

## Above Ground Oil Storage Tanks

### Leak/Spill Detection in a Dyke's Sump of an Oil Storage Tank

Drainage canals around tank dykes are used for collecting oil and/or stormwater which may carry oil sheens (resulting from leaking pipes, valves, and pumps) into collecting sumps, separators, or interceptors. These sumps, which can be wet or dry, need to be continuously monitored for the following reasons:

- Environmental regulations
- Firefighting safety regulations
- Day and night overflow detection
- Identification of leaking tanks and equipment

A Leakwise\* ID-223 Oil Sheen Detector, which can be installed in wet and dry sumps, triggers an alarm in the event of oil detection in sumps around the tanks.

### Reduction of Water Treatment Costs

Due to various environmental regulations, tank farms have to treat stormwater before discharge into the sea, river, or public drainage system. An ID-223 Oil Sheen Detector installed in the collecting sump will continuously monitor its water outlet. If water is detected, it can be diverted into retention tanks or directly discharged into

the sea, a river, or public drainage. If oily water is detected, an alarm will be set off and the ID-223 Oil Sheen Detector will shut the water outlet valve. The oily water could then be manually or automatically diverted into an API separator or any other oily water treatment system. This operation will reduce the load from the treatment system and cut treatment costs.

### Monitoring and Control of Oil/Water Separators

In some tank farms, water is collected from the tank area and sent to a local separator or interceptor where oil is separated by gravity and water is discharged directly into the sea, a river, or public drainage. In other locations, water from the tank area has to be treated in an API separator.

An ID-223 Oil Sheen Detector installed at the separator/interceptor outlet will continuously monitor the discharged water and ensure that the separation is running smoothly, without any upsets.

An ID-225 Oil Layer Thickness Monitor installed in the separator/interceptor will continuously monitor the thickness of the accumulated oil layer and control a skimming pump, or "inform" the operator when to skim, and thus bring substantial savings in treatment costs.

### Leak Detection from Bottom of Tanks by Groundwater Monitoring

Even sophisticated tank gauging systems are not capable of monitoring small leaks of oil from the bottom of tanks. This unnoticed oil creates a major fire and explosion hazard as well as groundwater contamination. Groundwater monitoring can in many cases be the only method of detecting leaks from the bottom of tanks. An ID-221 Oil Sheen Detector installed in monitoring wells around the tank will give an "early warning" on hydrocarbon seepage into the groundwater.

### Monitoring Water Drainage from Floating Roofs

An ID-223 Oil Sheen Detector can be installed at the outlet of the floating roof water drainage flexible pipe. This detector can be used to detect:



- a. Leaks due to pinholes or cracks in water drainage flexible pipe
- b. Spills due to oil run over the floating roof
- c. Clogs in water drainage flexible pipe

*See also Application Note 300-00056: Oil Storage Tank with a Floating Roof.*

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