

US EPA ARCHIVE DOCUMENT

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

**June 28, 2010**

Water samples were collected at three stations for particle size distribution measurements using the LISST-100X particle counter. A total of 35 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 ( $\Sigma$  2.5 - 60 $\mu$ m) particle size data and fluorescence intensity ratios for stations OV073 to OV075. Because of a CTD malfunction at station OV075, only the bucket sample was collected and analyzed. Station OV073 was 2km southwest of the wellhead; station OV074 was 2km south of the wellhead; and station OV075 was 1.2km southwest of the wellhead. The GPS coordinates of the stations were:

OV073: Lat= 28.726288 Long= -88.380850

OV074: Lat= 28.720215 Long= -88.367083

OV075: Lat= 28.732011 Long= -88.367788

The concentration of small particles was low (<0.2 $\mu$ L/L) throughout the entire water column for stations OV073 and OV074. The *in situ* CTD fluorometer detected a weak subsurface plume at station OV073 and a moderate plume at station OV075.

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

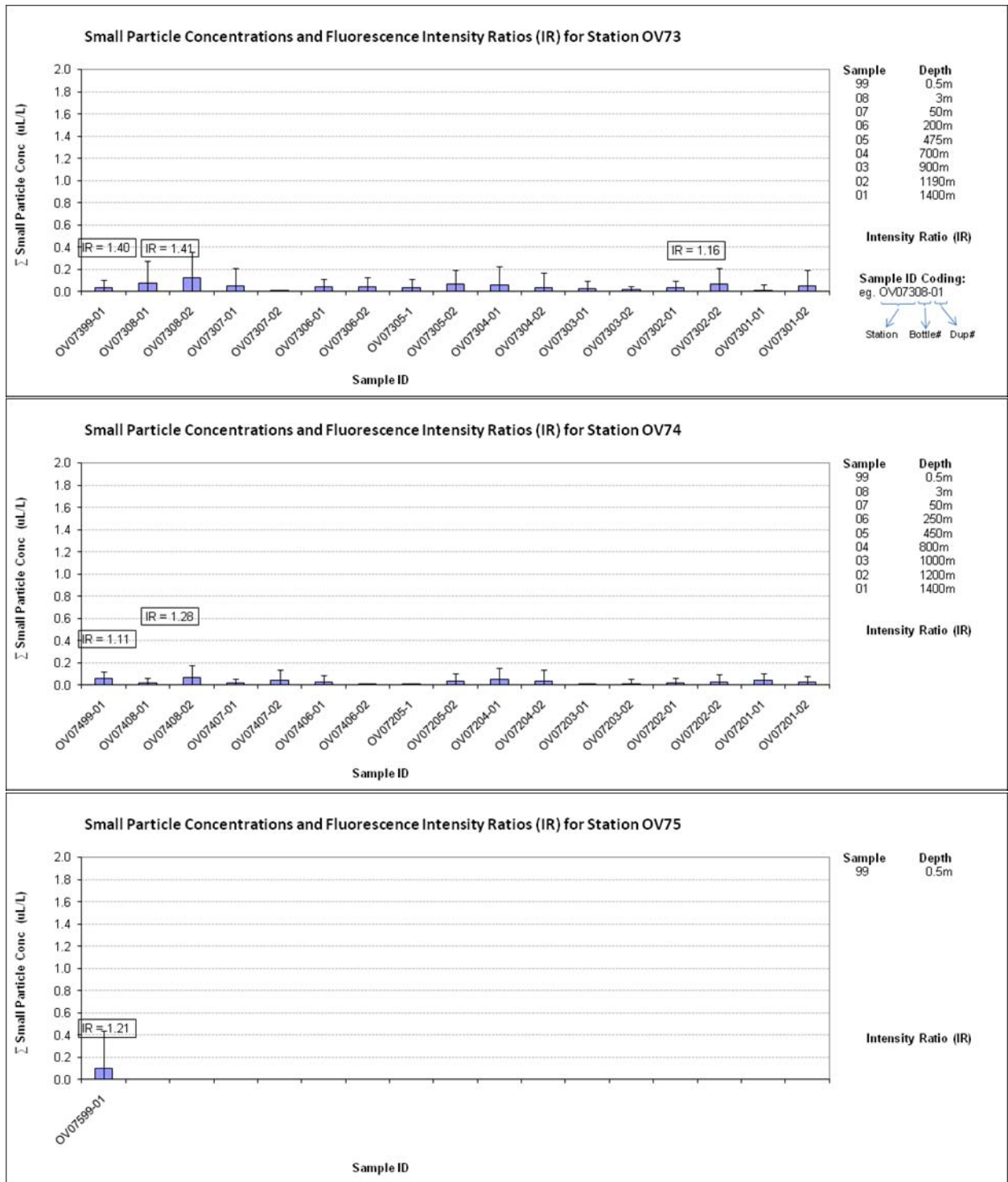


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations OV073 to OV075.