

US EPA ARCHIVE DOCUMENT

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

August 1, 2010

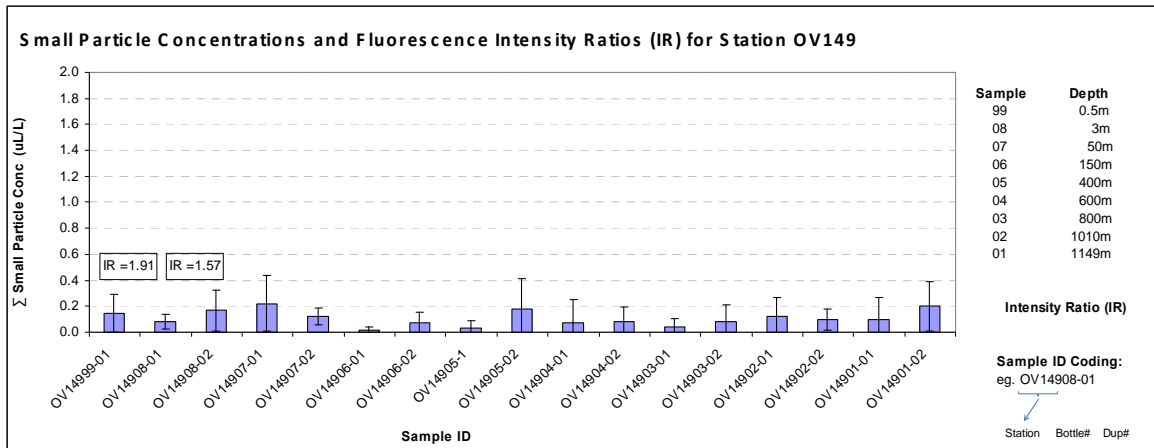
Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 68 LISST samples were analyzed, including duplicates. Samples from the surface and 3m, plus those at depths of elevated fluorescence selected from the CTD trace, 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 OV149 through OV152. The station locations were:

- OV149: Lat= 28.325024 Long= -88.937608
- OV150: Lat= 28.328528 Long= -89.154702
- OV151: Lat= 28.141061 Long= -89.406980
- OV152: Lat= 28.291092 Long= -88.871448

Small particle concentrations at all stations were low, most noticeably at station OV152. No evidence of a deep subsurface plume was observed at any of the four stations. At station OV150 there was a slight increase noted in the fluorescence trace from the *in situ* CTD fluorometer at 233m, but small particle concentrations at this depth did not appear to be elevated relative to any other depth at station OV150.

Fluorescence intensity ratios were very similar at all stations and all depths, ranging from 1.57 to 2.06, in the same range as those observed on July 28, 2010.



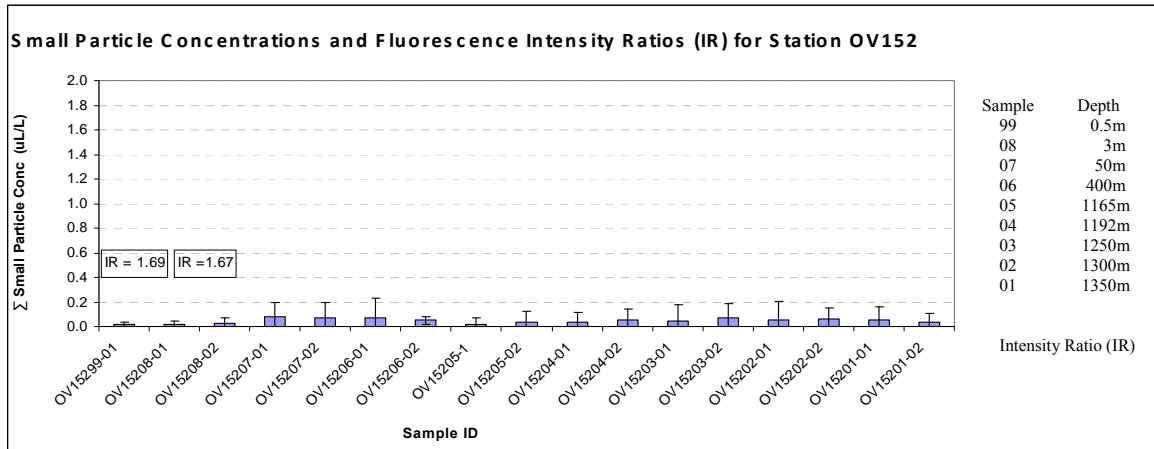
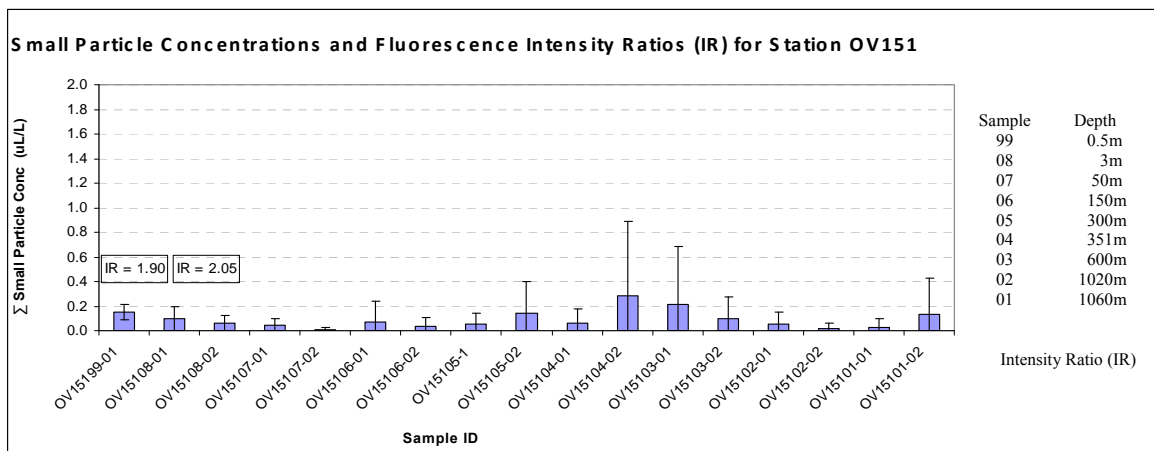
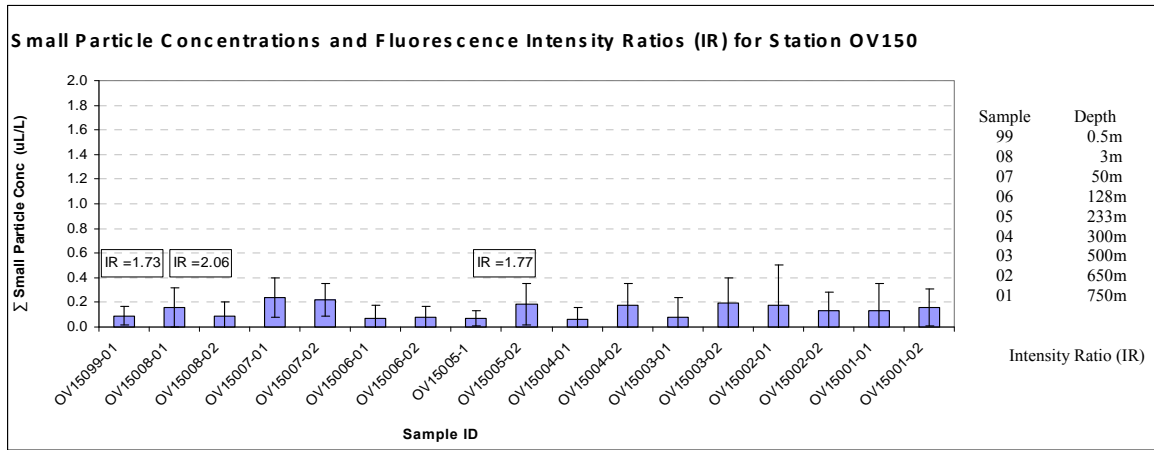


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations OV149 to OV152.