

OPEN WATER SUMP MONITORING

How do you measure oil concentration on the water surface when the level can change?

SITUATION

Power Plants, Steel Mills and other heavy industrial plants and Municipal Water Treatment Plants often have an open water basin which they need to measure for oil concentration. The water can be in a sump or open channel with in the plant or in an open body of water like a River, Lake or the Oceans.

PROBLEM

Industrial waste water is often monitored for oil concentration to meet the local environmental guidelines. Also, water that enters a plant to be used for Drinking Water, or Boiler Feed Water should be monitored for oil content if the source water has the potential for oil contamination. The water treatment systems for Boiler Feed Water are often damaged or not as effective in treating water with an oil coating. In an open location, like sump, channel or a river, the measurement of oil concentration has some challenges that these customers need to overcome.

First, the most of the oil will tend to float to the surface and not be evenly mixed throughout the entire body of water. With low oil concentration discharge limits, the oil might not form a visible sheen at the discharge concentration limit. Waves, wind and other water conditions can cause the oil to be dispersed or not form a uniform sheen that is easy to detect with simple Sheen Detectors. Some oil



can be suspended in the water depending on the type of oil and particles or debris.

Second, the sumps or rivers, etc. will collect debris like rust, dirt and sticks, etc. that can foul, plug or stick to any device used to measure oil / water level or concentrations. Lastly, the location where measurement is typically needed tends to be removed from the primary operations of the plant. These locations might have limited attention from plant operators..

SOLUTION

The TD-4100XD and TD-4100XDC are ideal monitors to be used for these applications. For Dirty Waste Water Services, the TD-4100XD is specifically designed to be low maintenance with no direct contact with the water in the measuring flow cell. For intake monitoring application where the water has been screened or filtered of most particles, the TD-4100XDC can be used for additional sensitivity.

The TD-4100XD is a rugged all 316SS monitor designed to be installed in the most challenging environments. When it is installed in a remote location some accessories are available for easy installation. These include a Self-Cleaning system to extend the time between operator maintenance, a level or flow switch input to control the sample pump and integration into a stand-alone system (through 3rd party integrators).

If the water should be measured at the surface, the addition of a Floating Suction Skimmer and a Self-Priming pump will allow the TD-4100XD to pull water from a changing surface level and deliver a continuous sample to the monitor for measurement. Because the monitor is not damaged or lose calibration when no water is present, it can be used in rain or storm water installations that will be empty regularly. If the water should be measured after a discharge sump pump, a continuous sample can be pulled from the discharge piping to be delivered to the monitor.

The Fluorescence measurement of the TD-4100XD has no significant affect from water turbidity caused by solids or gas bubbles that might be present in the water. It has been proven to measure waste water in dirty discharge sumps from 0 – 50 ppm with no cleaning needed for over 30 days and matching the results of laboratory analyzed samples within 2%.

The E09 features of the internal Data Logger, Diagnostic Record, and Event Log of the TD-4100XD and TD-4100XDC are valuable tools for plant operators to use the monitors. The Data Logger can store up to 18 Months of measurements and transferred spreadsheet for interpretation with no proprietary software needed. The Diagnostics Record and Event Log can be easily transmitted to a Service Engineer for quick diagnostics and troubleshooting if needed.

