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Short Cruise Report MARIA S. MERIAN, cruise MSM105

Walvis Bay, Namibia - Mindelo, Cape Verde

11.01.2022 - 23.2.2022

Chief Scientist: Dr. Volker Mohrholz

Captain: Ralf Schmidt

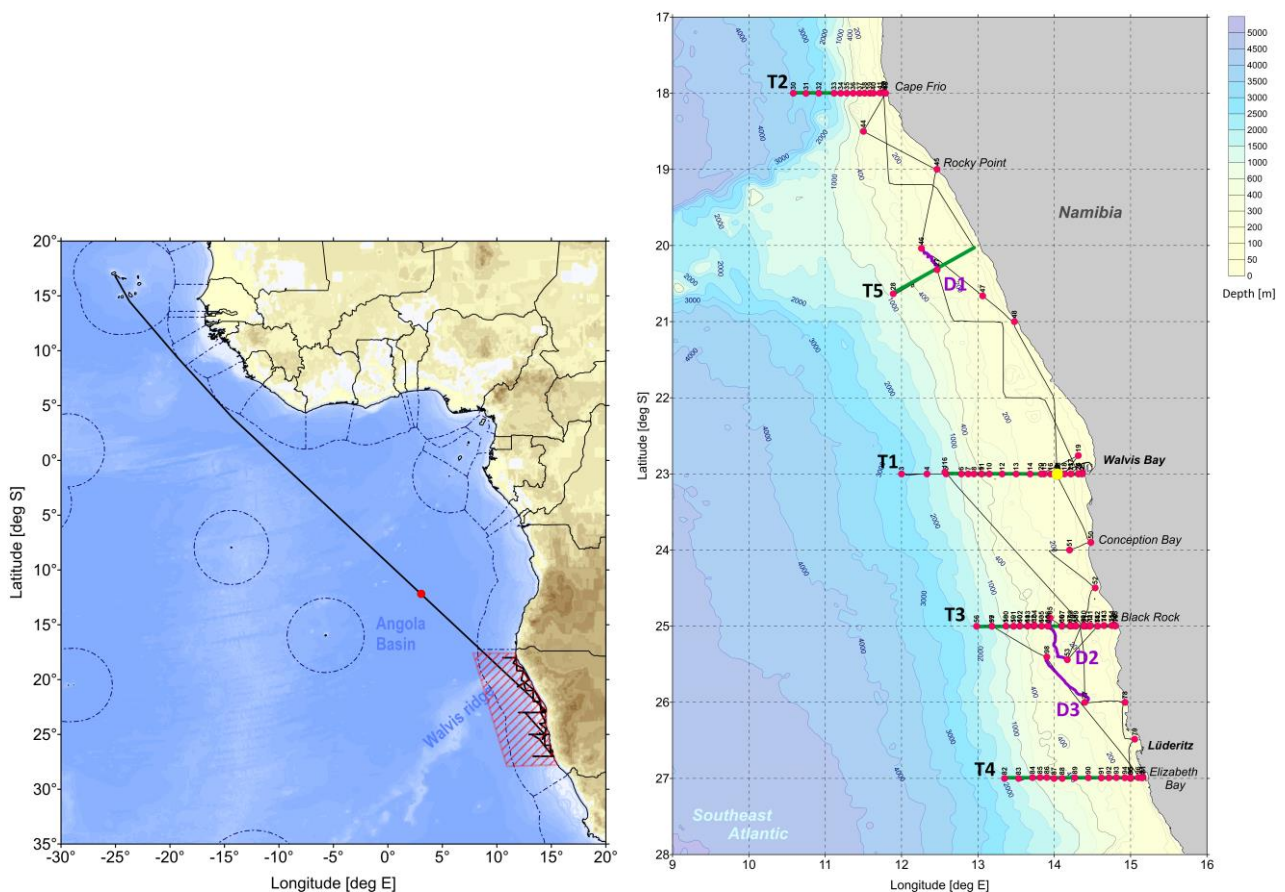


Fig. 1: Cruise track (left) and working area (right) of RV MARIA S. MERIAN cruise MSM105.

Objectives

The major goal of this second EVAR expedition was to obtain high-resolution data on the variability of present day physical forcing of the BUS during the austral summer season, when the oxygen minimum zone (OMZ) reached its annual maximum (alternate to the first EVAR expedition M157 with RV METEOR that was performed during austral winter). The present and past variability of oxygen supply as well as their key biogeochemical feedbacks as documented in sediment archives will be analyzed. The response of microbially driven processes to variations in the redox scheme over the ranges observed today and in the geological past was investigated in targeted experiments to understand their impact on oxygen, carbon and nutrient budgets and their influence on the production of greenhouse gases. Linking variability of physical and biogeochemical forcing with ecosystem response will help to develop possible trajectories of future upwelling systems in a changing climate. Thematically structured list of aims addressed during the cruise is given below:

Hydrographic Regime

- Detection of short term upwelling peaks by recording standard hydrographic parameters
- Investigate turbulent mixing processes and vertical eddy diffusivity in the water column
- Maintenance the long-term mooring at 23°S

Assessing variability in past upwelling intensity

- Recovering of high-resolution sediment archives to investigate the history of geochemical environmental conditions during the Holocene.

Fluxes and turnover in response to variable redox conditions in the water column and the seafloor

- Estimate the pelagic microbial potential to react towards changes in abiotic parameters such as a sudden increase in sulfide or decrease in oxygen, and how this is related to trace gas production and sulfide oxidation. Identification of specific biogeochemical transformation zones and the involved microbial key organisms. Investigation of the effect of sulfide accumulation in the water column on the phosphorus cycling.
- Experimental elucidation of the magnitude and pathways of benthic fluxes of nutrients (N-species, phosphate, Fe), dissolved gases (CH₄, pCO₂, N₂/Ar) as well as dissolved inorganic carbon (DIC), sulfide and silicate in response to fluctuating and shifting regimes of the bottom water availability of O₂ and NO₃⁻. Determine microbial controls and tipping points of the sequestration and release of phosphate, as well as of the benthic N and S cycling. Investigation of the tolerance of distinct microbenthic species to oxygen availability
- Determination of the contribution of the macro- and microbenthic communities to the overall solute turnover in sediments at the upper and lower boundary of the OMZ

Trace gases

- Determination of sea surface concentration and fluxes of trace gases and relation to upwelling intensity and chemical physicochemical signature of the feed waters. Linking trace gas transformations to the microbial key players. Determination of the key depth horizons and processes for trace gas transformations and sensitivity of the underlying processes to variations in redox conditions (O₂ and H₂S levels).

Narrative

On January 8 the scientific crew of the MSM105 started in Germany to join the RV MARIA S. MERIAN in Walvis Bay, Namibia. The PCR-tests for SARS-CoV-2 of all participants were negative, and so we could go with the full group. After flight and a 6 hours land transfer from Windhoek to Walvis Bay we embarked the ship in the evening of January 9. The following day was spent in port to allocating the deck and lab space to the working groups and devices, unloading containers, preparing the devices and labs, and for safety instructions. In the afternoon, we had our first science meeting for planning the scientific work of the first week at sea.

The cruise started on the morning of January 11 with sunny weather. We left the port at 8am heading to our first station 20nm off Walvis Bay. On the way to the station a safety drill was performed. Around noon we reached the station where also a long term mooring is located. We performed some device-tests with the CTD and took first water samples for testing the lab equipment. Then we went back to the coast for the start position of the first ScanFish-track. The ScanFish observations could not be performed since we faced some technical problems, which needed some time to be fixed. Thus, the first transect started with the ship's sediment echo sounder *PARASOUND* only, to obtain data about the surface sediment distribution, and to locate feasible positions for gravity core sampling.

We reached the western most position of the 23°S-transect in the morning of January 12. Here we started the station work with CTD, MSS and coring. During the day, we could work three stations with hydrography and benthic sampling. The station work at the 23°S transect was continued during the next day with calm wind conditions. Five stations were covered and a ScanFish-test was performed again between two stations. In the afternoon the first deployments of the AFIS system and the in-situ pumps were done. On January 14 we did the first station with extended sampling with PumpCTD. This station lasted until the next day and was followed directly by the next station with extended sampling program. In the evening the air pressure sensors detected first pressure waves of the Tonga Volcano eruption. The second wave that surrounded the earth on an opposite path was registered next morning.

On January 16 the second PumpCTD was finished. Then the long-term mooring at 23°S was successfully recovered. All devices have worked. Later on this day the sampling with gravity coring was started at three stations on the 23°S transect. In the evening, the ship doctor let us know that all final PCR-tests for SARS-CoV-2 were negative, so the COVID related restrictions on board were suspended.

The long-term mooring off Walvis Bay was redeployed in the morning of January 17. Afterwards a sediment trap mooring, located at a position nearby, was successfully recovered. The third station with extended sampling with PumpCTD started right before noon at this day. The station work along the 23°S transect was finished in the early afternoon of the 18th January. The work was completed in time since the weather conditions along the transect were unusually calm.

The ship was now traveling northward to the next transect at 20°S. On the underway surface measurements of trace gas concentrations were performed continuously. The ship track followed a zic-zac-line to increase the coverage of the inner shelf areas. The time was also used to analyze the first data in order to adjust the measurement strategy to the actual hydrographic conditions.

The 20°S-transect was arrived on January 19. Here we first deployed a drifting mooring for observations of the surface layer dynamics on the northern Namibian shelf. The actual position of the drifter was sent via Iridium-network. Starting near the coast a cross shelf combined ScanFish- and PARASOUND-transect was performed that ends near the continental slope.

From the end-point of this transect we started our transit to the next hydrographic station line at 18°S, that we arrived in the evening of January 20. The work on this transect began with another combined ScanFish-/ PARASOUND-track from the coast to the continental slope. After completing the ScanFish-/ PARASOUND-measurements we started with station work from the westernmost station and worked towards the coast. On this transect mainly hydrographic observations and benthos sampling were performed. The meteorological conditions were still calm and sunny, although fog was present every morning, especially near the coast. The coastal station of the transect was reached in the morning of January 23. Here we found rocky grounds with a high benthic biodiversity. The work on this northern most working area of the expedition was finished with a CTD/MSS calibration station at 18.5°S. Then we went back towards the 23°S-transect on the central Namibian shelf. Along the way, we visited two further stations near the coast for benthos sampling at 19°S and 21°S, and continued the underway trace gas and current measurements. The drifting mooring was successfully recovered at night on January 24. All mounted devices have worked as expected. During the day, the wind increased quite a bit, and reached 6 Bft in the evening. A remarkable observation was the unusual orange to red sky after sunset and dusty conditions at the horizon, may be caused by the massive volcano eruption at Tonga on January 15. This was also observed during the following days. We arrived the 23°S-transect early after midnight on January 25. Here we redeployed the sediment trap mooring that will sample until April 2023, when its recovery is planned with RV METEOR. After the mooring work we started the transit to the 25°S-line, the main transect during the cruise. On the way two further benthos stations were performed at Conception Bay 24°S and close to the coast at 24.5°S. At both stations strongly anoxic conditions with free H₂S were found in bottom water layer and the surface layer depicted the turquoise color, typical for elementary sulfur. During the night, we deployed our drifting mooring at 25.5°S for the second drift. The wind has further increased to 7Bft. Then we started the station work at the 25°S-transect 15nm. off the coast with the first extended PumpCTD-station in the morning of January 26. The observations here covered nearly the entire day. In the late evening, we travelled to the coast where we started the next ScanFish-/ PARASOUND-transect along 25°S. During the following day, the wind was constantly at 7Bft with gusts of Bft. We reached the offshore end of the transect in the afternoon of January 27. Here we started the station work towards the coast. The wind velocity has decreased to 6Bft, but the sea state was still high. During the next day, four stations were completed, mainly hydrography and benthic sampling. The wind speed increased again to 7Bft. Since the drifting mooring depicted an unexpected high speed towards northwest, we decided to recover it as soon as possible, before the drifter float too far away. So on the morning of January 29 the Drifter was recovered 6 nautical miles north of the transect. The drifter depicted a high drift speed of about 0.5m/s. Despite of the high sea state all instruments were successfully recovered and contain data. Afterwards we continued the station work along the 25°S-transect. Unexpectedly, at the planned pumpCTD-station 25nm off the coast we found oxic bottom conditions. Thus, the pumpCTD-observations were shifted to station N25015 and the program was continued with two gravity corer stations. On 30th January we performed the 2nd PumpCTD station on the 25°S-transect. It was a repetition of the first PumpCTD-station to obtain the impact of the last windy days. Now the wind speed decreased rapidly to 3Bft. The surface water was very turbid and of brownish color. We finished the station work at the 25°S-transect on January 31 and started a short ScanFish-transect from the coast to the station 25nm offshore at the 25°S-transect, to repeat the high resolution hydrographic measurements after the decay of the strong wind forcing. After completing the observations on the 25°S-transect we started the transit to our Southernmost transect at 27°S. During the transit we deployed the drifting mooring for the 3rd time at 26°S, and worked two further benthos-stations near the coast at 26°S and in the Lüderitz Bay.

Our work on the 27°S-transect started with a test station 10nm off the coast to check whether the lower water column is anoxic or well ventilated. Then we moved to the coast off Possession Island to the start position of the next ScanFish-/ PARASOUND-track. After solving some technical issues with the ScanFish we could start the ScanFish-/ PARASOUND-transect along 27°S. We reached the offshore end of the transect in the morning of February 2. There we started the station work at the westernmost station, with calm wind conditions and low swell. The planned Box-corer and MSS deployments were successfully performed. The entire transect was worked mainly with hydrographic data collection and benthic sampling. On February 3 we continued the station work with five stations, mostly with calm wind conditions and sunny weather. In the evening, the wind started to increase again. It reached 8Bft during the night and the high sea state hampered partly the station work. CTD- and MSS-casts could be performed, but the planned deployments of the Multicorer and in-situ pumps were shifted to a later station, since the high waves did not allow a save deployment. The wind remained at 8Bft the entire day, and decreased only slightly to 7Bft on the following day. Despite of the unfavorable conditions we continued the station work and finished the transect on February 5 near Possession Island. We started the transit to the Drifter recovery position at 25.5°S, which we reached in the afternoon. Here some MSS-casts were performed before the drifter was safely recovered. The westernmost station of the 25°S transect was reached in the early evening, and started the repetition of the station work with MSS with calm wind conditions and moderate swell. During the following day, we performed ten stations mainly with MSS and some deployments of the Multicorer. On February 7 the station 15nm off the coast was worked the third time with extended sampling program and PumpCTD. A comparison to the earlier visits during the cruise revealed the extreme temporal variability of the conditions in the water column above the central mud belt. Again we found free H₂S in the water column and an extreme shallow oxycline. We finished the station work in the early evening and performed a short ScanFish Transect from the coast to 25nm offshore together with trace gas sampling and surface nutrient sampling. This was completed shortly after midnight. Afterwards we started our transit to the 23°S-transect.

On early afternoon of February 8, we arrived at the offshore end of the Walvis Bay transect. Here we started a ScanFish-track towards the coast, which we could not perform in the first days of the expedition due to technical problems. This time we finished the whole transect successfully on the morning of February 9 near the coast of Walvis Bay. At a station 10nm off the coast another station with enhanced PumpCTD sampling program was started. The station was shifted from N23020 to N23010 due to oxygen conditions near the bottom at N23020. The station was finished in the late evening of February 9. That was also the end of our scientific work in Namibian waters. We started the transit to the port of Walvis Bay, where we arrived on the next morning.

During the port stay in Walvis Bay, which was necessary for custom reasons, container handling and bunkering was carried out. On the next morning, we left the port after disembarking of four scientists and one crewmember.

Since we were not allowed to sample in Namibian waters we continued our work experiments and measurements at samples in the labs. On February 14 the last station in the Angola gyre was reached. Here MSS- and CTD-casts were performed to gather reference data for one of the source water masses that enters the Namibian shelf. Afterwards we continued our transit to Mindelo, Cape Verde. Underway measurements with acoustic current meters and the trace gas sampling system were performed along the entire way to Mindelo, as long as the ship was traveling in international waters.

On February 18 we crossed the equator near 10°W at noon. Since most of the lab experiments were finished, we could start with first data validation and packing of equipment. In the evening of this day we celebrated the successful end of the cruise with a barbeque on deck.

The last scientific sampling was done on February 20 when the ship crossed large mats of surface floating sargassum. We took samples of sargassum itself but also samples of the attached zooplankton. After that, we continued our transit to Mindelo, and the loading of the large equipment into the containers.

The underway data acquisition was stopped in the night from 21st to the 22nd of February, when we entered the EEZ of Cape Verde. We arrived the port of Mindelo in the morning of the February 23. Here the packing of equipment was finished. Some scientific equipment was handed over to the following cruise. We left the ship in the early morning of February 24, which was the official end of the expedition MSM105.

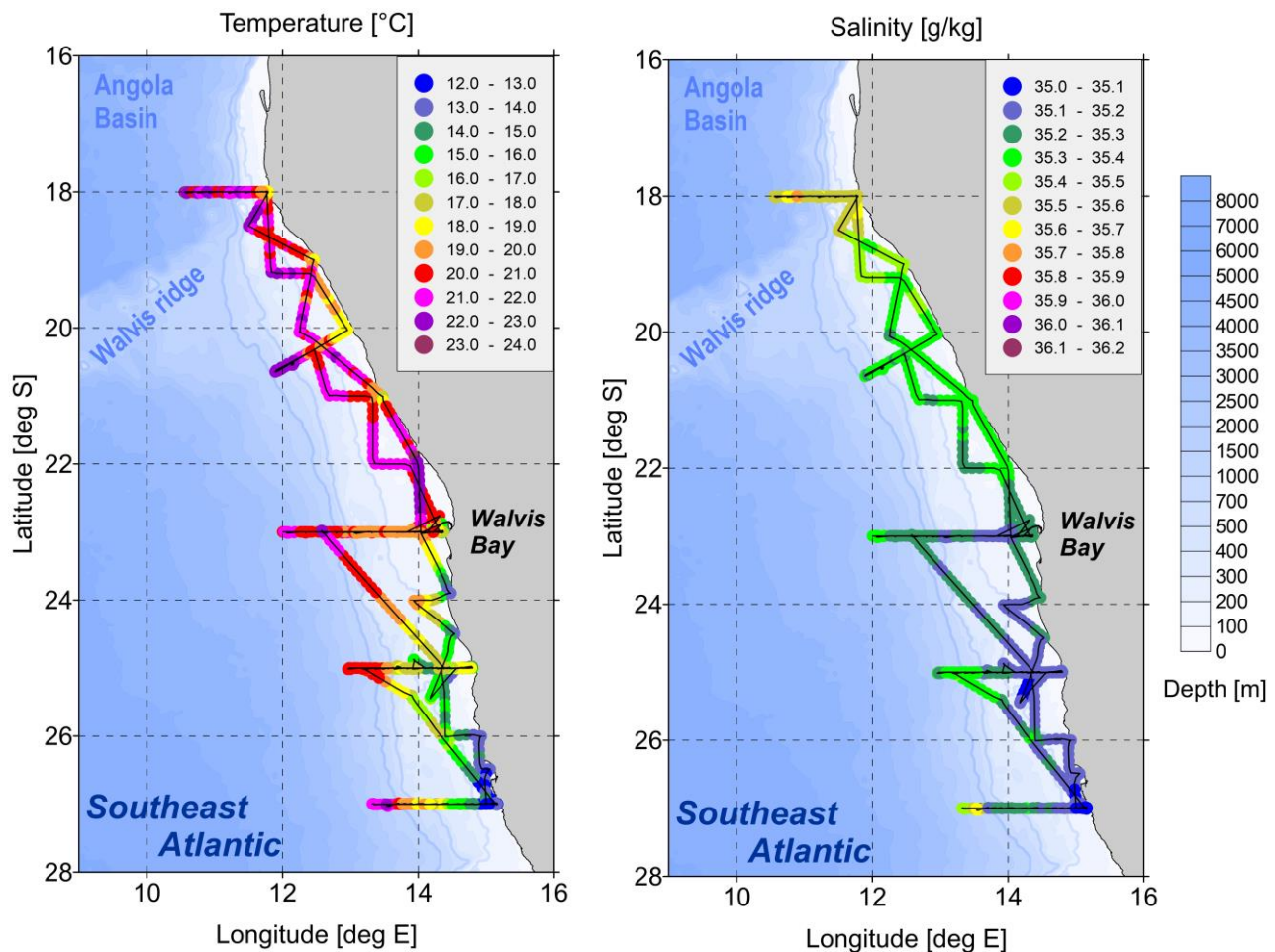


Fig. 2: Surface distribution of temperature and salinity in the working area on the Namibian Shelf during MSM105.

Acknowledgements

We would like to thank Captain Ralf Schmidt and the crew of RV MARIA S. MERIAN for their efforts and for their effective and great support during the cruise, as well as the cruise participants from the Leibniz Institute for Baltic Sea Research Warnemünde and the MARUM Bremen who carried out the measurements as part of the field work of the BMBF granted project EVAR. We are also grateful to all other people who help to prepare the cruise, and made this important part of EVAR fieldwork possible under the difficult conditions caused by the COVID19 pandemic. The cruise was funded by the BMBF, the DFG and institutional funds of the IOW and MARUM.

Cruise Participants

1.	Mohrholz, Volker, Dr.	Phys. Oceanogr. / Chief Scientist	IOW
2.	Amorim, Katherine	Biology / Benthos	IOW
3.	Beier, Sebastian	Phys. Oceanogr.	IOW
4.	Braun, Philipp	Microbiology / Genomics	IOW
5.	Burmeister, Christian	Biology / Nutrients	IOW
6.	Dangl, Gabriela	Microbiology / Genomics	IOW
7.	Fabian, Jenny	Microbiology	IOW
8.	Glockzin, Michael	Mar. Chemistry / Trace gases	IOW
9.	Gogina, Mayya	Biology / Benthos	IOW
10.	Heene, Toralf	Phys. Oceanogr.	IOW
11.	Jürgens, Klaus, Prof.	Microbiology / Genomics	IOW
12.	Kolbe, Martin	Phys. Oceanogr. / Instrumentation	IOW
13.	Kossak, Michael	Geology	MARUM
14.	Meeske, Cristian	Microbiology / Genomics	IOW
15.	Pohl, Frank	Biology / Benthos	IOW
16.	Pörmann, Simon	Geology	MARUM
17.	Rehder, Gregor, Prof.	Mar. Chemistry / Trace gases	IOW
18.	Sabbaghzadeh, Bitā	Mar. Chemistry / Trace gases	IOW
19.	Schmidt, Martin, Dr.	Phys. Oceanogr.	IOW
20.	Schulz-Vogt, Heide, Prof.	Microbiology / Nutrients	IOW
21.	Witzleb, Antonia	Geology	MARUM
22.	Zettler, Michael L., Dr.	Biology / Benthos	IOW

Institutes

IOW	Leibniz-Institute for Baltic Sea Research Warnemünde
MARUM	Center for Marine Environmental Sciences (Marum – Bremen University)

Stationlist

The station list lists all stations and deployments carried out during the cruise MSM105. Standard sampling consisted of a CTD- and MSS-cast, and benthic-sampling with Multicorer, Van Veen Grab and Dredge. At selected stations PumpCTD-casts, Gravity corer- and BoxCorer-deployments were performed. Additional samplings only performed occasionally, are indicated in the last column of the table.

Used gears:

CTD	- CTD probe with rosette water sampler
PCTD	- PumpCTD with AFIS rosette water sampler
PS	- Parasound
GC	- Gravitycorer
MUC	- Multicorer
BC	- Box corer
VGRAB	- Van Veen Grab
DGR	- Dredge
MSS	- Microstructure profiler for turbulence and mixing study
SCF	- ScanFish undulating CTD deployment

Additional sampling program on selected stations:

CC	- Comparison measurements for MSS probe data quality assurance
DT	- Device test deployments
SG	- Sampling of Sargassum

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_1-1	N23020	CTD	11.01.2022 10:44	23° 00.31'S	014° 03.30'E	133	
MSM105_2-1	N23002	SCF	11.01.2022 13:39	22° 59.19'S	014° 22.10'E	47	
MSM105_2-2	N23002	SCF	11.01.2022 15:04	22° 59.17'S	014° 22.39'E	44	
MSM105_2-3	N23002	PS	11.01.2022 15:30	22° 60.00'S	014° 20.44'E	62	
MSM105_3-1	N23130	MSS	12.01.2022 06:58	22° 59.99'S	012° 00.01'E	2700	DT
MSM105_4-1	N23110	CTD	12.01.2022 12:45	23° 00.00'S	012° 20.00'E	2059	
MSM105_4-2	N23110	MSS	12.01.2022 15:03	23° 00.07'S	012° 20.03'E	2059	
MSM105_4-3	N23110	BC	12.01.2022 16:16	23° 00.03'S	012° 19.96'E	2065	
MSM105_5-1	N23100	MSS	12.01.2022 19:11	23° 00.06'S	012° 34.98'E	1426	
MSM105_6-1	N23090	CTD	12.01.2022 21:24	22° 60.00'S	012° 47.01'E	943	
MSM105_6-2	N23090	MSS	12.01.2022 22:44	23° 00.01'S	012° 47.02'E	941	
MSM105_6-3	N23090	BC	13.01.2022 00:25	22° 60.00'S	012° 47.00'E	939	
MSM105_6-4	N23090	DRG	13.01.2022 01:46	22° 60.00'S	012° 47.01'E	940	
MSM105_7-1	N23085	MSS	13.01.2022 03:19	23° 00.02'S	012° 52.44'E	740	
MSM105_8-1	N23080	MSS	13.01.2022 04:56	22° 59.99'S	012° 56.99'E	596	
MSM105_9-1	N23075	MSS	13.01.2022 06:46	23° 00.00'S	013° 02.89'E	414	
MSM105_10-1	N23070	CTD	13.01.2022 08:31	23° 00.01'S	013° 08.95'E	1011	
MSM105_10-2	N23070	MSS	13.01.2022 09:20	23° 00.02'S	013° 08.96'E	321	
MSM105_11-1	N23070	MSS	13.01.2022 11:04	22° 60.00'S	013° 02.99'E	411	
MSM105_11-2	N23075	SCF	13.01.2022 12:21	23° 00.86'S	013° 03.49'E	409	
MSM105_12-1	N23060	CTD	13.01.2022 15:07	22° 59.98'S	013° 19.03'E	360	
MSM105_12-2	N23060	ISP	13.01.2022 16:02	22° 59.98'S	013° 19.03'E	360	
MSM105_12-3	N23060	PCTD	13.01.2022 19:06	22° 59.99'S	013° 19.03'E	359	
MSM105_12-4	N23060	ISP	13.01.2022 19:58	22° 59.98'S	013° 19.03'E	361	
MSM105_12-5	N23060	MSS	13.01.2022 22:10	22° 60.00'S	013° 19.03'E	361	
MSM105_12-6	N23060	MUC	13.01.2022 23:38	23° 00.00'S	013° 19.02'E	361	
MSM105_12-7	N23060	VGRAB	14.01.2022 00:12	23° 00.00'S	013° 19.01'E	361	
MSM105_12-8	N23060	VGRAB	14.01.2022 00:36	23° 00.00'S	013° 19.01'E	360	
MSM105_12-9	N23060	VGRAB	14.01.2022 00:59	23° 00.00'S	013° 19.01'E	362	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
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MSM105_12-11	N23060	DRG	14.01.2022 02:11	23° 00.07'S	013° 19.02'E	359	
MSM105_13-1	N23050	MSS	14.01.2022 04:02	22° 59.97'S	013° 30.01'E	240	
MSM105_13-2	N23050	ISP	14.01.2022 05:15	22° 59.97'S	013° 29.93'E	245	
MSM105_13-3	N23050	CTD	14.01.2022 07:11	22° 59.97'S	013° 29.94'E	241	
MSM105_13-4	N23050	MUC	14.01.2022 08:00	22° 59.97'S	013° 29.94'E	242	
MSM105_13-5	N23050	MUC	14.01.2022 08:41	22° 59.97'S	013° 29.95'E	240	
MSM105_13-6	N23050	VGRAB	14.01.2022 09:04	22° 59.97'S	013° 29.95'E	240	
MSM105_13-7	N23050	VGRAB	14.01.2022 09:20	22° 59.97'S	013° 29.95'E	240	
MSM105_13-8	N23050	VGRAB	14.01.2022 09:38	22° 59.97'S	013° 29.95'E	240	
MSM105_13-9	N23050	VGRAB	14.01.2022 09:49	22° 59.97'S	013° 29.96'E	241	
MSM105_13-10	N23050	DRG	14.01.2022 10:12	22° 59.97'S	013° 29.96'E	242	
MSM105_14-1	N23040	CTD	14.01.2022 11:48	22° 60.00'S	013° 41.02'E	156	
MSM105_14-2	N23040	MSS	14.01.2022 12:35	23° 00.02'S	013° 41.01'E	155	
MSM105_14-3	N23040	MUC	14.01.2022 13:52	23° 00.00'S	013° 41.01'E	155	
MSM105_14-4	N23040	VGRAB	14.01.2022 14:12	22° 60.00'S	013° 41.01'E	155	
MSM105_14-5	N23040	VGRAB	14.01.2022 14:26	22° 59.99'S	013° 41.01'E	156	
MSM105_14-6	N23040	DRG	14.01.2022 14:48	22° 59.99'S	013° 41.01'E	154	
MSM105_15-1	N23030	CTD	14.01.2022 16:18	23° 00.02'S	013° 51.97'E	149	
MSM105_15-2	N23030	MSS	14.01.2022 17:00	23° 00.04'S	013° 51.97'E	148	
MSM105_15-3	N23030	PCTD	14.01.2022 18:12	23° 00.00'S	013° 51.98'E	149	
MSM105_15-4	N23030	MSS	14.01.2022 22:51	23° 00.02'S	013° 51.98'E	148	
MSM105_15-5	N23030	PCTD	14.01.2022 23:55	23° 00.01'S	013° 51.98'E	150	
MSM105_15-6	N23030	ISP	15.01.2022 04:02	23° 00.01'S	013° 51.98'E	149	
MSM105_15-7	N23030	CTD	15.01.2022 07:09	23° 00.00'S	013° 51.98'E	148	
MSM105_15-8	N23030	PCTD	15.01.2022 08:05	23° 00.00'S	013° 51.98'E	147	
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MSM105_15-11	N23030	VGRAB	15.01.2022 09:23	23° 00.01'S	013° 51.98'E	148	
MSM105_15-12	N23030	VGRAB	15.01.2022 09:34	23° 00.01'S	013° 51.99'E	148	
MSM105_15-13	N23030	VGRAB	15.01.2022 09:45	23° 00.01'S	013° 51.99'E	147	
MSM105_15-14	N23030	VGRAB	15.01.2022 09:54	23° 00.01'S	013° 51.99'E	150	
MSM105_15-15	N23030	VGRAB	15.01.2022 10:04	23° 00.01'S	013° 51.99'E	149	
MSM105_15-16	N23030	DRG	15.01.2022 10:18	23° 00.01'S	013° 51.99'E	148	
MSM105_16-1	N23025	MSS	15.01.2022 11:25	23° 00.02'S	013° 57.01'E	144	
MSM105_16-2	N23025	VGRAB	15.01.2022 12:52	23° 00.01'S	013° 57.01'E	144	
MSM105_16-3	N23025	VGRAB	15.01.2022 13:02	23° 00.01'S	013° 57.01'E	146	
MSM105_16-4	N23025	VGRAB	15.01.2022 13:14	23° 00.01'S	013° 57.01'E	144	
MSM105_16-5	N23025	VGRAB	15.01.2022 13:24	23° 00.01'S	013° 57.01'E	146	
MSM105_16-6	N23025	DRG	15.01.2022 13:40	23° 00.02'S	013° 57.02'E	145	
MSM105_17-1	N23020	CTD	15.01.2022 14:57	23° 00.02'S	014° 03.00'E	136	
MSM105_17-2	N23020	MSS	15.01.2022 15:44	23° 00.08'S	014° 02.93'E	138	
MSM105_17-3	N23020	PCTD	15.01.2022 16:48	23° 00.00'S	014° 02.86'E	138	
MSM105_17-4	N23020	MSS	15.01.2022 20:22	23° 00.01'S	014° 02.86'E	135	
MSM105_17-5	N23020	PCTD	15.01.2022 21:31	22° 59.96'S	014° 02.89'E	139	
MSM105_17-6	N23020	PCTD	15.01.2022 22:35	22° 59.96'S	014° 02.89'E	139	
MSM105_17-7	N23020	ISP	16.01.2022 03:18	22° 59.96'S	014° 02.89'E	137	
MSM105_17-8	N23020	PCTD	16.01.2022 06:23	22° 59.96'S	014° 02.89'E	137	
MSM105_17-9	N23020	CTD	16.01.2022 06:59	22° 59.96'S	014° 02.89'E	139	
MSM105_17-10	N23020	MOOR	16.01.2022 07:26	23° 00.08'S	014° 03.21'E	136	
MSM105_17-11	N23020	MUC	16.01.2022 08:30	23° 00.00'S	014° 03.00'E	138	
MSM105_17-12	N23020	MUC	16.01.2022 08:59	23° 00.00'S	014° 03.00'E	138	
MSM105_17-13	N23020	VGRAB	16.01.2022 09:14	23° 00.00'S	014° 03.00'E	138	
MSM105_17-14	N23020	VGRAB	16.01.2022 09:24	23° 00.00'S	014° 03.00'E	137	
MSM105_17-15	N23020	VGRAB	16.01.2022 09:34	23° 00.00'S	014° 03.00'E	139	
MSM105_17-16	N23020	VGRAB	16.01.2022 09:44	23° 00.00'S	014° 03.00'E	137	
MSM105_17-17	N23020	VGRAB	16.01.2022 09:53	23° 00.01'S	014° 03.00'E	138	
MSM105_17-18	N23020	DRG	16.01.2022 10:04	23° 00.01'S	014° 03.00'E	137	
MSM105_18-1	N23015	CTD	16.01.2022 11:06	23° 00.02'S	014° 08.03'E	129	
MSM105_18-2	N23015	MSS	16.01.2022 11:47	23° 00.07'S	014° 07.98'E	136	
MSM105_18-3	N23015	MSS	16.01.2022 12:19	23° 00.06'S	014° 07.96'E	125	
MSM105_18-4	N23015	MUC	16.01.2022 13:37	23° 00.01'S	014° 08.00'E	130	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_18-5	N23015	MUC	16.01.2022 13:56	23° 00.01'S	014° 08.01'E	127	
MSM105_18-6	N23015	MUC	16.01.2022 14:10	23° 00.01'S	014° 08.01'E	129	
MSM105_18-7	N23015	MUC	16.01.2022 14:24	23° 00.01'S	014° 08.01'E	139	
MSM105_18-8	N23015	VGRAB	16.01.2022 14:37	23° 00.01'S	014° 08.00'E	132	
MSM105_18-9	N23015	VGRAB	16.01.2022 14:49	23° 00.01'S	014° 08.00'E	130	
MSM105_18-10	N23015	VGRAB	16.01.2022 15:00	23° 00.01'S	014° 08.00'E	130	
MSM105_18-11	N23015	DRG	16.01.2022 15:12	23° 00.01'S	014° 08.00'E	129	
MSM105_18-12	N23015	GC	16.01.2022 16:01	23° 00.00'S	014° 08.01'E	128	
MSM105_19-1	NGC001	CTD	16.01.2022 18:01	22° 45.48'S	014° 18.92'E	83	
MSM105_19-2	NGC001	GC	16.01.2022 18:23	22° 45.48'S	014° 18.91'E	83	
MSM105_19-3	NGC001	MUC	16.01.2022 18:37	22° 45.48'S	014° 18.91'E	83	
MSM105_20-1	NGC002	CTD	16.01.2022 21:53	22° 59.99'S	013° 49.63'E	147	
MSM105_20-2	NGC002	ISP	16.01.2022 22:27	22° 59.99'S	013° 49.63'E	148	
MSM105_20-3	NGC002	MUC	17.01.2022 04:11	22° 59.99'S	013° 49.63'E	150	
MSM105_20-4	NGC002	GC	17.01.2022 04:33	22° 59.98'S	013° 49.63'E	145	
MSM105_20-5	NGC002	GC	17.01.2022 04:54	22° 59.98'S	013° 49.63'E	147	
MSM105_21-1	M_LTBM	MOOR	17.01.2022 06:29	22° 59.27'S	014° 02.79'E	136	
MSM105_22-1	M_WBST	MOOR	17.01.2022 08:05	23° 01.19'S	014° 02.26'E	133	
MSM105_23-1	N23010	CTD	17.01.2022 09:39	23° 00.02'S	014° 13.01'E	113	
MSM105_23-2	N23010	MSS	17.01.2022 10:25	23° 00.08'S	014° 12.97'E	113	
MSM105_23-3	N23010	PCTD	17.01.2022 11:43	23° 00.01'S	014° 13.01'E	113	
MSM105_23-4	N23010	MSS	17.01.2022 16:17	23° 00.03'S	014° 13.00'E	114	
MSM105_23-5	N23010	PCTD	17.01.2022 17:21	23° 00.01'S	014° 13.03'E	113	
MSM105_23-6	N23010	CTD	17.01.2022 17:58	23° 00.00'S	014° 13.03'E	110	
MSM105_23-7	N23010	MUC	17.01.2022 18:17	23° 00.00'S	014° 13.03'E	109	
MSM105_23-8	N23010	VGRAB	17.01.2022 18:39	23° 00.00'S	014° 13.03'E	108	
MSM105_23-9	N23010	VGRAB	17.01.2022 18:47	23° 00.00'S	014° 13.03'E	110	
MSM105_23-10	N23010	VGRAB	17.01.2022 18:55	23° 00.00'S	014° 13.03'E	109	
MSM105_23-11	N23010	DRG	17.01.2022 19:10	23° 00.00'S	014° 13.03'E	109	
MSM105_24-1	N23005	CTD	17.01.2022 20:10	23° 00.02'S	014° 18.98'E	76	
MSM105_24-2	N23005	MSS	17.01.2022 20:38	23° 00.02'S	014° 18.97'E	72	
MSM105_24-3	N23005	ISP	17.01.2022 21:46	23° 00.04'S	014° 18.96'E	71	
MSM105_24-4	N23005	MUC	18.01.2022 00:38	23° 00.01'S	014° 18.98'E	73	
MSM105_24-5	N23005	VGRAB	18.01.2022 00:54	23° 00.01'S	014° 18.99'E	71	
MSM105_24-6	N23005	VGRAB	18.01.2022 01:02	23° 00.01'S	014° 18.99'E	75	
MSM105_24-7	N23005	VGRAB	18.01.2022 01:09	23° 00.01'S	014° 19.00'E	75	
MSM105_24-8	N23005	DRG	18.01.2022 01:18	23° 00.01'S	014° 19.00'E	74	
MSM105_25-1	N23002	CTD	18.01.2022 02:16	22° 60.00'S	014° 22.00'E	42	
MSM105_25-2	N23002	MSS	18.01.2022 02:56	23° 00.02'S	014° 22.00'E	82	
MSM105_25-3	N23002	MUC	18.01.2022 03:39	23° 00.00'S	014° 22.00'E	80	
MSM105_25-4	N23002	VGRAB	18.01.2022 03:47	23° 00.00'S	014° 22.00'E	43	
MSM105_25-5	N23002	VGRAB	18.01.2022 03:54	23° 00.00'S	014° 22.00'E	48	
MSM105_25-6	N23002	VGRAB	18.01.2022 03:59	23° 00.00'S	014° 22.00'E	43	
MSM105_25-7	N23002	DRG	18.01.2022 04:07	23° 00.00'S	014° 21.99'E	43	
MSM105_26-1	N23005	MSS	18.01.2022 05:07	22° 59.80'S	014° 18.87'E	75	
MSM105_26-2	N23005	PCTD	18.01.2022 07:05	23° 00.00'S	014° 19.00'E	73	
MSM105_26-3	N23005	PCTD	18.01.2022 08:13	22° 60.00'S	014° 19.00'E	74	
MSM105_26-4	N23005	MSS	18.01.2022 11:31	23° 00.05'S	014° 19.01'E	74	
MSM105_26-5	N23005	CTD	18.01.2022 12:38	23° 00.02'S	014° 19.00'E	75	
MSM105_26-6	N23005	CTD	18.01.2022 13:05	23° 00.02'S	014° 19.00'E	75	
MSM105_27-1	NAM007	DRIFT	19.01.2022 09:06	20° 19.07'S	012° 27.90'E	262	
MSM105_27-2	NAM007	MSS	19.01.2022 09:14	20° 19.08'S	012° 27.97'E	263	
MSM105_28-1	NAM014	SCF	19.01.2022 13:26	20° 38.01'S	011° 53.43'E	861	
MSM105_28-2	NAM014	PS	19.01.2022 13:46	20° 39.31'S	011° 53.52'E	876	
MSM105_28-3	NAM001	SCF	19.01.2022 17:38	20° 32.15'S	012° 09.46'E	386	
MSM105_29-1	N18002	SCF	20.01.2022 19:21	17° 59.10'S	011° 46.13'E	52	
MSM105_29-2	N18002	PS	20.01.2022 19:36	17° 60.00'S	011° 45.48'E	64	
MSM105_30-1	N18070	MSS	21.01.2022 07:53	18° 00.01'S	010° 35.01'E	3482	DT
MSM105_30-2	N18070	MSS	21.01.2022 09:08	18° 00.34'S	010° 34.81'E	3487	DT
MSM105_30-3	N18070	MSS	21.01.2022 10:21	18° 00.67'S	010° 34.64'E	3491	
MSM105_31-1	N18060	MSS	21.01.2022 12:44	18° 00.04'S	010° 44.98'E	3218	
MSM105_32-1	N18050	MSS	21.01.2022 15:02	17° 59.99'S	010° 55.05'E	2772	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_33-1	N18040	CTD	21.01.2022 17:37	17° 60.00'S	011° 06.98'E	1973	
MSM105_33-2	N18040	MSS	21.01.2022 18:54	18° 00.02'S	011° 06.97'E	1979	
MSM105_33-3	N18040	BC	21.01.2022 20:29	17° 59.98'S	011° 06.99'E	1967	
MSM105_33-4	N18040	CTD	21.01.2022 21:44	17° 59.98'S	011° 06.99'E	1973	
MSM105_33-5	N18040	BC	21.01.2022 23:04	17° 59.98'S	011° 06.98'E	1972	
MSM105_34-1	N18035	MSS	22.01.2022 01:14	18° 00.02'S	011° 12.26'E	1596	
MSM105_35-1	N18030	CTD	22.01.2022 03:19	17° 59.96'S	011° 17.02'E	1006	
MSM105_35-2	N18030	MSS	22.01.2022 04:30	17° 59.98'S	011° 17.00'E	1008	
MSM105_35-3	N18030	BC	22.01.2022 05:58	17° 59.98'S	011° 16.99'E	1008	
MSM105_35-4	N18030	DRG	22.01.2022 06:47	17° 59.98'S	011° 16.98'E	1006	
MSM105_36-1	N18025	CTD	22.01.2022 08:23	18° 00.02'S	011° 21.94'E	555	
MSM105_36-2	N18025	MSS	22.01.2022 09:23	18° 00.03'S	011° 21.94'E	553	
MSM105_36-3	N18025	BC	22.01.2022 11:06	18° 00.01'S	011° 22.00'E	548	
MSM105_36-4	N18025	DRG	22.01.2022 11:39	18° 00.01'S	011° 22.00'E	548	
MSM105_37-1	N18020	MSS	22.01.2022 12:58	17° 59.99'S	011° 26.97'E	277	
MSM105_38-1	N18017	CTD	22.01.2022 14:48	18° 00.00'S	011° 30.97'E	234	
MSM105_38-2	N18017	MSS	22.01.2022 15:31	18° 00.03'S	011° 30.96'E	234	
MSM105_38-3	N18017	VGRAB	22.01.2022 16:50	17° 59.95'S	011° 30.99'E	233	
MSM105_38-4	N18017	VGRAB	22.01.2022 17:09	17° 59.95'S	011° 30.99'E	234	
MSM105_38-5	N18017	VGRAB	22.01.2022 17:28	17° 59.95'S	011° 30.99'E	234	
MSM105_38-6	N18017	DRG	22.01.2022 17:50	17° 59.96'S	011° 31.00'E	232	
MSM105_39-1	N18013	MSS	22.01.2022 19:08	18° 00.00'S	011° 35.00'E	186	
MSM105_40-1	N18010	CTD	22.01.2022 20:50	18° 00.01'S	011° 37.94'E	130	
MSM105_40-2	N18010	MSS	22.01.2022 21:19	18° 00.02'S	011° 37.95'E	129	
MSM105_40-3	N18010	MUC	22.01.2022 22:26	18° 00.01'S	011° 38.03'E	130	
MSM105_40-4	N18010	VGRAB	22.01.2022 22:41	18° 00.01'S	011° 38.02'E	131	
MSM105_40-5	N18010	VGRAB	22.01.2022 22:53	18° 00.01'S	011° 38.02'E	132	
MSM105_40-6	N18010	VGRAB	22.01.2022 23:05	18° 00.01'S	011° 38.02'E	130	
MSM105_40-7	N18010	DRG	22.01.2022 23:21	18° 00.01'S	011° 38.02'E	131	
MSM105_41-1	N18005	MSS	23.01.2022 00:30	17° 59.70'S	011° 42.99'E	93	
MSM105_41-2	N18005	MUC	23.01.2022 01:39	17° 59.98'S	011° 42.98'E	93	
MSM105_41-3	N18005	MUC	23.01.2022 01:52	17° 60.00'S	011° 42.99'E	91	
MSM105_41-4	N18005	MUC	23.01.2022 02:03	17° 60.00'S	011° 42.99'E	94	
MSM105_41-5	N18005	MUC	23.01.2022 02:15	17° 60.00'S	011° 42.99'E	94	
MSM105_41-6	N18005	MUC	23.01.2022 02:28	17° 60.00'S	011° 42.99'E	92	
MSM105_41-7	N18005	MUC	23.01.2022 02:43	18° 00.00'S	011° 42.99'E	92	
MSM105_41-8	N18005	VGRAB	23.01.2022 02:56	18° 00.00'S	011° 42.99'E	92	
MSM105_41-9	N18005	VGRAB	23.01.2022 03:06	18° 00.01'S	011° 42.99'E	91	
MSM105_41-10	N18005	VGRAB	23.01.2022 03:14	18° 00.01'S	011° 42.99'E	92	
MSM105_41-11	N18005	VGRAB	23.01.2022 03:23	18° 00.01'S	011° 42.99'E	91	
MSM105_41-12	N18005	VGRAB	23.01.2022 03:32	18° 00.01'S	011° 42.99'E	91	
MSM105_42-1	N18002	CTD	23.01.2022 04:16	17° 59.89'S	011° 46.00'E	54	
MSM105_42-2	N18002	MSS	23.01.2022 04:40	17° 59.90'S	011° 46.00'E	58	
MSM105_42-3	N18002	VGRAB	23.01.2022 05:24	17° 59.99'S	011° 46.00'E	54	
MSM105_42-4	N18002	VGRAB	23.01.2022 05:29	17° 59.99'S	011° 46.00'E	55	
MSM105_42-5	N18002	VGRAB	23.01.2022 05:36	17° 59.99'S	011° 46.00'E	55	
MSM105_42-6	N18002	VGRAB	23.01.2022 05:42	17° 60.00'S	011° 46.00'E	55	
MSM105_42-7	N18002	VGRAB	23.01.2022 05:50	18° 00.01'S	011° 46.00'E	56	
MSM105_42-8	N18002	VGRAB	23.01.2022 05:57	18° 00.02'S	011° 46.00'E	56	
MSM105_43-1	N18001	MSS	23.01.2022 06:37	17° 59.91'S	011° 47.42'E	23	
MSM105_43-2	N18001	VGRAB	23.01.2022 06:58	17° 59.91'S	011° 47.42'E	22	
MSM105_43-3	N18001	VGRAB	23.01.2022 07:01	17° 59.92'S	011° 47.42'E	24	
MSM105_43-4	N18001	VGRAB	23.01.2022 07:04	17° 59.92'S	011° 47.41'E	22	
MSM105_43-5	N18001	VGRAB	23.01.2022 07:08	17° 59.91'S	011° 47.41'E	24	
MSM105_43-6	N18001	VGRAB	23.01.2022 07:11	17° 59.92'S	011° 47.41'E	24	
MSM105_43-7	N18001	VGRAB	23.01.2022 07:14	17° 59.92'S	011° 47.41'E	22	
MSM105_44-1	N18535	CTD	23.01.2022 10:51	18° 30.00'S	011° 30.01'E	266	CC
MSM105_45-1	N19001	MSS	23.01.2022 17:48	18° 59.90'S	012° 27.76'E	24	
MSM105_45-2	N19001	VGRAB	23.01.2022 18:02	18° 59.90'S	012° 27.76'E	24	
MSM105_45-3	N19001	VGRAB	23.01.2022 18:07	18° 59.90'S	012° 27.76'E	25	
MSM105_45-4	N19001	VGRAB	23.01.2022 18:11	18° 59.91'S	012° 27.76'E	24	
MSM105_45-5	N19001	DRG	23.01.2022 18:20	18° 59.92'S	012° 27.76'E	25	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_45-6	N19001	DRG	23.01.2022 18:36	19° 00.01'S	012° 27.73'E	27	
MSM105_46-1	N20_DR	MSS	24.01.2022 01:16	20° 02.18'S	012° 15.58'E	253	
MSM105_46-2	N20_DR	MUC	24.01.2022 02:16	20° 02.83'S	012° 15.45'E	256	
MSM105_47-1	NN	CTD	24.01.2022 08:39	20° 39.74'S	013° 03.73'E	123	
MSM105_48-1	N21001	MSS	24.01.2022 12:00	21° 00.03'S	013° 28.68'E	24	
MSM105_48-2	N21001	VGRAB	24.01.2022 12:22	21° 00.08'S	013° 28.67'E	24	
MSM105_48-3	N21001	VGRAB	24.01.2022 12:26	21° 00.08'S	013° 28.67'E	25	
MSM105_48-4	N21001	VGRAB	24.01.2022 12:30	21° 00.08'S	013° 28.67'E	25	
MSM105_48-5	N21001	VGRAB	24.01.2022 12:33	21° 00.08'S	013° 28.67'E	25	
MSM105_48-6	N21001	DRG	24.01.2022 12:41	21° 00.11'S	013° 28.66'E	25	
MSM105_48-7	N21001	DRG	24.01.2022 13:00	21° 00.24'S	013° 28.63'E	26	
MSM105_49-1	M_WBST	MSS	25.01.2022 01:10	23° 01.40'S	014° 02.21'E	141	
MSM105_49-2	M_WBST	MOOR	25.01.2022 02:35	23° 01.40'S	014° 02.23'E	141	
MSM105_50-1	N24001	MSS	25.01.2022 08:55	23° 53.96'S	014° 28.78'E	30	
MSM105_50-2	N24001	VGRAB	25.01.2022 09:15	23° 53.96'S	014° 28.78'E	30	
MSM105_50-3	N24001	VGRAB	25.01.2022 09:19	23° 53.96'S	014° 28.78'E	30	
MSM105_50-4	N24001	VGRAB	25.01.2022 09:22	23° 53.95'S	014° 28.77'E	29	
MSM105_50-5	N24001	VGRAB	25.01.2022 09:27	23° 53.95'S	014° 28.77'E	28	
MSM105_50-6	N24001	MUC	25.01.2022 09:34	23° 53.95'S	014° 28.77'E	31	
MSM105_50-7	N24001	DRG	25.01.2022 09:45	23° 53.95'S	014° 28.77'E	28	
MSM105_51-1	N24015	CTD	25.01.2022 12:08	23° 59.98'S	014° 12.02'E	135	CC
MSM105_52-1	N24501	MSS	25.01.2022 18:49	24° 29.77'S	014° 32.15'E	30	
MSM105_52-2	N24501	VGRAB	25.01.2022 19:10	24° 29.77'S	014° 32.15'E	32	
MSM105_52-3	N24501	VGRAB	25.01.2022 19:14	24° 29.77'S	014° 32.14'E	30	
MSM105_52-4	N24501	VGRAB	25.01.2022 19:19	24° 29.77'S	014° 32.14'E	31	
MSM105_52-5	N24501	DRG	25.01.2022 19:29	24° 29.77'S	014° 32.14'E	30	
MSM105_53-1	N25_DR	DRIFT	26.01.2022 03:08	25° 26.44'S	014° 10.20'E	214	
MSM105_53-2	N25_DR	MSS	26.01.2022 03:22	25° 26.77'S	014° 10.36'E	216	
MSM105_54-1	N25015	CTD	26.01.2022 07:30	24° 59.98'S	014° 33.96'E	104	
MSM105_54-2	N25015	MSS	26.01.2022 08:01	24° 59.98'S	014° 33.96'E	102	
MSM105_54-3	N25015	PCTD	26.01.2022 08:54	24° 59.99'S	014° 33.96'E	104	
MSM105_54-4	N25015	PCTD	26.01.2022 09:10	24° 59.99'S	014° 33.96'E	104	
MSM105_54-5	N25015	MSS	26.01.2022 15:31	25° 00.01'S	014° 33.96'E	100	
MSM105_54-6	N25015	PCTD	26.01.2022 16:32	25° 00.00'S	014° 33.96'E	101	
MSM105_54-7	N25015	CTD	26.01.2022 17:04	25° 00.00'S	014° 33.96'E	98	
MSM105_54-8	N25015	PCTD	26.01.2022 18:05	25° 00.00'S	014° 33.96'E	103	
MSM105_54-9	N25015	MUC	26.01.2022 18:29	25° 00.00'S	014° 33.96'E	110	
MSM105_54-10	N25015	MUC	26.01.2022 18:44	25° 00.00'S	014° 33.97'E	103	
MSM105_54-11	N25015	MUC	26.01.2022 18:53	25° 00.00'S	014° 33.97'E	105	
MSM105_54-12	N25015	MUC	26.01.2022 19:10	25° 00.00'S	014° 33.97'E	101	
MSM105_54-13	N25015	MUC	26.01.2022 19:15	25° 00.00'S	014° 33.97'E	103	
MSM105_54-14	N25015	VGRAB	26.01.2022 19:28	25° 00.00'S	014° 33.97'E	102	
MSM105_54-15	N25015	VGRAB	26.01.2022 19:38	25° 00.00'S	014° 33.97'E	104	
MSM105_54-16	N25015	VGRAB	26.01.2022 19:47	25° 00.00'S	014° 33.96'E	104	
MSM105_54-17	N25015	DRG	26.01.2022 19:59	25° 00.00'S	014° 33.97'E	104	
MSM105_55-1	N25002	SCF	26.01.2022 22:08	24° 58.87'S	014° 46.98'E	35	
MSM105_55-2	N25002	SCF	26.01.2022 22:17	24° 59.33'S	014° 47.05'E	37	
MSM105_55-3	N25002	PS	26.01.2022 22:25	24° 59.99'S	014° 46.83'E	41	
MSM105_56-1	N25100	CTD	27.01.2022 16:26	25° 00.04'S	012° 59.01'E	1822	CC
MSM105_56-2	N25100	ISP	27.01.2022 17:19	25° 00.04'S	012° 59.01'E	1824	
MSM105_56-3	N25100	MSS	27.01.2022 20:12	25° 00.07'S	012° 59.01'E	1824	
MSM105_57-1	N25090	CTD	27.01.2022 22:52	25° 00.01'S	013° 10.97'E	1422	
MSM105_57-2	N25090	MSS	28.01.2022 00:51	25° 00.09'S	013° 10.99'E	1422	
MSM105_58-1	N25080	MSS	28.01.2022 03:16	24° 59.93'S	013° 22.02'E	1000	
MSM105_59-1	N25075	MSS	28.01.2022 05:17	25° 00.02'S	013° 28.00'E	1013	
MSM105_60-1	N25070	CTD	28.01.2022 07:14	24° 59.96'S	013° 32.94'E	625	
MSM105_60-2	N25070	MSS	28.01.2022 08:15	24° 59.97'S	013° 32.99'E	623	
MSM105_60-3	N25070	MSS	28.01.2022 08:45	25° 00.27'S	013° 33.02'E	624	
MSM105_60-4	N25070	ISP	28.01.2022 10:01	24° 59.98'S	013° 32.99'E	625	
MSM105_60-5	N25070	BC	28.01.2022 13:29	24° 60.00'S	013° 33.01'E	622	
MSM105_60-6	N25070	DRG	28.01.2022 14:01	24° 60.00'S	013° 33.01'E	623	
MSM105_61-1	N25065	MSS	28.01.2022 15:40	25° 00.01'S	013° 38.99'E	429	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_62-1	N25060	CTD	28.01.2022 17:33	24° 59.99'S	013° 43.98'E	315	
MSM105_62-2	N25060	MSS	28.01.2022 18:22	24° 60.00'S	013° 43.99'E	314	
MSM105_62-3	N25060	MUC	28.01.2022 19:40	25° 00.02'S	013° 43.98'E	0	
MSM105_62-4	N25060	MUC	28.01.2022 19:43	25° 00.02'S	013° 43.98'E	316	
MSM105_62-5	N25060	MUC	28.01.2022 20:11	25° 00.01'S	013° 43.98'E	317	
MSM105_62-6	N25060	MUC	28.01.2022 20:16	25° 00.01'S	013° 43.98'E	317	
MSM105_62-7	N25060	VGRAB	28.01.2022 20:43	25° 00.01'S	013° 43.98'E	317	
MSM105_62-8	N25060	VGRAB	28.01.2022 21:09	25° 00.01'S	013° 43.98'E	315	
MSM105_62-9	N25060	DRG	28.01.2022 21:35	25° 00.01'S	013° 43.98'E	317	
MSM105_63-1	N25055	MSS	28.01.2022 23:16	24° 59.99'S	013° 49.98'E	229	
MSM105_64-1	N25050	CTD	29.01.2022 01:12	24° 59.99'S	013° 54.99'E	186	
MSM105_64-2	N25050	MSS	29.01.2022 02:10	25° 00.05'S	013° 54.99'E	186	
MSM105_64-3	N25050	VGRAB	29.01.2022 03:35	24° 59.92'S	013° 54.98'E	184	
MSM105_64-4	N25050	DRG	29.01.2022 03:54	24° 59.94'S	013° 54.99'E	187	
MSM105_65-1	DR0003	MSS	29.01.2022 05:51	24° 53.41'S	013° 56.68'E	170	
MSM105_66-1	N25040	CTD	29.01.2022 09:15	25° 00.03'S	014° 05.93'E	175	
MSM105_66-2	N25040	MSS	29.01.2022 10:01	25° 00.06'S	014° 05.94'E	175	
MSM105_66-3	N25040	MUC	29.01.2022 11:22	25° 00.00'S	014° 06.01'E	175	
MSM105_66-4	N25040	VGRAB	29.01.2022 11:39	25° 00.00'S	014° 06.01'E	176	
MSM105_66-5	N25040	DRG	29.01.2022 12:00	25° 00.00'S	014° 06.01'E	175	
MSM105_67-1	N25035	MSS	29.01.2022 13:24	25° 00.01'S	014° 12.38'E	171	
MSM105_67-2	N25035	ISP	29.01.2022 14:37	24° 59.99'S	014° 12.40'E	170	
MSM105_67-3	N25035	MUC	29.01.2022 17:44	24° 59.99'S	014° 12.40'E	169	
MSM105_67-4	N25035	MUC	29.01.2022 18:06	24° 59.99'S	014° 12.40'E	170	
MSM105_67-5	N25035	VGRAB	29.01.2022 18:23	24° 59.99'S	014° 12.40'E	170	
MSM105_67-6	N25035	VGRAB	29.01.2022 18:37	24° 60.00'S	014° 12.40'E	170	
MSM105_67-7	N25035	VGRAB	29.01.2022 18:50	24° 60.00'S	014° 12.40'E	171	
MSM105_67-8	N25035	VGRAB	29.01.2022 19:04	25° 00.00'S	014° 12.40'E	172	
MSM105_67-9	N25035	DRG	29.01.2022 19:19	25° 00.00'S	014° 12.40'E	171	
MSM105_68-1	N25030	CTD	29.01.2022 20:31	24° 59.95'S	014° 16.99'E	162	
MSM105_68-2	N25030	MSS	29.01.2022 21:10	24° 59.96'S	014° 16.99'E	163	
MSM105_68-3	N25030	MSS	29.01.2022 21:38	25° 00.25'S	014° 16.92'E	162	
MSM105_69-1	N25025	CTD	29.01.2022 23:10	24° 59.99'S	014° 23.01'E	140	
MSM105_69-2	N25025	MSS	29.01.2022 23:52	25° 00.01'S	014° 23.00'E	136	
MSM105_69-3	N25025	MUC	30.01.2022 01:18	25° 00.00'S	014° 23.00'E	138	
MSM105_69-4	N25025	VGRAB	30.01.2022 01:32	25° 00.00'S	014° 23.01'E	138	
MSM105_69-5	N25025	VGRAB	30.01.2022 01:43	25° 00.00'S	014° 23.01'E	140	
MSM105_69-6	N25025	VGRAB	30.01.2022 01:54	25° 00.01'S	014° 23.01'E	138	
MSM105_69-7	N25025	MUC	30.01.2022 02:08	25° 00.01'S	014° 23.01'E	135	
MSM105_69-8	N25025	DRG	30.01.2022 02:23	25° 00.01'S	014° 23.02'E	138	
MSM105_70-1	NGC004	MSS	30.01.2022 03:44	24° 59.84'S	014° 14.20'E	167	
MSM105_70-2	NGC004	MUC	30.01.2022 04:57	25° 00.01'S	014° 14.17'E	167	
MSM105_70-3	NGC004	GC	30.01.2022 05:15	25° 00.01'S	014° 14.16'E	167	
MSM105_71-1	NGC005	GC	30.01.2022 06:36	24° 59.99'S	014° 24.90'E	132	
MSM105_71-2	NGC005	MUC	30.01.2022 06:58	24° 59.99'S	014° 24.90'E	134	
MSM105_71-3	NGC005	MUC	30.01.2022 07:23	24° 59.99'S	014° 24.90'E	138	
MSM105_71-4	NGC005	MSS	30.01.2022 07:39	25° 00.00'S	014° 24.89'E	129	
MSM105_72-1	N25020	CTD	30.01.2022 09:04	25° 00.02'S	014° 27.98'E	123	
MSM105_72-2	N25020	MSS	30.01.2022 09:44	25° 00.03'S	014° 27.98'E	123	
MSM105_73-1	N25015	CTD	30.01.2022 11:19	25° 00.01'S	014° 34.04'E	103	
MSM105_73-2	N25015	MSS	30.01.2022 11:57	25° 00.05'S	014° 34.03'E	103	
MSM105_73-3	N25015	PCTD	30.01.2022 13:12	25° 00.01'S	014° 34.01'E	102	
MSM105_73-4	N25015	MSS	30.01.2022 18:30	25° 00.02'S	014° 34.00'E	98	
MSM105_73-5	N25015	PCTD	30.01.2022 19:34	25° 00.02'S	014° 34.00'E	100	
MSM105_73-6	N25015	CTD	30.01.2022 20:02	25° 00.02'S	014° 34.00'E	100	
MSM105_73-7	N25015	MUC	30.01.2022 20:38	25° 00.02'S	014° 34.00'E	98	
MSM105_74-1	N25010	MSS	30.01.2022 21:40	24° 59.51'S	014° 39.19'E	81	
MSM105_74-2	N25010	CTD	30.01.2022 22:21	25° 00.00'S	014° 39.00'E	84	
MSM105_74-3	N25010	ISP	30.01.2022 22:54	25° 00.00'S	014° 39.00'E	84	
MSM105_74-4	N25010	PCTD	31.01.2022 02:01	25° 00.00'S	014° 39.00'E	89	
MSM105_74-5	N25010	CTD	31.01.2022 02:44	25° 00.00'S	014° 39.00'E	81	
MSM105_74-6	N25010	MUC	31.01.2022 03:04	25° 00.00'S	014° 39.00'E	80	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_74-7	N25010	VGRAB	31.01.2022 03:14	25° 00.00'S	014° 39.00'E	80	
MSM105_74-8	N25010	VGRAB	31.01.2022 03:22	25° 00.00'S	014° 39.00'E	81	
MSM105_74-9	N25010	VGRAB	31.01.2022 03:30	25° 00.01'S	014° 39.00'E	81	
MSM105_74-10	N25010	MUC	31.01.2022 03:40	25° 00.01'S	014° 39.00'E	81	
MSM105_74-11	N25010	DRG	31.01.2022 03:52	25° 00.01'S	014° 39.00'E	81	
MSM105_75-1	N25005	MSS	31.01.2022 05:13	24° 59.55'S	014° 45.23'E	50	
MSM105_75-2	N25005	CTD	31.01.2022 05:51	24° 59.96'S	014° 45.00'E	50	
MSM105_75-3	N25005	VGRAB	31.01.2022 06:12	24° 59.96'S	014° 45.00'E	50	
MSM105_75-4	N25005	VGRAB	31.01.2022 06:19	24° 59.96'S	014° 45.00'E	49	
MSM105_75-5	N25005	VGRAB	31.01.2022 06:26	24° 59.96'S	014° 45.00'E	50	
MSM105_75-6	N25005	DRG	31.01.2022 06:35	24° 59.96'S	014° 45.00'E	50	
MSM105_76-1	N25002	MSS	31.01.2022 07:42	24° 59.69'S	014° 48.14'E	30	
MSM105_76-2	N25002	CTD	31.01.2022 08:15	24° 60.00'S	014° 48.00'E	32	
MSM105_76-3	N25002	MUC	31.01.2022 08:29	24° 60.00'S	014° 48.00'E	32	
MSM105_76-4	N25002	MUC	31.01.2022 08:43	24° 60.00'S	014° 48.00'E	32	
MSM105_76-5	N25002	MUC	31.01.2022 08:53	25° 00.00'S	014° 48.00'E	32	
MSM105_76-6	N25002	MUC	31.01.2022 09:08	25° 00.00'S	014° 47.99'E	32	
MSM105_76-7	N25002	MUC	31.01.2022 09:21	25° 00.01'S	014° 47.99'E	32	
MSM105_76-8	N25002	VGRAB	31.01.2022 09:29	25° 00.01'S	014° 47.99'E	32	
MSM105_76-9	N25002	VGRAB	31.01.2022 09:34	25° 00.01'S	014° 47.99'E	31	
MSM105_76-10	N25002	VGRAB	31.01.2022 09:38	25° 00.01'S	014° 47.99'E	32	
MSM105_76-11	N25002	VGRAB	31.01.2022 09:42	25° 00.01'S	014° 47.99'E	33	
MSM105_76-12	N25002	DRG	31.01.2022 09:49	25° 00.01'S	014° 47.99'E	33	
MSM105_76-13	N25002	SCF	31.01.2022 10:43	24° 58.29'S	014° 47.34'E	32	
MSM105_77-1	N26_DR	DRIFT	31.01.2022 21:02	26° 00.02'S	014° 24.01'E	200	
MSM105_77-2	N26_DR	MSS	31.01.2022 21:10	26° 00.05'S	014° 24.05'E	201	
MSM105_78-1	N26001	MSS	01.02.2022 01:02	26° 00.03'S	014° 55.57'E	27	
MSM105_78-2	N26001	MSS	01.02.2022 01:10	26° 00.04'S	014° 55.56'E	28	
MSM105_78-3	N26001	VGRAB	01.02.2022 01:40	26° 00.11'S	014° 55.49'E	30	
MSM105_78-4	N26001	VGRAB	01.02.2022 01:44	26° 00.11'S	014° 55.49'E	30	
MSM105_78-5	N26001	VGRAB	01.02.2022 01:47	26° 00.11'S	014° 55.50'E	30	
MSM105_78-6	N26001	VGRAB	01.02.2022 01:50	26° 00.11'S	014° 55.50'E	31	
MSM105_78-7	N26001	VGRAB	01.02.2022 01:54	26° 00.11'S	014° 55.50'E	29	
MSM105_78-8	N26001	VGRAB	01.02.2022 01:59	26° 00.11'S	014° 55.50'E	30	
MSM105_78-9	N26001	VGRAB	01.02.2022 02:02	26° 00.11'S	014° 55.50'E	29	
MSM105_78-10	N26001	VGRAB	01.02.2022 02:05	26° 00.11'S	014° 55.50'E	29	
MSM105_78-11	N26001	VGRAB	01.02.2022 02:09	26° 00.12'S	014° 55.50'E	29	
MSM105_79-1	BLC001	CTD	01.02.2022 05:59	26° 29.13'S	015° 03.29'E	56	
MSM105_79-2	BLC001	VGRAB	01.02.2022 06:10	26° 29.13'S	015° 03.29'E	55	
MSM105_79-3	BLC001	VGRAB	01.02.2022 06:16	26° 29.13'S	015° 03.28'E	55	
MSM105_79-4	BLC001	VGRAB	01.02.2022 06:22	26° 29.13'S	015° 03.28'E	54	
MSM105_79-5	BLC001	MUC	01.02.2022 06:30	26° 29.13'S	015° 03.28'E	55	
MSM105_79-6	BLC001	MUC	01.02.2022 06:41	26° 29.14'S	015° 03.28'E	56	
MSM105_79-7	BLC001	DRG	01.02.2022 06:51	26° 29.14'S	015° 03.28'E	56	
MSM105_80-1	N27010	CTD	01.02.2022 10:25	26° 59.99'S	014° 59.99'E	146	
MSM105_81-1	N27002	SCF	01.02.2022 12:07	26° 58.76'S	015° 09.82'E	57	
MSM105_81-2	N27002	PS	01.02.2022 13:42	26° 59.99'S	015° 09.82'E	59	
MSM105_81-3	N27002	SCF	01.02.2022 13:45	26° 59.99'S	015° 09.66'E	60	
MSM105_82-1	N27100	CTD	02.02.2022 06:53	26° 60.00'S	013° 20.97'E	1972	CC
MSM105_82-2	N27100	BC	02.02.2022 07:48	26° 59.99'S	013° 21.00'E	1966	
MSM105_82-3	N27100	MSS	02.02.2022 09:05	26° 59.99'S	013° 21.00'E	1969	
MSM105_83-1	N27090	MSS	02.02.2022 11:37	26° 59.99'S	013° 31.97'E	1457	
MSM105_83-2	N27090	CTD	02.02.2022 13:10	27° 00.00'S	013° 32.01'E	1457	
MSM105_83-3	N27090	BC	02.02.2022 14:43	27° 00.00'S	013° 32.01'E	1457	
MSM105_83-4	N27090	MSS	02.02.2022 15:45	27° 00.00'S	013° 32.01'E	1452	DT
MSM105_83-5	N27090	MSS	02.02.2022 16:35	27° 00.57'S	013° 32.12'E	1467	DT
MSM105_83-6	N27090	MSS	02.02.2022 17:23	27° 01.10'S	013° 32.23'E	1478	DT
MSM105_84-1	N27080	MSS	02.02.2022 19:52	26° 59.28'S	013° 42.91'E	1013	DT
MSM105_84-2	N27080	BC	02.02.2022 21:09	26° 59.99'S	013° 43.00'E	1031	
MSM105_84-3	N27080	DRG	02.02.2022 21:54	26° 60.00'S	013° 43.00'E	1028	
MSM105_85-1	N27075	MSS	02.02.2022 23:37	26° 59.26'S	013° 48.90'E	762	
MSM105_85-2	N27075	BC	03.02.2022 00:54	27° 00.00'S	013° 49.00'E	787	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_85-3	N27075	DRG	03.02.2022 01:32	27° 00.00'S	013° 49.00'E	787	
MSM105_86-1	N27070	MSS	03.02.2022 03:02	26° 59.25'S	013° 54.19'E	552	
MSM105_86-2	N27070	CTD	03.02.2022 04:13	26° 59.95'S	013° 54.00'E	586	
MSM105_86-3	N27070	BC	03.02.2022 05:27	26° 59.99'S	013° 54.00'E	587	
MSM105_86-4	N27070	DRG	03.02.2022 05:58	27° 00.00'S	013° 54.00'E	588	
MSM105_87-1	N27065	MSS	03.02.2022 07:28	26° 59.97'S	013° 59.79'E	447	
MSM105_88-1	N27060	MSS	03.02.2022 09:47	26° 59.98'S	014° 06.21'E	416	
MSM105_88-2	N27060	CTD	03.02.2022 10:57	27° 00.00'S	014° 05.00'E	422	
MSM105_88-3	N27060	VGRAB	03.02.2022 11:52	27° 00.00'S	014° 05.00'E	423	
MSM105_88-4	N27060	VGRAB	03.02.2022 12:20	27° 00.00'S	014° 05.00'E	423	
MSM105_88-5	N27060	VGRAB	03.02.2022 12:46	27° 00.01'S	014° 05.00'E	422	
MSM105_88-6	N27060	DRG	03.02.2022 13:15	27° 00.01'S	014° 05.01'E	422	
MSM105_89-1	N27050	MSS	03.02.2022 15:22	26° 59.40'S	014° 16.25'E	380	
MSM105_89-2	N27050	CTD	03.02.2022 16:28	26° 59.99'S	014° 16.00'E	385	
MSM105_89-3	N27050	MUC	03.02.2022 16:59	26° 59.99'S	014° 16.00'E	384	
MSM105_89-4	N27050	VGRAB	03.02.2022 17:32	27° 00.01'S	014° 16.00'E	384	
MSM105_89-5	N27050	VGRAB	03.02.2022 18:00	27° 00.00'S	014° 15.99'E	384	
MSM105_89-6	N27050	VGRAB	03.02.2022 18:28	27° 00.00'S	014° 15.99'E	383	
MSM105_89-7	N27050	DRG	03.02.2022 18:59	27° 00.00'S	014° 15.99'E	383	
MSM105_90-1	N27040	MSS	03.02.2022 21:17	26° 59.42'S	014° 26.75'E	339	
MSM105_90-2	N27040	CTD	03.02.2022 22:22	26° 59.99'S	014° 26.99'E	341	
MSM105_90-3	N27040	VGRAB	03.02.2022 23:15	26° 59.99'S	014° 26.99'E	339	
MSM105_90-4	N27040	VGRAB	03.02.2022 23:40	26° 59.99'S	014° 27.00'E	341	
MSM105_90-5	N27040	VGRAB	04.02.2022 00:06	26° 59.99'S	014° 27.00'E	339	
MSM105_90-6	N27040	DRG	04.02.2022 00:35	26° 59.99'S	014° 27.00'E	340	
MSM105_91-1	N27030	MSS	04.02.2022 02:32	26° 59.54'S	014° 36.94'E	283	
MSM105_91-2	N27030	CTD	04.02.2022 03:24	26° 59.86'S	014° 36.98'E	283	
MSM105_91-3	N27030	MUC	04.02.2022 04:02	26° 59.92'S	014° 36.99'E	284	
MSM105_91-4	N27030	VGRAB	04.02.2022 04:25	26° 59.92'S	014° 36.98'E	284	
MSM105_91-5	N27030	VGRAB	04.02.2022 04:48	26° 59.93'S	014° 36.98'E	282	
MSM105_91-6	N27030	VGRAB	04.02.2022 05:11	26° 59.95'S	014° 36.98'E	284	
MSM105_91-7	N27030	DRG	04.02.2022 05:35	26° 59.96'S	014° 36.98'E	285	
MSM105_92-1	N27025	MSS	04.02.2022 07:11	26° 59.44'S	014° 42.91'E	247	
MSM105_92-2	N27025	CTD	04.02.2022 08:10	26° 59.98'S	014° 43.00'E	246	
MSM105_92-3	N27025	VGRAB	04.02.2022 08:46	26° 60.00'S	014° 42.87'E	247	
MSM105_92-4	N27025	VGRAB	04.02.2022 09:04	26° 60.00'S	014° 42.87'E	246	
MSM105_92-5	N27025	VGRAB	04.02.2022 09:23	26° 59.99'S	014° 42.87'E	246	
MSM105_92-6	N27025	DRG	04.02.2022 09:45	26° 59.98'S	014° 42.89'E	247	
MSM105_93-1	N27020	MSS	04.02.2022 11:08	26° 59.37'S	014° 48.88'E	208	
MSM105_93-2	N27020	CTD	04.02.2022 12:06	26° 59.99'S	014° 49.00'E	210	
MSM105_93-3	N27020	ISP	04.02.2022 12:51	26° 59.99'S	014° 49.00'E	208	
MSM105_93-4	N27020	VGRAB	04.02.2022 14:42	26° 59.99'S	014° 49.00'E	210	
MSM105_93-5	N27020	DRG	04.02.2022 15:03	26° 60.00'S	014° 49.00'E	208	
MSM105_94-1	N27015	MSS	04.02.2022 16:26	26° 59.42'S	014° 55.48'E	176	
MSM105_94-2	N27015	CTD	04.02.2022 17:30	27° 00.00'S	014° 55.49'E	178	
MSM105_94-3	N27015	VGRAB	04.02.2022 18:09	27° 00.00'S	014° 55.49'E	180	
MSM105_94-4	N27015	VGRAB	04.02.2022 18:24	27° 00.01'S	014° 55.49'E	178	
MSM105_94-5	N27015	VGRAB	04.02.2022 18:37	27° 00.01'S	014° 55.49'E	180	
MSM105_94-6	N27015	DRG	04.02.2022 18:55	27° 00.01'S	014° 55.49'E	178	
MSM105_95-1	N27010	MSS	04.02.2022 20:09	26° 59.37'S	014° 59.98'E	147	
MSM105_95-2	N27010	CTD	04.02.2022 21:10	26° 59.96'S	015° 00.00'E	146	
MSM105_95-3	N27010	VGRAB	04.02.2022 21:46	26° 59.96'S	015° 00.00'E	145	
MSM105_95-4	N27010	VGRAB	04.02.2022 21:58	26° 59.96'S	015° 00.00'E	147	
MSM105_95-5	N27010	VGRAB	04.02.2022 22:09	26° 59.96'S	015° 00.00'E	148	
MSM105_95-6	N27010	VGRAB	04.02.2022 22:21	26° 59.96'S	015° 00.00'E	146	
MSM105_95-7	N27010	VGRAB	04.02.2022 22:34	26° 59.96'S	015° 00.01'E	147	
MSM105_96-1	N27005	MSS	04.02.2022 23:40	26° 59.31'S	015° 06.01'E	125	
MSM105_96-2	N27005	CTD	05.02.2022 00:29	26° 60.00'S	015° 06.00'E	120	
MSM105_96-3	N27005	MUC	05.02.2022 01:05	27° 00.00'S	015° 06.00'E	123	
MSM105_96-4	N27005	VGRAB	05.02.2022 01:19	27° 00.00'S	015° 06.01'E	123	
MSM105_96-5	N27005	VGRAB	05.02.2022 01:30	27° 00.00'S	015° 06.01'E	121	
MSM105_96-6	N27005	DRG	05.02.2022 01:46	26° 60.00'S	015° 06.01'E	121	

Station No.	Station name	Gear	Date/Time	Latitude	Longitude	Water Depth	Remarks
MERIAN	IOW		[UTC]			[m]	
MSM105_97-1	N27002	MSS	05.02.2022 02:47	26° 59.57'S	015° 08.95'E	70	
MSM105_97-2	N27002	CTD	05.02.2022 03:31	26° 59.98'S	015° 09.01'E	69	
MSM105_97-3	N27002	MUC	05.02.2022 04:01	26° 59.98'S	015° 09.01'E	70	
MSM105_97-4	N27002	VGRAB	05.02.2022 04:12	26° 59.99'S	015° 09.01'E	72	
MSM105_97-5	N27002	VGRAB	05.02.2022 04:17	26° 59.99'S	015° 09.01'E	71	
MSM105_97-6	N27002	VGRAB	05.02.2022 04:25	27° 00.00'S	015° 09.01'E	74	
MSM105_97-7	N27002	VGRAB	05.02.2022 04:33	27° 00.01'S	015° 09.01'E	71	
MSM105_97-8	N27002	VGRAB	05.02.2022 04:39	27° 00.01'S	015° 09.01'E	71	
MSM105_97-9	N27002	VGRAB	05.02.2022 04:45	27° 00.02'S	015° 09.01'E	71	
MSM105_98-1	DR0004	MSS	05.02.2022 15:11	25° 24.29'S	013° 54.22'E	258	
MSM105_99-1	N25090	MSS	05.02.2022 20:13	25° 00.02'S	013° 11.00'E	1421	
MSM105_100-1	N25080	MSS	05.02.2022 22:43	24° 59.95'S	013° 22.02'E	997	
MSM105_101-1	N25075	MSS	06.02.2022 00:37	24° 59.98'S	013° 28.00'E	794	
MSM105_102-1	N25070	MSS	06.02.2022 02:25	24° 59.79'S	013° 33.13'E	612	
MSM105_103-1	N25065	MSS	06.02.2022 04:29	24° 59.73'S	013° 39.17'E	424	
MSM105_104-1	N25060	MSS	06.02.2022 06:25	24° 59.31'S	013° 44.42'E	310	
MSM105_104-2	N25060	ISP	06.02.2022 07:48	24° 59.98'S	013° 44.02'E	313	
MSM105_104-3	N25060	CTD	06.02.2022 09:40	24° 59.98'S	013° 44.02'E	313	CC
MSM105_104-4	N25060	MUC	06.02.2022 10:25	24° 59.98'S	013° 44.02'E	314	
MSM105_105-1	N25055	MSS	06.02.2022 11:31	24° 59.97'S	013° 50.04'E	227	
MSM105_106-1	N25050	MSS	06.02.2022 13:12	24° 59.95'S	013° 55.04'E	184	
MSM105_107-1	N25040	MSS	06.02.2022 15:29	24° 59.53'S	014° 06.24'E	177	
MSM105_108-1	N25035	MSS	06.02.2022 17:19	24° 59.39'S	014° 12.63'E	171	
MSM105_108-2	N25035	MUC	06.02.2022 18:32	25° 00.01'S	014° 12.40'E	172	
MSM105_109-1	N25030	MSS	06.02.2022 19:33	24° 59.72'S	014° 17.07'E	162	
MSM105_110-1	N25025	MSS	06.02.2022 21:28	24° 59.34'S	014° 23.22'E	138	
MSM105_110-2	N25025	MUC	06.02.2022 22:35	24° 59.99'S	014° 23.01'E	140	
MSM105_110-3	N25025	MUC	06.02.2022 22:56	24° 59.99'S	014° 23.01'E	140	
MSM105_110-4	N25025	MUC	06.02.2022 23:13	24° 59.99'S	014° 23.01'E	138	
MSM105_111-1	N25020	MSS	07.02.2022 00:04	24° 59.33'S	014° 28.28'E	123	
MSM105_111-2	N25020	MUC	07.02.2022 01:01	25° 00.01'S	014° 28.01'E	124	
MSM105_112-1	N25015	CTD	07.02.2022 01:57	24° 59.99'S	014° 34.00'E	103	
MSM105_112-2	N25015	MSS	07.02.2022 02:22	25° 00.02'S	014° 33.99'E	100	
MSM105_112-3	N25015	PCTD	07.02.2022 03:14	24° 59.98'S	014° 33.98'E	100	
MSM105_112-4	N25015	MSS	07.02.2022 07:49	24° 59.98'S	014° 33.98'E	100	
MSM105_112-5	N25015	PCTD	07.02.2022 09:00	25° 00.02'S	014° 33.96'E	100	
MSM105_112-6	N25015	CTD	07.02.2022 09:42	25° 00.02'S	014° 33.96'E	100	
MSM105_112-7	N25015	PCTD	07.02.2022 11:08	24° 60.00'S	014° 34.00'E	99	
MSM105_112-8	N25015	MUC	07.02.2022 11:52	25° 00.00'S	014° 34.00'E	100	
MSM105_113-1	N25010	MSS	07.02.2022 12:43	24° 59.40'S	014° 39.09'E	81	
MSM105_113-2	N25010	CTD	07.02.2022 13:45	25° 00.00'S	014° 39.00'E	84	
MSM105_113-3	N25010	PCTD	07.02.2022 14:06	25° 00.00'S	014° 39.00'E	83	
MSM105_113-4	N25010	DRG	07.02.2022 14:40	25° 00.00'S	014° 39.00'E	81	
MSM105_114-1	N25005	MSS	07.02.2022 16:07	24° 59.57'S	014° 45.09'E	51	
MSM105_115-1	N25002	MSS	07.02.2022 17:14	24° 59.87'S	014° 47.97'E	31	
MSM105_115-2	N25002	SCF	07.02.2022 18:07	24° 58.34'S	014° 46.98'E	35	
MSM105_115-3	N25002	SCF	07.02.2022 20:22	24° 58.53'S	014° 47.08'E	34	
MSM105_116-1	N23100	SCF	08.02.2022 14:23	22° 58.62'S	012° 33.98'E	1467	
MSM105_117-1	N23010	CTD	09.02.2022 08:30	22° 59.98'S	014° 13.00'E	114	
MSM105_117-2	N23010	PCTD	09.02.2022 09:08	23° 00.00'S	014° 13.00'E	113	
MSM105_117-3	N23010	MSS	09.02.2022 09:52	23° 00.01'S	014° 12.99'E	113	
MSM105_117-4	N23010	PCTD	09.02.2022 11:08	22° 60.00'S	014° 13.01'E	114	
MSM105_117-5	N23010	MSS	09.02.2022 16:19	23° 00.01'S	014° 13.00'E	109	
MSM105_117-6	N23010	CTD	09.02.2022 17:43	22° 59.98'S	014° 13.05'E	110	
MSM105_118-1	AG0001	MSS	14.02.2022 15:55	12° 00.60'S	003° 00.02'E	5574	
MSM105_118-2	AG0001	CTD	14.02.2022 17:26	11° 59.87'S	002° 59.99'E	5577	
MSM105_118-3	AG0001	CTD	14.02.2022 18:17	11° 59.87'S	002° 59.99'E	5573	
MSM105_119-1	-	BOAT	20.02.2022 09:10	05° 48.86'N	016° 7.93'W	4974	SG