

LOIS RACS(C) Core Programme
Sea Vigil SV 14
Cruise Report
17th-21st October 1994

Personnel:

Duncan Plummer (PML/LOIS Hull)	18-20/10/94	Senior Scientist
Bek Bellerby (PML)	18-20/10/94	
Jack Hardisty (U of Hull)	17/10/94	Senior Scientist
Helen Rouse (U of Hull)	17/10/94	
Cormac Parle (U of Hull)	17/10/94	
Richard Hirst (U of Hull)	17/10/94	
Mark Williams (U of Plymouth)	18 & 19/10/94	
Christina Thurssen (U of Plymouth)	18 & 19/10/94	
Jason Gray (U of Plymouth)	18 & 19/10/94	
Karen Evans (PML)	21/10/94	Senior Scientist
Tim Fileman (PML)	21/10/94	
Jun Zhou (U of Plymouth)	21/10/94	

Monday 17th: The scientific party mustered on board at 0445 and *Sea Vigil* departed Grimsby at 0510 and arrived on station at the Hawke Float Anchorage at 0624. Sampling for vertical profiles of conductivity, temperature and depth with concomitant recordings of current velocities, over a tidal cycle commenced at 0700. The surface waters were monitored using the NRAs system. During this time Hardisty and Harris serviced some equipment on 2C and Bull Light Floats. The sampling was completed at 1740 and passage was made to Hail Sand Fort where Hardisty and Harris checked out further equipment. The *Sea Vigil* entered Grimsby Fish Dock at 1940. The equipment of the U of Hull was unloaded by 2000. Between 2000 and 2030 equipment from PML was loaded aboard.

Tuesday 18th: The party assembled on board at 0720 and *Sea Vigil* departed Grimsby Fish Dock at 0755 and headed towards the river mouth. It soon became apparent that the sea conditions were too rough for the proposed work in this region and off the Holderness coast. The vessel turned back at the eastern end of the Bull Anchorage at 0915 and sheltered in Grimsby 'Mouse Trap' between 1030 and 1310. After leaving the docks a second time *Sea Vigil* headed towards the POL mooring near Bull Sand Fort. Between 1410 and 1450 a vertical profile consisting of water samples from 5 depths was collected here for particle characterization and trace metal determination. A sediment sample was collected using the grab. At 1500 passage upstream commenced. Water samples were collected at a further 3 sites and in addition a sediment sample was also collected at the final station off Salt End. The *Sea Vigil* penned into the Marina at 1645 and LOIS personnel disembarked at 1700.

Wednesday 19th: From 0330 and 0400, when the *Sea Vigil* left the Marina, the analyzer were started up and standards recorded. The survey was from Hull at 0431

(station 16) to Selby (station 40) at 0815 passing stations 16-1 and 38-40. Water samples were collected in the vicinity of stations 14, 11, 10, 7, 5, 3 and 1 for particle characterization and trace metal determination by the team from the U of Plymouth. Sediment samples were also collected near stations 5 and 1. The survey was repeated downstream starting at station 40 at 0820 and completed at station 16 at 1220. Further discrete samples were collected at station 3 and between stations 5 and 6.

The profile measured nutrients (nitrate, nitrite, phosphate and silicate) conductivity, temperature, turbidity, pH and dissolved oxygen. Discrete samples were be collected for gravimetric, C/N and chlorophyll analysis.

The *Sea Vigil* sheltered in Albert Dock Bellmouth until 1520 and then off the entrance until locking into the marina at 1630. Unloading of U of Plymouth equipment commenced at 1700 and was completed at 1730.

Thursday 20th: The party was on board at 0915 and the vessel departed Hull Marina at 1000. The downstream run was delayed until 1115. This was to ensure better weather conditions would prevail at the Humber mouth when we would be sampling in that area. The survey commenced at station 16 and continued eastwards to station 26. Due to the conditions stations 27 and 28 were not sampled and the survey continued at station 29. The westwards survey passed through all stations to Hull and finished at 1710 (station 17).

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The *Sea Vigil* locked into the marina at 1715 and the nutrient survey equipment was unloaded and the apparatus for the following day was loaded onto the vessel from 1730 to 1830.

Friday 21st: The scientific group boarded at 0445 and the *Sea Vigil* left Hull Marina at 0500. The survey proceeded upstream via Trent Falls into the Trent as far as Keadby Bridge (0710). The route then returned to Trent Falls and passed into the Ouse as far as Goole (0820). The profile then went downstream passing Hull, Immingham, Grimsby to Spurn Point (1502). On completion of the survey *Sea Vigil* proceeded to Grimsby and tied up at the Fish Docks at 1730. During the survey 14 sites were samples for water, sediment and suspended particles were collected for later determination of organic micropollutants. The surface waters were monitored using the NRAs system for conductivity, temperature, turbidity, pH, dissolved oxygen *etc.* Unloading of equipment and samples was completed at 1830.

Notes:

This was the tenth LOIS RACS(C) Core Programme survey of the Humber and Ouse.

The programme was badly affected and hence altered due to the bad weather. The effect was that after Monday all work at the mouth of the Humber was severely restricted. In more detail the work off the Holderness coast planned by the U of Plymouth was canceled. Also canceled was the work of the U of Southampton (Purdie and Nash) which involved following a track out of the Humber into the coastal seas. Two stations (27 & 28), at the Humber mouth, on the nutrient survey were not visited.

Because of the inclement weather the programme was altered on several occasions during the week. For example the work planned for Wednesday and Thursday was switched around. The work planned by Purdie and Nash was canceled before they traveled to Humberside. This saved a wasted journey.

One result of the changes was that the start and finish ports were different to the proposed programme. Thus requiring complete reorganisation of the transport.

The weather took its toll on some of the equipment. During operations on Monday a lifejacket became wet and hence inflated (a replacement gas cylinder and a spare has been purchased). The underway pump proved to be inadequate for the task and soon developed an air block (due to the movements of the vessel). As a result the nutrient analyser was plumbed into the NRA water system.

The flexibility and consideration of Peter Sarjeant and Tim Rhodes (NRA *Sea Vigil*), and all the participants, greatly helped in the success of the Programme.