CRUISE SUMMARY

RVB Reference P13/3/78

Ship RRS JOHN MURRAY

Cruise No: 3/78

Master Captain P.H.WARNE

Dates 4 - 13 April 1978
(Grimsby - Newcastle)

Principal Scientist R.A.NICHOLSON

Institute or University Institute of Geological Sciences

Other Institutes or Universities -

RVB Scientific-technical staff -

Area Northern North Sea and Shetlands between 2° East and 2° West

Objectives Continuation of geochemical sampling programme of superficial bottom sediment for heavy metal analysis.

Equipment planned Coring by Reineck Box-Corer using Sykes winch. Core dredging and Shipek grabbing from hydrographic winch. Extra freezer capacity.

Account 48 out of 62 of the stations completed before ship was forced by bad weather to work in more sheltered sites in the lee of the Shetlands where the back-up programme was carried out successfully. The handling of the box-corer using the Sykes winch proved unsatisfactory. Cruise ended a day earlier as no further useful work seemed practicable in the weather prevailing.

Defects 11 hour delay in sailing through late arrival of bunkers. Port engine cooling water pipe. Tainted fresh water. MS47 side scan sonar sensor cable severed. Standby power system to digital clock.

Remarks Principal Scientist was concerned by an apparent disparity in the watches on deck supporting the scientific party which was unusually small, only 4 people. Such matters should be raised by him with the Master at the time (RVB letter P13/3/78 of 4th May 1978 refers). The need to run the Paxman to operate a light loaded winch was criticised.

Date 24th May 1978

Director

Distribution Base: OIC. AO, MS, FS, SIC, SEMFC, SCG, CP, CFO

Ship: Master JOHN MURRAY

Principal Scientist: R.A.Nicholson,Esq., Institute of Geological Sciences, Geochemical Division, 64-78 Grays Inn Road, LONDON.

Report on RRS "John Murray" cruise 3/78

3 April - 13 April 1978

In response to a request from IGS Continental Shelf Unit North (CSUN) our sampling programme this year was moved sixty miles to the North of that planned. In addition, the offer of loan of a Reineck box-corer from the MAFF laboratories at Lowestoft was taken up and this cruise was used to evaluate the operation of this device.

All equipment was loaded on Friday 31 March at Grimsby, and scientific personnel embarked on Sunday 2 April. Sailing was delayed until 0200 on 4 April due to late arrival and loading of bunkers. At 1700 on 4 April an engine cooling pipe ruptured necessitating a shutdown of the main engines with consequent loss of electrical power. This was only temporary until the auxillary generation set could be started. About two hours were lost while repairs were effected. At 1645 on 5 April at 58°41.6'N./01°15.8W. a trial site was worked to test the equipment under operational conditions prior to starting the sample grid. The Sykes winch proved to be jerky in operation and this was attributed to the new brake blocks. Hopes were high that this problem would solve itself with use. The first sample station was reached at 2300, where it became apparent that continued use of the Sykes winch would at best lose us the box-corer, and at worst cause a serious accident to one or more of the team handling the deployment. A change to the ship's main winch was made and few further problems were encountered, although the time taken at each station was necessarily longer owing to the winch having to be driven out rather than free fall. The box-corer was found to be useless in any area where the ground was hard, bending the thin stainless steel boxes with regularity, also handling became a problem as the weather deteriorated. All box coring stopped at 0700 on 8 April. The MS 47 sidescan sonar, provided by CSUN, broke down during the night of 6/7 April and this was found to be due to a severed lead at the transducer shoe. A

replacement shoe was fitted, and although records improved, an obvious malfunction within the transceiver was apparent. All open sea sampling ceased at 0945 on 10 April because of galeforce winds and poor visibility in the heavy snow showers. A course was set for Sumburgh Head and a course change made later in the day to take us into the lee of Fetlar. A grid of five by six miles was laid out and a side-scan survey run at 4 knots to delineate any likely areas of glacial till. Six sites were chosen and six replicate samples collected at each site with the Shipek grab to check the reproducibility of the sampling. The box-corer was used at one site and returned the longest core of the trip at 24cm. Sampling was completed at 1800 on 11 April and as the weather was still bad, John Murray steered for Newcastle where she docked at 1000 on 13 April. A total of 85 samples were collected.

R.A. Nicholson

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Sen. Scientist.