

Vacuum Distillation of Petroleum Products

EDITOR'S NOTE—This article is abridged from articles on *Wet and Dry Distillation Processes* written by Mr. Forncrook for *Refiner and Natural Gasoline Manufacturer*, and printed in their February, 1932, Process number. Reprints of the original articles are available and will gladly be sent to anyone interested upon request.

ALL VACUUM PROCESSES for the distillation of petroleum products fall into one of two general classifications, commonly referred to as either wet or dry distillation.

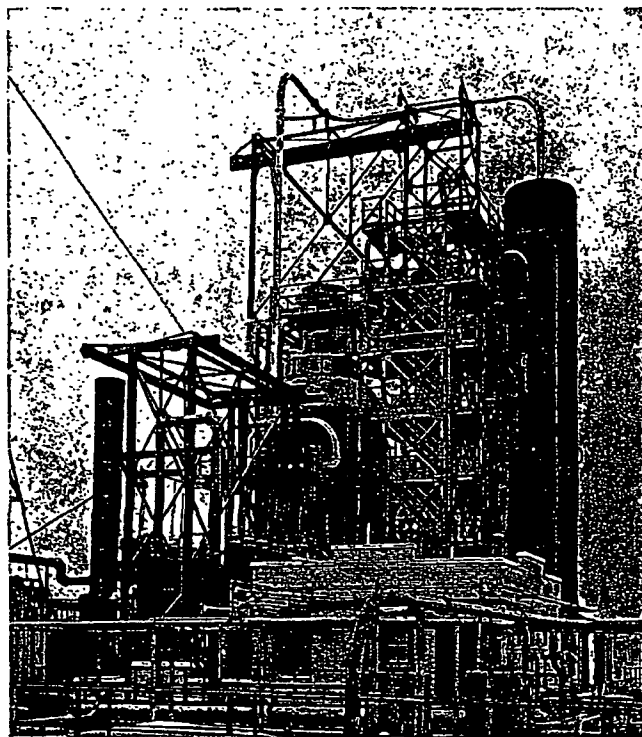
Wet Process

The accompanying flow sheet and installation photograph illustrate one of the most successful wet distillation vacuum units now in operation in this country. Charging stock passes through two overhead condensers in series, then enters the pipe still, where it is heated and sent to the vaporizer section of the vacuum tower above

the point at which tower steam is admitted. In the reflux condenser, a sufficient portion of the vapors are condensed to supply the proper amount of reflux to the tower to facilitate top temperature control. Uncondensed vapors then pass through a crude-cooled wax distillate condenser in which the wax distillate is recovered. The steam, together with light ends or gas oil, then passes into the final tubular condenser in which nearly all of the gas oil is condensed and re-

covered. The steam is compressed by a booster ejector to a discharge pressure at which the steam is readily condensed at prevailing water temperatures. Non-condensable gases are removed from the barometric condenser by a small two-stage air ejector.

It is very important to keep the difference in pressure between the suction of the booster ejector and the vaporizer section of the tower at a minimum. It is further important to make sure that the wa-



A combination vacuum distillation (wet process) and atmospheric rerun unit for lubricating oil, manufactured for a prominent midcontinent refinery. All of the equipment in this installation including stills, towers, vapor condensers, steam jet ejectors, etc., was built by the Elliott Company.

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