

US EPA ARCHIVE DOCUMENT

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

June 27, 2010

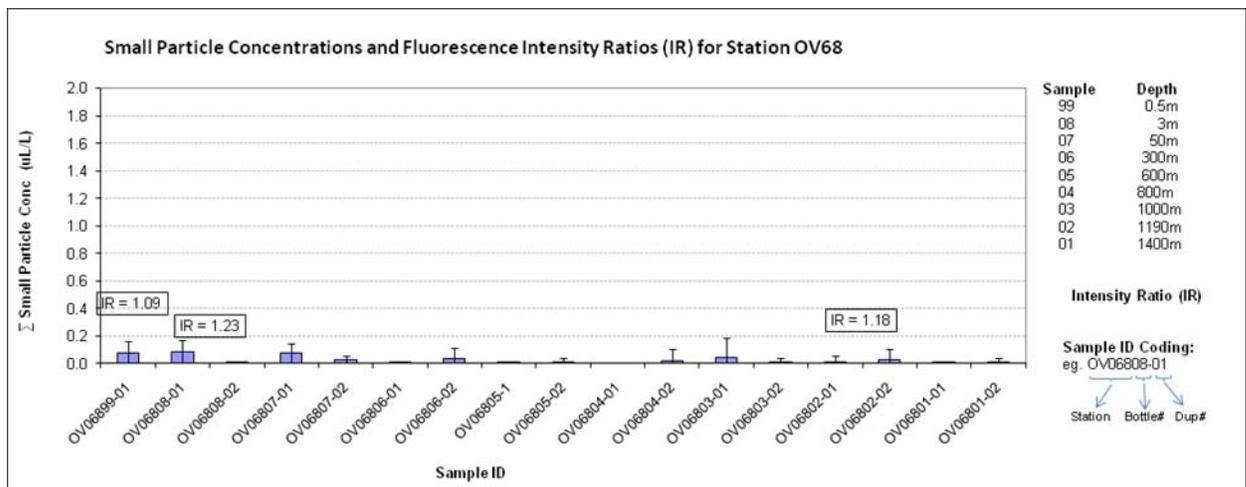
Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 68 LISST samples were analyzed, including duplicates. Samples at depths of elevated fluorescence were selected from the CTD trace for fluorescence intensity ratio measurements and analyzed 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 OV068, OV069, OV071 and OV072. All four stations were 5-6km from the wellhead in the southwest quadrant. Station OV070 was a CTD cast only; no water samples were collected. The GPS coordinates of the stations were:

- OV068: Lat= 28.701708 Long= -88.395779
- OV069: Lat= 28.730275 Long= -88.416872
- OV071: Lat= 28.716192 Long= -88.410757
- OV072: Lat= 28.705997 Long= -88.413788

The concentration of small particles was low (<0.2 μ L/L) throughout the entire water column for all four stations. The *in situ* CTD fluorometer detected a weak subsurface plume at stations OV068, OV069 and OV071.

The fluorescence intensity ratios were low in both the near surface waters (3m or less) and in the deeper water samples.



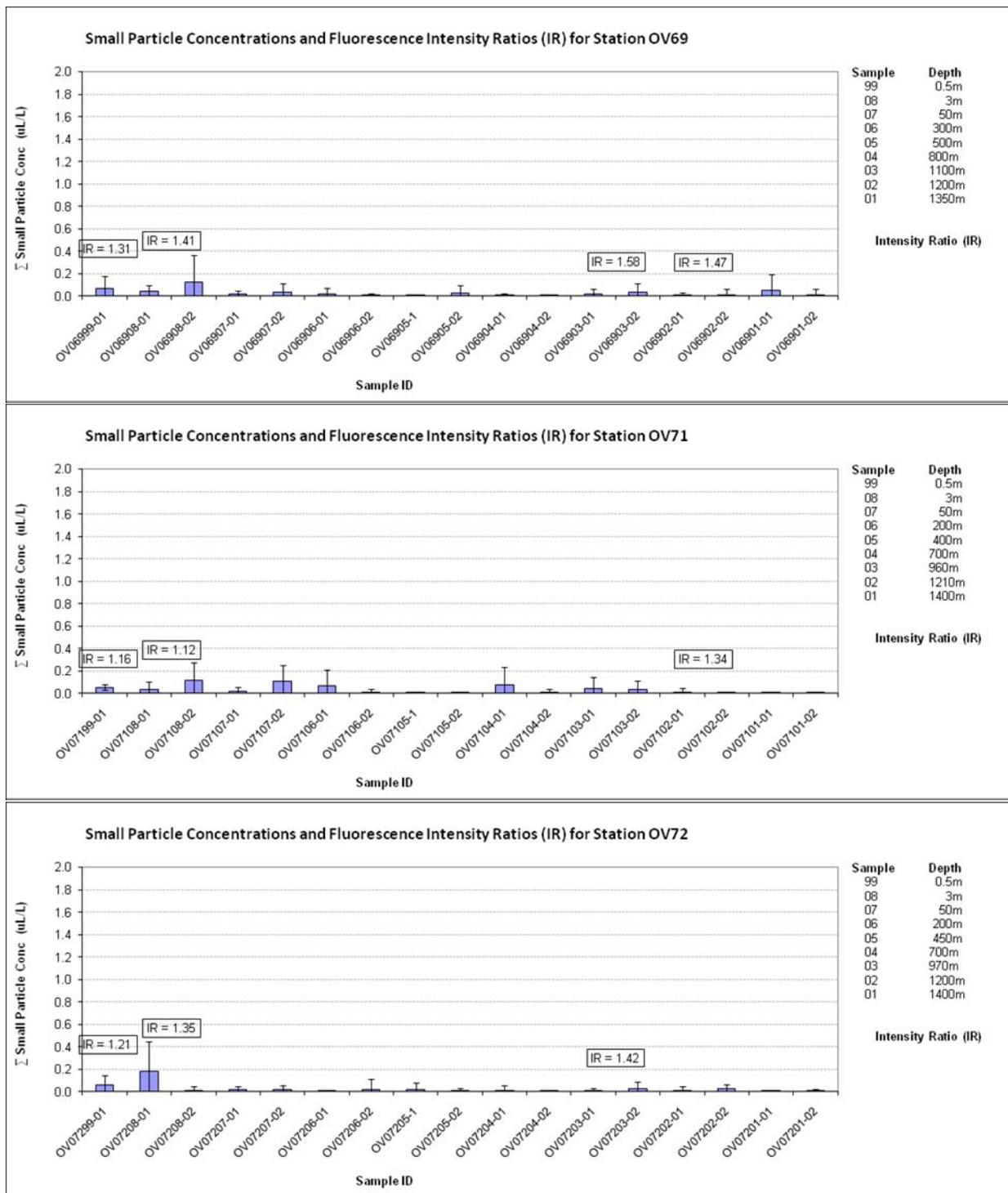


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations OV68, OV69, OV71 and OV72.