Tank Clean

green tech sludge oil recovery

Maintaining high performing storage facilities can be challenging as paraffin and asphalt solids build continually over time, reducing effective tank volumes. Subsequent cleaning and the removal of tank based sludge deposits from your tanks can be a costly exercise. Down time for cleaning disrupts your cash flow and the cost of cleaning is often exacerbated by the increasing cost of hydrocarbon waste disposal and labour.

Traditional tank cleaning often involves a high labour component who perform whilst the tank is out of service and 'off-line'. Larger tanks can be out of action for extended periods, reducing your storage capacity and impacting your bottom line.

Manual de-mucking and the safe removal of highly volatile sludge deposits for disposal off-site is potentially dangerous and can be challenging for your HS&E risk mitigation strategy.

Whilst effective in the removal of sludge deposits, high pressure volatile solvent washes still require removal of waste, your tank to be off-line and potentially exposes your operation to a hazardous operational risk.

Long term BS&W build-up and subsequent potential contamination not only reduces your storage capacity but also risks your valuable through-put oil reducing in quality.

But a new option is here. A safe, molecular carbon based chemical allows your tanks to be cleaned whilst 'on-line', without having to remove sludge oil for disposal and therefore reducing your valuable asset's down-time. The traditional reliance on draining, manual de-mucking, high pressure solvent washes and disposal of sludge deposits are now a thing of the past.

Hydrocarbon Dynamics' ground breaking Tank Clean chemistry is a green tech molecular disaggregator that effectively liquefies sludge oil waxes and asphalt deposits - turning it back into valuable free-flowing oil. The converted sludge solids are effectively liquefied without manual labour, freeing up valuable storage space, all whilst the tank is 'on-line and in service.

HCD Tank Clean is organic, requires no hazardous chemical handling protocols (with a flash point of 97°C) and can significantly impact your HS&E concerns, OPEX spend and storage availability challenges.

HCD Tank Clean is effective operating at temperatures as low as -40°C.

Contact your Hydrocarbon Dynamics representative to learn more about a more efficient static and/or floating tank cleaning solution that fits your needs.

Applications

Oil storage tanks
Offshore floating storage tankers
Oil rigs
Sludge pits
Well heads
Transfer pipelines
Refineries
Cold climate challenged storage

Remediate

Conventional oil sludge
Heavy and super heavy oil/sludge
Distillate fuel oils
Residual oils
Grease and lubricants

Features & Benefits

Sludge oil converted to low viscosity secondary oil

Significantly reduces BS&W contaminants in tank contents

Tank remains available and 'on-line' for storage duties during cleaning operations if required

Reduces labour requirement significantly. 'No-man' entry is possible

Dramatically reduces HS&E and operational risk

Oil sludge removal, handling and disposal costs are significantly lowered if not negated

Environmentally friendly non-toxic, non-volatile chemistry allows for safe handling conditions

Tank Sludge Oil Converted To Quality Crude Oil - Significantly Reduced Clean-Time, BS&W and Labour Requirements

Tank clean treatment recovers 98% of hydrocarbons in record time

Benefits

Facilitated **record time tank clean** for South China Sea floating storage offloading vessel (FSO) servicing multiple platforms.

Approximately **98%** of sludge deposits were converted to 'on-spec' crude oil that was subsequently sold at TAPIS price.

HCD Tank Clean treatment quickly converted sludge deposits to a saleable crude oil using a no-man entry solution.

Achieved a **zero waste to shore** result. No sludge oil deposits were shipped back to shore to be disposed of by an on-shore waste disposal facility - as all sludge deposits were re-liquefied to oil in situ.

Liquefied oils did not return to heavy sludge viscosities and achieved the client's strict success criteria of maintaining a liquid state for 30 days or more.

Achieved significant reduction in labour costs normally associated with traditional sludge removal, handling and disposal protocols.

Project background and challenges

Heating coils situated at the tank floor had suffered under deposit corrosion and were consistently leaking water into stored oil - resulting in increased unsatisfactory BS&W levels for the client's oil off-takes.

Operator unable to remove concrete like sludge oil deposits without committing human resources into dangerous confined and volatile storage spaces.

Client's 30 day off-take schedule required easily pumpable, low viscosity crude oils to reduce turnaround times and 'at-sea' operational risk.

A major national oil producer operating multiple offshore platforms in the South China Sea, Malaysia experienced high BS&W levels in oil kept on a 30 day storage cycle upon their permanently moored floating storage offloading vessel (FSO).

Due to the high asphaltene and wax characteristics of the produced oil and substantial water content, BS&W levels were elevated, resulting in discounted barrel prices.

Hydrocarbon Dynamics implemented a world's first 'no-man' entry sludge liquefication program to liquefy tank sludge deposits and expose the heating coils for repair on the tank floor. The unqualified success of this program prompted the operator to implement HCD's companion chemistry program for pipeline flow assurance (Multi-Flow) that effectively eliminates future tank cleaning requirements.

Elimination of wax, asphaltene and emulsion related viscosity issues also improved flow rate & flow size of off-take transit lines to the smaller off-take tanker on a rotating 30 day cycle - stabilising supply and quality.

Highly expensive 'ship to shore' disposal of waste sludge deposits was completely avoided.

HCD Tank Clean is a carbon based green technolgy in a liquid that molecularly disaggregates paraffin waxes and asphaltenes whilst de-watering heavy sludge oil deposits in tanks and transit lines.

Work on the FSO was carried out above deck, administering HCD Tank Clean to the tanks below. Tank Clean successfully reliquefied sludge oil deposits in situ without the need for removal and disposal.