DRAFT: Mass Balance Team, part of Flow Rate Technical Group, Updates Estimate of Oil Flow

One team from the National Incident Command's Flow Rate Technical Group (FRTG) has completed~~finalized~~ its report and is updating its estimates on the amount of oil that ~~has~~e flowed from BP's leaking well prior to the riser being cut off to allow for the Lower Marine Riser Package to be capped.

The Mass Balance Team has completed~~finalized~~ their assessment of the flow and provided an updated estimate that the average minimum discharge from the flow was 11,000 to 19,500 barrels of oil a day between April 20 and May 17. The team develo~~p~~ed their assessment by looking at the amount of oil on the surface of the Gulf of Mexico on a given day, May 17, and adjusting for the amount of oil that had been burned, skimmed, dispersed or evaporated.

The team developed its range of values using U.S. Geological Survey ~~and National Oceanic and Atmospheric Association~~ analysis of data that was collected from NASA's Airborne Visible InfraRed Imaging Spectrometer (AVIRIS), an advanced imaging tool. USGS has previously used the AVIRIS tool in response to hurricanes and wildfires and has used a similar space-borne instrument to discover water on the moon. This is the first time it has been used to measure the volume of an oil spill. The analytic method for mapping oil spills was developed after the Deep Water Horizon explosion by a team of scientists from USGS, NOAA, NASA, and academia.

The updated number changed slightly from their initial estimate of that the minimum discharge rate was 12,000 to 19,000 barrels of oil a day. This estimate is being refined as new information becomes available.

The team's full report can be reviewed at (website).

Three additional teams continue to work independent assessments, the results of which will be released as their reports are finalized.

- END -

[probably should end here]

The Mass Balance Team analyzed how much oil is on the surface of the Gulf of Mexico. The team developed a range of values using USGS and NOAA analysis of data that was collected

from NASA's Airborne Visible InfraRed Imaging Spectrometer (AVIRIS), an advanced imaging tool. USGS has previously used the AVIRIS tool to discover water on the moon. This is the first time it has been used to measure the volume of an oil spill.

Given the amount of oil observed on May 17th and the adjusted calculations for the amount of oil that has been burned, skimmed, dispersed, or evaporated, the initial estimate from the Mass Balance Team was in the range of 12,000 to 19,000 barrels of oil per day.

The Nodal Team…. (Mark Sogge is helping with description)

The Department of Energy (DOE) was asked to conduct a nodal analysis to estimate flow rates from reservoir to release points. This effort will rely on input from a research team coordinated by the Minerals Management Service (MMS) that will provide information on flow rates and pressure drops associated with reservoir processes. The effort will also rely on data provided by MMS that enable a sufficient description of the flow-system (reservoir properties; geometries of well, BOP, riser; fluid characteristics at the well; physical conditions at the site; etc.).

DOE will engage a multi-national-lab team to develop a detailed assessment of flow rates based on nodal analysis from reservoir to release points. This assessment will rely on assessment of fluid-dynamic phenomena in the well-BOP-riser system, as appropriate. Coupling of flow dynamics with the reservoir will also be addressed by integration with the MMS team and by incorporation of some degree of reservoir-related phenomena in the nodal analysis.

The DOE team will comprise complementary resources at several national labs (LANL, LBNL, LLNL, NETL, ORNL, and PNNL) and will rely on resources across these labs to provide a consensus estimate of flow-rate with rigorous technical assessment of the potential uncertainties. The team will include expertise in reservoir dynamics, multi-phase fluid flow (including computational fluid dynamics), and physical properties of the relevant fluids.

The Reservoir Team….(Mark Sogge is helping with description)

The FRTG used separate methodologies to calculate the estimates because measurement of the flow of oil is extremely challenging, given the environment, unique nature of the flow, limited visibility, and lack of human access to BP's leaking oil well.

Background

The Flow Rate Technical Group is comprised of federal scientists, independent experts, and representatives from universities around the country. It includes representatives from USGS, NOAA, DOE, Coast Guard, MMS, the national labs, National Institute of Standards and Technology, UC Berkeley, University of Washington, University of Texas, Purdue University, and several other academic institutions. BP is not involved in the FRTG except to supply raw data for the scientists and experts to analyze.

FRTG Members from the Federal Government appointed to date include:

Marcia McNutt, Director, USGS; William Rees, Jr., Los Alamos National Lab, Department of Energy; Darren Mollot, Department of Energy; Franklin Shaffer, Department of Energy; Victor Labson, USGS; Bill Lehr, National Oceanic and Atmospheric Administration; Austin Gould, US Coast Guard; Richard Brannon, US Coast Guard; Don Maclay, Minerals Management Service (MMS); Gerald Crawford, MMS.

FRTG Members from academia and independent organizations appointed to date include:

Omar Savas, Professor of Mechanical Engineering, University of California Berkeley
James Riley, Professor of Mechanical Engineering, University of Washington
Juan Lasheras, Prof. of Engineering and Applied Sciences, University of California San Diego
Poojitha Yapa, Professor of Civil and Environmental Engineering, Clarkson University
Paul Bommer, Senior Lecturer, Petroleum and Geosystems Engineering, Univ. of Texas at Austin
Steve Wereley, Associate Professor of Mechnical Engineering, Purdue University
Peter Cornillon, Professor of Oceanography, University of Rhode Island
Ira Leifer, Assoc. Researcher, Marine Science Institute, University of California Santa Barbara
Alberto Aliseda, Assistant Professor of Mechanical Engineering, University of Washington
Pedro Espina, National Institute of Standards and Technology.

For more information, visit www.deepwaterhorizonresponse.com

[

REFERENCE FROM FIRST RELEASE

Mass Balance Team

The Mass Balance Team analyzed how much oil is on the surface of the Gulf of Mexico. The team developed a range of values using USGS and NOAA analysis of data that was collected from NASA's Airborne Visible InfraRed Imaging Spectrometer (AVIRIS), an advanced imaging tool. USGS has previously used the AVIRIS tool to discover water on the moon. This is the first time it has been used to measure the volume of an oil spill.

Given the amount of oil observed on May 17th and the adjusted calculations for the amount of oil that has been burned, skimmed, dispersed, or evaporated, the initial estimate from the Mass Balance Team was in the range of 12,000 to 19,000 barrels of oil per day.

This methodology carried several challenges, including the fact that the AVIRIS plane can only fly over a portion of the spill in a day, meaning that an assumption must be made that the area imaged is representative of the entire spill region.

Riser Insertion Tube Tool Estimate

Both estimates from the Mass Balance Team and the Plume Modeling Team were reality-checked with a basic calculation of the lower limit of possible oil that is spilling. The lower limit was calculated based on the amount of oil collected by the Riser Insertion Tube Tool (RITT), plus the estimate of how much oil is escaping the RITT, and how much oil is leaking from the kink in the riser.

On May 25, 2010, at approximately 17:30 CDT, the RITT logged oil collection at a rate of 8,000 barrels of oil per day, as measured by a meter whose calibration was verified by a third-party. Based on observations of the riser, the team estimated that at least 10% of the flow was not being captured by the riser at the time oil collection was logged, increasing the estimate of total flow to 900 barrels of oil per day. Factoring in the flow from the kink in the riser, the RITTI Team calculated that the lower bound estimate of the total flow is at least 11,000 barrels of oil per day, depending on whether the flow through the kink is primarily gas or oil. The lower bound estimate calculated by the RITT Team is more than twice the amount of the earlier flux estimate of 5,000 barrels of oil per day and is independent of any calculations or model assumptions made by either team above.

On-going Calculations

The preliminary estimates provided by the FRTG are based on new methodologies being employed to understand a highly dynamic and complex situation. As the FRTG collects more data and improves their scientific modeling in the coming days and weeks ahead, they will continue to refine and update their range of oil flow rate estimates, as appropriate.

The FRTG is working diligently to ensure all estimates are peer reviewed by independent experts and academics as expeditiously as possible. They will also establish a website to ensure this information is available and reported to the public in a timely fashion.

In making the announcement, Dr. McNutt, who is the chair of the FRTG, emphasized that since day one, the Administration's deployments of resources and tactics in response to the BP oil spill have been based on a worst-case, catastrophic scenario, and have not been contained by flow rate estimates.

Background

The Flow Rate Technical Group is comprised of federal scientists, independent experts, and representatives from universities around the country. It includes representatives from USGS, NOAA, DOE, Coast Guard, MMS, the national labs, National Institute of Standards and

Technology, UC Berkeley, University of Washington, University of Texas, Purdue University, and several other academic institutions. BP is not involved in the FRTG except to supply raw data for the scientists and experts to analyze.

FRTG Members from the Federal Government appointed to date include:

Marcia McNutt, Director, USGS; William Rees, Jr., Los Alamos National Lab, Department of Energy; Darren Mollot, Department of Energy; Franklin Shaffer, Department of Energy; Victor Labson, USGS; Bill Lehr, National Oceanic and Atmospheric Administration; Austin Gould, US Coast Guard; Richard Brannon, US Coast Guard; Don Maclay, Minerals Management Service (MMS); Gerald Crawford, MMS; David Absher, MMS; and Bill Courtwright, MMS.

FRTG Members from academia and independent organizations appointed to date include:

Omar Savas, Professor of Mechanical Engineering, University of California Berkeley
James Riley, Professor of Mechanical Engineering, University of Washington
Juan Lasheras, Prof. of Engineering and Applied Sciences, University of California San Diego
Poojitha Yapa, Professor of Civil and Environmental Engineering, Clarkson University
Paul Boomer, Senior Lecturer, Petroleum and Geosystems, University of Texas at Austin
Steve Wereley, Associate Professor of Mechnical Engineering, Purdue University
Peter Cornillon, Professor of Oceanography, University of Rhode Island
Ira Leifer, Assoc. Researcher, Marine Science Institute, University of California Santa Barbara
Alberto Aliseda, Assistant Professor of Mechanical Engineering, University of Washington
Pedro Espina, National Institute of Standards and Technology.

For more information, visit www.deepwaterhorizonresponse.gov.

###