

R1/10 In Confidence (not to be quoted without prior reference to the Laboratory)

FRV "Goldseeker"  
Cruise 3/84

3GR84

Report  
12 March - April 1984

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### Objectives

- 1) To investigate the movements of suspended sediments and associated contaminants in the area of
  - a) Rosyth
  - b) Hound Point
  - c) Seafield
  - d) Tancred Bank
- 2) To collect sediment samples in the estuary and firth (south side)
- 3) To occupy anchor stations for full tidal cycles to assess fluxes of sediments and metallic contaminants.
- 4) To collect a water sample for radio-caesium analysis off Arbroath at 56° 32'N, 20° 20'W.  
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### Narrative

Equipment was loaded at Buckie on 12 March, Goldseeker proceeded to the Forth, and was joined by scientific staff at Granton on 13 March. A shore laboratory was established at Port Edgar.

On 15 March, P Balls joined the vessel, and a full tidal cycle water sampling programme was carried out off Rosyth to assess the movement of sediment and metallic contaminants.

Between 16 and 20 March, near-bottom water sampling programmes were undertaken at Oxcars and Seafield. On 21 and 22 M Robertson and G Clark joined Goldseeker, and sampled sediments near Seafield for metal and ATP analysis; 23 and 26 March were lost through bad weather. Coring at Seafield was completed on 27 March.

After further water sampling on 28-29 March and sediment coring programme in the inner Firth was undertaken on 30, and 3-4 April.

The vessel was unloaded at Leith on April, and scientific staff travelled to Aberdeen.

### Results

Whilst the bulk of the samples await analysis or interpretation, some comment can be made on the water sampling programme. The tidal cycle sampling demonstrate considerable variation in bulk concentration of particulate material, and of the concentration of metals in the particles during the period of sampling.

The experimental near-bottom sampling rig operated successfully in all but the strongest tidal currents, and showed that no great increase in contaminant transport on particles occurred near the sea bed, when compared with the overlying water column.

Ian M Davies

16 January 1985

See in Draft A Mair