

TANK CLEANING SUMMARY



Tank Cleaning Process

The fluidization of the residues is carried out using our own engineered recirculation nozzles and chemicals within a closed loop recirculation procedure.

All residues are fluidized and re-suspended within a crude oil medium.

When all residues have been re-suspended the tank is pumped out to another tank within the refinery and blended with other crude oil to meet the refinery unit specifications.



On completion of the pump out, if required, workers enter the tank for final washing to hot work specifications.

A 60 meter tank containing 3,500.00 cubic meter of residues takes, on average, 30 working days to complete to hot work specifications.

Salient Points

A) Faster than conventional methods presently used. 60 meter diameter tank containing 3000 cubic meters of residues takes the same time as the same sized tank containing 6000 cubic meters of residues. The only difference would be the amount of chemicals used and the time taken to pump out the tank. Quick turn around means that the tank is returned into service after a shorter time.

B) Safer than conventional methods as no workers are required to enter the tank until at least 95% of the residues have been removed. Less capital equipment required to complete the operation. Workers enter the tank only for the final cleaning and wash down of the tank interiors to hot work specification.

C) More economical as the fluidized hydrocarbons is returned to the refinery stock crude oil for refining. 3700 cubic meter of residues treated would give, at today's prices a return to the refinery in excess of \$1,500,000.00 which more than pays for the tank cleaning operation. What was once a loss incurred by the refinery now becomes a profitable venture. Very little or as in most cases no hazardous waste disposal costs.

D) More efficient as all entrapped hydrocarbons are returned to the refinery crude oil stock. Less capital equipment required on site. Due to the closed loop recirculation process no loss of the crude oil light ends to the atmosphere. Less worker hours required to complete the operation. No expensive cutter stock used. Unless a very high pour point crude oil no additional heating required.

E) The advantages of the system mean that the whole operation may be engineered to suit any tank on site requiring cleaning. The chemicals used have no detrimental impact on the crude oil or the tank structure and tank linings. The chemicals are of a non aggressive nature and do not have any impact on the steel work of the tank or associated pipe work. The whole operation when viewed commercially returns a profit to the refinery in oil. The operation overall is:

- Safer
- Faster
- More efficient
- More economical
- More environmentally friendly than traditional methods currently used.

ProTec International