



COMMONWEALTH of VIRGINIA

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MEMORANDUM

TO: Regional Directors, Director – Air Permits, Director – Air Compliance, Director – Data Analysis and Planning, Director – Regulatory Affairs, Air Permit Managers, Air Compliance Managers

CC: Richard F. Weeks, Chief Deputy
James J. Golden, Deputy Director for Operations

FROM: Michael G. Dowd – Director, Air Division *MGD*

SUBJECT: APG-355: Used Oil Fuel Permitting

DATE: July 11, 2013

Purpose:

The purpose of this document is to provide guidance to air permitting staff when permitting the use of used oil as a fuel. The guidance is not intended to cover every possible situation but should be applicable in most scenarios. Check with the regional air permit manager and/or the central office staff if a deviation from the guidance is deemed necessary.

Background and Regulatory Basis:

Depending on its characteristics, used oil could be classified as a traditional fuel, a non-hazardous solid waste or a hazardous waste. The classification of the used oil then determines what regulations apply to the unit combusting the used oil as detailed below.

Boilers and/or process heaters burning **traditional or legitimate fuels** are regulated under 40 CFR 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources (Boiler MACT): Industrial, Commercial, and Institutional Boilers and Process Heaters or 40 CFR 63 Subpart JJJJJ NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources, commonly referred to as the major and area source Boiler MACT.

Combustion units burning **non-hazardous solid wastes** are regulated under 40 CFR 60 Subpart CCCC Standards of Performance for Commercial and Industrial Solid Waste Incineration Units (CISWI) for new units and 9 VAC 5 Chapter 40, Article 45 Emission Standards for Commercial/Industrial Solid Waste Incinerators for existing units.

Combustion units burning **hazardous waste** are regulated under 40 CFR 63, Subpart EEE NESHAP from Hazardous Waste Combustors.

The 1990 Clean Air Act (CAA) amendments established Section 129 to regulate emissions from solid waste combustion units. CAA §129 states that for purposes of that section non-hazardous solid waste shall have the same definition as that promulgated by the Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act (RCRA). The non-hazardous secondary material (NHSM) regulations contained in 40 CFR Part 241 identifies which non-hazardous secondary materials are, or are not, solid wastes when burned in combustion units. This distinction is necessary in order to determine whether a combustion unit is regulated under CISWI or the Boiler MACT.

Definitions:

The following definitions are for use in this document and do not necessarily have the same meaning in other portions of the regulations.

Boiler - An enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water.

Used Oil - Any oil which has been refined from crude or synthetic oil which is used and has become contaminated with physical or chemical impurities.
(40 CFR Part 279.1)

Used Oil Fuel - Any fuel produced from used oil by processing, blending or other treatment. Examples of used oil include but are not limited to used crankcase, power steering, transmission, gear, or other lubricating oils commonly associated with the operation of internal combustion engines, machinery, or motor vehicles.
(40 CFR 279.10(e)(2))

Off-specification Used Oil Fuel (off-spec) - Used oil fuel containing contaminants in excess of, or does not meet, the specification levels set for on-specification used oil.

On-specification Used Oil (on-spec) - On-specification used oil is used oil which by demonstration of testing meets the following criteria:

- The used oil does not contain contaminants in excess of the concentrations established in 40 CFR 279.11.

- The used oil has not been mixed with a listed hazardous waste. (40 CFR Part 279.10.b.1.ii).
- The used oil has been mixed with a characteristic hazardous waste but does not exhibit the characteristic of the hazardous waste the used oil has been mixed with. (40 CFR Part 279.10.b.2).

Applicability:

The guidance applies to industrial, institutional and commercial facilities or units burning used oil.

Small Shop Generator Applicability

EPA's regulations promulgated under CAA Section 129 do not apply to space heaters. EPA specifically clarified in the [preamble to the Identification of Non-Hazardous Secondary Materials That Are Solid Waste rule \(40 CFR Part 241 dated March 21, 2011 page 15502\)](#) that used oil combusted in an oil-fired space heater that meets the provisions of [40 CFR 279.23](#) need not be tested to establish whether or not such oil is on or off-specification. This includes used oil generated by small facilities such as auto repair shops and machine shops that have such units, and used oil generated by homeowners who change their own oil (referred to as "do-it-yourself" or "DIY" oil) that are burned in such units. Small shop generators who burn used oil in space heaters are exempt from minor New Source Review (NSR) permitting provided:

1. The heater burns only used oil the owner or operator generates or used oil received from household do-it-yourself used oil generators;
2. The heater(s) is/are designed to have a combined maximum capacity of no more than 500,000 Btu per hour; and
3. The combustion gases from the heater are vented to the ambient air;

If the space heater is a boiler, it is subject to the area source boiler MACT (40 CFR 63, Subpart JJJJJ) and therefore not subject to state toxics. If the unit is not a boiler (example provided: <http://www.cleanburn.com/products/cb5000.html>), then the state toxics rules apply. However, the emissions from the burning of used oil in a space heater with a combined capacity equal to or less than 500,000 Btu/hr do not exceed established state toxics exemption levels and a toxics review is not required. Space heaters that do not meet the definition of a boiler and have a combined maximum capacity of more than 500,000 Btu per hour should be evaluated for state toxic permit applicability. The state toxic evaluation can be limited to those pollutants included in the used oil specification found in 40 CFR 279.11. See Table 1 in the following section.

A sample exemption letter is provided at the end of this document.

On-Specification Used Oil

Under 40 CFR Part 241 (Solid Wastes Used as Fuels or Ingredients in Combustion Units) definition section (241.2), used oil can be considered a traditional fuel if it meets the specifications outlined in 40 CFR 279.11. Used oil that meets these specifications is termed “on-specification” used oil. On-specification used oil is not a waste because it has contaminant concentrations similar to fuel oils. Accordingly, 40 CFR part 279 does not restrict where on-specification used oil can be burned.

The following table from 40 CFR 279.11 includes the allowable contaminant levels for on-specification used oil.

Table 1— Used Oil Not Exceeding Any Allowable Level Shown Below Is Not Subject To This Part When Burned For Energy Recovery¹

Constituent/Property	Allowable Level
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100 °F minimum
Total Halogens (see additional information below)	4,000 ppm maximum ²
Note: Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e).	

¹The allowable levels do not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see §279.10(b)).

²Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under §279.10(b)(1). Such used oil is subject to subpart H of part 266 of this chapter rather than this part when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

Although the allowable level for total halogens in Table 1 above is a maximum of 4,000 ppm, footnote 2 states that used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste except as provided in 40 CFR 279.10(b)(1). A permit condition that includes the allowable levels should be included in the permit. To avoid the potential of burning used oil that could be considered a hazardous waste, the permit writer may want to limit the allowable level for total halogens to a maximum of 1,000 ppm. Although Poly chlorinated biphenyls (PCBs) are referenced in Table 1 above, PCBs are not a criterion for specification under 40 CFR 279.11.

Facilities burning on-specification used oil in a boiler or process heater are subject to either the major or area source Boiler MACT (40 CFR 63, Subpart DDDDD or JJJJJ). Combustion units that are not subject to a MACT need to be evaluated for state toxics even if they are exempt under 9 VAC 5-80-1105, Subsections B through D.

Off-Specification Used Oil

Facilities burning or requesting to burn off-specification used oil in a combustion device may be subject to the CISWI or the Hazardous Waste Incineration regulations.

Used Oil Fired Space Heater Sample Exemption Letter

DATE

<<Mr./Ms.>> <<FirstName>> <<MiddleInitial>> <<LastName>>
<<Title>>
<<Company>>
<<StreetName>>
<<City>>, <<State>> <<Zip>>

Dear <<Mr./Ms.>> <<LastName>>

This letter acknowledges receipt of your [permit application] [exemption request letter] dated, <<ApplDate>>. The Department of Environmental Quality (the Department) <<Region>> staff has completed its initial review of your request to <<Construct>> and operate a used oil space heater with a combined total maximum rated capacity of <<value in MMBtu/hr>> .

Based on the staff's review, it has been determined the proposed project is exempt from the permitting requirements of Chapter 80, Article 6 of the Virginia Regulations for the Control and Abatement of Air Pollution as long as the project is constructed and operated as described in your [application] / [exemption request letter]. The proposed project is exempt provided the proposed project meets the following criteria:

- The unit(s) to be constructed and operated is(are) a space heater(s) with a maximum(combined) rated capacity of 500,000 Btu/hr.
- The space heater only uses used oil generated on-site by the facility or uses oil collected from other do-it-yourself household generators.
- The emissions from the space heater are vented to the ambient air.

The decision concerning permit applicability is not binding upon the Department and is subject to change upon further review.

You are cautioned that this decision also should not be construed to mean that your operation is automatically in compliance with all aspects of the Regulations for the Control and Abatement of Air Pollution. Regional personnel will be constantly evaluating all sources for compliance with the Regulations.

Any owner claiming that a facility is exempt from the provisions of 9 VAC 5, Chapter 80, Article 6 shall keep records in accordance with 9 VAC 5-80-1105 A.4 as may be necessary to demonstrate to the satisfaction of the Department its continued exempt status.

If you have questions concerning this matter please contact <<Engineer>> at <<RegPhone>>. Your concern for Virginia's Air Quality is appreciated.

Sincerely,

<<APMName>>

Regional Air Permit Manager

<<APMInitials>>/<<EngrInitials>>/<<FileName>>

cc: File