

FRONT & CENTER

Oil Spill Tracking Buoy Offers Flexible, Complete, and Reliable Support

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The Deepwater Horizon oil spill presented an unprecedented threat to Gulf of Mexico marine resources. Although the amount of oil gushing to the surface diminished after the well was capped, scientists did not stop gathering data, or looking for ways to avoid future disasters. For example, both during and after the oil spill, researchers captured information about the way oil breaks down, dissipates, and bioaccumulates. Their goal: to improve the technology used to mitigate the impact of such disasters.

One device that is addressing this challenge is the WorleyParsons Oil Spill Tracking Buoy (OSTB).

Oil drifts along the surface of ocean water at 97 percent of current speed, but only a fraction of the wind speed. Therefore, it is essential to track these currents, since they account for at least 95 to 98 percent of the ultimate oil spill trajectory. WorleyParsons designed, developed, and deployed OSTB to provide a scientific instrument for capturing only the surface currents. For fast response, it can be deployed from a helicopter for oil spill response monitoring using satellite-tracking modems.

The OSTB is designed to accurately track a surface oil spill, with movement of the buoy limited to the metocean conditions found at the immediate air/sea interface and in the upper 0.5 m of the water column. The buoy has close to zero windage, yet still sends and receives satellite GPS fixing data. Each buoy has its own identification number and can be tracked 24 hrs a day, seven days a week. This system allows determination of the exact position of oil, icebergs, and search and rescue teams, to track them in real-time and at any point on the planet.

The associated software platform can track an infinite number of OSTBs at any time and enables multi-user

control and monitoring from several different locations at the same time, with the ability to limit access and control of the data between individual sites, thus permitting the end-user the ability to map the extent of the spill and ultimately calculate spill dispersion rates. A waterproof switch integrated into the lid turns the tracking function ON and OFF. Each OSTB is fitted with a unique, impact-resistant satellite-tracking device. Lithium cells provide extended operational endurance, 30-minute reporting frequency up to 40 days' deployment life and 365 days when reporting every 24 hours.

Previous project experience, examination of existing oil spill response systems and model validation exercises have shown that multiple OSTBs need to be deployed across a variety of locations during an oil spill incident, namely spill fronts and spill central points. This is vitally important for any Oil Spill Response Team for planning its incident response effectively, and to enable the emergency numerical modelling systems that predict the fate of a spill.

With a proven heavy-duty design for 50 m free-fall deployments and a global satellite tracking system (GlobalStar), the WorleyParsons OSTB is an instrument that can be safely deployed from oilrigs, rig support vessels and helicopters. Offshore deployments have seen OSTBs track in sea states greater than 6 m for prolonged periods. Weighing only 7 kg, an OSTB can be deployed and recovered by one person.

The OSTB was designed and built by WorleyParsons Pty Ltd, a global consulting company specializing in hydrocarbon engineering.

For further information visit www.worleyparsons.com, or email ostb@worleyparsons.com.