

Railway transport of waste oils constitutes important part of TAYRAŞ' logistics operations

Every step is eco - friendly, every step is safe

TAYRAŞ sets an example for the industry with its environmentally friendly logistics operations, while creating added value with upcycling.

TAYRAŞ aims to ensure the safe and environmentally friendly completion of the process extending from the collection of waste lubricant to its transportation to the refinery facility, in accordance with "Regulation on Management of Waste Oils" and "Principles and Procedures for the Collection of Waste Oils" published by the Ministry of Environment, Urbanization and Climate Change. With this approach, ensuring logistics operations to take place with the lowest possible carbon emissions is a cornerstone of TAYRAŞ' waste oil management.

TAYRAŞ, being the first and only upcycling refinery in Türkiye to produce high-quality base oil from end-of-life waste lubricants using hydro-treatment technology, conducts its waste oil collection activities in compliance with regulations and HSSE (Health, Safety, Security and Environment) rules. TAYRAŞ, creating added value through "upcycling" and leading the way towards a circular economy, sets an example for the industry with its environmentally friendly logistics operations while reducing total carbon footprint.

In our interview with TAYRAŞ' Assistant General Manager in Charge of Logistics Operations and Raw Material Supply, Hüseyin Koyuncu, we obtained detailed information about TAYRAŞ' logistics operations. Koyuncu explains that TAYRAŞ Base Oil Refinery, established in Bilecik with most advanced technology and an annual waste oil processing capacity of 60,000 tons, has its own railway connection. He mentions that as a result, they transported 31% of the waste lubricant oils by rail in 2022 and they aim to significantly increase this percentage in the near future, further reducing their carbon footprint.



Hüseyin KOYUNCU

TAYRAŞ Inc. Assistant General Manager

The waste lubricant is then transferred to high-capacity waste tanks from here. When the tanks are full, a final sample is taken and the oil is analyzed once again in our laboratory. After obtaining a positive result, the transfer of the waste lubricant begins as it is delivered to the refinery either by tank wagons (railway transportation) or trailers (road transportation).

After the loading process, we once again remove free water from the bottom valves and transfer all wastewater to the wastewater tank. Subsequently, we send all the wastewater to licensed wastewater treatment facilities using licensed vehicles. By doing so, we effectively dispose of the waste water, which typically accounts for 2% to 4% of the total volume of waste lubricant, before it reaches the refinery.

What measures do you take to ensure environmentally-friendly logistics operations?

One of our top priorities is to ensure that the logistics process aligns with the dynamics of the circular economy and the principles of upcycling as well as low carbon footprint operations. In line with the mission of our values, we conduct our logistics process in an environmentally beneficial and climate-friendly manner, adhering to the HSSE (Health, Safety, Security and Environment) rules at every stage.

As you know, waste oils are hazardous for the environment due to their certain chemical constituents and present challenges in terms of storage and transportation caused by their physical properties. We use our data base integrated to our ERP system that helps calculate our customers' daily average waste oil production data. This enables us to plan our vehicle schedules effectively and aim to prevent tank overflows by taking timely action. We strictly adhere to the HSSE principles, without allowing even the slightest spill during the waste oil collection and transfer operations.

In line with this approach, we collect waste lubricants from businesses' premises using licensed and ADR-compliant tankers. Following the relevant regulations, MOTAT records are generated, and the quantity and location information are entered into the Ministry's official registration system. Additionally, we enter the logistics process into TAYRAŞ' electronic record

Where do you source waste lubricants from and what factors do you consider to improve production quality?

We source waste lubricants mainly from auto industrial sites and services operating throughout Türkiye, logistics companies that produce waste lubricants. We also obtain it from industrial establishments such as iron & steel companies, industrial manufacturing facilities, and automotive manufacturers, factories utilizing high-pressure and frictional machines, and mines.

To enhance quality and efficiency, we first collect samples from waste lubricant producers and analyze them in our laboratory at the refinery. Based on the analysis results, we decide whether to accept the waste oil. Furthermore, our waste lubricant oil transfer point supervisors, who have received specialized quality training, take all delivered waste lubricants to the conical waste oil settling tank after conducting checks on color, odor and density. Here, waste lubricant is allowed to settle for approximately an hour, facilitating the separation of free water, which settles to the bottom.





Denizli Transfer Point

systems, enabling real-time monitoring. These reports and records are crucial for both TAYRAŞ' performance management and the monitoring and oversight responsibilities of relevant public institutions.

After the legal registration procedures, our vehicles deliver the collected waste lubricants to our authorized and licensed waste oil transfer points. Here, as mentioned in your previous question, the settling and analysis processes are completed and we proceed to the transfer phase. Our drivers are selected from people who possess the necessary competencies and qualifications required for waste oil filling and discharge operations. They have obtained SRC-5 and Psychotechnical certificates and have completed the specialized training related to these operations. The adherence to traffic regulations and ensuring the health and safety of our drivers is our top priority, both on urban and intercity roads. In this regard, we provide our drivers with Heavy Duty Vehicle Defensive Driving Training.

Could you provide us information about your vehicle fleet in your logistics operations?

We have a wide range of vehicles for our logistics operations, and all of our vehicles' waste oil collection operations are planned by our refinery's planning unit, taking into account mileage and fuel efficiency. As TAYRAŞ Base Oil Refinery Inc., we perform waste oil collection operations throughout Türkiye with a total of 60 vehicles and 133 personnel. Our vehicle fleet consists of twenty 5-ton tankers, five 8-ton tankers, four 10-ton tankers and 31 vans.

Waste oils collected by the black market operators without authorization and licenses cause significant harm to the country's economy in terms of tax losses while negatively impacting country's cash deficit. The loss to the national economy due to these illegal collectors is estimated to be as high as 150 million \$. Additionally, that creates unfair competition for refineries that operate in compliance with regulations.

In addition to that, we also conduct delivery from the transfer points to our refinery using a total of 15 vehicles. This includes 5 vehicles with a capacity of 18 tons and 10 trailers with a capacity of 26 tons. One of the aspects we take great pride in regarding our transfer process is the 2 km-long railway connection established within our TAYRAŞ property. A significant portion of the waste lubricant collected at our transfer points reaches our refinery via railcars through this railway connection.

The railway infrastructure at your refinery makes the logistics process much more environmentally friendly.

Our railway infrastructure is vital in terms of environmental health, sustainability, and reducing carbon emissions. In 2022, 31% of the waste lubricant delivered to our refinery was transported by railway. We plan to further increase this percentage in 2023 and the following years. In this context, we aim to minimize the carbon footprint caused by activities in the sector through sustainable logistics and supply chain practices.

Could you also elaborate on your waste oil transfer points?

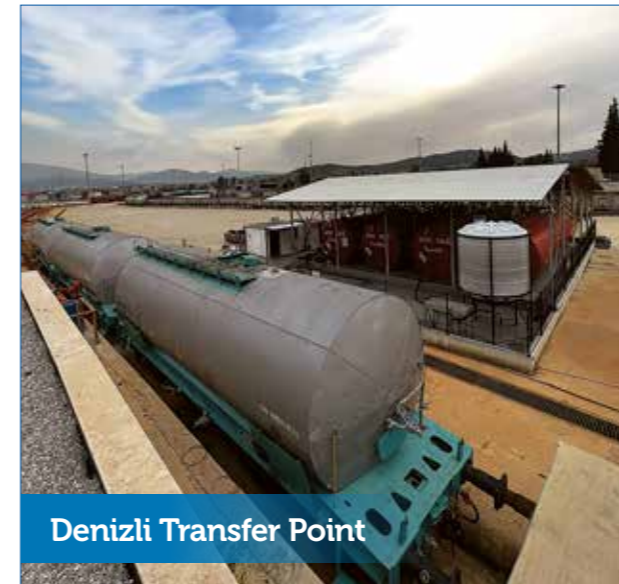
According to the provisions in Waste Oil Management Regulation, the production of base oil in compliance with TS 13369 standard is essential for refining facilities in relation to waste oils. Furthermore, the Regulation allows the establishment of Waste Oil Transfer Points to ensure the proper collection and transportation of waste oils in compliance with regulations and provide collection services to every location within the country. It is mandatory to obtain a license from the Provincial Directorates of the Ministry of Environment, Urbanization and Climate Change to which these Waste Oil Transfer Points are affiliated.



Mersin Transfer Point



As TAYRAŞ Inc., we have Waste Oil Transfer Points at 7 cities: Ankara, Izmir, Mersin, Denizli, Antalya, Bursa and Istanbul. We aim to minimize exhaust carbon emissions by efficiently planning our vehicles' process for waste oil transfer to our refinery in Bilecik. We prioritize using optimum short distances whenever possible and, when feasible, we prefer utilizing the railway transportation. By doing so, we can achieve both economic benefits and emission reduction measures together.



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Izmir Transfer Point

What are you doing to increase the supply quantities?

Our process, which starts with identifying waste oil producers, continues with our field managers establishing direct contact with these producers. During these meetings, we explain TAYRAŞ' environmentally friendly approach, service quality, and benefits of our products to our country. We offer our customers special contract terms and price offer based on the annual waste oil generation quantities and the conformity data of samples taken from the waste oils.

Our field team is constantly in touch with our customers. We thoroughly analyze the feedbacks received from collection points received and continuously improve our supply process based on this valuable input. With our increasing service quality and strong references, we are deepening our relationships with existing customers and gaining new customers every day. We initiate our supply process by directing waste oil notification calls to our customer representatives at the refinery. With our extensive fleet of vehicles, we quickly organize and ensure customer satisfaction by efficiently managing the process.

TAYRAŞ Inc. complies with the principles and procedures outlined in "Regulations on the Collection of Waste Oils" and organizes education and awareness programs for waste oil management, primarily targeting automotive industrial sites. The company also informs its customers about waste management through environmentally friendly posters and labels.

