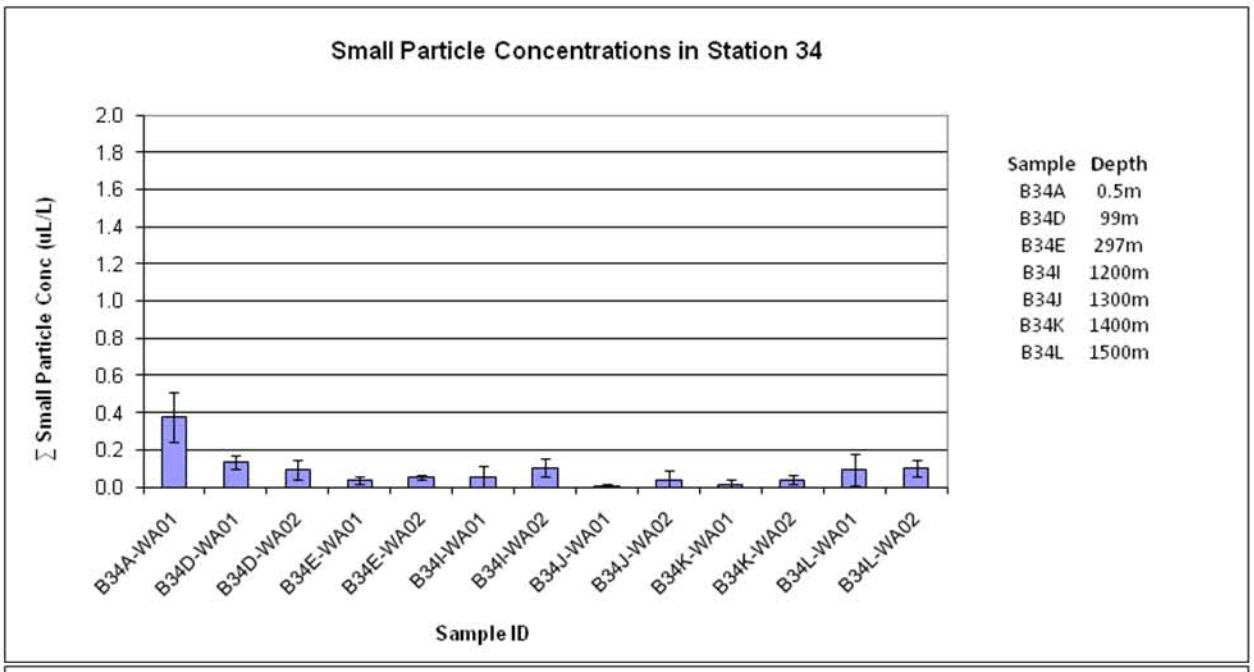
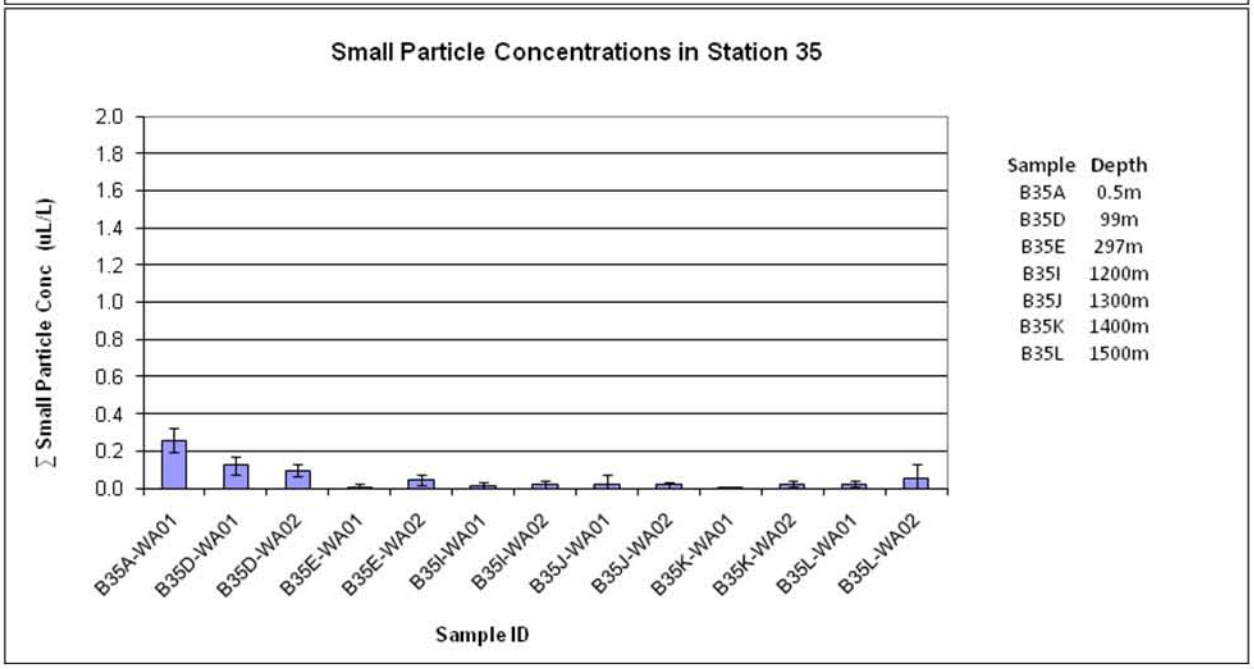
Daily Report: Evidence of dispersed oil droplets using the LISST-100X particle counter

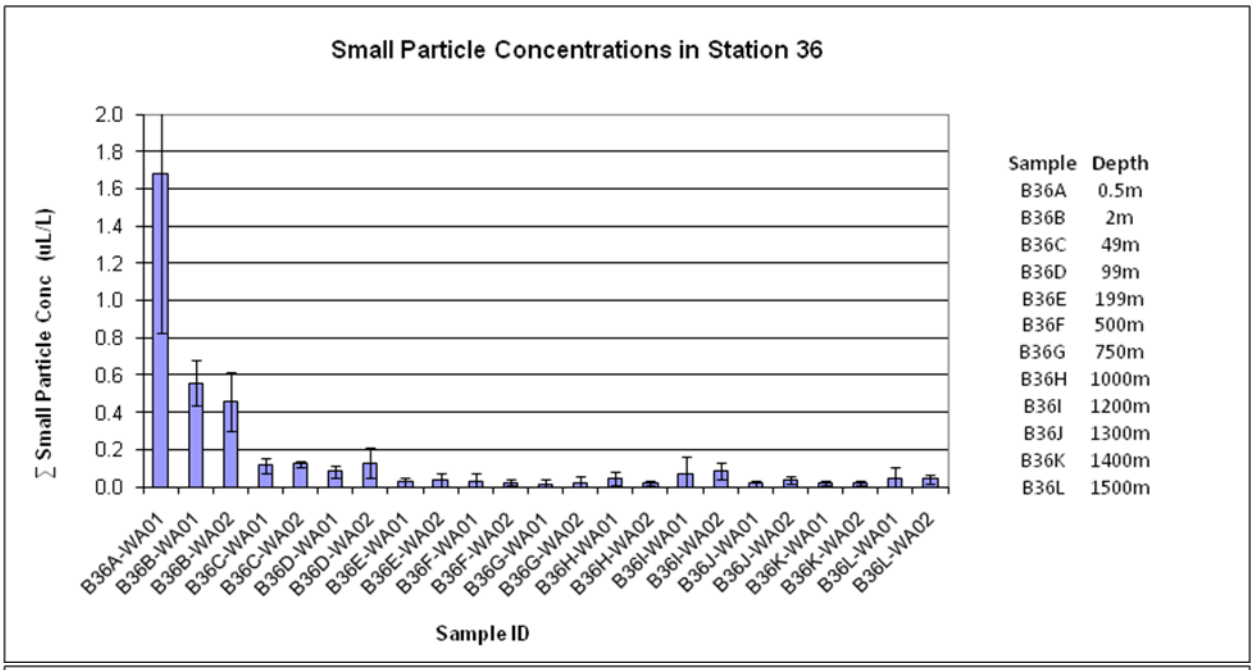
May 20, 2010

Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 72 LISST samples were analyzed, including duplicates. Selected samples were also collected and stored for shore based fluorescence intensity ratio measurements.

Figure 1 presents the small droplet ($\sum$ 2.5 - 60µm) particle size data for stations 34 through 37. The small droplet concentrations for stations 34 and 35 were low throughout the water column, with only a small increase for the surface samples consistent with the observations made on May 19. In contrast, station 36 had significantly higher concentrations of small particles in the surface samples extending down to 100m. At station 36, the *in situ* CTD fluorometer signal showed a spike between 1100-1200m. This was also detected by the LISST, where a small increase in small particle concentrations was observed in the 1200m sample. This could indicate a small plume of dispersed oil at this depth, although the intensity of the signal is much less than what was observed at this station 3 days ago (Station 26 on May 17). Station 37 was similar to station 36, with high concentrations of small particles at the surface, although no deep water plume was detected by the *in situ* CTD fluorometer.


Small Particle Concentrations in Station 34
∑ Small Particle Conc (uL/L)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
B34A-WA01
B34D-WA01
B34D-WA02
B34E-WA01
B34E-WA02
B34I-WA01
B34I-WA02
B34J-WA01
B34J-WA02
B34K-WA01
B34K-WA02
B34L-WA01
B34L-WA02
Sample ID
Sample Depth
B34A 0.5m
B34D 99m
B34E 297m
B34I 1200m
B34J 1300m
B34K 1400m
B34L 1500m


Small Particle Concentrations in Station 35
∑ Small Particle Conc (uL/L)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
B35A-WA01
B35D-WA01
B35D-WA02
B35E-WA01
B35E-WA02
B35I-WA01
B35I-WA02
B35J-WA01
B35J-WA02
B35K-WA01
B35K-WA02
B35L-WA01
B35L-WA02
Sample ID
Sample Depth
B35A 0.5m
B35D 99m
B35E 297m
B35I 1200m
B35J 1300m
B35K 1400m
B35L 1500m



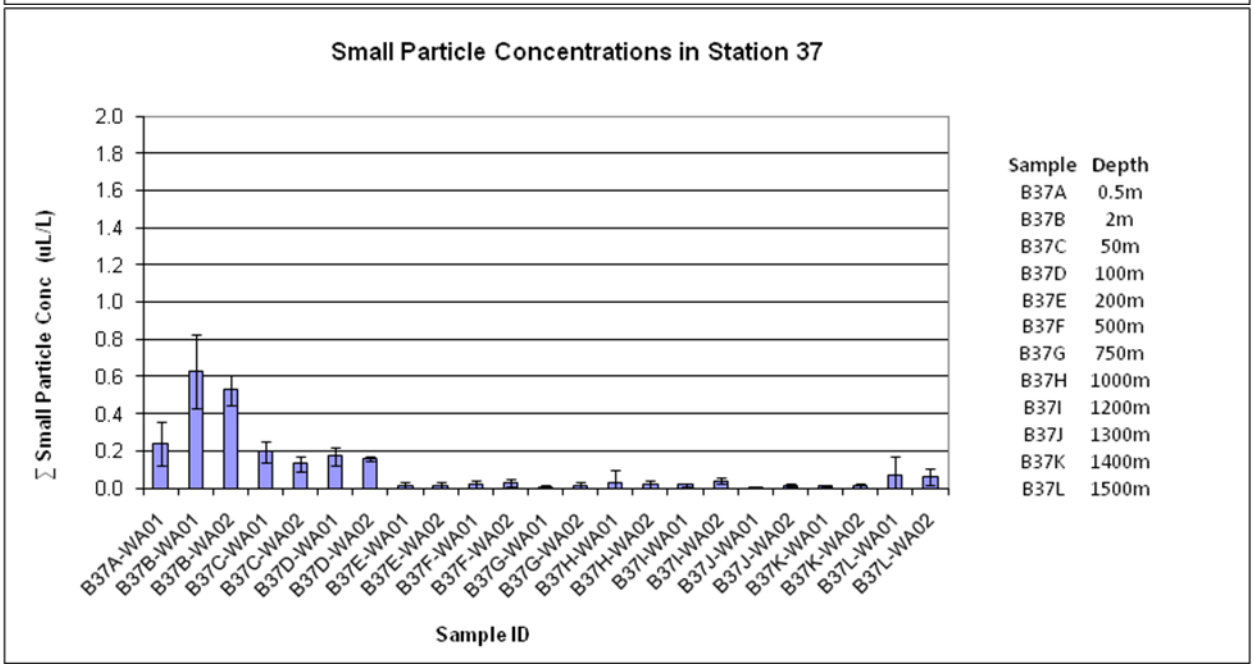


Figure 1: Average small droplet concentration as a function of depth from stations 34 to 37.