

R1/10

Not to be cited without prior reference to the Laboratory

FRV "Goldseeker"

Cruise 10/89 Pt 2

10GR89

REPORT

22-29 August 1989

Personnel

A G Kelly	SSO
I Cruz (Miss)	Student

Objectives

1. To field test equipment for sampling and filtration of large water volumes for trace organic contaminants.
2. To follow the post-dumping movement of suspended sludge particulates at the Garroch Head dump site over 24 hours and to obtain water and suspended particulate samples.
3. To collect water and suspended particulate samples on a 20 mile transect south from Garroch Head.
4. To obtain water and suspended particulate samples during a complete tidal cycle, from a position in the Clyde Estuary.

Narrative

The scientific staff joined "Goldseeker" at Troon. Miss I Cruz, then proceeded to accommodation at Millport. Work was confined to a sheltered position in the Clyde Estuary by inclement weather on 23 and 24 August, when the tidal survey was completed. The ship rendezvoused with MV "Garroch Head" at the sludge dump site on the morning of 25 August. A drifting holey-sock buoy was released into the slick and tracked for 7 hours during which time samples were periodically taken. Attempts to locate the buoy on 26 August to the south and west of the dump site were unsuccessful. The southern transect stations at 2 km, 4 km and 8 km were sampled during that day. The search pattern was continued to the north and west on 27 August without success. Samples were taken at the dump site and 8 km and 16 km north. The southern transect stations were completed on 28 August, with multiple samples taken at the 32 km station; the ship docked at Troon at 1615 hours and staff left the following morning.

Results

Suspended particulate and water samples await analysis in the Laboratory for a suite of organic contaminants including polychlorinated biphenyls, organochlorine pesticides, pentachlorophenol, sterols and chlorobenzenes. Water samples will also be analysed for salinity, dissolved ammonia, dissolved organic carbon and chlorophyll. Several samples taken in duplicate and 4 samples taken at the 32 km south station will allow assessment of the variance of the sampling procedure, and performance of the sampling equipment. In practical terms the equipment operated efficiently and dependably. One modification identified was the need for a wire mesh filter over the water intake.

Measurements of water temperature and pH taken on board indicated little variation apart from elevated water temperature immediately post sludge dumping.

The results will help elucidate the partitioning of organic contaminants between suspended particulate material and water and the factors which influence this partitioning. In addition the geographical distribution of contaminant levels will allow conclusions to be drawn as to the flux of contaminants in the area, and the likely exposure of biota to such contaminants.

A G Kelly

7 September 1989

Seen in draft: A Mair