BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

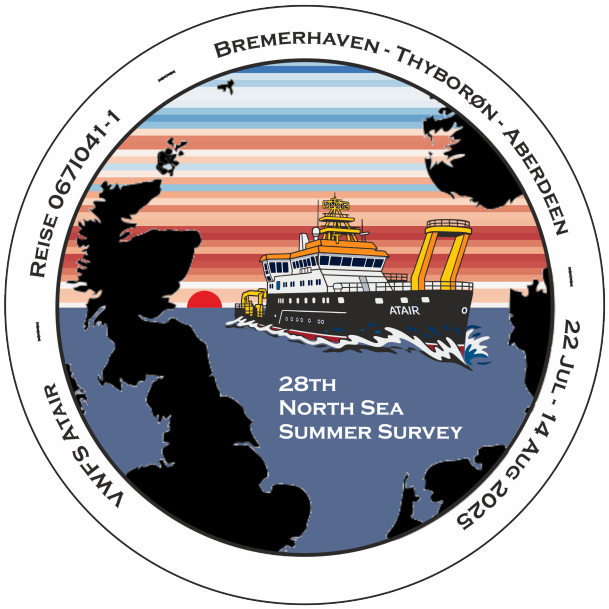
# Short Cruise Report
# RV ATAIR, Cruise 067l041-1
# North Sea Summer Survey 2025

## Bremerhaven/Germany – Thyborøn/Denmark – Aberdeen/UK

## 22 Jul – 14 Aug 2025

Chief Scientist: Dr. Dagmar Kieke

Captain: Ulrich Klüber




Hamburg, February 2026

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## Contents

# 1. Purpose of the Cruise & Research Objectives

Cruise *067I041-1* with *RV ATAIR* served to carry out the annual large-scale *North Sea Summer Survey* (NSSS) on behalf of the Federal Maritime and Hydrographic Agency of Germany (BSH). Surveys similar to cruise *067I041-1* have been conducted by the BSH every year since 1998. These surveys generally follow a predefined net of standard stations forming zonal sections across the North Sea at different latitudes between 54°N and 60°N. Additional stations located to the south of 54°N form a loop-like station pattern extending to about 52°N near the southern entrance to the North Sea. In addition, two survey lines located to the west and east of the Orkney and Shetland Islands cover the inflow of Atlantic Water into the North Sea. The cruise is typically interrupted at halftime in order to allow for a crew and team change. The *North Sea Summer Survey* of 2025, cruise *067I041-1*, started in Bremerhaven, Germany, on 22 July 2025, led to Thyborøn, Denmark, with a port stay in the period 03 to 06 August, and ended in Aberdeen, UK, on 14 August 2025 (see Fig. 1).

The annual *North Sea Summer Survey* is usually carried out at or near the time when maximum stratification and phytoplankton productivity are expected to have passed their peak. The primary objective of cruise *067I041-1* is to assess the physical and chemical state of the North Sea in the summer of 2025, using data collected during the cruise. Large-scale data will be used to investigate the hydrographic state of the water column in different regions of the North Sea. Furthermore, temporal hydrographic changes will be addressed, which will become apparent when the data are put into context with data from previous cruises. Sampling water for radionuclide analysis is part of the BSH's standard monitoring of radioactive contamination in the North Sea. This is based on several legal and regulatory provisions, as well as the corresponding requirements for fulfilling them. The sampling will assess spatial changes in the concentrations of these radionuclides, as well as changes over time compared to previous cruises.

For the purpose of the cruise the BSH team has been joined by members from the *Helmholtz Centre Hereon* in Geesthacht, Germany. The *Hereon* group addresses three topical foci during cruise *067I041-1*: carbonate system dynamics, trace metal dynamics and microplastic distributions in the North Sea basin.

Another cruise participant affiliated with both, the *Max-Planck-Institute for Chemistry* (MPIC), Mainz, Germany, and the *Research Centre for Toxic Compounds in the Environment* (RECETOX), Brno, Czech Republic, joined the cruise after a crew change in Thyborøn in order to analyse pesticides in air and water in the central to northern North Sea en route from Thyborøn/DK to Aberdeen/UK.

Specific objectives related to cruise *067I041-1* addressing the state of the North Sea in the summer of 2025 are the following:

- How far south does the Atlantic Water (AW) that enters the North Sea at its northern boundary spread in the summer of 2025?
- Where is the main inflow of AW into the North Sea in summer 2025?
- How far north does the AW entering the southern North Sea via the English Channel penetrate northwards in summer 2025?

- What are the outflow conditions from the Baltic Sea in summer of 2025?
- What is the lateral distribution and concentration level of selected radionuclides in summer 2025?
- What is the internannual variability of dissolved inorganic carbon and alkalinity?
- What are the drivers for this variability?
- What is the distribution of mircoplastics and changes thereof in the highly dynamic North Sea?
- What are sources and distribution of technologically critical and other trace metals in the North Sea?
- What is the concentration of pesticides in air and water in the northern half of the North Sea in summer 2025?

Overarching objectives addressing temporal changes on different time scales are:

- How do changes in the Northeast Atlantic happening on time scales ranging from seasonal to decadal affect the North Sea?
- Which processes are associated with the variability of the North Atlantic Oscillation (NAO) and to what extent?

# 2. Scientific Tools & Methods

The scientific tools used during the cruise included profiling of the entire water column using a Conductivity-Temperature-Depth (CTD) unit of type SBE9/11 equipped with two sets of T/C sensors that was attached to a carousel water sampler system of type SBE32. Additional sensors on the CTD-unit included a SBE43 sensor to measure dissolved oxygen, a transmission sensor to measure turbidity and fluorescence, and an altimeter of type Valeport to determine the distance of the underwater unit from the sea bottom in order to avoid contact. The carousel water sampler was fitted with a varying number of 10 L Niskin bottles and occasionally a 10 L GoFlo bottle. The latter did not properly work during the cruise until arrival in Thyborøn/DK. Water samples were taken from the near-bottom and the near-surface (5 and 10 dbar) and sampling levels in-between depending on the water depth.

Water sampling served to determine concentrations of salinity, density, chlorophyll-A, plankton, dissolved inorganic carbon (DIC), alkalinity, nutrients, and various trace metals (see station list in Table 5). Chlorophyll-A and plankton sampling was limited to stations visited during daylight as the sample processing required knowledge of the Secchi depth, which was estimated from lowering a Secchi disc. Water sampling with respective to estimating the concentrations of the radionuclides cesium-137 ($^{137}$Cs), strontium-90 ($^{90}$Sr) and tritium ($^{3}$H) was limited to the surface waters of a predefined number of stations between Bremerhaven and Thyborøn (southern to central North Sea). Sampling for radionuclides based on water samples was not continued afterwards.

On the second leg of the cruise, between Thyborøn/DK and Aberdeen/UK, pesticide sampling was carried out using an air sampler and a water sampler system. The latter system was used on typically two to three stations per section across the North Sea, the air sampler along a number of transects (see Table. 4).

Salinity samples were analysed already during the cruise using a salinometer in order to check sensor performance. Also, samples for DIC and alkalinity were also analysed during the cruise using a VINDTA system. Water samples for other parameters were prepared for storage and conserved for laboratory analysis at home through e.g. freezing.

In total, 114 stations were conducted using the CTD/water sampler system (Figure 1 and Table 5). Three of them were visited twice, before and after the port stay in Thyborøn/DK.

A vessel-mounted Acoustic Doppler Current Profiler (vmADCP) system operating at 150 kHz in narrow-band mode provided upper water column velocity data during the cruise. Further on-board measurements focused on standard meteorological data, water depth on the station locations and along the cruise track, near-surface values for water temperature, salinity, fluorescence/chlorophyll and turbidity, and finally automatic standard on-board sampling for air chemistry and radionuclides. Filtration of surface waters on transects between stations was carried out in order to estimate the polymer type, size and number concentration of microplastics in the surface layers (see Table 3).

Four surface drifters were deployed on behalf of the University of Oldenburg, Institute for Chemistry and Biology of the Marine Environment (ICBM), in order to reveal regional details of the surface circulation (Table 2).

Oceanographic data analysis will be carried out together with national and international collaborators as part of BSH's contribution to the international *Working Group on Oceanic Hydrography*

(WGOH) of the *International Council for the Exploration of the Seas* (ICES). Data from this cruise will be used for the respective *ICES Report on Ocean Climate* (IROC) and reporting under the *Marine Strategy Framework Directive* (MFSD) and the *OSPAR* protocol. The data will also be available for validataition of numerical operational ocean and climate models, to calibrate satellite-based ocean colour data, hyperspectral satellite data and downstream products (e.g. Secchi depth, turbidity, fluorescence, chlorophyll-a, plankton). Plankton sampling at selected stations contributes to the EnSAD project, which is part of the *Environmental Mapping and Analysis Program* (EnMAP, https://www.enmap.org). Pesticide data in air and water will be analysed as part of a joined collaboration between BSH and MPIC/RECETOX. Sampling and data of the *Hereon* group will contribute among others to the *MOSES* initiative and the *RETAKE II* project.

# 3. Narrative of Cruise *067I041-1*

*RV ATAIR* departed from its berth at Labradorkai in Bremerhaven, Germany, on 22 July 2025, at 06:30 UTC, passing Bremerhaven Sleuth in order to start its cruise *067I041-1*, the *North Sea Summer Survey* (NSSS) of 2025. The scientific mission of cruise *067I041-1* began that afternoon with a test station at the mouth of the Old Weser River. Continuous acquisition of vessel-mounted ADCP data commenced upon reaching station #002/GN003/ELBE1. The course was set westwards, initially following the 54°N latitude line. On 23 July, the vessel entered the Dutch EEZ and subsequently worked at nine hydrographic stations (#005/GN007A to #013/GN013N). At station #008/GN009, the vessel turned south to reach the southernmost station of the cruise, which was located near the southern entrance to the North Sea (station #013/GN013N, reached on 24 July).

Water intrusion into the main body of the thermosalinograph (TSG) at the start of the cruise had damaged the electronic connectors. The system was out of action until 12:18 UTC on 24 July, when it was repaired and data recording could resume.

On 24 July, the vessel entered UK waters for the first time and worked on stations #014/GN014 to #018/GN009S, traveling north to return to 54°N to complete the measurements at this latitude. The first of four surface drifters, EDDY 2057, was deployed at the end of station #018/GN009S on 25 July. The western end of the 54°N section was reached at station #020/GN017A on 26 July.

On the same day (26 July), measurements began at station #022/GN018A, located at the western end of the 55°N section. The course was then set towards the eastern end of the section. The second surface drifter, EDDY 2068, was deployed on station #024/GN018S on 26 July. Due to the presence of a large wind farm located on Dogger Bank, it was necessary to take a northward detour in order to reach the new station location #025/GN019N, which was visited for the first time in the summer of 2024. Shortly after completing station #026/GN019S on 27 July, the vessel left UK waters and entered Dutch waters again. On 28 July, the vessel reached the eastern end of the 55°N section (station #033/GN025) off the island of Sylt. The cruise was interrupted for a time of about three hours in order to pick up some scientific spare parts in List Harbour on the island of Sylt. The cruise then resumed, and the vessel headed north to continue measurements along the 56°N line in a westerly direction, encountering increasing wind speeds and a rising sea state (Fig. 2). On 28 July, the easternmost station of the 56°N section, #036/GN026, was sampled in Danish waters. The third surface drifter, EDDY 2060, was deployed on station #038/GN027 on 29 July. On 30 July, the westernmost station of the 56°N section, #046/GN033A, was sampled in British waters.

On 31 July, the predicted weather conditions for the following days led to the decision to temporarily skip the 57°N section, with the intention of resuming it at a later point in time. Thus, the vessel headed north and continued station work at 58°N in an easterly direction, starting with station #049/GN045D. On the way towards Norway, weather conditions deteriorated with wind speeds increasing to 7-8 Bf. The eastern end of the section was reached on 02 August at station #062/GN040, which was also the deepest station of the entire cruise (524 m). From 02 to 03 August, *RV ATAIR* followed 8°E south, crossing the Norwegian Trench (stations #063/GN040B to #065/GN039) and heading towards the port of Thyborøn in Denmark.

On 03 August at 08:50 UTC, *RV ATAIR* was towed to Nordre Mole in Thyborøn, Denmark, to complete leg 1 of cruise *067I041-1*. The port stay between 03 and 06 August was used for the exchange of crew members and scientific participants. The vessel was originally scheduled to depart from Thyborøn on 05 August. The departure was delayed due to the storm system *Floris* hitting the western coast of Denmark. High winds and rough seas did not allow for a punctual departure. The scientific mission was resumed on 06 August, 09:50 UTC, when the vessel left Thyborøn in order to start leg 2 of cruise *067I041-1*. The sampling program of the radioactivity group was finished with the arrival in Thyborøn. Sampling of pesticides started on leg 2 after leaving Thyborøn.

The 57°N section began at its eastern end with a repeat visit to station GN039 (#065/GN039) on 06 August. Heading west, the vessel crossed Danish and UK waters and reached the western end of the section at station #080/GN034A on 08 August, which was also visited for a second time during the cruise. Also, station GN045D at the latitude of 58°N was visited for another time (#081/GN045D, 08 August). All repeated visits served to investigate the hydrographic conditions before and after the storm system had passed through the region of investigation. Back at 58°N, the western end of the section towards Moray Firth that was not addressed during the first visit at 58°N was sampled.

On 09 August, *RV ATAIR* continued station work along the eastern side of the Orkney Islands to start sampling at the western end of the 59°N section the same day (#086/GN046A). The fourth and last surface drifter, EDDY 2064, had been deployed on the previous station (#085/GN046B). The eastern end of the section off Stavanger, Norway, was reached on 10 August. Since leaving the Orkney side of the section, wind and sea state had become much more favourable (see Fig. 2).

Having finished station work at #097/GN051 on 11 August, course was set again towards the west, following the latitude of 60°N. The southern tip of the Shetland Islands was reached on 12 August (#106/GN053A). Between 12 and 13 August, *RV ATAIR* passed through the Fair Isle Strait, circumnavigating the Orkney Islands from the west. The station work was completed at the final station of the cruise, #114/GN057A, on the western side of the entrance to the Pentland Firth in fine, sunny conditions. After midnight, the vessel passed eastward through the Pentland Firth and began approaching the designated port of arrival, Aberdeen, UK.

The continuous acquisition of underway data stopped shortly at 09:15 UTC on 14 August 2025, when the vessel reached the 3 nm-limit of UK waters off Aberdeen. This marked the end of the scientific mission of cruise *067I041-1* with *RV ATAIR*. The vessel arrived at the Aberdeen pilot station on 14 August at 15:00 UTC, and the pilot was brought on board. Shortly before 16:00 UTC, the vessel was finally towed to Blaikie’s Quai in Aberdeen, UK, marking the end of cruise *067I041-1*.

The port stay in Aberdeen was used for the disembarkation of the scientific participants and crew members of cruise *067I041-1*, as well as for the respective embarkation of the members of the subsequent cruise *067I041-2* (chief scientist Dr. Berit Brockmeyer, BSH). The time was also used to remove or install the necessary laboratory equipment and instruments.

# 4. Acknowledgments

We would like to thank Ulrich Klüber, the master of *RV ATAIR*, and his entire crew for their assistance and great support during cruise *067I041-1*. We greatly appreciated the very friendly atmosphere, the hospitality on board, and the very professional and constructive cooperation between the scientific teams and the ship's crew. We would also like to thank our colleagues at our home laboratories for their help in preparing for the cruise. We are particularly grateful for the support of the "Einsatzstelle Schiffe" of the BSH and the international authorities for allowing us to conduct this survey in the various national waters. The remote sensing group of BSH kindly provided daily and weekly maps of sea surface temperatures and chlorophyll concentrations based on satellite observations.

# 5. Selected Figures & Tables

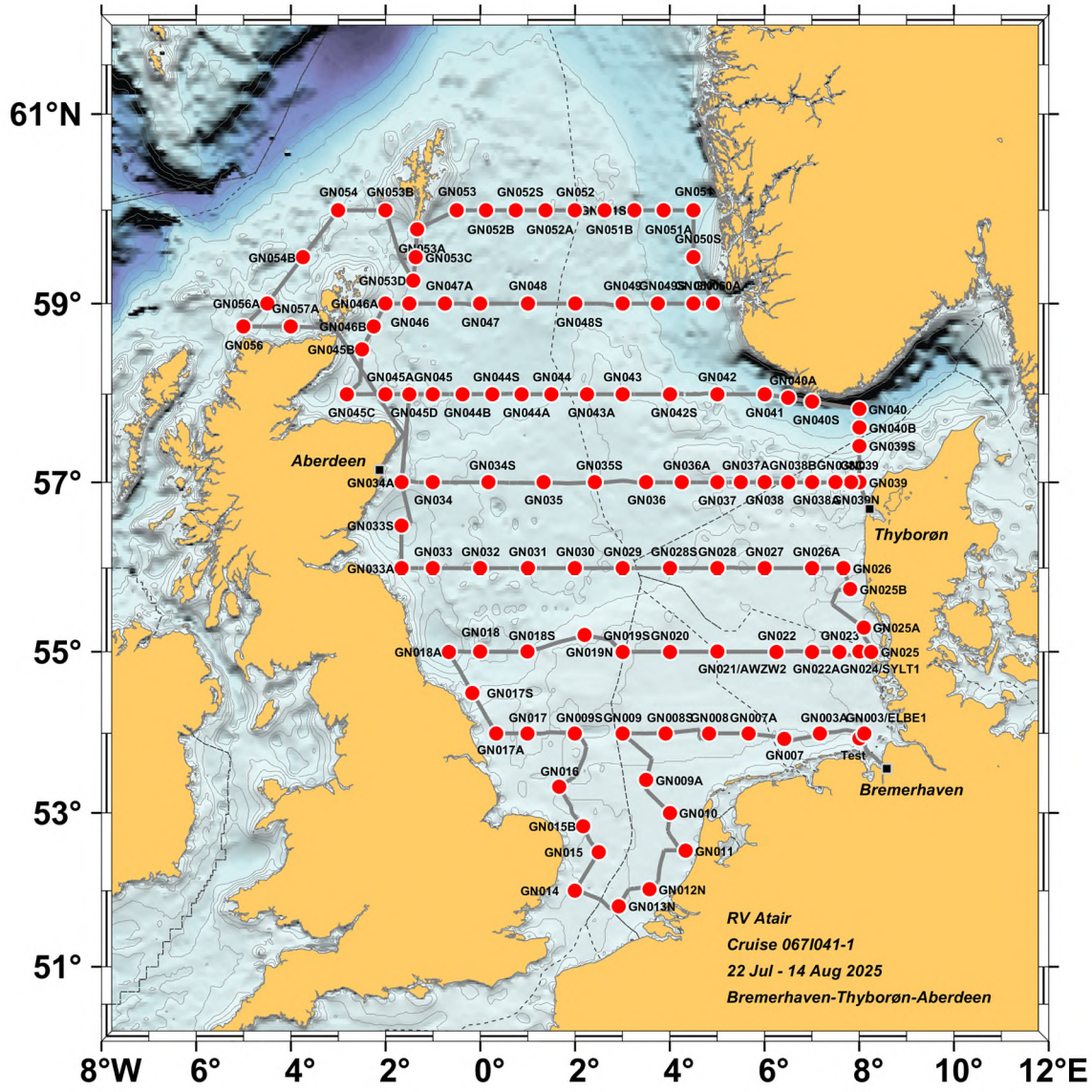


***Figure 1.*** *Track of cruise 067I041-1 with RV ATAIR and locations of corresponding hydrographic stations. Text labels denote station names. Thin dashed lines highlight limits of the various Exclusive Economic Zones (EEZ) according to the Maritime Boundaries Geodatabase version 11.0 of Flanders Marine (2019).*

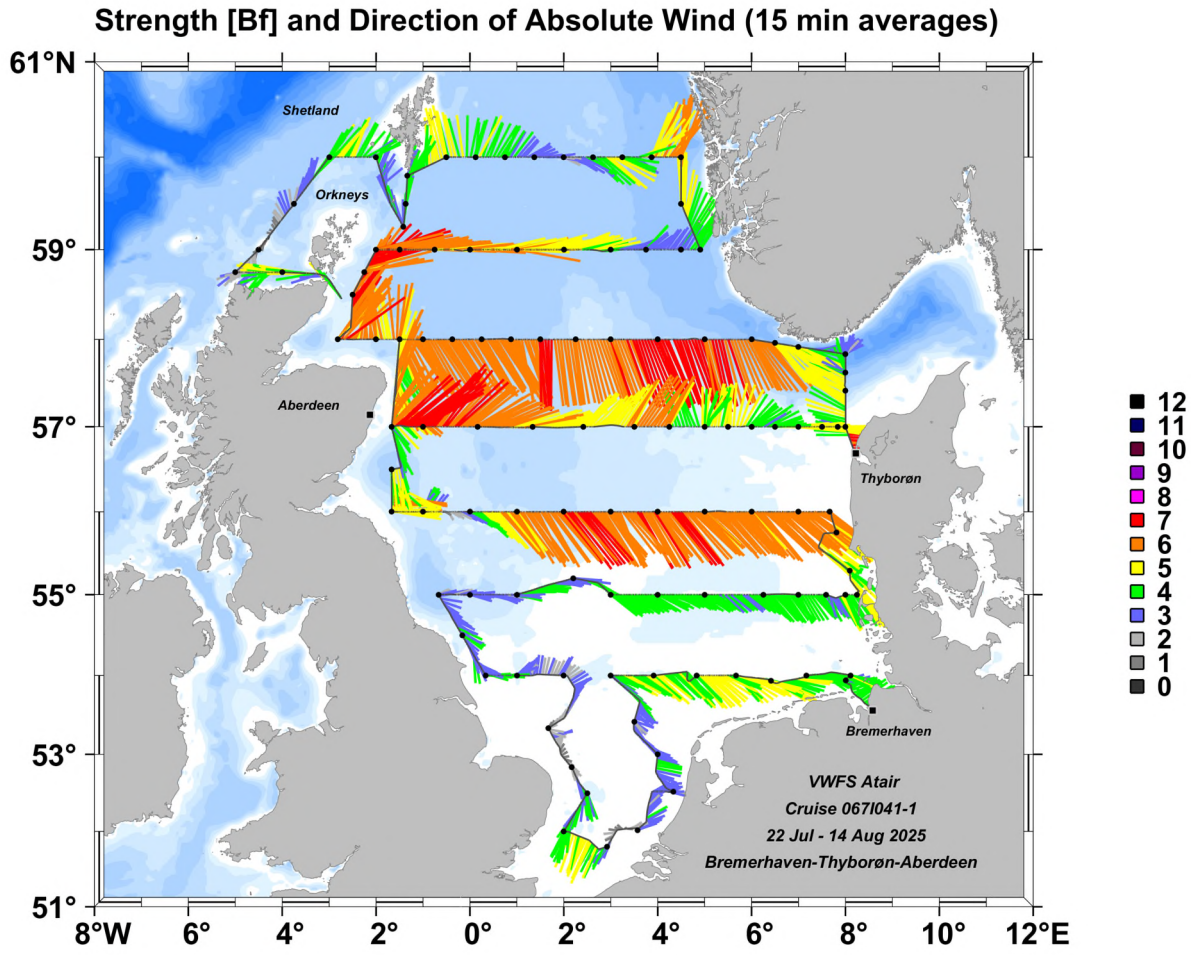


***Figure 2.*** *Spatial distribution of the absolute wind strength and direction during cruise 067I041-1. Wind information is reported on the Beaufort scale (see colour bar) and averaged over 15 min intervals.*

| | Name | Institute | Field of Activity/Responsibility |
|---|---|---|---|
| 1. | Kieke, Dagmar, Dr. * | BSH | chief scientist, Secchi disc, surface drifters |
| 2. | Burmester, Thomas ** | BSH | sampling of radionuclides |
| 3. | Hempel, Niklas *** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity) and filtration (microplastics) |
| 4. | Joswig, Sören ** | BSH | CTD watch, CTD technics, water sampling (salinity, density, Chl-A, plankton) |
| 5. | Köllner, Manuela * | BSH | CTD watch, CTD/vmADCP data processing, water sampling (salinity, density, Chl-A, plankton) |
| 6. | Kretzschmann, Lisett *** | MPIC/ RECETOX | air and water sampling of pesticides |
| 7. | Petrauskas, Catharina ** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity) and filtration (microplastics) |
| 8. | Petzold, Bianca *** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity) and filtration (microplastics) |
| 9. | Römer, Nadine * | BSH | CTD watch, salinometry, water sampling (salinity, density, Chl-A, plankton) |
| 10. | Schacht, Martin *** | BSH | CTD watch, water sampling (salinity, density, Chl-A, plankton) |
| 11. | Thomas, Helmuth, Prof. Dr. ** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity, lead) and filtration (microplastics) |
| 12. | Svensson, Tobias *** | BSH | CTD winch operation and deck hand |
| 13. | Weidig, Christopher ** | BSH | sampling of radionuclides |
| 14. | Weidner, Carl ** | BSH | CTD winch operation and deck hand |
| 15. | Zimmermann, Tristan, Dr.*** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity) and filtration (microplastics) |
| 16. | Zonderman, Alexa ** | Hereon | water sampling (trace metals, nutrients, DIC, alkalinity) and filtration (microplastics) |

* Bremerhaven – Aberdeen ** Bremerhaven – Thyborøn *** Thyborøn – Aberdeen

*BSH* *Federal Maritime and Hydrographic Agency, Hamburg, Germany*
*Hereon* *Helmholtz-Centre Hereon, Geesthacht, Germany*
*MPIC* *Max-Planck Institute for Chemistry, Mainz, Germany*
*RECETOX* *Research Centre for Toxic Compounds in the Environment, Brno, Czech Republic*

***Table 1.*** *Scientific participants of cruise 067I041-1.*

| # | Drifter ID | Tracker ID | Date | Time [UTC] | Latitude | Longitude | Station |
|---|---|---|---|---|---|---|---|
| 1. | EDDY 2057 | 069 | 25 Jul 2025 | 19:25 | 54°00.03‘N | 002°00.00‘E | 018/GN009S |
| 2. | EDDY 2068 | 059 | 26 Jul 2025 | 21:02 | 56°00.01'N | 000°59.86'E | 024/GN018S |
| 3. | EDDY 2060 | 015 | 29 Jul 2025 | 08:34 | 56°00.03'N | 005°59.93‘E | 038/GN027 |
| 4. | EDDY 2064 | 066 | 09 Aug 2025 | 14:10 | 58°45.00'N | 002°15.07‘W | 085/GN046B |

***Table 2.*** *Deployment of surface drifters during cruise 067I041-1.*

| | Start of Transect | | End of Transect | |
|---|---|---|---|---|
| Sample# | Station | Date/Time [UTC] | Station | Date/Time [UTC] |
| 1 | 005/GN007A | 23 Jul 2025, 02:21 | 006/GN008 | 23 Jul 2025, 05:54 |
| 2 | 010/GN010 | 24 Jul 2025. 03:36 | | 24 Jul 2025. 05:51 |
| 3 | 012/GN012N | 24 Jul 2025, 14:28 | | 24 Jul 2025, 17:38 |
| 4 | 016/GN015B | 25 Jul 2025, 08:01 | | 25 Jul 2025, 11:27 |
| 5 | 020/GN017A | 26 Jul 2025, 03:32 | | 26 Jul 2025, 06:29 |
| 6 | 027/GN020 | 27 Jul 2025, 12:13 | | 27 Jul 2025, 14:52 |
| 7 | 060/GN040A | 02 Aug 2025, 13:13 | 061/GN040S | 02 Aug 2025, 15:31 |
| 8 | 075/GN036 | 07 Aug 2025, 15:35 | 077/GN035S | 07 Aug 2025, 20:00 |
| 9 | 083/GN045C | 09 Aug 2025, 03:30 | | 09 Aug 2025, 08:00 |
| 10 | 090/GN048 | 10 Aug 2025 07:00 | | 10 Aug 2025 10:15 |
| 11 | 097/GN051 | 11.08.2025, 07:15 | | 11.08.2025, 10:15 |
| 12 | 101/GN052 | 12.08.2025, 05:45 | | 12.08.2025, 08:30 |
| 13 | 109/GN053B | 12.08.2025, 19:30 | | 12.08.2025, 21:00 |

***Table 3.*** *Overview of transects between stations used for water filtration for microplastics, cruise 067I041-1.*

| | Start of Transect | | End of Transect | |
|---|---|---|---|---|
| Sample # | Date/Time [UTC] | GPS Coordinates | Date/Time [UTC] | GPS Coordinates |
| 1 | sampling failed | --- | sampling failed | --- |
| 2 | 07 Aug 2025<br>16:21:42 | 57°00.001'N<br>003°25.965'E | 08 Aug 2025<br>13:28:02 | 57°00.337'N<br>001°23.652'W |
| 3 | 08 Aug 2025<br>14:16:41 | 57°00.501'N<br>001°35.321'W | 09 Aug 2025<br>10:26:46 | 58°30.072'N<br>002°29.916'W |
| 4 | 11 Aug 2025<br>07:48:20 | 60°00.000'N<br>004°30.014'E | 12 Aug 2025<br>06:01:35 | 59°59.997'N<br>000°30.028'W |
| 5 | 12 Aug 2025<br>06:32:39 | 59°58.952'N<br>000°34.382'W | 13 Aug 2025<br>05:35:39 | 59°29.974'N<br>003°44.979'W |
| 6 | 13 Aug 2025<br>07:48:20 | 59°17.267'N<br>004°04.184'W | 14 Aug 2025<br>05:13:22 | 57°52.302'N<br>002°01.394'W |

***Table 4.*** *Overview of transects between stations used for air-sampling of pesticides, cruise 067I041-1.*

***Table 5.*** *List of hydrographic stations carried out during cruise 067I041-1.*

| Station Number | Station Name | Date, Station Begin | Time [UTC] Station Begin | Latitude, Station Begin | Longitude Station Begin | Water Depth [m], Station Begin | Date, Station End | Time [UTC] Station End | Latitude, Station End | Longitude Station End | Water Depth [m], Station End | CTD | Water samples (Niskin, GoFlo) | Secchi Depth | Bottle Salinity | Bottle Density | Bottle Chlorophyll | Bottle Plankton | Bottle DIC/Alkalinity | Bottle Nutrients | Bottle Trace Metals | Surface Sample, Cesium-137 | Surface Sample, Strontium-90 | Surface Sample, Tritium | Surface Sample, Pesticides | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 001 | Test Station | 22-Jul-2025 | 11:30 | 53° 56.147' N | 008° 00.428' E | 13 | 22-Jul-2025 | 11:57 | 53° 56.148' N | 008° 00.432' E | 13 | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A001X501 |
| 002 | GN003/ELBE1 | 22-Jul-2025 | 13:01 | 54° 00.027' N | 008° 06.470' E | 24 | 22-Jul-2025 | 13:26 | 54° 00.024' N | 008° 06.470' E | 24 | x | x | x | x | x | x | x | x | x | x | x | x | x | --- | CTD A002X501 |
| 003 | GN003A | 22-Jul-2025 | 17:45 | 54° 00.005' N | 007° 09.979' E | 30 | 22-Jul-2025 | 18:13 | 54° 00.002' N | 007° 09.979' E | 30 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A003X501 |
| 004 | GN007 | 22-Jul-2025 | 22:06 | 53° 55.998' N | 006° 24.999' E | 26 | 22-Jul-2025 | 22:28 | 53° 55.999' N | 006° 24.998' E | 26 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A004X501 |
| 005 | GN007A | 23-Jul-2025 | 01:50 | 54° 00.005' N | 005° 39.965' E | 37 | 23-Jul-2025 | 02:13 | 54° 00.009' N | 005° 39.971' E | 37 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A005X501 |
| 006 | GN008 | 23-Jul-2025 | 05:58 | 53° 59.976' N | 004° 50.000' E | 43 | 23-Jul-2025 | 06:28 | 53° 59.981' N | 004° 49.995' E | 43 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A006X501 |
| 007 | GN008S | 23-Jul-2025 | 11:31 | 53° 59.975' N | 003° 54.984' E | 45 | 23-Jul-2025 | 12:00 | 53° 59.976' N | 003° 54.987' E | 45 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A007X501 |
| 008 | GN009 | 23-Jul-2025 | 16:09 | 53° 59.970' N | 002° 59.992' E | 43 | 23-Jul-2025 | 16:34 | 53° 59.974' N | 002° 59.991' E | 42 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A008X501 |
| 009 | GN009A | 23-Jul-2025 | 22:24 | 53° 24.975' N | 003° 29.985' E | 28 | 23-Jul-2025 | 22:45 | 53° 24.984' N | 003° 29.997' E | 28 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A009X501 |
| 010 | GN010 | 24-Jul-2025 | 02:55 | 52° 59.981' N | 003° 59.990' E | 30 | 24-Jul-2025 | 03:13 | 52° 59.983' N | 003° 59.988' E | 30 | x | x | --- | x | x | --- | --- | x | x | x | x | --- | --- | --- | CTD A010X501 |
| 011 | GN011 | 24-Jul-2025 | 07:40 | 52° 30.997' N | 004° 19.999' E | 19 | 24-Jul-2025 | 07:59 | 52° 31.006' N | 004° 19.998' E | 19 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A011X501 |
| 012 | GN012N | 24-Jul-2025 | 14:01 | 52° 01.022' N | 003° 34.017' E | 29 | 24-Jul-2025 | 14:23 | 52° 01.016' N | 003° 34.017' E | 29 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A012X501 |
| 013 | GN013N | 24-Jul-2025 | 18:29 | 51° 47.986' N | 002° 55.197' E | 29 | 24-Jul-2025 | 18:57 | 51° 47.987' N | 002° 55.200' E | 28 | x | x | x | x | x | x | x | x | x | x | x | x | x | --- | CTD A013X501 |
| 014 | GN014 | 24-Jul-2025 | 23:41 | 52° 00.042' N | 001° 59.976' E | 31 | 25-Jul-2025 | 00:04 | 52° 00.041' N | 001° 59.976' E | 31 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A014X501 |
| 015 | GN015 | 25-Jul-2025 | 03:54 | 52° 29.987' N | 002° 29.955' E | 48 | 25-Jul-2025 | 04:13 | 52° 29.988' N | 002° 29.983' E | 48 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A015X501 |
| 016 | GN015B | 25-Jul-2025 | 07:32 | 52° 49.998' N | 002° 10.002' E | 42 | 25-Jul-2025 | 07:52 | 52° 50.002' N | 002° 09.997' E | 42 | x | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | CTD A016X501 |
| 017 | GN016 | 25-Jul-2025 | 12:26 | 53° 20.006' N | 001° 40.001' E | 28 | 25-Jul-2025 | 12:47 | 53° 20.006' N | 001° 40.001' E | 28 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A017X501 |
| 018 | GN009S | 25-Jul-2025 | 18:52 | 54° 00.006' N | 001° 59.999' E | 75 | 25-Jul-2025 | 19:25 | 54° 00.029' N | 001° 59.955' E | 75 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A018X501, EDDY 2057 |
| 019 | GN017 | 25-Jul-2025 | 23:45 | 54° 00.020' N | 000° 59.971' E | 43 | 26-Jul-2025 | 00:09 | 54° 00.020' N | 000° 59.974' E | 43 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A019X501 |
| 020 | GN017A | 26-Jul-2025 | 02:56 | 54° 00.017' N | 000° 19.991' E | 54 | 26-Jul-2025 | 03:19 | 54° 00.008' N | 000° 19.986' E | 54 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A020X501 |
| 021 | GN017S | 26-Jul-2025 | 07:47 | 54° 29.989' N | 000° 09.969' W | 62 | 26-Jul-2025 | 08:22 | 54° 29.984' N | 000° 09.963' W | 61 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A021X501 |
| 022 | GN018A | 26-Jul-2025 | 12:07 | 54° 59.994' N | 000° 39.996' W | 66 | 26-Jul-2025 | 12:41 | 54° 59.995' N | 000° 40.000' W | 66 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A022X501 |
| 023 | GN018 | 26-Jul-2025 | 15:36 | 55° 00.014' N | 000° 00.005' E | 76 | 26-Jul-2025 | 16:07 | 55° 00.007' N | 000° 00.000' W | 76 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A023X501 |

| Station Number | Station Name | Date, Station Begin | Time [UTC] Station Begin | Latitude, Station Begin | Longitude Station Begin | Water Depth [m], Station Begin | Date, Station End | Time [UTC] Station End | Latitude, Station End | Longitude Station End | Water Depth [m], Station End | CTD | Water samples (Niskin, GoFlo) | Secchi Depth | Bottle Salinity | Bottle Density | Bottle Chlorophyll | Bottle Plankton | Bottle DIC/Alkalinity | Bottle Nutrients | Bottle Trace Metals | Surface Sample, Cesium-137 | Surface Sample, Strontium-90 | Surface Sample, Tritium | Surface Sample, Pesticides | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 024 | GN018S | 26-Jul-2025 | 20:18 | 55° 00.004' N | 000° 59.986' E | 63 | 26-Jul-2025 | 21:02 | 55° 00.007' N | 000° 59.831' E | 62 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A024X501, EDDY 2068 |
| 025 | GN019N | 27-Jul-2025 | 02:26 | 55° 12.027' N | 002° 12.045' E | 35 | 27-Jul-2025 | 02:49 | 55° 12.026' N | 002° 12.025' E | 35 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A025X501 |
| 026 | GN019S | 27-Jul-2025 | 06:36 | 54° 59.990' N | 003° 00.000' E | 25 | 27-Jul-2025 | 06:59 | 54° 59.988' N | 003° 00.003' E | 25 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A026X501 |
| 027 | GN020 | 27-Jul-2025 | 11:05 | 54° 59.979' N | 004° 00.001' E | 48 | 27-Jul-2025 | 11:35 | 54° 59.990' N | 003° 59.998' E | 48 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A027X501 |
| 028 | GN021/ AWZW2 | 27-Jul-2025 | 15:46 | 54° 59.996' N | 005° 00.081' E | 41 | 27-Jul-2025 | 16:16 | 54° 59.994' N | 005° 00.074' E | 41 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A028X501 |
| 029 | GN022 | 27-Jul-2025 | 21:23 | 54° 59.975' N | 006° 15.006' E | 45 | 27-Jul-2025 | 21:52 | 54° 59.982' N | 006° 15.004' E | 44 | x | x | --- | x | x | --- | --- | x | x | x | x | --- | --- | --- | CTD A029X501 |
| 030 | GN022A | 28-Jul-2025 | 00:57 | 54° 59.989' N | 006° 59.982' E | 32 | 28-Jul-2025 | 01:16 | 54° 59.993' N | 006° 59.984' E | 33 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A030X501 |
| 031 | GN023 | 28-Jul-2025 | 03:58 | 54° 59.972' N | 007° 35.019' E | 25 | 28-Jul-2025 | 04:18 | 54° 59.983' N | 007° 34.995' E | 26 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A031X501 |
| 032 | GN024/ SYLT1 | 28-Jul-2025 | 06:41 | 54° 59.994' N | 007° 59.985' E | 17 | 28-Jul-2025 | 07:00 | 54° 59.995' N | 007° 59.984' E | 16 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A032X501 |
| 033 | GN025 | 28-Jul-2025 | 08:20 | 54° 59.993' N | 008° 14.979' E | 13 | 28-Jul-2025 | 08:46 | 54° 59.993' N | 008° 14.971' E | 13 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A033X501 |
| 034 | GN025A | 28-Jul-2025 | 14:29 | 55° 17.529' N | 008° 05.499' E | 17 | 28-Jul-2025 | 14:50 | 55° 17.514' N | 008° 05.500' E | 17 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A034X501 |
| 035 | GN025B | 28-Jul-2025 | 20:45 | 55° 44.990' N | 007° 48.532' E | 19 | 28-Jul-2025 | 21:03 | 55° 44.996' N | 007° 48.535' E | 19 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A035X501 |
| 036 | GN026 | 28-Jul-2025 | 23:33 | 56° 00.002' N | 007° 40.006' E | 28 | 28-Jul-2025 | 23:53 | 56° 00.006' N | 007° 40.004' E | 28 | x | x | --- | x | x | --- | --- | x | x | x | x | x | x | --- | CTD A036X501 |
| 037 | GN026A | 29-Jul-2025 | 02:56 | 56° 00.008' N | 006° 59.996' E | 36 | 29-Jul-2025 | 03:21 | 56° 00.006' N | 006° 59.994' E | 36 | x | x | --- | x | --- | --- | --- | x | x | x | x | x | x | --- | CTD A037X501 |
| 038 | GN027 | 29-Jul-2025 | 07:40 | 55° 59.976' N | 006° 00.035' E | 48 | 29-Jul-2025 | 08:34 | 56° 00.034' N | 005° 59.917' E | 47 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A038X501, EDDY 2060 |
| 039 | GN028 | 29-Jul-2025 | 12:40 | 55° 59.990' N | 004° 59.977' E | 43 | 29-Jul-2025 | 13:31 | 55° 59.990' N | 004° 59.974' E | 43 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A039X501 |
| 040 | GN028S | 29-Jul-2025 | 17:40 | 56° 00.004' N | 003° 59.992' E | 58 | 29-Jul-2025 | 18:30 | 56° 00.009' N | 003° 59.993' E | 58 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A040X501 |
| 041 | GN029 | 29-Jul-2025 | 22:56 | 56° 00.000' N | 002° 59.997' E | 73 | 29-Jul-2025 | 23:45 | 56° 00.001' N | 003° 00.006' E | 73 | x | x | --- | x | x | --- | --- | x | x | x | x | x | x | --- | CTD A041X501 |
| 042 | GN030 | 30-Jul-2025 | 03:53 | 56° 00.001' N | 001° 59.967' E | 86 | 30-Jul-2025 | 04:39 | 56° 00.009' N | 001° 59.975' E | 86 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A042X501 |
| 043 | GN031 | 30-Jul-2025 | 08:45 | 55° 59.987' N | 001° 00.039' E | 77 | 30-Jul-2025 | 09:45 | 55° 59.990' N | 001° 00.032' E | 77 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A043X501 |
| 044 | GN032 | 30-Jul-2025 | 13:45 | 56° 00.013' N | 000° 00.041' W | 89 | 30-Jul-2025 | 14:45 | 56° 00.016' N | 000° 00.031' W | 89 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A044X501 |
| 045 | GN033 | 30-Jul-2025 | 18:56 | 56° 00.020' N | 000° 59.996' W | 65 | 30-Jul-2025 | 19:44 | 56° 00.018' N | 000° 59.999' W | 65 | x | x | x | x | --- | x | x | x | x | x | x | --- | --- | --- | CTD A045X501 |
| 046 | GN033A | 30-Jul-2025 | 22:40 | 56° 00.007' N | 001° 40.025' W | 65 | 30-Jul-2025 | 23:16 | 56° 00.008' N | 001° 40.024' W | 65 | x | x | --- | x | x | --- | --- | x | x | x | x | x | x | --- | CTD A046X501 |
| 047 | GN033S | 31-Jul-2025 | 03:00 | 56° 30.003' N | 001° 40.019' W | 51 | 31-Jul-2025 | 03:24 | 56° 30.004' N | 001° 40.018' W | 51 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A047X501 |
| 048 | GN034A | 31-Jul-2025 | 07:57 | 56° 59.990' N | 001° 39.996' W | 75 | 31-Jul-2025 | 08:49 | 56° 59.989' N | 001° 39.997' W | 74 | x | x | x | x | x | x | x | x | x | x | x | x | x | --- | CTD A048X501 |

| Station Number | Station Name | Date, Station Begin | Time [UTC] Station Begin | Latitude, Station Begin | Longitude Station Begin | Water Depth [m], Station Begin | Date, Station End | Time [UTC] Station End | Latitude, Station End | Longitude Station End | Water Depth [m], Station End | CTD | Water samples (Niskin, GoFlo) | Secchi Depth | Bottle Salinity | Bottle Density | Bottle Chlorophyll | Bottle Plankton | Bottle DIC/Alkalinity | Bottle Nutrients | Bottle Trace Metals | Surface Sample, Cesium-137 | Surface Sample, Strontium-90 | Surface Sample, Tritium | Surface Sample, Pesticides | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 049 | GN045D | 31-Jul-2025 | 16:10 | 58° 00.014' N | 001° 30.049' W | 72 | 31-Jul-2025 | 16:56 | 58° 00.015' N | 001° 30.052' W | 73 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A049X501 |
| 050 | GN045 | 31-Jul-2025 | 19:03 | 57° 59.986' N | 000° 59.987' W | 114 | 31-Jul-2025 | 19:55 | 57° 59.987' N | 000° 59.996' W | 113 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A050X501 |
| 051 | GN044B | 31-Jul-2025 | 22:38 | 58° 00.015' N | 000° 22.527' W | 122 | 31-Jul-2025 | 23:15 | 58° 00.006' N | 000° 22.532' W | 122 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A051X501 |
| 052 | GN044S | 01-Aug-2025 | 01:45 | 58° 00.012' N | 000° 15.041' E | 141 | 01-Aug-2025 | 02:18 | 58° 00.013' N | 000° 15.029' E | 140 | x | x | --- | x | --- | --- | --- | --- | --- | x | --- | --- | --- | --- | CTD A052X501 |
| 053 | GN044A | 01-Aug-2025 | 05:00 | 58° 00.005' N | 000° 52.497' E | 146 | 01-Aug-2025 | 06:05 | 58° 00.008' N | 000° 52.503' E | 147 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A053X501 |
| 054 | GN044 | 01-Aug-2025 | 08:49 | 57° 59.977' N | 001° 29.993' E | 105 | 01-Aug-2025 | 09:37 | 57° 59.981' N | 001° 29.992' E | 106 | x | x | x | x | --- | x | x | x | x | x | x | x | x | --- | CTD A054X501 |
| 055 | GN043A | 01-Aug-2025 | 12:38 | 57° 59.986' N | 002° 14.995' E | 77 | 01-Aug-2025 | 13:33 | 57° 59.990' N | 002° 14.999' E | 77 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A055X501 |
| 056 | GN043 | 01-Aug-2025 | 16:39 | 57° 59.970' N | 003° 00.046' E | 76 | 01-Aug-2025 | 17:27 | 57° 59.987' N | 003° 00.003' E | 77 | x | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | CTD A056X501 |
| 057 | GN042S | 01-Aug-2025 | 21:40 | 57° 59.984' N | 003° 59.994' E | 98 | 01-Aug-2025 | 22:22 | 57° 59.985' N | 003° 59.999' E | 98 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A057X501 |
| 058 | GN042 | 02-Aug-2025 | 02:33 | 58° 00.004' N | 004° 59.999' E | 126 | 02-Aug-2025 | 03:24 | 58° 00.003' N | 004° 59.986' E | 126 | x | x | --- | x | --- | --- | --- | x | x | x | x | --- | --- | --- | CTD A058X501 |
| 059 | GN041 | 02-Aug-2025 | 07:32 | 57° 59.985' N | 006° 00.006' E | 314 | 02-Aug-2025 | 09:08 | 57° 59.989' N | 006° 00.008' E | 314 | x | x | x | x | x | x | x | x | x | x | x | x | x | --- | CTD A059X501 |
| 060 | GN040A | 02-Aug-2025 | 11:45 | 57° 57.555' N | 006° 29.967' E | 353 | 02-Aug-2025 | 13:10 | 57° 57.556' N | 006° 29.966' E | 354 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A060X501 |
| 061 | GN040S | 02-Aug-2025 | 15:31 | 57° 54.983' N | 006° 59.952' E | 361 | 02-Aug-2025 | 16:26 | 57° 54.993' N | 006° 59.964' E | 361 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A061X501 |
| 062 | GN040 | 02-Aug-2025 | 20:34 | 57° 50.010' N | 007° 59.972' E | 524 | 02-Aug-2025 | 21:24 | 57° 50.008' N | 007° 59.973' E | 525 | x | x | --- | x | x | --- | --- | x | x | x | x | x | x | --- | CTD A062X501 |
| 063 | GN040B | 02-Aug-2025 | 23:18 | 57° 37.477' N | 008° 00.006' E | 267 | 02-Aug-2025 | 23:59 | 57° 37.478' N | 008° 00.000' E | 268 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A063X501 |
| 064 | GN039S | 03-Aug-2025 | 01:54 | 57° 24.994' N | 007° 59.995' E | 91 | 03-Aug-2025 | 02:20 | 57° 25.006' N | 007° 59.967' E | 91 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A064X501 |
| 065 | GN039 | 03-Aug-2025 | 05:39 | 57° 00.007' N | 007° 59.997' E | 34 | 03-Aug-2025 | 06:02 | 57° 00.008' N | 008° 00.000' E | 34 | x | x | x | x | x | x | x | x | x | x | x | x | x | --- | CTD A065X501 |
| 066 | GN039 | 06-Aug-2025 | 14:30 | 56° 59.993' N | 008° 00.000' E | 34 | 06-Aug-2025 | 15:13 | 56° 59.993' N | 008° 00.002' E | 34 | x | x | x | x | --- | x | x | --- | --- | --- | --- | --- | --- | --- | CTD A066X501, second visit |
| 067 | GN039N | 06-Aug-2025 | 16:05 | 57° 00.005' N | 007° 50.008' E | 42 | 06-Aug-2025 | 16:45 | 57° 00.004' N | 007° 49.998' E | 41 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A067X501 |
| 068 | GN038C | 06-Aug-2025 | 18:11 | 56° 59.998' N | 007° 30.002' E | 32 | 06-Aug-2025 | 18:48 | 56° 59.998' N | 007° 29.999' E | 32 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A068X501 |
| 069 | GN038A | 06-Aug-2025 | 20:55 | 56° 59.993' N | 007° 00.012' E | 34 | 06-Aug-2025 | 21:32 | 56° 59.994' N | 007° 00.015' E | 33 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A069X501 |
| 070 | GN038B | 06-Aug-2025 | 23:52 | 56° 59.997' N | 006° 29.968' E | 65 | 07-Aug-2025 | 00:18 | 56° 59.999' N | 006° 29.972' E | 65 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A070X501 |
| 071 | GN038 | 07-Aug-2025 | 02:27 | 57° 00.026' N | 006° 00.008' E | 53 | 07-Aug-2025 | 03:21 | 57° 00.026' N | 005° 59.999' E | 52 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | x | CTD A071X501 |
| 072 | GN037A | 07-Aug-2025 | 05:25 | 57° 00.012' N | 005° 29.958' E | 54 | 07-Aug-2025 | 06:03 | 57° 00.012' N | 005° 29.954' E | 55 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A072X501 |
| 073 | GN037 | 07-Aug-2025 | 07:57 | 56° 59.967' N | 004° 59.972' E | 59 | 07-Aug-2025 | 09:24 | 56° 59.966' N | 004° 59.970' E | 59 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A073X501 |
| 074 | GN036A | 07-Aug-2025 | 12:02 | 56° 59.986' N | 004° 15.021' E | 65 | 07-Aug-2025 | 12:53 | 56° 59.984' N | 004° 15.019' E | 65 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A074X501 |

| Station Number | Station Name | Date, Station Begin | Time [UTC] Station Begin | Latitude, Station Begin | Longitude Station Begin | Water Depth [m], Station Begin | Date, Station End | Time [UTC] Station End | Latitude, Station End | Longitude Station End | Water Depth [m], Station End | CTD | Water samples (Niskin, GoFlo) | Secchi Depth | Bottle Salinity | Bottle Density | Bottle Chlorophyll | Bottle Plankton | Bottle DIC/Alkalinity | Bottle Nutrients | Bottle Trace Metals | Surface Sample, Cesium-137 | Surface Sample, Strontium-90 | Surface Sample, Tritium | Surface Sample, Pesticides | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 075 | GN036 | 07-Aug-2025 | 15:39 | 57° 00.016' N | 003° 30.017' E | 66 | 07-Aug-2025 | 16:03 | 57° 00.015' N | 003° 30.012' E | 65 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A075X501 |
| 076 | GN035S | 07-Aug-2025 | 19:58 | 57° 00.004' N | 002° 24.988' E | 81 | 07-Aug-2025 | 20:44 | 57° 00.004' N | 002° 24.990' E | 81 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | x | CTD A076X501 |
| 077 | GN035 | 08-Aug-2025 | 00:36 | 57° 00.004' N | 001° 19.942' E | 100 | 08-Aug-2025 | 01:10 | 57° 00.005' N | 001° 19.941' E | 99 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A077X501 |
| 078 | GN034S | 08-Aug-2025 | 05:29 | 57° 00.017' N | 000° 10.002' E | 85 | 08-Aug-2025 | 05:51 | 57° 00.018' N | 000° 10.002' E | 85 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A078X501 |
| 079 | GN034 | 08-Aug-2025 | 10:46 | 56° 59.988' N | 001° 00.007' W | 72 | 08-Aug-2025 | 11:35 | 57° 00.020' N | 001° 00.239' W | 72 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | x | CTD A079X501 |
| 080 | GN034A | 08-Aug-2025 | 14:40 | 57° 00.026' N | 001° 39.987' W | 76 | 08-Aug-2025 | 15:16 | 57° 00.025' N | 001° 39.989' W | 76 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A080X501, second visit |
| 081 | GN045D | 08-Aug-2025 | 22:57 | 58° 00.006' N | 001° 29.943' W | 74 | 08-Aug-2025 | 23:17 | 58° 00.004' N | 001° 29.948' W | 74 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A081X501, second visit |
| 082 | GN034A | 09-Aug-2025 | 01:30 | 58° 00.019' N | 001° 59.991' W | 91 | 09-Aug-2025 | 02:01 | 58° 00.018' N | 001° 59.984' W | 90 | x | x | --- | x | x | --- | --- | x | x | x | --- | --- | --- | --- | CTD A082X501 |
| 083 | GN045C | 09-Aug-2025 | 05:29 | 57° 59.998' N | 002° 48.964' W | 71 | 09-Aug-2025 | 06:01 | 57° 59.998' N | 002° 48.978' W | 71 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A083X501 |
| 084 | GN045B | 09-Aug-2025 | 10:32 | 58° 30.000' N | 002° 29.899' W | 73 | 09-Aug-2025 | 11:12 | 58° 30.004' N | 002° 29.902' W | 74 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A084X501 |
| 085 | GN046B | 09-Aug-2025 | 13:27 | 58° 45.021' N | 002° 14.960' W | 80 | 09-Aug-2025 | 14:10 | 58° 44.996' N | 002° 15.089' W | 80 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A085X501, EDDY 2064 |
| 086 | GN046A | 09-Aug-2025 | 16:21 | 59° 00.034' N | 001° 59.970' W | 79 | 09-Aug-2025 | 16:56 | 59° 00.029' N | 001° 59.951' W | 78 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | x | CTD A086X501 |
| 087 | GN046 | 09-Aug-2025 | 19:05 | 59° 00.001' N | 001° 29.962' W | 107 | 09-Aug-2025 | 19:42 | 59° 00.004' N | 001° 29.973' W | 108 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A087X501 |
| 088 | GN047A | 09-Aug-2025 | 22:51 | 59° 00.008' N | 000° 44.932' W | 136 | 09-Aug-2025 | 23:21 | 59° 00.012' N | 000° 44.933' W | 136 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A088X501 |
| 089 | GN047 | 10-Aug-2025 | 02:24 | 59° 00.031' N | 000° 00.003' W | 134 | 10-Aug-2025 | 02:51 | 59° 00.026' N | 000° 00.006' W | 133 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A089X501 |
| 090 | GN048 | 10-Aug-2025 | 06:44 | 59° 00.024' N | 001° 00.042' E | 125 | 10-Aug-2025 | 07:34 | 59° 00.022' N | 001° 00.040' E | 125 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A090X501 |
| 091 | GN048S | 10-Aug-2025 | 10:58 | 58° 59.994' N | 002° 00.044' E | 116 | 10-Aug-2025 | 11:30 | 58° 59.993' N | 002° 00.039' E | 115 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | x | CTD A091X501 |
| 092 | GN049 | 10-Aug-2025 | 14:55 | 58° 59.990' N | 003° 00.044' E | 138 | 10-Aug-2025 | 15:19 | 58° 59.985' N | 003° 00.037' E | 137 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A092X501 |
| 093 | GN049S | 10-Aug-2025 | 18:03 | 58° 59.998' N | 003° 44.988' E | 275 | 10-Aug-2025 | 18:31 | 58° 59.994' N | 003° 44.997' E | 275 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A093X501 |
| 094 | GN050 | 10-Aug-2025 | 21:15 | 59° 00.005' N | 004° 29.996' E | 261 | 10-Aug-2025 | 21:51 | 59° 00.001' N | 004° 30.022' E | 262 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | x | CTD A094X501 |
| 095 | GN050A | 10-Aug-2025 | 23:26 | 58° 59.988' N | 004° 54.497' E | 239 | 10-Aug-2025 | 23:54 | 58° 59.987' N | 004° 54.493' E | 240 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A095X501 |
| 096 | GN050S | 11-Aug-2025 | 03:45 | 59° 29.998' N | 004° 30.010' E | 267 | 11-Aug-2025 | 04:04 | 59° 30.000' N | 004° 30.007' E | 268 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A096X501 |
| 097 | GN051 | 11-Aug-2025 | 07:23 | 60° 00.002' N | 004° 30.016' E | 262 | 11-Aug-2025 | 08:15 | 60° 00.000' N | 004° 30.013' E | 262 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A097X501 |
| 098 | GN051A | 11-Aug-2025 | 11:00 | 60° 00.013' N | 003° 52.492' E | 289 | 11-Aug-2025 | 11:45 | 60° 00.009' N | 003° 52.491' E | 290 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A098X501 |
| 099 | GN051S | 11-Aug-2025 | 14:16 | 59° 59.990' N | 003° 14.999' E | 217 | 11-Aug-2025 | 14:46 | 59° 59.995' N | 003° 14.994' E | 216 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A099X501 |

| Station Number | Station Name | Date, Station Begin | Time [UTC] Station Begin | Latitude, Station Begin | Longitude Station Begin | Water Depth [m], Station Begin | Date, Station End | Time [UTC] Station End | Latitude, Station End | Longitude Station End | Water Depth [m], Station End | CTD | Water samples (Niskin, GoFlo) | Secchi Depth | Bottle Salinity | Bottle Density | Bottle Chlorophyll | Bottle Plankton | Bottle DIC/Alkalinity | Bottle Nutrients | Bottle Trace Metals | Surface Sample, Cesium-137 | Surface Sample, Strontium-90 | Surface Sample, Tritium | Surface Sample, Pesticides | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | GN051B | 11-Aug-2025 | 17:12 | 59° 59.988' N | 002° 37.482' E | 112 | 11-Aug-2025 | 17:34 | 59° 59.984' N | 002° 37.488' E | 112 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A100X501 |
| 101 | GN052 | 11-Aug-2025 | 19:40 | 59° 59.978' N | 001° 59.949' E | 102 | 11-Aug-2025 | 20:04 | 59° 59.981' N | 001° 59.924' E | 102 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A101X501 |
| 102 | GN052A | 11-Aug-2025 | 22:19 | 59° 59.999' N | 001° 22.436' E | 111 | 11-Aug-2025 | 22:36 | 59° 59.996' N | 001° 22.443' E | 110 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A102X501 |
| 103 | GN052S | 12-Aug-2025 | 00:55 | 59° 59.994' N | 000° 44.974' E | 129 | 12-Aug-2025 | 01:14 | 59° 59.995' N | 000° 44.977' E | 128 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A103X501 |
| 104 | GN052B | 12-Aug-2025 | 03:25 | 60° 00.015' N | 000° 07.431' E | 151 | 12-Aug-2025 | 03:41 | 60° 00.010' N | 000° 07.438' E | 151 | x | x | --- | x | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | CTD A104X501 |
| 105 | GN053 | 12-Aug-2025 | 05:49 | 59° 59.996' N | 000° 30.027' W | 124 | 12-Aug-2025 | 06:09 | 59° 59.998' N | 000° 30.023' W | 124 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A105X501 |
| 106 | GN053A | 12-Aug-2025 | 09:38 | 59° 48.010' N | 001° 20.038' W | 87 | 12-Aug-2025 | 10:02 | 59° 48.010' N | 001° 20.046' W | 87 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A106X501 |
| 107 | GN053C | 12-Aug-2025 | 12:11 | 59° 30.013' N | 001° 22.021' W | 103 | 12-Aug-2025 | 12:33 | 59° 30.017' N | 001° 22.025' W | 103 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A107X501 |
| 108 | GN053D | 12-Aug-2025 | 14:09 | 59° 14.971' N | 001° 24.996' W | 103 | 12-Aug-2025 | 14:33 | 59° 14.971' N | 001° 24.999' W | 103 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A108X501 |
| 109 | GN053B | 12-Aug-2025 | 19:23 | 59° 59.990' N | 002° 00.036' W | 87 | 12-Aug-2025 | 19:44 | 59° 59.991' N | 002° 00.028' W | 87 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A109X501 |
| 110 | GN054 | 12-Aug-2025 | 23:57 | 59° 59.987' N | 002° 59.976' W | 107 | 13-Aug-2025 | 00:14 | 59° 59.993' N | 002° 59.983' W | 106 | x | x | --- | x | --- | --- | --- | x | x | x | --- | --- | --- | --- | CTD A110X501 |
| 111 | GN054B | 13-Aug-2025 | 05:23 | 59° 29.974' N | 003° 44.977' W | 158 | 13-Aug-2025 | 05:44 | 59° 29.975' N | 003° 44.979' W | 158 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A111X501 |
| 112 | GN056A | 13-Aug-2025 | 10:46 | 59° 00.033' N | 004° 29.988' W | 84 | 13-Aug-2025 | 11:04 | 59° 00.032' N | 004° 29.991' W | 84 | x | x | x | x | --- | x | x | x | x | x | --- | --- | --- | --- | CTD A112X501 |
| 113 | GN056 | 13-Aug-2025 | 13:51 | 58° 44.993' N | 004° 59.979' W | 86 | 13-Aug-2025 | 14:17 | 58° 44.995' N | 004° 59.976' W | 85 | x | x | x | x | x | x | x | x | x | x | --- | --- | --- | --- | CTD A113X501 |
| 114 | GN057A | 13-Aug-2025 | 18:19 | 58° 44.995' N | 003° 59.977' W | 78 | 13-Aug-2025 | 19:30 | 58° 44.998' N | 003° 59.980' W | 79 | x | x | x | x | --- | x | x | x | --- | --- | --- | --- | --- | --- | CTD A114X501 |