

Oil Sludge Treatability Tests

Oil sludge is a typical waste stream generated by oil exploration, extraction, storing, refining and distribution industries. On the one hand, clean-up of oil sludge deposits (lagoons) and remediation of contaminated environment can be very expensive (both investment & operational costs), but, on the other hand, oil sludge – considering its potentially high calorific value – might be reprocessed to a valuable alternative fuel. Due to this fact, the sound approach is collecting complex information on all the alternatives for oil sludge treatment / disposal / reprocessing, and selecting the most convenient one. DEKONTA carries out complex treatability testing of oil sludge, including the following:

a) Sampling and chemical-physical analyses of all the vertically stratified waste layers typically present in oil sludge lagoons:

- Floating oil
- Water layer
- Sediment layer

b) Centrifugation tests aimed at dewatering and recovery oil from oil sludge:

- Optimum conditions for oil sludge centrifugation (density, viscosity, chemical pretreatment, temperature etc.)
- Determination of achievable yield of particular separated products (oil, water, solids)

c) Chemical analyses of specific separated products:

- Content of petroleum hydrocarbons (TPH) and water in separated solids
- Content of petroleum hydrocarbons (TPH) and solids in separated water
- Content of solids and water in separated oil
- Content of sulphur and chlorine in separated solids
- Contents of toxic metals in separated solids (Hg, Cd, Pb, Zn, As, Ni, Cr, Co, Cu, Tl)
- Calorific value of separated oil and solids

d) Treatability tests aimed at final disposal / utilization of separated solids by the following methods:

- Bioremediation
- Stabilization/solidification
- Reprocessing to alternative fuel
- Thermal desorption
- Incineration



e) Treatability tests aimed at treatment of separated water phase

f) Oil sludge testing in a Retort kit

OFITE 50-ml Retort Kit provides a means for separating and measuring the volumes of water, oil, and solids contained in a sample of oil sludge. A known volume of sample is heated to vaporize the liquid components which are then condensed and collected in a graduated cylinder. Liquid volumes are determined from reading the oil and water phases on the graduated cylinder. The total volume of solids, both suspended and dissolved, is obtained by noting the difference of the total sample volume versus the final liquid volume collected. Calculations are necessary to determine the volume of suspended solids since any dissolved solids will be retained in the retort. Relative volumes of low-gravity solids and weight materials may also be calculated.



Technical specifications:

- Volume of the retort: 50 mL
- Maximum temperature: 500 °C (930 °F)
- Material: Stainless steel
- Heating output: 0.35 kW
- Electronic temperature control.

Lab test duration: 3 - 8 weeks

Price of lab test: Available on request

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