



LOIS RACS(C) Core Programme
Sea Vigil SV 35
Cruise Report
15th - 20th December 1996

Personnel:

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Brendan Murphy (U of Hull)	
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Jon Barnes (U of Newcastle)	
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Ruth Parker (U of Southampton)	

Sunday 15th: The scientific party traveled from Plymouth, Berwick and Newcastle to Hull. During the day equipment was loaded and commissioned (1100-1915). All the equipment was set up and calibrated for work on Monday and Tuesday.

Monday 16th: Upstream Humber/Ouse survey & Downstream Humber survey

The party mustered from 0530 and the *Sea Vigil* locked out of Hull Marina at 0745. The upstream survey started at 0755 (station 16) and continued upstream into the Ouse passing the Apex at 0915 and reached station 39 at 1120. There was insufficient water to proceed to station 40 at Selby. The survey returned downstream passing Hull (station 16 at 1515) and proceeded to station 30 (1815) close to Spurn Head. The survey then continued upstream and ended at station 17 (2010). The *Sea Vigil* locked into Hull Marina at 2020 and the scientific party disembarked at 2040 after analysis of standards and blanks on the underway analysers.

The survey measured nutrients (TON, phosphate, silicate and ammonium), conductivity, temperature, turbidity, pH and DO. Discrete samples were collected at all stations for gravimetric, C/N, chlorophyll and DOC* analysis (* downstream survey). CO was measured in a semi-continuous way over the whole survey. In addition samples were collected during the downstream run starting from station 39 for later determination of nitrous oxide and methane, stations 39, 38, 1, 2, 4, 8, 10, 12, 16, 20, 24, 26 & 29 (Ouse and Humber). Samples were collected for later determination of trace metals at stations 17, 19, 21, 22, 23, 24, 25, 27, 28, 29 & 30 (lower Humber).

(stations 16-1, 38-39, 39-38, 1-37, 19-17)

MG, TS, AM, JB, DP (five scientists)

Tuesday 17th: Upstream Humber/Trent survey

The party mustered on board from 0600 and *Sea Vigil* departed Hull Marina at 0820. The upstream Humber/Trent survey commenced at station 16 (0831) and continued into the Trent at 0950 and was at Keadby (station 44) at 1056. Thick fog and maintenance work on Keadby Bridge prevented the survey going further upstream of this station. The survey then continued and returned downstream and ended at station 16 (1402). The *Sea Vigil* tied up along side Admiral Steps at 1420. The scientific party unloaded their equipment and samples and departed the vessel at 1630.

The nutrient and standard parameter survey was as on Wednesday. Discrete samples were taken at all stations for gravimetric, C/N chlorophyll and DOC* analysis (* downstream survey). CO was measured in a semi-continuous way over the whole survey. Samples were collected for later determination of trace metals at stations 44, 43, 42, 41 (Trent stations), 10, 12, 14 & 16 (upper Humber stations)

(stations 16-8, 41-44, 44-41, 8-16)

MG, DP, AM, TS (four scientists)

Wednesday 18th: Humber Flux Curtain

The party mustered on board at 2145 and the *Sea Vigil* locked out of Grimsby Fish Dock at 2130. The vessel made passage for Haile Sand to start the work at the Flux Curtain. The instruments were deployed outboard at 2330 and the survey proceeded at 2340.

JH, NH, BM, DP (four scientists)

Thursday 19th: Humber Flux Curtain Continued

Nine Axial transects of the Humber Flux Curtain were carried out for the approximate duration of a tidal cycle. At 0900 the final transect was completed and the vessel headed for Hull Marina. The work had to be curtailed early due to the worsening weather. The *Sea Vigil* entered Hull Marina at 1110. The scientific party unloaded their equipment and departed the vessel at 1145. Between 1145 and 1300 the vehicles were recovered from Grimsby Fish Dock.

Measurements were made of conductivity, temperature, turbidity and depth. The surface waters were monitored using the *Sea Vigil* instrumentation.

JH, NH, BM, DP (four scientists)

Friday 20th: Contingency day.

Notes:

This was the thirtieth and final LOIS RACS(C) Core Programme survey of the Humber and Ouse. The sixth of the regular series of surveys into the Trent was completed. Carbon monoxide, nitrous oxide and methane concentrations were monitored for the seventh in a series of two monthly investigations. DOC concentrations continued to be monitored. Samples were collected for later determination of trace metals.

The axial survey into the Trent was shortened due to the thick fog and maintenance work on the bridge at Keadby.

The work on the Flux curtain was brought forward by a tide, from Thursday to overnight Wednesday/Thursday, due to the inclement weather forecast. The predicted gales duly arrived which lead to this work finishing early. We are indebted to Peter Sarjeant, Ulric Wilson for their agreement to this change.

We thank Peter Sarjeant, Ulric Wilson of the Environment Agency for their help throughout the week. Their flexibility was appreciated particularly as the programme was altered throughout the week.