



Refinery Process Overview @ MBT Nevada 2025

Facility Overview

MBT Nevada is a 1,300 bbl/day refinery that operates 24 hours a day, 365 days a year. It can also function in a batch production manner. The facility accepts unused, mixed, and off-spec petroleum products such as transmix, gasoline, diesel, jet fuel, and residual fuels, processing and reclaiming fuels into usable diesel, gasoline, and/or component fuels for blending.

Receiving

- Deliveries are sampled for water and contaminants
- Samples are tested in our on-site lab for density, gravity, boiling points, saturates, aromatics, vapor pressure, octane, oxygenates and cetane content for diesel fuels.
- Fuel products are received at our truck off-loading rack, metered, filtered and transferred into several tanks.
- All deliveries are documented with a Delivery Receipt.



Interim Storage

- Unused, off-spec and finished petroleum products (feed stock) are stored in the tank farm.
- Feed stock is settled, purged and tested prior to processing through additional filtration and ultimately pumped into the plant.

Distillation Process

- **Heat Exchangers:** Thermal oil Heat exchangers are used to heat feedstock to 350°F prior to injecting into the column.
- **Reboiler:** The reboiler uses thermal oil to maintain heat in the column at approximately 350°F and continues the vaporization process.
- **The distillation column:** This is where the magic takes place.
 - Our column is 63 feet to the top and can produce up to 19 individual products using 19 valves at various levels along the column.
 - The feed stock enters the distillation column at the middle, on a tray known as the “feed tray,” The feed tray divides the column into two sections:
 - Top Section (Enriching/Rectification Section): Focuses on light hydrocarbon fractions like gasoline.





- Bottom Section (Stripping Section): Focuses on heavy hydrocarbon fractions like diesel and kerosene.
- The vapor rises through the column, exiting at the top where it begins to condense.

Condensers: Cool fuel products and /or condenses vapor back into liquid.

Accumulator Tank: Collects and stores condensed fuels such as, gasoline and diesel from the condensers.

Product Separation and Collection

- The condensed liquid (distillate) is pumped from the accumulator tank as gasoline.
- Part of the condensed gasoline liquid is returned to the process and into column as reflux liquid to maintain efficiency.
- The liquid collected at the bottom of the column is known as the bottoms product (diesel/kerosene).

Final Processing and Storage

- After distillation, The processed gasoline and diesel are filtered when transferred and then stored in finished product tanks within the tank farm.
- During the final stage before loading onto trucks at the loading rack, additives, detergents, or blending components are introduced to enhance fuel quality.



Lab Testing

Our lab consists of all of the primary analyzers to ensure quality control of our fuels products including several analyzers manufactured by Eralytics.

- Eraspec fuel analyzer
- Flashpoint analyzer
- Vapor pressure analyzer
- Micro -Z Sulphur tester
- Tanka distillation tester
- Aquatec KF water analyzer

All processed fuels undergo multiple filtration stages throughout the process to protect equipment and to ensure product quality before distribution.

