



North Carolina Department of Environment and Natural Resources  
Division of Air Quality

Beverly Eaves Perdue  
Governor

B. Keith Overcash, P.E.  
Director

Dee Freeman  
Secretary

March 17, 2010

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Mr. Ivan Clayton

Vice President

Sharpe Bros – A Division of Vecellio & Grogan, Inc.

P.O. Box 35387

Greensboro, NC 27425

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SUBJECT: Solid Waste Determination  
Applicability Determination No. 1556  
Used Mineral Oil Proposed for Combustion at Sharpe Bros. – A Division of Vecellio &  
Grogan, Inc. (Facility ID Nos. 4101208, 4101181, & 4101176)

Dear Mr. Clayton:

The North Carolina Division of Air Quality (NC DAQ) is reviewing new and modified sources that involve the combustion of materials that may be considered “solid waste” under Section 129 of the Clean Air Act (CAA). In response to NC DAQ’s request for additional information Heritage Environmental Services, LLC (Heritage Environmental) provided information about the food-grade mineral oil that Sharpe Brothers is proposing to burn at three existing hot mix asphalt (HMA) plants. NC DAQ has determined that the used mineral oil, as described by Heritage Environmental, is a solid waste as defined under the Solid Waste Disposal Act. Therefore, the New Source Performance Standard (NSPS) for commercial and industrial solid waste incineration (CISWI) units will potentially apply to the process if it fires the material. The determination, as summarized below, is based on the discussion of relevant law provided by the North Carolina Attorney General’s Office in its September 28, 2009 memorandum to Keith Overcash, P.E., Director, NC DAQ.

**1. Unit in Which the Material is Being Burned**

Sharpe Brothers is proposing to fire mineral oil as a fuel at three existing asphalt plants, as follows:

- **Liberty Road Plant (ID No. 4101208):** One batch mix asphalt plant rated at 320 tons per hour (tph), including an oil-fired aggregate dryer, rated at 90 MMBtu/hr.
- **Burnt Poplar Road Plant (ID No. 4101181):** One counterflow drum mix asphalt plant rated at 400 tph, including an oil-fired aggregate dryer/mixer, rated at 100 MMBtu/hr.
- **Lebanon Road Plant (ID No. 4101176):** One counterflow drum mix asphalt plant rated at 400 tph, including an oil-fired aggregate dryer/mixer, rated at 100 MMBtu/hr.

A total of approximately 5,000 gallons of used mineral oil per month could be delivered to and fired

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**Permitting Section**

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at the three asphalt recycling plants listed above.

**2. Description of the Non-Combustion Facility Process**

All three Sharpe Brothers facilities listed above are hot mix asphalt plants. At the batch mix operation at the Liberty Rd. Plant, mineral aggregate is dried and transferred to a mixer where it is mixed with liquid asphalt to product HMA. At the drum mix operations at the Burnt Poplar Road Plant and the Lebanon Road Plant, the mineral aggregate is dried and mixed with liquid asphalt cement in a rotary dryer to produce HMA. After mixing, the HMA is stored in silos until it is loaded by truck out for delivery to the customer.

**3. Process by Which the Material to be Burned was Developed**

The mineral oil Sharpe Brothers is proposing to fire in the aggregate dryer and dryer/mixers originates from a Procter & Gamble Co. (P&G) facility that manufactures toothpaste. Food-grade mineral oil is used as a solvent to clean the process equipment when the facility changes the types of toothpaste manufactured on a line.

**4. Physical and Chemical Characteristics of the Material to Be Burned.**

The used mineral oil will have the same chemical characteristics as the virgin, food-grade mineral oil used at the P&G facility, except that it will contain small concentrations of toothpaste cleaned from the P&G process. The used mineral oil is substantially chemically identical to the virgin mineral oil. The heat content of the used mineral oil is greater than 13,000 Btu/gal.

**5. Third-Party Handling**

The mineral oil is collected at P&G and transported to a Heritage Environmental recycle center located in Greensboro, NC. P&G pays Heritage Environmental to collect the used mineral oil along with other used materials from the facility. Heritage Environmental anticipates that the mineral oil would be stored on-site for approximately one month before being transported to one of the Sharpe Brothers asphalt plants for combustion in the dryers.

**6. Any Treatment Process Applied to the Materials**

There would be no treatment of the used mineral oil prior to combustion.

**7. General Market for the Material**

There is some precedent for used mineral oil being used as a fuel. At least one hot mix asphalt facility located in Indianapolis, Indiana is firing used mineral oil in an existing dryer. Mineral oil may also be solidified and routed to a landfill.

**8. Markets for Materials**

Currently, mineral oil that Heritage Environmental collects from P&G is transferred to a 3<sup>rd</sup>-party. The 3<sup>rd</sup>-party may use the mineral oil to enhance used fuel oils that are then sold to various customers. Alternatively, it may be solidified and sent to a landfill. Heritage Environmental has sold the mineral oil for \$0.10-0.20 per gallon in some instances. In other instances, Heritage Environmental has paid a 3<sup>rd</sup>-party to take the mineral oil. Heritage Environmental would like to be able to sell the mineral oil as a positively-valued fuel to Sharpe Brothers.

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**9. Benefit Derived From Burning of Material Aside from Energy Production**

There are no on-site benefits derived from the firing of the mineral oil aside from the production of heat to dry mineral aggregate.

**10. Other Information, Including Whether the Material Was Ever Discarded**

To be classified as a solid waste, the material must have been discarded. The market participation theory may be considered in determining whether a material has been discarded, which considers whether market participants treat the material as a positively-valued commodity or a negatively-valued waste. *Safe Food & Fertilizer v. EPA*, 350 F.3d 1263 (D.C. Cir. 2003). Further, in *Am. Petroleum Inst. V. EPA*, 906 F.2d 729, 741 (D.C. Cir. 1990), the court held that EPA had the authority to regulate materials that were delivered to a 3<sup>rd</sup> party as part of a waste treatment plan as solid waste because they were no longer part of an ongoing process. The court found that a material does not lose its status as solid waste just because it is reclaimed at some later time by a 3<sup>rd</sup> party.

In this case, the used mineral oil is treated by P&G as a negatively-valued waste. P&G pays Heritage Environmental to pick up the material, along with other on-site generated wastes. This is strong evidence that the material is "discarded" by P&G, qualifying it as a solid waste under CAA § 129. The proposed recovery of the product by Heritage Environmental, in which it proposes to treat the mineral oil as a positively valued commodity, does not deliver the material for its designation as a solid waste under CAA § 129.

The purpose of this determination is only to summarize and record the facts and analysis relevant to the proposed fuel source at this facility. Because the determination of what is a "solid waste" under CAA § 129 is highly fact specific, this letter does not establish any requirements for future cases. Should you have any questions concerning this determination, please contact Ms. Fern Paterson, P.E. at (919) 715-6242.

Sincerely yours,



Donald R. van der Vaart, Ph.D., J.D., P.E.  
Chief

cc: Ms. Janet Williams  
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