

Deepwater Horizon MC252 Gulf Incident Oil Budget

Synopsis: In collaboration with the USCG, NOAA, and NIST, the U.S. Geological Survey (USGS) has developed a Web application, known as Deepwater Horizon MC252 Gulf Incident Oil Budget, which allows comprehensive tracking and graphical display of the daily and cumulative oil budget in the Gulf.

Federal personnel collaborated to ensure that the oil budget tool supports absolute data integrity, comprehensive data entry and management, and simple Web access, eliminating the need for specialized software. The tool offers a basic user interface for daily data entry and reporting, allowing rapid visualization of oil volumes in the Gulf.

The application allows:

- National Incident Command personnel to input daily variables;
- Scientific support staff to edit the computing program for the Oil Budget Model as improved information becomes available;
- Dynamic creation of graphs showing modeled low flow rate, maximum removal and high flow rate/minimum removal scenarios; and
- Generation of executive summaries, showing the most up-to-date calculated daily and cumulative values.

The tool incorporates succinct descriptions, including assumptions and factors used for calculations such as amount of oil burned, skimmed, or released unaffected, in the online application and printed reports.

For example: Skimmed oil is a rough calculation based on the daily reported amount of oily water multiplied by a factored estimation of net oil content. The net oil factor is different for the Maximum and Minimum removal scenarios. The Skimmed oil estimate is very rough. The actual amount of skimmed oil should ultimately be based on actual measurement.

The Oil Budget tool is being updated as new information becomes available and desired capabilities are identified. Based on the rapid response to this incident, the USGS is poised to apply extensive scientific and technical expertise to benefit other environmental emergencies.

Background: Since the blowout on the Deepwater Horizon offshore oil-drilling rig, the (USGS) has been actively involved with the National Incident Command Center, helping to inform decisions in response to the ensuing oil spill. The USGS is collaborating with the National Oceanic and Atmospheric Administration (NOAA), U.S. Coast Guard (USCG), and the National Institute of Standards and Technology (NIST) to provide scientific and technical expertise to aid the oil spill management and recovery effort.

The USGS developed a Web application, known as Deepwater Horizon MC252 Gulf Incident Oil Budget, to track the discharged oil and results of subsequent processes that affect oil volumes in the Gulf. Secure Web architecture and a rapid application development process, instituted for other Web-based applications used by USGS scientists, was used to construct the Oil Budget application, synthesizing information collected and maintained by the USCG.