

NIST releases Gulf of Mexico crude oil reference material

7 March 2012



Gulf oil: Collected directly from the Macondo well during the Deepwater Horizon disaster and rigorously tested and measured by NIST and NOAA, NIST SRM 2779 will serve as a vital quality control for environmental impact analyses of the Gulf. Credit: L. Sander/NIST

The National Institute of Standards and Technology (NIST) has released a new certified reference material to support the federal government's Natural Resources Damage Assessment (NRDA) in the wake of the April 2010 Deepwater Horizon oil spill 40 miles off the Louisiana coast. The new Standard Reference Material, "Gulf of Mexico Crude Oil" (SRM 2779), will be used as a quality control material for the ongoing environmental impact analyses for the NRDA effort.

The Deepwater Horizon disaster resulted in the discharge of tens of thousands of barrels of oil per day from the seafloor into the Gulf of Mexico. In what has become the worst offshore oil spill in U.S. history, a wide expanse and variety of natural resources have been exposed to and potentially impacted by oil. During the NRDA, tens of thousands of environmental samples including oil in various forms, water, sediment and biological samples are being collected and analyzed to characterize both pre-spill and post-spill environmental conditions.

The petroleum crude oil for SRM 2779 was collected on May 21, 2010, on the drillship Discoverer Enterprise from the [insertion tube](#) that was receiving oil directly from the Macondo well during response operations. The oil was collected in 2.5 liter glass bottles and transported via a defined chain of custody to a laboratory in College Station, Texas. A portion was subsequently provided to NIST under the authority of the [National Oceanic and Atmospheric Administration](#) (NOAA) for use in the preparation of SRM 2779.

Using the data from three independent methods of analysis performed at NIST as well as one set of data from an interlaboratory study coordinated by NIST and NOAA, certified and reference values (as mass fractions) are provided for a number of [polycyclic aromatic hydrocarbons](#) (PAHs) along with reference values (as mass fractions) for a number of alkylated PAH groups, hopanes and steranes. These compound classes are among those used as indicators for the presence of petroleum crude oil. Each unit of SRM 2779 consists of five ampoules, each containing 1.2 mL of crude oil.

Provided by National Institute of Standards and Technology

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