



State of Oregon Department of Environmental Quality

Q & A On the Fuel Sampling Results From American Petroleum and Oil Re-Refining Company

May 31, 2016

Why did DEQ take samples from APES and ORRCO?

The nearby communities raised concerns over American Petroleum Environmental Services (APES) and Oil Re-Refining Company (ORRCO) burning off-specification used oil, which could be contributing to air toxics and odors.

When did sampling occur at APES and ORRCO?

The samples taken from APES occurred on 4/21/16 at 5:47am and 5:53am. Samples from ORRCO were taken on 4/21/16 at 7:02am and 7:03am.

Were the facilities aware DEQ would be onsite to perform sampling?

No. Both facility visits were unannounced.

What tanks did DEQ sample at APES?

The first sample taken at APES was from their “light ends” fuel tank. Light ends, such as gasoline, gas oil, naphtha, etc., are collected during the initial heating stage of the re-refining process. Used oil is piped from a storage tank to one of four cook tanks (CT-1 to CT-4). After the oil is transferred to the cook tanks, the tanks are heated and the refining process begins. As the temperature of the cook tank rises, water and light ends are evaporated out of the cook tank and routed to a condensing unit where the water and light ends vapors turn back into a liquid. Once the water and light ends return to liquid form, they are separated and sent to holding tanks specific to the product. The water is transferred to a holding tank for offsite shipment and processing and the light ends are routed to a separate tank for mixing or direct use in the facilities burning equipment.

The second sample was taken from tank 8, the plant site fuel tank. Tank 8 is filled with APES final processed oil product and provides the fuel to operate the re-refinery. Tank 8 is also a mixing tank, meaning the product in the tank can mix with light ends to obtain the final fuel mixture.

What sampling occurred at ORRCO?

The first sample taken at ORRCO was from their plant site fuel tank. After the re-refining process is complete, one of the final products is piped to the plant site fuel tank where it is stored and used as needed.

The second sample was from the wastewater evaporation unit. The evaporator is supplied with water collected from the distillation process. During the initial re-refining water is evaporated from the used oil and sent through a condensing unit where it undergoes a phase change from vapor back into liquid form. The water is then piped into a holding tank where it is stored before being sent to the evaporation unit. The plumbing connecting the wastewater

holding tank and the evaporator contains an inline particulate filter to remove any solids present in the water.

Who took the samples from the tanks at APES and ORRCO?

Both facilities had onsite personnel perform the sampling on all four tanks in the presence of DEQ personnel.

How were the samples stored prior to arrival at the processing lab?

After sampling was completed, DEQ staff transported the samples to their northwest regional office at 8am. At 9:30am, DEQ's laboratory manager retrieved the samples and chain of custody forms and delivered them to the DEQ lab in Hillsboro, where they were sent to a third party lab for analysis.

How did DEQ determine the ideal time to sample product at APES and ORRCO?

Odor sampling times were based on information received from citizen complainants. Complaint information was compiled into a spreadsheet where it was sorted and analyzed by staff, identifying times of strong odor occurrences.

What EPA analytical methods did the lab use to process the samples?

- Method 9076 - Total organic compounds in new and used petroleum samples
- Method D93/1010A - Ignitability of petroleum products.
- Method 6010B – Presence of trace elements in the sample, including metals and sulfur content.
- Method 6020 – Presence of metals in a sample.
- Method 8082 – Concentration of polychlorinated biphenyls (PCB).
- Method 8082M - Concentration of PCB's.

What chemical constituents were the samples tested for?

- Total organic compounds
- Sulfur
- Arsenic
- Cadmium
- Chromium
- Lead
- PCB's

What are the sampling results?

Source	Sample ID	Sample Description	Total Organics (ppm)	Sulfur (ppm)	Arsenic (ppm)	Lead (ppm)
			Results/Limit	Results/Limit	Results/Limit	Results/Limits
Apes	1604275-01	Light ends tank	693/1,000	2,500/5,000	0.119/5	0.302/100
Apes	1604275-02	Plant site fuel tank	483/1,000	1,570/5,000	0.055/5	0.153/100
ORRCO	1604275-03	Evaporator	168/1,000	473/5,000	0.036/5	Undetected/100

ORRCO	1604275-04	Plant site fuel tank	283/1,000	1,370/5,000	0.355/5	1.80/100
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Source	Sample ID	Sample Description	Cadmium (ppm)	Chromium (ppm)	PCB (ppm)	Ignitability (F)
			Results/Limit	Results/Limit	Results/Limit	Results/Limits
Apes	1604275-01	Light ends tank	Undetected/2	Undetected/10	Undetected/2	0/100+*
Apes	1604275-02	Plant site fuel tank	Undetected/2	Undetected/10	Undetected/2	170+/100+
ORRCO	1604275-03	Evaporator	Undetected/2	Undetected/10	Undetected/2	70/100+
ORRCO	1604275-04	Plant site fuel tank	Undetected/2	Undetected/10	Undetected/2	170+/100+

**The lab results indicate a flashpoint of "0" on the light ends tank sample at APES because there was not enough product in the tank to pull a sample large enough to indicate the flashpoint.*

How did DEQ decide which pollutants to test the samples for?

The samples were analyzed for regulated pollutants outlined in the Code of Federal Regulations for used oil processors. Under the Code of Federal Regulations (CFR) 40 CFR 279.11, used oil re-refineries are required to test all fuel oil received and processed at the facility for the pollutants listed in the above table. The table compares the pollutant value (in ppm-parts per million) of the four samples taken from APES and ORRCO to regulated federal standards. The wastewater was tested against the same parameters as used oil because it was dehydrated from the oil during the beginning stages of the re-refining process and may contain similar pollutants.

When comparing the sample results (listed in the above table) to the corresponding regulatory limit, the results for samples 1, 2, and 4 were within specification of federal standards for on-specification used fuel oil, which can be burned onsite without specialized burning devices. To be considered compliant, the pollutant levels in the fuel must not exceed the limit established by the EPA under authority of the Clean Air Act and as listed in 40 CFR 279.11 Table A.

DEQ's hazardous waste program is reviewing the results for sample 3 (wastewater from ORRCO) and is developing a sampling plan to take additional wastewater samples from different points in the evaporation process. When the sampling is complete and the results reviewed, the hazardous waste program will make an official compliance determination for the wastewater.

Are APES and ORRCO in compliance with the applicable regulations for the samples taken?

The sampling results for APES show compliance with the fuel standards as listed in 40 CFR 279, Standards for the Management of Used Oil. All pollutants tested for are within the compliance ranges for used oil products.

Oil samples taken from ORRCO demonstrate compliance with the used oil standards listed in 40 CFR 279.

Were both companies operating in compliance with their permits?

The objective of the site visit to ORRCO and APES was to collect samples for pollutant analysis of their used oil and wastewater, not to conduct full compliance inspections. DEQ and EPA are determining permit compliance of both facilities through the issuance of two joint letters from DEQ and EPA, requiring submission of all facility records from August 2015 through October 2016. APES and ORRCO will submit the required records twice monthly and staff will analyze the records for compliance determination with state and federal standards.

What violations did DEQ identify based on the sampling results from APES and ORRCO?

The two samples from APES were compared to the regulatory standards outlined in 40 CFR 279, Standards for the Management of Used oil. Both samples taken from APES were compliant to the applicable standards in 40 CFR 279 Table A. See above table for detailed sampling results.

The used oil sample taken at ORRCO showed compliance with the same regulatory standards as APES and was determined compliant for the oil sample taken.

The wastewater sample taken from ORRCO identified a wastewater flashpoint of 70 deg. F., DEQ's hazardous waste program is reviewing the sampling results and is developing a sampling plan to take additional wastewater samples from different points in the evaporation process. When the sampling is complete and the results reviewed, the hazardous waste program will make an official compliance determination for the wastewater.

If both companies were in compliance for the type of fuel they use and process, what other steps will DEQ take to determine other sources of odors and air toxics coming from both facilities?

Both companies comply with used oil regulations for the pollutants listed 40 CFR 279, but the test results are only one indicator of a single point in time and one batch of used oil. The pollutant levels in used oil can vary from batch to batch, making it necessary for continuous sampling and testing of every fuel received at the facilities, which DEQ and EPA have mandated.

Under authority granted by the Clean Air Act, DEQ and EPA sent a second information request letter to both companies on May 25, 2016, requiring sampling and testing of every batch of oil delivered to or picked up by the facilities. APES and ORRCO are required to submit the test results to DEQ and EPA twice monthly where the results will be scrutinized for compliance.