



# U.S. Environmental Protection Agency

## Applicability Determination Index

**Control Number: Z030004**

**Category:** NESHAP  
**EPA Office:** Region 10  
**Date:** 06/29/1999  
**Title:** Wastewater Treatment Operations  
**Recipient:** Ken Ferry  
**Author:** Gil Haselberger

**Subparts:** Part 61, FF, Benzene Waste Operations

**References:** 61.341  
61.342(c)(2)  
61.348(b)

### Abstract:

Q1: Tosco combines affected process wastewater streams for centralized treatment. Is the waste stream flowing to the Roughing Filter with less than 10 ppm benzene exempt from control requirements per Subpart FF?

A1: No. Based on a detailed review of the regulations and supporting discussion in the 1990 preamble to Part 61, Subpart FF, the exemption of 40 CFR 61.342(c)(2) does not apply because the facility uses a centralized wastewater treatment system that treats aggregate waste streams, some of which may have benzene concentrations greater than 10 ppm. The control requirements do not allow for avoiding control requirements through intentional or unintentional dilution of waste streams. Thus, waste management units, including the Roughing Filter, are subject to control requirements of 40 CFR 61.348(b).

Q2: Does the exemption of 40 CFR 61.348(b)(2)(ii)(B) apply to Tosco's Roughing Filter?

A2: No. The Roughing Filter is not an enhanced biodegradation unit as defined in Subpart FF.

Q3: What procedures apply if Tosco' wanted to seek approval for use of its RF/AS system as an alternative means of emission limitation?

A3: EPA Region 10 does not have the authority to grant Tosco an alternative means of emission limitation. The Assistant Administrator of OAR along with the Director of OAQPS possess such authority, and the determination indicates how Tosco should follow up on this matter if it remains interested in this option.

### Letter:

Reply To  
Attn Of: OAQ-107

Mr. Ken J. Ferry  
Mechanical Manager  
Tosco Refining Company  
3901 Unick Road - P.O. Box 8  
Ferndale, Washington 98248

Re: NESHAP Subpart FF Guidance for Tosco Refining Company, Ferndale Refinery

Dear Mr. Ferry:

This letter is in response to your October 12, 1998, request to the United States Environmental Protection Agency, Region 10 (Region 10) for regulatory guidance relating to wastewater treatment operations at Tosco's petroleum refinery located in Ferndale, Washington. This letter also responds to a similar request from the Northwest Air Pollution Authority (NWAPA) dated October 12, 1998. The refinery is subject to 40 C.F.R. Part 61, Subpart FF - National Emission Standard for Benzene Waste Operations (NESHAP FF). You requested that Region 10 identify the emission control requirements, if any, applicable to the Roughing Filter (more commonly referred to as a trickling filter) at the Ferndale facility. For the reasons discussed below, Region 10 has determined that the Roughing Filter is subject to the tank emission standards outlined in 40 C.F.R. Sec. 61.343.

### Waste Stream Exemption Not Applicable to Aggregate Waste Streams

It is Tosco's position that the refinery is not required to install emission controls on the Roughing Filter, pursuant to the exemption in 40 C.F.R. Sec. 61.342(c)(2), because the benzene concentration of the waste stream entering it is less than 10 ppmw. Specifically, Tosco points out that, following treatment in the API separators and induced air flotation units (IAFs), wastewater at typically less than 10 ppmw benzene flows to the Roughing Filter.

The Region has carefully considered your position and has concluded that the exemption stated in 40 C.F.R. Sec. 61.342(c)(2) does not apply to your Roughing Filter within the context of your compliance strategy. In particular, Tosco, like many other refineries, aggregates many individual waste streams in order to facilitate management and treatment in a centralized wastewater treatment system. Because Tosco's refinery operates a centralized wastewater treatment system, the management and treatment requirements of 40 C.F.R. Sec. 61.348(b) apply to waste management units within your wastewater treatment system.

Because the Tosco refinery produces greater than 10 megagrams per year (Mg/yr) of benzene, it must meet the requirements of 40 C.F.R. 61.342(c), (d), or (e). Tosco has elected to comply with the requirements of 40 C.F.R. 61.342(c). Pursuant to 40 C.F.R. Sec. 61.342(c)(1)(i), the facility must, therefore, destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in Sec. 61.348.

40 C.F.R. Sec. 61.348(a) lists requirements for treating the waste stream described above. Additionally, 40 C.F.R. Sec. 61.348(a)(3) states that, for the purpose of complying with the requirement that benzene be removed from a waste stream to a level less than 10 ppmw, "the intentional or unintentional reduction in the benzene concentration of a waste stream by dilution of the waste stream with other wastes or materials is not allowed." This point is further emphasized by 40 C.F.R. Sec. 61.348(a)(5) which states:

If an owner or operator aggregates or mixes any combination of process wastewater . . . together with other waste streams to create a combined waste stream for the purpose of facilitating management or treatment of waste in a wastewater treatment system, then the wastewater treatment system shall be operated in accordance with paragraph (b) of this section.

40 C.F.R. Sec. 61.348(b) contains the requirements for facilities that aggregate or mix individual waste streams, which mandate wastewater treatment consistent with the requirements specified in Sec. 61.343 through Sec. 61.347.

The Region's position is further supported by the preamble to the final rule for NESHAP FF located at 55 Fed. Reg. 8292-8340 (March 7, 1990). The preamble explains the requirement that a facility apply controls to all wastewater treatment units up to the point where the benzene concentration is below 10 ppmw and one of the following occurs: (1) the total annual quantity of benzene in the wastewater for the facility is reduced below 1 Mg; or (2) the waste has reached the biological treatment unit. The preamble states:

While the final rule allows the combination of waste streams for the purpose of centralized treatment, EPA recognizes that this allowance could result in emission and risks higher than intended in certain cases when many large volume waste streams that contain levels of benzene above and below 10 ppmw as mixed. This situation could occur if an owner or operator chooses to reduce the benzene content of process wastewater streams through treatment that occurs in a facility's wastewater treatment system rather than segregate streams with greater than 10 ppmw benzene for separate treatment. The wastewater treatment system at some facilities, such as at petroleum refineries, manages large quantities of wastewater made up of a mixture of waste streams having benzene concentrations above and below 10 ppmw. The mixed stream may go through several management steps leading to a biological treatment unit. Due to the large volume of wastes handled, benzene emissions could be substantial even though the benzene concentration in the mixed waste is below 10 ppmw. . . . Therefore, a provision has been added to the final rule that applies specifically to those situations where an owner or operator chooses to use an existing wastewater treatment system to meet the treatment requirements of the rule. In these situations, the final rule requires the facility to apply controls to all wastewater treatment units up to the point where benzene concentration is below 10 ppmw and one of the following occurs: (1) the total annual quantity of benzene in the process wastewater for the facility is reduced below 1 megagram; or (2) the waste has reached the biological treatment unit.

55 Fed. Reg. 8292, 8331 (March 7, 1990) (emphasis added).

In sum, based on both the regulatory language and the preamble to NESHAP FF, the Region has concluded that EPA did not intend refineries utilizing a centralized wastewater treatment system to apply the exemption of 40 C.F.R. Sec. 61.342(c)(2) to waste management units within the wastewater treatment system. Each waste management unit within Tosco's wastewater treatment system must comply with emission control requirements of 40 C.F.R. Sec. 61.343 through Sec. 61.347 as required by Sec. 61.348(b).

### Roughing Filter

Tosco has raised the additional argument that, even if 40 C.F.R. Sec. 61.348(b) applies to the Roughing Filter, the Roughing Filter should still be exempt from pollution controls pursuant to Sec. 61.348(b)(2). That exemption, as explained above, essentially requires that the stream entering the waste management unit be less than 10 ppmw, and either of the following conditions exists: (1) the total annual quantity of benzene in the process wastewater for the facility is reduced below 1 Mg; or (2) the waste has reached the biological treatment unit. Because the total annual quantity of benzene in the waste stream entering the Roughing Filter is greater than 1 Mg, the first condition does not exist. However, you indicate, that the second condition does exist as the Roughing Filter operates as part of a larger biological treatment system which includes the Aero- Accelerators.

After considering the information you have provided, and based upon our inspection of the Tosco facility conducted on May 14, 1999, the Region does not consider the Roughing Filter (or a combination of the Roughing Filter and Aero-Accelerators) to be "enhanced biodegradation" as required by the exemption in 40 C.F.R. Sec. 61.348(b)(2)(ii)(B). According to that provision, "[a] unit shall be considered enhanced biodegradation if it is a suspended-growth process that generates biomass, uses recycled biomass, and periodically removes biomass from the process." 40 C.F.R. Sec. 61.348(b)(2)(ii)(B) (emphasis added). A trickling filter functions differently from an activated sludge unit in that a trickling filter is an attached-growth process, not a suspended- growth process. While activated sludge units have been widely demonstrated to effectively remove up to 80 percent of organics from dilute waste streams, trickling filters have not.

During Region 10's inspection of Tosco's wastewater treatment system on May 14, 1999, we observed that the trickling filter is a physically distinct emission point apart from the Aero-Accelerators. Wastewater treatment plant process flow diagrams presented by Tosco also identify the trickling filter as a singular unit and distinguish it from the Aero-Accelerators. Our visual inspection of the aforementioned waste management units confirmed that the Roughing Filter is a physically distinct unit apart from the Aero-Accelerators.

In sum, EPA Region 10 finds that EPA did not intend to allow trickling filters to be considered "enhanced biodegradation" units for the purposes of utilizing the emissions control exemption of 40 C.F.R. Sec. 61.348(b)(2). The emission control exemption of Sec. 61.342(b)(2)(ii)(B) is reserved exclusively for singular enhanced biological treatment units, i.e., activated sludge units, that have been widely proven to effectively remove organics from dilute waste streams. Tosco's Roughing Filter does not qualify as an enhanced biological treatment unit.

### Alternate Means of Emission Limitation

Finally, Tosco has requested information relating to EPA's authority to approve alternate emission control strategies pursuant to 40 C.F.R. Sec. 61.353. Region 10 does not have the authority to grant Tosco an alternative means of emission limitation for the Roughing Filter. The Assistant Administrator of the Office of Air and Radiation (OAR) along with the Director of the Office of Air Quality Planning and Standards (OAQPS) possess such authority. You may contact Mr. Bob Lucas of OAQPS at (919) 541- 0884 to pursue requesting an alternative means of emission limitation for the Roughing Filter. Given the nature of your request, you may also need to coordinate with EPA's Office of General Counsel.

### Summary

Region 10 provides the following determinations:

1. The waste stream exiting the IAFs is not exempt from control requirements. The exemption of 40 C.F.R. Sec. 61.342(c)(2) does not apply to your centralized wastewater treatment system that treats aggregate waste streams. Waste management units, including the Roughing Filter, are subject to control requirements of 40 C.F.R. Sec. 61.348(b).

2. Tosco's Roughing Filter is not an enhanced biodegradation unit as defined in NESHAP FF; therefore, the exemption of 40 C.F.R. Sec. 61.348(b)(2)(ii)(B) does not apply to the Roughing Filter.

3. EPA Region 10 does not have the authority to grant Tosco an alternative means of emission limitation. The Assistant Administrator of OAR along with the Director of OAQPS possess such authority.

This response has been coordinated with both OAQPS and Office of Enforcement and Compliance Assistance at EPA Headquarters. If you have any questions regarding any aspect of this response, please contact either Dan Meyer or John Keenan of this office at (206) 553-4150 and (206) 553-1817, respectively.

Sincerely,

Gil Haselberger, Manager  
Air Enforcement & Program Support Unit

DM:GH:cb

cc: R.T. Bremer, Tosco  
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