

Used Oil Space Heaters

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STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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Subchapter 20

Used Oil Space Heaters

- “Space Heater” as defined in Subchapter 20 means a used oil fired space heater that is a self-contained, automatically controlled, indirectly fired heating appliance for warming of a non-residential area or for other energy recovery.
- “Used Oil” means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result is contaminated by physical or chemical impurities OR unused oil that has been contaminated physically or chemically through storage or handling.

Used Oil Space Heaters



Used Oil Space Heaters

- Facilities that have Used Oil Space Heaters include, but are not limited to:
 - auto dealerships
 - auto repair shops
 - auto oil & lube service centers
 - taxi, limousine, & bus service centers
 - marinas & boatyards that service and repair marine engines
 - used oil recycling centers

Used Oil Space Heaters

- Because burning waste oil produces more pollutants and a higher concentration of pollutants than burning commercial fuels, the DEP has a separate category for combustion sources that fire used oil.

Registrations and Permits

- ALL Used Oil Space Heaters are regulated by the DEP regardless of their size. A Registration or Permit is required.
- Registrations only cover used oil space heaters with an individual or combined heat input of $\leq 500,000$ Btu/hr. The reason is that the cumulative health risks from additional used oil combustion would have to be evaluated on a case-by-case basis by the Department in which case a permit would be required.

Registrations & Permits

- 20.3 Burning of on-specification used oil in space heaters covered by a registration.
- 20.4 Burning of on-specification used oil in space heaters covered by a permit.
Sub 8 Permit or Sub 22 Operating Permit as applicable.

20.3 Used Oil Space Heater Registration

- Used oil space heaters require a registration if the individual space heater or total combined gross heat input of all space heaters is $\leq 500,000$ BTUs per hour.
- Registration is available on paper forms only. Forms can be found at: <http://www.nj.gov/dep/aqpp/applying.html> or by written request to:

Department of Environmental Protection

Division of Air Quality, Air Quality Permitting Program

Bureau of Air Permits

Mail Code 401-02

PO Box 420

Trenton, NJ 08625-0420

*Heat input in BTU/hr. is based on 140,000 BTU heat value per gallon of used oil.

20.4 Used Oil Space Heater Permit

- Used oil space heaters require a permit if the individual space heater or total combined gross heat input of all space heaters is >500,000 BTU per hour OR if the units are burning used oil other than on-specification used oil from conveyances that are powered by an internal combustion engine.
- Permits are available through Radius at <http://www.nj.gov/dep/aqpp/radius.html> or by submitting a written request to:

Department of Environmental Protection
Division of Air Quality, Air Quality Permitting Program
Bureau of Air Permits
Mail Code 401-02
PO Box 420
Trenton, NJ 08625-0420

*Heat input in BTU/hr. is based on 140,000 BTU heat value per gallon of used oil.

Operating Requirements

- A registration is required if any one unit or multiple units have a combined heat input $\leq 500,000$ BTU/hr
There are standard operating requirements in registrations. These requirements are specific to the smaller units firing used oil from internal combustion engines.
- A permit is required if any one unit or multiple units have a combined heat input $> 500,000$ BTU/hr OR any size unit firing used oil other than from internal combustion engines.
Permits may have different operating requirements specific to these sources with individualized requirements based on the unit. Examples include: manifest certifications from the used oil supplier, ash standard testing, operating hours, etc..

Registrations & Permits

- No used oil or blended used oil may be burned or sold for burning in a multi-family residence (such as an apartment building or dormitory), day care facility, pre-school, school, hospital, residence for the elderly, or a nursing home.
- No used oil or blended used oil may be sold for burning in a single-family dwelling, two-family dwelling, or a dwelling of six or less family units, one of which is owner occupied.

20.3 Registration Operating Requirements

- The unit must only be used for energy recovery space heating or heating hot water.
- The used oil must be:
 - generated on-site, or
 - by household do-it-yourselfers, or
 - from household do-it-yourselfer collection centers like those organized by a municipality.

20.3 Registration Operating Requirements

- The used oil must be only from conveyances powered by an internal combustion engine, consisting of any combination of:
 - used crankcase oil
 - used brake fluid
 - used transmission fluid
 - used power steering fluid
- #1 & #2 Commercial Fuel Oil may also be blended & burned

20.3 Registration Operating Requirements

- None of the following may be blended with the used oil:
 - anti-freeze
 - carburetor cleaner
 - paint or paint thinner
 - part degreaser solvents
 - oil additives
 - gasoline
 - chlorinated solvents
 - battery acid
 - a hazardous waste defined pursuant to N.J.A.C. 7:26G-5.

20.3 Registration Operating Requirements

- The unit must be listed and tested by a nationally recognized laboratory in accordance with Underwriters Laboratory- UL or Canadian Standards Association- CSA and FBL Notice Number 72. Manufacturer documentation must be maintained.
- The space heater must be constructed, installed, and operated in conformance with all applicable requirements in Subchapter 20 and N.J.A.C.

20.3 Registration Operating Requirements

- Combustion adjustments must be conducted within 24 operating hours after start-up and annually thereafter and consist of:
 - Adjust the air-to-fuel ratio to the manufacturer's recommended standards & ensure it is correctly calibrated and functioning properly;
 - Inspect the heater and clean or replace any components as necessary to minimize total emissions of carbon monoxide (CO);

Combustion Adjustments

(continued)

-Take an exhaust sample & analyze it for CO and Oxygen using a portable monitor. The results shall ensure CO emissions after the adjustments listed above are ≤ 100 ppmvd, hourly average, corrected to 7% oxygen. Testing for less than 1 hour is permitted if the CO reading is ≤ 100 ppmvd, corrected to 7% oxygen for 5 consecutive minutes of operation.

- Record the manufacturer & model # of the portable monitor used for CO & Oxygen. The CO monitor must be able to measure & record in-stack concentrations of CO, over a range of 0 – 500 ppmv, with an accuracy of plus/minus 5% of the reading when measuring 100 ppmv.
- If an exhaust sample exceeds CO 100 ppmvd, one hour average, corrected to 7% Oxygen, the heater must not be operated, except for adjustment purposes, until the operator corrects any mechanical problems, readjusts the heater, & the heater demonstrates compliance with the CO limit.

Combustion Adjustments (continued)

- Ensure the exhaust emissions at the stack don't contain visible particulate emissions.
 - Record all adjustments made to the heater, all CO & Oxygen readings, the determination of visible emissions, & the dates of each adjustment.
 - If the combustion adjustment shows the CO standard of 100 ppmvd, corrected to 7% Oxygen, one hour average, is being exceeded, no violation will be cited if the unit is only operated for corrections and readjustments of the unit to meet the limit.
- *These combustion adjustment procedures are based on Subchapter 20 and not Subchapter 19 NOx combustion adjustment procedures.

20.3 Registration Operating Requirements

- The unit must not be operated in a manner which will cause visible emissions, exclusive of visible condensed water vapor, except for a period of no more than 3 minutes in any consecutive 30 minute period.

20.3 Registration Operating Requirements

- If Visible Emissions are observed:
 - refer to the operator manual for corrective measures & record the corrective actions taken.
 - Except for adjustment purposes, do not operate the unit after visible emissions are observed, until mechanical problems have been corrected, air-to-fuel ratio adjustments have been made if necessary, & the unit no longer has visible emissions.

20.3 Registration Operating Requirements

- The used oil in the storage tank for the used oil heater must not exceed the Solid Waste limits in N.J.A.C. 7:26A-6.2(a).

The Department may obtain a sample.

(The department assumes the acceptable used oil from conveyances from internal combustion engines meets these limits).

20.3 Registration Operating Requirements

- The oil filter equipment must be installed, operated, & maintained properly according to manufacturer specs.
- Keep records of combustion adjustments and instances when visible emissions were observed for 3 years after the date of the record.
- The discharge point of the stack must be higher than the roof peak of the building & at least 20' above grade.

20.3 Registration Operating Requirements

- Operation of the unit which may cause a release of air contaminants that might result in citizen complaints must be reported. The facility must immediately notify the Department of any non-compliance, including visible emissions, by the DEP preferred method of calling the DEP hotline at: 1-877-WARNDEP (1-877-927-6337).
- The used oil brought to the facility by household-do-it yourselfers must be visually inspected before charging it to the storage tank.

Used Oil Space Heater Combustion Adjustment Testing

- A list of consultants performing testing of stationary sources in NJ can be found on the BTS website at:
http://www.state.nj.us/dep/bts/consult_list.html
- Contact Used Oil Space Heater manufacturers & distributors for information for testing vendors.
- Facilities may conduct their own combustion adjustments with portable monitors in accordance with Subchapter 20.3(b)8 & 9.

Subchapter 20 Used Oil Combustion

- This presentation is not a complete listing of the rules and regulations contained in N.J.A.C. 7:27-20.
- A complete list of the rule can be found at:
<http://www.nj.gov/dep/aqm/rules27.html>

Who should I contact with Questions?

NJDEP Air Compliance and Enforcement Regional Offices

Northern Field Office

Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Warren, and Union Counties

973-656-4444

Central Field Office

Burlington, Mercer, Middlesex, Monmouth, and Ocean Counties

609-292-3187

Southern Field Office

Atlantic, Camden, Cape May, Cumberland, Gloucester, and Salem Counties

856-614-3601

Questions?