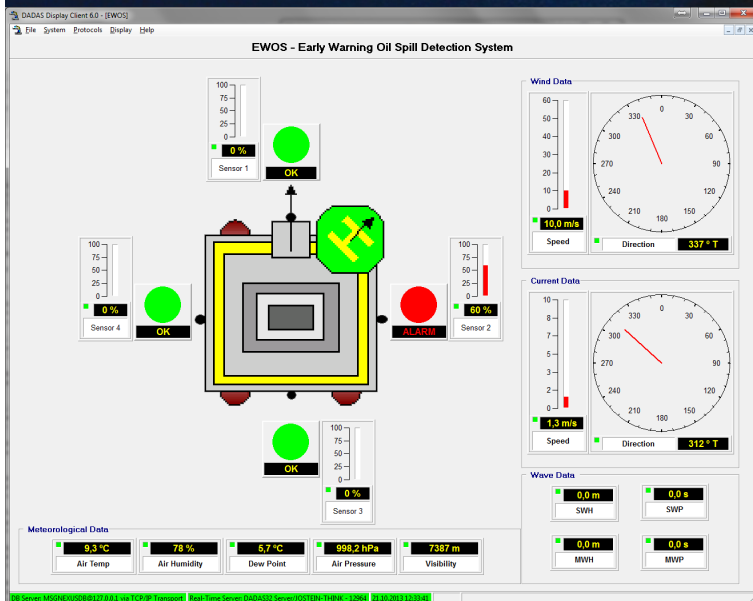


# EWOS—Early Warning Oil Spill System

## Oil Spill Monitoring for Offshore Rigs & Platforms

### Real-Time Spill Alert



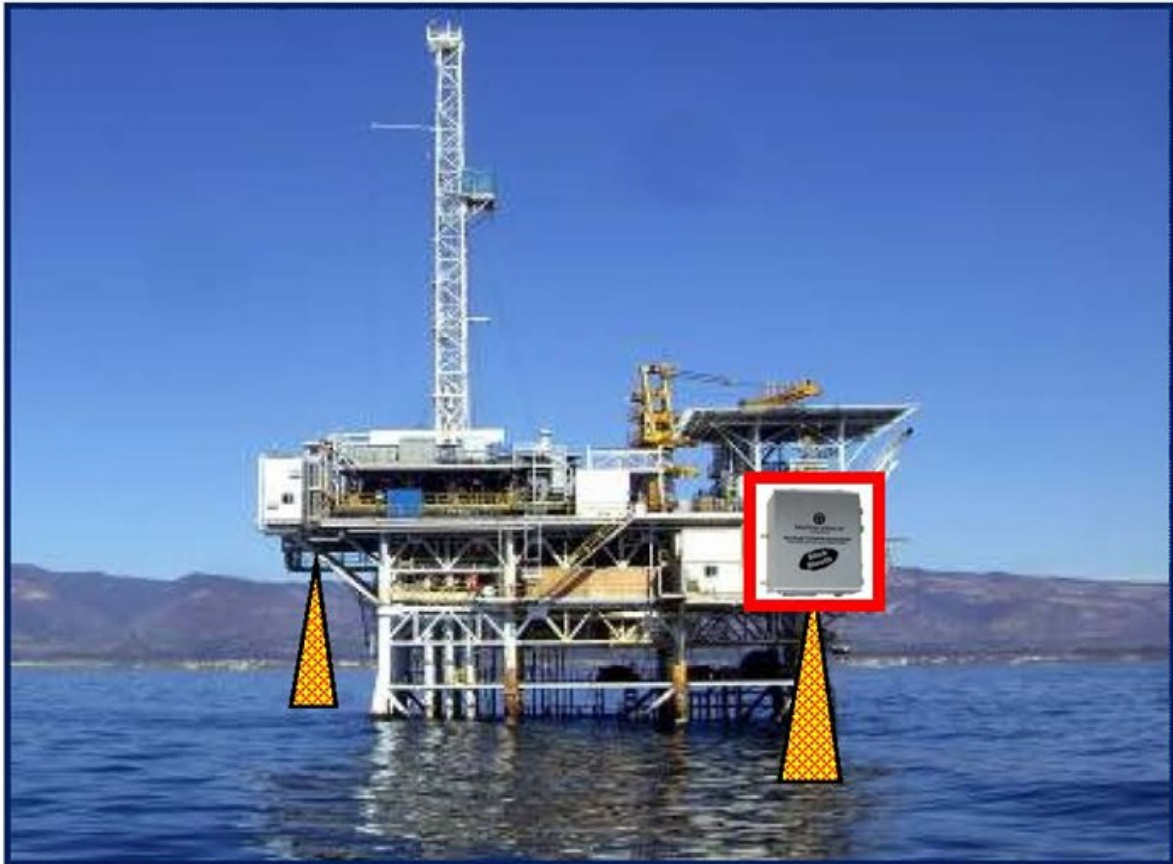
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### **EWOS — Early Warning Oil Spill System — Multi point measurement**

- Can be delivered as a complete system with several sensors suited for specific monitoring applications, onshore or offshore.
- The Oil Spill sensors should be installed close to the locations with highest risk of leakage for earliest possible detection.
- A typical offshore platform can be fully covered by installing from 2 to 8 sensors connected to a monitoring system or alarm system.
- The Oil Spill sensors can be fully integrated with A+D Early Warning Oil Spill Systems (EWOS) and displayed together with wind, wave and current information for oil spill drift information.
- The system is optimized for detection of crude oil, as well as diesel, lube oil, and slop oil, all of which may be a concern in the offshore environment.
- Will detect any size oil sheen or slick as soon as it appears at the sea surface.
- Sensibility is user adjustable to avoid false alarms.
- Detection ranges from 5 meters up to 20 meters available off the shelf. Longer ranges available upon request.
- Ex version for installation in hazardous areas available.
- Additional environmental data can be added in order to assist in oil spill drift predictions.
- Wind, Wave and Current data from existing or new sensors can be interfaced directly.
- EWOS System can be combined or integrated with existing or new EMS Systems, Helideck Monitoring Systems, Weather Stations or other systems with additional useful information.
- A+D can provide design and engineering support, installation support, operation and maintenance services, calibration services and training of personnel as required by each individual customer.

## Stand-alone EWOS System or Combined EMS / EWOS

The EWOS software can be installed as a stand-alone system or as an additional module to a Weather Station or an Integrated Environmental Monitoring System.

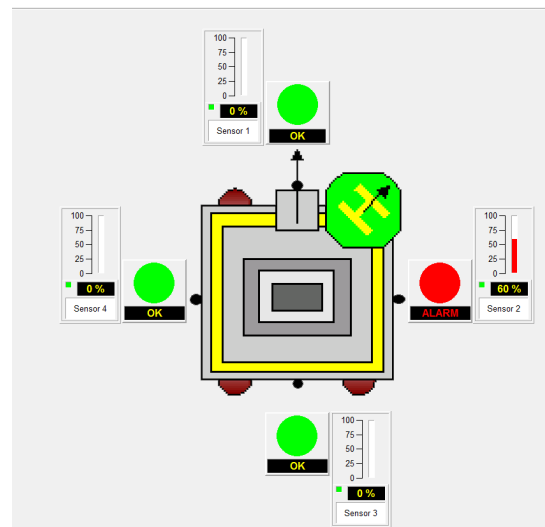
Combining EWOS and EMS systems will make it easier to predict possible influence of wind, wave and current forces on the oil spill.

The number of oil spill sensors to be installed needs to be evaluated for each installation, but correctly located and used in a logic combination these can be used to find the source of the oil spill as fast as possible.

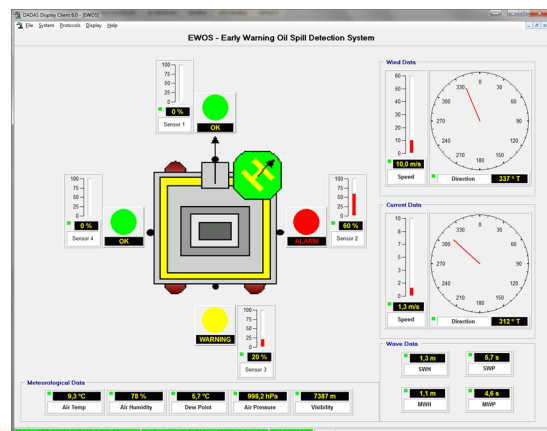
EWOS is a dedicated tool for Real-time Early Warning when an oil spill occur.

### Main advantages are:

- Real-time oil spill watch.
- User-friendly logic displays for immediate decision support.
- Immediate alarm if an oil spill occurs.
- Adjustable alarm sensitivity to avoid false alarms.
- Alarms or other data from the EWOS system can be sent to other local or remote users as required.
- Non-Contact sensors.
- Low maintenance requirements.
- Automated, Optical, Non-Contact Sensor
- Patented UV Filter-Fluorometer Methodology.
- Oil-On-Water Detection: Crude Oil, Fuel Oil, Diesel, Slops, etc.
- Sensitivity: 5 +/- Micron Sheen with User Adjustable Sensitivity.
- Discrete Alarm and/or Scaled Signal Output.
- Range: maximum 20 Meters (Maximum Distance Above Surface).  
Other ranges can be discussed upon request.
- Installation hardware can be custom designed by A+D and included in the complete delivery.



Logic user display can help operators making quick decisions in critical oil spill situations. Alarm levels for each alarm can be adjusted in order to avoid false alarms.



Typical example of combined EWOS and EMS display. Wind, wave and current information can be obtained at a glance.



## **EWOS is the newest addition to the highly successful Environmental Monitoring Systems product line**

The EWOS system offers proven technology for real-time monitoring and alert of oil leaks and spills in offshore environments. The system provides operators with reliable oil-on-water detection around drill rigs, production platforms, loading buoys, pipelines and other offshore sites where the risk of accidental spills exists.

Whereas major offshore spills get the most attention, accidental discharges in the form of smaller-scale spills and leaks are far more common and are also of great concern. The EWOS sensor will detect any size surface oil sheen or slick, assuring companies who operate in environmentally sensitive marine areas that a spill will not go undetected until the problem worsens and becomes a costly incident.

The benefits of early detection include oil spill risk reduction, as well as minimizing (or altogether avoiding) the myriad costs associated with regulatory fines, clean-up efforts, legal fees, shut-downs, and environmental mitigation/restoration expenditures associated with oil spills. This may also be leveraged to help protect corporate image and project a proactive environmental stewardship posture.



The EWOS oil spill sensor is a Slick Sleuth Rig Guard sensor from InterOcean Inc. This is a robust system, ruggedized for permanent installation and continuous operation on platforms, in any sea-state, and all marine weather conditions. The system is non-contact, thus it requires minimal maintenance and no operational expense. The mounting range can vary from nearsurface, up to maximum 20-meters above sea-surface. Installation hardware can be delivered from A+D.



The system is optimized for detection of crude oil, as well as diesel, lube oil, and slop oil, all of which may be a concern in the offshore environment. The patented non-contact Slick Sleuth scanning optics and detection processor allows users to easily adjust settings for site-specific sensitivity levels, so spills of any size can be identified before significant damage occurs. Detection of spills above the user-selected threshold triggers automated user-defined response such as local audio/visual alert and remote alarm notification to control room SCADA or PLC.

The EWOS oil spill detection system is meant to deliver significant cost savings and environmental safety benefits to offshore operators with its all weather, noncontact, low maintenance monitoring capability.

