

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

OCT 02 1998

REPLY TO THE ATTENTION OF:

R-19J

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

David Peel, Vice President  
Oil Recovery Division  
Safety-Kleen Systems, Inc.  
One Brinkman Way  
Elgin, Illinois 60123-7857

Dear Mr. Peel:

Pursuant to the Federal Polychlorinated Biphenyl (PCB) regulations published on May 31, 1979, 40 Code of Federal Regulations (CFR) Section 761.60(e) and 40 CFR Section 761.65(d), under the authority of the Toxic Substances Control Act (TSCA) of 1976 (Public Law 94-469), the United States Environmental Protection Agency (U.S. EPA) is issuing the enclosed document entitled "Approval to Store and Dispose of PCB Contaminated Waste Oil by Re-refining Process," to Safety-Kleen Oil Recovery Company (SKORC) of East Chicago, Indiana. This authorizes specified activities subject to the listed conditions of the approval.

This approval is based upon the capability of the hydrotreating step of SKORC's re-refining process to destroy PCBs to a level below 2 parts per million (ppm) per resolvable gas chromatographic peak. The re-refining process is also capable of generating by-products containing less than 2 ppm PCBs. The 2 ppm level is the U. S. EPA's designated limit of detection of PCBs in oil. A process which generates final products containing less than 2 ppm PCBs is considered to have a level of performance equivalent to that required of thermal destruction methods (incinerators and high efficiency boilers). In addition, this approval is based upon the Agency's conclusion that SKORC's re-refining process, when operated in accordance with the conditions of the approval, does not present an unreasonable risk of injury to human health and the environment.

The approval to store PCB contaminated waste oil is based on U.S. EPA's determination that SKORC has completely and adequately satisfied the regulatory requirements specified in 40 CFR 761.65, Storage for Disposal.

This approval shall be effective today and shall remain effective for five (5) years. This approval allows the SKORC re-refining process to operate in accordance with the listed conditions of

approval. This approval may be withdrawn or further conditions may be added to it at any time the U.S. EPA has reason to believe that operation of the process represents an unreasonable risk of injury to human health or the environment. Withdrawal of this authorization or the imposition of further conditions may also result from future U.S. EPA rulemaking or development of guidance with respect to PCBs. Moreover, violation of any conditions included as part of this authorization may subject Safety-Kleen Oil Recovery Company to enforcement action and/or termination of this approval.

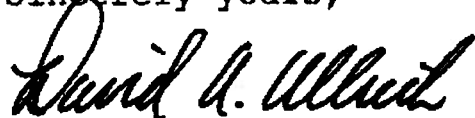
It is the responsibility of you and your company, Safety-Kleen Oil Recovery Company, to ensure that all applicable provisions of TSCA and the Federal PCB regulations are followed. Violation of any of the applicable provisions may be cause for rescision of this approval. Furthermore, this approval does not relieve SKORC of the responsibility to comply with all other Federal, State and local regulations and ordinances for transportation, siting, operation and maintenance of its facility.

The U.S. EPA reserves the right for its authorized representatives to observe SKORC's disposal activities and inspect records which the company is required to maintain under the Federal PCB regulations and this approval during normal operation and at other reasonable times.

A copy of the *Response to Comments* generated during the public comment period for the draft approval is included with this letter. It was prepared and is intended for release in conjunction with the issuance of the final approval by U.S. EPA.

Please contact Priscilla Fonseca, of my staff, at (312) 886-1334, if you have any questions pertaining to this matter.

Sincerely yours,



David A. Ullrich  
Acting Regional Administrator

Enclosures

cc: John Hamilton, Commissioner  
Indiana Department of Environmental Management

Daniel Olson, East Chicago Sanitary District

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF ) APPROVAL TO STORE AND DISPOSE  
SAFETY-KLEEN OIL RECOVERY CO. ) OF PCB CONTAMINATED WASTE  
EAST CHICAGO, INDIANA ) OIL BY RE-REFINING PROCESS

AUTHORITY

This approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976, Public Law No. 94-469, and the Federal PCB regulations, 40 CFR §761.60(e) and 40 CFR §761.65(d) (48 FR 13181, March 30, 1983, and 54 FR 52746, December 21, 1989).

EFFECTIVE DATE

This approval shall be effective upon the signature of the Regional Administrator.

BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires the United States Environmental Protection Agency (U.S. EPA) to promulgate rules for the disposal of Polychlorinated Biphenyls (PCBs). The rules implementing Section 6(e)(1)(A) were published in the Federal Register of May 31, 1979, (44 FR 31514) and recodified in the May 6, 1982 Federal Register (47 FR 19527). Those rules require, among other things, that various types of PCBs and PCB Articles be disposed of in U.S. EPA-approved landfills (40 CFR §761.75), incinerators (40 CFR §761.70), high efficiency boilers (40 CFR §761.60), or by alternative methods (40 CFR §761.60[e]) that demonstrate a level of performance equivalent to U.S. EPA-approved incinerators or high efficiency boilers and do not present an unreasonable risk of injury to health and the environment. The rules published in the May 31, 1979 Federal Register also designate Regional Administrators as the approval authority for PCB disposal facilities.

Amendments to those rules, published in the December 21, 1989, Federal Register (54 FR 52746) require, in part, that facilities which store PCB waste generated by others, in quantities greater than 500 gallons obtain U.S. EPA approval. The current rules for PCB storage facilities are codified at 40 CFR §761.65, Storage for Disposal. The rules published in the December 21, 1989,

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Federal Register designate the U.S. EPA Regional Administrator of the region in which the storage facility is located (or the Director, National Program Chemicals Division [NCPD], if the commercial storage area is ancillary to a facility approved for disposal by the Director, NCPD) as the approval authority for commercial PCB storage facilities.

Further amendments to those rules, published in the June 29, 1998 Federal Register (63 FR 35384), altered a number of requirements in 40 CFR Parts 750 and 761. Among other changes, these amendments clarified and modified certain requirements for PCB disposal.

On November 13, 1992, Safety-Kleen Oil Recovery Company (SKORC) submitted an application to U.S. EPA for an approval to treat PCB contaminated waste oil through its used oil re-refining system as an alternate method for PCB disposal. SKORC's re-refining process involves two basic steps; a distillation step to remove physical impurities and a hydrotreating step to remove chemical impurities. PCBs are destroyed in the hydrotreating step of the re-refining process.

SKORC submitted a demonstration test plan on June 21, 1993. The plan was approved by the U.S. EPA on December 9, 1994. SKORC conducted the demonstration test from December 13 to December 23, 1994 and processed approximately 190,000 gallons of PCB contaminated waste oil. The U.S. EPA and its oversight contractor witnessed the demonstration to observe the general handling of PCB contaminated waste oil and operation of the distillation and hydrotreating systems and to obtain split samples for analysis and verification. The demonstration indicated that the hydrotreating step of SKORC'S re-refining process is capable of destroying PCBs, while generating final products containing less than the detection limit of 2 ppm PCBs. A process which generates final products containing less than 2 ppm is considered to have a level of performance equivalent to that required of thermal destruction methods (incinerators and high efficiency boilers). In addition to showing a level of performance equivalent to that required of thermal destruction methods, the applicant must show that the method will not present an unreasonable risk of injury to health or the environment.

On February 5, 1990, the U.S. EPA granted SKORC interim approval to commercially store PCB waste. A complete commercial PCB storage approval application was originally submitted to the U.S. EPA on July 31, 1990. Upon receipt of SKORC's complete

application, the February 5, 1990 interim approval was extended until the Regional Administrator made a final decision on the commercial storage application. On November 13, 1992, and September 9, 1996, SKORC submitted major modifications to their commercial PCB storage application.

On May 20, 1998 there was a merger of a corporation named LES Acquisition, Inc. with Safety-Kleen Corporation. Safety-Kleen Corporation was the surviving corporation. LES Acquisition was an indirect wholly-owned subsidiary of Laidlaw Environmental Services, Inc. (LESI). Therefore, Safety-Kleen Corporation is now an indirect wholly-owned subsidiary of LESI. Safety-Kleen Corporation remained the parent corporation of SKORC. On July 1, 1998, Safety-Kleen Corporation legally changed its name to Safety-Kleen Systems, Inc. The U.S. EPA received an affidavit with supporting documentation from LESI, stating that there has been no transfer of ownership or change in operational control of SKORC.

#### FINDINGS

1. Safety-Kleen Oil Recovery Company (SKORC) will treat PCB contaminated waste oil using their on site re-refining system as an alternate method of PCB disposal. The facility's primary purpose is to re-refine used oil into petroleum products including lubricating base stocks, fuel oil and distillate products, such as asphalt extender.

SKORC will store PCB contaminated waste oil in on site bulk containers.

2. The facility, located at 601 Riley Road, East Chicago, Indiana, is owned and operated by SKORC. SKORC is a wholly owned subsidiary of Safety-Kleen Systems, Inc., whose headquarters is located at 1301 Gervais St., Suite 300, Columbia, South Carolina.
3. SKORC's re-refining system involves two basic processes: a distillation process to remove physical impurities, and a hydrotreating process to remove chemical impurities. The distillation process involves four steps. The first distillation step is dehydration, which removes the water and any light hydrocarbons (e.g., gasoline and solvents) from the waste oil. The water removed is treated in SKORC's wastewater treatment system. The dewatered oil is processed through vacuum distillation which is the second step of the

distillation. The overhead vapors from this stage are condensed into fuel oil. In the third and fourth distillation steps, the oil is processed through a vacuum tower and thin film evaporators which operate at a higher temperature and lower pressure than the second distillation step. The vacuum tower and the evaporators produce three grades of lubricating oil: light, medium and heavy. The PCBs in the waste oil are carried along with the lubricating oil distillates since they have similar boiling ranges. Any material which does not evaporate in the third and fourth step evaporators is sold as a distillate product.

The three grades of lubricating oil produced in the third and fourth distillation steps are then chemically treated in the hydrotreater to purify the oil. Hydrotreatment is a common process in the re-refining industry. This step, also called catalytic dechlorination, uses hydrogen gas in a high temperature, high pressure catalyzed reaction to remove sulfur, chlorine, oxygen and other chemical impurities from the oil. The catalytic reaction with hydrogen destroys the PCBs.

4. SKORC conducted a demonstration test from December 13 to December 23, 1994, processing about 190,000 gallons of PCB contaminated waste oil. Rinsates generated from the decontamination of the tanks and railcars were also processed during the demonstration. Extensive laboratory testing and sampling procedures were incorporated into the demonstration test.
5. On March 28, 1995, SKORC submitted the demonstration test report. Pertinent test results demonstrate that the hydro-treating step of SKORC's re-refining process is capable of destroying PCBs. No PCBs were detected per resolvable gas chromatographic peak in the finished products. The PCBs are destroyed in the absence of oxygen and, therefore, the process does not result in the formation of products associated with incomplete combustion, such as dioxins and furans. This was confirmed by the analytical result of the sample taken during the demonstration. Dioxins and furans were not detected in the finished products.

By-products (e.g. ethylene glycol, asphalt extender, spindle oil) of the re-refining process generated during the demonstration were also analyzed for PCBs. Analytical results of the by-products showed concentrations of less than the detection limit of 2 ppm PCBs except for one

incident where a grab sample of the asphalt extender, the residue from the FE-302 evaporator, was found to contain 3.9 ppm PCBs. This incident occurred when the feed rate to the evaporator was increased 20 minutes prior to the evaporator temperature being increased. The results of the other asphalt extender samples taken prior to and after that incident were all non-detectable for PCBs. In order to prevent PCBs from getting into the asphalt extender, this approval requires SKORC to maintain a minimum feed rate and a minimum temperature at the evaporator.

6. Analysis of the split samples collected by U.S. EPA during the demonstration test confirms that SKORC's distillation process is capable of producing by-products containing less than the detection limit of 2 ppm PCBs and that the hydro-treating step of the re-refining process yields finished products with non-detectable PCBs.
7. SKORC's catalytic dechlorination process takes place in a closed system and has no significant emissions. The catalytic dechlorination process not only destroys PCBs, but generates useful lubricant products.
8. SKORC's re-refining system is equipped with safety features which are designed to prevent releases or spills into the environment. The system is designed to enable a shutdown sequence which will cut off power to the oil feed pumps for the distillation system and the hydrotreater during emergency situation. One of these features is an alarm system. All operational staff are trained to respond to early warning alarms in order to avoid potential emergencies.

Personnel involved in the general operation and those conducting sampling, use specific safety procedures and use proper protective clothing to minimize worker exposure.

9. SKORC has provided the U.S. EPA with a description of its training program for process operators and technicians. This program is intended to help ensure that the re-refining system is in compliance with applicable safety and health standards.



The training program includes descriptions of:

- a. operational procedures for using, inspecting, repairing, and replacing facility equipment, including the monitoring and control system;
  - b. recordkeeping and sampling analysis;
  - c. key parameters for waste feed cut-off systems;
  - d. communications and alarm systems;
  - e. response to fires and explosions;
  - f. shutdown of operations; and
  - g. spill prevention, cleanup and emergency response.
10. SKORC's process has a level of performance equivalent to that of thermal destruction methods (incinerators and high efficiency boilers). There are no detectable PCBs in the treated fluid at a detection limit of 2 ppm per resolvable gas chromatographic peak, no significant PCB emissions and no worker exposure to PCBs. In the preamble to the PCB Ban Rule, published in the May 31, 1979 Federal Register (44 FR 31519), U.S. EPA expressed the expectation that approved incinerators (§761.70) would achieve a destruction and removal efficiency of 99.9999% and that high efficiency boilers (§761.60), which may be used to destroy PCBs in concentrations up to 500 ppm, would achieve a destruction and removal efficiency of 99.9% or greater. While these percentages provide general guidance in determining the approximate destruction and removal efficiency goals for alternate PCB disposal methods under 40 CFR §761.60(e), other factors may be considered to determine equivalency to thermal destruction methods.

On August 28, 1987, the Director of Exposure Evaluation Division issued a memorandum to Region 5 confirming U.S. EPA policy on the limits of quantitation for PCBs in industrial oils. The practical limits on methods of quantitation for PCBs were also discussed in the preamble to the Closed and Controlled Waste Manufacturing Processes Rule published in the October 21, 1982 Federal Register (47 FR 46980). U.S. EPA regards 2 ppm as the threshold which sets apart PCB containing materials from those which are essentially "PCB-free" for the purposes of the PCB regulations. U.S. EPA

has adopted 2 ppm as a practical limit of quantitation at low PCB concentrations based upon experience with PCB analytical methods. U.S. EPA also regards the 2 ppm regulatory quantitation limit as consistent with the requirement that PCB destruction methods be demonstrated to achieve a 99.9999% level of destruction.

11. SKORC has developed and filed with U.S. EPA a closure plan and cost estimate for the PCB storage and handling areas and the re-refining system. This plan includes procedures and costs for the decontamination and/or disposal of PCB contaminated equipment, structures and process materials to assure that no PCBs are present after closure.
12. SKORC has filed with U.S. EPA, the necessary financial assurance for closure. The closure plan, closure cost estimate and the provisions for financial assurance for closure are in accordance with 40 CFR §761.65(e), (f), and (g), respectively, and account for the proper closure of the PCB storage and handling areas and the re-refining system, and for the disposal of any stored PCB waste.
13. Pursuant to 40 CFR §761.60(e) and the aforementioned findings, U.S. EPA has determined that SKORC's re-refining process, when operated under the conditions of approval as described below, does not present an unreasonable risk to health or the environment.
14. Pursuant to 40 CFR §761.65 and the aforementioned findings, U.S. EPA has determined that the final revised application is in compliance with the regulatory requirements for the commercial storage of PCB waste.
15. SKORC's re-refining process results in the production of lubricating oils that meet the Society of Automotive Engineers (SAE) and American Petroleum Institute (API) specifications. By this process, the PCB contaminated waste oil collected is treated and reused as a lubricant, a fuel or an asphalt extender. The recycle/reuse of the PCB contaminated used oil after treatment through SKORC's re-refining system is an effective technique that benefits the society and the environment through the minimization of PCB waste materials requiring ultimate disposal and through the beneficial reuse of a valuable resource, oil.

CONDITIONS OF APPROVALSITE LOCATION

1. The operation of the authorized re-refining process, which is an alternate method of disposing PCBs, and the storage of PCB waste shall be carried out at the Safety-Kleen Oil Recovery Company (SKORC) located at 601 Riley Road, East Chicago, Indiana.

SCOPE OF WORK

2. SKORC is permitted during this authorization period to do the following:
  - a. Store PCB contaminated waste oil in the designated guard tanks in Tank Farms #1 and # 2 and PCB containerized waste in the PCB waste storage area located at Plant 1, ~~as identified in its application~~, subject to the terms and conditions of this approval and the Federal PCB regulations at 40 CFR Part 761. Any storage of PCBs and/or PCB items not authorized in this approval is prohibited.
  - b. Process PCB contaminated waste oil subject to the terms and conditions contained in this approval and in conformance with its application. The PCB contaminated waste oil will be processed and disposed of using the catalytic hydrotreating system normally used in the re-refining process of used oil.
  - c. Reuse and distribute in commerce the treated products, containing less than 2 ppm PCBs.

COMPLIANCE WITH REGULATIONS

3. This approval does not relieve SKORC from compliance with the Federal PCB regulations, at 40 CFR Part 761.

Compliance with these Conditions of Approval does not establish a defense to any other law that provides protection from any unreasonable risk to public health and the environment, including the Federal PCB regulations at 40 CFR Part 761.

Issuance of this approval does not convey property rights or any exclusive privilege, nor does it authorize any injury

to persons such as SKORC employees, agents or contractors, any property damage, any invasion of other private rights or any infringement of State or local laws or regulations.

#### COMPLIANCE WITH OTHER GOVERNMENTAL REQUIREMENTS

4. SKORC must obtain all necessary approvals from other Federal, State and local agencies prior to the storage and processing of PCB contaminated waste oil.
5. SKORC must comply with all applicable Federal, State and local health, safety and environmental requirements and regulations.

#### PCB STORAGE MANAGEMENT

6. All PCB waste must be stored in the approved curbed storage areas and containers as identified in the final approved application and as described below.

SKORC must not commingle reactive/ignitable waste with PCB contaminated waste oil after it is received.

7. SKORC shall store the PCB contaminated waste oils only in the authorized tanks listed below. All PCB storage/guard tanks must be maintained in accordance with the requirements specified in 40 CFR §761.65(c)(7).

Tanks approved for storage of PCB contaminated waste oils include:

Tanks 101, 102, 103, 104, 105, 106, 107, 108, 110, 111 and 112: closed top 29,600 gallon tanks constructed of carbon steel.

Tank 109: closed top 20,400 gallon tank constructed of carbon steel.

Tanks 120 and 121: closed top 15,500 gallon tanks constructed of carbon steel.

After storing PCB contaminated oil and prior to storing non-PCB waste oil, SKORC must remove all free flowing liquid from the bulk container, including liquid which is below the "pick-up" pipe utilized in operation to drain the tank.

In addition, SKORC must sample the heel from the tank as describe in Condition 47 and in Attachment V of the Approval.

SKORC must sample all liquid materials that are stored in any of the above tanks which were not treated in the re-refining system. Each tank must be sampled for PCBs individually, prior to removing the liquid materials from the tank for off-site shipment. If the PCB concentration of the liquid materials is 2 ppm or greater, then the liquid must be considered and handled as regulated TSCA waste. If the PCB concentration of the liquid material is less than 2 ppm, the liquid does not have to be considered and handled as regulated TSCA waste.

8. At any one time, SKORC shall store no more than 376,600 gallons of PCB contaminated waste oils in the authorized tanks listed above. SKORC must not store PCB contaminated waste oils in railcars or trailers for over 72 hours, unless approval is granted by the Director, Waste, Pesticides and Toxics Division, U.S. EPA, Region 5.
9. All non-liquid PCB waste (i.e, protective clothing, absorbents, sample jars) generated as a result of sampling and any spill cleanup, must be stored in containers that meet the requirements of 40 CFR §761.65(c)(6) or the Shipping Container Specification of the Department of Transportation (DOT), 49 CFR Part 178. The PCB containerized waste must be stored in the PCB waste storage area located at Plant 1 as described in the approved application. SKORC must not store more than 3,575 gallons (65 55-gallon drums or equivalent) of PCB waste at any one time in the PCB waste storage area.

PCB containers used by SKORC for the storage of non-liquid PCB waste must be no larger than a 55-gallon drum. However, when it is necessary to repack a drum, SKORC may use an 85-gallon overpack container or other DOT approved container.

10. The storage area for PCB containerized waste must be maintained in accordance with the requirements at 40 CFR §761.65(b)(1) and as specified in the approved application.

Aisle space within the storage area must be maintained at all times to allow unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment.

SKORC must not stack PCB drums.

11. SKORC can not commence storage of PCB waste oil in storage tanks not identified in Condition 7, until it has notified the U.S. EPA in writing and received written approval from the Director, Waste, Pesticides and Toxics Division, U.S. EPA, Region 5, authorizing the new tanks for PCB storage.
12. SKORC must notify the U.S. EPA Regional Office, Toxics Program Section at (312) 886-1334, within three days upon discovery that the site has been redesignated as being in a 100-year flood plain.

#### GENERAL OPERATION

13. During the authorized period of this approval, SKORC must properly operate and maintain its designated PCB storage tanks, PCB waste storage area; and its re-refining system and controls, as well as any related appurtenances, which are installed or used to achieve compliance with the conditions of this approval.
14. SKORC must perform scheduled inspections and maintenance as included in the Inspection Plan, Appendix E of the TSCA application and those described in the Vessel Inspection Procedure. The frequency of inspection and testing of process equipment shall be consistent with applicable manufacturers' recommendations, industry standards and good engineering practices.
15. SKORC must maintain and operate the facility to prevent fire, explosion, or releases of PCBs to air, soil, ground water or surface water. SKORC shall ensure that each employee involved in the operation of the process and maintenance of the process equipment is appropriately trained and competent to perform his or her task in a safe manner.

16. All transport vehicles owned by the company used for the transport of PCB contaminated waste oils must be properly maintained and inspected as required by the applicable Department of Transportation regulations.
17. SKORC is responsible for the actions of all employees, agents, contractors or others involved in commercially storing and processing PCB contaminated waste oils at the facility.

SKORC must educate its employees, agents and contractors, including those involved in the procurement of PCB contaminated waste oil, regarding the conditions of this permit insofar as those conditions may affect the duties and responsibilities of employees, agents and contractors.

#### WASTE ACCEPTANCE

18. SKORC must determine the PCB concentration of any waste oil accepted by the facility. PCB testing must be performed using either individual waste oil samples or waste oil composites of incoming loads, as specified in ATTACHMENT III.

Analysis of the samples must be performed in accordance with the analytical methods submitted with the application and described in ATTACHMENT IV.

It will be considered a violation of this condition if SKORC, its employees, its agents, or its contractors solicit the dilution of PCB-containing materials in order to circumvent the requirements of this approval.

19. SKORC is authorized to accept PCB contaminated waste oil at any concentration. SKORC may store the PCB contaminated waste oil prior to shipment offsite to a TSCA approved facility, or may treat it onsite in accordance with this Approval. The storage of the PCB contaminated oil must be in accordance with Conditions 6 through 18 of this Approval.

#### NOTIFICATION

20. Since the re-refining process is normally used for non-PCB waste oil, SKORC must submit a written notification to the

U.S. EPA, Toxics Program Section and other regulating agencies at least thirty days prior to processing PCB contaminated waste oil.

#### FEEDSTOCK LIMITATION

21. The PCB contaminated waste oil must be fed from the storage/guard tanks using a dedicated pump and will be injected into the main used oil feed stream at a controlled rate, downstream of the main feed pumps, such that the maximum PCB concentration in the combined feed stream to the distillation process does not exceed 200 ppm.

A target concentration must be on display at the control room to monitor the concentration of the combined feed to the distillation process, to assure that the concentration does not exceed the 200 ppm PCB limit.

This target concentration is the calculated feed ratio of the PCB contaminated waste oil feed stream to the main used oil feed stream, taking into account the PCB concentration of each stream. The equivalent concentration of PCB at the target concentration must also be on display.

22. SKORC must install check valves on the discharges of the feed pumps and utilize a flow control scheme that will prevent the back flow of PCB contaminated waste oil to the main used oil feed tank.
23. SKORC is authorized to process PCB contaminated waste oil on a batch basis. A batch is a predetermined amount of PCB contaminated oil. The maximum amount of PCB contaminated oil that can be processed in a batch is 376,600 gallons, which is also the maximum amount of PCB contaminated oil that can be stored by SKORC under this Approval. If SKORC can arrange for additional PCB contaminated waste oil to be transported to the facility and processed during the same batch, SKORC must obtain approval from the Director, Waste, Pesticides and Toxics Division, U.S. EPA, Region 5.
24. The water content of the combined feed to the dehydration unit must not exceed 35%.
25. The combined feed to the distillation process must be measured and sampled for PCBs according to ATTACHMENT II of this approval.



26. After processing the PCB contaminated waste oil, rinsates<sup>1</sup> from the decontamination of storage tanks must be fed to the distillation unit and then hydrotreated.

PROCESS LIMITATION

27. The approved standard operating procedures submitted with the application and modified on August 27, 1996, based on the demonstration test must be followed during the processing of the PCB contaminated waste oil.
28. During the processing of the PCB contaminated waste oil, the two by-pass line valves from V-307 must be sealed and locked closed to prevent the off-gas stream from by-passing the process scrubber.
29. SKORC must maintain the following key operating conditions during the processing of PCB contaminated waste oil.

Key Process Variable	Operating Range	Time Limit for Correcting excursion (Before PCB waste oil feed cut-off)	Deviation that would require PCB waste oil feed cut-off (1 minute)
Feed to Pre-treat/dehydration (FI201)	100-190 gpm	5 minutes	---
Feed to Distillation (FI208)	100-180 gpm	5 minutes	---
Feed Concentration to Distillation (FI208)	≤ 200 ppm	---	---
Feed Rate to Evaporator#1 (FI 330)	50-80 gpm	5 minutes	---

<sup>1</sup> Rinsates are not included in the total 376,600 gallons of PCB contaminated waste oil treated per batch as noted in Condition 23.

Key Process Variable	Range	Time Limit for Correcting Excursion (before PCB waste oil feed cut-off)	Deviation that would require PCB waste oil feed cut-off(1 minute)
Light Vacuum Oil Heater Outlet Temp. (TI 3018)	>530°F	5 minutes	---
Light vacuum Tower Pressure (PIC 306)	10-14 mm Hg	15 minutes	4 mm Hg
Medium Vacuum Oil Temp (TI391)	>620 °F	15 minutes	15 °F
Medium Vacuum Oil Evaporator Pressure (PIC 304)	8-12 mm Hg	15 minutes	4 mm Hg
Heavy Vacuum Oil Heater Outlet Temp (TI 392)	>670 °F	5 minutes	10 °F
Heavy Vacuum Oil Evaporator Pressure (PIC 305)	4-6 mm Hg	15 minutes	2 mm Hg
Hydrotreater System Pressure	>800 psi	20 minutes	25 psi
Hydrotreater Feed Rate (FI 404)	≤120 gpm	5 minutes	15 gpm
Reactor R402/403 Temp	>565 °F	5 minutes	10 °F
Reactor R404 Temperature	>570 °F	5 minutes	10 °F

During PCB processing, SKORC must continuously monitor and record all of the above KEY OPERATING CONDITIONS by means of an on-line computer system. SKORC must install alarms, set at the range limits given above, which will sound in the

control room if process conditions reach or fall outside the range limits. During an upset condition, the operator at the control room must take corrective action to return the operating condition to the operating limits. In the event that the operating conditions can not be restored within the time limit indicated above, the PCB waste oil feed must be cut-off. If the operating range deviates to the extent indicated above, the PCB feed must be cut-off within one minute.

SKORC must maintain a record of any upset condition. The operator must follow the shutdown procedures, in the event of an emergency shutdown.

30. If during the processing of PCB waste oil, it is determined by SKORC or a federal, state, and local authority that an odorous compound is released from the PCB processing that would affect East Chicago or any other neighboring community, SKORC must cut off the PCB feed immediately upon that determination being made and must implement corrective action. SKORC must notify the U.S. EPA, state and local authority within the hour of any such determination.
31. During the distillation of the PCB contaminated waste oil, the temperature of the heat transfer fluid to the evaporator, measured at TI 392, must be maintained at 670°F or greater.

#### ALLOWABLE PCB RESIDUALS

32. The final product streams and by-product streams of the re-refining system must have PCB residues or PCB concentrations less than those shown below to be considered non-PCBs.

Liquids (oil).....	2.0 ppm
Asphalt extender.....	2.0 ppm
Ethylene glycol.....	2.0 ppm
Wastewater <sup>2</sup> .....	(see footnote 2)

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<sup>2</sup> SKORC must meet the East Chicago Sanitary District Industrial Wastewater Pretreatment Approval.

These levels are based on those required for other federally approved detoxification or removal methods. A process meeting these maximum limits in the final product streams and by-product streams is considered to have a level of performance equivalent to that of required thermal destruction methods (incinerators and high efficiency boilers). Also, the process must not present an unreasonable risk of injury to health or the environment.

#### PROCESS STREAMS DISPOSITION

33. All process streams from the distillation process such as fuel oil, light vacuum oil, medium vacuum oil, heavy vacuum oil, asphalt, ethylene glycol, and dehydration fuel must be collected and stored in separate storage tanks and sampled in accordance with Attachment II.
34. If a result of 2 ppm PCBs or greater is detected in the glycol stream, the glycol rundown tanks must be segregated for reprocessing in the distillation system.
35. If a result of 2 ppm PCBs or greater is detected in the asphalt stream, the asphalt rundown tanks must be segregated and reprocessed in the distillation system.
36. The light, medium and heavy vacuum oils from the distillation process listed in Condition 33 must be hydrotreated for PCB processing. Any fuel oil recovered from the distillation process that contains 2 ppm PCBs or greater must be hydrotreated.
37. The final hydrotreated lubricating oil products must be collected and stored in separate storage tanks until the PCB concentration has been verified. Process streams generated from the hydrotreatment process (such as kerosene, spindle oil and spent caustic) must be collected and stored in separate storage tanks until the PCB concentration has been verified.
38. During the processing of the PCB contaminated waste oil, all process water (dehydration water, ejector seal water, hydrotreater steam stripper overhead boot water and the vacuum fuel oil stripper water) must be fed to the Light Ends Recovery Tower (LERT) and collected in the Emulsion Breaking tanks for PCB sampling.

39. Process streams generated during the processing of the rinsates from the decontamination of storage tanks and piping systems may be collected and stored in the storage tanks with the same process stream generated during the processing of the PCB contaminated waste oil.
40. Any liquid fuel process stream generated during the PCB processing must not be used as a fuel or sold until it has been tested to meet the requirement in Condition 32.
41. The final disposition (such as on or off-site use or disposal) of all streams generated during the processing of the PCB contaminated waste oil will depend upon the analytical results of the samples as required in Condition 32.

#### SAMPLING AND ANALYSIS OF PROCESS STREAMS

42. Process streams identified in the flow chart in ATTACHMENT I of this Approval, and generated during the processing of the PCB contaminated waste oil, and rinsates from the decontamination of storage tanks and of the re-refining system, must be sampled for PCBs at the specified sampling point and frequency specified in ATTACHMENT II of this Approval.  
  
SKORC must conduct sampling in accordance with the procedures described in the approved PCB Processing Training Manual and Quality Assurance Manual in Appendix C of the approved application.
43. The processed wastewater must be collected, sampled and analyzed for PCBs prior to being sent to SKORC's wastewater treatment plant. Wastewater from the Emulsion Breaking tanks must not be discharged into the SKORC's Wastewater Treatment Plant, until the PCB concentration has been verified and found acceptable in accordance with the East Chicago Sanitary District Industrial Wastewater Pre-treatment Permit Standard.
44. SKORC must conduct all additional PCB sampling required in its discharge permit from the East Chicago Sanitary District during the processing of the PCB contaminated waste oil.
45. The analyses of all samples must be conducted in accordance with the methodologies listed in ATTACHMENT IV of this Approval and the quality assurance/quality control plan

submitted by SKORC and approved by the U.S. EPA. SKORC must obtain an approval from the U.S. EPA before implementing any modification in the methodologies listed in ATTACHMENT IV.

46. Upon request, SKORC must provide U.S. EPA with process stream sample material. The U.S. EPA will spike this material. SKORC must analyze the spiked samples and submit the results to U.S. EPA within seven (7) days of receipt of the samples.

#### DECONTAMINATION

47. After processing or storing PCB contaminated waste oil, but prior to processing or storing any non-PCB liquid, SKORC must follow the decontamination and sample verification procedures outlined in ATTACHMENT V.

After completing the necessary rinses, SKORC must sample the heel in the bottom of the bulk containers for PCBs. If the PCB concentration is less than 50 ppm, the heels may be left in the bulk container. If the PCB concentration is equal to or greater than 50 ppm, the heel must be disposed of in accordance with the applicable Federal and State regulations (40 CFR 761.60 and 329 IAC 4-1-5(7)).

U.S. EPA will consider alternative sampling and handling procedures using a statistical analysis of the sample results generated from sampling the heels after the first and second batches of oil have been processed.

Alternative sampling procedure for the heel will include a maximum PCB concentration limit depending upon the statistical analysis of the sampling results. For tanks which store oil with PCB concentration less than the maximum limit, the heel can be sampled in accordance with the statistically based alternative sampling procedure. For tanks which store oil with PCB concentration above the maximum limit, the heel must be sampled each time the tank is decontaminated. This maximum limit may be increased if SKORC can statistically demonstrate that the decontamination procedure can effectively remove PCBs from the heel resulting from storage of oil with higher PCB concentration.

48. SKORC shall store PCB contaminated rinsates from tank cars and railcars only in the tanks designated in Condition 7.

49. Rinsates that exceed the PCB concentrations detailed in Condition 32 are regulated and must be managed as PCB contaminated material and must be processed in the re-refining system in accordance with Conditions 26 through 42 and 45 or transported off-site to a TSCA-approved disposal facility.
50. In the event that a catalyst change is necessary, the hydrotreater will be put on recycle using non-PCB oil prior to switching reactors. No PCB oil will be fed to the hydrotreater. The outcoming stream from the reactor must be sampled for PCBs. Recycling will continue until three consecutive sample results are non-detect for PCBs at a detection limit of 2 ppm.

#### DISPOSAL

51. Should the concentration of PCBs in the lubricating oils, kerosene, spindle oil and spent caustic remain at 2 ppm or greater after hydrotreating, the oil must be either reprocessed and shown to contain less than 2 ppm PCBs or disposed of in a TSCA approved disposal facility.
52. If the asphalt residues or ethylene glycol contain 2 ppm PCBs or greater, they must be either reprocessed and shown to contain less than 2 ppm PCBs or disposed of in a TSCA approved disposal facility.
53. Any debris or solid wastes generated as laboratory wastes or as a result of a cleanup or decontamination of a PCB spill, must be disposed of in a TSCA approved landfill or incinerator in accordance with the applicable Federal regulations, 40 CFR §761.60 et seq.
54. SKORC must sample the heel for PCBs and for hazardous waste characterization specified in 40 CFR 262.11 any time it is removed for disposal. If the heel has a PCB concentration equal to or greater than 2 ppm and is a hazardous waste, the heel must be disposed of in a TSCA/RCRA approved disposal facility. If the heel has a PCB concentration of less than 2 ppm, it may be burned for energy recovery as regulated used oil. If the heel has a PCB concentration less than 2 ppm and is not a hazardous waste, it must be disposed of as a "Special Waste" in accordance with the Indiana Solid Waste Management Regulations (329IAC 10-8.1), if landfilled in Indiana.

HEALTH, SAFETY AND SPILLS

55. SKORC must implement the training program described in the PCB Processing Training Manual submitted with the TSCA application and approved by the U.S. EPA. SKORC must provide adequate protection to its workers from exposure to PCBs.
56. SKORC is responsible for ensuring that personnel who are directly involved with handling PCBs and PCB items are familiar with the requirements of this approval, and the regulatory requirements under 40 CFR Part 761.
57. SKORC will develop and implement a risk management program that includes a hazard assessment, a prevention program, and an emergency response program. The risk management program must be described in a Risk Management Plan(RMP) and must be submitted to U.S. EPA by January 31, 1999. The U.S. EPA will determine the adequacy of the RMP by reference to relevant and appropriate standards under the Clean AIR ACT(CAA)112(r) and OSHA's 29 CFR 1910.119 as guidelines. The RMP will be made available to the public and local agencies upon approval by the U.S. EPA.
58. If, in the course of this authorized operation, there is a spill or release of the equivalent of 1 pound or more of pure PCBs, a reportable quantity (RQ), SKORC must notify the National Response Center at (800) 424-8802 and the U.S. EPA, Region 5, Toxics Program Section, at (312)886-1334. Releases or spills of PCBs below the RQ, which pose a potential for significant exposure to humans, animals or the environment, shall be reported to the U.S. EPA, Region 5, Toxics Program Section, at 312) 886-1334, or the Emergency Response Section at (312) 353-2318.
59. Cleanup of PCB spills must begin immediately pursuant to 40 CFR Part 761, Subpart G (PCB Spill Cleanup Policy). Any debris or solid wastes generated as a result of clean up or decontamination of a PCB spill or release must be disposed of in a facility approved to dispose of PCBs under 40 CFR §761.60. Cleanup includes any areas impacted by the spill which may include containment areas, sumps and drainage system.



60. Those injuries or illnesses directly related to PCB exposure, or which result from spills or handling of PCBs during the authorized work period, must be reported to the U.S. EPA Region 5, Toxics Program Section.
61. Upon any unplanned suspension of the operation of the re-refining system which results in the shutdown of the facility during the processing of PCBs, SKORC must prepare a document which shall include, at a minimum, the date and time of the suspension and an explanation of the circumstances causing the suspension of the operation. The document shall be sent to the U.S. EPA, Region 5, Toxics Program Section within thirty (30) days of any such suspension.
62. SKORC must prepare a written report for each spill and injury/illness incident as required to be reported in Conditions 58 and 60. The report must include a description of the incident and the corrective measures or treatment provided. Within 5 days of completing the corrective measures and/or treatment, SKORC must submit the report to:

Toxics Program Section (DT-8J)  
Pesticides and Toxic Substances Branch  
U.S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

63. SKORC must implement, once a month during the processing of PCBs and every three (3) months during storage of PCBs, the approved Sampling Plan for Monitoring Surface Contamination Outside of the PCB Management Areas during the processing of PCBs. In the event that any measurement exceeds 10 ug/100 cm<sup>2</sup>, SKORC will implement its action plan for decontamination and retesting.

#### EMERGENCY PROCEDURES

64. SKORC must, without delay, implement the appropriate measures described in ATTACHMENT F of the TSCA application (SPCC and Contingency Plan) whenever there is a fire or any PCB related emergency which could threaten health or the environment. A copy of these plans along with a copy of this Approval must be kept on-site in an area accessible to employees who handle PCBs. These plans must be maintained at the facility and must also be submitted to the local police and fire departments, and State and local emergency

response teams. In such an emergency or in the case of any fire, SKORC must notify the U.S. EPA Region 5, Toxics Program Section, (312) 886-1334, or the Emergency Response Section at (312) 353-2318.

The plans must be immediately amended by SKORC upon any change of emergency equipment, or any change within the facility or with personnel affecting the plans. The amendments to the plans must be promptly submitted to the U.S. EPA, Region 5, Toxics Program Section.

65. SKORC shall maintain in good working condition the following emergency equipment:
- a. internal communication or alarms capable of providing immediate emergency notification to facility personnel;
  - b. portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment; and
  - c. water at adequate volume and pressure to supply fire hose streams for foam equipment.

SKORC must test and/or check monthly the equipment specified above to assure its proper operation. A record of the monthly inspection must be maintained by the facility.

66. SKORC must maintain adequately trained emergency coordinators who shall be available or on-call at all times during processing and storage of PCBs to direct emergency procedures as outlined in the Contingency Plan. Emergency contacts, telephone numbers and emergency exit routes shall be posted in prominent locations throughout the facility.

#### FACILITY SECURITY

67. The SKORC site, including the re-refining system and storage areas, must be secured (e.g, alarm systems, controlled passageways, etc,) to restrict public access.

COMPLIANCE WITH REGULATIONS

68. SKORC must comply in particular with the following sections of the Federal PCB regulations, where applicable. Compliance with these Conditions of Approval does not establish a defense to any other law that provides protection from any unreasonable risk to public health and the environment, including the Federal PCB regulations at 40 CFR Part 761.
- a. 40 CFR Section 761.40 - marking;
  - b. 40 CFR Section 761.60 - disposal;
  - c. 40 CFR Section 761.65 - storage for disposal;
  - d. 40 CFR Section 761.79 - decontamination;
  - e. 40 CFR Section 761.123 - definitions;
  - f. 40 CFR Section 761.125 - spill cleanup;
  - g. 40 CFR Section 761.130 - sampling;
  - h. 40 CFR Section 761.180 - records and monitoring; and
  - i. 40 CFR Section 761 Subpart K - PCB waste disposal records and reports.

RECORDKEEPING/MONITORING

69. SKORC must develop and maintain the following records for each batch of PCB contaminated waste oil processed:
- a. quantity and concentration of PCB contaminated waste oil received at the facility and blended to make the batch,
  - b. quantity and concentration of the feed to the distillation system,
  - c. key operating conditions as generated during the processing of the PCB contaminated oil stored electronically or on a hard copy,
  - d. process operating log as described in Appendix D included in the approved application,
  - e. quantity and concentration of final products (e.g. lube oil, kerosene and spindle oil) and by-products (e.g. ethylene glycol and asphalt)
  - f. PCB analytical test results, including copies of the gas chromatograph from analyses conducted to determine that the PCB concentration of the final products and by-products is less than 2 ppm, and

- g. the name and address of the person or facility, if known, whose PCB contaminated waste oil was included in each batch processed.

SKORC must maintain these records for a minimum of five years after the facility has finished processing or storing PCBs and PCB Items for each batch that the records relate to. These records must be kept at the facility and must be made available for inspection by authorized representatives of the U.S. EPA.

70. SKORC must maintain daily inventories of PCBs in storage. The inventories must include: the quantity of PCB waste received, the amount processed on site, the types and quantities shipped off-site, and the PCBs remaining in storage.

In addition, an annual report, as required at 40 CFR §761.180(b), must be submitted to the Toxics Program Section by July 15 for the previous calendar year.

71. SKORC must maintain the records of daily storage inspection, as specified in Condition 14 of this Approval, and these records must be made available to U.S. EPA upon request.
72. Following each spill cleanup action, SKORC must develop and maintain records of the cleanup in accordance with 40 CFR §761.125(c)(5).
73. SKORC must retain all records required by this Approval or the Federal PCB regulations at 40 CFR Part 761 during the course of any unresolved enforcement action regarding the facility or upon request by the Regional Administrator, notwithstanding any other provision of this approval or the Federal PCB regulations at 40 CFR Part 761.

#### CERTIFICATE OF DISPOSAL

74. SKORC must prepare a Certificate of Disposal for the PCB contaminated waste oil disposed of at the facility as required in 40 CFR §761.218.

#### PROCESS MODIFICATION

75. SKORC must notify U.S. EPA in writing of any intended modification of this Approval or SKORC's final approved application. A "major modification" is defined as any

change in capacity, design, efficiency, type of catalyst or change in the storage areas, the maximum PCB storage inventory, or the closure plan, or any other changes which affect overall performance or environmental impact. A change in "type of catalyst" is defined as a change to use of catalyst different from the Hydro-Desulfurization/Hydro-Denitrification Alumina Hydroxide Based catalyst used during the demonstration of the process. A major modification to this Approval or the final application shall be made only after written approval by the Regional Administrator. A "minor modification" is defined as administrative and informational changes, correction to typographical errors, changes to conform with agency guidance or regulations, or any other change which does not affect overall performance or environmental impact. A minor modification to this approval or the final application shall be made only after written concurrence by the Waste, Pesticides and Toxics Division Director of U.S. EPA, Region 5.

#### INSPECTION

76. The U.S. EPA reserves the right for its authorized representatives to observe the processing of PCB contaminated waste oil, perform inspections of SKORC's property and activities, take samples, and inspect and request copies of records that must be maintained under the PCB regulations and this Approval. These activities will be conducted during normal operations and at other reasonable times.

#### CLOSURE AND FINANCIAL REQUIREMENTS

77. SKORC must maintain a closure plan, a closure cost estimate, and financial assurance for closure, in accordance with 40 CFR §761.65(e), (f) and (g), respectively. The facility has filed with the Regional Administrator a closure plan and financial assurance for closure. Financial assurance shall be maintained to provide for funding of proper closure of the facility. The closure plan shall include the decontamination and/or disposal in a TSCA approved disposal facility of PCB contaminated equipment and materials.
78. When the Regional Administrator approves a modification to the facility's closure plan and that modification increases the cost of closure, SKORC shall revise the closure cost

estimate and the financial assurance mechanism, if applicable, no later than thirty (30) days after the modification is approved.

79. SKORC shall update the Closure Cost Estimate annually for inflation and to reflect changes beyond the control of SKORC which may effect disposal.

#### TRANSFER OF OWNERSHIP

80. SKORC must notify the U.S. EPA at least ninety (90) days before transferring the ownership of the facility. In addition, SKORC must notify the state and local authorities of the transfer of ownership.
81. The U.S. EPA will recognize the transfer of this approval to a new owner/operator if all of the following conditions are met:
- a. The transferee has established, within 30 days from the date of transfer, financial assurance for closure of the facility pursuant to 40 CFR Section 761.65(g) using a mechanism under which there will be no lapse in financial assurance for closure of the transferred facility.
  - b. The transferee submits an amended or new and complete application for final storage and disposal approval including all the elements listed in 40 CFR §761.65(d).
  - c. The transferee submits a signed and notarized affidavit which states that the transferee shall comply with all the terms and conditions of this Approval.

Failure by SKORC or the transferee to comply with any provision of these conditions shall render this approval null and void.

#### SEVERABILITY

82. The conditions of this Approval are severable, and if any provision of this Approval or any application of any provision is held invalid, the remainder of this Approval shall not be affected thereby.

APPROVAL REVOCATION/SUSPENSION/CANCELLATION

83. Failure to comply with the conditions of this Approval, the approved application or approved modification(s) to this Approval, any Federal or State or local statute or regulation may result in the immediate suspension of this Approval and/or the commencement of proceedings to revoke this Approval and/or appropriate enforcement action under all applicable statutes and regulations. This Approval may be suspended or revoked at any time by U.S. EPA when it has reason to believe that the continued operation of the facility presents an unreasonable risk to health or the environment.

EXPIRATION/RENEWAL

84. This Approval shall expire five (5) years from the time this Approval has been signed by the Regional Administrator. To continue operations granted by this Approval after the expiration date, SKORC must submit a written notice of intent to continue the Approval to U.S. EPA at least 180 days, but not more than 270 days prior to the expiration date of this Approval.

This Approval and its conditions herein will remain in effect beyond the approval expiration date if SKORC has submitted a timely and complete notice of intent to continue the Approval and, through no fault of SKORC, the Regional Administrator has not issued an approval renewal.

The U.S. EPA may require SKORC to submit additional information and/or conduct additional tests of SKORC's re-refining process in connection with the renewal of this Approval.

**APPROVAL**

1. Approval to store and dispose of PCB contaminated waste oil by a re-refining process is hereby granted to Safety-Kleen Oil Recovery Company (SKORC) of East Chicago, Indiana, subject to the conditions expressed herein, and consistent with the material and data included in the company's application and additional information filed by the company. The U.S. EPA reserves the right to impose additional conditions when it has reason to believe that the continued operation of the SKORC's PCB storage areas and its re-refining system present an unreasonable risk to public health or the environment, when new information requires changes, or when U.S. EPA issues new regulations or standards for issuing approvals.

Any departure from the conditions of this Approval or the terms expressed in the application must receive the prior written authorization of the Regional Administrator, except as otherwise provided in this approval. In this context, "application" shall be defined as all data and materials which have been received by this Agency from SKORC regarding its system and operations.

2. This Approval to store and dispose PCB contaminated waste oil through the re-refining process does not relieve SKORC of its responsibility to comply with all applicable Federal, State and local regulations. Violations of any applicable Federal regulations will subject SKORC to enforcement action, and may result in termination of this Approval. This Approval may be rescinded at any time for failure to comply with the terms and conditions herein, failure to disclose all relevant facts, or for any other reason as the Regional Administrator deems appropriate to protect health or the environment.

In the event that these approval conditions are inconsistent with the final approved application, SKORC must abide by the approval conditions stated herein.

3. SKORC is responsible for the actions of any of its authorized employees, contractors and agents when those actions are within the scope of operating or administering the overall operation of its disposal and storage facility.



In addition, SKORC must assume full responsibility for compliance with all applicable Federal, State and local regulations including, but not limited to any advance or emergency notification and accident reporting requirements.

4. U.S. EPA reserves the right for its employees or agents to inspect SKORC disposal and storage activities during operation and at other reasonable times. U.S. EPA also reserves all legal rights available under all applicable statutes and regulations.
5. U.S. EPA reserves the right to withdraw this Approval or impose further restrictions or limitations as the result of any further U.S. EPA rulemaking with respect to PCBs.
6. Any and all information required to be maintained or submitted pursuant to this Approval is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 et seq., because it is information collected by U.S. EPA from a specific individual or entity for the purpose of assuring compliance with this Approval.

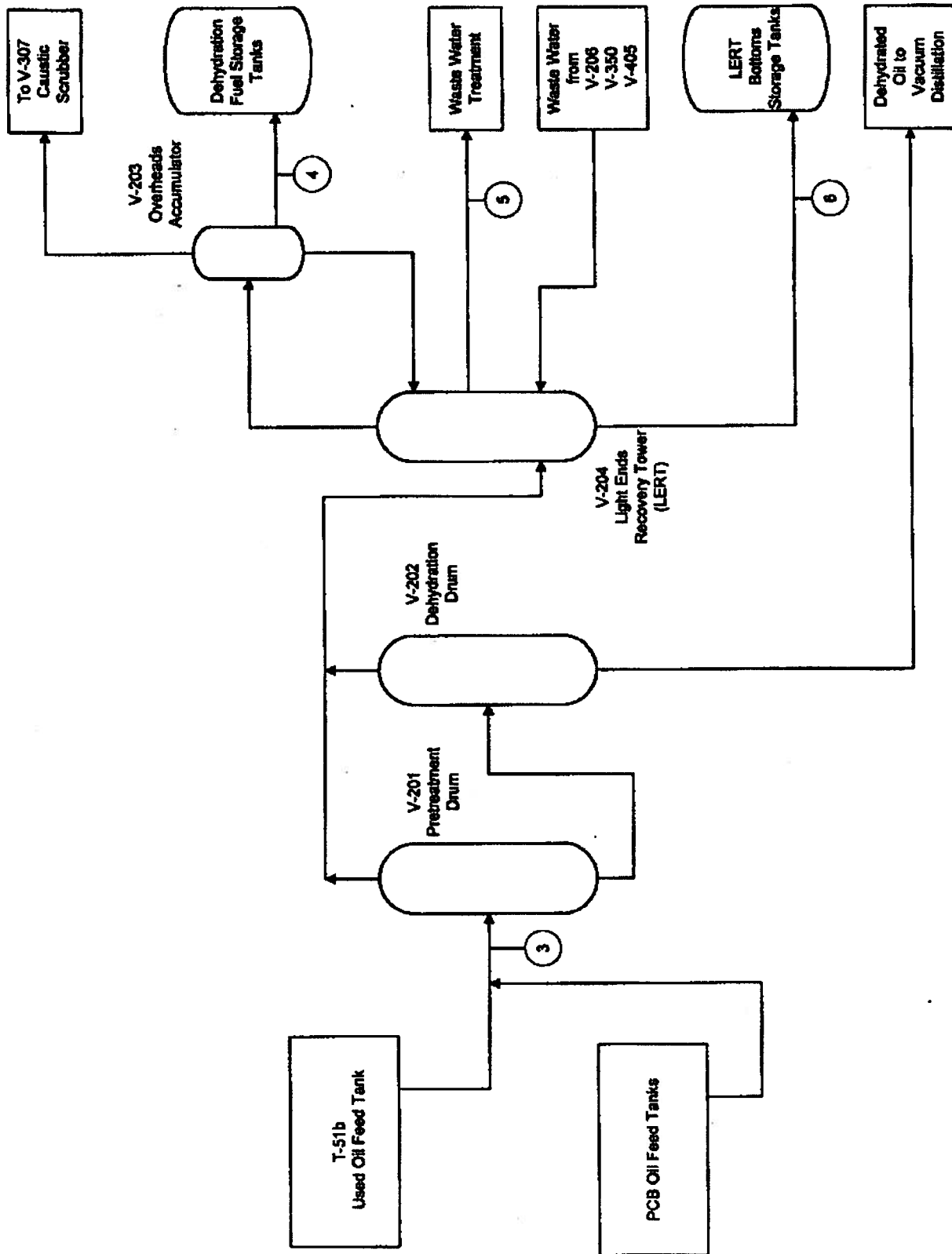


David A. Ullrich  
Acting Regional Administrator  
U.S. EPA Region 5

10/2/98  
Date

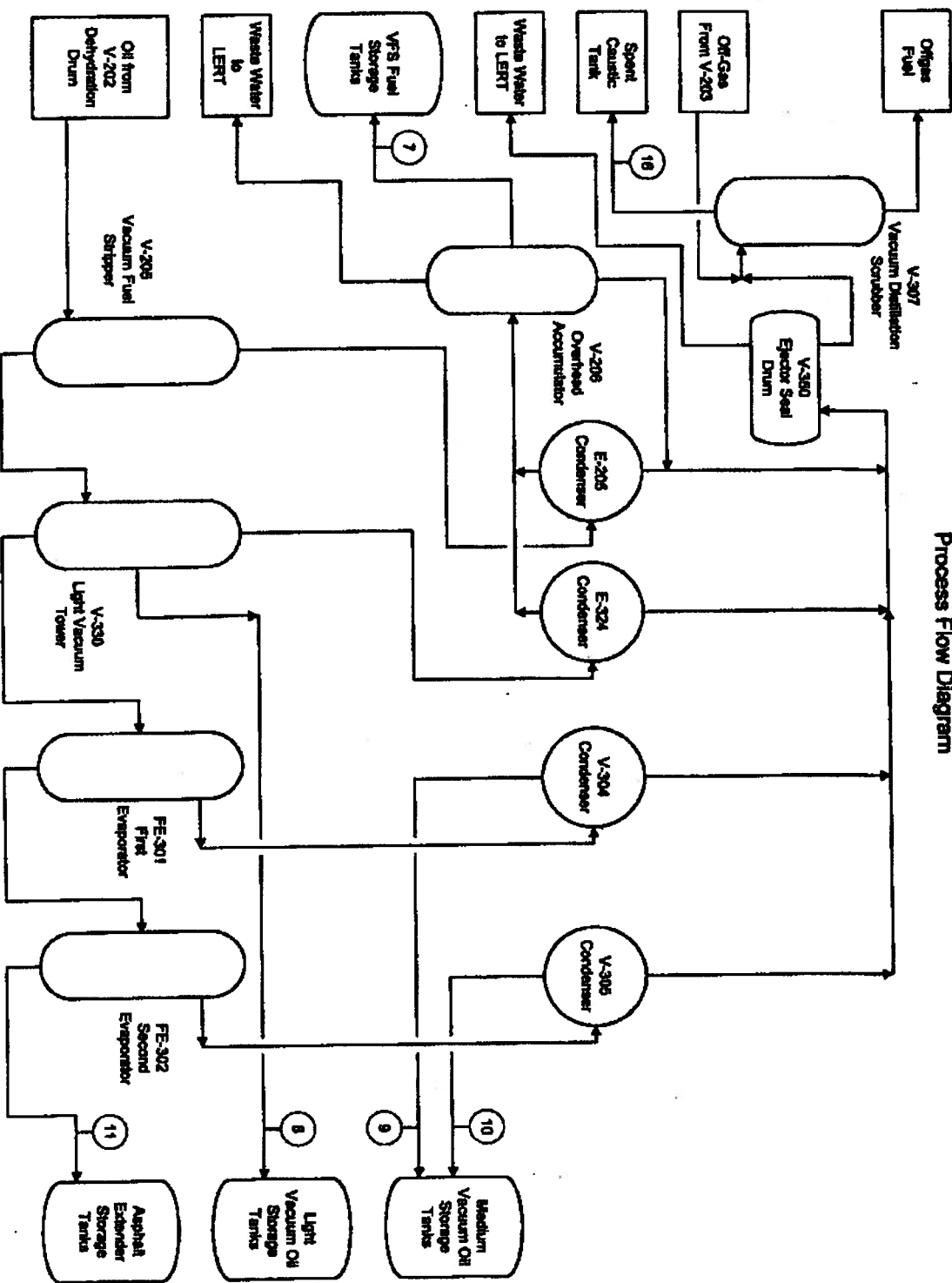
ATTACHMENT 1

Dehydration  
Process Flow Diagram



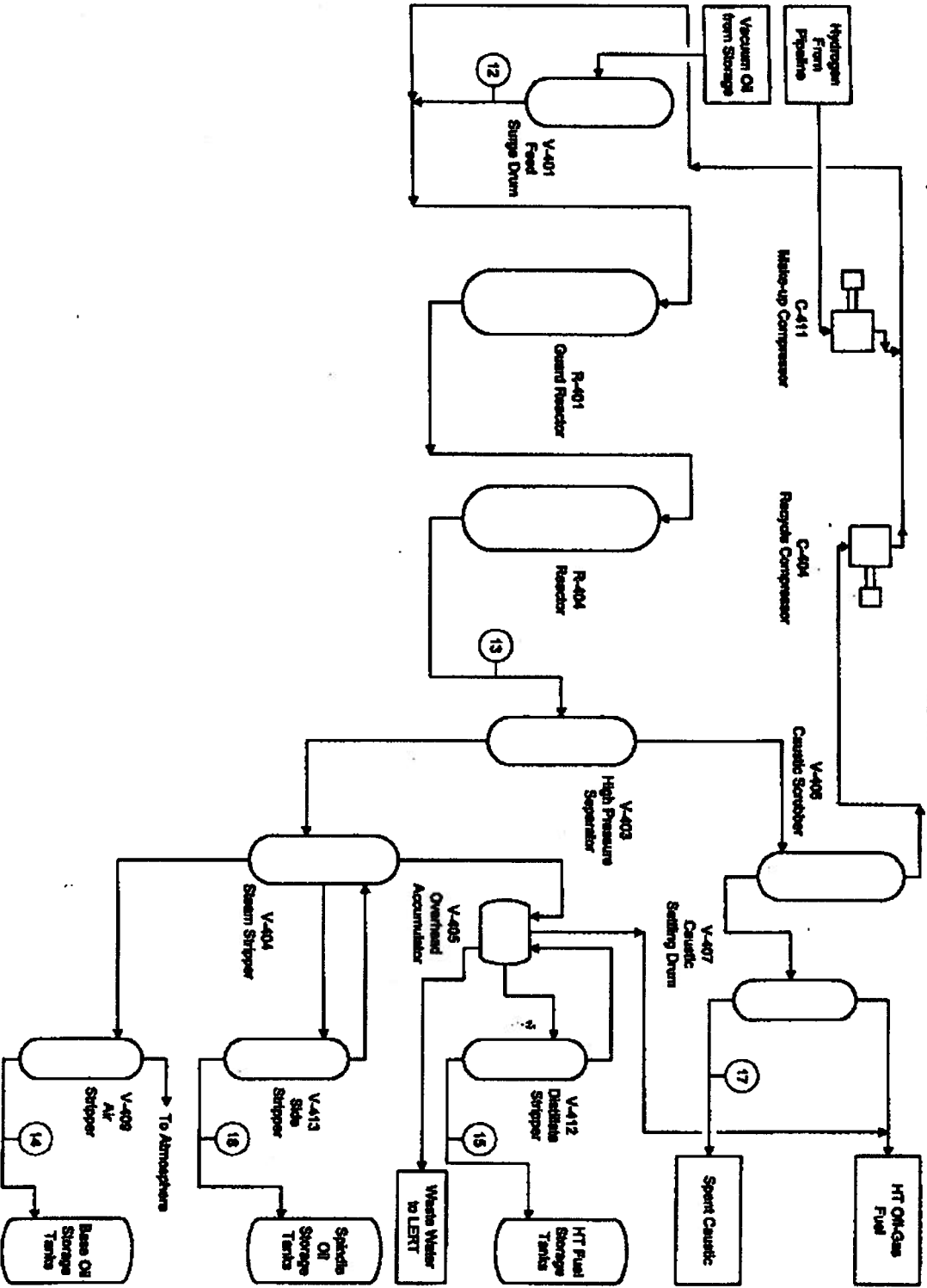
ATTACHMENT 1

Vacuum Distillation  
Process Flow Diagram



ATTACHMENT 1

Hydrotreater  
Process Flow Diagram



## ATTACHMENT II

The sampling procedure and frequency described below shall be implemented for every 376,600 gallons of feed into the distillation process.

Sample # and I.D.	Sampling Frequency	Sampling Method	Acceptable Limits
1. Waste Receipt	each shipment	coliwasa	
2. Receiving Guard Tank	each guard tank	grab sample	
3. Feed to Pre-treatment tank V-201	Every six (6) hours during processing of PCB contaminated waste oil	grab sample	200 ppm PCBs  (Feed ratio will be calculated and a target concentration for the maximum limit will be on display at the control room)
4. Dehydration Overhead Receiver (V-203)	every six (6) hours while processing PCB contaminated waste oil	grab sample to be composited into one sample	< 2 ppm PCBs
5. LERT (V-204)* Dehydration Water	East Chicago Sanitary District Pretreatment Discharge Permit sampling requirement	grab sample	East Chicago Sanitary District Pretreatment Discharge Permit Standard **
6. LERT (V-204) Bottoms (ethylene glycol)	every six (6) hours while processing PCB contaminated waste oil	grab sample	< 2 ppm PCBs
7. VFS Overhead (V-206) Fuel	every six (6) hours while processing PCB contaminated waste oil	grab sample	< 2 ppm PCBs
8. Lite Vacuum Oil (V-330) Rundown	one grab at the mid-point of the processing of PCB contaminated waste oil	grab sample for process control	NA
9. Medium Vacuum Oil Rundown (V-304)	one grab at the mid-point of the processing of PCB contaminated waste oil	grab sample for process control	NA
10. Heavy Vacuum Oil Rundown (V-305)	one grab at the mid-point of the processing of PCB contaminated waste oil	grab sample	NA
11. LUWA Bottoms Asphalt Extender	Every two (2) hours while processing PCB contaminated waste oil	grab sample	< 2 ppm PCBs

### ATTACHMENT III

#### WASTE OIL SAMPLING COLLECTION PROCEDURE FOR PCB ANALYSIS

SKORC must determine the PCB concentration of any waste oil accepted by the facility. Upon receipt of a waste oil shipment, SKORC must collect a sample from each individual load. The two types of waste oil sources for SKORC dictate two different PCB sample collection/analysis techniques, as detailed below. Any changes to this procedure will be considered a minor modification under Condition 75.

1. The waste oil shipments received directly from a non-vehicle waste oil generator or from a distinct industrial customer (not commingled with waste oil from other generator/customers) will be handled in the following manner:
  - a) The waste oil will be held in the transport vehicle until the analytical screening, which includes PCBs, is completed.
  - b) SKORC may analyze each individual load, or composite up to five samples for PCB testing following the compositing procedure of Item 2a below.
  - c) If any of the screening parameters contradict the pre-qualification analysis, then the waste oil may not be offloaded, until SKORC has verified that it is acceptable based on the RCRA/TSCA acceptance criteria.
  - d) If PCBs are 50 ppm or greater in the non-vehicle/industrial load from a single source, the waste oil is considered a TSCA regulated waste.
2. The waste oil shipments collected from Safety-Kleen Systems' branches, where other customers' vehicle and non-vehicle waste oils are commingled, either during collection or when transferred into a tank or railcar for transport to SKORC, must be handled in the following manner:
  - a) If waste oil samples are from an inbound tanker truck SKORC may analyze each individual load, or composite up to five samples for PCB testing.
    - i) The composite sample must only consist of inbound tanker samples.

- ii) The composite sample must be made upon receipt of all inbound tanker samples going into that composite and must not be made over a time period while waiting for additional inbound samples.
  - iii) The actual compositing of the inbound tanker samples must be witnessed and documented by a second individual.
  - iv) A label with a unique identification number must be placed on the composite sample container
- b) If waste oil samples are from an inbound railcar, only a maximum of two (2) samples are allowed in a composite.
- i) The composite must consist only of railcar samples.
  - ii) The composite sample must be made upon receipt of both samples going into the composite and not made over a time period while waiting for additional inbound samples.
  - iii) The actual compositing of the inbound tanker samples must be witnessed and documented by a second individual.
  - iv) A label with a unique identification number must be placed on the composite sample container
- c) A composite is never to consist of inbound and outbound samples together.
- d) A composite is never to consist of railcar and tanker samples together.
- e) Any composite sample made must be recorded in the SKORC's Laboratory's Composite Logbook.
- f) Only one composite type is to be made at a time. No new composite is to be started until the previous composite is completed and labeled.
- 3) If a composite sample contains 2 ppm or more PCBs, SKORC must analyze the retain samples from each load included in the composite. If any retain sample from an individual load contains either  $\geq 10$  ppm but  $< 50$  ppm PCBs in an inbound tanker

truck, or  $\geq 4$  ppm but  $< 50$  ppm PCBs in an inbound rail car, SKORC may treat that particular tanker truck or railcar, including all waste oil mixed with the load in the holding tank, as a non-TSCA waste if it is treated by hydrotreatment.

SKORC shall provide notification to

Toxics Program Section (DT-8J)  
Pesticides and Toxic Substances Branch  
U.S. Environmental Protection Agency  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

within 10 days from the date SKORC determines that retain sample from an individual load contains either  $\geq 10$  ppm but  $< 50$  ppm PCBs in an inbound tanker truck, or  $\geq 4$  ppm but  $< 50$  ppm PCBs in an inbound rail car.



## ATTACHMENT IV

SKORC and/or its contract laboratory must determine the PCB concentration of the feed and all the streams generated during the re-refining of PCB contaminated waste oil and rinsates, as identified in Attachment I and II, by following the methodologies listed below.

### I. Waste Oil, Distillation Products and By-Products,

- a. To determine the PCB level in waste oil, distillation products and by-products, SKORC must use SAFETY-KLEEN Method # 9202 (Rev. 2/98) except for Florisil clean-up of oil sample aliquot diluent. Method 9202 (Rev. 2/98) is an update to SAFETY-KLEEN Method 9202 (Rev. 3/94) that was approved by the U.S. EPA and was utilized during the PCB demonstration of SKORC'S re-refining process. Except for Florisil clean-up, Method 9202 (Rev. 3/94) is SKORC'S Standard Operating Procedure for PCB in waste oil based on, and consistent with guidance, from SW 846 (Update III) Methods 3580A, 3620B, 3660B, 3665A, and 8082.

Future revisions to Safety-kleen Method # 9202 (Rev.2/98) must be reviewed by U.S. EPA to determine if these changes are significant.

- b. In September 1997, SKORC initiated a Florisil clean-up option(1 g Florisil Column) to improve identification of Aroclor PCB products. This technique provides better qualitative PCB identification than the acid-slurry technique of SK Method 9202; however, it has not been documented as part of SKORC'S Method # 9202.

SKORC must provide to U.S. EPA by Novemeber 1, 1998,, recovery data and chromatographic records, using Aroclors 1016 and 1260, for both Florisil clean-up column and slurry techniques, as well as data evaluation. If appropriate data are obtained, the September 1997 Florisil column technique will be appended by SKORC to SK Method #9202 as an approved option for SKORC.

Because of the complexity and interferences for asphalt extender, SKORC shall use the 2 g Florisil column option of SK Method #9202.

- c. The analytical results must be reported as total PCBs (on an oil weight basis), calculated by comparison to Aroclor standards identified by SW-846 (Update III) Method 8082, including Aroclor 1262 and Aroclor 1268. Specific Aroclors used for calculation of total PCBs shall be reported.

Oil weight basis PCB concentrations can be calculated using results from Safety-Kleen Method # 9801, SOP for the Determination of Water in Waste materials Using Karl-Fisher Titration.

- SKORC can change the reporting of total PCBs (on oil weight basis) in the future by following the separation and analysis of multiphasic samples specified by 40 CFR Section 761.61(b)(4)(iii), after U.S. EPA review and approval of a the new SOP.

## II. Wastewater

- a. SKORC must follow the general guidelines set forth in the U.S. EPA SW-846 (Update III) Methods 3500B, 8000B, and 8082. Method 8082 is an update to Method 8081 of Update II and is now written for PCBs only. Update III has deleted PCB determinations from Method 8081.
- b. Sample extraction method must be consistent with the technique used in the Method of Detection Limit (MDL) study.
- c. SKORC's wastewater is a complex matrix and needs specific cleanup methods in order to improve the detection limit.

Florisil and acid treatment must be performed on the wastewater samples. In addition, sulfur cleanup with mercury or copper must be utilized as necessary.

- d. The lowest achievable detection limit must be obtained. After the above cleanup procedures are employed, a minimal dilution of the extract must be used to produce a usable chromatogram.
- e. A multi-point calibration curve must be used. The response for the clean & diluted extracts must be within the calibration curve for quantitation.

- f. The analytical results must be reported as total PCBs calculated by comparison to Aroclor standards identified by SW-846 (Update III) Methods 8082, including Aroclors 1262 and 1268. Specific Aroclors used for calculation of total PCBs are also to be reported.

### III. Hydrotreater Products:

- a. SKORC must use the U.S. EPA approved SAFETY-KLEEN METHOD # 9213, Safety-Kleen's Standard Operating Procedure for Analysis of PCB Congeners. This method of analysis was utilized during the demonstration of SKORC's re-refining process.
- b. Instrument calibration must be performed by utilizing a specially prepared calibration standard composed of selected congeners (from monochlorobiphenyl to decachlorobiphenyl) as identified in SAFETY-KLEEN Method # 9213.
- c. Every observable peak is calculated by comparison to an external standard, one PCB congener per homolog peak having the nearest retention time to each appropriate PCB peak to be quantified. A final PCB total value is calculated by adding the ten homolog groups.

## ATTACHMENT V

### DECONTAMINATION PROCEDURE

#### Railcars, Trailers and Bulk Storage Tank

Railcars, trailers, and bulk storage tanks (bulk containers), including the bulk storage tanks used to store PCB-contaminated distilled vacuum oil, must be decontaminated, if not returned to PCB service, in accordance with the following procedures:

1. Remove all free flowing liquid from each bulk container. This would include all liquid from each bulk container. This would include all liquid which is below the "pick-up" pipe utilized in operation to drain the tank.
2. Rinse the internal surfaces of the emptied bulk container three times with an oil containing less than 50 ppm PCBs (rinsate). During each rinse cycle, the rinsate must contact the internal surface of the bulk container that has been in contact with PCB contaminated material. The volume of the rinsate used for each rinse must be no less than 10% of the capacity of the bulk container.
3. After the third rinse, analyze the rinsate for PCBs. If the rinsate contains less than 50 ppm PCBs, the bulk container will be considered decontaminated and the rinsate can be used to decontaminate other PCB containers on site. If the rinsate contains 50 ppm PCBs or greater, additional rinses shall be conducted until the rinsate contain less than 50 ppm PCBs.
4. All rinsates used to decontaminate the bulk containers must be processed in the re-refining system or disposed of in a TSCA approved disposal facility.
5. After completing the necessary rinses, SKORC must sample the material in the bottom of the bulk containers (heels) for PCBs. If the PCB concentration is less than 50 ppm, the heels may be left in the bulk container. If the PCB concentration is equal to or greater than 50 ppm, the heel must be removed and disposed of in accordance with the applicable Federal and State regulations (40 CFR 761.60 and 329 IAC 4-1-5(7)).

6. Composite samples of the heel from a tank must be collected and analyzed. The composite sample must consist of two separate samples taken from the following locations:

- one sample from the center of the tank
- one sample between the center and the wall of the tank.

#### **Liquid Storage Piping System**

The liquid storage piping system and other conveyance equipment not part of the re-refining system must be decontaminated prior to being used to convey liquid not regulated as PCB waste in accordance with the following procedure. The piping system shall include all interconnected pipes, pumps, meters, valves and other conveyance equipment.

1. Flush the piping system twice with oil containing less than 50 ppm PCBs (rinsate). The piping system will be completely filled with rinsate during each rinse cycle. During each rinse cycle, pumps and valves and all other conveyance equipment must be operated to ensure that the rinsate contacts all their internal surfaces.

2. Once the rinse cycles are completed, fill the pipes, pumps, meters, valves and other conveyance equipments with oil containing less than 2 ppm PCBs (verification rinse). Drain the oil, and collect a composite sample. If the PCB concentration of the oil is less than 2 ppm, the pipes, pumps, meters, valves and other conveyance equipment will be considered decontaminated. If the PCB concentration of the oil is 2 ppm or greater, repeat the verification rinse, as many times as necessary, until the PCB concentration in the oil is less than 2 ppm.

#### Decontamination of Process Tanks and Piping System

After completing the batch processing of the PCB contaminated waste oil through the distillation and hydrotreating systems, the process system tanks and piping system must be decontaminated in accordance with the following procedure. The distillation and hydrotreating systems must be decontaminated and documented separately.

1. Calculate the total internal volume of the distillation and hydrotreating systems by combining the internal volumes of each process tank or vessel and the pipings for each system

separately. Feed oil containing less than 2 ppm PCBs (rinsate) into the distillation or hydrotreating system, using a volume of rinsate equal to three times the total internal volume the distillation or hydrotreating system.

2. Sample the rinsate and each process stream in accordance with the sampling schedule in Attachment II.

3. If any process stream samples have a PCB concentration of 2 ppm or greater, feed additional volumes of rinsate through the distillation or hydrotreating system until the PCB concentration of each process stream is less than 2 ppm.

