

Management of Petroleum Product Mixed with Water

Technical Guidance

This technical guidance document provides a general overview of the management options for mixtures of petroleum product and water. These options may vary greatly from case to case, so specific questions must be addressed to the Pima County Department of Environmental Quality (PDEQ) for a final decision as to the correct interpretation of the regulations.

Industrial operations typically associated with petroleum and water mixtures include: pipeline operations, refinery operations, and storage-oil separation tank management. These mixtures usually consist of the product, which could be one or more off-specification products, and contaminated waters from the process or natural sources. Mixtures of petroleum product and water can be produced as a result of:

- Chemical and/or physical reactions in industrial operations (e.g. water vapor condensation in a storage tank);
- Spills that may occur during handling of petroleum products; or
- Accidental spills, including traffic accidents.

The mixture may not be subject to the Resource Conservation and Recovery Act (RCRA) regulation even though the product is listed as a hazardous waste in [40 CFR 261.33\(e\)](#) or [\(f\)](#). This determination cannot be made until the generator of the mixture makes a management decision concerning the recovery, treatment, or disposal of the mixture.

Recovered Product

If the mixing of product and water (from any source) is unavoidable, and the recovery of the product is a standard practice in the management of the product, the product is not a solid waste and therefore is not a hazardous waste.

Recovered Water

The water from the same recovery process is "wastewater" and therefore a solid waste which may be hazardous waste. RCRA applies to the

management of these hazardous wastewaters and generators must comply with all applicable state and federal solid and hazardous waste laws and regulations. If the mixture did not contain a listed hazardous waste, the wastewater which remains after the product has been removed must undergo a Toxicity Characteristic Leaching Procedure (TCLP) evaluation.

- If the wastewater passes the TCLP analysis, it should be managed as solid waste.
- If the wastewater fails the TCLP analysis, or if the wastewater came in contact with a listed hazardous waste, the wastewater must be managed as a hazardous waste.

[40 CFR 261.3\(a\)\(2\)\(iv\)](#) states the "wastewater" mixture of solid and hazardous waste is: "...not hazardous...if the generator can demonstrate the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act." This wastewater is, however, regulated as hazardous waste until it is discharged into the unit regulated by the Clean Water Act. The intentional mixing or purposeful non-separation of product and hazardous wastewater to avoid RCRA regulation is prohibited.

Case Study. The following is an example of a petroleum product/water mixture and some of the regulatory issues which are involved:

Trucks are loaded with petroleum product at petroleum storage terminals for transport to customers. The trucks pull onto concrete pads for loading. Occasionally, product spills onto the pad

from the truck or loading mechanism and becomes mixed with water from washing down the pad or from rain falling on the pad. The pad is constructed so that the product/water mixtures will flow into a drain and enter a collection system consisting of pipes and tanks, including a gravity separator followed by product and water collection tanks. It is possible to bypass the separator, and pipe the product/water mixture collected from the drain back to the product tanks, or into a product/water mixture storage tank, or directly onto a vehicle for transportation to an offsite recovery facility.

The facility raised the following questions; the answers are the U.S. Environmental Protection Agency's (EPA) responses:

If separation occurs at the loading facility, is the water leaving the separator a solid waste? Yes, as a material that is being sent for treatment and disposal, the water is considered a solid waste.

If the separated water is a solid waste and fails a TCLP, is the water collection tank which receives the water flowing out of the separator considered a hazardous waste tank under RCRA? In general, if the water collection tank is used for managing a hazardous waste, the unit would be considered a "hazardous waste tank," assuming it meets the definition of "tank" found in [40 CFR 260.10](#). This determination must be made on a site-specific basis by PDEQ. If the hazardous waste is stored in the tank for 90 days or less, a RCRA permit is not required.

Is the un-separated product/water mixture a solid waste? If the mixture is determined to be an off-specification product and the product will be recovered, the mixture is not a solid waste. However the mixture is a solid waste if:

- The mixture will not be recovered; or

- The "recovery" is an incidental process that does not actually recover usable product; or
- The mixture was intentionally generated solely to avoid regulation of the hazardous water before its treatment and disposal. This determination must be made on a case-specific basis by PDEQ.

If the on-site separator is bypassed, can the product/water mixture be transported to an off-site recovery facility for product and wastewater treatment without a RCRA manifest? Whether the separator is bypassed has little impact on determining whether a RCRA manifest is required. The determining factor is whether the mixture sent off-site is a hazardous waste. If it is a hazardous waste, a hazardous waste manifest is required. However, if the separator is being bypassed solely for the purpose of avoiding regulation of the contaminated water, PDEQ may determine this scenario to be a sham recycling situation in which the main intent is to avoid the regulation of the transportation and storage of hazardous waste water under the guise of a recycling operation.

Does the facility receiving the product/water mixture require a RCRA Treatment/Storage/ Disposal Facility permit to receive the mixture if the facility recovers product and treats the separated water in a system which meets all the requirements of the wastewater treatment exemption under RCRA? This determination must be made by PDEQ. If the mixture is not solid waste when received at the recycling facility, no storage permit is required. In addition, the recovery process itself is generally exempt from permitting requirements. However, the hazardous water that is separated from the product is subject to regulation as a hazardous waste. If the water is treated in a wastewater treatment unit that is exempt from RCRA permitting requirements, no RCRA permit is required.

For additional information regarding proper management of solid or hazardous waste in Pima County, you may contact the Pima County Department of Environmental Quality (PDEQ) at (520) 724-7400, at the address at the beginning of this document, or visit the PDEQ website at <http://www.deq.pima.gov/waste/index.html>.

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