



## **Free Water Knockout Tank Case Study**

### **Location:**

A major Southern California oil producer

### **The Problem:**

The objectives were to condition and remove the sandy sludge contained within a free water knockout tank, and place the sludge into roll-off bins at less cost than if using the conventional method of cleaning.

### **The conventional method:**

Using a 1 ½" hose fed and pressured by the adjacent fire monitor, the water is blasted into the heavy compacted sand (between 100 psi and 150 psi) while using a shovel to break up the compacted waste. With copious amount of added fire water, the heavy sand is then fed into a vacuum hose using a Guzzler Super Sucker to pull the sand sludge across 80 feet of ground level pipe rack to the adjacent roadway. The material is extremely difficult to move through hoses thereby negating the use of a standard 110 bbl vacuum truck. This situation results in both the added cost of the Super Sucker along with the related safety issue of having to use an off-loading ramp.

The removal rate using the conventional method is roughly 15 to 20 bbls of sand sludge per Super Sucker load with each load containing about 40 to 50 bbls of water. Two of these loads are what can be accomplished per day when using this removal method.

### **Additional issues:**

This particular tank had not been cleaned since 1989. The 12 ft. diameter horizontal vessel contained 10 feet of very compacted sand sludge. It was estimated that there was 600 bbls of sand sludge to be removed. Using the conventional method, the estimated sand sludge removal duration would be between 15 and 20 days. A minimum of 1,200 bbls of oily waste water would have to be disposed of at an additional cost to the client. Such costs include the necessary vacuum truck handling charges and associated operational costs related to the on-site waste water facility.

# ***Petromax***

## **The solution:**

The *Petromax PPR10 water-based application* used in place of the conventional process was specially designed to maintain suspension long enough to transport the heavy sand sludge (via hoses and vacuum truck) into nearby staged roll-off bins. Once in the roll-off bins, the solids were to settle over the next few days allowing the Petromax water-based formula to be decanted.

## **Work scope highlights:**

- The Petromax formula was applied at 3,000 psi directly into the sandy sludge to achieve suspended pumpable slurry that would not stick in hoses or secondary containments. The daily sludge production to the roll-off bins was predictable (including weight consistency) without hose handling issues that are normally associated with conventional sand sludge removal methods.
- The amount of Petromax formula in the conditioned sludge was determined to be 14.45% at the conclusion of the project. When compared to the conventional method, roughly 1/12<sup>th</sup> of the waste water handling was necessary as a result of using our application.
- At the end of the project, it was determined that, in the future, a Super Sucker would not be necessary when the Petromax application was used. A regular vacuum truck, preferably a 110 bbl truck, would suffice with our application and would further speed up the sludge removal rate at far reduced cost.
- It was further determined that a non-entry Petromax application could be utilized to remove sand sludge build up in a more routine and timely manner. In addition, this would result in eliminating confined space entry unless vessel inspection is required.

## **Bottom line result:**

The total time to remove the sludge utilizing the Petromax application is 7 days vs.15 days as compared to the conventional method. In addition, a reduced level of equipment and risk exposure was achieved through the use of our application.

**Petromax Technologies, Inc.**

Office: 539-990-2123  
BRosengrant@gmail.com