ILLINOIS POLLUTION CONTROL BOARD
January 10, 2002

IN THE MATTER OF:	)	
	)	
PETITION OF PROGRESSIVE	)	AS 01-7
ENVIRONMENTAL SERVICES, INC.	)	(RCRA Adjusted Standard)
d/b/a ANTIFREEZE RECYCLING FOR	)	
AN ADJUSTED STANDARD UNDER	)	
35 ILL. ADM. CODE 720.131(c)	)	

OPINION AND ORDER OF THE BOARD (by S.T. Lawton, Jr.):

Progressive Environmental Services, Inc. (PESI) recycles automotive antifreeze for customers that include car dealerships and auto repair shops. PESI collects used antifreeze that is processed through bag filtration units at its customers' facilities, and transports it to its centralized facility in Jerseyville, Jersey County, Illinois. PESI then processes the filtered used antifreeze with a reverse osmosis system, adds inhibitors, and resells it as a final product.

PESI petitions the Board to find that the used antifreeze that PESI accepts and places through bag filtration units is a commodity-like material and not a solid waste under 35 Ill. Adm. Code 720. 131(c). Pet. at 1.[1] PESI requests this determination so that its operation will not be subject to Board regulations concerning requirements for manifesting, transportation, management, closure, and record keeping practices for the filtered used antifreeze. The Board utilizes adjusted standard procedures under 35 Ill. Adm. Code 106 to determine whether a material is a solid waste per 35 Ill. Adm. Code 720.133.

On June 19, 2001, the Illinois Environmental Protection Agency (Agency) filed its recommendation that the Board deny PESI's petition unless PESI provides sufficient information as requested in the Agency's recommendation. PESI did not file a response to the Agency's recommendation.

The Board finds that PESI has established that the filtered used antifreeze is not a solid waste. The Board therefore grants PESI's amended petition for an adjusted standard.

PROCEDURAL HISTORY

PESI filed a petition for an adjusted standard with the Board on March 15, 2001. PESI also requested that the hearing in this matter be waived or that the Board hold an expedited hearing. PESI filed an amended petition on May 17, 2001, which addressed several of the issues raised by the Board order of April 19, 2001, requesting more information. On June 19, 2001, the Agency filed its recommendation to deny PESI an adjusted standard, as stated above.

[1] The Board will refer to the PESI petition for an adjusted standard in this matter as "Pet. at ___."

PESI waived hearing, and the Board has not received a request for a hearing in this matter. Accordingly, no hearing has been held.

PESI'S PETITION

In this section, the Board discusses facts that PESI alleged in its petition for adjusted standard. First, the Board summarizes how PESI collects, transports, and processes filtered used antifreeze. Second, the Board describes the work practices employed by PESI in handling the filtered used antifreeze. Third, the Board explains how PESI handles waste generated from recycling used antifreeze. Lastly, the Board discusses factors affecting the end market for filtered used antifreeze and antifreeze processed by reverse osmosis (RO filtered antifreeze).

PESI Operations

PESI recycles antifreeze, starting with the common industry practice of filtering used antifreeze through bag filtration units at its customers' facilities. Am. Pet. at 2. PESI then transports the filtered used antifreeze to its central processing facility, where it further refines it by using a reverse osmosis process and adding chemical dyes and inhibitors. The reverse osmosis processing results in a higher grade recycled product. PESI's central processing facility is located at 708 McClusky Road in Jerseyville, Jersey County. Am. Pet. at 4.

PESI first visits customers and inspects their collected used antifreeze for contamination. Am Pet. at 2. PESI will not accept used antifreeze with a visible layer of oil or gasoline. Am. Pet. at 4. If the used antifreeze is not suspect, PESI runs it through a bag filtration system while at the customer's site. Am. Pet. at 2. The bag filters remove particles of rust, scale, pieces of gasket and other solid particles, but do not remove gasoline or petroleum products. Am. Pet. at 4.

PESI siphons used antifreeze from a designated container at the customer's site with a PVC tube that is connected to a high-pressure, chemical resistant hose. Am. Pet. at 3. PESI uses a diaphragm pump to generate enough pressure to move the material from the customer's designated container, through the filter vessel, and into a 535-gallon heavy-duty polyethylene tank bolted to the floor of the to the truck. *Id.* PESI then transports the filtered used antifreeze to its central processing facility for further conditioning. Am. Pet. at 4.

PESI transports the filtered used antifreeze to and from its centralized recycling facility via normal truck delivery routes. Am. Pet. at 3. PESI transfers the material from the tank attached to the truck into a 2,000-gallon holding tank through schedule 80 PVC piping, valves, and fittings. *Id.* PESI moves the material by using an electrical centrifugal pump fitted to a chemical resistant, non-collapsible hose with a PVC constructed wand. *Id.*

Once the filtered used antifreeze is transferred into the holding tank, it is refined through a three-step reverse osmosis system. Am. Pet. at 4. The process starts by moving the filtered used antifreeze from the holding tank into a second tank for flocculation, which further

clarifies the antifreeze. *Id.* PESI transfers the antifreeze into a third holding tank, where it is filtered through reverse osmosis membranes. *Id.* The reverse osmosis process results in a clear mixture of ethylene glycol and water. Am. Pet .at 2. PESI collects this material in a fourth tank, where PESI adds any necessary dyes and inhibitors to create a finished product. Am. Pet. at 4.

PESI Work Practices

PESI employs safe work practices, spill response procedures, and employee training to ensure that all antifreeze is handled with a minimum loss due to spills or leaks. Am. Pet. at 3. PESI states that it has two employees. *Id.* The principal employee of PESI worked in the hazardous waste transportation and disposal business for 10 years, and received extensive training in safe handling and shipment of hazardous waste and materials. *Id.* The second PESI employee received two weeks of hands-on training in the safe handling of used and reclaimed antifreeze when he was hired approximately one and a half years ago. *Id.* "The training included an overview of all PESI procedures related to loading, unloading, spill clean-up and other customer service procedures." *Id.*

PESI provides customers in its recycling program with a clean plastic drum to store used antifreeze, which is labeled "USED ANTIFREEZE ONLY" on the top and sides of the drum. Am. Pet. at 1. PESI states that it makes customers fully aware that they should only place used antifreeze to be recycled in the drum. *Id.* PESI also notifies customers that it will not accept contaminated antifreeze for recycling. *Id.* PESI inspects each drum before accepting it for recycling, and rejects any suspect material. Am. Pet. at 2. PESI drops customers with more than two suspect drums from its recycling program, and all customers are responsible for disposing of any contaminated material. *Id.*

PESI transfers the filtered used antifreeze to its central processing facility in a tank fitted into a van box truck. Am. Pet. at 3. PESI maintains the truck, tank, hoses, pumps, and fittings, and keeps them clean so that it can perform proper inspections for leaks at all times. *Id.* PESI inspects the equipment at each customer location prior to, during, and following each pick-up. *Id.* Employees can visually inspect all fittings during the filtration and loading of the filtered used antifreeze. *Id.*

If the antifreeze leaks, the PESI employee will immediately stop the recycling process and repair the problem. Am. Pet. at 3. PESI employees keep an emergency spill kit on the truck, including absorbent, a broom, shovel, and container to clean up any spills. *Id.* Any waste generated from cleaning up spills is certified by PESI not to be an Illinois special waste, and is disposed of with other non-regulated residuals. *Id.*

PESI employees drive the truck containing the antifreeze into the centralized facility to ensure that any spills from loading and unloading would be contained in the building. Am. Pet. at 3. The building has a 40-foot by 60-foot steel frame with a concrete slab floor. Am. Pet. at 4. An eight-inch berm forms the foundation of the exterior walls. All floor drains are sealed with concrete. *Id.*

A PESI employee is always present when the antifreeze is unloaded into the centralized facility. Am. Pet. at 3. He inspects all pipes, valves, and fittings for leaks prior to, during, and after each time it transfers or unloads antifreeze. *Id.* A PESI employee offloads the filtered used antifreeze into the first holding tank through schedule 80 PVC piping, fittings, and a pressure hose by using an electric centrifuge pump fitted to a chemical resistant, non-collapsible hose with a PVC constructed wand. *Id.* PESI utilizes four 2,000-gallon heavy-duty polyethylene agricultural chemical tanks in the reverse osmosis process that it purchased new in 1999. Am. Pet. at 4. PESI always contains the antifreeze when transferring it to the reverse osmosis system. Am. Pet. at 3. In the event of a leak, PESI maintains a spill control station with absorbent products, a broom, shovel and container. *Id.*

PESI transports the conditioned antifreeze to customers' sites and unloads it with a diaphragm pump through a high-pressure chemical resistant hose. Am. Pet. at 3. The hose is equipped with a shut-off nozzle, which is similar to a gas pump nozzle. *Id.*

The reverse osmosis process is a closed system, which holds a maximum amount of 4,000 gallons of material. Am. Pet. at 4-5. It does not produce any air emissions. Am. Pet. at 4. There are no volatile organic materials involved in the reverse osmosis system that could produce hazardous air emissions. *Id.* PESI also does not have any regulated discharges to a publicly owned treatment works, or to any other water source. *Id.*

Storage and Disposal of Waste

PESI states that it disposes of waste from the bag filtration and reverse osmosis process as solid waste. Am. Pet .at 4. PESI collects used filters from the bag filtration units at customers' sites and temporarily stores them at its centralized facility. *Id.* PESI tested the used filters and states that they did not contain hazardous constituents above regulated limits. *Id.* PESI certifies that the used filters are not Illinois special waste, and disposes of used filters with other residuals in a solid waste landfill. *Id.*

PESI states that the only residuals generated from the reverse osmosis process are precipitated solids. Am. Pet. at 3. It tested the residuals for Toxicity Characteristic metals, and found that they were not above regulated levels. *Id.* PESI certifies that the residuals are not Illinois special waste, and disposes of them in a solid waste landfill. *Id.*

PESI tested the spent solution from cleaning the reverse osmosis membranes, and found that it did not contain regulated levels of hazardous constituents. Am. Pet. at 3. PESI discharges the solution to the sanitary sewer. *Id.*

Factors Affecting the End Market for Filtered Used Antifreeze

PESI explains that is a common practice in the antifreeze recycling industry for a company to visit a customer's site, filter used collected antifreeze through bag filters, add chemical inhibitors, and resell it to the customer without ever leaving the premises. Am. Pet.

at 2. Companies that choose to use only bag filtration systems typically do not need to process the filtered used antifreeze further before selling it back to its customers. *Id.* PESI uses bag filtration units in its initial processing step that perform the same function as on-site recycling machines that other companies use to generate a recycled product. Am. Pet. at 2, 6.

PESI does not provide the Board with an estimate of the economic value of the filtered used antifreeze as a raw material in its production of RO filtered antifreeze. However, PESI states that the market price for RO filtered antifreeze as a final product is approximately $1.60 to $1.80 per gallon in the St. Louis metropolitan area. Am. Pet. at 2. The RO filtered antifreeze is the equivalent to virgin antifreeze from a chemical, physical and economic standpoint. *Id.* PESI states that it has charged approximately $1.70 per gallon for RO filtered antifreeze since the inception of its business. *Id.* PESI attached invoices with current sales and prices to verify the cost of its finished product. *Id.*

PESI claims that it is the leading provider of high-quality recycled antifreeze out of the four recycling companies in St. Louis. Am. Pet. at 2. It priced its RO filtered antifreeze to directly compete with those utilizing other recycling methods. *Id.* PESI has an established list of over 100 clients that purchase the RO filtered antifreeze, including numerous Jiffy Lube stores. *Id.* PESI attached affidavits from 13 customers to its amended petition, which state that they would not purchase on-site recycled antifreeze due to the inferior quality and the inability to resell it to their customers. *Id;* Am. Pet. Exh 1. Instead, they buy RO filtered antifreeze from PESI because it is a higher quality alternative that costs less than new antifreeze. Am. Pet. Exh 1.

PESI receives used antifreeze from customers that do not wish to purchase RO filtered antifreeze. Am. Pet. at 2. However, PESI states that other customers typically use more antifreeze than they collect for recycling because antifreeze is lost in repairing vehicles. *Id.*

Agency Recommendation

The Agency recommends that the Board deny PESI's request for an adjusted standard unless PESI addresses certain concerns raised by the Agency. The Agency requested that the Board should impose the same conditions as found in *In re* Petition of Recycle Technologies, Inc., AS 97-9, slip op. at 7 (Sept. 3, 1998), if the Board grants the adjusted standard to PESI. The Agency, in its recommendation, presents an analysis of how it perceived the petition by PESI inadequately addressed the six factors under 35 Ill. Adm. Code 720.121(c).

The Agency first states that PESI should provide details of the effectiveness of its bag filtration process, including information on whether the filtered used antifreeze generated by PESI meets industry standards or is subjected to quality analysis. Ag. Rec. at 3.

The Agency next recommends that PESI provide further information about the value of the filtered used antifreeze after PESI reclaims the material. Ag. Rec. at 3. The Agency requests that PESI clarify the price of RO filtered antifreeze, filtered used antifreeze, and

virgin antifreeze in the St. Louis market. Ag. Rec. at 4. The Agency states that PESI should also provide details concerning the quality and prices of its competitors' products. *Id.* The Agency further requests that PESI clarify statements made by its customers concerning the useability of the filtered used antifreeze that PESI reclaims for further processing to better show the value of the material. *Id.*

The Agency states that PESI should better explain the degree to which the filtered used antifreeze is like an analogous raw material. Ag. Rec. at 4-5. Although PESI alleges that the RO filtered antifreeze is equivalent to virgin antifreeze from a chemical, physical and economic standpoint, the Agency requests that PESI prove this allegation by comparing the RO processing to the steps performed by manufacturers of virgin antifreeze. Ag. Rec. at 5. The Agency also recommends that PESI show how the chemical and physical characteristics of RO filtered antifreeze compare to virgin antifreeze. *Id.*

The Agency requests specific information on the extent to which an end market for reclaimed material is guaranteed. Ag. Rec. at 5. The Agency states it would be useful for PESI to provide details concerning increased market share or business opportunities created by switching to reverse osmosis processing in 1999, and whether any competitors also use a reverse osmosis system. *Id.* The Agency also suggests that PESI should specify whether there are industry standards for reverse osmosis processing, and whether PESI meets these standards. *Id.* Similarly, the Agency requests PESI to clarify which ASTM standards are met and provide data supporting its conclusions. *Id.* Finally, the Agency recommends that PESI submit information about any routine quality analysis that it performs on material generated by the RO system. *Id.*

The Agency recommends that PESI answer several inquiries concerning the extent that PESI handles filtered used antifreeze to minimize loss of the material. Ag. Rec. at 6. The Agency states that "[i]t would be relevant to know what inspection or sampling procedures PESI employs to identify contaminated used antifreeze at a customer's site, what its rejection criteria are, and whether PESI advises the customer on proper disposal procedures if contaminated used antifreeze is detected." *Id.* The Agency also requests that PESI should "advise if there have been or could be circumstances where used antifreeze collected or processed by PESI had to be or could be discarded, and provide the reasons and procedures for these situations." *Id.*

The Agency lastly discusses other relevant factors that concern PESI's petition for an adjusted standard. Ag. Rec. at 7-8. The Agency contends that PESI's sample of filtered used antifreeze contained tetrachloroethene in concentrations that qualified it as a characteristic hazardous waste under the standard in 35 Ill. Adm. Code 721.124. Ag. Rec. at 7. The Agency then questions whether PESI's reverse osmosis operation is subject to the Clean Air Act. *Id.* The Agency also requests PESI to "clearly describe the circumstances in which filtered used antifreeze would not be a solid waste." Ag. Rec. at 8. Finally, the Agency states that PESI should discuss whether it follows the same procedures as a permitted facility to ensure no impact to the environment. PESI should include information on "facility design,

operating procedures, secondary containment, inspections, emergency response procedures, record keeping, and closure procedures." *Id.* The concerns raised by the Agency in its recommendation are addressed in the discussion section below.

DISCUSSION

In this section, the Board discusses whether the filtered used antifreeze collected by PESI qualifies for a nonsolid waste determination in accordance with Section 720.131(c) of the Board regulations. *See* 35 Ill. Adm. Code 720.131(c). The Board first provides a general framework of the regulations concerning this matter. The Board next examines whether the determination under Section 720.131(c) is available to PESI. Finally, the Board analyzes whether the filtered used antifreeze initially reclaimed by PESI is commodity-like, according to the six factors under Section 720.131(c).

Legal Framework

PESI requests that the Board find that the filtered used antifreeze collected from its customers' facilities is not a solid waste under 35 Ill. Adm. Code 720.131(c). Section 720.131(c) of the Board's regulations reads in part as follows:

> The Board will determine that those materials that have been reclaimed but must be reclaimed further before recovery is completed are not solid wastes if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further) . . . . 35 Ill. Adm. Code 720.131(c).

The Board notes that these regulations are substantively identical to regulations that the United States Environmental Protection Agency (USEPA) promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 *et seq*. According to the USEPA, to "determine if a secondary material is a RCRA solid waste when recycled, one must examine both the material and the recycling activity involved." 50 Fed. Reg. 614, 619 (Jan. 4, 1985).

Generally, the Board considers three factors to determine whether and how material becomes a solid waste. *See* *In re* Petition of Recycle Technologies, Inc. (Recycle Technologies), AS 97-9, slip op. at 7 (Sept. 3, 1998); 35 Ill. Adm. Code 721.102(c) and 721 Appendix Z. The first factor that the Board considers is the category of the secondary material, such as whether it is a by-product, sludge, or spent material.[2] The second factor is whether it is an unlisted "characteristic" hazardous waste or a "listed" hazardous waste. The third factor that the Board considers is which recycling activity is involved.

[2] The Board regulations define "spent material" as "any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing." 35 Ill. Adm. Code 721.101(c)(1).

With regards to the second factor, solid waste generally is also hazardous waste if it exhibits certain characteristics (*i.e.* it is toxic, corrosive, ignitable, or reactive) or is "listed" as a hazardous waste. *See* 35 Ill. Adm. Code 721.103, 721, Subparts C and D. For regulations implementing Subtitle C of RCRA, the definition of "solid waste" is applicable to those that are hazardous wastes . *See* 35 Ill. Adm. Code 721.101(b)(1). The USEPA explains this scope in its federal regulations:

> Although hazardous wastes are a subset of solid wastes under RCRA, [USEPA's] regulatory authority under Subtitle C applies only to hazardous wastes. Since the present regulations apply only to Subtitle C, we have chosen to make the definition of solid waste applicable to those materials that also are hazardous wastes. 50 Fed. Reg. 614, 616, n. 3 (Jan. 4, 1985).

Used automotive antifreeze is not a listed hazardous waste. PESI maintains that it conducted tests on its used filters, spent cleaning solution, and residual precipitated solids, which prove that the materials contain no hazardous constituents above regulated limits. Am. Pet. at 6,7. The test results for the filtered used antifreeze appear to be contained in Attachment 3 of the amended petition, as noted by the Agency. Agency Rec. at 7.

The Agency contends that PESI test results for its filtered used antifreeze show that it contains tetrachloroethene (known as tetrachloroethylene) at levels that qualify the material as a characteristic hazardous waste. Agency Rec. at 7.[3] The Agency stated that the tests indicated that the concentration of 1.54 parts per million (ppm) of tetrachloroethene is greater than the 0.7 ppm standard found at 35 Ill. Adm. Code 721.124. Agency Rec. at 7. The analysis from PESI utilized SW-846 Methods 5030/8260B and EPA 66 4.1.4 instead of SW-846 Method 1311 for the Toxicity Characteristic Leachate Procedure. According to 40 C.F.R. 261.24, the test method for determining whether the material exhibits characteristics of a hazardous waste is method 1311. Since PESI did not use method 1311, and only tested a single sample, the analysis provided in Attachment 3 is not conclusive in finding that this phase is characteristic hazardous waste.

Based on this record, the Board is not in a position to determine if the used antifreeze that is generated by PESI's numerous customers exhibits any characteristics of hazardous waste. *See* Recycle Technologies, AS 97-9, slip op. at 7. However, "if spent materials are listed or characteristic [hazardous waste], they are solid wastes if they are to be recycled by reclamation." *Id.*

The Board regulations state that a material is reclaimed if it is:

> processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents. 35 Ill. Adm. Code 721.101(c)(4).

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[3] The Agency filed their recommendation with the Board on June 19, 2001, which is referred to as "Agency Rec. at ___."

According to the USEPA, materials are reclaimed if "material values . . . are recovered as an end-product of a process" or if they are "processed to remove contaminants in a way that restores them to their usable original condition." Recycle Technologies, AS 97-9, slip op. at 8, quoting 50 Fed. Reg. 614, 633 (Jan. 4, 1985). With regards to the third factor considered by the Board, PESI's processing of filtered used antifreeze through the bag filtration unit is consistent with this material reclamation process.

Without the non-solid waste determination, the Board finds that the filtered used antifreeze collected by PESI, if a characteristic hazardous waste, is a "solid waste" because it is a "spent material" being "reclaimed." *See* 35 Ill. Adm. Code 721.102(c)(3) and 721 Appendix Z.

Availability of Relief Under Section 720.131(c)

PESI is eligible for a non-solid waste determination, pursuant to 35 Ill. Adm. Code 720.131(c) if, after PESI initially reclaims the used antifreeze, the resulting material is commodity-like. The filtered used antifreeze can qualify as commodity-like even though it is not yet a commercial product and has to be reclaimed further. Without a non-solid waste determination, a waste that is in the process of being reclaimed is a waste until the reclamation is complete. *See* Recycle Technologies, AS 97-9, slip op. at 8. "A nonsolid waste determination under Section 720.131(c) applies only to wastes after they have been initially reclaimed." *Id.*, citing 50 Fed. Reg. 614, 620, 633-34, 655 (Jan. 4, 1985). According to the USEPA, the provision is designed to address situations where "the initial reclamation step is so substantial that the resulting material is more commodity-like than waste-like even though no end-product has been recovered." 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

The Board finds that relief under Section 720.131(c) is available in this case because PESI initially reclaims the used automotive antifreeze when it filters it through bag filtration units at its customers' facilities. This results in a commodity-like material, even though the filtered used antifreeze is not yet a commercial product until it is reclaimed further through the RO process and supplemented with dyes and inhibitors. Below, the Board addresses the evidence on the Section 720.131(c) factors to determine if the initially reclaimed material (the filtered used antifreeze) is commodity-like and thus not a solid waste.

Section 720.131(c) Factors

The Board must determine whether the filtered used antifreeze that PESI initially reclaims at its customers' facilities is commodity-like according to the Section 720.131(c) factors. The Board must consider the following six factors under Section 720.131(c):

1) The degree of processing the material has undergone and the degree of further processing that is required;

2) The value of the material after it has been reclaimed;

3) The degree to which the reclaimed material is like an analogous raw material;

4) The extent to which an end market for the reclaimed material is guaranteed;

5) The extent to which the reclaimed material is handled to minimize loss; and

6) Other relevant factors. 35 Ill. Adm. Code 720.131(c).

The Board finds that the filtered used antifreeze is commodity-like based on these factors. The Board addresses these factors in turn.

The Degree of Processing the Material has Undergone and the Degree of Further Processing that is Required

The USEPA states that the "more substantial the initial processing, the more likely the resulting material is to be commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). For the initial processing, PESI first inspects and filters used automotive antifreeze through bag filtration units at its customers' facilities. The bag filtration removes particles of rust, scale, pieces of gasket and other solid particles.

PESI states that the antifreeze recycling industry commonly uses bag filtration units to recycle antifreeze at its customers' sites. The companies filter the material, add inhibitors, and resell the filtered used antifreeze on site as an inexpensive alternative to virgin antifreeze. The Board has previously found that there is a large market for filtered used antifreeze, and that "it is not only commodity-like, but a commodity." *See* Recycle Technologies, AS 97-9, slip op. at 9.

The Agency states that Recycling Technologies, Inc. (RTI), in its application for an adjusted standard, included detailed information on how it processed used antifreeze through a

20 micron filter and then through a 5 micron or smaller filter. Agency Rec. at 2. It states that this type of bag filtration unit was comparable to one approved by General Motors and satisfied standards adopted by the American Society for Testing and Materials (ASTM). Agency Rec. at 2. The Agency also noted that RTI periodically tested its filtered used antifreeze at various laboratories to ensure its quality. Agency Rec. at 2. The Agency commented that PESI did not describe the effectiveness of its bag filtration process in removing particulate contaminants, or indicate whether the filtered used antifreeze meets any particular industry standard or is routinely subjected to quality analysis. Agency Rec. at 2.

The Board finds that PESI provided sufficient information in its amended petition to address the Agency's concerns. Although PESI does not specifically state what type of bag filtration units it uses at its customers' sites, it does state that such units perform the same function as machines such as Wynn's, BP 5, Glyclean, and Hytech. PESI also states that it screens the antifreeze prior to acceptance for contamination, such as an oil or gasoline layer. PESI does not specify the size filters, but does assert that the bag filtration units remove particles of rust, scale, pieces of gasket and other solid particles. Further evidence by PESI that the filtered used antifreeze rises to specific ASTM standards and stands up to routine testing would bolster the showing that the material has undergone a significant amount of processing. The Agency's concerns that PESI did not indicate if the filtered used antifreeze meets industry standards or is subject to quality analysis, pertains in this matter to the integrity of the product, and their absence does not disqualify the material as commodity-like in nature.

The bag filtration at customers' sites is an integral part of the PESI recycling process. It is the first step towards priming the used antifreeze before PESI transfers the filtered used antifreeze to its central processing facility and further processes the ethylene glycol and water in the reverse osmosis process. PESI does not specifically address whether the filtered used antifreeze is of standard quality to resell as a product itself. Despite this fact, the Board finds that the information provided by PESI, although sparse, is sufficient to show that the bag filtration is a substantial processing step in the overall RO reclamation process and produces a commodity-like material.

The Value of the Material After it Has Been Reclaimed

The USEPA states that "the more valuable a material is after initial processing, the more likely it is to be commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). As noted above, there is a large market for filtered used antifreeze without further processing. The filtered used antifreeze, which contains ethylene glycol and water, is also an essential raw material in manufacturing RO filtered antifreeze.

The Agency states that PESI did not provide enough information to show that the filtered used antifreeze has value because it omitted the economic value of the filtered used antifreeze and of virgin antifreeze. The Agency also contends that PESI customers undercut the value of the filtered used antifreeze by stating in affidavits that they would not purchase it

from PESI due to the inferior quality and lack of marketability to their own customers. Am. Pet. Exh. 1.

The Board finds that PESI provides sufficient evidence to show that filtered used antifreeze as well as the RO filtered antifreeze have both an economic and practical value. The practical value of the filtered used antifreeze to PESI lies in its use as a raw material that is a necessary part of PESI's business. This is especially true since PESI does not produce a filtered used antifreeze for sale. From an economic standpoint, this type of filtered used antifreeze contains ethylene glycol, water, and residual inhibitors and may be used as antifreeze without any further processing. *See, e.g.,* Recycle Technologies, AS 97-9, slip op. at 9. The USEPA stated that "[i]f the initially-reclaimed material can substitute for a virgin material, . . . it is more likely to be commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

The RO filtered antifreeze processed by PESI also has economic value. PESI states the quality of the reclaimed product approximates virgin antifreeze, and the value is similar. Am. Pet. at 9. The economic value of RO filtered antifreeze may not be similar to virgin antifreeze, but the practical value to the consumer would be. The economic value is seen in the current market price for reclaimed antifreeze, which is $1.60 to $1.80 per gallon in the St. Louis Metro Area. Am. Pet. at 2, 6. This price is also within the same range that the Board has previously seen for filtered used antifreeze without further processing. *See, e.g.,* Recycle Technologies, AS 97-9, slip op. at 9.

The preference by PESI customers to provide a higher grade alternative to filtered used antifreeze does not mean that a market for the lower quality filtered used antifreeze no longer exists. Although some PESI customers may choose to purchase RO filtered antifreeze, PESI states that it is still a common practice for companies to process used antifreeze through bag filtration units, add inhibitors, and resell the filtered used antifreeze.

The Degree to Which the Reclaimed Material is Like an Analogous Raw Material

Section 720.131(c)(3) of the Board's regulations requires that the petitioner demonstrate the extent to which the reclaimed material is like an analogous raw material. In this case, the reclaimed material is the filtered used antifreeze. The filtered used antifreeze, as the main ingredient, is like an analogous raw material in PESI's process to further reclaim and produce its RO filtered antifreeze. The filtered used antifreeze contains ethylene glycol and water, which are an essential part of the RO filtered antifreeze.

The Board finds that the filtered used antifreeze is used as raw material to make RO filtered antifreeze, which can be substituted for new antifreeze with the addition of chemical dyes and inhibitors.

The Extent to Which an End Market for the Reclaimed Material is Guaranteed

In discussing this factor, the USEPA states that:

> If the [petitioner] can show that there is an existing and guaranteed end market for the initially-reclaimed material (for instance, value, traditional usage or contractual arrangements), the material is more likely to be commodity-like. 50 Fed. Reg. 614, 655 (Jan 4, 1985).

As stated above and in Recycle Technologies, AS 97-9, slip op. at 10, there is a large market for filtered used antifreeze that only passes through bag filtration without further RO processing. PESI claims that three other competitors in its service area use alternatives to RO processing. PESI also guarantees its own end market in that it plans to use all of the filtered used antifreeze that it collects to make its final product, the RO filtered antifreeze with additives.

As to the end market for the RO filtered antifreeze, PESI states that it installed tanks for reverse osmosis processing in 1999, and claims to have approximately 100 clients in its recycling program, including Jiffy Lube stores that are a part of a national chain. Thirteen clients signed affidavits that they are current end users of PESI recycled antifreeze. Am. Pet. at 2. They stated that they purchase the RO filtered antifreeze from PESI because they like the superior quality of the recycled product for less cost than virgin antifreeze. PESI also included invoices as further proof of a guaranteed end market.

PESI does receive used antifreeze from clients who do not wish to repurchase RO filtered antifreeze. Am. Pet. at 2. However, customers typically use more recycled antifreeze than they collect for recycling. This is due in part to vehicle repairs such as damaged radiator hoses, water pumps, or blown head gaskets. Am. Pet. at 2.

The Agency requested that PESI specify whether the three other antifreeze recycling companies that compete with PESI use reverse osmosis processing. The Agency also suggested that PESI provide information concerning increased market share or business opportunities, if any, created by the addition of reverse osmosis processing. PESI did not do so. The Board finds that, while this information would be useful, it is not necessary for the Board to determine whether PESI has a guaranteed end market for the reclaimed material.

The Board finds that there is a guaranteed end market for all of the filtered used antifreeze and the RO filtered antifreeze from PESI's process.

The Extent to Which the Reclaimed Material is Handled to Minimize Loss

According to the USEPA, the "more carefully a material is handled, the more it is commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). PESI only handles the filtered used antifreeze from its customers. If a drum passes PESI inspection, PESI uses a pump and suction hose to move used antifreeze from the customers' designated receptacles, through PESI bag filtration units, and into a heavy-duty polyethylene tank bolted to its truck.

PESI then transports the filtered used antifreeze to its centralized facility, where it unloads the material inside the building into a holding tank. The facility is contained within an enclosed structure with a concrete slab floor, 8 inch berm, and sealed floor drains. The filtered used antifreeze is channeled through the closed reverse osmosis system. PESI handles the antifreeze so that it does not spill.

In its recommendation, the Agency requested information concerning the type of inspection or sampling procedures used by PESI to identify contaminated used antifreeze at a customer's site, its rejection criteria, and whether PESI advises customers on proper disposal of contaminated used antifreeze. The Agency also requested information on what circumstances PESI could collect or process contaminated antifreeze, and how it would dispose of the material. Agency Rec. at 6-7. PESI did not file a response to the Agency recommendation.

However, PESI stated in its amended petition that it screens used antifreeze prior to collection and rejects any suspect material. It specifically stated that it would not accept used antifreeze with an oil or gasoline layer. Am. Pet. at 4. PESI "provides each customer with a clean plastic drum to store the used antifreeze" at the customer's site, and "[t]he customer is made fully aware that only used antifreeze to be recycled is placed in the drum." The drum is labeled both on the top and sides with "USED ANTIFREEZE ONLY." Am. Pet. at 1.

PESI notifies each customer that it will not accept contaminated used antifreeze, and that the customer is obligated to dispose of any suspect material. PESI is not obligated to provide legal advice or guidance on how to properly dispose of the suspect used antifreeze. Since PESI screens the used antifreeze for contamination prior to collection, it does not handle or dispose of such material.

The Board finds that PESI handles the filtered used antifreeze so as to minimize loss. PESI also has a financial incentive not to lose the filtered used antifreeze. Lost material would deplete its supply of recycled product to sell to its customers. PESI estimates that it reclaims over 99% of the ethylene glycol content of the filtered used antifreeze. Am. Pet. at 3.

The Board notes that the process of reclaiming the used antifreeze makes PESI the generator of any wastes produced in that process. However, the disposition of the wastes from the reverse osmosis process, including the unusable antifreeze, is a separate responsibility of PESI that does not factor into this solid waste determination. The solid waste determination only pertains to filtered used antifreeze collected and transferred from customers' facilities to the centralized processing facility. It does not include wastes produced during the reclamation process.

Other Relevant Factors

The Agency expressed several concerns regarding the scope of a nonsolid waste determination in this matter. The Agency requested that PESI describe the circumstances in

which filtered used antifreeze would not be a solid waste. Agency Rec. at 8. PESI states in its amended petition that it only accepts used antifreeze that is free of contamination for recycling. Accordingly, PESI only considers filtered used antifreeze not to be a solid waste in accordance with this adjusted standard if PESI determines that the used antifreeze is not contaminated after inspecting the material, and filters it through a bag filtration unit at its customer's site.

The Agency also questioned whether the Clean Air Act would apply to the PESI recycling operation. The statutory and regulatory requirements concerning the reverse osmosis processing are separate from this matter. This solid waste determination does not preclude the application of Clean Air Act requirements if the PESI process produces regulated air emissions. However, the Board notes that PESI claims "[t]here are no air emissions resulting from [its] final conditioning process. . . ." Am. Pet. at 4.

The Board finds that the remaining issues raised by the Agency concerning the potential impact to the environment by PESI from its facility design, operating procedures, secondary containment, inspections, and emergency response procedures, are all adequately addressed in the amended petition by PESI for the adjusted standard in this matter. As for issues that the Agency raised concerning record keeping and closure, such requirements would not apply in the context of this adjusted standard because of this non-solid waste determination.

CONCLUSION

The Board finds that PESI established under Section 720.131 of the Board regulations (35 Ill. Adm. Code 720.131(c)), that the filtered used antifreeze is commodity-like. Accordingly, the Board finds that the material is not a solid waste, and grants PESI's petition for an adjusted standard.

The Board emphasizes that this nonsolid waste determination applies only to used antifreeze once it has been initially reclaimed by PESI at the customer's site, *i.e.,* it applies only after PESI processes the material through a bag filtration unit. In addition, this nonsolid waste determination applies only to the filtered antifreeze that is to be further processed by PESI through reverse osmosis at its centralized facility for sale to customers in its recycling program.

This opinion constitutes the Board's findings of fact and conclusions of law.

ORDER

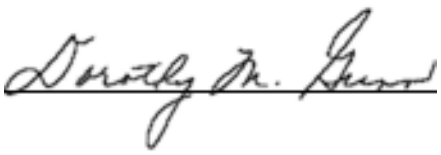
1. The Board finds that the filtered used automotive antifreeze handled by PESI at its Jerseyville, Jersey County facility, is not a solid waste. The Board accordingly grants PESI an adjusted standard under 35 Ill. Adm. Code 720.131(c).

2. The adjusted standard applies only to used automotive antifreeze after PESI has initially reclaimed it through a bag filtration unit at the customer's site where the used automotive antifreeze was generated. In addition, the adjusted standard applies only to such filtered used antifreeze that is to be further processed by PESI through reverse osmosis at its Jerseyville, Jersey County facility for sale to customers in its recycling program.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2000); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the Board adopted the above opinion and order on January 10, 2002, by a vote of 6-0



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board