

US EPA ARCHIVE DOCUMENT

Daily Report: Tracking the Plume of Dispersed Oil using Particle Size Distribution Measurements and Fluorescence Intensity Ratios

August 2, 2010

Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 101 LISST samples were analyzed, including duplicates. Samples from the surface and 3m, plus those at depths of elevated fluorescence selected from the CTD trace, were analyzed for fluorescence intensity ratio measurements using a Quantech Life Sciences fixed wavelength fluorometer.

Figure 1 presents the small droplet (Σ 2.5 - 60 μ m) particle size data and fluorescence intensity ratios for stations OV153 through OV157. The station locations were:

OV153: Lat= 28.289597 Long= -88.771428
 OV154: Lat= 28.290594 Long= -88.811783
 OV155: Lat= 28.287290 Long= -89.005709
 OV156: Lat= 28.144973 Long= -88.855005
 OV157: Lat= 28.135657 Long= -88.817498

Small particle concentrations at all stations were low, most noticeably at station OV155, and were highest at station OV156. A weak subsurface plume was indicated by the fluorescence trace from the *in situ* CTD fluorometer observed at station OV156 and a very weak subsurface plume may also have been observed at OV154, at the approximate depth of 1100m. Small particle concentrations at the depths corresponding to the potential plumes did not appear elevated over background values at either station.

Fluorescence intensity ratios were very similar to those observed on August 1, 2010. No differences were observed between ratios from the surface and those associated with the weak subsurface plume.





