal, a conditional approval renewal, or an approval request denial. EPS shall not be allowed to operate under revised operating conditions until EPA issues EPS a fully renewed, and revised, operating approval. If EPS does not submit a complete approval renewal application request and, if required, a complete demonstration test plan to EPA at least 180 days and 90 days, respectively, prior to the expiration date of this Approval, this Approval will expire as specified in Condition 22.

A complete approval renewal application and complete demonstration test plan are considered to be, at a minimum, information that was submitted in previously approved operating approval requests and demonstration test plans, with appropriate modifications or updates based on proposed revisions to the original approval, which may include treatment unit design and operation changes, updated safety protocols, and revised operating and testing procedures. For example, if EPS is seeking approval to treat another type of PCB material, or MODEF containing concentrations of PCBs equal to or greater than 5,000 ppm, the approval application and demonstration test plan shall reflect those changes.

EPA may require EPS to conduct another demonstration test to assure EPA that EPS will continue to operate its PCBX^{TM} CD unit(s) in accordance with the applicable performance standards and in a manner that does not pose an unreasonable risk of injury to health or the environment. As a result, EPS is encouraged to contact the ORCR HQ contact identified in Condition 13 in advance of 180 days prior to the expiration date of this Approval if EPS intends to renew this Approval in order to ascertain whether EPA would require EPS to conduct a new demonstration test. This is especially important if EPS wants to make changes to its operating parameters.

24. Mobile versus Permanent Operation

This Approval is for mobile operation of the EPS PCBX^{TM} CD unit(s). If EPS operates the PCBX^{TM} CD unit(s) at a facility for 60 cumulative days or longer within any year, then such operations are considered permanent operations requiring a separate approval, with the following exception. EPS may, pursuant to the provisions in Condition 24(b), request EPA to waive the requirement to obtain a separate approval for permanent operations.

a) Advance Notification and Approval Process for Transitioning from Approved Mobile Operations to Approved Permanent Operations

The following requirements are applicable only if EPS intends to operate the PCBX^{TM} CD unit(s) at a site for greater than 60 cumulative days in a year, and apply irrespective of whether

EPS, pursuant to the provisions in Condition 24(b)(1), requests EPA to waive the requirement to obtain a separate approval for permanent operations:

1) Notification Requirements Prior to Transitioning from Approved Mobile Treatment Operations to Approved Permanent Treatment Operations

   A. EPS shall provide advance written notification of its proposed intent to change to permanent operating status at least seven (7) days prior to the 60th cumulative day of operations to the Director of PIID and the EPA Regional PCB coordinator.

   B. This notification shall indicate whether EPS anticipates conducting operations in more than one EPA Region after leaving the permanent operations facility. If EPS anticipates conducting operations in more than one EPA Region after leaving the permanent operations facility, EPS shall include in the notification whether such anticipated treatment activities will use:

      i. The PCBX^{TM} CD unit(s) covered by this Approval;

      ii. New PCBX^{TM} CD unit(s) that are identical to the units covered by this Approval; or

      iii. New PCBX^{TM} CD unit(s) that are designed differently than the units covered by this Approval.

   C. EPS's future operating plans can impact whether the permitting authority will be the EPA Headquarters or the EPA Region pursuant to 40 CFR § 761.60(e). Section 761.60(i) also gives EPA the discretion to assign the authority to review and approve any aspect of a disposal system to the Director of PIID in EPA HQ or to the Regional EPA Administrator.

2) Approval Requirements and Process for Transitioning from Approved Mobile Operations to Approved Permanent Operations

   A. EPS shall not operate for more than 60 cumulative days in a year at a facility without first obtaining a separate approval from the applicable EPA approval issuance authority to operate a permanently-based unit.

   B. EPA, at its discretion, may:

      i. Require EPS to conduct a demonstration test.

      ii. Require EPS to submit other information to EPA including, but not limited to, a demonstration test plan, a demonstration test report, and an application.

      iii. Require EPS to conduct public participation activities. If EPA notifies EPS that public participation is required, EPA may require EPS to make relevant documents, such as updated facility evaluations and updated approval applications, available to the public. The public participation activities may include providing a public notice to the community via an established

treatment facility public mailing list or an ad in a local newspaper and conducting a public meeting using procedures similar or identical to those described in 40 CFR § 270.42(b)(2)-(5). EPA may also, based on the current or anticipated level of interest require EPS to, in addition to the activities discussed above, hold a public hearing using procedures similar to those described in 40 CFR §§ 124.12(a)(1), (2), and (4) and 124.12(b), (c) and (d).

iv. Approve or deny EPS's request.

C. Requirements described in Condition 24(a)(2)(A) and (a)(2)(B) do not apply if EPS operates pursuant to a waiver described in Condition 24(b).

b) Requirements and Process to Waive the Requirements in Condition 24(a)(2)

1) Waiver Request

A. EPS may request to EPA to waive the requirements in Condition 24(a)(2)(A) and (a)(2)(B) once per year. EPS shall submit such a request to the Director of PIID at least seven (7) days prior to the 60th cumulative day operating at a particular facility.

B. If, pursuant to Condition 24(b)(1)(A), EPS submits a request to EPA to waive the requirements in Condition 24(a)(2)(A) and (a)(2)(B), and EPA has either approved or not yet made a determination on EPS's waiver request, then EPS may continue operating for up to ten (10) days after the 60th cumulative day at a facility pursuant to the conditions of this Approval.

C. If granted, such a waiver does not release a facility from any regulatory requirements to obtain other TSCA PCB approvals (e.g., a commercial storage approval).

2) EPA's Decision on a Waiver Request

EPA may:

A. Approve the waiver request and allow EPS to continue to operate pursuant to the conditions of this Approval;

B. Request additional information; or

C. Deny EPS's waiver request.

c) Transitioning Back to Mobile Operation Status after Approved Permanent Operations Have Concluded

1) EPS shall submit a notification 45 days in advance of mobilization to both the Regional EPA Administrator and the Director of PIID if EPS would like to resume mobile operations.

2) Prior to mobilization, EPS shall comply with any applicable closure and decontamination requirements that are specified in the waiver and the applicable operating approval.

3) EPA may modify this Approval based on information that becomes available prior to allowing EPS to transition from permanent operation status to mobile operation status. EPS may also request EPA to modify certain approval conditions that may not be appropriate or necessary for mobile operations.

4) If EPS anticipates transitioning back to mobile operation status after the expiration date of this Approval, EPS shall submit a renewal application to EPA no later than 180 days prior to the expiration date of this Approval (see Condition 23) if it wishes to ensure that it can operate pursuant to this Approval in the event EPA does not make a final decision on the renewal application prior to this Approval's expiration date.

DECISION TO APPROVE EPS's REQUEST TO CONDUCT PCB TREATMENT OPERATIONS

1. Approval under § 761.60(e) to dispose of PCBs in MODEF in the PCBX^{TM} CD units identified in Condition 2(a) is hereby granted to Environmental Protection Services, Inc. (EPS), of Wheeling, West Virginia, subject to the conditions of this Approval and consistent with the information included in the application, demonstration test plans, and reports submitted to EPA by EPS. Where there are discrepancies between this document and the application, this document must be followed.

2. EPA finds that the EPS PCBX^{TM} CD units covered by this Approval achieve a level of performance equivalent to a TSCA PCB incinerator and finds that, as reflected in the performance test results and as a result of the design aspects of the treatment system and the operating parameters and safety requirements included in this Approval, the treatment units' operations will not pose an unreasonable risk of injury to health or the environment when operated in accordance with applicable regulations and the conditions of this Approval.

3. EPA reserves the right to impose additional conditions or revoke this Approval when it has reason to believe that the EPS PCBX^{TM} CD unit(s) is/are not achieving the relevant performance standards; it/they may pose an unreasonable risk of injury to health or the environment; new information requires changes to this Approval; and/or EPA issues new regulations or standards that impact conditions of this Approval.

4. EPA will make reasonable efforts, taking into account the nature of the risk, to provide reasonable advance notice to EPS and to provide opportunity for EPS to comment on any modifications or termination of the Approval. EPA may require EPS to immediately suspend operations while EPA is deciding whether to impose approval modifications or to terminate this Approval.

5. Any departure from the conditions of this Approval or the terms expressed in the application must receive prior written authorization from the Director of PIID.

6. EPS shall be responsible for the actions of its employees and contractors that operate or assist in the operation of its PCBX^{TM} CD unit(s) when those actions are related to performance of the operations, including operating or moving the equipment.

7. EPS shall assume full responsibility for compliance with this Approval and all federal, state, and local requirements that apply to EPS's operation of the PCBX^{TM} CD units, including, but not limited to, any malfunction, spill, pollutant release, incident, or other reporting requirements.

8. EPA reserves the right for its employees or agents to inspect EPS's PCB treatment/disposal activities at any location and at any reasonable time.

9. Violations of any applicable regulations or conditions of this Approval may be subject to enforcement action and may result in termination of this Approval. Violation of any requirement of this Approval is a violation of §§ 761.60(e) and 761.50(a) and may also be a violation of other provisions of 40 CFR part 761. A violation of the regulations is a prohibited act under Section 15 of TSCA.

6/8/23

Date

Digitally signed by SONYA SASSEVILLE
Date: 2023.06.08 12:39:45 -04'00'

Sonya M. Sasseville, Director
Program Implementation and Information Division

APPENDIX I

COMPANY BACKGROUND

Environmental Protection Services, Inc. (EPS), located in Wheeling, West Virginia, specializes in the disposal and recycling of transformers and electrical equipment. EPS offers the service of on-site treatment of PCB-contaminated mineral oil dielectric fluid (MODEF) by using its proprietary PCBX™ chemical dechlorination (CD) treatment units, "PCBX™ CD units," which are mounted on transportable rigs. PCBs in the contaminated MODEF are primarily converted to sodium chloride and polyphenylene in the CD treatment process.

On September 14, 2017, ORCR granted approval to EPS to operate three PCBX™ CD units (i.e., rigs number two, six and eight), a non-thermal alternative disposal method, to destroy PCBs in diesel oil[2] and mineral oil dielectric fluid (MODEF. As part of the approval process, EPS conducted a demonstration test of the PCBX™ CD units for EPA. The process flow diagram and demonstration test results are included in Appendix III and Appendix IV, respectively. On January 9, 2018, ORCR received EPS's request to modify three (3) conditions of its September 14, 2017, Approval. On June 15, 2018, EPA approved those modifications and issued a modified Approval. The three (3) modifications are described below.

2018 Approval Modification

Conditions 2(f) and 8(a) were modified to allow EPS to manually record instantaneous readings of temperature and pressure parameters every 30 minutes rather than continuously recording the parameters based on 60-second rolling averages. We note that this did not relax the actual limits that apply to EPS, but rather modified the requirements on how the data is recorded. The modification also required EPS to comply with the limits on an instantaneous basis as opposed to on the basis of an "averaging period." In other words, if the pressure and/or temperature exceed(s) the limits contained in the Approval at any time, rather than on the average, EPS must take corrective actions immediately (and record any such exceedance). Corrective action is required irrespective of whether any exceedance coincides with the 30-minute recording point for the temperature or pressure value.

Condition 11(l) was amended to require a safety distance of at least 20 feet between the PCBX™ CD unit(s) and any storage area for flammable or combustible materials. EPA amended this Condition to only apply when the PCBX™ CD unit(s) is/are located at EPS's facility in Wheeling, WV. This decision is based in part on EPS's familiarity with how to best minimize the fire hazards at its primary facility, which has a fire suppression system. Additionally, Condition 11 requires EPS to maintain and operate its PCB CD mobile unit(s) in a way that minimizes the possibly of any unreasonable risk of injury to health or the environment.

Condition 9(d)(2) was modified to require EPS to provide a 30-day advance written notification of intent to operate, to the community located nearest the facility. This amended Condition stipulates that the notification can be provided on a yearly basis when the PCB CD treatment unit(s) will operate at the same location multiple times during the same calendar year, as long as the information included in the original notice has not significantly changed

[2] EPA previously approved EPS to treat PCB-contaminated diesel oil following EPS successfully demonstrating treatment of diesel oil in 2011. For the renewal of this Approval, EPS requested to remove diesel oil from the Approval, since they do not treat diesel oil under their current operations.

2020 Fire Incident

On July 27, 2020, EPS's Environmental, Health and Safety Director provided a written report to EPA describing a fire at PCBX™ Rig 2 that occurred on July 22, 2020, at EPS's facility in Wheeling, West Virginia. The report included information from EPS's preliminary investigation of the fire, which indicated that the furnace had likely restarted when power was restored after an outage and ran without any feedstock oil flowing through the system, resulting in the fire. Based on the information ORCR received, EPA found sufficient reason to believe that the three (3) PCBX™ CD units covered in the EPS PCB Disposal Approval (issued to EPS on September 14, 2017, and amended on June 15, 2018, the "PCB Disposal Approval") posed an unreasonable risk of injury to health or the environment as they were configured and operated at the time. Therefore, EPA required EPS to suspend operations conducted pursuant to the PCB Disposal Approval until further notice.

On September 14, 2020, EPS's Environmental, Health and Safety Director, provided a third-party fire investigation report to EPA, which provided an evaluation of the origin and cause of the July 22, 2020, fire incident. The report indicated that an electrical arc likely ignited oil vapor that had leaked into the trailer after the furnace heated stagnant oil following the power outage.

With information gleaned from both EPS's report and the third-party report, as well as observations made by EPA representatives during the December 2022 demonstration, EPA can reasonably conclude that the fire was caused by the following events:

1. The loss of electrical power caused mineral oil flow through the rig to stop, which resulted in some stagnant mineral oil remaining in the furnace.
2. When power was restored, the furnace restarted and heated the stagnant oil, causing oil vapors to accumulate. The resulting pressure led to oil vapor leaking out of the pipe system and releasing into the air in the trailer. The oil vapor did not vent through the pressure relief valve and into the atmosphere as intended by the design of the rig, because the rest of the rig was not in operation.
3. When the rig operator flipped a switch on the control panel, an electrical arc from the switch contactor ignited the oil vapors causing a flash fire.

Corrective Actions

EPS, in conversations with EPA, identified corrective actions that could prevent similar incidents. On September 28, 2020, EPA issued a letter to EPS, included in Appendix IX, requiring that corrective actions be implemented, and authorized EPS to resume operation of PCBX™ Rigs 6 and 8 under the conditions of the PCB Disposal Approval, provided EPS implemented the corrective actions. All but one of these corrective actions, including detecting and documenting the presence of any flammable gases inside each trailer prior to start-up following any non-routine shut down, and conducting daily visual inspections of the units to ensure that the equipment does not show any signs of leaks or failure, were incorporated in the PCB Disposal Approval through an Agency-initiated Approval modification in 2022. The remaining corrective action from the September 2020 EPA letter, directing EPS to reroute gases from the pressure relief valve such that they vent into the atmosphere was implemented on a temporary basis pursuant to the corrective actions letter issued by EPA, including collection of data which supported modifications during the Approval renewal process.

During a January 27, 2021, inspection, EPA was able to confirm that EPS was implementing all of the corrective actions from the September 2020 EPA letter in operation of PCBX™ Rigs 6 and 8.

On December 23, 2021, EPS submitted the third-party failure and vulnerability analysis report required in the September 28, 2020, corrective actions letter. The report included the following recommendations:

- EPS should continue their practice of wrapping external hose connections that run over open ground in absorbent pads, placing connections in secondary containment, and checking external hoses for leaks multiple times a day.
- Ensure that, in the event that hoses external to the rig have the potential to be in proximity with vehicles, as many precautions as possible (Jersey barriers, structured ramps, construction barricades, flagging, etc.) are present to prevent vehicle interactions with the hoses, since this was a non-negligible contributor to the risk of an outdoor leak.
- Proactive maintenance should be performed on the sodium line (e.g., checking and/or replacing components every 5-10 years), since failure of the sodium line was a risk-driving component of the ignition fault tree analysis.
- Inspect the failsafe and any other rig-specific mechanisms following work by external contractors.
- Develop additional written training manuals for potential higher-risk events, including the higher-risk events identified in the report. As noted by Blackman et al. (2008), formal written procedures can have important bearing on the likelihood of failure due to human error.
- Maintain the current high level of communication between staff members (weekly staff meetings, daily check-ins, lengthy on the job training) and emphasis on the workplace safety culture. These were also noted by Blackman et al. (2008) as potential mitigators of human error.

EPA used some of these recommendations to make changes in the modified Approval in 2022, including use of absorbent pads to identify leaks, checking for leaks periodically during operation, and inspection of the sodium line and failsafe during the start-up phase. Those changes are retained in this Approval renewal. EPA considered but ultimately did not find it necessary to incorporate any of the other recommendations into this Approval renewal.

2022 Approval Modification

On June 9, 2022, EPA issued to EPS an Agency-initiated approval modification as a result of the 2020 fire incident and subsequent corrective actions. The substantive changes made to the Approval modification are summarized below.

Condition 2 was modified to include new operating conditions. Condition 2(b) was added to require a visual inspection of the PCBX™ CD units prior to circulating any contaminated oil through the system. Many of the corrective actions resulting from the 2020 corrective actions letter were incorporated into this condition, including visually inspect the unit(s) for leaks and perform appropriate maintenance procedures such that any leak is corrected before the unit(s) is/are put on line in the treatment phase for processing; detect and document whether any flammable gases are present inside each trailer unit(s); that the equipment, including alarms and other safety devices, do not show any signs of failure; that the sodium line and failsafe do not show any signs of damage or failure; and that all process materials (e.g., quench water supply level, nitrogen tank level) are present at the manufacturer's recommended levels. Condition 2(c) was added to require EPS to monitor for leaks during operation and to take appropriate maintenance procedures if leaks are identified.

Condition 2(h) was added to require EPS to monitor the Fuller's Earth tank pressure to determine when

the system's flow should be switch to the offline Fuller's Earth tank.

Condition 2(i), the treatment unit shutdown condition, was modified to update the safety parameters and operating conditions which, if the limits were exceeded, require EPS to shut down the system. Other corrective actions were added to this condition, including ensuring that the main electrical disconnect providing power to each PCBX^{TM} CD unit is turned off after any power outage and at any time when the unit is either shut down or unattended.

Condition 5 was modified to include exceedance of operating parameter limits as a condition under which EPS must cease operation of the PCBX^{TM} CD unit.

Condition 6 was modified to require EPS to report to EPA any instance of malfunction of the PCBX^{TM} CD unit, and to not resume operation of the unit until the malfunction is corrected to the satisfaction of EPA.

Condition 11(a) was modified to allow the use of hydrocarbon-based oil sorbent pads to wrap pipe connections to detect for leaks, and the use of cardboard for focusing light on transparent sections of pipe to ensure flow and observe color of oil through the pipes.

Condition 11(o) was added to require secondary spill containment systems to be placed under each pipe or hose connection during PCBX^{TM} CD unit mobile operation.

Finally, Condition 15(c) was modified to incorporate the corrective action to annually train PCBX^{TM} CD unit operators on safe handling of gases and protocols for implementing immediate corrective actions in the event the operating conditions are exceeded, as described in Condition 2(i).

<u>EPS PCBX^{TM} CD Units</u>

EPS is the owner of the following two (2) regulated PCBX^{TM} mobile CD units and two (2) lab trailers.

Rig 2 Lab Trailer (Not subject to EPA Approval)
VIN - CHZ290003
Plate - OH TMH-2752

Rig 6 Processing Trailer
VIN - 1H2V04524EB002201
Plate - OH TMC-9608

Rig 6 Lab Trailer (Not subject to EPA Approval)
VIN - A30089
Plate - OH TMC-9609

Rig 8 Processing Trailer
VIN - 1JJV532Y8VL412739
Plate - OH TQM-500

APPENDIX II

PROCESS DESCRIPTION AND FINDINGS

Process Description:

Generally, the feedstock for the PCBX™ mobile unit(s) is contained in a transformer or bulk tank. At the start of each run, the contaminated oil is pumped into onboard feedstock tanks. The contaminated oil is then passed through a furnace and leaves the furnace at a temperature of 200-225º C. The contaminated oil is then passed through an oil storage tank and combined with reagent (40% sodium in oil dispersion mixture) under a nitrogen blanket. The PCB-contaminated oil with the reagent is sent to a continuous dechlorination reactor. The reactors are pipelines with a controlled flow rate for the contaminated oil to react with the sodium reagent. In this process, the sodium reagent reacts with the chlorine atoms on the PCB molecule to form sodium chloride and chlorine-free biphenyl molecules.

The following equipment is included in the system:

a) Inbound Feedstock oil tank, filters, and pumps
b) Reagent systems consisting of a mixer can, cylinder chest and reactant injection system
c) Reactors
d) Quench water system
e) Centrifuge system
f) Earth tank system
g) Pre-vacuum system
h) Vacuum system

Reactor Effluent:

The treated oil (less than two (2) ppm PCB) leaving the reactor is first cooled with the quench water system and then passed through a degassing column which removes hydrogen gas from the system. This treated oil is then passed through a centrifuge system where the heavy byproducts of the reaction (water, hydroxides, salts, polyphenylene, etc.) are forced to the perimeter of a centrifuge bowl. These heavy byproducts then go into an effluent system consisting of two effluent tanks where the lighter treated oil is separated from the heavier contaminated residuals (byproduct wastes) by gravity.

The treated oil is sent through an earth tank system for further removal of contaminants, such as polar compounds (such as acids and bases), and moisture, then passed through a vacuum system where it is sent back to the transformer or a treated oil tank.

Demonstration Findings:

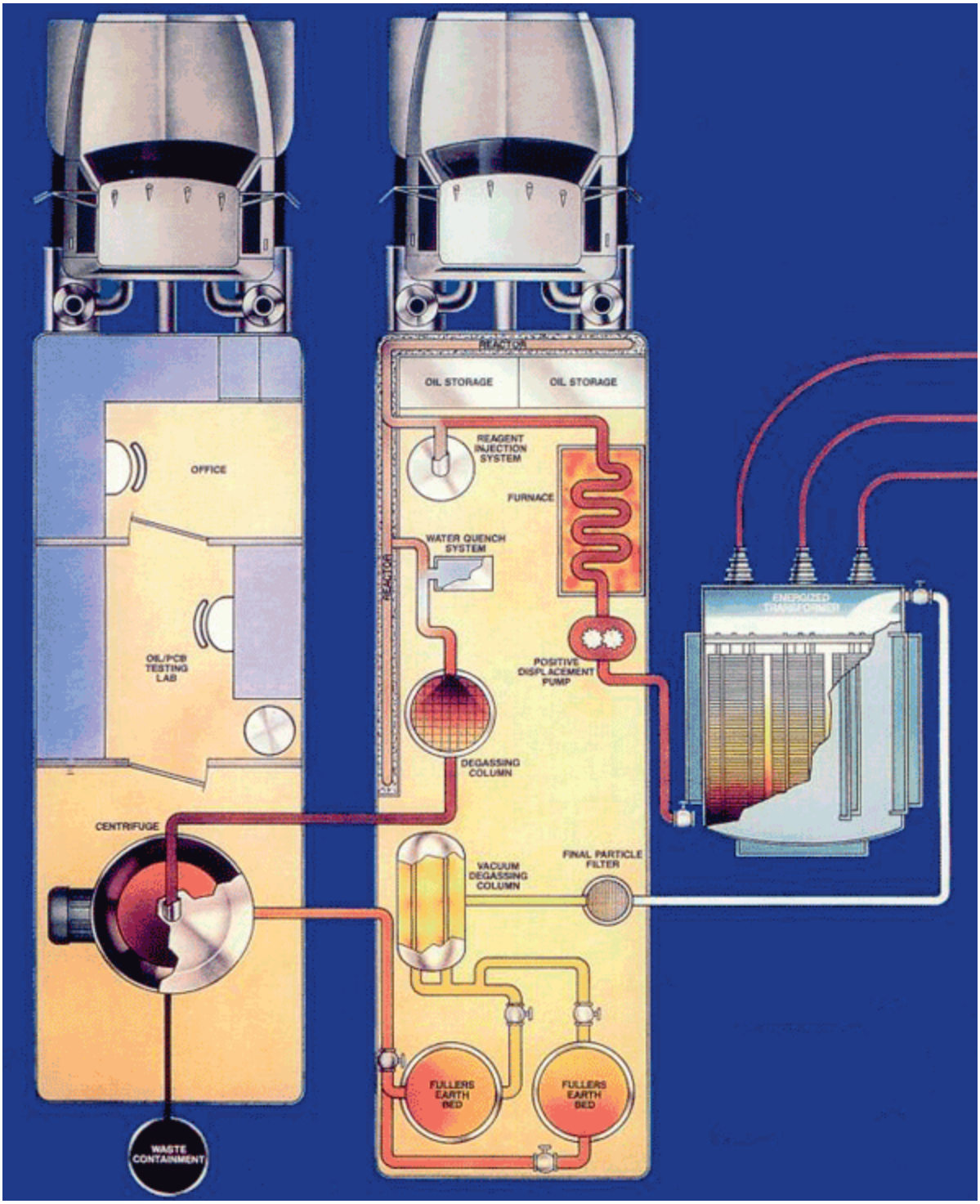
Pursuant to the October 24, 2022, demonstration approval issued by EPA to EPS, EPS successfully demonstrated three runs of the PCBX™ CD technology in December 2022. The three runs demonstrated that EPS's PCBX™ CD process (conducted using Rig #8 in Wheeling, West Virginia) destroyed PCBs in MODEF at the following concentrations: 10,539 ppm on December 6, 2022; 3,900 ppm on December 7, 2022; and 5,169 ppm on December 8, 2022. EPA considers the two PCBX™ CD units included in this Approval, Rigs #6 and #8, to be functionally equivalent, and demonstration of one unit provides reasonable assurance for both units. However, EPA does require new units to be tested on one media type at least once prior to initial use for treatment of contaminated media (such testing was done on Rig #6 on January 11-12, 2006).

EPS previously conducted three successful demonstration tests from 2010 to 2012. The first demonstration test conducted, using EPS's CD technology (Rig #2), occurred the week of November 29, 2010, and demonstrated that EPS's CD process adequately destroys PCBs in MODEF at levels up to 17,780 ppm. The second demonstration test conducted during the week of August 15, 2011, using EPS's CD technology (Rig #2), adequately destroyed PCBs in diesel oil at levels up to 1,600 ppm. Lastly, another demonstration test conducted with EPS's CD technology (Rig # 8), during the week of December 3, 2012, demonstrated that EPS's new PCBX^{TM} CD unit is capable of adequately destroying PCBs in MODEF. Three test runs for TSCA compliance were conducted and successfully completed during each demonstration.

APPENDIX III

FLOW DIAGRAM

From EPS's demonstration test plan.



APPENDIX IV

SUMMARY OF DEMONSTRATION TEST RESULTS
FOR THE PCBX™ CHEMICAL DECHLORINATION PROCESS

2022 Demonstration

Date: December 6 to December 8, 2022
Media: MODEF
Unit Tested: Rig #8
Detection Limit: 0.00 ppm PCB

Sample Type	Run Number	Total PCB Concentration (ppm)	
		EPS's Lab	EPA's Lab[3]
Feed	1	10,539	2,330
Feed	2	3,996	1,225
Feed	3	5,169	1,369
Feed	**Average**	**6,568**	**1,641**
Treated	1	Non-detect	Non-detect
Treated	2	Non-detect	Non-detect
Treated	3	Non-detect	Non-detect
Condensate	1	n/a[4]	Non-detect
Condensate	2	n/a	Non-detect
Condensate	3	5.6	Non-detect

Run Number	Pressure (psi) Reactor A (avg)	Temperature (°F) Reactor A (avg)	Reaction Time (hr)	Feed Rate (gal/hr)
1	10.7	268.0	9.60	743
2	12.2	272.8	6.25	782
3	10.0	272.3	7.75	760
Average	**11.0**	**271.0**	**7.87**	**762**

[3] The difference in EPA sample analysis data vs. EPS sample analysis data is likely due to calibration of the GC equipment and dilution of the samples. EPA R3 indicated that their GC calibration stops at 5 ppm, so they likely diluted the samples at a different ratio than EPS.

[4] EPS did not analyze the condensate samples for runs 1 and 2. EPA collected condensate samples for runs 1 and 2, as well as a split sample for run 3, and EPA lab analysis of the condensate samples for each run resulted in non-detect for PCBs.

2010 Demonstration

Date: November 29 to December 3, 2010
Media: MODEF
Unit tested: Rig 2
Detection Limit: 0.00 ppm PCB

Sample Type	Run Number	Total PCB Concentration (ppm)	
		EPS's Lab	EPA's Lab
Feed	1	6,546	28,833
Feed	2	18,588	16,899
Feed	3	28,205	40,213
Feed	**Average**	**17,780**	**28,648**
Treated	1	0.01	Non-detect
Treated	2	0.01	Non-detect
Treated	3	0.02	Non-detect

Run Number	Pressure (psi)	Reaction Temperature (°F)	Reaction Time (h)	Feed Rate (kg/h)
1	17.3	259.4	11:25	1988
2	18.0	259.0	10:00	2249
3	21.5	263.5	5:00	2500
Average	**19.0**	**260.6**	**8:48**	**2246**

2011 Demonstration

Date: August 15-16, 2011
Media: PCB-Contaminated Diesel Oil
Unit tested: Rig 2
Detection Limit: 0.00 ppm PCB

Sample Type	Run Number	Total PCB Concentration (ppm)	
		EPS's Lab	EPA's Lab
Feed	1	1,146	40.09
Feed	2	1,749	36.89
Feed	3	1,954	35.32
Feed	**Average**	**1,616**	**37.43**
Treated	1	0	1.76
Treated	2	0	1.86
Treated	3	0	1.88

Run Number	Pressure (psi)	Reaction Temperature (°F)	Reaction Time (h)	Feed Rate (kg/h)
1	14	248	14:00	2315
2	14	248	7:00	3409
3	14	260	11:30	2393
Average	**14**	**252**	**10:50**	**2706**

2012 Demonstration

Date: December 3-6, 2012
Media: MODEF
Unit tested: Rig 8
Detection Limit: 0.00 ppm PCB

Sample	Run Number	Total PCB Concentration (ppm)	
		EPS's Lab	EPA's Lab
Feed	1	10,695	10,037
Feed	2	14,850	13,824
Feed	3	16,151	15,178
Feed	**Average**	**13,899**	**13,013**
Treated	1	0.3	1.02
Treated	2	1.3	1.01
Treated	3	0.5	1.00

Run Number	Pressure (psi)	Reaction Temperature (°F)	Reaction Time (h)	Feed Rate (kg/h)
1	20	250	16:00	2315
2	20	250	10:00	3409
3	20	250	11:30	2993
Average	**20**	**250**	**12:30**	**2906**

APPENDIX V

SAMPLE 30-DAY ADVANCED NOTIFICATION OF OPERATIONS FOR CONDITION NO. 9

Section A

Company

Name: Environmental Protection Services, Inc.
Address: 4 Industrial Park Drive, Wheeling, West Virginia 26003-0091
Contact Person Name, Email Address, and Phone: _____
VIN and License Plate Number of Mobile Unit: _____
Phone dedicated to the unit that the unit operator(s) have access to that goes with the unit to each site: _____

When and Where Disposal/Treatment Will Occur:

Street Address or Other Identifier for Site: _____
Facility Manager: _____
Phone Number for Facility Manager: _____
Brief Description of the Facility/Site: _____
Date Treatment Operations Expected to Begin: _____
Estimated Duration of the Treatment Operations (in Days): _____

Section B

Company that Owns the Facility where the Unit will be Operating

Name: _____
Mailing Address: _____
Contact Person Name and Phone: _____

Person, Organizational Affiliation/Title, and Phone Number for:

EPA ORCR Contact: Luke Weber, EPA ORCR, PCB Approval Writer, 202-564-6576, ORCRPCBs@epa.gov
EPA Regional Contact: _____
State Contact: _____
Local (Town/City/County) Contact: _____

Nature of the Activity:

Type of PCB Disposal/Treatment Process: _____
Volume of MODEF Treated: _____
Concentration of PCBs in the MODEF Before Treatment: _____

APPENDIX VI

GENERAL PCBX RIG SHUT DOWN PROCEDURE

1. Turn off PCBX mode.
2. Turn off the oil heating devices.
3. Circulate oil with PCB concentrations of less than two (2) ppm at ambient temperature through the rig to clear the reactors and cool down the rig.
4. Once the remaining sodium has been cleared from the reactors, turn off the quench water system.
5. Circulate oil through the rig until the temperature of the oil downstream of the heating device is less than 100° F.
6. Start taking devices offline in the following order:
    - Sodium Mixer Chest
    - Reactors
    - Degas Column
    - Centrifuge
    - Fullers Earth Tanks
7. Sample the outgoing oil from the rig to ensure the oil is less than two (2) ppm PCB.
8. Turn off the incoming and outgoing oil pumps stopping all flow of oil through the rig.
9. Ensure all external valves are closed.
10. Turn off internal breakers to all powered devices inside of the rig.
11. Turn off external power to the rig.

Safety Data Sheet

SECTION I: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sorbent Fabric – MeltBlown White Oil-only
PRODUCT USE: Sorbent Media
COMPANY IDENTIFICATION: Evolution Sorbent Products, LLC
1270 Nuclear Drive
West Chicago, IL 60185
Telephone Number: 1-800-615-8699 (Emergency) **1-630-293-8055** (Information)

SECTION II: HAZARD IDENTIFICATION

GHS CLASSIFICATION: Not a Hazardous Material under GHS

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY: Olefin
CHEMICAL NAME: Polypropylene

INGREDIENTS	PERCENT	CAS NUMBER
Polypropylene	100%	9003-07-0

SECTION IV: FIRST AID MEASURES

Ingestion: Not applicable
Inhalation: Not applicable
Skin Contact: Not applicable

SECTION V: FIRE FIGHTING MEASURES

FLASH POINT: >329°C (625°F) (Setchkin test)
FLAMMABLE LIMITS: Not Yet Determined
EXTINGUISHING MEDIA: Water, Foam, CO^2, Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURES: Standard procedures for Class A fires
UNUSUAL FIRE AND EXPLOSION HAZARDS: Some carbon monoxide formation is possible under oxygen-lean conditions. Matting will not support combustion.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: If material is unused, sweep or pick up and dispose of as a non-hazardous material.

SECTION VII: HANDLING AND STORAGE

Store in a dry area. Do not store near open flame, high heat or strong oxidants.
Polypropylene/synthetic fibers, when heated, become very sticky and will burn.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: None required
VENTILATION: None required
PROTECTIVE GLOVES: None required
EYE PROTECTION: None required
OTHER PROTECTIVE EQUIPMENT: None required
OSHA PEL: None
ACGHI TLV: None

Safety Data Sheet

RE: PRODUCT NAME: Sorbent Fabric - MeltBlown White Oil-only

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	White & virtually odor free
SPECIFIC GRAVITY:	0.88-0.92
BOILING POINT (C):	Not Applicable
MELTING POINT:	>160°C
SOLUBILITY IN WATER:	Insoluble
PERCENT VOLATILE BY VOLUME:	Not Applicable
EVAPORATION RATE:	Not Applicable
VAPOR PRESSURE (mm hg):	Not Applicable

SECTION X: STABILITY AND REACTIVITY

STABILITY: Stable (XX)
INCOMPATIBILITY (CONDITIONS TO AVOID): None
INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with hot or concentrated nitric and perchloric acid, sulfuric acid or 98% sulfuric acid at 60°C or above.
HAZARDOUS POLYMERIZATION: Will not occur (XX)

SECTION XI: TOXICOLOGICAL PROPERTIES

HEALTH HAZARDS: (acute or chronic) None
SIGNS & SYMPTOMS OF EXPOSURE: None
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None
TOXICITY: No toxicological data for this material. Adverse health effects are not known nor are expected under normal use.

SECTION XII: ECOLOGICAL INFORMATION

No data available

SECTION XIII: DISPOSAL CONSIDERATIONS

Sanitary landfill or incineration site. Disposal must be done in accordance with local, state, and federal regulations.

SECTION XIV: TRANSPORT INFORMATION

DOT (Department of Transportation):

Proper Shipping Name:	Not regulated
Hazard Class:	Not regulated
Identification Number:	Not applicable

SECTION XV: REGULATORY INFORMATION

No data available

SECTION XVI: OTHER INFORMATION

The data in this SDS has been compiled from publicly available sources. This data relates only to the designated product and not to the use of said product in combination with other materials. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. All data in this SDS is typical of the product as a whole, and does not represent any individual lot or batch, therefore, Evolution Sorbent Products makes no warranty about accuracy of the data herein and assumes no liability for the use of such data. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Univar Solutions

Safety Data Sheet
Glycol Ether EB

Version 1.11 Revision Date: 09/05/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Glycol Ether EB

Recommended use of the chemical and restrictions on use

Recommended use : Solvent.

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.
Address 3075 Highland Pkwy Suite 200
Downers Grove, IL 60515
United States of America (USA)

Emergency telephone number:
Transport North America: CHEMTREC (1-800-424-9300)
CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
E-mail: SDSNA@univarsolutions.com
SDS Requests: 1-855-429-2661
Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	:	Category 4
Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 4
Acute toxicity (Dermal)	:	Category 4
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system, Central nervous system)

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H227 Combustible liquid.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

CAS-No.	Chemical name	Weight percent
111-76-2	2-Butoxy ethanol	90 - 100

Any Concentration shown as a range is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2) Water spray Dry chemical Foam
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides
Further information	:	For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	No smoking. Keep in a well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
111-76-2	2-Butoxy ethanol	TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m3	NIOSH REL
		TWA	50 ppm	OSHA Z-1

			240 mg/m3	
		TWA	25 ppm 120 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	Colorless
Odour	:	mild, sweet, ester-like
Odour Threshold	:	0.48 ppm
pH	:	No data available
Freezing Point (Melting point/freezing point)	:	-75 - -74.8 °C (-103 - -102.6 °F)
Boiling Point (Boiling point/boiling range)	:	171 - 173.5 °C (340 - 344.3 °F)

Flash point	:	67 - 72 °C (153 - 162 °F) Method: closed cup
Evaporation rate	:	0.06 - 0.1
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	10.6 %(V)
Lower explosion limit	:	1.1 %(V)
Vapour pressure	:	0.60 - 0.8775 mmHg @ 20 - 25 °C (68 - 77 °F)
Relative vapour density	:	> 4 @ 20 - 25 °C (68 - 77 °F) (Air = 1.0)
Relative density	:	0.9 - 0.9040 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	:	0.9 g/cm3 @ 20 °C (68 °F)
Solubility(ies) Water solubility	:	900 g/l completely miscible @ 25 °C (77 °F)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Pow: 6.46 @ 25 °C (77 °F) log Pow: 0.81 @ 25 °C (77 °F)
Auto-ignition temperature	:	230 - 245 °C
Thermal decomposition	:	No data available
Viscosity Viscosity, dynamic	:	3.3 mPa.s @ 20 °C (68 °F)
Viscosity, kinematic	:	3.642 - 3.7 mm2/s @ 20 °C (68 °F)
Surface tension	:	65 mN/m

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Reacts with air to form peroxides.
Conditions to avoid	:	Keep away from heat, flame, sparks and other ignition sources.

Incompatible materials	:	Acids aluminum Bases Oxidizing agents Amines Ammonia
Hazardous decomposition products	:	Carbon oxides Aldehydes Ketones Organic acids

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,314 mg/kg
Acute inhalation toxicity	:	Acute toxicity estimate: 11.11 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	Acute toxicity estimate: 1,112 mg/kg

Components:

111-76-2:

Acute oral toxicity	:	LD50 (Rat): 1,300 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male): 2.56 mg/l Exposure time: 4 h Test atmosphere: vapour Assessment: The component/mixture is moderately toxic after short term inhalation.
Acute dermal toxicity	:	LD0 (Guinea pig, male and female): > 2,000 mg/kg Assessment: The component/mixture is moderately toxic after single contact with skin.

Skin corrosion/irritation

Components:

111-76-2:

Result: Irritating to skin.

Serious eye damage/eye irritation

Components:

111-76-2:
Species: Rabbit
Result: Irritating to eyes.

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	Confirmed animal carcinogen with unknown relevance to humans
	111-76-2 2-Butoxy ethanol

Aspiration toxicity

Product:
No aspiration toxicity classification

Further information

Product:
Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):
NA1993, Combustible liquid, n.o.s., (2-BUTOXYETHANOL), CBL, III

IATA (International Air Transport Association): Not regulated as a dangerous good

IMDG-Code: Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

Specific target organ toxicity (single or repeated exposure)

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

111-76-2 2-Butoxy ethanol

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

111-76-2 2-Butoxy ethanol

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

111-76-2	2-Butoxy ethanol	90 - 100 %

Pennsylvania Right To Know

111-76-2	2-Butoxy ethanol	90 - 100 %

New Jersey Right To Know

111-76-2	2-Butoxy ethanol	90 - 100 %

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

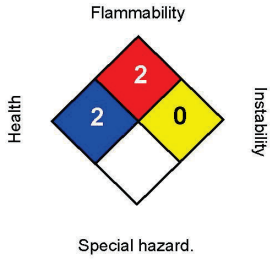
KECI : On the inventory, or in compliance with the inventory

PHIL : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

SECTION16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

Revision Date : 09/05/2019

Legacy SDS: : R0000694, 100000027612

Material number:
16141758, 16141113, 16132295, 16130390, 16127405, 16121258, 16118778, 70304, 16115289, 16106019, 16102525, 16100758, 16098446, 16086705, 16077390, 16074396, 16062657, 16056118, 16056117, 16061248, 16054520, 16048541, 16047096, 16032176, 16016635, 16015501, 16001400, 788372, 775994, 765987, 765863, 714415, 709916, 702242, 699239, 691013, 677574, 674238, 623616, 614620, 555430, 554369, 554322, 554285, 554205, 554137, 554095, 554065, 552664, 550801, 503690, 501960, 167270, 123115, 103486, 103127, 103077, 103067, 102851, 102791, 102284, 87112, 87105, 86469, 86409, 86408, 85906, 85895, 85892, 70364, 70315, 70308, 70027, 69522, 54357, 54354, 53927, 53711, 53708, 53647, 53145, 53134, 53131, 20132, 20131, 20130, 20129, 20128, 70318

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical	LOAEL	Lowest Observed Adverse Effect

	Substances		Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

September 28, 2020

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Mr. Keith R. Reed
President
Environmental Protection Services, Inc.
4 Industrial Park Drive
P.O. Box 710
Wheeling, West Virginia 26003-0091

Re: Implementing Corrective Actions Related to Environmental Protection Services, Inc. (EPS) 40 CFR 761.60(e) Approval to Dispose of Polychlorinated Biphenyls (PCBs)

Dear Mr. Reed:

This letter is to inform you that the U.S. Environmental Protection Agency (EPA) is:

(1) requiring EPS to implement the immediate and long-term corrective actions identified in this letter in response to the fire at PCBX™ Rig 2 that occurred on July 22, 2020, at EPS's facility in Wheeling, West Virginia; and

(2) authorizing EPS to resume operation of PCBX™ Rigs 6 and 8 under the conditions of the 40 CFR 761.60(e) Approval to Dispose of Polychlorinated Biphenyls (PCBs) issued to EPS on September 14, 2017, as amended on June 15, 2018 (the "PCB Disposal Approval"), provided EPS implements the immediate corrective actions identified in this letter (the "immediate corrective actions").

Based on the information EPS submitted to the Office of Resource Conservation and Recovery, including EPS's final investigative report of the July 22 fire and identified corrective actions to prevent like incidents from occurring in the future, EPA finds that EPS's resumption of operation of Rigs 6 and 8 PCBX™ chemical dechlorination (CD) units covered in the PCB Disposal Approval do not pose unreasonable risk of injury to health or the environment, provided EPS also adheres to the immediate corrective actions listed below. Thus, EPS may immediately resume operation of Rigs 6 and 8 once the immediate corrective actions are in place.

In addition, EPS shall also implement the long-term corrective actions below within the stated timeframes or as otherwise agreed by EPA. EPA may also modify EPS's approval to remove Rig 2 and to incorporate the immediate and long-term corrective actions, as appropriate. As part of this modification review, EPA will also assess whether air emission controls or additional approval conditions might be necessary.

Immediate Corrective Actions

EPS shall:

1. Ensure that the main electrical disconnect providing power to each unit is turned off after any power outage and after ending operations for the day.

2. Detect and document whether any flammable gases are present inside each trailer prior to startup following any non-routine shut down.

3. Reroute gases coming from the pressure relief valve of the vapor recovery system during the processing of PCB mineral dielectric fluid (MODEF), such that they vent into the atmosphere and do not accumulate inside the trailer(s). Document the frequency and duration of the safety relief valve emissions, which occur whenever the system is over pressurized.

4. Conduct and document daily visual inspections of the units to ensure that the equipment, including alarms and other safety devices, do not show any signs of leaks or failure and that all process materials (e.g., quench water supply level, nitrogen tank level) are present at the proper levels.

5. Once a year, provide training to all the PCBX™ unit operators on: (a) the safe handling of gases that are generated during the operation of the units, and (b) the protocols for implementing all the immediate corrective actions. This training shall be provided and documented in addition to the training requirements specified in condition number five of the PCB Disposal Approval.

Long-term Corrective Actions

1. EPS shall conduct and provide to EPA a third-party failure and vulnerability analysis report for Rigs 6 and 8 within a year after issuance of this letter. Such analysis shall investigate and identify areas of vulnerability in the operation process of each unit (e.g., improper waste characterization procedures), as well as vulnerabilities related to the physical components of each unit (e.g., investigating and resolving corrosion, fatigue and potential failures of equipment such as pumps, valves, pipelines, and furnace).

2. EPS shall address the vulnerabilities identified in the third-party failure and vulnerability analysis report within 10 months after issuance of such report or at the discretion of EPA.

Please contact Lilybeth Colón at (703) 308-2392, or colon.lilybeth@epa.gov, if you have any questions pertaining to these corrective actions.

Sincerely,

Digitally signed by
CAROLYN HOSKINSON
Date: 2020.09.28 08:12:53
-04'00'

Carolyn Hoskinson, Director
Office of Resource Conservation and Recovery

Enclosure

cc: Kelly Bunker, EPA Region 3 PCB Coordinator
Terri Crosby-Vega, EPA Region 4 Coordinator