

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1978 RESEARCH VESSEL PROGRAMME

REPORT: RV CORELLA: CRUISE 12A
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

P G W Jones
C W Baker
T C Doddington
A K Young

DURATION

Left Lowestoft 1030 h 7 September
Arrived Grimsby 1700h 15 September
All times are Greenwich Mean Time

LOCALITY

East coast of England, Thames Estuary and Spurn Head dumping ground.

AIMS

1. To measure the level of trace metals in the water and suspended particulate material in the areas of the Thames Estuary and Spurn Head waste dumping grounds. Measurements of nutrient salts will also be made.
2. To collect surface seabed sediment samples off the east coast for the analysis of trace metals by the Institute of Geological Sciences.

NARRATIVE

After sailing from Lowestoft CORELLA proceeded to the Thames Estuary, collecting seabed surface sediment samples on passage. The vessel anchored overnight and the following day worked a 13 hour tidal station collecting samples at hourly intervals, in the Middle Deep between 0730h and 2030 h. Similar stations at anchor were subsequently worked in the central Barrow Deep (0730 h - 2030 h 9 September), northern Barrow Deep (0730 h - 2030 h 10 September) and southern Barrow Deep (0830 h - 2130 h 12 September). During 11 September a general water sampling survey was made in poor weather conditions along several channels of the Thames Estuary. During 13 September sections across the Barrow Deep sludge dumping ground were made before and after dumping operations. Water samples were also collected in the wake of the dumping vessels. CORELLA departed from the area at 1830 h the same day and proceeded to the Spurn Head dumping ground, collecting further seabed sediment samples on passage.

A grid of stations collecting water samples over the Spurn Head ground was started at 0930 h 14 September. By the afternoon of the following day the weather had deteriorated with westerly force 8 winds. The vessel therefore proceeded to the mouth of the Humber Estuary, water samples being collected on passage. CORELLA docked at Grimsby at 1700 h 15 September.

RESULTS

1. At most stations surface and bottom water samples were collected. The total mercury content of unfiltered water was analysed shortly after

collection. Water was filtered and returned to the shore laboratory deep frozen for the analysis of other selected trace metals on both particulate and dissolved phases. Filtered samples were also collected for the analysis ashore of dissolved inorganic total nitrogen (nitrate, nitrite and ammonia). Salinity samples were collected and surface temperature observations made at each station. Unfiltered water samples were stored frozen from the anchor station in the Barrow Deep for the analysis of particulate carbon and nitrogen by the Burnham on Crouch laboratory.

The total mercury content of the water in the Thames Estuary was very variable but mainly between 30-50 ng l⁻¹. The bottom water was generally higher in mercury than at the surface. The highest value recorded was 810 ng Hg l⁻¹ immediately after the discharge of sewage sludge. The mercury content of the water over the Spurn Head ground mainly ranged between 10-30 ng l⁻¹.

2. A total of 10 seabed sediment samples were collected for the analysis of trace metals by the Institute of Geological Sciences.

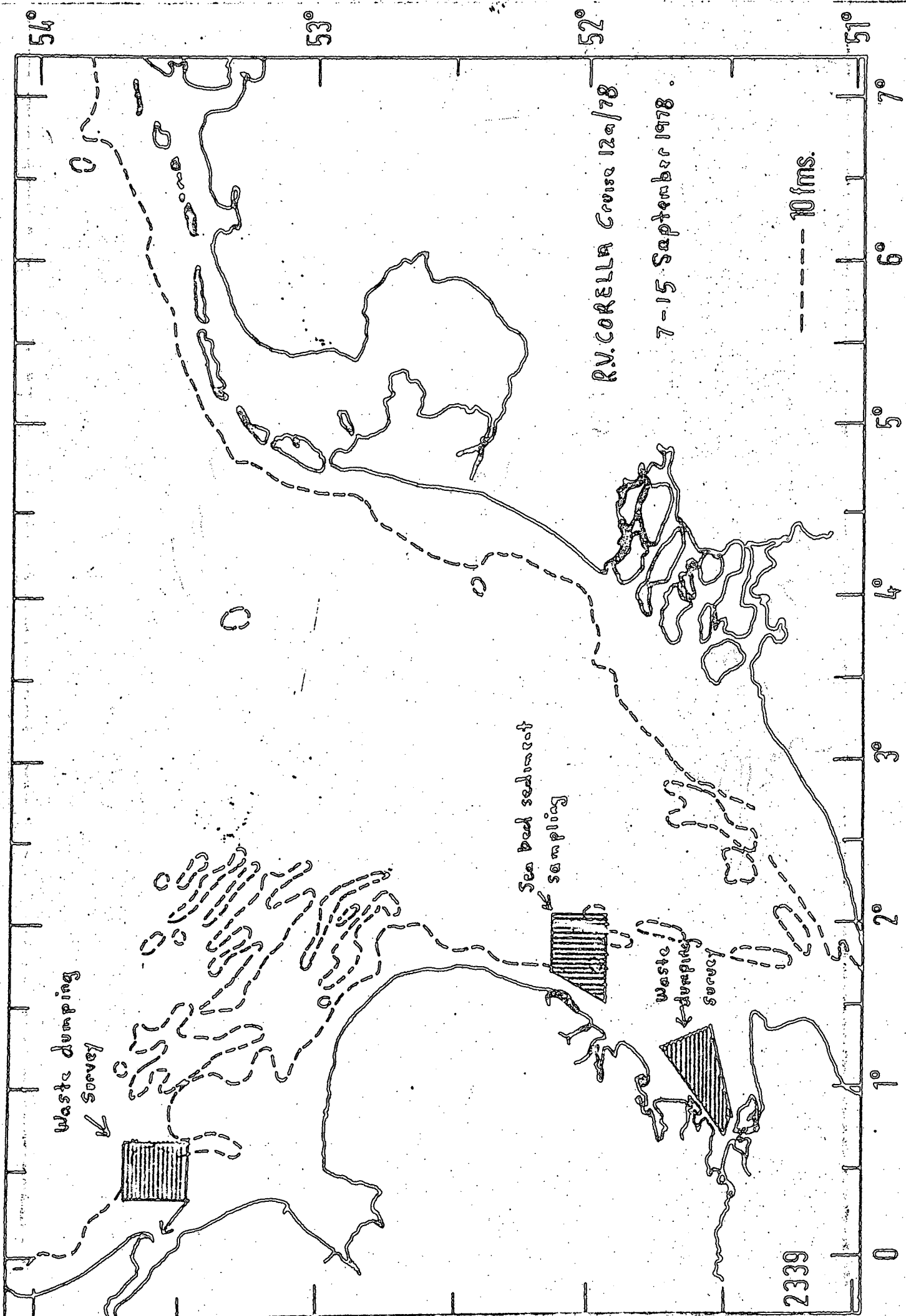
P G W Jones
25 September 1978

SEEN IN DRAFT: G Sinclair - First Officer
R C Newrick - Fishing Skipper

INITIALLED: AJL

DISTRIBUTION:

Basic List
P G W Jones
C W Baker
T C Doddington
A K Young



R.V. CORELLA Cruise 12/78
7-15 September 1978

----- 10 fms.

Waste dumping
survey

Sea bed sediment
sampling

Waste
dumping
survey

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