

Preventing and Detecting PCB Contamination in Used Oil

Best management practices for commercial and municipal used oil collection centers and recyclers¹

February 2018



Managing Used Oil to Prevent PCB Contamination

EPA recommends commercial and municipal used oil collection centers and recyclers use the voluntary best management practices (BMPs) outlined in this document to reduce the spread of PCB contamination in used oil and decrease the frequency of PCB incidents.

Used oil containing PCBs at concentrations of 50 parts per million (ppm) or greater (≥ 50 ppm) is regulated for disposal under the Toxic Substances Control Act (TSCA). At lower PCB concentrations (2 ppm to < 50 ppm), used oil may be burned as a fuel, subject to restrictions listed in title 40 of the Code of Federal Regulations (CFR) section 761.20(e), 40 CFR part 279, and any applicable state and local laws. EPA's website has more information on the federal hazardous waste requirements for used oil.² TSCA requirements may not be avoided through dilution. Contact both your state environmental agency and EPA any time PCB contamination is detected.

The mismanagement of used oil contaminated with PCBs is a recurring issue faced by EPA and states, commercial and municipal used oil collection centers, and recyclers. Used oil transporters pick up oil from a variety of facilities, often without knowing the PCB concentration. When PCB oil ≥ 50 ppm is introduced into used oil, the entire volume (which otherwise generally could be recycled and reused) must be disposed of in accordance with the TSCA regulations. All tanks, equipment, and vehicles must be decontaminated and the PCB contaminated oil must be disposed of in accordance with the PCB regulations (40 CFR section 761.79), which can be quite costly.

Polychlorinated Biphenyls (PCBs)

PCBs were manufactured between 1929 and 1979 and used extensively in many applications such as coolants in hydraulic systems and as dielectric fluids in electrical equipment. Most manufacturing, processing, distribution in commerce, and use of PCBs was banned under TSCA after 1979. However, PCBs may still be present in products and materials produced before 1979 (including oil used in motors and hydraulic systems) or in excluded manufacturing processes, as defined in 40 CFR section 761.3, and can still be released into the environment, where they do not readily break down.

PCBs have been identified as probable human carcinogens and cause a variety of non-cancer health effects.³

¹ The BMPs in this document do not impose legally binding requirements and will not be implemented as binding in practice. They do not impose any obligations on private parties nor are they intended to direct the activities of any other federal, state or local agency or to limit the exercise of their legal authority.

² <https://www.epa.gov/hw/managing-used-oil-answers-frequent-questions-businesses>

³ <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs#healtheffects>



Recommended BMPs for Commercial and Municipal Used Oil Collection Centers

- When feasible, collection centers should obtain a sample of used oil from each batch received, known as a retain sample. In the event of detection of PCBs in the collection tank, these samples can be analyzed to determine the source of PCBs.
- Sample from the collection tank before shipping the used oil off-site. Lock and label used oil tanks immediately after sampling. If the space and funds are available, use dual-compartment tanks or dual tanks, where one side or tank can be locked when full to await test results while the other side or tank remains open to collect used oil.
- If the used oil in your tank contains quantifiable levels of PCBs but less than 50 ppm PCBs, use the retain samples to determine whether the PCBs are from a source ≥ 50 ppm that has been diluted. If used oil contains ≥ 50 ppm PCBs, or contains < 50 ppm PCBs as a result of dilution, label the tank or container and notify your state and regional PCB coordinators immediately. If the source is < 50 ppm, consult your state environmental agency regarding any state requirements for management.
- Offer to submit test results to used oil recyclers prior to pick up. Testing for PCBs in oil can only be done by accredited laboratories to be defensible. Field test kits cannot reliably detect PCBs in used oil. As of 2017, sample analysis costs around \$60 to \$150 per sample, depending on your desired turnaround time. EPA Method 8082A may be used to determine PCB concentration in oil if appropriate sample extraction procedures are used. For example, EPA Method 3580A may be used for extraction with Method 3620C or 3665A for cleanup. States may have information on accredited laboratories in your area. For information on methods, see <https://www.epa.gov/hw-sw846>.
- Post signs at collection facilities providing notification that only used oil should be put in tanks (see photo from city of Madison on page 4). All containers used to collect and store used oil should be clearly labeled with the words “Used Oil.”
- Keep all used oil collection containers and tanks closed and secured in a fenced area or inside a building to prevent access when the collection center is closed.
- If possible, a staff person at the collection center should document the owner and source of the used oil. Do not add used oil from potential PCB-containing sources (such as transformers, capacitors, hydraulic equipment, pre-1979 brake fluid, etc.) to non-PCB used motor oil.

Recommended BMPs for Used Oil Recyclers

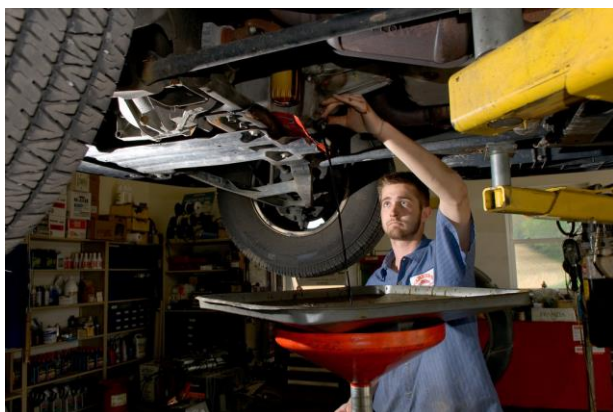
- Educate commercial and municipal collection centers and transporters on the importance of preventing the mixing of potentially PCB-contaminated oil with other used oils, such as used motor oils.
- Obtain analytical results showing the PCB concentration from each collection tank at a commercial or municipal collection center prior to pick-up. Signed certifications do not absolve any facility from obligation to comply with applicable regulations or excuse any facility from enforcement.

- Ensure analytical lab results are submitted to used oil recyclers as opposed to relying on word of mouth or experience.
- Offer to analyze samples from commercial and municipal collection centers prior to pick-up, if they decline to submit test results. Analyzing samples in advance of pickup could prevent contamination of the tanker truck. Provide simple sample collection equipment with easy-to-follow instructions to help collection centers take accurate samples of their oil to send to the recycler or to an accredited laboratory for testing before shipment to the recycler.
- Take a retain sample from each incoming shipment of used oil. Offload the used oil into a guard tank, which should remain locked while waiting for PCB test results. Guard tanks reduce cleanup costs, if a used oil shipment is contaminated with PCBs.
- If PCBs are detected in the used oil at the guard tank, analyze retain samples collected prior to pickup to find the likely source.
- Maintain records that document the testing and analysis of used oil samples to determine the presence and concentration of PCBs prior to any processing or re-refining of the used oil. Applicable EPA SW-846 testing procedures and protocols should be followed (such as EPA Method 8082A with Method 3580A extraction and Method 3620C or 3665A cleanup).
- When taking a retain sample of each batch collected during a pick-up run, collect a duplicate sample in a separate sealed container that can be kept for future reference.
- Keep a defensible chain of custody for the duplicate sample. Document and verify each transfer of custody.
- For analysis of samples, only use labs that follow approved EPA analytical methodology and that have quality assurance management programs. Facilities with their own labs can develop their own Quality Assurance Project Plans (QAPP). For more information, see



**Help stop future used oil
PCB incidents by finding the
source of contamination.**

<https://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5>.



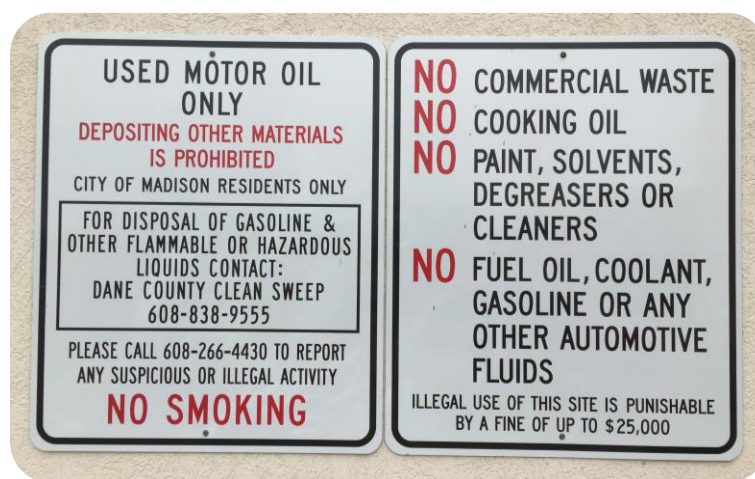
Commercial and municipal used oil collection centers and recyclers, after implementing these BMPs or taking other actions to address sources of PCB contamination, should be able to significantly reduce the incidence and extent of PCB contamination. Facilities should always ensure compliance with all applicable state and federal regulations.

Case Study: Madison, Wisconsin

The municipal used oil collection program in Madison, Wisconsin, received PCB-contaminated used oil twice in the past few years. The first time, the PCB contamination was not detected by the city and the used oil recycler picked up 600 gallons of contaminated oil (> 50 ppm) and mixed it with non-PCB oil, resulting in 17,000 gallons of PCB-contaminated oil that became subject to the TSCA PCB disposal regulations. This left both the city and the recycler open to potential enforcement under TSCA and its implementing regulations. The total cleanup and disposal cost for the incident was \$206,000. Following this incident, the city implemented a strict sampling procedure - the recycler is required to sample the oil, lock out the city's tank, and confirm that the oil has no detectable PCBs before the transporter can pick it up. This prevents further downstream cleanup costs caused by mixing contaminated oil with larger quantities of uncontaminated oil.

The second time PCB-contaminated used oil was received at the city collection center, the newly implemented sampling procedure limited the quantity of oil that was contaminated to 250 gallons. This limited the costs to only \$12,000, which included disposal of the contaminated oil and decontamination of the tank.

The city expects to further invest in dual-compartment tanks when they upgrade all of their public used oil drop-off sites. Once upgrades are made, city residents will be able to continue to drop off used oil when a full compartment is locked out after sampling.



New signs posted at a city of Madison used oil collection site.

Contact your State and EPA Regional PCB Coordinator

If you have concerns about PCB contamination or need more information, consult your EPA Regional PCB Coordinator at <http://www.epa.gov/pcbs/program-contacts> and your state environmental agency. EPA recommends that you make decisions about appropriate action after thoughtful consideration of all available information and all legal requirements.

EPA Region 1 (CT, MA, ME, NH, RI, VT) Tel: 617-918-1527

EPA Region 2 (NJ, NY, PR, U.S. Virgin Islands) Tel: 732-906-6817

EPA Region 3 (DE, DC, MD, PA, VA, WV) Tel: 215-814-2177

EPA Region 4 (AL, FL, GA, KY, MS, NC, SC, TN) Tel: 404-562-8512

EPA Region 5 (IL, IN, MI, MN, OH, WI) Tel: 312-886-7890

EPA Region 6 (AR, LA, NM, OK, TX) Tel: 214-665-6796

EPA Region 7 (IA, KS, MO, NE) Tel: 913-551-7504

EPA Region 8 (CO, MT, ND, SD, UT, WY) Tel: 303-312-6446

EPA Region 9 (AZ, CA, HI, NV, American Samoa, Guam, Northern Mariana Islands) Tel: 415-972-3360

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