ENVIRONMENTAL PROTECTION
Air Quality Regulation
Used Oil Combustion

Adopted Amendments:	N.J.A.C. 7:27-8.1, 8.2 and 8.6
Adopted New Rules:	N.J.A.C. 7:27-20
Proposed:	November 16, 1998 at 30 N.J.R. 4003(a).
Adopted:	November 9, 1999 by Robert C. Shinn, Jr., Commissioner, Department of Environmental Protection.
Filed:	November 10, 1999 as R.1999 d.428, with substantive and technical changes not requiring additional public notice and comment (see N.J.A.C. 1-30-4.3).
Authority:	N.J.S.A. 13B-3, 13-1D-9 and 26:2C-1 et seq.
DEP Docket Number:	25-98-09/673.
Effective Date:	December 6, 1999.
Operative Date:	January 8, 2000 (see N.J.S.A. 26:2C-8).
Expiration Date:	Exempt.

The New Jersey Department of Environmental Protection (Department) is adopting new rules at N.J.A.C. 7:27-20, Used Oil Combustion, and amendments to N.J.A.C. 7:27-8.1, Definitions, N.J.A.C. 7:27-8.2, Applicability, and N.J.A.C. 7:27-8.6, Service fees.

The adopted rules and amendments are intended to reduce the incidence of improper disposal of used oil and ensure if used oil is burned, it is done without significant harm to the environment or public health and welfare, and in a manner that is consistent with the Federal regulations. The new rules limit used oil combustion to those units best able to burn it in an environmentally sound manner. Provisions in the rules will minimize the impact to public health and the environment by providing specific requirements for the combustion of used oil.

The proposed new rules and amendment to N.J.A.C. 7:27-8.6 were published in the New Jersey Register at 30 N.J.R. 4003(a) on November 16, 1998. The public comment period closed on December 16, 1998. Eight written comments were received during the public comment period.

Summary of Hearing Officer Recommendations and Agency Response:

A public hearing was held on December 9, 1998 at the Department's Public Hearing Room, Trenton, New Jersey, at which six people presented oral comments. Gary Sondermeyer, Assistant

Commissioner, Environmental Regulation, served as hearing officer. After reviewing the testimony given at the public hearing, Assistant Commissioner Sondermeyer recommended that the responses to this testimony, and changes made to the rules to address the concerns raised by the public, be accepted as set forth in the Summary of Public Comments and Agency Responses for this adoption.

Interested persons may inspect the public hearing record by contacting:

Attn: DEP Docket Number: 25-98-09/673

Department of Environmental Protection
Office of Legal Affairs
401 East State Street
PO Box 402
Trenton, NJ 08625-0402

Summary of Public Comments and Agency Responses:

The following people submitted written and/or oral comments on the proposal:

1. Geri Ann Deputy, Laboratory Manager, Intertek Testing Services
2. Richard Gertler, General Manager, Heating Alternatives, Incorporated
3. Christopher Harris, General Counsel, National Oil Recyclers Association
4. Joanna L. Johnson, General Counsel, Automotive Oil Change Association
5. Robert Krawiecki, President, C.R. Warner, Incorporated
6. John Lionetti, President, Lorco Petroleum Services
7. Kathryn McWilliams, Executive Director, National Oil Recyclers Association
8. Wayne Robertson, Used Oil Management Association
9. Alan Seligman, Norki Energy Systems
10. William Shapcott, A.D. Supplies
11. Louis Young, NJCAR

A summary of the comments timely submitted and the Department's responses follows. The number(s) in parentheses after each comment corresponds to the commenter(s) listed above.

Summary

1. COMMENT: One commenter objected to the 500,000 British Thermal Units per hour (BTU/hr) limitation (for a facility threshold for qualifying for a registration for all used oil space heaters at the facility) claiming that the limit would not allow auto dealers to accept used oil from do-it-yourselfer generators. (11)

   RESPONSE: The Department is not prohibiting auto dealers from burning used oil with a gross heat input in excess of 500,000 BTU/hr per facility. The Department, however, does require the owner or operator of space heater(s) exceeding a cumulative gross heat input of 500,000 BTU/hr per facility to obtain an air permit. As set forth at N.J.S.A. 13:lE-99.35 and 99.36, auto dealers meeting the definition of a used oil collection center have been required to accept used

oil from the public do-it-yourself used oil generators since April 20, 1987, the date of enactment of the statute referenced.

The 500,000 BTU/hr level and registration conditions adopted as part of this rulemaking action are based in part on a risk assessment of space heaters up to the 500,000 BTU/hr size at any one facility. The Department determined that it is not appropriate to use the registration procedure for larger amounts of used oil combustion at any one facility because of the potential risk which result from the increased usage. The Department will, however, use a risk screening procedure to expedite the review of the larger used oil space heater permits which do not meet the registration requirements. The risk screening procedure will expedite the review of these larger permits since a determination of the potential health risks can be made quickly, as opposed to having to conduct a complete air quality health risk modeling. The complete air quality health risk modeling is an involved process which could take one to three months, as opposed to the screening procedure which should be able to be done in less than one half hour by the permit review engineer. The screening procedure can be used since it makes conservative assumptions and results in a conservative estimate of health impacts. The conservative assumptions result in a quicker, less complicated analysis and more expedient review. If the screening procedure determines a risk which is not minimal, the more involved air quality health risk modeling procedure is conducted. As a result of this procedure, the Department will accumulate a database of the risk screening results and any air quality modeling performed for the permitted space heaters. If over time the Department finds that all of the facilities which applied for larger space heaters pass the risk screening procedure or air quality modeling, the Department will consider a higher gross heat input, in units of BTU/hr, facility threshold in the future. This scenario assumes that a substantial number of space heater permits will be issued for space heaters at a facility with a total capacity greater than 500,000 BT/hr and less than 1,000,000 BTU/hr.

2. COMMENT: One commenter questioned why used oil is being treated any differently than Number 6 fuel oil. (6)

RESPONSE: The rule is treating on-specification used oil like Number 6 fuel oil by allowing most boilers which are permitted to burn, and capable of burning, Number 6 fuel oil with a rated gross heat input greater than 20,000,000 British Thermal Units per hour to now burn on-specification used oil without requiring a permit modification. This new flexibility differs from previous rules on the combustion of non-commercial fuel which required permits for all used oil combustion. The principal difference in the burning of on- specification used oil and Number 6 fuel oil is the prohibition on burning used oil at sensitive receptor locations. These locations include multifamily residences, day care facilities, pre-schools, schools, hospitals, residences for the elderly, and nursing homes. This is to provide an added margin of safety for the young and the elderly when burning used oil. While on- specification used oil is generally similar to Number 6 fuel oil for the parameters regulated, the uncertainties of all the constituents of a waste- derived product (used oil) make additional safeguards on the combustion of used oil prudent.

3. COMMENT: One commenter objected to the 0.1 percent by weight ash limitation in on-specification used oil, claiming the ash limit itself is not reasonable or achievable. The commenter stated that the rerefining necessary to bring the ash content down to the 0.1 percent level is not cost effective. (6)

RESPONSE: The Department has modified the Ash Limit to 0.15 percent by weight, maximum content for the following reasons:

1. The dirtiest commercial oil available as fuel are residual oils. It is stated in Federal guidance that on-specification used oil is typically compared to residual oils. See 50 Federal Register 49180.

2. Residual fuel oils are Number 5 and Number 6 fuel oils. Number 5 and Number 6 fuel oils are similar to each other in physical (that is, viscosity, boiling ranges) and chemical characteristics (that is, composition). The maximum ash limit specified by the American Society for Testing and Materials (ASTM) is 0.15 percent by weight for Number 5 fuel oil. This technical standard is set forth in ASTM D396-84 which may be obtained from The American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

3. Combustion unit operators have the following options to burn on- specification used oils that contain ash at a level greater than 0.15 percent by weight:

    1. On-specification used oil is expected to be mixed with virgin oil prior to being combusted. According to "Fuel Oil and Kerosene Sales 1996 (August, 1997)" which is published by the Energy Information Administration, Department of Energy, approximately 500,000 gallons of commercial residual fuel oils, including Number 5 fuel oil and Number 6 fuel oil, are sold in New Jersey annually. The amount of used oil generated annually in New Jersey is approximately 40 million gallons, which is about eight percent of the residual used oil sold. Therefore, on-specification used oil that has an ash content greater than 0.5 percent by weight can be blended with virgin fuel oil that has a lower ash content to achieve the 0.15 percent by weight maximum ash content for the mixture. Commenters claimed the typical used oil ash concentration is 0.5 percent by weight based on sampling results.

    2. On-specification used oil with greater than 0.15 percent by weight ash content may be burned in combustion units that have air pollution control devices installed for particulate matter.

The increase in the ash limitation is not a relaxation of the existing emission limitation. Rather, the ash limit is being established in order to be consistent with the provisions of N.J.A.C. 7:27-4.

The most stringent standard established by N.J.A.C. 7:27-4 is 0.1 pounds per million British Thermal Unit (lb/MMBTU) of particulate emissions. The 0.1 lb/MMBTU is approximately equivalent to an ash content of 0.2 percent ash by weight if there is complete combustion of all

of the carbon in the fuel. Consequently, the 0.15 percent by weight limitation would result in compliance with the emission standard if complete combustion is occurring. In practice, there is not complete combustion, so the ash limit must be less than 0.2 percent by weight to account for carbon in the particulate emissions.

A portion of the solid particles emitted from fuel combustion is from ash. The remaining portion of the particulates are unburned carbon, including liquid organics, which can be reduced through efficient combustion. The issue is the level of carbon typically found in the particulate emissions of a well maintained, Number 6 fuel oil combustion unit. For coal, it is known that carbon is in the range of one to twenty percent of the emitted solid particles, and typically less than five percent in a boiler with good combustion controls. For Number 6 fuel oil, the Department has no direct information on the carbon content of particulate emissions, but would expect that combustion is at least as efficient as for coal burning. Even at 20 percent unburned carbon in the particulate emissions, the resultant particulate emission concentration would be about 0.075 lb/MMBTU from the ash, at an ash concentration of 0.15 percent by weight and 0.015 lb/MMBTU from carbon, for a total of 0.090 lb/MMBTU, which is under the 0.1 lb/MMBTU limit.

Efficient combustion, which minimizes the carbon portion of the emissions, is ensured through several mechanisms. Permitted combustion units have individual, site specific carbon monoxide (CO) and total volatile organic compound (VOC) limitations, which are indications of combustion efficiency. Compliance with these limitations ensures that minimal organic particulate is emitted. In addition, there are provisions in the Air Pollution Control rules which also address combustion efficiency. These include N.J.A.C. 7:27-16.8, Boilers, which establishes VOC and CO emission limits for boilers with a gross heat input greater than 50 million BTU/hr or more, and requires an annual combustion adjustment for boiler with a gross heat input of at least 20 million BTU/hr and less that 50 million BTU/hr. Also, N.J.A.C. 7:27-3, Control and Prohibition of Smoke from Combustion of Fuel, establishes a maximum opacity at stack discharge, which is usually no visible emissions.

The Department believes that these mechanisms can ensure that less than 25 percent of the overall particulate emissions are carbon based emissions, and therefore a 0.15 percent by weight ash limitation can achieve the existing 0.1 pound of particulate per million British Thermal Unit limitation in N.J.A.C. 7:27-4 for large boilers. Finally, when visible emissions or other information indicates potentially high particulate emissions, the Department may require that stack tests be conducted to determine compliance with N.J.A.C. 7:27-4.

4. COMMENT: One commenter objected to allowing the combustion of used oil in space heaters, claiming haulers will be put out of business, leaving no one who is able or available to pick up other types of waste, such as antifreeze and oily waters. With no one to pick up oil filters, they will be thrown in landfills and cause water pollution. (5)

RESPONSE: While allowing space heaters to combust used oil on-site is a recent practice in New Jersey, the Department's current rules allow combustion of used oil in space heaters if permits are obtained. The primary change with the adoption of these rules will be procedural

whereby some used oil space heaters will now be allowed to burn used oil through a simple registration process. Other states have allowed space heaters to burn used oil for longer than New Jersey and have indicated that the used oil processing industry continues to be in business.

5. COMMENT: One commenter questioned the permitting requirement for used oil space heaters. The commenter stated that N.J.A.C. 7:26A-6.2(b) and 6.3 specifically require an Air Pollution Control Permit to Construct and Certificate to Operate pursuant to N.J.A.C. 7:27 for non-space heaters burning used oil and N.J.A.C. 7:26A-6.3(e) specifically does not require a space heater meeting the Federal Exemption to obtain an air permit, pursuant to N.J.A.C. 7:27-8. (8)

RESPONSE: The commenter is correct in pointing out that N.J.A.C. 7:26A- 6.2(b) and 6.3(c) specifically refer to the requirement that a Permit to Construct, Install or Alter Control Apparatus or Equipment and Certificate to Operate Control Apparatus or Equipment be obtained in accordance with N.J.A.C. 7:27 before the combustion of on-specification used oil may take place, while the provision for space heaters at N.J.A.C. 7:26A-6.3(e) is silent on the need for a Permit. It is the Department's position, however, that this does not obviate the need for such a permit for the use of used oil in space heaters. The requirement for a Permit to Construct, Install or Alter Control Apparatus or Equipment and Certificate to Operate Control Apparatus or Equipment is governed and regulated by the Department's rules concerning Air Pollution, at N.J.A.C. 7:27. N.J.A.C. 7:27-8.2(c)13, which is controlling as to this issue, specifically provides that such a permit and certificate is required for "[a]ny equipment used for the burning of noncommercial fuel, crude oil or process by-products in any form." N.J.A.C. 7:26A-6.3 sets forth prohibitions on certain uses of used oil. The section also provides for certain uses which would otherwise be prohibited but are allowed provided that certain conditions are met. The Department agrees that it would have been clearer if a specific reference to N.J.A.C. 7:27 and the need for a permit were made in N.J.A.C. 7:26A-6.3(e) as it is in other provisions. However, the absence of such a reference does not supercede the Air permit requirement at N.J.A.C. 7:27-8.2(c)13.

Because there may be some confusion in the language, the Department is currently drafting proposed amendments to N.J.A.C. 7:26A-6 to eliminate this confusion and accurately reflect the Department's requirements for burning used oil in space heaters. Specifically as set forth above, prior to operating a space heater for the burning of on-specification used oil, the owner or operator must obtain authorization, in accordance with N.J.A.C. 7:27, from the Department's Air Quality Permitting Program.

The Department has consistently required the burning of on-specification used oil in any device to be conducted under the authorization of the Department's Air Quality Permitting Program, which, until this adoption, only occurs under an air permit. Once these rules are adopted, the operation of qualifying space heaters can be authorized through the registration process at N.J.A.C. 7:27- 20.3. Owner or operators whose space heaters do not meet the registration qualifications at N.J.A.C. 7:27-20.3 will continue to be subject to the permitting requirements in accordance with N.J.A.C. 7:27-20.4.

6. COMMENT: One commenter questioned the permitting requirement for used oil space heaters claiming a Commissioner letter contained language that N.J.A.C. 7:26A had been adopted allowing small space heaters to be installed without an air permit. (8)

   RESPONSE: The Commissioner's January 7, 1997 letter was referring to waste management permits as no longer being required. A subsequent letter dated January 29, 1997 from the Division of Solid and Hazardous Waste was sent to the commenter which stated that the Commissioner's letter did not specifically address the need for a used oil space heater to obtain an Air Pollution Control Permit. The letter further explained that pursuant to N.J.A.C. 7:27, Air Pollution Control, (APC) an APC permit continued to be needed to combust used oil in any device.

7. COMMENT: One commenter requested that the applicability level for the registration of used oil space heaters be raised from 500,000 BTU/hr to 1,000,000 BTU/hr in order to eliminate case-by-case technical reviews for most automotive service centers. (8)

   RESPONSE: A site-specific health impact assessment is necessary for operation of used oil space heaters with a cumulative gross heat input in excess of 500,000 BTU/hr at any facility because the analyses performed by the Department indicated that there may be unacceptable environmental impacts above 500,000 BTU/hr depending on the location of the facility wishing to operate used oil space heaters at a cumulative gross heat input in excess of 500,000 BTU/hr. Most gas stations and repair shops are small enough so that 500,000 British Thermal Units per hour (BTU/hr) heat input rate (which equates to about 3.5 gallons of used oil burned per hour) is more than adequate for space heating. Some car dealerships require more oil combustion to supply all of the winter time heating needs. Such facilities may install used oil space heaters having a cumulative gross heat input greater than 500,000 BTU/hr if a site specific risk assessment is done to assess the impacts on public health and the environment. With a higher cumulative gross heat input, there are proportionally higher emissions. For example, a gross heat input of 1,000,000 BTU/hr (about seven gallons/hr.) will have twice as much emissions and environmental impact as a gross heat input of 500,000 BTU/hr (about 3.5 gallons/hr.), all other factors (for example, stack height, type and composition of the used oil) being equal.

   This procedure is already working successfully. For example, the Department on August 24, 1998, issued four Air Pollution Control (APC) Permits to Construct and Certificates to Operate for used oil space heaters at a facility totaling 1.33 million BTU/hr (three space heaters, each with a capacity of 350,000 BTU/hr, and one space heater with a capacity of 280,000 BTU/hr). These APC Permits underwent a health risk assessment for heavy metals (arsenic, cadmium, chromium, lead) and hydrogen chloride emissions. The Department has an obligation to perform such health risk assessments. The entire process, from the preapplication meeting to the actual issuance of the permits, took approximately four months.

   For all of the above reasons, the Department believes a case-by-case determinations for larger facilities can be completed in a timely fashion, and that a health risk assessment is necessary to ensure that public health is protected when the cumulative gross heat input at a facility is greater than 500,000 BTU/hr. Also, see Response to Comment 1.

8. COMMENT: One commenter expressed concern that the proposed rules could result in a system of direct shipments of used oil to space heaters without proper blending, claiming it is unrealistic to expect that all or even a sizable number of these small users will invest in the resources needed to attain proper blending and assure proper ash and metal content. The commenter also stated that the small users would not be subject to the rigorous testing and reporting requirements that apply to currently permitted used oil recyclers. (5)

   RESPONSE: Space heaters authorized through a registration process are not allowed to accept direct shipments of used oil. They may only combust on-site generated used oil and "Do-it-Yourselfer" (DIY) used oil. The control of the properties of used oil at these facilities is achieved by waste management. The Registration conditions specifically list what is allowed and not allowed to be blended. Also, the Department has the authority to take samples to ensure conformance with the limits for on-specification used oil. To qualify for a Registration, the Registrant must agree to burn only motor vehicle used oil generated on-site or DIY used motor oil.

   Any person operating a used oil space heater or any other combustion device who intends to accept used oil from a supplier or directly from a generator must do the following: (1) file for a permit with the Department; and (2) comply with the solid waste recycling requirements at N.J.A.C. 7:26A-6.9. The permit will include provisions which will insure compliance with all applicable regulatory requirements.

   As a result, these rules do not establish a system of direct shipments to small users, such as space heaters, because these users must comply with the current testing and reporting requirements which are similar to the requirements that permitted used oil recyclers are subject to.

9. COMMENT: One commenter expressed concern that the proposed rules will permit the unchecked proliferation of space heaters, in reality, potential "mini-incinerators," for use by virtually anyone in the State. Therefore, there will be a reliance on these users to not only enforce (and verify compliance with) important expensive technical requirements, but to protect the State's environment. (5)

   RESPONSE: The proposed rules will not allow for unchecked proliferation of space heaters because all used oil space heaters operating in the State are required to have either a Permit or Registration, and must follow a set of Operating Conditions. The Department has the authority to enter and inspect these facilities to confirm that the operating conditions are being met and enforce the requirements. The used oil space heaters must also meet an industry standard which must be equivalent to Underwriters Laboratories, Incorporated 296A Standard for Safety, UL296A "Waste Oiurning Air Heating Appliances." To ensure continued operation, they must be properly maintained, as would any piece of combustion equipment. Additionally, the requirement for an annual examination of the combustion process consisting of measurement of and modification to, if necessary, the air-to-fuel ratio, annual inspection of the space heater

to determine if any components need to be cleaned or replaced, and annual carbon monoxide test will ensure efficient combustion is confirmed at least on an annual basis.

10. COMMENT: One commenter claimed that the Department does not have enough enforcement personnel and the proposed rules do not factor in what a used oil user will do if it detects hazardous off-specification materials in its used oil. The commenter questioned what enforcement mechanism is in place if users illegally handle and dispose of off-spec materials, and what proper enforcement or other means are there to insure that the generators cease such behavior. (5)

    RESPONSE: The primary enforcement responsibility is with the Air Compliance and Enforcement program which has four regional offices in the State. In addition, the Department has trained and delegated enforcement authority to county and local agencies under the County Environmental Health Act (CEHA). These CEHA agencies inspect gas stations and other small facilities on a routine basis. Since many of the used oil heaters are expected to be located at these facilities, the Department will train CEHA agencies in the rule requirements to help ensure adequate regulatory oversight. In addition to the enforcement inspectors, members of the general public have the ability to file complaints whenever they observe potential air quality violations. The common potential observations are visible emissions of smoke at the discharge point and odors beyond the property line.

    N.J.A.C. 7:26A-6 establishes the overall management standards for all used oil, with a general identification of the devices that may be used to burn a particular used oil, while this rulemaking sets standards for the actual combustion of used oil and the necessary authorization which must be obtained in order to burn used oil. Therefore, until the used oil is burned, the used oil must be managed in accordance with the provisions of N.J.A.C. 7:26A-6. This includes any used oil that is rejected as off-specification for burning by the operator of a space heater, which then must be managed consistent with N.J.A.C. 7:26A-6. None of the provisions of this rulemaking relieves the regulated community from compliance with the Used Oil Management Standards at N.J.A.C. 7:26A-6 or impact the enforcement of those rules.

11. COMMENT: One commenter expressed concern that the rules will create a seasonal demand for used oil, thereby putting used oil haulers/ processors out of business. The commenter believed this would be an environmental disaster, resulting in the illegal dumping of used oil and other types of wastes, such as antifreeze and oily water, that the used oil processors handle. (5)

    RESPONSE: The Federal rule allows the burning of used oils in space heaters. Pennsylvania, Connecticut, and New York allow the burning of used oil in space heaters. To the Department's knowledge, there are used oil haulers/processors operating in these states. These other states also experience a seasonal demand for used oil, as well as other types of fuel, as a result of their geographic location in the northeast section of the United States. In addition, it is not expected that all automobile service stations will replace their commercial fuel fired, existing heating system and install a new used oil space heater.

There has always been a seasonal demand for used oil, as well as other types of fuel oils, in New Jersey. This is demonstrated by the fact that one generator of used oil informed the Department that during the winter the generator's used oil was taken by a hauler for free, but during the summer months the charge for removing the used oil from the facility was ten cents per gallon. Fuels are in greater demand and, therefore, have more value during the colder months of the year. The used oil storage and handling costs are less in the winter since the used oil can be sold soon after it is collected and processed.

The rules do not create a seasonal demand for used oil as the commenter claims. The seasonal demand currently exists. There are no prohibitions or restrictions in the rules on when during the year used oil can be combusted.

12. COMMENT: One commenter said that the proposed rules did not allow for enough time for public comment which is a denial of due process. (5)

RESPONSE: The rules were proposed in full compliance with the Administrative Procedure Act (APA). In fact, the Department went beyond the requirements of the APA in proposing these rules by holding an Interested Party Review and conducting an Interested Party Used Oil Rule Workshop (Workshop) one year prior to the proposed rules' publication in the New Jersey Register. During the Interested Party Review, there was an opportunity for an open dialogue among the public, regulated community, and the Department. During the Workshop, environmental concerns were discussed by many members of the general public and regulated community and the Department made every effort to address those concerns. The proposed rules were reviewed by the Department personnel who organized and participated in the Workshop to ensure that the concerns identified during the Workshop were addressed in the proposal. The proposed rules were subject to a 30 day public comment period and a formal Public Hearing.

In following all of the procedures outlined above, the Department believes that sufficient time was provided for public comments on these rules.

13. COMMENT: One commenter expressed concern that the proposed rules impose restrictions and requirements which discourage competition of used oil fuel with virgin fuel products. (3)

RESPONSE: The rules do impose some restrictions on the burning of used oil which are not imposed on burning commercial fuel, such as the restriction against burning of used oil at sensitive receptor locations (that is, schools, hospitals, etc.) which are prudent to adequately protect public health. See the Response to Comment 2 in this Summary section for the reasons. However, the Department does not expect this restriction will significantly impact the competition between used oil and virgin fuel products. Also, the market for Number 6 fuel oil in New Jersey is mostly commercial and industrial oil usage. This industrial and commercial usage alone is approximately 200 million gallons per year according to "Fuel Oil and Kerosene Sales 1996 (August, 1997)" which is published by the Energy Information Administration,

Department of Energy. This usage provides an outlet for the 40 million gallons of used oil generated annually in New Jersey.

As stated in the Economic Impact of the rule proposal, published November 16, 1998 (30 N.J.R. 4003(a), 4006), there is a cost incentive for burning on- specification used oil with Number 6 fuel oil. The cost of on-specification used oil from a processor is reported to range from $0.35 to $0.60 per gallon, based on the quality and heating value of the oil. The current price of Number 6 fuel oil is about $0.75 per gallon. A cost incentive will likely remain in place even with the adoption of this rule. Also, there may be increased incentive to take advantage of this economic incentive because this rule indicates where used oil may be burned and clarifies that this is an accepted and legal practice for these units. With respect to particulate emission limits, confirmation that combustion units are meeting their air pollution control contaminant emission limits must be done whether virgin fuel oils or on-specification used oil is being combusted.

14. COMMENT: One commenter claimed the rules do not offer scientific data to support the different treatment for the burning and/or blending of Number 6 Fuel Oil from that of on-specification recycled fuel oil produced by reprocessors. The commenter also suggested that the proposed rules should be amended to provide that once used oil has undergone an approved recycling process such that it meets the specification set out at 40 C.F.R. Part 279, such fuel oil should be permitted to be burned or blended in the same manner as Number 6 fuel oil. (6)

RESPONSE: On-specification used oil and Number 6 fuel oil are being treated the similarly by the rules. The principle difference in the burning of on- specification used oil is the prohibitions against being at sensitive receptor locations. Historically, there has never been an approved permit to burn used oil at these sensitive receptive locations in New Jersey. No sensitive receptor location has applied for a permit to combust on-specification used oil. Also, see the Response to Comment 2 above of this Summary section. It is reasonable that the combustion of used oil has more restrictions than Number 6 fuel oil because used oil comes from waste. Also, on-specification used oil criteria have been established for only five contaminant parameters. This leaves uncertainty with respect to the unspecified parameters. Number 6 fuel oil, however, has an American Society for Testing and Materials (ASTM) Standard which must be achieved which reduces this uncertainty. The ASTM Standard is the "Standard Specification for Classification of Fuel Oils by ASTM D396-84."

The Department has determined that the following additional safeguards are warranted for burning on-specification used oil in units which burn Number 6 Fuel Oil:

1. The combustion unit has a gross heat input of greater than 20 million BTU/hr, which is used as one criteria in N.J.A.C. 7:27-20.6(a) to allow on- specification used oil combustion without a permit modification. (See Response to Comment 2 of the Summary Section);

2. The combustion unit is not located at a sensitive receptor location as listed in N.J.A.C. 7:27-20.2. (See Response to Comment 2 above of this Summary section); and

3. The total halogen limit for on-specification used oil is 1000 parts per million by weight (ppmw), as opposed to the 4000 ppmw total halogen limit at 40 C.F.R. Part 279. (See May 6, 1996 proposal concerning the Recycling Rules, the Federal Standards Analysis at 28 N.J.R. 2240(a), 2260, May 6, 1996). This total halogen limit is listed in the definition of "on-specification used oil" in N.J.A.C. 7:27-20.1 of the rules. This limit is further supported by the health risk analyses for hydrochloric acid conducted by the Department.

15. COMMENT: One commenter maintained that any environmental benefits seen from the prohibitions against burning used oil in large volume boilers at sensitive receptor locations (N.J.A.C. 7:27-20.2(b)) will be eliminated by the space heater exemptions/registration process (N.J.A.C. 7:27-20.3). (6)

    RESPONSE: Boilers located at the sensitive receptor locations have never been authorized to combust commercial fuel blended with used oil. Studies have shown that health risks associated with burning used oil in space heaters are lower than the health risks associated with burning used oil in boilers located at sensitive receptor locations, such as schools, because school boilers typically burn much more oil (hundreds of gallons per hour) than used oil space heaters (less than 3.5 gallons per hour). Since there are incrementally higher risks associated with these large volume oil-burning boilers, the prohibition on burning used oil in these sensitive receptor locations is necessary.

Environmental Impact

16. COMMENT: One commenter questioned why the Department is requiring a registration for used oil space heaters under 500,000 British Thermal Units per hour (BTU/hr) and not requiring a registration for less than one million BTU/hr commercial boilers. (9)

    RESPONSE: The Department is requiring the registration of used oil space heaters because the combustion of used oil produces emissions of known carcinogens and particulate emissions in concentrations greater than those associated with commercial fuel oil burned in small boilers (that is, Number 2 fuel oil or kerosene). For example, the ash content of used oil is typically 10 times the ash content of Number 2 fuel oil. Also, the likelihood of blending inappropriate substances into used oil at automobile service stations is greater than at commercial fuel oil boilers. Hence, a registration which specifies the blending prohibitions is appropriate. Similarly, the polycyclic organic matter content of used oil is higher than in Number 2 fuel oil; therefore, annual tuneups for used oil space heaters are more important than for small boilers. This can be seen from the 9/23/91 USEPA Federal Register which reported that, "crankcase oils generally contain high levels of polynuclear aromatic hydrocarbons (PAH). Of the samples analyzed, 100 percent exceeded the health based number for benzo(b)fluoranthene and benzo(a)pyrene by a factor of greater than 1,000."

    The benefit of the registration for space heaters is to help assure that the operator will comply with the following:

    - specially designed space heaters to properly burn used oil;

- stack height requirements;
- the burning of limited types of used oils; and
- annual tuneups and carbon monoxide combustion efficiency tests.

The above operational and design factors will help ensure that when used oil is combusted in space heaters, it will be done in an environmentally safe manner. Also, the Department needs to know where used oil space heaters are in order to inspect those locations to determine conformance with the registration requirements.

17. COMMENT: One commenter questioned what benefits will be received by the State of New Jersey by regulating something (that is, used oil space heaters) that has already been established as having an insignificant health risk. (9)

RESPONSE: Without proper safeguards, the health risks from combusting used oil in space heaters could be significant. The Department established the registration process to minimize the health risks from combustion of on- specification used oil and to help ensure that the risks are insignificant. The following are some of the ways in which each of the New Jersey requirements associated with space heaters might cause significant risk if they were not implemented:

1. Without a cap on the total amount of used oil burned at a facility, a significant health risk can result. The more used oil combusted, the greater the health risk because of the emission of the heavy metals (arsenic, cadmium, chromium, lead, and hydrogen chloride). The cap limits the risk to a negligible level.

2. Without a stack height requirement, space heater stacks could be directed at low levels into a neighbor's property. Such lack of pollutant dispersion before reaching ground level is a common cause of significant risk.

3. Without an annual tuneup and carbon monoxide test, a space heater could be operating with lower combustion efficiency for long periods, causing unnecessary emissions of polycyclic organic matter (POM). POMs have a high cancer risk if emitted in high enough amounts.

4. Without clear specification of what may and may not be burned in a space heater, organic solvents would more likely be burned, causing higher emissions of hydrochloric acid and partially burned chlorinated organics. Emissions of such substances can cause significant risk.

5. The opacity limitation of the stack discharge informs the owner/operator of the space heater when incomplete combustion is taking place and corrective action has to be taken.

18. COMMENT: One commenter questioned what the Department's perceived difference is between Number 2 fuel oil and used oil, what was considered Number 2, 4, and 6 fuel oils

when the risk assessments were conducted and what are the Department's assumed contaminant levels in standard fuel oils. (8)

RESPONSE: Number 2 fuel oil is a much cleaner fuel than used oil since it consistently has lower contamination levels, especially for lead and chlorine. Number 2 fuel oil is virgin fuel which is derived through the cracking of crude oil, while used oil comes from a variety of sources and may be contaminated in various ways. In addition, Number 2 fuel oil must meet 11 American Society for Testing and Materials standards, while used oil does not have a comparable set of specifications. For example, Number 2 fuel oil has a sediment and water maximum level of 0.05 percent by weight while the used oil has an ash content of about 0.5 percent by weight. Number 6 fuel oil is also from the bottom of the crude oil refinery process and has similar contaminant levels as used motor oil for these parameters. However, ash content is typically less than 0.1 percent by weight, as compared to 0.5 percent by weight in used oil. Listed in the Table below are concentrations in parts per million weight for each contaminant evaluated in the risk assessments. The Department concluded that these concentrations represented contaminant concentrations in the commercial fuel oils listed.

	No. 2 Fuel Oil* (average)	No. 4 Fuel Oil* (average)	No. 6 Fuel Oil* (average)	Used Oil On-spec. +	Vermont Study ^ actl. contam. levels (average)
Arsenic (ppmw)	2.0	5.0	3.75	5.0	2.0
Cadmium (ppmw)	0.53	0.6	0.8	2.0	2.3
Chromium (ppmw)	5.0	0.8	4.0	10.0	3.9
Lead (ppmw)	4.2	1.3	81.5	100	57.0
Total halogens (ppmw)	25.0	312.5	1250	1000	230

* = Field tests performed by Department, average of all readings taken
\+ = On-specification (on-spec.) levels, as per the on-specification definition in N.J.A.C. 7:27-20.1
^ = Vermont Used Oil Analysis and Waste Oil Furnace Emission Study (Sept. 1994) Actual contamination levels (actl. contam. levels), which are the average readings of the samples of used motor oils taken from diesel powered vehicles

19. COMMENT: One commenter questioned why used oil studies were done by the State of New Jersey based on on-specification limitations rather than what is actually found from actual used oil analyses. (8)

RESPONSE: The Department's studies did include what was actually found in used oil. The Department evaluated both the emissions of burning used oil based on on-specification limits and the Vermont Study actual used oil concentrations. This is appropriate because it evaluates the risk if contaminants are at the maximum emissions allowed, as well as what is the more likely risk in practice based on average concentrations found in tested used oil.

20. COMMENT: One commenter stated that according to the USEPA, on- specification levels for used oil were selected to be equivalent to virgin fuel oils Number 2, 4, and 6 (contaminant levels to the 95th percentile) and that the rules were being too restrictive in their regulation of on-specification used oil. (8)

RESPONSE: The USEPA's study stated that depending upon the particular pollutants, used oil would be equal to virgin fuel oils. The USEPA assumed that the used oil would generally be replacing Number 6 fuel oil, and constituent levels are similar. The Department has followed this line of reasoning in allowing used oil to be used in most large Number 6 fuel oil combustors. However, when analyzing the installation and operation of used oil space heaters, the health impact from on-specification used oil should be compared to that of burning Number 2 fuel oil and not Number 6 fuel oil. This is done because the space heaters and other small fuel burning units are capable of burning Number 2 fuel oil, and are not capable of burning heavier oils, such as Number 6 fuel oil. The Federal used oil combustion parameters did not address the difference in polycyclic organic matter and ash content between Number 2 fuel oil and used oil.

21. COMMENT: One commenter claimed that the NJDEP's own risk assessment shows that public health is clearly not endangered by the small businesses who generate used oil when they purchase two of the 280,000 British Thermal Units per hour (BTU/hr) space heaters. (8)

RESPONSE: Even though the Department did not conduct a health risk assessment for two 280,000 BTU/hr space heaters at a facility, the Department will begin accumulating data on used oil space heater(s) at a facility which have a cumulative gross heat input in excess of 500,000 BTU/hr. The Department will then accumulate a data base of risk screening and any air quality modeling performed for permitted space heaters. If all of the facilities with permitted space heaters pass the risk screening procedure or air quality modeling, the Department will consider a higher BTU/hr used oil burning threshold in the future.

As a point of information, the health risks that were evaluated by the Department were determined to be minimal at a maximum, cumulative gross heat input of 500,000 BTU/hr. However, the health risks have the potential of becoming significant at a gross heat input greater than 500,000 BTU/hr. At these higher inputs, facilities would have to undergo a case-by-case evaluation, which is required for all Air Pollution Control (APC) Permits.

This APC requirement takes into account the maximum annual hours of operation, distance to the property line, and the type of used oil being combusted. As with the establishment of a speed limit, a registration cutoff level must be established which is appropriate and protective

of public health and the environment. There may not be a significant difference in the risks resulting from a 66 mile per hour (mph) speed limit and a 65 mph speed limit, but it is necessary to establish some limit which minimizes the hazard potential.

22. COMMENT: One commenter questioned the restrictions the rules placed on space heaters by stating that the May 7, 1996 NJDEP risk assessment-health risk study for used oil space heaters conducted by the Department determined that the health risk from small, on-site used oil fired space heater is "insignificant," "about the same as standard fuel oil," and "in fact, space heaters can prevent water pollution that does create a significant health risk." (8)

RESPONSE: The May 7, 1996 risk assessment, which the commenter refers to, states, "These results [of the risk assessment] fall into the case-by-case risk management range that is used for new and modified sources in the air pollution control program. Taking into account the fact that these risks are about the same as 'burning standard fuel oil,' and the fact that allowing combustion of used automotive oils in space heating may reduce the amount of crankcase oil that is poured down storm drains, this risk appears to be insignificant."

The "burning standard fuel oil" refers to burning Number 6 fuel oil, which does have similar constituent levels for the USEPA regulated pollutants. Number 6 fuel oil burners have their own set of restrictions, such as minimum gross heat input, stack height, and American Society for Testing and Material standards. It is, therefore, reasonable to establish parallel restrictions on used oil space heaters.

The May 7, 1996 health risk assessment was based on used oil space heaters whose design and operating specifications were consistent with the registration limitations. As a result, these limitations do result in a minimal health impact, which verifies the goal of the registration, and confirms the need for a case-by-case review of used oil space heaters which operate outside of the registration parameters. Also, the Department must set baseline restrictions to ensure minimal risk, and these are outlined in the registration.

23. COMMENT: One commenter expressed concern that the proposed rules will not reduce illegal dumping, because dumping will still be more convenient and economical than taking used oil to a depository, or investing in a used oil space heater. (5)

RESPONSE: The Spill Act, N.J.S.A. 58:10-23.11 et. seq., and other laws and regulations already prohibit illegal dumping. These rules were designed to require the most environmentally safe avenues for combustion of used oil. The Department hopes that the provisions of these rules which streamline the regulatory process, such as the registration of used oil space heaters, will encourage the regulated community to increase the level of proper management of used oil.

24. COMMENT: One commenter stated that the Department does not justify how the simplified registration process promotes its primary goal of environmental protection and suggested that a $1,000 fee should be charged annually for all space heaters. (5)

    RESPONSE: The registration process eliminates the need for a risk assessment to be completed for each individual space heater installed. The general risk assessment performed for a 500,000 British Thermal Units per hour heat input space heater showed that the risks are minimal if operated consistent with the registration conditions. Since no case-by-case risk assessment needs to be done for a registration, there is less review time involved, and, therefore, fewer resources expended by the Department.

    The fees were based on a streamlined regulatory review process because a registration form would take less time to review, and, therefore, the cost/fee would be less for a registration than a full permit review. The fee for a registration is $250.00, which is less than the base fee for a full permit.

25. COMMENT: One commenter expressed the following concerns relating to school building risk assessments: (1) This study was not predicated upon actual burning but, rather, it was based upon computer models of probable emission content; (2) Used oil harm probabilities were determined using the maximum specifications of constituent contaminants; and (3) Specifications of the Number 4 fuel oil were not being evaluated in the school building risk assessment. (6)

    RESPONSE:

    1. Computer models are the appropriate way to estimate maximum ground level concentrations of air contaminants emitted from stacks. No school boilers are authorized to burn on-specification used oil so a reasonable operating scenario had to be assumed to draw conclusions.

    2. Using maximum allowed constituent levels is the appropriate procedure to predict maximum risk to the public.

    3. The specifications of the risk from burning Number 4 fuel oil were not evaluated in the school building risk assessment. This was not done since the study focused on the burning of used oil in Number 4 fuel oil boilers located at schools. These boilers were chosen since they would be the most capable type of institutional boilers which could burn used oil.

26. COMMENT: One commenter expressed concern that a study limited to four schools cannot truly be deemed comprehensive or conclusive. (6)

    RESPONSE: The study did show that under some exposure scenarios, burning used oil in boilers permitted to burn Number 4 fuel oil could result in unacceptable health risks. For

example, short boiler stacks typical of many schools allow emissions to be caught in the cavity of the school building and brought down to ground level. The four schools had characteristics that were representative of many of the schools in New Jersey. It is possible that other stack, building, and boiler configurations could result in higher risk. Methodologies were consistent with the USEPA guidance and the Department's technical manuals which have been subject to comprehensive input by the general public, including modeling and risk assessment professionals.

Jobs Impact

27. COMMENT: One commenter questioned how permitting used oil to be burned in space heaters could result in anything but a decrease in the used oil supply available to reprocessors for recycling. The commenter stated without a sustainable used oil supply, any perceived increase in demand for used oil for combustion afforded by these rules is rendered meaningless and the increased demand for used oil combustion envisioned by the Department is illusory. The commenter also stated that the rule proposal commentary makes it clear that the only parties to be negatively impacted by these proposed rules are used oil processors, such as the commenter's firm, and that the Department must keep in mind that used oil recycling operations, such as the commenter's firm, are the primary means for ensuring safe disposal of the majority of used oil generated in the State. (6)

    RESPONSE: While space heaters will reduce used oil available to reprocessors, the Department does not expect used oil reprocessors to go out of business because of used oil space heaters. The Department contacted other states (Pennsylvania, Connecticut, New York) where used oil combustion in space heaters is practiced and determined used oil processors remain in business in these states.

    The Department estimates that even if 1,000 used oil space heaters are installed and burn two gallons per hour each for 2,000 hours per year that only about 10 percent of the used oil generated in the State will be combusted in space heaters. This will result in a decrease in the used oil that is forwarded to used oil processors. However, this represents only four million of the approximate 40 million gallons of used oil generated in New Jersey and the remaining 90 percent is still a sizable market for the used oil processors. In addition, with the installation of space heaters, more automotive service stations may advertise, beyond what is mandated by N.J.S.A. 13:1E-99.35 and 99.36, that they accept do-it-yourselfer oil, which should increase volumes of used oil that are forwarded to the stations and decrease the amount of improperly disposed oil. N.J.S.A. 13:1E-99.36 states, "On or after July 1, 1987, every owner or operator of a used oil collection center shall post and maintain a durable and legible metal sign, not less than 11 inches by 15 inches, in a prominent location, informing the public that it is a collection site for the disposal of used oil."

Economic Impact

28. COMMENT: One commenter suggested that the permitting fee for a used oil space heater be $250.00, rather than $1,000. (8)

    RESPONSE: The Department agrees with the comment. The permit fee for a used oil space heater with a gross heat input of less than 500,000 British Thermal Units per hour has been modified to $250.00. This revised permit fee is consistent with how fees for other similar types of sources were determined. For example, the Department has a general permit for boilers with a gross heat input of less than 10 million British Thermal Units per hour which burn natural gas, propane, Number 2 fuel oil, diesel, kerosene, or a combination of these fuels. The permit fee for the general permit is $250.00, since the review of these sources are straightforward and minimal engineering review is necessary to determine if the application is approvable. Since the Department has done much evaluation of the operation and health risks from used oil space heater, the level of engineering review would be comparable to that applied to the general permit for boilers. The amount of fees charged for any given source is based on the different level of services provided and is reasonable given the depth of the review necessary for a permit for a used oil space heater. This is being implemented by incorporating "used oil space heaters which burn Opecification Used Oil and have a capacity of 500,000 British Thermal Units or less" as a "Category I" permit in N.J.A.C. 7:27-8.1. N.J.A.C 7:27-8.6, Service Fees, lists in A. Base Fee Tables, Table 1 a Total Category I initial permit fee of $250.00.

29. COMMENT: One commenter questioned the Department's position that the rules may increase the number of businesses which will seek used oil which may, in turn, increase the consumer base of used oil processors. It is the commenter's position that what the proposed rules truly contemplate is that used oil generators will take their used oil directly to users, thereby bypassing the used oil processor middleman and the rules contemplate that used oil processing is no longer needed, under the theory that unprocessed used oil can meet the on-specification requirements. The commenter concluded that it is more likely that used oil processors would experience a dramatic decrease, rather than increase, in business. (5)

    RESPONSE: As stated above in the Response to Comment 27, the Department contacted other states where used oil combustion in space heaters is practiced and determined that these states have used oil processors in business. Based upon the experience of these states, the Department does not have a basis to believe that the adopted rules will have a dramatic negative impact on the used oil processing business.

    To the Department's knowledge, do-it-yourselfer used oil generators do not generally take their used oil to processors. They take it to a municipal collection center or a gas station/lube oil facility that does motor vehicle oil changes. Conversely, other generators of used oil, such as industrial generators, can not take their used oil to those sites where used oil space heaters are present. This will continue to be a source of used oil for processors.

30. COMMENT: The commenter questioned the findings of the Economic Impact statement, which addresses the costs of space heaters, based on the following two points: first, the impact

statement does not include any factual support concerning the costs of stacks and their installation, required by proposed rule N.J.A.C. 7:27-20.3, or regarding the recordkeeping and maintenance costs which this provision contemplates and, second, the analysis does not consider the costs of used oil testing, recordkeeping, and other compliance requirements.(5)

RESPONSE: The Department clearly expected, and thus stated, that purchase and installation of a used oil space heater and equipment associated with it would impose certain costs. (1) The proposal does provide sufficient background concerning the installation, operation, and maintenance costs of used oil space heaters. In the Economic Impact statement, it is stated that the used oil storage tank costs approximately $900.00 and that the space heater installation costs are between $1,500 to $2,500, depending on the local cost of labor and the existing layout of the facility. This includes both costs associated with the space heater and the stack. (2) The "Regulation of Used Oil Space Heaters" section of the Federal Standards Analysis states that the annual maintenance cost for a typical used oil space heater is $750.00. This includes all testing and recording related costs. Used oil testing is not required under the registration provisions.

31. COMMENT: One commenter stated that the Department must include the increased costs of buying processed oil in its economic analysis of the proposal. (5)

RESPONSE: The commenter did not provide sufficient information or explanation in the comment as to (1) why the cost of buying processed used oil would increase, and (2) how this would affect the economic impact either to used oil processors, to buyers of used oil from processors, or to the persons combusting used oil in space heaters. If the cost of processed used oil increases, used oil processors' revenues would increase. However, the buyer will purchase used oil only if it is cheaper than virgin fuel oil. The used oil space heater operators would not be impacted by the price of the processed used oil.

The Department does not believe that the cost of buying processed used oil would increase from its present level. The procedure in the rule for confirming that a processed used oil meets the on-specification criteria has been modified to be the same at the existing procedure outlined in the Recycling Rules at N.J.A.C. 7:26A-6.9. The rule does require that the ash content of the used oil be measured. However, this is standard procedure as all of the residual fuel oils have ash or sediment content limits, consistent with American Society for Testing and Materials, and must have these concentrations confirmed.

Social Impact

32. COMMENT: One commenter requested that the Social Impact statement be modified to state that rerefining of used oil occurs on-site, or at the site at which it is generated. (8)

RESPONSE: The Department does not anticipate that any used oil will be rerefined at the site at which it is generated if no used oil is brought in from off-site. No facility generates so much used oil that it could justify the cost of a rerefining process without accepting off-site generated

oil. Only a commercial used oil processor, accepting used oil from a wide variety of sources, could build and operate a rerefining process in a cost effective manner.

33. COMMENT: One commenter expressed concern that the proposed rules act as a disincentive for the development of cost effective technologies for the rerefinement of used oil into lubricants and feed stocks since the rules would decrease the amount of used oil available for off-site processing because space heaters can be installed. This is inconsistent with the Department's acknowledgment that rerefining is the best alternative. The commenter also stated that the Department itself has articulated that the highest and best use for used oil is to rerefine the used oil into lubricants and other feedstocks. The commenter pointed out that if capital is to be invested in these nascent re-refining technologies, reprocessors with an eye towards the future must be assured that used oil sources will be available to supply rerefining ventures. (6)

RESPONSE: Based on the documents Used Oil: Disposal Options, Management Practices, Potential Liability (3rd Edition) and Environmental Regulations and Technology Managing Used Motor Oil, USEPA Document EPA/625/R-94/010, less than 10 percent of the used oil generated in the United States is burned in space heaters. Moreover, only approximately four percent is rerefined into new lubricating stocks. Therefore, the Department believes that the "development of cost effective technologies for the rerefinement of used oil" are related to the following: (1) global costs of virgin lubricating oil, and (2) large outlets for used oil, such as combustion in large industrial boilers. As a result, the Department believes that the development of the rerefinement technologies are not related to the local, or national use of used oil space heaters.

It is not the Department's goal to discourage used oil recyclers from pursuing rerefining technologies. Even assuming 10 percent of used oil generated is burned in space heaters, there is still about 36 million gallons generated annually in New Jersey and about 1,200 million gallons generated annually in the United States which are available to rerefine. This should be an ample supply for any entity which can design and operate a rerefining process in an economically sound manner. Currently, used oil processors receive $0.35 to $0.60 per gallon of processed used oil sold. It is estimated that a rerefiner could generate at least $1.00 for every gallon of rerefined oil sold. As a result, there still remains an economic incentive to develop an economically efficient rerefining system. The rules only address another environmentally acceptable outlet for the used oil, that being used oil space heaters. The Department in fact encourages the development of rerefining into lubricating oil.

Regulatory Flexibility Analysis

34. COMMENT: One commenter questioned whether the Department is complying with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., when it requires these small businesses who need cumulative space heaters' input of 501,000 to 999,000 BTUs (British Thermal Units per hour) to go through a long permit process. Further, the New Jersey Regulatory Flexibility Act provides, "exemption from coverage so long as public health is not endangered," and the NJDEP already knows that the "public health is not endangered" by these

small businesses who generate used oil when they purchase two of the 280,000 BTU space heaters. (8)

RESPONSE: The New Jersey Regulatory Flexibility Act does not remove small businesses (as defined at N.J.S.A. 52:14B-17) from the reach of environmental regulation where the Department determines such regulation is necessary to protect public health and the environment. Rather, the Act requires that the Department consider ways to minimize any adverse economic impacts of a rule on small businesses. The Department has done this with the result that the current air permit requirements are being replaced with a less burdensome registration for used oil space heaters in certain circumstances. Thus, the Act is not being violated because the current N.J.A.C. 7:27-8, Permits and Certificates, has always required all noncommercial fuel burning units to have an APC Permit and Certificate regardless of the size of the business. Also, health risks potentially increase to significant levels at a gross heat input greater than 500,000 BTU/hr. As a result, facilities with a proposed gross heat input in excess of 500,000 BTU/hr need to obtain an APC Permit for each used oil space heater installed. This APC Permit requirement takes into account the maximum annual hours of operation, distance to the property line, and the type of used oil being combusted. Also, see the Response to Comments Number 1 and 7 of the Summary section above.

Federal Standards Analysis

35. COMMENT: One commenter stated an opinion that the Department's conclusions were offensive to other states, and stated that the Department found insignificant risks from used oil space heaters, using Federal guidelines. (8)

RESPONSE: New Jersey is the most densely populated State in the country. The air contaminant emissions from a used oil combustion source could impact a greater number of citizens as compared to most other States. The Department's proposal was intended to emphasize this State's unique characteristics with respect to protecting air quality. In reference to New Jersey's findings on health risk assessments, please refer to Response to Comment Number 21 of the Environmental Impact section above and the May 7, 1996 health risk assessment itself. New Jersey found minimal risks from used oil space heaters when the cumulative gross heat input is not greater than 500,000 British Thermal Units per hour (BTU/hr) at any one facility, and the on-specification criteria are used. The "500,000 BTU/hr" limit was used as a heat input in the risk assessment since it represents the maximum capacity of a used oil space heater that can burn used oil pursuant to 40 C.F.R. Part 279.23(b). The on-specification criteria are consistent with the Federal guidelines at 40 C.F.R. 279.11, except for the total halogen limit (see Response to Comment Number 50 of the N.J.A.C. 7:27-20.1 section below for an explanation of the different halogen limit). The Department did not find insignificant risks when using the Federal guidelines at the 500,000 BTU/hr limit. Also, Federal guidelines have no 500,000 BTU/hr gross heat input limit at any one facility. With no limit on the total number of space heaters, there is no limit on risk in the Federal rule. The Department found that health risks could have the potential of becoming significant at a gross heat input greater than 500,000 BTU/hr.

36. COMMENT: One commenter believes that the statement that the registration process for space heaters is less costly than the current case-by-case permitting process is misleading, given its location in the Federal Standards Analysis and the fact that the Federal rule has no registration fee or requirement.(8)

RESPONSE: It is correct that there is no registration requirement in 40 C.F.R. Part 279. However, if any space heater is located in a facility subject to New Source Review Permitting requirements outlined in 40 C.F.R. Part 52.21 or 40 C.F.R. Part 51.165, it would be subject to Federal permitting requirements. 40 C.F.R. Part 279 does not include exemptions for 40 C.F.R. Part 52.21 or 40 C.F.R. Part 51.165. Under the provisions of N.J.A.C. 7:27-8.6, Service fees, that were in effect prior to the adoption of these rules, all used oil space heaters were required to obtain complete APC permits at a cost of $1,000. With the adoption of N.J.A.C. 7:27-20.3 and the amendment to N.J.A.C. 7:27-8.6, a registration process is available to applicable space heaters and the cost of the registration process is $250.00. In a Federal standards analysis, an agency is required to identify those areas of a rule that are different or more stringent than the Federal law. For more details, please refer to the Item 2, Regulation of Used Oil Space Heaters, in the proposal's Federal Standards Analysis, New Jersey Register, dated November 16, 1998, 30 N.J.R. 4003(a), 4009.

37. COMMENT: One commenter questioned the basis for the following statement, "Permitting or registering used oil space heaters is consistent with USEPA's State Implementation Plan." The commenter also questioned why Number 2 fuel oil burners are not being registered and permitted since they put out significant hydrocarbon and carbon monoxide emissions. (8)

RESPONSE: The USEPA mandates that the Department meet the Federal ambient air quality standards, and develop a State Implementation Plan (SIP) for those contaminants which do not meet the Standards. Part of the SIP is to require permits for several categories of air pollution sources. Number 2 fuel oil burners, which have a gross heat input of 1,000,000 British Thermal Units per hour (BTU/hr) or greater, would not qualify for a registration and therefore must obtain APC Permits. At major facilities, the emissions from Number 2 fuel oil burners, which have a gross heat input less than 1,000,000 BTU/hr, must be accounted for by including these sources in their Title V Operating Permit, pursuant to N.J.A.C. 7:27-22. (Also, see Response to Comment Number 16 above.)

Number 2 fuel oil is consistent in its form and makeup. Number 2 fuel oil is much cleaner than the on-specification contaminant levels applied for used oil that would be combusted in used oil space heaters. Used oil typically contains over ten times the ash content and resulting particulate emissions as Number 2 fuel oil. Therefore, greater oversight for used oil combustion is appropriate. Particulate emission control is required by the SIP.

38. COMMENT: One commenter questioned the basis for the statement that health risk studies may be required under Title III of the Clean Air Act in the future. The commenter also questioned by what in the provisions of Title III of the Clean Air Act would small space heaters be required to conduct health risk studies. (8)

RESPONSE: "Coal/Oil Combustion," "Commercial/Institutional Fuel Distillate Oil," "Commercial/ Institutional Fuel Residual Oil" and "Industrial Fuel Residual Oil" are Potential Source Categories to be regulated under the Air Toxics Portion of the Clean Air Act (Section 112). Section 112(f) requires the USEPA to prepare a residual risk assessment for all sources regulated by Maximum Achievable Control Technology (MACT) standards and, if necessary, adopt new standards to reduce the risk that remains after the control technology standards have been met. Also, the USEPA is required to identify and control area sources of urban air toxics. Small combustion sources are frequently considered area sources.

39. COMMENT: One commenter believes that increasing the registration threshold for the cumulative gross heat input for all used oil space heaters at a given facility from 500,000 British Thermal Units per hour (BTU/hr) to 1,000,000 BTU/hr is an easy decision since the Department has all the facts, risk assessments, and real numbers, and the Vermont study found no traces of contaminants. (8)

RESPONSE: The Vermont Study (Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study, dated March, 1996) does show contamination in used oil generated from vehicles. The following is a summary of the contamination levels found in all 25 used oil samples (both derived from gasoline and diesel powered vehicles) taken: Cadmium average concentration (avg conc.) 1.65 parts per million by weight (ppmw), seven samples over two ppmw; Lead avg. conc. 49.18 ppmw, two samples over 100 ppmw; Chromium avg. conc. 3.33 ppmw; Ash avg conc. 0.525 percent by weight. One sample of used oil has a halogen content of 877 ppmw. The worst case averages in the Vermont Study came from the five used oil samples derived from diesel powered vehicles and the average concentration of these five samples are as follows: Arsenic-two ppmw, Cadmium-2.3 ppmw, Chromium-3.9 ppmw, Lead-57 ppmw, and total halogens-230 ppmw. These worst case averages were used to derive the emission rates modeled in the Department's May 6, 1997 space heater health risk study since they are more conservative than the overall average of the 25 used oil samples. The Vermont sampling and analytical data demonstrate the need for site specific risk assessment for permits where the cumulative gross heat input exceeds 500,000 BTU/hr. Also, see Response to Comment Number 6 in the Environmental Impact section above. The variability of the Vermont Study results also indicates the appropriateness of evaluating maximum allowed limit, as well as the average. Since actual contaminant levels and resulting emissions do vary, use of maximum allowable levels in risk assessment provide greater certainty as to maximum risk exposures.

The Department disagrees that increasing the registration threshold is an easy or appropriate decision at this time. The risk assessments conducted by the Department demonstrate that there is the potential for a significant health risk to result at a facility if the cumulative gross input of all used oil space heaters exceeds 500,000 BTU/hr. The Department will use a risk screening procedure to review the larger used oil space heater permits which do not meet the registration requirements. The risk screening procedure will expedite the review of these larger permits since a conclusion of the potential health risks can be made quickly, as opposed to having to conduct a complete air quality health risk modeling. The complete air quality health risk modeling is an involved process which could take one to three months, as opposed to the

screening procedure which should be able to be done in less than one half hour by the permit review engineer. As a result of this procedure, the Department will accumulate a database of the risk screening results and any air quality modeling performed for the permitted space heaters. If, over time, the Department finds that all of the facilities which applied for larger space heaters pass the risk screening procedure or air quality modeling, the Department will consider a higher gross heat input, in units of BTU/hr, facility threshold in the future. This scenario assumes that a substantial number of space heater permits will be issued for space heaters at a facility with a total capacity greater than 500,000 BTU/hr and less than 1,000,000 BTU/hr.

40. COMMENT: One commenter believed that the only way to reduce the potential for illegal dumping of used oil in the water streams that flow into the waste water treatment facilities is to increase (registration) threshold to 1,000,000 British Thermal Units per hour (BTU/hr) and to eliminate the need for permits. The commenter stated that without a registration increase, no one will apply for permits or install units, and space heater operators will be less likely to go after do-it-yourselfer (DIY) oil. Therefore, no decrease of used oil dumping and illegal disposal would occur. (8)

    RESPONSE: (Also, see Response to Comment Number 7 in the Summary section above.) There is a financial incentive for companies to use the on- specification used oil generated on-site to generate heat. The Department does not believe the permitting requirement for facilities with a large heat input capacity to be a deterrent. Since used oil is a multimedia concern, the Department must balance protection of both air and water quality. The Department believes it has achieved the appropriate balance with a registration at or below the 500,000 BTU/hr threshold and permits above this amount.

    The Department disagrees that the only way to reduce the potential for illegal dumping of used oil in the water streams that flow into waste water treatment facilities is to increase the registration threshold at a facility to 1,000,000 BTU/hr for the cumulative gross heat input of all space heaters. Facilities that have a cumulative gross heat input for all space heaters of 500,000 BTU/hr or less qualify for the registration. These facilities, once they have installed their space heaters, will solicit the DIY to bring in their oil since it represents a source of no cost fuel. This alone will reduce the potential for improper dumping by DIY.

41. COMMENT: One commenter expressed concern that the proposed rules do not provide adequate enforcement safeguards to regulate used oil composition, air emissions, and other used oil composition requirements. The commenter believed that while the proposed rules contemplate registration, testing, and recordkeeping requirements, the Department does not afford direct agency regulation and enforcement to ensure regulatory compliance and that given the expected increase in the number of users, enforcement of these restrictions will be impossible. The commenter also stated that if the supply of used oil at sites where the oil will be burned increases, as contemplated by the proposed rules, there is insufficient Department resources to assure that all of the oil will be tested to ensure that it is on-specification. The commenter did not see how adequate enforcement would occur if, as the Department states,

there will be relatively little change in the number of employees regulating used oil. The commenter stated that, without stronger departmental enforcement, the increased used oil use will be left unchecked and although a business' records would be open for departmental inspection, maintaining but not increasing the current number of enforcement personnel suggests that record inspection will be rare. The commenter disputed the self monitoring provisions under the proposed rules since the potential health risks from used oil combustion also result in the need for more oversight in a densely populated state with generally poor air quality. (5)

RESPONSE: The Department disagrees with this comment. There will be a sufficient government regulation and enforcement presence to monitor the facilities which burn used oil. Most facilities which will burn used oil in space heaters or other combustion units already have installed and operate other sources which have air permits. These sources include petroleum storage tanks, degreasers, and commercial fuel burning equipment. These sources are currently inspected. The primary enforcement responsibility is with the Air Compliance and Enforcement program which has four regional offices in the State. In addition, the Department has trained and delegated enforcement authority to county and local agencies under the County Environmental Health Act (CEHA). These CEHA agencies inspect gas stations and other small facilities on a routine basis. Since many of the used oil space heaters are expected to be located at these facilities, the Department will train CEHA agencies in the rules' requirements to help ensure adequate regulatory oversight. The commenter should be aware of the fact that, in addition to the enforcement inspectors, members of the general public have the ability to file complaints whenever they observe a violation. The common potential observations are visible emissions of smoke at the discharge point and odors beyond the property line. The Department routinely relies on citizen complaints to which the Department responds to investigate if any violations have occurred.

42. COMMENT: One commenter expressed concern that by labeling (on- specification) fuels from used oil as anything other than "commercial fuel" and imposing additional burner regulations, used oil fuel loses its ability to be competitive. The commenter stated that the (Federal) Management Standards allow used oil that meets precise specifications to be free from further regulation and the USEPA, which has carefully evaluated this issue, concluded that "(on-specification) used oil fuel poses no greater risk than virgin fuel oil and once it enters the commercial fuel oil market should not be regulated differently than virgin." 50 Federal Register 49189. (7)

RESPONSE: The Department is using Federal terms to describe used oil as on- specification or off-specification. To recognize that combustion of on- specification used oil to generate useful heat constitutes a form of recycling a material that could otherwise be wasted (unless rerefined into motor oil), a new term, processed used oil fuel, is added to the definition section. Processed used oil fuel is defined as follows, "on-specification used oil which has been treated to improve its combustion characteristics and is combusted consistent with an approved Air Pollution Control Permit to Construct and Certificate to Operate or is burned consistent with the provisions of N.J.A.C. 7:27-20.6(a)." Processed used oil fuel is not being classified as a virgin fuel since it is typically more contaminated than most virgin fuels, primarily Numbers

2 fuel oil. This can be seen from the Chart in Response to Comment Number 18 of the Environmental Impact section above. As a result, the processed used oil fuel must be regulated differently by the Department to protect public health. However, using the processed used oil fuel designation does imply that the on-specification used oil is something that has been "processed or treated," which is a good connotation, and a fuel, which can be used to generate useful heat. This is consistent with 40 C.F.R. Part 279, which a burner or processor would have to consult to determine the used oil's status. A burner or processor would not have to consult 40 C.F.R. Part 279 for a truly virgin fuel.

The processed used oil fuel definition is not meant to create a new category of used oil fuel or meant to lessen the requirements of the proposed rules. Its inclusion is a clarification that certain used oil has gone through processing to create an on-specification used oil fuel. Other used oil is "on- specification" without having undergone processing. Processed used oil fuel is meant to identify processed on-specification used oils that can be charged to combustion units that are permitted to burn on-specification used oils. The inclusion of this definition does not impact the requirements of the proposed adoption. Such a change would not impact the types and amounts of air contaminants generated from the combustion of on-specification used oil.

Used oil which meets the "on-specification" definition may be exempt from most of the regulations of 40 C.F.R. Part 279. However, as outlined in the proposal under the "Other Federal Requirements Which Regulate Used Oil Combustion" Section of the Federal Standards Analysis, November 16, 1998 New Jersey Register, 30 N.J.R. 4003(a), 4008, there are other Federal requirements that regulate used oil combustion. These include 40 C.F.R. Part 52 "Approval and Promulgation of Implementation Plans," 40 C.F.R. Part 60, Subpart D, "Standards for the Performance of Fossil Fuel Fired Steam Generators for Which Combustion Is Commenced After August 17, 1971," and Title V of the Clean Air Act.

43. COMMENT: One commenter raised issue with the Federal Standards Analysis, claiming that the differences with Federal rules are under-emphasized. The commenter also claimed that the rules undermine the used oil recycling system. (3)

RESPONSE: The Department disagrees that the Federal Standards Analysis (FSA) of the proposal under emphasizes the differences with the Federal rules (40 C.F.R. Part 279). The FSA examines those sections of 40 C.F.R. Part 279 which specifically deal with used oil combustion and compares them to the provisions of the rules.

The rules do not undermine the used oil recycling system (the Department assumes the commenter is referring to recycling used oil into a fuel product) because the Federal rules allow used oil in space heaters. Pennsylvania, Connecticut, and New York all allow the burning of used oil in space heaters. Furthermore, the rules allow on-specification used oil to be combusted in most boilers with a minimum gross heat input of 20 million British Thermal Units per hour which are permitted to and capable of burning Number 6 fuel oil. This facilitates the used oil processors ability to sell their processed used oil fuel product in New Jersey.

N.J.A.C. 7:27-8.6 Service fees

44. COMMENT: Several commenters requested that a permit application fee for a used oil space heater be set at $250.00. (4, 8)

RESPONSE: The Department agrees. The permit application fee for a used oil space heater with a capacity of 500,000 British Thermal Units per hour or less will be $250.00. Also, see Response to Comment 28 above.

This is being implemented by incorporating "used oil space heaters which burn On Specification Used Oil and have a capacity of 500,000 British Thermal Units or less" as a "Category I" permit in N.J.A.C. 7:27-8.1. N.J.A.C 7:27-8.6, Service fees, lists in A. Base Fee Tables, Table 1 a Total Category I initial permit fee of $250.00.

Note that the Department expects that most persons intending to install one or more used oil space heaters with a combined gross heat input of less than or equal to 500,000 BTU/hr will use the registration process. The use of the permit application is intended for multiple units with a combined gross heat input of over 500,000 BTU/hr. The $250.00 fee would apply to each unit that is not subject to a registration.

N.J.A.C. 7:27-20.1 Definitions

45. COMMENT: One commenter requested that the "heating of water" be added to the definition of energy recovery. (11)

RESPONSE: The Department agrees. The definition of "energy recovery" is revised as follows, with the additional text in boldface. "Energy recovery" means the use of heat from combustion for a useful purpose, such as the heating of water or air for space heating or wash water. This change is being implemented to clarify the Department's interpretation of "energy recovery." The energy generated by the used oil space heaters can be used for both heating of a room or work area and the heating of water. The heating of water is fairly common at automobile dealerships since this water can be used to heat either the offices of the facility or the water used to wash vehicles. Such a clarification does not impact the types and amounts of air contaminants generated by used oil space heaters.

46. COMMENT: One commenter requested a clarification of the term "facility" as used in the subchapter. (8)

RESPONSE: The term was intended to have the same meaning as the statutory term which is also used in N.J.A.C. 7:27-8. Thus, the following definition of "facility" from N.J.S.A. 26:2C-1 et seq. will be incorporated into the rules to clarify its use in the rules.

> "Facility" means the combination of all structures, buildings, equipment, control apparatus, storage tanks, source operations, and other operations that are located on

a single site or on contiguous or adjacent sites and that are under common control of the same person or persons. Research and development facilities that are located with other facilities shall be considered separate and independent entities for the purposes of complying with the operating permit requirements of P.L. 1954, c.212 (N.J.S.A. 26:2C-1 et seq.) or any codes, rules, or regulations adopted pursuant thereto.

47. COMMENT: One commenter requested that the definition of space heater be modified to define a space heater to mean a used oil fired appliance for energy recovery for a useful purpose. (8)

RESPONSE: The definition of space heater is modeled after the "Unit Heater" designation of Underwriter Laboratories, Inc. 296A Standard for Safety, UL296A, "Waste Oil Burning Air Heating Appliances." The term "air" will be removed from the existing definition and a reference will be added concerning "energy recovery" to allow greater flexibility on how the heat generated is used.

48. COMMENT: One commenter questioned the reason as to why a definition of Number 4 fuel oil was not provided in the definition section of the rules. (8)

RESPONSE: Number 4 fuel oil was not defined in the definition section since it is not referred to anywhere in the text of the rules.

49. COMMENT: Several commenters objected to including used oil in the definition of non-commercial fuel. One commenter stated that doing this would undermine used oil recycling and stated that the market would be diminished since fewer people would to want to burn it, which would lead to improper disposal. A second commenter stated that sensitive receptor locations aside, there is no reason to treat oil-derived fuel differently from its virgin counterpart unless the point is to discourage its use. Most used oil collected from fast lubes, dealers, and service stations already meets the definition of on-specification. The used oil is processed by fuel processors/recyclers and eventually blended with other fuels--but only to meet burners' specific energy requirements. The resulting product is every bit as "commercial" as virgin fuel which is also blended to meet burners' specific energy requirements. In taking this approach, the Federal Trade Commission wisely encouraged the recycling of used oil by not attaching a stigma to one of the most common recycled used oil products. A third commenter stated that this was directly contrary to the USEPA's objective and to effectively promote the burning of on-specification recycled used oil for energy recovery, the stigma must be removed from on- specification recycled oil. (3, 4, 6)

RESPONSE: For the purpose of air pollution control regulation, processed and unprocessed used oil has always been considered a "non-commercial" fuel if burned and the Department has required air pollution control permits for its combustion. With these rules, specific requirements are being set forth for processed used oil combustion to eliminate the

case-by-case permit process in many cases. These requirements are a function of whether the used oil is "on- specification" or "off-specification," the type of combustion unit, and type of building where it is burned. Consequently, the information a potential burner of used oil needs to know is whether the used oil is "on-specification" or "off-specification" and whether the combustion unit is eligible to burn it. When it is sold as fuel, the Department is defining a term of "processed used oil fuel" to describe on-specification used oil being combusted in an eligible combustion unit. In short, "on-specification used oil" sold to an eligible burner can be referred to as "processed used oil fuel." "Off-specification used oil" must be referred to as "off-specification used oil" when sold to a burner with air pollution control devices and permits that allow the combustion of the "off-specification used oil." Any sale of "on-specification used oil" to a middleman who is not the eligible burner must continue to be referred to as "on-specification used oil." In this way, the terminology matches the requirement. "Processed used oil fuel" is defined as follows, "on-specification used oil which has been treated to improve its combustion characteristics and is combusted consistent with an approved Air Pollution Control Permit to Construct and Certificate to Operate or is burned consistent with the provisions of N.J.A.C. 7:27-20.6(a)." "Processed used oil fuel" is not being classified as a virgin fuel since it is typically more contaminated than the most common virgin fuel, Number 2 fuel oil. This can be seen from the Table in Response to Comment Number 18 of the Environmental mpact section above. As a result, the "processed used oil fuel" must be regulated differently by the Department to protect public health.

Also, see the Response to Comment 42 of the Federal Standards Analysis section above.

50. COMMENT: One commenter questioned why the halogen level in the "on- specification used oil" definition is different than that established by the Federal Government. (3)

RESPONSE: The on-specification used oil halogen limit of 1,000 parts per million by weight (ppmw) is more stringent than the Federal upper limit at 40 C.F.R. Part 279.11 of 4,000 ppmw and is consistent with the Federal rule at 40 C.F.R. Part 279.44(a) which states, "To ensure that used oil is not a hazardous waste under the rebuttable presumption of 40 C.F.R. Part 279.10(b)(1)(ii), the used oil transporter must determine whether the halogen content of used oil being transported or stored at a transfer facility is above or below 1,000 ppm." The total halogen limit for on-specification used oil of 1,000 ppmw is listed at N.J.A.C. 7:26A-6.2(a) and was justified in the Department's May 6, 1996 proposal concerning the recycling rules (See the Federal Standards Analysis of the proposal at 28 N.J.R. 2240(a), 2260, May 6, 1996). In addition, the health risk assessment studies conducted by the Department demonstrated that significant health risks can result when used oil which has a halogen content in excess of 1,000 ppmw is burned. Halogen content in excess of 1,000 ppmw would have to be evaluated on a case-by-case basis by the Department to determine the health risks. Some type of acid gas control device, such as a wet scrubber, would be needed to control the combustion unit which would burn used oil with a halogen content in excess of 1,000 ppmw in order to minimize health risk.

N.J.A.C. 7:27-20.2 General provisions

51. COMMENT: One commenter stated that the rules do not propose location limitations for used oil combustion within the vicinity of certain buildings (multi-family residences, day care facilities, schools, hospitals, residences for the elderly, and nursing homes). Limitations on combustion near residential areas is not prohibited either. Further, there is no control to assure that the cumulative effect of space heaters in any one given location will be acceptable. Further, the proposed rules do not explain how such a possibility would be consistent with Federal and State law concerning particulate and other air emissions. (5)

    RESPONSE: Registered space heaters are limited to locations which generate used oil, such as automobile dealerships and automobile service stations. Air dispersion modeling done by the Department shows that the predicted annual concentrations from a used oil space heater decrease significantly at a distance of 300 feet or more from the stack. For dealerships and vehicle service stations, the nearest residential building is usually 300 feet or more from the used oil space heater stack. Also, the size of a space heater is limited to 500,000 British Thermal Units per hour with a registration, which does not require a site specific risk assessment. If there is a cumulative gross heat input in excess of 500,000 BTU/hr capacity for space heater(s) at a given facility, permit(s) must be obtained from the Department to burn used oil. The permit application provides the Department with a mechanism to assess the health impact of the air contaminant emissions for larger amounts of used oil combustion and ensure that risks are minimal. When the permit application is submitted, to gain approval, pursuant to N.J.A.C 7:27-8.11(a), the applicant must document that all the State and Federal air pollution control standards, codes, rules, and regulations are being met. The Department then reviews this documentation for acceptability.

52. COMMENT: One commenter urged that the rule allow those virgin fuels with less than 25 percent on-specification RFO-Recycled fuel oil in them and that meet the virgin ASTM specification for their designated grade to be utilized in the above referenced applications (hospitals, schools etc.). The commenter stated that Numbers 4, 5, and 6 fuel oils contain some used oil and the ASTM proposal for used oil RFO-Recycled fuel oil, states that to be considered a RFO, the blend must contain at least 25 percent used oil. The commenter also believed that a RFO blend of 25 percent or more used oil should be allowed if the product meets the EPA used oil fuel spec and the virgin ASTM fuel spec and stated that produced fuels are currently sold to sensitive receptor locations without incident. (7)

    RESPONSE: The rule allows industrial boilers that are capable of burning and permitted to burn Number 6 fuel oil and have a gross heat input greater than 20 million British Thermal Units per hour to combust on-specification used oil without a permit modification. Comparable blending with commercial fuel oil may be required to meet the ash content specification which is based on the ASTM's specification for Number 5 fuel oil. The Department believes that a user of oil should be made aware if it contains used oil. See Response to Comment Number 2 in the Summary Section on why burning used oil in school boilers and the like is prohibited. The commenter would allow blending off-specification used oil with commercial Number 2 fuel oil to be sold as commercial fuel oil, without any notice to the user, despite the fact that

risk from air contaminant emissions could increase substantially over that when burning commercial Number 2 fuel oil. For combustion units that do not go through the permit process, the Department is limiting on-specification used oil use to Number 6 fuel oil boilers because the regulated parameter levels are similar and, consequently, risk does not increase for these parameters. The Department is also limiting used oil combustion to "non-sensitive" sites, that is, industrial sites, because the composition of used oil is more uncertain than commercial fuel oil and this uncertainty makes it prudent to avoid possible plume downwash situations at school, hospital, and other locations with sensitive receptors.

Based on the results of the health risk assessments, the Department is maintaining the prohibition of combustion of used oil at sensitive receptor locations.

The commenter has stated that "produced fuels" are currently sold to sensitive receptor locations without incident. Pursuant to N.J.A.C. 7:27-8.2 (effective date March 5, 1973), any person combusting fuel containing used oil must have obtained a permit from the Department. To the Department's knowledge, there are no boilers located at a multi-family residence, a day care facility, a school, a hospital, a residence for the elderly, or a nursing home in the State with air permits which authorize the combustion of used oil. Also, it is unclear to what kind of incidents the commenter is referring.

53. COMMENT: One commenter opposed the proposed following language at N.J.A.C. 7:27-20.2(e), providing that, "No person may combust used oil containing hazardous waste," claiming the following: (1) Zero tolerance is impractical, total segregation not realistic, (2) Definition of hazardous waste is so broad that it encompasses materials which are fully compatible with use as fuel, (3) No burner would accept used oil from a processor for fear of violating the subchapter and just purchase virgin, unprocessed fuels. The commenter urged that the subchapter adopt the Federal de minimus rule at 40 C.F.R. Part 279.10(b)(2). (3)

RESPONSE: The Department's rules already include the provision requested by the commenter. N.J.A.C. 7:27-20.2(e) references the provisions that allow the burning of used oil blended with hazardous waste in certain instances. N.J.A.C. 7:26A-6 allows certain mixtures of used oil and hazardous waste to be managed as used oil, N.J.A.C. 7:26G-8 and 9 regulate the incineration of hazardous waste that may be mixed or combined with used oil, and N.J.A.C. 7:27-8 or 22, as applicable, regulates the air contaminant emissions from the combustion or treatment of used oil mixed with other substances. The appropriate APC permit applications must be submitted to demonstrate compliance with N.J.A.C. 7:27-8 or 22, and during the review of the applications, the Department will verify whether the materials being burned will be consistent with all State and Federal requirements. Furthermore, the Federal rule 40 C.F.R. 279.10 (b) has already been adopted by the Department at N.J.A.C. 7:26A-6.1(a) .

54. COMMENT: One commenter opposed the proposed burning restrictions imposed by N.J.A.C. 7:27-20.2(b), claiming they unfairly and without rational or scientific basis restrict the end market for on-specification, recycled fuel oil produced by used oil processors. The commenter claimed the proposed burning restrictions of N.J.A.C. 7:27-20.2(b) do not seem to serve the

objective sought, which is the protection of "sensitive receptors" from the threat of air pollution and, thus, in all likelihood, the Number 4 fuel oil and other types of fuel permitted to be burned in light industrial furnaces/boilers serving sensitive receptors may contain higher levels of hazardous constituents than the on-specification, recycled fuel oil product being produced by recycling operations, such as Lorco, which product may not be burned in such light industrial furnaces boiler. (6)

RESPONSE: The proposed used oil burning restrictions at multi-family residences, day care facilities, schools, hospitals, residences for the elderly, and nursing homes have been established based on the results of health risk environmental studies. Health risk assessments have demonstrated that there are potential significant health impacts when burning on-specification used oil at these locations. The available data on contaminant levels in light commercial fuel oil and used oil consistently demonstrate higher contamination levels in used oil. (See also Response to Comment Number 2 of the Summary section above and Response to Comment 52 above in this section)

There are no multi-family residences, day care facilities, schools, hospitals, residences for the elderly, and nursing homes in the State that are authorized to burn used oil. Therefore, the proposed rule is simply streamlining and clarifying existing regulatory requirements and practices.

N.J.A.C. 7:27-20.3 Burning of on-specification used oil in space heaters covered by a registration

55. COMMENT: Several commenters requested that the registration threshold at any one facility of a cumulative gross heat input for all space heaters of 500,000 British Thermal Units per hour (BTU/hr) or less be increased. One commenter suggested that the registration process be available to multiple units, each with a gross heat input of less than 500,000 BTU/hr. Two commenters proposed that the registration threshold limit be increased to 1,000,000 BTU/hr. One commenter stated that at the 500,000 BTU/hr threshold, space heater operators would not be able to effectively burn all of the used oil generated at some facilities. One commenter claimed that gross heat inputs at a facility in excess of 500,000 BTU/hr will result in a negligible risk to the environment. The facility limit of 500,000 BTU/hr could be comprised of several smaller used oil space heaters, in the 180,000 BTU/hr range, and each of these space heaters would require a permit, thereby penalizing the business trying to conserve energy. One commenter also claimed that the 500,000 BTU/hr registration threshold limit does not provide enough flexibility for operators of used oil space heaters and that the Department did not consider the possibility that some of the fuel burned would be commercial fuel oil. The commenter emphasized that only a portion of the fuel burned could be on- specification used oil and that this should been taken into account when establishing the threshold. (8, 10, 11)

RESPONSE: (Also see Response to Comment 1 of the Summary section above.) The Department is not prohibiting auto dealers, other automotive maintenance facilities, and any facilities which generate used motor oils on-site from burning at a gross heat input in excess of 500,000 BTU/hr. Any facilities that exceed the 500,000 BTU/hr threshold would have to apply for air permits for all used oil space heaters. This is necessary so that facility specific

health risk assessments can be conducted. The health risks have the potential of becoming significant at a gross heat input greater than 500,000 BTU/hr.

The Department agrees that facilities which have a cumulative potential gross heat input of 500,000 BTU/hr and qualify for the registration may not burn used oil at maximum capacity. However, the registration must be based on enforceable restrictions and maximum potential to emit. Limiting the collective capacity of the used oil space heaters to the maximum technically feasible level in the Registration achieves these two requirements, and alleviates the requirement for the Registrant to keep records of how much used oil is burned per hour, day, and year.

However, if a used oil space heater operator wanted to install at a facility used oil space heaters with a cumulative gross heat input capacity in excess of 500,000 BTU/hr and limit the health risk impact through operating restrictions, the operator could do so by applying for air permits.

56. COMMENT: One commenter questioned the current facility registration threshold of 500,000 British Thermal Units per hour for the cumulative gross heat input of used oil space heaters at any given facility. The commenter based the comment on what is actually in used oil (the contamination level), as compared to and supported by the contaminant level in standard purchased fuel oil and that used oil is very much cleaner than the listed on-specification levels. (8).

RESPONSE: (Also see Response to Comment 55 above) There are used oil samples which contain contaminant concentration levels which are above the on- specification criteria. For example, in the Vermont study of the 25 used oil samples taken, nine used oil samples had concentrations of a contaminant exceeding an on-specification standard. Hence, it is reasonable to use the maximum allowable contaminant levels to evaluate risk. Also, used oil sampling and analytical results demonstrated consistently higher contaminant concentrations than the most common commercial fuel oil, Number 2 fuel oil.

57. COMMENT: One commenter suggested that in lieu of a 20 foot stack height above grade as a requirement for a registered used oil space heater, that the highest point within 10 feet of the flue will accomplish the same objective and proposed the following as revised rule language for the stack requirement: The discharge point of the stack serving the space heater is four feet higher than any part of the roof within 10 feet of the stack discharge and that discharge point is at least 20 feet above grade. (8)

RESPONSE: The requirement proposed and adopted is that the discharge point must be higher than the peak of the roof of the building in which the space heater is located and at least 20 feet above grade. Dispersion modeling shows that a stack at a height of less than 20 feet will have severe downwash and allow emissions to reach the average respiratory height of five feet, without sufficient diffusion or downwash. Some of the proposed new language, while beneficial to dispersion in some situations, is not an adequate substitute to the proposed

language. Other stack requirements may also be applicable under New Jersey Uniform Construction (N.J.A.C. 5:23) and New Jersey Uniform Fire Code (N.J.A.C. 5:70).

58. COMMENT: One commenter questioned whether a renewal notice should be issued for the five year renewal of the space heater registration. The commenter supported this concept and proposed that the following language be incorporated into the rule: The Department shall provide notice that it is time to renew to the registration so that the registrant may obtain registration renewal forms at the following address. (8)

RESPONSE: The Department agrees with the comment and, six months prior to expiration of the operational authority under the registration, a renewal notice and form will be sent from the Department to the Registrant. The proposed language at N.J.A.C. 7:27-20.3(b)16 has been modified to provide that the Department will send renewal notifications and forms six months prior to the expiration of the registration to the registrants.

59. COMMENT: One commenter questioned whether other substances, besides authorized used oil, would be charged to the registered space heaters and whether there were sufficient controls to prevent this. The commenter claimed there are a large number of waste streams typically generated at facilities which will install used oil space heaters and that there is insufficient means to confirm what types of materials are being forwarded by do-it-yourselfers to used oil space heater facilities. (5)

RESPONSE: The following safeguards are in place to ensure that only authorized used oil is charged to used oil space heaters: (1) The rule clearly outlines those substances that are common to automobile maintenance facilities which are prohibited from being charged to a registered space heater and which are allowed to be charged; and (2) Registered used oil space heaters are designed to burn commercial fuel oil (grades of Number 2 fuel oil and lighter) and used motor oil only and no other type of substances. Burning of other substances may damage the space heater, destroy its capability to operate, and void any manufacturer's warranty.

The registered space heater may only burn used oil which is generated from motor vehicles either generated on-site or by do-it-yourselfers (DIY) off-site. The substances generated on-site that may be charged to the space heater are under the control of the space heater operator. While there is much less control on the content of DIY used oil, it can be inspected by employees to ensure that it looks like and has the consistency of used motor oil. Also, pursuant to the waste management rules, the provider of the DIY used oil must sign a registry when delivering the used oil.

60. COMMENT: One commenter warned that the volume of used oil space heaters would take out of the market would put haulers and processors out of business, and businesses (which generate used oil) would have no entity which would pick up the used oil. It (the used oil) would end up in the ground or in the waterways. (5)

RESPONSE: See Response to Comments 4 and 11 of the summary section above.

61. COMMENT: One commenter objected to the arsenic, cadmium, and hexavalent chromium assumptions used in the health risk studies, claiming they were inconsistent with the Vermont study's findings. (8)

RESPONSE: The Department disagrees with the commenter's statement that used oil samples taken and analyzed in the Vermont study did not detect arsenic or cadmium or hexavalent chromium. The used oil sampling and analytical arsenic results were inconclusive due to analytical difficulties. As a result, no final conclusion can be made. As for cadmium, of the 25 used oil samples taken and analyzed, the average concentration was 1.65 ppmw, with seven samples over two ppmw. In the Vermont study, arsenic and cadmium stack testing results of used oil space heaters were reported as non-detectable. However, the Department believes that this is more the result of the limitations of the stack test method than the absence of arsenic or cadmium. In fact, Footnote 1 of Table 2 "Emission Testing Actual Results" of the Vermont study states, "Arsenic and cadmium results were all reported as non-detectable. The values presented represent the varying levels of detection for each specific sample collected which is a function of the sample mass." It is therefore reasonable to conclude that all arsenic and cadmium entering the space heater is emitted out of the discharge point since there are no particulate controls.

It is also inaccurate to state that the Vermont study did not detect hexavalent chromium. Total chromium was measured at the stack at detectable levels. However, the Vermont study could not make a final conclusion on hexavalent chromium as the following from page 10 of the Vermont study indicates, "However, compliance with the hexavalent chromium Action Level could not be determined for either fuel (Number 2 fuel oil or used oil) since the hexavalent chromium percentage of the total chromium value is not known."

62. COMMENT: Two commenters suggested that the types of materials that are authorized to be charged to a registered used oil space heater be expanded. These would be substances that are comparable to the types of used oils currently authorized and would be acceptable to the Department. One of these commenters suggested that it be expanded to include any fuels which meet the American Society for Testing and Materials Used Oil Fuel Specification. (7, 8)

RESPONSE: To include the proposed provision that states "and any other fluid that the Department determines is comparable and acceptable" would make it unclear what is allowable under this rule for a registration. Since registration procedures do not provide for Department approval, this provision is not appropriate.

A good deal of information is known about the types of used oil (used crankcase oil, used brake fluid, used transmission fluid, or used power steering fluid) that are included under the registration. This knowledge was the foundation for the Department's development of the registration requirements. Knowing the typical concentrations of contaminants in this type of used oil resulted in registration operating requirements that are protective of public health and

result in minimal impacts to the environment. This also eliminates the need for case-by-case permit reviews of space heaters which burn only these used motor oils and meet the other registration requirements.

The Department agrees that there are other types of on-specification used oil that may be acceptable for energy recovery in a used oil space heater. However, in order to burn these used oils, an air permit would have to be filed. There is a large universe of non-motor vehicle generated used oil and a case specific analysis would have to be conducted to verify that the combustion of these used oils will not result in a significant impact to public health or the environment.

63. COMMENT: One commenter suggested that used oil space heaters have the same requirements and procedures as larger boilers and offered the following specific recommendations: 1. Require permits for space heaters and others who would burn used oil; 2. Set a $1,000 annual fee, to allow proper enforcement of used oil users; 3. Conduct annual emission checks to assure compliance; 4. Require a log book showing source, volume, date of shipment and type and content of used oil, based on tests of incoming shipment, and 5. Require used oil testing, reporting, and recordkeeping. (5)

RESPONSE: Used oil space heaters which do not meet the registration requirements must obtain an Air Permit. This combustion equipment will be subject to the same review procedures as any other permit application. Used oil space heaters which do meet the registration requirement need only file the registration form. The form can be used because the limitations on the operation and design of the space heater, and types of on-specification used oil which may be combusted, are clearly specified in the rule. These have been developed to be protective of public health and result in minimal impact to the environment. In addition, the air contaminant emission rates from the space heaters do not have to be calculated and provided by the registrant since they can be derived by the Department based on the restrictions imposed.

The regulation of used oil space heaters is consistent with regulation of other types of sources. Requirements vary from source to source depending on potential to emit, volume of fuel or raw material processed, and types of fuel or raw material used. For example, the Department has a general permit which is similar to a registration for a used oil space heater, for boilers with a gross heat input of less than 10 million British Thermal Units per hour which burn natural gas, propane, Number 2 fuel oil, Diesel, kerosene, or a combination of these fuels. Any other type of boiler must have a regular air permit. Such "registrations" and "general permits" have been developed to be protective of the environment, streamline the permitting system, and provide for appropriate measures for determining compliance with the applicable rules. The amount of fees charged for permits and operating certificates, and general permits/registrations are based on the different levels of service required. General permits and registrations do not require case-by-case permit review and approval services. A service fee of $250.00 is assessed for both general permits and registrations.

64. COMMENT: One commenter questioned why on-specification used oil from processors can not be accepted for burning at registered space heaters. The commenter claimed that no greater amount of (air contaminant) emissions would result if this was allowed.(7)

RESPONSE: Authorization to combust on-specification used oil at space heaters with a registration is a streamlined procedure limited to specific types of used oil. On-specification used oil from processors could contain used oil types that are different than these specific types limited in the registration. The specific types of used oils which may be burned in a registered used oil space heater is limited to the following types of used motor oils: used crankcase oil, used brake fluid, used transmission fluid, and used power steering fluid. These must either be generated on-site, or generated by do-it- yourselfers. This minimizes the possibility of unauthorized fuel being charged to the used oil space heater. These restrictions were put in place since there is much data on the contaminant concentration levels in used motor oil. This allowed the Registration procedure to be implemented by the Department since case-by-case reviews were not necessary for those space heaters which met all of the Registration requirements. The registration does not include on- specification used oil from processors because of the variability of the types of used oil which could be in the used oil generated by the processors.

65. COMMENT: One commenter objected to the list of substances which may not be blended with used oil combusted in a registered space heater. The commenter requested that the Federal standards governing used oil and waste mixtures, at 40 C.F.R. Part 279.10(b), apply. (7)

RESPONSE: Please refer to Response to Comment 53 of the N.J.A.C. 7:27-20.2 section above.

66. COMMENT: One commenter requested that the Department reconsider its proposed absolute prohibition of mixing as it relates to antifreeze, solvents, and oil additives claiming that zero tolerance would be both unrealistic and potentially costly with little or no benefit. The commenter stated that in promulgating the Used Oil Management Standards (40 C.F.R. Part 279), the USEPA recognized this reality (of non-used oil materials being in the mix) and provided a de minimus exception for ignitables only. (4)

RESPONSE: Please refer to Response 53 of the N.J.A.C. 7:27-20.2 section above.

67. COMMENT: One commenter objected to the proposed burning of used oil in space heaters claiming it suppresses used oil recycling activities by used oil reprocessors and increases the potential for used oil pollution. (6)

RESPONSE: See Response to Comment 27 of the Jobs Impact section above, Response to Comment 23 of the Environmental Impact section above, and Response to Comment 4 of the Summary section above.

68. COMMENT: One commenter objected to the Department's allowing the unrestricted burning of used oil in space heaters despite its own determination that the "quality of used oil typically burned by service station used oil collection sites in their space heaters is higher than the maximum, on- specification limit" as set forth in draft rule. The commenter referred to the Summary for The recycling rules proposal set forth in the New Jersey Register, 28 N.J.R. 2240(a), 2260 (May 6, 1996) to support the comment. (6)

    RESPONSE: The commenter is correct in stating that the Department has determined that the quality of used oil typically burned in small space heaters by service stations is higher than the maximum on-specification used oil limit, but has failed to recognize the Department's intent. Specifically, the Department's usage of the term, "higher quality," included in 28 N.J.R. 2240(a), 2260 (May 6, 1996), means, or should be interpreted as meaning, that the oil typically burned by service stations contains contaminants that are not above, but are significantly below, the maximum limit allowed for the on- specification used oil.

    However, the Department realizes the commenter's meaning that service station used (motor) oil may have contaminant concentration levels higher than the on- specification levels. The Department did encounter during rule development, several used motor oil samples which exceeded the on-specification criteria. However, these were in the minority and overall contaminant concentration averages of every study examined were below the criteria levels. Since the health risks are the result of many years of exposure, it was concluded that used motor oil was appropriate to include in the registration since the overall average was consistently below the on-specification criteria.

69. COMMENT: One commenter claimed that once generators who burn used oil on- site in space heaters recognize the unlikelihood of enforcement action, they will begin to burn as much of their collected used oil as possible without the slightest regard to the promulgated specification. (6)

    RESPONSE: See Response to Comment 10 of the Summary section above.

70. COMMENT: One commenter claimed that the permitting of the unrestricted burning of used oil in space heaters is directly contradictory to the Department's expressed concern over the potential health risk posed to the general public by the burning of tested, on-specification, recycled fuel oil in light industrial furnaces/boilers.(6)

    RESPONSE: The Department does not allow the unrestricted burning of used oil in space heaters. The registration includes several limitations restricting the cumulative capacity of the space heaters, what types of used oils can be burned, and what type of space heater must be installed. All other used oil space heaters must obtain an air permit, which will undergo a complete health risk assessment. If deemed approvable, an air permit will be issued with appropriate limitations and restrictions. As a result, the burning of used oil in space heaters is restricted, consistent with Department regulations, policies, and procedures.

Similarly, the Department is allowing boilers with a gross heat input greater than 20 million BTU/hr which are permitted to and capable of burning Number 6 fuel oil to burn on-specification used oil. The rationale for allowing this is that these boilers are located in industrial areas, have high stacks which result in greater contaminant dispersion, and generally have already been reviewed by the Department to allow for combustion of Number 6 fuel oil that has a consistency similar to on-specification used oil. This would not cause increases to exposure to air contaminants resulting from the combustion of on- specification used oil.

Any other use of used oil in boilers or other combustion equipment needs to be reviewed by the Department through an air permit to assess the impacts to the public health and environment. Light industrial boilers are larger than industrial space heaters, and in much more common use than space heaters or heavy oil boilers. The Number 2 fuel oil burned in these boilers is much cleaner than used oil, so a change to used oil combustion increases in public health risks, which should be evaluated with a permit process.

71. COMMENT: One commenter suggested the Canadian Standard Association standard be incorporated into the used oil space heater registration specifications as an industry standard since is it equivalent to the Underwriter Laboratory standard. (2)
RESPONSE: The Department concurs that the Canadian Standard Association standard is equivalent to the Underwriter Laboratory standard. N.J.A.C. 7:27-20.3(b)6 has been modified as to incorporate the standards for used oil space heaters set forth by the Canadian Standards Association

N.J.A.C. 7:27-20.4 Burning of on-specification used oil in space heaters covered by a permit

72. COMMENT: One commenter objected to having to obtain a permit and the permitting process for a larger used oil space heater, claiming that it has been and will be too cumbersome for most customers and they will opt to just not install a space heater based on the hassle involved in getting a permit. (10)

RESPONSE: (Also see Response to Comment 7 of the Summary section above.) The health risk screening procedure used to evaluate the larger space heaters is simple and arrives at an indication of acceptability quickly. The Department can also help the permit applicant develop the emission rates and conduct the health risk screening.

73. COMMENT: One commenter requested a clarification of the term "facility" as it applied to this section of the rules and how the 500,000 British Thermal Units per hour (BTU/hr) registration threshold related to the Department's definition of "facility." The commenter believed that a 1,000,000 BTU/hr threshold was more appropriate for a "facility." (8)

RESPONSE: See the Response to Comment 46 of the N.J.A.C. 7:27-20.1 section above and Response to Comment 1 of the Summary section above.

N.J.A.C. 7:27-20.5 Demonstration that used oil is on-specification

74. COMMENT: One commenter suggested the rule allow "other information," in addition to an analysis of the used oil, to confirm that the used oil has met all on-specification criteria. The commenter pointed out that this would be consistent with Federal regulations which deal with the classification of used oil. (7)

RESPONSE: The Department is not including "other information" as a sole means of confirming that used oil has met the on-specification designation of N.J.A.C. 7:27-20.5. Analyses of used oil must be conducted to confirm that the "on-specification" criteria are met. This is partially because of the variability of used oil. The analyses are also necessary since the concentrations of the heavy metals (arsenic, cadmium, chromium, lead) are directly related to the health risks posed by the combustion of the used oil. Also, the analyses are needed to provide confirmation to the purchaser that the product being burned is on-specification used oil.

The following four scenarios provide examples of the scope of analysis that will satisfy this provision, and where "other information" might supplement, but not replace, such analysis:

1. Used motor oil burned in either a registered or permitted space heater would not fall under the provisions of N.J.A.C. 7:27-20.5, since they are limited to burning used crankcase oil, used brake fluid, used transmission fluid, or used power steering fluid. For these units, the Department has concluded that the used oil combusted does not have to be sampled routinely and analyzed provided used oil management practices are maintained. Such practices limit burning to used oil generated on-site or generated by do-it-yourselfers. This conclusion was reached as a result of the degree of information the Department has on used oil from these sources. Many studies have been done which demonstrate that this type of used oil meets the on-specification criteria.

2. For "processed used oil fuel" sold by New Jersey used oil processors to boilers, sampling is specified in the used oil processors' General Approval issued by the Division of Solid and Hazardous Waste. This requires that processed oil to be sold must be sampled and analyzed to determine if the on- specification criteria are met. The processors must verify to the boiler operators that the used oil being sold is on-specification so that the burning of the used oil would not violate any state or Federal Regulations.

3. Non-crankcase used oil which is generated on-site and burned in an on-site combustion unit also must be analyzed to confirm that the on-specification criteria are being achieved. An example is used lubricating oil generated at a power generating station. This used lubricating oil can be burned in the utility boiler, provided sampling and analysis confirms that the used oil is on-specification used oil. In this case, the used oil is "on-specification" used oil, but not a "processed used oil fuel." After initial sampling, information that the lubricating oil has not changed can be used to reduce the frequency of additional sampling and analyses.

4. Used oil is bought from either in-State or out-of-State marketers or out- of-State processors. Since the used oil is obtained by entities from a wide variety of sources, it is reasonable to require that analysis of the used oil be conducted and accompany the sales transactions to confirm that the on- specification criteria are being met for any of these processed used oil fuels sold to be combusted in New Jersey.

Not including the "other information" language does not impose any restrictions which are not currently in place for boilers with a gross heat input greater than 20 million BTU/hr which will burn on-specification used oil. However, it should be noted that if an applicant had a boiler which met the specifications of N.J.A.C. 7:27-20.6(a) and wanted to use "other information" to confirm the on-specification criteria, this could be done in the Compliance Plan of an Air Pollution Control permit. In an application for a "Compliance Plan Change," the applicant would outline how the "other information" is to be used in addition to analytical information to verify that the used oil is on-specification used oil. One scenario which may be approvable would be used oil generated from a process which is not changed. If analyses of this used oil was analyzed to show consistent concentration levels, it is not necessary to sample every batch generated. The frequency of analyses would be developed as part of the permit application review process.

To confirm the Department's existing position that the on-specification determination must be made based on analytical results, N.J.A.C. 7:27- 20.5(b) is being revised to allow "other information" to be used in conjunction with the used oil analyses. Such other information could be confirmation that the process which generated the used oil has not been modified, which could result in a lessened sampling frequency. Knowledge of the process that generates the used oil could also be used, in conjunction with sampling, to arrive at the "on-specification" determination.

75. COMMENT: One commenter objected to the burden being placed on the permittee to maintain the documentation which verifies the on-specification criteria. The commenter believed that this should have to be done by either the burner (permittee) or marketer of the used oil. (3)

RESPONSE: The burden for ensuring on-specification used oil is shared in this rule. The permittee needs to confirm that the used oil combusted meets the on- specification criteria. The permittee obtains the appropriate documentation from the supplier to confirm that the type and specification of fuels are being charged to its permitted combustion unit to comply with its APC Permit. It would not be legal or prudent for any combustion unit operator to charge an unknown fuel type to a combustion unit. The Department emphasizes that the permittee only has to confirm that the used oil is on-specification. The written documentation or the determination can be obtained from the used oil generator, transporter, or processor/re-refiner, or the permittee can make this determination independently. This is consistent with the current regulation at N.J.A.C. 7:26A-6.9.

76. COMMENT: One commenter objected to regulating on-specification used oil differently than a virgin fuel oil. To support this, the commenter referenced 50 Federal Register 49189 which

states, "(on-specification) used oil fuel poses no greater risk than virgin fuel oil and once it enters the commercial market should not be regulated differently than virgin fuel." (3)

RESPONSE: The commenter is correct in stating that, "According to USEPA, (on-specification) used oil fuel poses no greater risk that virgin fuel and, once it enters the commercial fuel market it should not be regulated differently than virgin fuel (50 Federal Register 49189, Volume 50, Number 230, Friday, November 29, 1985)." However, a clarification must be made. The USEPA makes a distinction between Number 2 fuel oil and Number 6 fuel oil. The USEPA compares on-specification used oil to Number 6 fuel oil, which has a much higher level of contamination than Number 2 fuel oil. This is seen in the Federal Register, Volume 50, Number 230, Friday, November 29, 1985 on the following pages.

Federal Register, Volume 50, Number 230, Friday, November 29, 1985, Page 49183, "Although PNA (polynuclear aromatic hydrocarbons) levels in distillate virgin fuels (e.g. Number 2 oil) are much lower than in residual Number 6 oil, it is reasonable to compare used oil levels in No. 6 because used oil frequently (indeed, most often) displaces No. 6 fuel oil."

Federal Register, Volume 50, Number 230, Friday, November 29, 1985, Page 49186, "Specification levels (arsenic, cadmium, chromium) were based on levels of these metals found in dirty virgin fuel oil ..."

The virgin fuel the USEPA finds to be similar to on-specification used oil is Number 6 fuel oil, not any lighter, cleaner grade of refined fuel. The rule allows, without a permit change, on-specification used oil to be combusted in most boilers with a gross heat input greater than 20 million BTU/hr which is permitted to and capable of burning Number 6 Fuel Oil. This is more consistent with USEPA's basis for the federal specifications than to allow used oil to substitute for cleaner Number 2 fuel oil without a permit. The Department believes the USEPA erred in this regard and that it is important for the most densely populated state in the nation with substantial use of Number 2 fuel oil to avoid large scale substitution of Number 2 fuel oil with more contaminated used oil. Substitution of Number 6 fuel oil with on-specification used oil makes environmental sense, substitution of Number 2 fuel oil with on- specification used oil does not, unless it is for the small scale, on-site use of used motor oil.

77. COMMENT: One commenter stated that if the rule results in used oil-derived fuel costing more, because of extra regulatory requirements, industrial burners will buy virgin fuel. In that case, processors will stop purchasing used oil from transporters, transporters will stop collecting used oil from generators, generators will stop collecting used oil from the public, and the public will go right back to its old dumping habits. (4)

RESPONSE: The Department believes this rule will generally reduce New Jersey's requirements on use of used oil, rather than increasing them. Very few industrial sources obtained permits to burn used oil. The case-by-case permitting requirements that were in effect prior to the adoption of this rule have been streamlined and simplified as follows:

1. The rule allows on-specification used oil usage in industrial/utility combustion units with a gross heat input capacity greater than 20 million British Thermal Units per hour without prior approval from the Department when the combustion unit is permitted to combust, and capable of combusting Number 6 fuel oil.

2. The rule provides a simple registration procedure for small used oil space heaters for on-site generation of used oil.

3. The rule maintains the provisions that would allow the Department to continue to consider authorization all other types of combustion equipment to burn used oil through a permitting process.

N.J.A.C. 7:27-20.6 Burning on-specification oil in other combustion units

78. COMMENT: One commenter stated that the commenter's firm recycles its used oil so that its end product either meets, or is lower than, the maximum levels set forth 40 C.F.R. Part 279.11. This on-specification, recycled fuel oil product is then sold to major oil companies who further blend the on- specification recycled fuel oil product with Number 6 fuel oil, who, in turn, market the product to burners. The commenter requested that it (on- specification used oil) should be permitted to be blended or burned, and also permitted, in all respects consistent with Number 6 fuel oil. (6)

    RESPONSE: The adopted rule makes it easier to burn on-specification used oil as a blend with Number 6 fuel oil. This section allows on-specification used oil to be combusted, without a permit change, in an industrial boiler with a gross heat input greater than 20 million British Thermal Units/hour which is permitted to and capable of burning Number 6 Fuel Oil. This is a relaxation of the previous regulations which required a permit modification to be filed for all used oil combustion. Providing on-specification, processed fuel oil product to major oil companies who further blend the on-specification, processed fuel oil product with Number 6 fuel oil, is consistent with this rule provided the blend is sold as "on-specification used oil."

79. COMMENT: One commenter recommended that on-specification used oil should be permitted to be blended with Number 2 fuel oil in a manner consistent with Number 6 fuel oil to yield fuel oil products suitable for combustion in light industrial furnaces or boilers. (6)

    RESPONSE: The rule continues to more tightly restrict the use of on- specification used oil in light industrial burners or boilers. An APC permit application must be made for to obtain authorization to burn the used oil in these combustion units. The APC permit application is necessary since light industrial furnaces or boilers can be located in or near residential areas, such as in a commercial office building. They tend not to have as high stacks as large industrial boilers and usually do not have full time operator, nor are they usually capable of burning higher ash content fuels. During the review of the permit application, the Department can confirm that the proposed source operation will not cause a significant health impact. Number 2 fuel oil has less contamination of ash and heavy metal content than on-specification used oil.

If a light industrial furnace which was authorized to burn Number 2 fuel oil began to burn on-specification used oil, particulate and heavy metal emissions increase would result. This emission increase would be evaluated by the Department for acceptability during a permit application review.

N.J.A.C. 7:27-20.8 Ash standard

80. COMMENT: Several commenters requested clarification of how the ash standard would affect used oil space heaters. One commenter suggested that the rule should clearly state that used oil space heaters with a gross heat input of less than 1,000,000 British Thermal Units are exempt from the ash standard. One commenter questioned whether space heaters have the capacity to reduce the ash content of the used oil burned to the indicated level and why the rule does not impose the ash standard on used oil combusted in used oil space heaters. (6, 8)

RESPONSE: It is correct that combustion units with a gross heat input less than 1,000,000 British Thermal Units per hour are exempt from N.J.A.C. 7:27- 4, Control and Prohibition of Particles from Combustion of Fuel. Also, an ash standard for registered used oil space heaters is not established in N.J.A.C. 7:27-20.3. Particulate emissions from used oil space heaters which will be operated under a registration are limited through the size limit and operating requirements. Registered space heaters must meet an industry standard which requires that a filtering device be installed in the fuel line prior to the used oil reaching the burning chamber. This removes a portion of the ash. This requirement is included in N.J.A.C. 7:27-20.3(b)13 which states, "The owner or operator of the used oil space heater shall maintain the oil filtering equipment in accordance with manufacturer's specifications and shall not operate the used oil space heater without an installed and operational filter." In addition, N.J.A.C. 7:27-20.3(b)10 requires that the space heater 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 three minutes in any consecutive 30 minute period. This requirement is consistent with N.J.A.C. 7:27-3.2, "Smoke emissions from stationary indirect heat exchangers." A used oil space heater subject to the provisions of N.J.A.C. 7:27-20.4 would require a permit but would not be subject to the ash standard as long as certain restrictions are achieved. The following is N.J.A.C. 7:27-20.8(e) which is a new addition to the rule as follows:

Used oil space heaters with a capacity of not greater than 500,000 BTU/hr that are subject to N.J.A.C. 7:27-20.3 or N.J.A.C. 7:27-20.4 and that comply with N.J.A.C. 7:27-20.3(b) 2, 3, 6, and 13 are exempt from this section.

This exempts used oil space heaters which have a gross heat input of 500,000 BTU/hr or less, whether they are registered or permitted, from the ash standard. It establishes the operating parameters of no visible stack emissions and filtering equipment and limitations on types of used oil that can be burned as prerequisites for exemption.

This exemption should not be construed as making the regulation of space heater less stringent for the following reasons as outlined below:

1. N.J.A.C. 7:27-4 only applies to fuel burning equipment with a gross heat input greater than or equal to 1,000,000 BTU/hr.

2. Used oil space heaters with a gross heat input of 500,000 BTU/hr or less are exempt from N.J.A.C. 7:27-4.

3. The Department's intent is to establish an ash standard only for those combustion units which will burn on-specification used oil and are subject to the provisions of N.J.A.C. 7:27-4.

81. COMMENT: Several commenters objected to the fact that the used oil ash standard is being established at 0.1 percent by weight. Commenters stated that the ash content in used oil ranges from approximately 0.4 percent to 1.0 percent by weight. One commenter stated that there is no filtering technology that can reduce the used oil ash content to the 0.1 percent by weight level. One commenter stated that the 0.1 percent by weight ash content restricts the end market for on-specification recycled fuel oil and claimed that the similar health risks (as compared to Number 6 fuel oil) does not justify imposing this (0.1 percent by weight) ash content upon on-specification used oil, and that on-specification recycled fuel oil should be subjected to the same specifications as virgin Number 5 or 6 fuel oil. One commenter characterized the 0.1 percent by weight limit as unachievable. (1, 5, 6)

RESPONSE: In response to the comments received, N.J.A.C. 7:27-20.8(a) is revised to provide that the ash content of on-specification used oil to be combusted or processed used oil fuel to be combusted shall not exceed 0.15 percent by weight.

The "0.15 percent by weight" limit is consistent with American Society for Testing and Materials (ASTM), "Standards for Specification for Fuel Oils" D- 396-84 standard for heavy Number 5 Fuel Oil. This is an industry standard that must be achieved by many industrial boilers. There is no ASTM maximum ash specification for Number 6 fuel oil, but ash levels are generally less than 0.1 percent by weight.

While compliance with the "0.15 percent" standard does not guarantee compliance with the maximum allowable particulate emission rates of N.J.A.C. 7:27-4 "Control and Prohibition of Particles from Combustion of Fuel," it would likely result in compliance if the combustion is properly maintained and adjusted such that unburned carbon is less than 25 percent of the particulate emissions. Also, use of an ash standard is less costly than requiring stack emission tests of all boilers burning used oil. The Department will continue to require particulate testing of boilers where there are visible emissions. The Department believes that the ash limit, visible emission rules, and testing in some cases will provide adequate assurance of compliance with particulate limits. Also see Response to Comment 3 of the Summary section above.

An ash standard of greater than 0.2 percent by weight virtually guarantees that a boiler would exceed the 0.1 pound per million British Thermal Unit particulate limit, in N.J.A.C. 7:27-4, for large boilers without particulate control. Hence, used oil with an ash content between 0.4 percent and 1.0 percent by weight may not be burned unblended in uncontrolled boilers. Either the ash must be substantially reduced by processing or the used oil must be blended with lower

ash commercial fuel oil. For example, a used oil with a 0.5 percent by weight ash content could be blended with a commercial oil with a 0.05 percent by weight ash content at a 1 to 4 ratio (20 percent used oil by content) to obtain an ash content of 0.14 percent by weight.

Raising the ash standard to the "0.15 percent" level makes it more feasible to meet the standard through a variety of methods, including filtering (which will remove insoluble ash particulates), treating/processing, blending, and refining. For example, if the used oil ash concentration is 0.5 percent by weight, to meet the previously proposed "0.1 percent" standard, used oil would have be blended with oil with an ash content of 0.05 percent, at a ratio of approximately 8:1 to meet the standard. With the revised "0.15 percent" standard, a blending ratio of approximately 4:1 can be used.

It also must be pointed out that N.J.A.C. 7:27-20.8(b) allows for higher ash content in the used oil if the combustion device incorporates air pollution control (APC) devices for particulates and a permit review determines an alternative maximum allowable ash content is acceptable. This would allow used oil with a higher ash level to be burned in combustion units which incorporate APC such as baghouses. These would include incinerators, coal fired boilers, and certain industrial furnaces.

82. COMMENT: One commenter questioned whether the rule provides the ability to blend the (on-specification used oil) product with another fuel, such as Number 6 fuel oil, and if the blended product meets the ash standard, whether the blended product would be considered a commercial fuel. (6)

RESPONSE: The rule allows on-specification used oil to be blended with other on-specification used oils or commercial fuels to meet the 0.15 percent by weight ash standard. Any blends to which on-specification used oil has been added and the 0.15 percent by weight ash standard has been achieved will be considered as a blend of on-specification used oil and it would not be considered a commercial fuel. When a blend of on-specification used oil and commercial fuel is burned in a combustion unit, compliance with all applicable sections of this rule will be required.

83. COMMENT: One commenter claimed the economics of blending on-specification used oil to meet the ash standard were poor. The commenter stated that if one blends Number 2 fuel oil in a ten to one ratio with an on-specification used oil with an ash content of one percent by weight, the value of the Number 2 fuel oil is reduced. The commenter made the additional point there are really no incentives to blend this (on-specification used oil) with a Number 2 fuel oil, because all you are doing is devaluing the oil, and one is not increasing the value of the used oil. (6)

RESPONSE: The maximum ash content standard has been raised to 0.15 percent by weight. This will provide greater flexibility for achieving the standard through blending and/or other techniques. Number 2 fuel oil does not have to be used. Number 4 fuel oil can be used which typically has ash concentration levels between 0.05 to 0.1 percent, as required by American

Society of Testing and Material standards. Number 6 fuel oil could also be used, but at lower used oil blending levels. Also, other technologies in lieu of or in combination with blending can be used.

84. COMMENT: One commenter claimed the lack of enforcement personnel or mechanisms will make it impossible for the Department to prevent combustion of used oil with higher than acceptable ash content. (5)

RESPONSE: The Department disagrees. The primary enforcement responsibility is with the Air Compliance and Enforcement program which has four regional offices in the state. In addition, the Department has trained and delegated enforcement authority to county and local agencies under the County Environmental Health Act (CEHA). N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuel, are existing rules which are currently enforced through observing visible particulate emissions and stack emission testing. The Department will continue these enforcement practices. The used oil burner operator must also ensure that the ash content limit is being met and any particulate control equipment is being operated properly. In addition, the commenter should be aware of the fact that in addition to the enforcement inspectors, members of the general public have the ability to file complaints whenever they observe potential air quality violations. The common potential observations are visible emissions of smoke at the discharge point, which could be an indication of a high ash content, and odors beyond the property line.

85. COMMENT: Two commenters questioned why the 0.1 percent by weight ash limit is actually set lower than the 0.15 percent limit for virgin American Society for Testing and Materials (ASTM) Number 5 fuel oil. The commenters also stated that the proposed ASTM Used Oil Fuel Specification for recycled fuel oil is an ash content of 0.8 percent by weight. (5, 7)

RESPONSE: As discussed above, the Department has raised the used oil ash limit to 0.15 percent by weight which is equal to the Number 5 fuel oil ash standard listed by the American Society for Testing and Materials. The 0.8 percent by weight ash limit in the current draft of the ASTM standard is not an appropriate limit for combustion of used oil in large boilers. The purpose of establishing an ash limit in this rule is to minimize particulate emissions from combustion of used oil and ensure compliance with N.J.A.C. 7:27-4. This rule establishes limits for particulate emissions that result from combustion of fuels. The particulate emissions can be minimized either by reducing the ash content and/or installing air pollution control devices to reduce particulate emissions at the stack The rule provides flexibility to burner operators and allows them to choose their method of compliance.

Use of an ash limit of 0.8 percent by weight would result in emissions of 0.4 pounds per million British Thermal Units, if only the ash is considered and the unburned carbon emissions are zero. This would cause violations of New Jersey's particulate emission limits in N.J.A.C. 7:27-4. Also, it would reflect a substantial increase in particulate emissions from burning Number 2 fuel oil with virtually no ash, and Number 6 fuel oil with an ash content of about 0.1 percent by weight.

86. COMMENT: One commenter advocated that if on-specification recycled fuel oil product, through processing or blending meets the ash content specification of N.J.A.C. 7:27-20.8, that such recycled fuel oil should be totally exempt from regulation under these rules. (6)

RESPONSE: Emissions from the combustion of fuel are currently being regulated by N.J.A.C. 7:27-3, 4, 9, 10, 16 and 19. These rules establish air contaminant emission limitations, air contaminant concentration limitations, and allowable contaminant concentrations in the fuel to be processed, appropriate for the type of fuel, for the type of equipment the fuel will be combusted in, and the location of the combustion equipment. This rule establishes specific requirements for used oil, other subchapters establish specific requirements for other types of fuels, such as natural gas and coal.

It would be not appropriate to totally exempt on-specification used oil from this rule based solely on the ash content. There are many other contaminants, such as heavy metals and polycyclic aromatic hydrocarbons in on-specification used oil which can cause health concerns. Also, the combustion of on- specification used oil is not appropriate in all combustion equipment, especially those with low stacks which are designed and permitted to burn Number 2 fuel oil. If a combustion unit switched from Number 2 fuel oil to on- specification used oil, an increase in air pollutant emissions would result. Such an increase should be subject to the review and approval of the Department before it is allowed.

87. COMMENT: One commenter claimed that verifying the metal content in used oil is similar to verifying the ash content, in that it will be difficult to enforce. (5)
RESPONSE: The establishment of an ash standard would encourage blending of used oil with cleaner fuels and the Department does not believe the use of blending would adversely impact the metal (arsenic, cadmium, chromium, lead) content of used oil. It would appear that the opposite would be the case, that blending with a cleaner fuel would lower the overall metal content. As a result, confirmation that the maximum allowable metal contents are being achieved is more readily done with an ash limit.

Summary of Changes Upon Adoption:

Commenter-Initiated Changes

1. N.J.A.C. 7:27-8.1. The term "Category I" has been modified to include "Used oil space heaters which burn On Specification Used Oil and have a capacity of 500,000 British Thermal Units or less." By redesignating these permitted space heaters as Category I instead of Category II, the permit fee will change from $1,000 to $250.00. This was discussed in Responses to Comments 28 and 44.

2. N.J.A.C. 7:27-20.1. The definition of "energy recovery" has been clarified to provide examples of what the Department would term a useful purpose. See Response to Comment 45.

3. N.J.A.C. 7:27-20.1. The definition of "facility" has been added. A request for clarification of the meaning of "facility" as used in N.J.A.C. 7:27-20.4(a) was made as set forth in Comment 46.

4. N.J.A.C. 7:27-20.1. The definition of "processed used oil fuel" has been added. Commenters claimed that the rule proposal negatively portrayed on- specification used oil. The use of this term is meant to clarify that on- specification used oil could be processed and burned in combustion units. The definition was added to make it clear that used oil which has undergone some treatment can be burned in applicable units. It also makes it clear to the regulated community that processed used oil is acceptable to be burned in New Jersey if the applicable air pollution control requirements are met. Please refer to the response to these comments for the definition of processed used oil fuel and a further explanation of its development. See Responses to Comments 42 and 49.

5. N.J.A.C. 7:27-20.1. The definition of "space heater" has been modified to provide that it can be used for other energy recovery. (See Response to Comment 47.) This is a clarification, since the Department always assumed that the space heater could be used for various forms of energy recovery.

6. N.J.A.C. 7:27-20.3(b)6. Canadian Standards Association (CSA) guidelines have been incorporated as another industry standard. See Response to Comment 71.

7. N.J.A.C. 7:27-20.3(b)16 has been modified to provide that the Department will send renewal notifications for registered used oil space heaters. See Response to Comment 58.

8. N.J.A.C. 7:27-20.6(a) has been modified to include "processed used oil fuel." Please refer to Number 4 above.

9. N.J.A.C. 7:27-20.8(a) has been modified to increase the maximum allowable ash content from 0.1 to 0.15 percent by weight. As outlined in Comment 81, several commenters objected to the 0.1 percent by weight ash standard claiming it was difficult to achieve for on-specification used oil fuel. Please refer to the response to this comment for the reasoning behind the change as well as the establishment of the 0.15 percent by weight revised ash standard. Also, added is a provision which establishes a 0.15 percent by weight ash standard for any blends of on-specification used oil with commercial fuel or processed used oil fuel with commercial fuel. This clarifies that blending is permissible to achieve the 0.15 percent by weight ash standard.

10. N.J.A.C. 7:27-20.8(a) and (d) has been modified to incorporate "processed used oil fuel." Please refer to Number 4 above for the reasoning behind incorporating this new term into the rule.

11. N.J.A.C. 7:27-20.8(e) has been modified to exempt used oil space heaters from the ash standard. (See Comment 80.) The exemption is being made to this provision since the ash standard was meant to ensure compliance with N.J.A.C. 7:27-4, which applies only to units with a gross heat input of 1,000,000 BTU/hr or greater.

Summary of Agency Initiated Changes:

1. N.J.A.C. 7:27-8.2(c)13 has been modified to clarify that units which burn off-specification used oil, on-specification used oil, or processed used oil fuel must file permits, no matter what the capacity, except for registered used oil space heaters. This is not a new requirement. This is only a clarification to the existing requirement.

2. N.J.A.C. 7:27-20.5(b) has been modified. The phrase "or other information" has been replaced with "and other information." This change reflects the intent of the Department and allows the permittee to use analyses in conjunction with "other information" to arrive at an acceptable sampling frequency. Please refer to Response to Comment 74 for a complete explanation on the implementation of this change.

3. N.J.A.C. 7:27-20.6(a)6 has been added to clarify that all on- specification used oil must meet the provisions of N.J.A.C. 7:27-9. This is not a new requirement. It has been added to advise the regulated community of existing regulation.

4. N.J.A.C. 7:27-20.6(b) and (c) have been modified to clarify that all on- specification used oil must meet the provisions of N.J.A.C. 7:27-20.8. This is not a new requirement. It is meant to advise the regulated community that if they wish to operate pursuant to N.J.A.C. 7:27-20.6, the combustion unit and on-specification used oil burned still must meet the provisions of N.J.A.C. 7:27-20.8.

Federal Standards Analysis

Introduction

Executive Order No. 27(1994) and P.L. 1995, c.65 require State agencies that adopt, readopt, or amend State regulations that exceed any Federal standard or requirements to include a comparison with Federal law in the rulemaking document. The adopted new used oil combustion rule is broader in scope than the Federal hazardous waste management rules which deal exclusively with the management of used oil at 40 C.F.R. Part 279, Standards for the Management of Used Oil. However, it should be noted that there are other Federal rules, such as 40 C.F.R. Part 52, Approval and Promulgation of Implementation Plans, 40 C.F.R. Part 60, Subpart D, Standard for the Performance for Fossiuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971, and Title V of the Federal Clean Air Act, which address air contaminant emissions from the combustion of all fuels, including used oil. The primary difference between 40 C.F.R. Part 279 and the other Federal requirements cited is that the latter involve limitations on air contaminant emissions. With regard to used oil, the adopted rules are more comprehensive than 40 C.F.R. Part 279, since compliance with Federal and state laws and rules concerning air pollution must also be demonstrated. The adopted rules cover more aspects of used oil combustion than does 40 C.F.R. Part 279 because of New Jersey's unique characteristics, including high population density, and the potential increased health risk from used oil combustion in some situations.

It is anticipated that used oil will continue to be generated for the foreseeable future, which is assumed to be at least the next 30 years. The compliance costs of the adopted rules will be primarily

borne by firms who choose to combust used oil. Firms that burn used oil should enjoy cost savings because used oil is less expensive than commercial fuel oil. Currently, there is very little authorized used oil combustion in New Jersey. By clarifying and streamlining the current air pollution control requirements, the adopted rules may increase used oil combustion in New Jersey and decrease overall costs, when the resulting lower costs of used oil are compared with the costs of utilizing commercial fuel oil.

40 C.F.R. Part 279

40 C.F.R. Part 279 provides that on-specification used oil may be burned as a waste management measure and allows for the installation and operation of used oil space heaters. 40 C.F.R. Part 279.1 Definitions, defines used oil as "any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities." If the used oil meets the on-specification parameters outlined in 40 C.F.R. Part 279.11, the on-specification used oil is no longer subject to 40 C.F.R. Part 279 (Standards for the Management of Used Oil) as long as the following three criteria are met:

1. The used oil meets the specification parameters pursuant to 40 C.F.R. Part 279.72 and the documentation is retained for at least three years;

2. Proper notification is made to the USEPA pursuant to 40 C.F.R. Part 279.73; and

3. The used oil shipment is tracked pursuant to 40 C.F.R. Part 279.74(b).

40 C.F.R. Part 279.12 allows off-specification used oil to be combusted in the following units: industrial furnaces, industrial boilers, and utility boilers. Additionally, 40 C.F.R. Part 279.12 allows used oil space heaters to burn on-and off-specification used oil, without being subject to hazardous waste management rules, as long as they meet the following restrictions listed at 40 C.F.R. Part 279.23:

1. The heater burns only used oil that the owner or operator generates or used oil received from household do-it-yourself used oil generators;

2. The heater is designed to have a maximum capacity of not more than 0.5 million British Thermal Units (BTU) per hour; and

3. The combustion gases from the heater are vented to the ambient air.

40 C.F.R. Part 279.72 On Specification Used Oil Fuel allows a generator, transporter, processor/re-refiner, or burner to determine that used oil that is to be burned for energy recovery meets the on-specification specifications by performing analyses or obtaining copies of analyses or other information documenting that the used oil meets the specifications. Such records which confirm that the on-specification criteria are met must maintained for three years.

N.J.A.C. 7:27-20 in Relation to 40 C.F.R. Part 279

N.J.A.C. 7:27-20 includes several provisions which are not specifically addressed by 40 C.F.R. Part 279. These provisions, which are discussed below, have been developed in order to ensure that used oil combustion is protective of public health and is consistent with all other Federal and State requirements concerning air pollution.

N.J.A.C. 7:27-20 implements new rules concerning used oil combustion that would supersede current provisions of N.J.A.C. 7:27. Currently, all source operations which need Air Pollution Control (APC) permits, including those involving used oil combustion, are examined individually to determine whether they require a case-by-case evaluation of the nature and quantity of air contaminant emissions and impacts on human health and the environment. The rules streamline the current procedures under which used oil combustion can be authorized by the Department and also clarifies the compliance requirements. The potential health risks were considered when developing the streamlined procedures. The rules additionally reduce the delays and costs for gaining authorization for used oil combustion.

The procedure should not significantly impact the positive economic advantages that businesses will obtain from combusting used oil for the following reasons:

1. The used oil sampling and analytical requirements for industrial and commercial boilers are consistent with those required by current N.J.A.C. 7:26A. (See N.J.A.C. 7:26A-6.9(c));

2. The registration process for space heaters is less costly than the current case-by-case permitting process;

3. The permitting fees, which currently range from $250.00 to $1,000, for a term of five years, only represent one to three percent of the total cost savings, when prorated over the life of the permit. Moreover, fees for permitted and registered space heaters would be reduced from $1,000 to $250.00 for five years;

4. The stack sampling requirements are consistent with those currently required for existing combustion units (See N.J.A.C. 7:27-8.13 and 7:27- 16.8). Additionally, periodic, rather than continuous, monitoring will be required for small space heaters; and

5. If on-specification used oil will be combusted in a unit with a rated gross heat input greater than 20 million British Thermal Units per hour and which is capable of and authorized to burn Number 6 fuel oil, the procedures would not result in incremental costs.

N.J.A.C. 7:27-20 incorporates the following measures, which are not required by the Federal Standards for the Management of Used Oil at 40 C.F.R. Part 279:

1. The rules incorporate the current definition of used oil which is set forth at N.J.A.C. 7:26A-1.3. New Jersey's definition specifically includes unused oil which has been contaminated by physical or chemical impurities through storage and handling. This part of New Jersey's definition is not included in the Federal definition;

2. A total halogen limit of 1,000 parts per million (ppm) has been incorporated into the on-specification criteria. This is lower than the 40 C.F.R. Part 279 limit of 4,000 ppm;

3. The registration procedure for used oil space heaters which combust on- specification used oil is not an explicit Federal waste management requirement. Permitting or registering used oil space heaters is consistent with USEPA's State Implementation Plan for New Jersey (SIP) which mandates that an APC permitting and regulation program be established for combustion sources which may emit air contaminants. Moreover, establishing a registration process to replace the existing permit process for used oil space heaters adds flexibility to the current process;

4. The rules prohibit used oil combustion in locations such as residences and schools, where children, the elderly, and people with sensitive health conditions would be present;

5. All other used oil combustion will continue to be evaluated through case- by-case permit reviews. This reflects a current Departmental requirement (See N.J.A.C. 7:27-8.2);

6. Incorporation of an ash standard of a maximum 0.15 percent by weight in on- specification used oil or processed used oil fuel as one means of ensuring that used oil combustion will comply with current N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuels (This would not apply to small space heaters with a gross heat input of less than one million British Thermal Units per hour);

7. The rules prohibit off-specification used oil combustion in used oil space heaters;

8. The rules require that sources subject to N.J.A.C. 7:27-20.6(a), which allows on-specification used oil to be combusted in large industrial boilers without a permit modification, have their used oil analyzed to confirm that the on-specification criteria are met; and

9. The rules require that on-specification used oil or processed used oil fuel combusted meets the existing requirement at N.J.A.C. 7:27-9, Sulfur in Fuels, which is currently applicable to all fuel types combusted.

According to 1990 census data, New Jersey has the greatest population density of any state. Consequently, New Jersey's population is more likely to be adversely affected by air contaminant discharges than are residents of most other states. In addition, the Department has conducted risk assessment studies, using USEPA air quality models, which predict significant health risks in some cases when used oil is burned consistently with the provisions of 40 C.F.R. Part 279. Therefore, because of New Jersey's unique characteristics, additional measures beyond the Federal requirements are necessary to ensure protection of public health for New Jersey's population.

The definition of used oil in N.J.A.C. 7:20-1 states that:

"Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use, is contaminated by physical or chemical impurities, or unused oil that is contaminated by physical or chemical impurities through storage or handling.

This is not more restrictive than the Federal definition because it affords unused oil which has been contaminated the same management, recycling, and disposal options which are available to used oil. The Department believes this is appropriate since this type of oil would have similar characteristics to used oil generated from utilization in a given process. It is also consistent with the definition of used oil in N.J.A.C. 7:26A. Additionally, the total halogen limit for on-specification used oil of 1,000 ppm is listed at N.J.A.C. 7:26A-6.2(a) and was justified by the Department's Division of Solid and Hazardous Waste in the May 6, 1996 proposal concerning the recycling rules (See the Federal Standards Analysis of the proposal at 28 N.J.R. 2240(a), May 6, 1996).

The Department is establishing a registration program for used oil space heaters. This allows certain categories of space heaters to be registered, rather than having to obtain an air pollution control permit that involves a case-by-case review. A case-by-case permit review consists of evaluating the used oil to be combusted, the emission rates of each contaminant, and the site- specific health risk. The overall review time for this type of permit typically ranges from two to twelve months, depending on the size and type of source. In order to qualify for a registration, the owner of a space heater must comply with the specifications of 40 C.F.R. 279, as well as the following restrictions:

1. Only used oil from conveyances which are powered by an internal combustion engine which consist of any combination of the following substances can be combusted: used crankcase oil, used brake fluid, used transmission fluid, and used power steering fluid;

2. The stack discharge height must be at least 20 feet;

3. The space heater must meet an industry standard, such as the Underwriter Laboratory 296A Standard for Safety;

4. Only on-specification used oil may be burned; and

5. Registrants must conduct annual tuneups with carbon monoxide and oxygen testing.

The above restrictions are justified by New Jersey's population density, background air quality, and health risk assessments. A health risk assessment conducted by the Department demonstrated that on-specification used oil combusted at a heat input rate of 500,000 British Thermal Units per hour (BTU/hr) operating under certain operating parameters posed an acceptable health risk. The minimum stack height used in the assessment was 20 feet. A more detailed rationale for these restrictions is outlined below in Item 2 of the discussion entitled "Four Aspects of the Rule That Are Not Part of 40 C.F.R. Part 279."

The rules provide that on-specification used oil or processed used oil fuel that is blended with commercial fuel oil or unblended on-specification used oil or processed used oil fuel may be charged to those heating units with a rated gross heat input greater than 20 million British Thermal Units per hour (MMBTU/hr) and which are capable of and allowed to combust Commercial Number 6 Fuel Oil. No change to the permit is required to authorize burning on- specification used oil or on-specification blends in such heating units. This is a relaxation of the current permitting rules, which require a permit modification for all combustion units in order to be allowed to burn used oil. The Department is adopting this provision since Number 6 Fuel Oil burners are typically large units with tall stacks, which are located in industrial areas, and on-specification used oil has similar

inorganic content to Number 6 Fuel Oil. Hence, combusting on-specification used oil in Number 6 Fuel Oil fired units should not degrade air quality. Additionally, the location and stack height of such units also tends to minimize impacts to public health. Moreover, such units usually have full time operators and a high capital investment; thereby promoting efficient operation, which tends to minimize emissions. However, used oil which is combusted in these units must be analyzed to confirm that the on-specification criteria are met. This goes beyond 40 C.F.R. Part 279.72, which allows either analytical results or other information to confirm that the on-specification criteria are met. This is necessary since the on- specification used oil may be burned without having to be scrutinized through the standard review process. The analysis will confirm that the heavy metal on-specification levels are being met. This is protective of human health and the environment since high heavy metal concentrations can result in a significant health risk. An exception to sampling every batch or load of used oil is establishing that the process that generated the sed oil has not been modified and that all prior samples taken and analyzed have demonstrated the on- specification criteria. This could result in a decreased sampled frequency. Consequently, using "other information" to confirm the on-specification criteria are met is not prohibited by the rules. This can be accomplished by submitting an Air Pollution Control permit application for the combustion unit and outlining what "other information" will be used. This can then be reviewed by the Department for acceptability.

The rules allow qualified Number 6 fuel oil units to combust on-specification used oil without a permit modification; other types of units will require approved permit modifications before the used oil can be combusted. This site- specific, case-by-case review is not required by 40 C.F.R. Part 279, but is necessary since these units do not have parallel characteristics to the Number 6 fuel oil boilers and have the potential to cause increased health risks should used oil be burned.

Other Federal Requirements which Regulate Used Oil Combustion

Any other use of on-specification used oil, except as outlined for space heaters and large Number 6 fuel oil combustion units, is subject to permit approval by the Department. This is implemented through the APC permit application review procedures. There are several other Federal provisions which are relevant to used oil emissions since they regulate the emissions of the combustion of fuel in general. These include the following: 40 C.F.R. Part 52, Approval and Promulgation of Implementation Plans, 40 C.F.R. Part 60, Subpart D, Standards for the Performance for Fossiuel Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, and Title V of the Federal Clean Air Act, 42 U.S.C. §§ 401 et seq. The Federal government has not exempted used oil combustion in these rules and, as a result, air contaminant emissions from used oil combustion need to be examined by the Department. The emissions will be evaluated through the analysis of the type and amount of air contaminants listed in the applications submitted. A brief discussion of the above three Federal regulations follows:

1. 40 C.F.R. Part 52, Approval and Promulgation of Implementation Plans, requires that State Implementation Plans (SIPs) be filed for those pollutants which do not meet the National Ambient Air Quality Standards. New Jersey currently has SIP plans for volatile organic compounds and nitrogen oxides since these are precursors to ozone formation. The USEPA has designated the entire state "non-attainment" for ozone. Non-attainment means that the National

Ambient Air Quality Standard for ozone has been exceeded in New Jersey. All forms of used oil combustion emit both volatile organic compounds and nitrogen oxides. 40 C.F.R. Part 52.21 "Prevention of Significant Deterioration of Air Quality" regulates new and modified sources, such as fossil fuel boilers, which may burn used oil, and several pollutants, including nitrogen oxides, sulfur dioxide, lead, and particulates, which are emitted as a result of used oil combustion. Emissions from both used oil space heaters, and small and large industrial boilers that burn used oil, may be regulated by 40 C.F.R. Part 52.21, since this provision evaluates the air contaminant emissions from an entire facility. This furnishes another reason why the Department must conduct the appropriate evaluation of emissions from used oil combustion.

2. 40 C.F.R. Part 60, Subpart D, Standards for the Performance for Fossil Fuel Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, regulates the emissions of sulfur dioxide, particulates, and nitrogen oxides from applicable steam generators with a gross heat input of 10 million British Thermal Units per hour or greater. These steam generators would have to meet the same emission standards whether they burn used oil or commercial fuel oil. Since fossil fuel fired steam generators can burn used oil, their emissions must be evaluated by the Department to confirm compliance with 40 C.F.R. Part 60, Subpart D.

3. Title V of the Federal Clean Air Act, 42 U.S.C. §§ 7401 et seq. requires that an operating permit be submitted for certain facilities based on facility wide emissions. If the appropriate case-by-case permits are not filed, applicability of and compliance with the Federal Clean Air Act cannot be verified.

The preceding items illustrate that there are several Federal requirements concerning used oil combustion, in addition to 40 C.F.R. Part 279. The Department's rules and policies must be consistent with these Federal requirements. This is a factor in requiring permit reviews for the applicable used oil combustion sources and for requiring a registration procedure for conforming space heaters. The procedures will help the Department to continue to confirm compliance with all Federal and State requirements.

Parties Affected by the Rules

Regulated industries and professional groups which will be directly impacted by the rules are as follows: used oil space heater manufacturers, used oil processors, fuel oil blenders, refineries, boiler operators, car dealerships, gas stations, and other car maintenance facilities.

Related industries which will be indirectly, but positively affected, by the rule include: Analytical laboratories, oil burner maintenance firms, emission testing firms, and firms which generate used oil.

The rules have been designed to make it easier for people who change their own motor oil (do-it-yourselfers) to properly dispose of it, since space heaters which meet the registration requirement can combust do-it-yourselfer used lubricating oil. This should provide additional outlets

for the used oil if maintenance facilities with space heaters accept do-it-yourselfer used oil as an inexpensive source of fuel.

Operators of wastewater treatment plants will be positively affected, since improperly disposed of used oil can often reach their facilities. The adopted rules should promote increased combustion of used oil and less disposal of this substance on land and in water.

It is anticipated that employment would increase at the following businesses: used oil space heater manufacturers, analytical laboratories which test the used oil, and oil burner maintenance firms which maintain the space heaters. There is a potential for decreased employment at used oil processing facilities. These facilities may receive less used oil if many space heaters are installed. No change in employment is anticipated for the following businesses: boiler operators, refineries, car maintenance facilities, and fuel oil merchants.

The adopted rules will have a negligible impact on the taxpayers of the State since no new government programs will be implemented, and there will be relatively little change in the number of employees regulating used oil combustion. The Department's Air Quality Permitting Program will continue to review some APC permit applications for case-by-case combustion of used oil. The registration process for used oil space heaters will simplify regulation of this source category. The Department's Air and Environmental Quality Compliance and Enforcement program and New Jersey's County Health Agencies will be involved in enforcing the rule, instead of enforcing the prohibitions on used oil combustion and the few case-by-case permits for used oil combustion currently in place.

Individual consumers should not be affected by the rules for the following reasons: (1) The prohibition against burning used oil in residences should not affect the price of home heating oil (most commonly Number 2 Fuel Oil) because of the relatively low volume of used oil compared to commercial heating oil; and (2) The price of an oil change should not increase because the used oil space heaters that are purchased and installed at the car maintenance facilities should result in an overall cost saving for these facilities.

The adopted rules are protective of the health of New Jersey's citizens. Sensitive receptors (that is, schools, hospitals etc.) are specifically addressed in the rules.

The adopted rules are protective of New Jersey's environment and ecology, since one objective of the rules is to avoid improper disposal of used oil on the land and in the water. This furthers the protection of the State's plant and animal populations. The adopted rules also direct used oil to those combustion units that would have the least impact on the environment regarding the emissions of air contaminants. This will further protect New Jersey's plant and animal resources from air contaminant deposition onto the land and water.

Discussion of Four Aspects of the Adopted Rules that Are Not Part of 40 C.F.R. Part 279

1. Prohibition of Burning in Locations Near at Risk Populations

No used oil will be permitted to be combusted at sites where children, the elderly, and people with illness may be present. These locations include the following: multi-family residences, day care facilities, schools, and hospitals. This prohibition is consistent with health risk assessments performed by the Department. The first risk assessment dated, January 9, 1995, examined the potential health risks from the combustion of used oil in residential, small industrial, and large industrial boilers. In each case, a significant health risk was found from the combustion of used oil, and the risks were significantly higher than those posed by the combustion of commercial Number 2 Fuel Oil. The second risk assessment, dated March 21, 1996, is summarized in a report entitled, "Risk Assessment Study of Hypothetical Used Oil Combustion at Public Schools in New Jersey." The modeling in this study assumed emission rates that could occur if used oil was being combusted in three boilers which are installed in New Jersey schools in different parts of the State. Each boiler is currently authorized to combust Number Four Fuel Oil, not used oil; accordingly, this was a hypothetical scenario. The results of the study showed that at each of the schools, the emissions from used oil firing could result in increased cancer risks greater than one in a million and exposure to non-carcinogenic substances in excess of the relevant reference concentrations. Cancer risks 100 in a million and non-carcinogenic risks more than 60 times above reference concentrations were predicted for one of the schools. The other three schools had cancer risks as high as 10 in a million, and non-carcinogens were as much as seven times the reference concentration.

While the permit review process would likely catch and avoid these situations, the prohibition on burning used oil at these locations provides greater assurance to prevent any increases in risk. This is a prudent course of action for those in the population most at risk for illness. The benefit of not combusting used oil at the specified locations is a decrease in health risks to children, the elderly, and people with illnesses.

In 1994, approximately 40 million gallons of used oil were generated in New Jersey. The total annual amount of fuel oil burned in the State is approximately 1.05 billion gallons. Consequently, the prohibition of selling used oil to sensitive receptors should not significantly impact the market for non-commercial fuel produced from used oil.

2. Regulation of Used Oil Space Heaters

The adopted rules impose design and operating restrictions on used oil space heaters which exceed the Federal used oil management standard requirements at 40 C.F.R. Part 279 in order to minimize the impacts on the environment and human health. Space heaters must either meet the restrictions outlined in the registration procedure or obtain a site-specific APC Permit to Construct and Certificate to Operate. The registration procedure covers space heaters that exclusively burn used oil from conveyances that are powered by an internal combustion engine, consisting of any combination of the following substances: used crankcase oil, used brake fluid, used transmission fluid, and used power steering fluid. This constitutes the majority of space heaters which will be installed. The Department anticipates that site-specific used oil space heater permits, if any, would have operating conditions similar to the specifications for the registration process. The costs and

benefits outlined below would be comparable for both space heaters covered under the registration process and those that do not qualify for registration.

The adopted rules require that tuneups and monitoring for carbon monoxide (CO) and oxygen be conducted on an annual basis. These requirements help ensure that proper combustion efficiency is achieved. This acts as a surrogate for confirming that the organic compounds in the used oil are sufficiently burned and converted to carbon dioxide and water. There are potential health risks if sufficient combustion does not occur. Since some of the organic emissions from incomplete combustion of used oil may be polycyclic aromatic matter, including polycyclic aromatic hydrocarbons, it is important to ensure high efficiency combustion. The Federal regulations at 40 C.F.R. Part 279 do not require this testing, but other Federal regulations, such as 40 C.F.R. Part 52.21 indirectly require the emissions of volatile organic compounds and CO to be addressed. This would be the case for facilities subject to 40 C.F.R. Part 52.21 where the air contaminant emission rates for all sources would have to be quantified (See N.J.A.C. 7:27-8.14).

The Federal regulations do not currently require health risk studies to be conducted prior to the installation of used oil space heaters. (This may be required under Title III of the Clean Air Act in the future.) However, the health risk potential from used oil space heaters has been examined in New Jersey. The results of this study are outlined in the May 7, 1996 Memorandum from the Bureau of Air Quality Evaluation "Determination of Possible Health Risks from Used Oil Combustion Space Heaters Limited to 500,000 British Thermal Units per Hour." This document is available from the Chief, Bureau of Air Quality Evaluation, NJDEP, PO Box 27, Trenton, New Jersey 08625.

Based on these results, and a May 17, 1997 addendum to the memorandum, the registration requirements were developed to ensure that there would be a minimal health risk from the emissions of the registered space heaters. These requirements include a minimum 20 foot stack height for the necessary dispersion of the air contaminants, and limiting the used oil fuel types. The limitation on types of used oil was incorporated because: (1) a large body of data was available on used oil from cars and trucks, which comprise the large majority of used oils that would be authorized; (2) the air contaminant ranges could reasonably be estimated; and (3) it could be generally assumed that such oil is on-specification used oil. This assumption is also based on other studies, such as the March, 1996 Vermont Used Oil Analysis and Waste Oil Furnace Emissions Study. The installation of adopted space heaters which do not meet the Registration requirements of this rule would be subject to permitting.

The industry design standard in the registration requirements (see N.J.A.C. 7:27-20.3(b)), is necessary to ensure that home-made burning units or units employing antiquated technologies will not be installed. Combustion units that do not meet the industry standard may emit more air contaminants and be unsafe. One such recognized standard is the Underwriters Laboratories UL296A, Standard for Safety Waste Oil Burning Air Heating Appliances. Compliance with an industry design standard helps ensure that used oil space heaters will be operated in a safe manner, i.e. not cause fires.

The adopted rules regulate, either through the rules' requirements or permit reviews, the type of used oil that can be combusted in space heaters. This will help to ensure that no other air quality

regulation will be violated as a result of the nature and makeup of the used oil. The Federal regulations for space heaters do not distinguish between the types of used oil that will be combusted.

The estimated compliance costs of the rule for used oil space heaters are as follows:

1. The used oil space heater registration fee would be $250.00. This is a $750.00 decrease from the current fee level of $1,000. The permit application fee for a space heater to be operated outside of the guidelines of the registration procedure will be $250.00, which is also a $750.00 decrease from the current level. Both the registration fee and permit application fee cover five year terms.

2. All space heaters must undergo annual tuneups and CO and oxygen testing. The estimated cost would be $750.00 per year, if the services of a consultant are included. This cost can be reduced by contracting it among multiple space heater operators. If a permittee or registrant purchased a CO/oxygen monitor to conduct their own testing, the cost of the monitor would be approximately $1,300.

   This type of monitoring has financial advantages which should offset a portion of the costs. Higher combustion efficiency results in more useful heat generated per gallon of fuel combusted. In addition, the annual maintenance keeps the space heater in good working order and avoids breakdowns and costly repairs, thereby protecting the initial investment.

3. In following good management practices, the registrant should always inspect do-it-yourselfer used oil for irregularities. There should be no additional cost to the space heater operator. Employees should be instructed as to what could be burned in the space heaters even in the absence of the adopted rule. The reason for this is if substances other than used oil are charged to the space heater, the equipment associated with the space heater such as the nozzles, burning chamber, or stack could be severely damaged and a significant fire hazard would result.

4. The Federal regulations require only that combustion gases be vented to the ambient air, while the APC permit or registration will require a minimum stack height. The stack height requirement should not add a significant amount to the costs.

5. There should be no additional cost for meeting an industry standard, such as the Underwriters Laboratories UL296A, Standard for Safety Waste Oil Burning Air Heating Appliances, because all of the space heater manufacturers which commented during the Used Oil Workshop which was conducted by the Department on the registration requirements stated that their units meet such a standard. In addition, local fire codes require that an industry standard be met.

The registration procedure should facilitate the sale of used oil space heaters in New Jersey because it eliminates the currently required permitting procedure. The registration provisions clearly specify installation and operation requirements. The space heater owner or operator would only have to certify that the provisions within this rule will be followed. No calculation of emission rates or equipment design details would have to be submitted to the Department. Economies of scale will be achieved since almost all car dealerships and car maintenance facilities will be able to qualify for a space heater registration.

The adopted rules specifically allow do-it-yourselfer used oil to be accepted and combusted at space heater locations. This reduces the potential for illegal dumping of the used oil in the water streams that flow into the waste water treatment facilities.

The rules prohibit off-specification used oil from being combusted in used oil space heaters. This is being done based on the higher contaminant concentration levels in off-specification used oil. Health risk assessments conducted by the Department indicate that a significant health risk can occur from the combustion of used oil at contamination levels higher than those found in on- specification used oil. Also, used oil space heaters do not have Air Pollution Controls installed, which would control the combustion of the higher air contaminant emission levels which result from the combustion of off- specification used oil. A second reason for not allowing off-specification used oil is the Department has identified the following two industry standards for the manufacture and operation of used oil space heaters: Underwriter Laboratories, Incorporated Standard for Safety UL296 "Waste Oiurning Air Heating Appliances" and the Canadian Standards Association FBL Notice "7equirements for Appliances Burning Used Oil in an Atomizing Burner." Both of these standards refer to burning used motor oils in the space heaters, which are allowed by the rule and have been demonstrated to meet the on-specification criteria. As a result, the industry standards for used oil space heaters imply that off-specification used oils not be burned in space heaters.

3. Evaluation of Certain Used Oil Combustion Sources on a Site-Specific Basis

Permit reviews are necessary for sources other than space heaters which qualify for a registration and large boilers which are able to and permitted to combust Number 6 Fuel Oil. These permit reviews are necessary to evaluate potential health risks and to confirm that operation of the combustion units complies with all applicable Federal and State rules. The costs for the permit reviews would be similar to that for the review of an application for a commercial Number 6 Fuel Oil source.

4. Incorporation of an Ash Content Standard

Combustion units which burn any type of fuel and have a heat input of one million British Thermal Units per hour (BTU/hr) or greater are subject to current N.J.A.C. 7:27-4, Control and Prohibition of Particles from Combustion of Fuel. Limiting the amount of ash in the used oil will help to ensure compliance with the aforementioned rule without requiring stack testing. Therefore, N.J.A.C. 7:27-20 lists a maximum ash content of 0.15 percent by weight in on-specification used oil or processed used oil fuel. The rules would help ensure that used oil combustion will not cause the following particulate emission limit to be exceeded: 0.1 pounds of particles per million British Thermal Unit fuel input-lb/MMBTU. This is the most stringent particulate emission limit in N.J.A.C. 7:27-4 and is the relevant limit for large, Number 6 Fuel Oil fired combustion units. The "0.15 percent by weight ash standard" results in an inorganic particulate emission rate approximately 75 percent of the 0.1 lb/MMBTU standard. It is estimated that the other 25 percent of the particulate emissions from fuel oil combustion is organic resulting from incomplete combustion. This is the result of some carbon in the fuel which is not combusted. Hence, a 0.15 percent ash content correlates directly with 0.1 pounds of particulate emitted per million British Thermal Units, if 75 percent of the particles are inorganic and 25 percent are organic.

Conclusion

The adopted rules are more stringent than 40 C.F.R. Part 279, which governs the management of used oil. However, the adopted rules are consistent with other Federal rules for which compliance has to be demonstrated. The potential health risks from used oil combustion also result in the need for more oversight in a densely populated state with generally poor air quality. The environmental and health benefits of the rules and New Jersey's unique characteristics justify exceeding the Federal used oil management requirements at 40 C.F.R. Part 279.

Full text of the adoption follows (additions to proposal are indicated in bold face with asterisks ***thus***; deletions from proposal are indicated in brackets with asterisks ***[**thus**]***):

7:27-8.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context indicates otherwise.

. . .
"Category I" means a class of applications which require less review and are therefore subject to a lower fee than Category II applications. A Category I application is an application which covers a significant source which includes the following types of equipment:

1.-2. (No change.)

3. Plastics machining or extruding equipment; ***[**and**]***

4. An open top surface cleaner which is equipped with a cover and free-board chiller. This does not include any surface cleaner which uses a HAP***[**.**]***; and

5. Used oil space heaters which burn on-specification used oil and have a capacity of 500,000 British Thermal Units per hour or less for which a registration has not been filed pursuant to N.J.A.C. 7:27-20.3. The terms space heater, on-specification used oil, and registration are as defined in N.J.A.C. 7:27-20.1.

7:27-8.2 Applicability

(a)-(b) (No change.)

(c) The following equipment and control apparatus, if it emits air contaminants, requires a preconstruction permit and an operating certificate:

1.-12. (No change.)

13. ***[**Any**]*** ***Except where a registration has been filed pursuant to N.J.A.C. 7:27-20.3, any*** equipment used for the burning of non- commercial fuel, crude oil, or process by-products in any forms. ***This includes off-specification used oil, processed used oil fuel, or on specification used oil as defined in N.J.A.C. 7:27-20.1;***

14.-19. (No change.)

(d)-(g) (No change.)

7:27-8.6 Service fees

(a)-(k) (No change.)

A. BASE FEE TABLES

Tables 1 through 3-(No change).

Table 4
Registration fees

Table 4a
General permit registration fees

Activity	Basis	Amount
Registration for authorization to act under a general permit under N.J.A.C. 7:27-8.8(c)1 through 7	Per Registration	$250.00
Registration for authorization to act under a general permit under N.J.A.C. 7:27-8.8(c)7	Per Storage Tank	$250.00

Table 4b
Used oil space heater registration fees

Acitivity	Basis	Amount
Registration for authorization to operate a used oil space heater under N.J.A.C. 7:27-20.3	Per Registration	$250.00
Five year renewal for a used oil space heater under N.J.A.C. 7:27-20.3	Per Registration	$250.00

Tables 5 through 9 (No change.)

B. SUPPLEMENTARY FEE SCHEDULE (No change.)

SUBCHAPTER 20. USED OIL COMBUSTION

7:27-20.1 Definitions

(a) The following words and terms, when used in this subchapter, have the meanings given below unless the context clearly indicates otherwise.

"Air quality impact analysis" means a procedure, entailing the use of an air quality simulation model, for determining whether air contaminant emissions will result in ambient air concentrations that exceed standards established for the protection of human health and welfare and the environment.

"Air quality simulation model" means a mathematical procedure, taking into account the dispersive capacity of the atmosphere, meteorological data, topography, and other relevant factors, to predict the concentration of an air contaminant in the ambient air. Such procedure may entail use of a mathematical model or a physical model.

"Ash" means the residue remaining after the burning of a material as tested according to ASTM Standard Test Method for Ash from Petroleum Products by ASTM D482-91, incorporated herein by reference. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Brake fluid" means oil drained from the braking system of a conveyance.

"Combustion unit" means a unit into which fuel is charged and heated to the point at which oxidation occurs and energy is generated.

"Commercial fuel" means solid, liquid, or gaseous fuel normally produced or manufactured, and sold for the purpose of creating useful heat.

"Crankcase oil" means oil drained from the crankcase of a conveyance.

"Do-it-yourselfer used oil collection center" means any site or facility that accepts and/or aggregates and stores used oil collected only from household do- it-yourselfer used oil generators.

"Energy recovery" means the use of heat from combustion for a useful purpose ***, such as the heating of air or water for space heating or wash water*** .

"Facility" means the combination of all structures, buildings, equipment, control apparatus, storage tanks, source operations, and other operations that are located on a single site or on contiguous or adjacent sites and that are under common control of the same person or persons. Research and development facilities that are located with other facilities shall be considered separate and independent entities for the purposes of complying with the operating permit requirements of P.L. 1954, c.212 (N.J.S.A. 26:2C-1 et seq.) or any codes, rules, or regulations adopted pursuant thereto.

"Fluid catalytic cracking unit" means a refinery process unit in which petroleum derivatives are continuously charged. The hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed. This is meant to improve feed stock quality for additional processing, and the catalyst or contact material is continuously regenerated by burning off coke or other deposits.

"Fuel" means combustible material burned in boilers, furnaces, or other machinery to generate heat or other forms of energy. This term includes commercial fuel and non-commercial fuel.

"Fuel oil" means a liquid or liquefiable petroleum product burned for lighting or for the generation of heat or power and derived directly or indirectly from crude oil.

"Household do-it-yourselfer used oil" means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal motor vehicles.

"Household do-it-yourselfer used oil generator" means an individual who generates household do-it-yourselfer used oil.

"Noncommercial fuel" means solid, liquid or gaseous fuel which is not ordinarily produced, manufactured, or sold for the purpose of creating heat or other forms of energy. This includes fuels which are derived from used oil or other waste materials.

"Number 1 fuel oil" means fuel oil of the grade that is classified as Number 1, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Number 2 fuel oil" means fuel oil of the grade that is classified as Number 2, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Number 6 fuel oil" means fuel oil of the grade that is classified as Number 6, according to ASTM Standard Specification for Classification of Fuel Oils by ASTM D396-84. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

"Off-specification used oil" means used oil which is not on-specification used oil.

"On-specification used oil" means used oil which meets the specifications, established in the solid waste rules at N.J.A.C. 7:26A-6.2(a) and any amendments thereto. These specifications are currently as follows:

Constituent/Property	Allowable Level
Arsenic	5 ppmw maximum

Constituent/Property	Allowable Level
Cadmium	2 ppmw maximum
Chromium	10 ppmw maximum
Lead	100 ppmw maximum
Flash point	100 degrees Fahrenheit minimum
Total halogens	1000 ppmw maximum

"Permit" means a permit to Construct, Install or Alter Control Apparatus or Equipment issued under N.J.S.A. 26:2C-9.1 et seq. and N.J.A.C. 7:27-8, an operating permit issued under N.J.S.A. 26:2C-9.1 et seq. and N.J.A.C. 7:27-22, or a facility-wide permit issued under N.J.S.A. 13:1D-35 et seq. and N.J.A.C. 7:1K-1.5, as applicable.

"Person" means an individual, public or private corporation, company, partnership, firm, association, society, joint stock company, international entity, institution, county, municipality, state, interstate body, the United States of America, or any agency, board, commission, employee, agent, officer, or political subdivision of a state, an interstate body, or the United States of America.

"Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum.

"Processed used oil fuel" means on-specification used oil which has been treated to improve its combustion characteristics and is combusted consistent with an approved Air Pollution Control Permit to Construct and Certificate to Operate or is burned consistent with the provisions of N.J.A.C. 7:27- 20.6(a).

"Power steering fluid" means oil drained from the power steering system of a conveyance.

"Registration" means the registering of a space heater with the Department on forms provided by the Department and containing such information as may be required in accordance to N.J.A.C. 7:27-20.3(a)2 and (b).

"Risk assessment" means a procedure for characterizing the probability that potential exposure to air contaminants will result in adverse effects on human health or welfare or the environment.

"Shipment" means, in reference to used oil, used oil delivered in a single truckload, railroad tank car, barge, or other delivery vessel.

"Space heater" means ***[**an**]*** ***a*** used oil fired space heater that is self-contained, automatically controlled, indirectly fired ***[**air**]*** heating appliance for warming of a non-residential area ***or for other energy recovery**** .

"Transmission fluid" means oil drained from a transmission of a conveyance.

"Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use, is contaminated by physical or chemical impurities, or unused oil that is contaminated by physical or chemical impurities through storage or handling.

"Visible smoke" means smoke which obscures light to a degree readily discernible by visual observation.

(b) The following acronyms, when used in this subchapter, have the meanings given below:

"ASTM" means the American Society for Testing and Materials.

"BTU" means British Thermal Unit.

"C.F.R." means Code of Federal Regulations.

"CO" means carbon monoxide.

"EPA" means the United States Environmental Protection Agency.

"ppmw" means parts per million by weight.

"ppmvd" means parts per million by volume, dry basis.

7:27-20.2 General provisions

(a) No person shall combust used oil except as authorized pursuant to this subchapter.

(b) No person shall burn fuel oil, allow the burning of fuel oil, or sell fuel oil for burning, in a space heater, boiler, or other combustion unit located in a multi-family residence (such as an apartment building or a dormitory), a day care facility, a pre-school, a school, a hospital, a residence for the elderly, or a nursing home, if the fuel oil consists of used oil or has been blended with used oil.

(c) No person shall sell fuel oil for burning in a space heater, boiler, or other combustion unit located in a single-family dwelling, two-family dwelling, or a dwelling of six or less family units, one of which is owner occupied, if the fuel oil consists of used oil, or has been blended with used oil.

(d) No person shall combust used oil or any mixtures containing used oil in a space heater without first registering with the Department pursuant to N.J.A.C. 7:27-20.3, or combust used oil in any space heater or combustion unit without a permit issued by the Department pursuant to N.J.A.C. 7:27-8 or 7:27-22, whichever is applicable. The owner or operator of the space heater shall:

1. Construct, install, and operate the space heater in conformance with all applicable requirements in this subchapter and all other provisions of the New Jersey Administrative Code; and

2. Monitor the operation of the space heater and record and report the findings, as required in N.J.A.C. 7:27-20.3(b) or in the permit issued pursuant to N.J.A.C. 7:27-8 or 7:27-22, as applicable.

(e) No person shall combust used oil which has been blended with any hazardous waste, as defined pursuant to N.J.A.C. 7:26G-5, except as allowed under N.J.A.C. 7:26A-6, 7:26G-8 and 9, and 7:27-8 or 7:27-22, as applicable.

7:27-20.3 Burning of on-specification used oil in space heaters covered by a registration

(a) A person may burn used oil in a space heater pursuant to a registration provided that:

1. The total combined gross heat input of all space heaters at any one facility does not exceed 500,000 BTUs per hour. If any additional used oil space heater(s) at the facility result in the combined total gross heat input of all space heaters exceeding 500,000 BTUs per hour, then all of the space heaters shall require permits pursuant to N.J.A.C. 7:27-20.4;

2. The used oil space heater(s) covered by a registration shall be installed, operated, and maintained consistently with (b) below and the person submitting the registration shall certify that the space heater(s) is installed, operated, and maintained consistently with (b) below;

3. The registration shall be executed on forms prescribed by the Department. The registration form shall require information identifying full business name, mailing address, facility location, location of equipment on premises, facility contact, and maximum heat input rate; and confirming that the space heater meets the criteria for the registration, and operates in accordance with the registration. Registration forms may be obtained by submitting a written request to the Department at the following address:

   New Jersey Department of Environmental Protection
   Air Quality Permitting Program
   PO Box 27
   Trenton, New Jersey 08625-0027

4. The registration form referenced in (a)3 above shall require the registrant to certify the truth and accuracy of the information on the form. The certification shall meet the requirements of N.J.A.C. 7:27-1.39; and

5. The registration shall include certifications consistent with N.J.A.C. 7:27-1.39, Certification of Information.

(b) The space heater for which a registration has been filed with the Department shall conform to the following requirements:

1. The space heater shall be used for the purpose of energy recovery only;

2. Any used oil burned in the space heater shall be:

   i. Generated on-site by the owner or operator of the space heater, or by an agent of such person;

   ii. Generated by a household do-it-yourselfer used oil generator; or

   iii. Collected by do-it-yourselfer used oil collection centers, such as those organized by a municipality;

3. The on-specification used oil to be burned in the space heater shall conform to the following requirements:

   i. The used oil shall only be from conveyances that are powered by an internal combustion engine, consisting of any combination of the following substances: used crankcase oil, used brake fluid, used transmission fluid, or used power steering fluid;

   ii. None of the following shall be blended with the used oil:

      (1) Anti-freeze;

      (2) Carburetor cleaner;

      (3) Paint thinner;

      (4) Paint;

      (5) Part degreaser solvents;

      (6) Oil additives;

      (7) Gasoline;

      (8) Chlorinated solvents;

      (9) Battery acid; or

      (10) A hazardous waste as defined pursuant to N.J.A.C. 7:26G-5;

4. The maximum gross heat input of any one space heater at a facility shall not exceed 500,000 BTUs per hour;

5. The discharge point of the stack serving the space heater is higher than the peak of the roof of the building in which the space heater is located and that discharge point is at least 20 feet above grade;

6. The space heater shall be listed and tested by a nationally recognized laboratory in accordance with standards equivalent to the Underwriters Laboratory, Incorporated 296A Standard for Safety, UL296A "Waste Oil Burning Air Heating Appliances" ***or Canadian Standards Association--CSA Standard B140.4-1974 (R1991)--Oil Fired Warm Air Furnaces and FBL Notice Number 72 Requirements for Appliances Burning Used Oil in an Atomizing Burner*** . This listing shall be documented by the manufacturer of the used oil space heater and provided to the registrant;

7. The space heater shall be constructed, installed, and operated in conformance with all applicable requirements in this subchapter and all other provisions of the New Jersey Administrative Code;

8. The owner or operator shall adjust the combustion process of the used oil space heater within 24 operating hours after startup and annually thereafter. The adjustment shall consist of the following:

   i. Adjusting the air-to-fuel ratio to the manufacturer's recommended standards and ensuring that it is correctly calibrated and functioning properly;

   ii. Inspecting the space heater and cleaning or replacing any components of the space heater as necessary to minimize total emissions of carbon monoxide (CO);

   iii. Taking an exhaust stream sample and analyzing it for CO and oxygen. This sampling and analysis may be done with a portable monitor. The results of the sampling and analysis shall ensure that CO emissions after adjustment pursuant to (b)8i and ii above are no more than 100 parts per million by volume, dry basis, hourly average, corrected to seven percent oxygen. Testing for less than one hour is permitted if the CO reading is no more than 100 parts per million by volume, dry basis, corrected to seven percent oxygen for five consecutive minutes of operation;

      (1) Record the manufacturer and model number of the portable monitor used for the CO and oxygen measurements. The CO testing equipment shall be capable of measuring and recording the in-stack concentrations of CO, over a range of 0 to 500 parts per million by volume, with an accuracy of plus/minus five percent of the reading when measuring 100 parts per million by volume.

      (2) If an exhaust stream sample exceeds the CO standard of 100 ppmvd, one hour average, corrected to seven percent oxygen, the used oil space heater shall not be operated, except for adjustment purposes, until the owner or operator corrects any mechanical problems, readjusts the space heater, and the space heater has been demonstrated to meet the carbon monoxide standard of no more than 100 ppmvd, one hour average, corrected to seven percent oxygen;

iv. Ensuring the exhaust emissions at the stack do not contain visible particulate emissions; and

v. Recording all adjustments made to the space heater, all carbon monoxide and oxygen readings, the determination of the presence of visible emissions, and the dates of each adjustment, as outlined in (b)8i, iii and iv above, respectively;

9. If the sample taken in (b)8iii above exceeds the CO standard of 100 parts per million by volume, dry basis, corrected to seven percent oxygen, one hour average, no violation shall occur if the space heater continues to be operated only as is outlined in (b)8iii above;

10. The space heater shall 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 three minutes in any consecutive 30 minute period. If visible emissions are observed, the following measures shall be implemented:

i. The operator manual shall be referred to for corrective measures, and the corrective actions taken shall be recorded;

ii. Except for adjustment purposes, the used oil space heater shall not be operated after visible emissions are observed, until the owner or operator corrects any mechanical problems, readjusts the air-to-fuel ratio, if necessary, and the space heater has been demonstrated to meet the no visible emission standard;

11. Commercial Number 1 fuel oil, commonly known as kerosene, and commercial Number 2 fuel oil, commonly known as home heating oil, can be blended with the used oil and charged to the used oil space heater;

12. The used oil in the storage tank for the space heater shall not exceed the following limits. The Department may obtain an oil sample to verify that the used oil is within these limits:

Constituent/Property	Allowable Level
Arsenic	5 ppmw maximum
Cadmium	2 ppmw maximum
Chromium	10 ppmw maximum
Lead	100 ppmw maximum
Flash point	100 degrees Fahrenheit minimum
Total halogens	1,000 ppmw maximum
Sulfur	5,000 ppmw maximum

13. The owner or operator of the used oil space heater shall maintain the oil filtering equipment in accordance with manufacturer's specifications and shall not operate the used oil space heater without an installed and operational filter;

14. Any operation of the space heater which may cause a release of air contaminants which might result in citizen complaints shall be reported by the registrant as required by the Air

Pollution Control Act. The registrant shall immediately notify the Department of any non-compliance, including visible emissions, by calling the Department Regional Enforcement Office or the Environmental Action Hotline at (609) 292-7172;

15. All records which shall be maintained pursuant to this section shall be kept on-site in a central file in a permanently bound logbook or in readily accessible computer memories and made available for inspection by the Department for a period of three years after the date of each record. These records shall include the following:

    i. Pursuant to (b)8 above, the dates of each adjustment, carbon monoxide and oxygen readings, and presence of visible emissions, if any; and

    ii. Pursuant to (b)10 above, instances of when the used oil space heater caused visible emissions;

16. Consistent with Table 4b of the Base Fee Schedule at N.J.A.C. 7:27-8.6, a $250.00 fee, which includes registration for operating a space heater, shall be submitted with each registration statement. The registration shall be renewed every five years on forms prescribed by and furnished by the Department and shall be signed by the person engaging in the operation of a used oil space heater. In the registration renewal form, it shall be certified by the registrant that the information initially submitted and certified, pursuant to (a)3 above, is still valid for the space heater that had been registered. The certification shall meet the requirements of N.J.A.C. 7:27-1.39. ***The Department will send renewal notifications and forms six months prior to the expiration of the registration to the registrants.*** ***[**Registration renewal forms may be obtained by submitting a written request to the Department at the following address:

    New Jersey Department of Environmental Protection
    Air Quality Permitting Program
    P.O. Box 27
    Trenton, New Jersey 08625**]***

    The renewal fee shall be $250.00, consistent with Table 4b of the Base Fee Schedule of N.J.A.C. 7:27-8.6; and

17. The used oil brought to the facility by household do-it-yourselfer used oil generators shall be visually inspected prior to it being charged to the used oil storage tank.

(c) Once the registration has been forwarded to the Department by United States Postal Service by registered mail and a registered receipt is obtained, the space heater may be installed and operated. The Department shall send an acknowledgment to the registrant that it has received the registration. If the registration is incomplete or deficient, the Department shall notify the registrant.

7:27-20.4 Burning of on-specification used oil in space heaters covered by a permit

(a) Used oil may be burned in a space heater other than as outlined in N.J.A.C. 7:27-20.3 if a permit to combust used oil is issued by the Department pursuant to N.J.A.C. 7:27-8 or 7:27-22. Such space heaters include, but are not limited to, those at a facility in which the cumulative gross heat input of all space heaters exceeds 500,000 BTU/hr, the gross heat input of one space heater is in excess of 500,000 BTU/hr, or where any space heaters would combust used oil other than the used oils listed in N.J.A.C. 7:27-20.3(b)3i. In accordance with N.J.A.C. 7:27-8 or 7:27-22, as applicable, the application for a permit shall include the following at a minimum:

1. A protocol for conducting an air quality impact analysis, including a risk assessment;

2. Such details regarding the equipment and control apparatus as necessary to determine that the equipment and control apparatus is designed to operate without causing a violation of any provisions of relevant State or Federal laws or regulations and the equipment or control apparatus incorporates advances in the art of air pollution control for the kind and amount of air contaminant emitted by the applicant's equipment;

3. The appropriate completed forms which are obtained from the Department by submitting to written request to the following address:

   New Jersey Department of Environmental Protection
   Air Quality Permitting Program
   PO Box 27
   Trenton, New Jersey 08625-0027; and

4. Certifications complying with N.J.A.C. 7:27-1.39.

(b) Upon request by the Department, any person to whom the Department has issued a permit to burn used oil in a space heater pursuant to N.J.A.C. 7:27-8 or 7:27-22, as applicable, shall submit to the Department information relevant to the operation of the equipment and control apparatus including, but not limited to, the following: a diagram of the facility, records documenting any use of any equipment, and records documenting any construction, installation, or alteration;

(c) The Department may include, as a condition of approval for a permit to burn used oil in a space heater pursuant to N.J.A.C. 7:27-8 or 7:27-22, as applicable, that a person to whom the Department has issued a permit provide verification that the equipment and control apparatus is being used in compliance with the provisions and conditions of its permit. Such verification may include periodic testing; installation, operation, and maintenance of instrumentation and sensing devices; recordkeeping; and reporting.

(d) After an application for permit is filed with the Department, the space heater(s) shall not be installed and operated until an approved permit is issued by the Department pursuant to N.J.A.C. 7:27-8 or 7:27-22.

7:27-20.5 Demonstration that used oil is on-specification

(a) A permittee subject to N.J.A.C. 7:27-20.6(a) shall confirm that the used oil to be combusted is on-specification used oil, as defined in N.J.A.C. 7:27-20.1. This confirmation shall be done by either performing an analysis or obtaining copies of the analysis from the supplier, documenting that each shipment received from off-site or batch generated on-site of used oil meets the on-specification standards.

(b) The permittee shall keep copies of the analysis of used oil ***[**or**]*** ***and*** other information, as required by (a) above, on-site in a central file in a permanently bound logbook or in readily accessible computer memories and make these copies available for inspection by the Department for a period of three years after the date of each record, which is consistent with N.J.A.C. 7:26A-6.9(c)2.

(c) Suppliers of used oil shall provide a copy of the analysis to the permittee upon delivery of each shipment of used oil, documenting that the used oil is on-specification.

7:27-20.6 Burning of on-specification oil in other combustion units

(a) Except as prohibited by N.J.A.C. 7:27-20.2(b) or (c), a permittee may burn on-specification used oil ***or processed used oil fuel**** in a combustion unit without having to modify the permit, provided that:

1. The rated gross heat input is greater than 20 million BTU per hour;

2. The combustion device is capable of burning Number 6 fuel oil; and

3. The Department has issued a permit which authorizes the unit to burn Number 6 fuel oil;

4. The permittee confirms, prior to burning, and pursuant to N.J.A.C. 7:27-20.5, that the used oil combusted is on-specification used oil;

5. The permittee confirms, prior to burning, that the used oil combusted meets the ash standard outlined in N.J.A.C. 7:27-20.8; and

6. The on-specification used oil or processed used oil fuel or blend of any on-specification used oil or processed used oil fuel with commercial fuel meets the applicable sulfur standard of N.J.A.C. 7:27-9.

(b) Any combustion unit which meets the provisions of (a), above, may also combust a blend of on-specification used oil ***or processed used oil fuel**** and a commercial fuel oil. ***The blend shall meet the provisions of N.J.A.C. 7:27-20.8.**

(c) Any person who sells or conveys to another party commercial fuel blended with used oil to be burned in New Jersey in a combustion unit pursuant to (a) above shall provide certification that

only on-specification used oil is in the blend, consistent with N.J.A.C. 7:27-20.5 ***and that the ash content in the blend is less than 0.15 percent by weight, pursuant to N.J.A.C. 7:27-20.8(a)*** .

(d) Any blends of off-specification used oil with commercial fuel oil or with on-specification used oil shall be subject to the provisions of N.J.A.C. 7:27-20.7.

7:27-20.7 Burning of off-specification used oil

(a) A person wishing to burn off-specification used oil shall apply to the Department for a permit pursuant to N.J.A.C. 7:27-8 or 7:27-22, as applicable, provided that:

1. The combustion device for which the permit is sought has air pollution control devices which control the emissions of the off-specification contaminants;

2. The combustion device for which the permit is sought is one of the following:

i. An industrial furnace, as defined at N.J.A.C. 7:26-1.4;

ii. A boiler, as defined at N.J.A.C. 7:26-1.4, which is any of the following:

(1) An industrial boiler located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical process; or

(2) A utility boiler used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale; or

iii. A hazardous waste incinerator subject to regulation under 40 C.F.R. Parts 264 or 265, as incorporated by reference at N.J.A.C. 7:26G-8 or 9; and

3. The combustion device for which the permit is sought complies with all applicable air pollution control regulations at N.J.A.C. 7:27.

7:27-20.8 Ash standard

(a) Except as provided in (b) below, the ash content of on-specification used oil ***to be combusted or processed used oil fuel to be combusted*** shall not exceed ***[**0.1**]*** ***0.15*** percent by weight. ***Any blends of on-specification used oil or processed used oil fuel with commercial fuel oil shall meet the 0.15 percent by weight maximum ash content standard, except as provided by (b) below.***

(b) Any person may request a different ash content limit if the combustion device incorporates air pollution control for particulates. The Department shall approve such request if compliance

with all applicable air pollution control regulations is demonstrated in a permit application pursuant to N.J.A.C. 7:27-8 or 7:27-22.

(c) The ash content limit in (a) and (b) above shall be measured with ASTM Standard Test Method for Ash from Petroleum Products by ASTM D 482-91, incorporated herein by reference. This specification can be obtained from the ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(d) The vendor or permittee shall verify the ash content standard in (a) and (b) above for on-specification used oil or ***processed used oil fuel*** or blend of any on-specification used oil or ***processed used oil fuel*** with commercial fuel by sampling and analysis.

(e) Used oil space heaters with a capacity of not greater than 500,000 BTU/hr subject to N.J.A.C. 7:27-20.3 or 20.4 that comply with N.J.A.C. 7:27-20.3(b)2, 3, 6 and 13 are exempt from this section.

7:27-20.9 Exception

(a) The provisions of this subchapter shall not apply to any used oil charged to a fluid catalytic cracking unit at a petroleum refinery.