CRUDE OIL ASSAY

REPSOL
Technology Lab

Short Description

Detailed evaluation of whole crude oils and its fractions produced from atmospheric and vacuum distillation.

Deliverable

PDF reports with all the information of the crude oil and its fractions, which is made fitted to the client´s need. There are other deliverables with formats that can be used in modeling tools

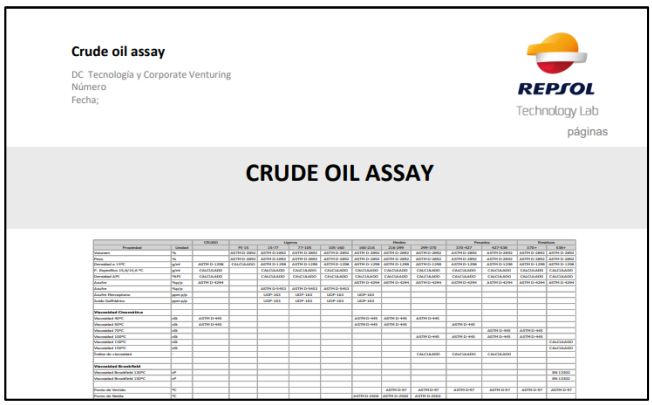
Benefits

- Having the complete characterization of the crude oil allows the client to operate effectively in the market (buying and selling) by knowing its potential and limitations
- The provided information puts the planning team in the best position to maximize profits.
- Crude oil analisys ensures that the refining processes continue to operate under safe conditions and prevents future incidents.

View of distillation plant

Differential Features

- State-of-the-art analytical instrumentation based on molecular analysis.
- Our in-depth knowledge of the industry we are working for allows us to provide comprehensive reports with detailed studies of possible contaminants.
- We have an important expertise in different modelling tools.


Crude oil assay

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Example of report

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Requirements

- 30 L of the physical oil sample is needed.
- The scheme of cuts, if the customer does not provide, we would apply the standard with commercial products (LPG, naphtha, kerosene, diesel, fuel oil and the corresponding residue).
- The list of tests required by fractions. Tech Lab has established different degrees of characterization, from a basic one, to the most complete one that includes bitumen characterization

Limitations

- The physical distillation carried out is limited to 565ºC AET, if crude oil allow it without cracking, according to ASTM D 2892 and D 5236 standards.
- Assay represents yield of fractions by mass and volume and typical properties, however minimal quality variations should be expected.

The Product in Depth

- The ASTM D2892 test method is used for destillation. The fractionating column has an efficiency of 18 theorical plates and operates at a 4:1 reflux ratio.
- The residue obtained is vacuum pot still according to ASTM D5236. The reduced pressure allows the volatilization at a lower temperature than in atmospheric conditions so that it can reach up to 565ºC AET.
- Among the usual analytical tests are density, sulfur, TAN, cold properties, PIONA, viscosities,, carbon residue, nitrogen content, asphaltenes...

Some Use Cases

- Buying/Selling crude oil
- production planning
- process units optimization
- Prevent future problems during refining proccess