Dr. Thomas Kuhn

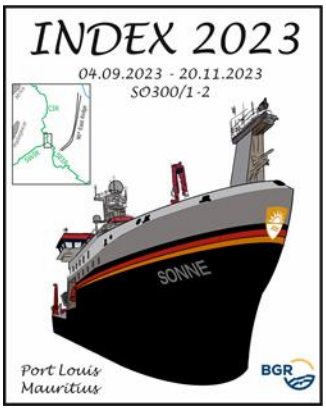
Bundesanstalt für Geowissenschaften und Rohstoffe

Stilleweg 2

30655 Hannover

Tel: +49 (0)511 6433780

E-Mail: thomas.kuhn@bgr.de



Short Cruise Report

RV SONNE cruise SO 300/2

Port Louis – Port Louis (Mauritius)

02.10. – 19.11.2023

Chief Scientist: Thomas Kuhn

Captain: Oliver Meyer

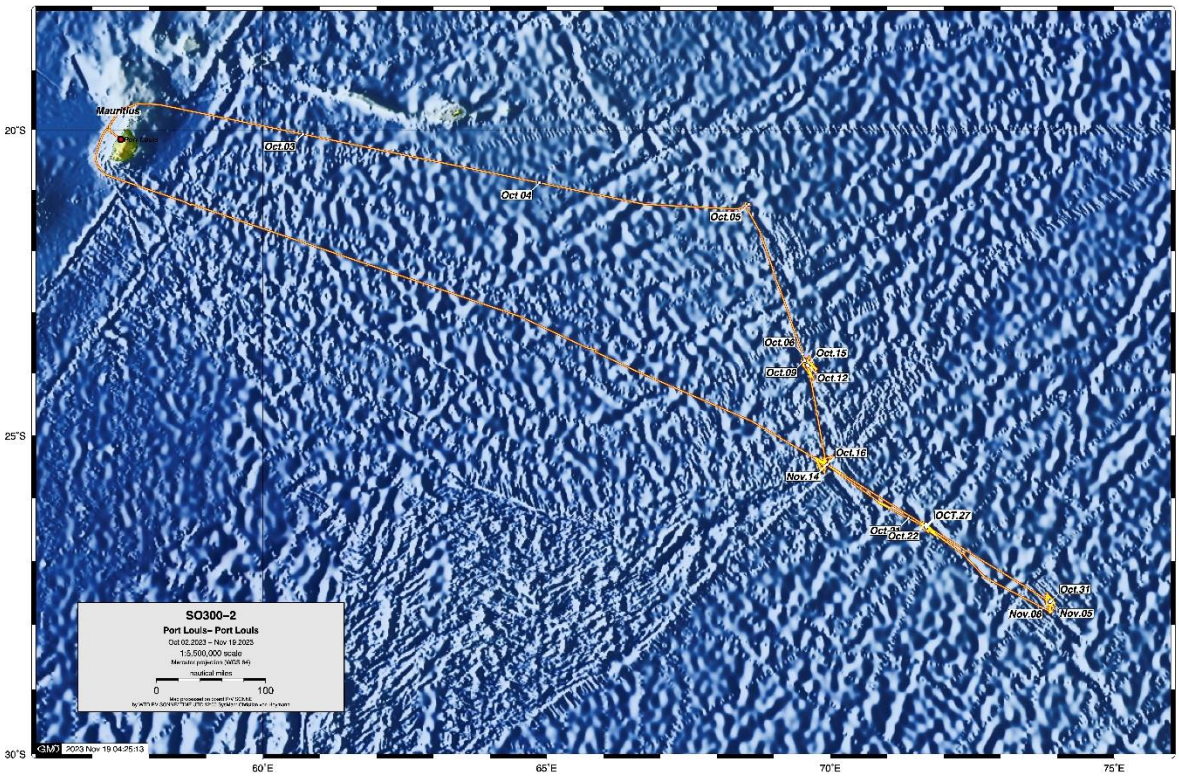


Figure 1: Cruise track of SO 300/2.

Objectives and major results

The objective of cruise SO300/2 was to continue the geological and environmental investigations in the BGR license area for the exploration of massive sulfides in the central Indian Ocean (the INDEX project) which are based on a contract between the Federal Institute for Geosciences and Natural Resources (BGR) and the International Seabed Authority (ISA). This exploration work has been started in 2015 and SO300/2 is the second leg of the INDEX2023 exploration campaign.

Cruise SO300/2 had the following general objectives: (1) high-resolution bathymetric mapping using the deep-towed bathymetric sled HOMESIDE; (2) Geological and biological mapping and sampling of known and new hydrothermal fields with the Canadian ROV ROPOS including sampling of high-T hydrothermal fluids; (3) Photogrammetric mapping of two hydrothermal mounds using the ROV and the deep-towed video sled STROMER; (4) retrieving gravity cores from crusted hydrothermal mounds for sampling their shallow subsurface; (5) drilling into massive sulfide and hard rock outcrops with the ROV-based drill tool ROCS; (6) continuation of our biogeochemical investigations based on long-term sediment trap moorings and CTD/rosette casts as part of BGR's environmental baseline studies; (7) investigation of the near-bottom megafauna community with baited fish camera moorings.

The results can be summarized as follows:

1) High-resolution bathymetric mapping:
Thirty two (32) HOMESIDE stations were run with a total of 344 hours bottom time and a coverage of 384 km². Two new inactive hydrothermal fields have been detected based on HOMESIDE data: the AURORA field in Cluster 12 and KAIMANA SOUTH field in Cluster 05. Strong indications of another hydrothermal field were found in the near-bottom water column of Cluster 05 as well, but the source on the seafloor could not yet been detected. Seven new hydrothermal sites were found in the ALPHA and JIM fields.
The AURORA field is special since it hosts numerous (> 100) mound structures, many of them seem to be of hydrothermal origin. This result suggests a large hydrothermal deposit in this area.

2) Geological mapping and sampling with ROV ROPOS:
Twenty (20) dives in 9 different hydrothermal fields were realized with ROPOS in the science mode and 5 dives in two fields in drill mode. Seafloor samples contained fresh and altered sulfides, rocks and hydrothermal sediments with push cores. The occurrence of native copper as up to a few centimeters large fragments in several push cores was one highlight of this work. Drilling with the ROV module ROCS proved the concept of this drilling system. Whereas massive, outcropping sulfides and rocks could be drilled with high recovery rates, altered and oxidized sulfides with changing lithologies could not. The retrieved cores exhibit a significant diversity. Over short distances in one hydrothermal field cores were drilled with a dominance from sphalerite (Zn-rich) over chalcopyrite (Cu-rich) to pyrite (Fe-rich).
Geological mapping was also further developed. In total about 29,000 lithological observations were processed in ArcGIS Pro during the cruise. We also started to process all available data in 3-dimensional models.
Two hydrothermal mounds were mapped in mm-resolution using a photogrammetric approach. 3D models were developed of these mounds to get a better understanding of their size, shape and surface.

3) Biological sampling with ROV ROPOS

As part of the environmental studies, the biology team was able to collect a total of 2,142 samples with ROV's manipulators, slurp gun and push cores as well as 146:54 hrs of video imagery and 15,603 photos. Special attention was taken in recovering the colonization experiments from two hydrothermal vent fields which were placed there one year before and three incubation experiments installed in or near the Edmond hydrothermal field four years ago. Moreover, water samples from different depths through the water column and just above the seafloor were taken. Samples were prepared for analyses in the home laboratories with special attention to metabarcoding and eDNA.

4) Hydrothermal fluid sampling with ROV ROPOS

An important part of this year's expedition was the sampling of high-T hydrothermal fluids on different active vents using the ROV-mounted KIPS. In total 27 fluid samples were taken on 17 high-T, focused and 10 low-T, diffuse vent sites. Maximum fluid temperature was 350°C and almost all high-T samples showed indications of phase separation.

5) Gravity Coring

In total 22 gravity corers were taken on hydrothermal mounds which are covered by Fe-Mn oxide crusts with only two of them being empty. The objective of this work was to sample the subsurface of these mounds with no obvious signs of massive sulfides at the seafloor. However, it turned that many of these mounds contain hydrothermal sediments beneath the crusts which might have developed due to weathering and oxidation of sulfides.

6) Biogeochemistry and oceanography

Biogeochemical and oceanographic research is an important part of BGR's environmental program since it provides information from the entire water column. Apart from this, these investigations contribute to climate change research by providing important data on vertical particle flux in this remote area of the Southern Indian Ocean Gyre.

Overall, INDEX2023 was extremely successful from the perspective of the accompanying biogeochemical studies. Five long-term moorings were recovered after one year of measurements, four more were deployed during this cruise. All deployed devices were successfully recovered without any losses and provided important samples and data from the water column. Together with numerous accompanying CTD casts across the entire INDEX area, current water column profiles including intensive water sampling were recorded, which will lead to a further oceanographic and biogeochemical understanding of the INDEX area.

7) Baited fish camera deployment

Last but not least we deployed the baited fish camera mooring system eight times for 24 hours each in different parts of the INDEX area. In each area the system was deployed close to active hydrothermal fields and far away from them. Significant changes compared to similar work in the central Pacific could already been stated during the cruise. Final analysis of the received underwater images will follow in the home lab.

Cruise narrative

Cruise SO300/2 started on 29 September with the mobilization of ROV ROPOS onboard RV SONNE. After three days of mobilization and testing the systems as well as after installing all the other scientific tools onboard, RV SONNE started her transit into the working area on 02 October 2023. In total, 26 scientists take part in this cruise. They are from BGR, the Universities of Hamburg and Kiel, GEOMAR Helmholtz Centre for Ocean Research Kiel, the Hafen City Universität Hamburg, the Integrated Environmental Solutions uG Wilhelmshaven, the Scottish Association for Marine Science as well as from Gibson Geosciences Consultants, Sudbury (Canada). Furthermore, four trainees with geological background, two from Philippines, one from Chile, and one from DR Congo participate. The objective of their participation is to be trained in marine exploration of seabed minerals. During this cruise the remotely operated vehicle (ROV) ROPOS was used which is run by the Canadian Scientific Submersible Facility. Moreover, the cruise is accompanied by Willi Schumann, a TV journalist who reports about the exploration and environmental work in different media formats such as blog entries, photo and video stories.

Station work during SO 300/2 took place over the entire INDEX area which stretches 500 km to the north of the Rodriguez Triple Junction (RTJ) along the Central Indian Ridge and 500 km to the southeast of RTJ along the Southeast Indian Ridge (see Fig. 1). We started in Cluster 01 where only a sediment trap mooring was recovered and two CTD casts carried out. RV SONNE then moved to Cluster 04 where she stayed for 9 days carrying out 28 stations. On 15 October RV SONNE continued to Cluster 05 which is located just north of the RTJ. In this Cluster 14 stations were run between 16 and 19 October. The next working area was Cluster 07 where only 6 stations have been realized. RV SONNE moved on to Cluster 09 where she stayed from 21 October to 29 October for 27 stations. Afterwards the vessel moved on to Cluster 12 with a short stopover in Cluster 10 (3 stations) and Cluster 11 (1 station). In Cluster 12 a great deal of the station work was realized which shows the importance of this area. In total 29 stations between 31 October and 08 November have been realized.
At the end of the investigations in Cluster 12 the mobile drill rig ROCS (remotely operated coring system) was mounted to ROV ROPOS and five drill stations were carried out during the last days of this cruise, one in Cluster 12 and four in Cluster 05. Originally, it was planned to drill in Cluster 07 and 09 as well but bad weather prevented this. In addition to the drill-ROV stations we carried out further bathymetric and video mapping as well as an intense gravity coring program between 09 and 15 November.
The deployment of a mooring in Cluster 05 was the last station of this cruise, totaling 127 stations for SO300/2 and 150 stations for the entire SO300 campaign.
RV SONNE arrived in Port Louis on 19 November at 09:00. During the transit most of the scientific equipment was already demobilized and packed into the containers. The unloading of the containers to the pier was rather quick and could be finished in the afternoon of 19 November. The scientists started to leave the vessel with the last ones leaving on 20 November in the morning and this way cruise SO300/2 ended.

Acknowledgement
The cruise was carried out based on an agreement between the Federal Ministry of Education and Research and the Federal Ministry for Economic Affairs and Climate Action. We thank the German Research Fleet Coordination Centre, Institute for Geology, Universität Hamburg, and BRIESE research for their comprehensive support in logistics preparation of the cruise. On behalf of the scientific crew, I would like to thank captain Oliver Meyer and the ship's crew for their outstanding assistance and support during all station work.

List of participants

1.	Kuhn, Thomas	Chief scientist	BGR
2.	Freitag, Ralf	Deputy chief scientist	BGR
3.	Adhikari, Dilip	Bathymetry	HCU
4.	Baaske, Ronny	Microbiology	GEOMAR
5.	Brake, Barry	ROV ROPOS	CSSF
6.	Brockless, Daniel	ROV ROPOS	CSSF
7.	Deike, Stephan	XRF measurements	BGR
8.	Dietzel, Kornelia	Hydrothermal Fluids	BGR
9.	Fuchs, Sebastian	Geology, Mineralogy	BGR
10.	Garbe-Schönberg, Dieter	Hydrothermal Fluids	CAU Kiel
11.	Gemmel, Thomas	Geological Mapping, GIS	GGC
12.	Girad, Luke	ROV ROPOS	CSSF
13.	Gardner, Scott	ROV ROPOS	CSSF
14.	Hagedorn, Dennis	Magnetics	BGR
15.	Harms, Natalie	Biogeochemistry	Uni HH
16.	Kefel, Oliver	Sample tools	BGR
17.	Kihara, Terue	Biology	INES
18.	Kniesz, Katharina	Biology	INES
19.	Lahajnar, Niko	Biogeochemistry	Uni HH
20.	Lobo, Bertrand	Bathymetry	HCU
21.	Lockhart, Peter	ROV ROPOS	CSSF
22.	Lueckge, Andreas	Sample Log, Sedimentology	BGR
23.	Lüttke, Thomas	Geological Mapping, GIS	BGR
24.	Mendoza, Chelsi	Trainee	ISA
25.	Meyn, Klaas	Biology	INES
26.	Motol, Kristine	Trainee	ISA
27.	Muhindo Kasay, Georges	Trainee	ISA
28.	Nischik, Timo	Bathymetry	HCU
29.	Penopp, Jan	Biogeochemistry	Uni HH
30.	Rivero Cortés, Alessandra	Trainee	ISA
31.	Schumann, Andreas	TV Journalist	Willy Productions
32.	Sturm, Simone	Logistics, Sedimentology	BGR
33.	Sweetmann, Andrew	Biology	SAMS
34.	Tamburri, Keith	ROV ROPOS	CSSF
35.	Wedemeyer, Henning	Electronics	BGR
36.	Wöhrl, Christian	Scanning electron microscopy	BGR
37.	Wurl, Christoph	Video Mapping	BGR

BGR: Federal Institute for Geosciences and Natural Resources, Hannover, Germany
HCU: Hafen City Universität Hamburg, Germany
CSSF: Canadian Scientific Submersible Facility, North Saanich, Canada
INES: Integrated Environmental Solutions UG, Wilhelmshaven, Germany
CAU Kiel: Carl Albrechts University Kiel, Institute for Geosciences, Germany
Uni HH: Universität Hamburg, Institute of Geology, Germany
SAMS: Scottish Association for Marine Science, Edinburgh, UK
GGC: Gibson Geosciences Consultants, Sudbury, Canada
ISA: International Seabed Authority, Kingston, Jamaica

Station List SO 300/2

StationID	remarks_ stations	Action	Date_Time _UTC	Lat, Long	depth_ m	Tool	remarks_ actions
INDEX2023 -023ST	Cluster 1; Recovery Mooring Cluster 01-06	start of station	5.10.23 10:25	21° 13.95' S, 68° 35.12' E	3192	Sedimenttrap	
INDEX2023 -023ST	Cluster 1; Recovery Mooring Cluster 01-06	end of station	5.10.23 12:22	21° 13.92' S, 68° 35.24' E	3177	Sedimenttrap	Results: recovery Sediment Trap complete rotation, 2 of 2 Current Meter; 2 of 2 passive samplers
INDEX2023 -024CTD	Cluster 1; complete water profile	start of station	5.10.23 13:54	21° 12.611' S, 68° 30.007' E	3180	CTD Rosette	
INDEX2023 -024CTD	Cluster 1; complete water profile	final depth	5.10.23 14:55	21° 12.607' S, 68° 30.02' E	3188	CTD Rosette	
INDEX2023 -024CTD	Cluster 1; complete water profile	end of station	5.10.23 16:10	21° 12.613' S, 68° 30.009' E	3186	CTD Rosette	Results: 24 Bottles Closed; Water samples for INES and UHH; both oxygen sensors failed
INDEX2023 -025CTD	Cluster 1; WaterProfile 0-600m	start of station	5.10.23 16:50	21° 12.583' S, 68° 29.984' E	3173	CTD Rosette	
INDEX2023 -025CTD	Cluster 1; WaterProfile 0-600m	final depth	5.10.23 17:16	21° 12.554' S, 68° 29.965' E	3166	CTD Rosette	
INDEX2023 -025CTD	Cluster 1; WaterProfile 0-600m	end of station	5.10.23 17:35	21° 12.553' S, 68° 29.957' E	3164	CTD Rosette	Results: 22 Bottles closed; Water samples für UHH; both oxygen sensors failed
INDEX2023 - 026FishCa m	Cluster 4; deployment FishCam; USBL check included	start of station	6.10.23 12:59	23° 47.81' S, 69° 33.131' E	3113	Camera lander for fish filming	
INDEX2023 - 026FishCa m	Cluster 4; deployment FishCam; USBL check included	end of station	6.10.23 14:15	23° 47.779' S, 69° 33.097' E	3118	Camera lander for fish filming	
INDEX2023 -027CTD	Cluster 4; Waterprofle for Sound Velocity / USBL Calibration	start of station	6.10.23 14:39	23° 48.139' S, 69° 33.448' E	3187	CTD Rosette	
INDEX2023 -027CTD	Cluster 4; Waterprofle for Sound Velocity / USBL Calibration	final depth	6.10.23 15:43	23° 48.139' S, 69° 33.45' E	3189	CTD Rosette	
INDEX2023 -027CTD	Cluster 4; Waterprofle for Sound Velocity / USBL Calibration	end of station	6.10.23 16:48	23° 48.137' S, 69° 33.452' E	3184	CTD Rosette	Results: Water Samples for BGR, Uni Kiel and INES
INDEX2023 -028USBL	Cluster 4; Recording data for USBL calibration Ranger 2 from RV SONNE	start of station	6.10.23 17:08	23° 47.781' S, 69° 33.099' E	3118	Sonardyne Ranger2 USBL System Calibration	

INDEX2023-028USBL	Cluster 4; Recording data for USBL calibration Ranger 2 from RV SONNE	end of station	6.10.23 22:43	23° 47.773' S, 69° 33.1' E	3117	Sonardyne Ranger2 USBL System Calibration	Results: Pos. In circle with ~2m radius
INDEX2023-029ST	Cluster 4; Recovery of Mooring Cluster 04-07	start of station	7.10.23 1:40	23° 52.284' S, 69° 31.182' E	3064	Sedimenttrap	
INDEX2023-029ST	Cluster 4; Recovery of Mooring Cluster 04-07	end of station	7.10.23 6:02	23° 51.702' S, 69° 31.62' E	3593	Sedimenttrap	Results: recovery Sediment Trap Cluster 01-05; 3 Sediment Trap; 3 passive samplers, 3 Current Meter;
INDEX2023-030GC	Cluster 4; Transponder @ 100m	start of station	7.10.23 6:16	23° 46.572' S, 69° 31.834' E	3070	Gravity corer INDEX	
INDEX2023-030GC	Cluster 4; Transponder @ 100m	at bottom	7.10.23 7:14	23° 46.635' S, 69° 31.883' E	3072	Gravity corer INDEX	
INDEX2023-030GC	Cluster 4; Transponder @ 100m	end of station	7.10.23 8:21	23° 46.035' S, 69° 31.217' E	3061	Gravity corer INDEX	Results: core length 1,44 m
INDEX2023-031GC	Cluster 4; Transponder @ 100m	start of station	7.10.23 8:44	23° 46.644' S, 69° 32.68' E	3033	Gravity corer INDEX	
INDEX2023-031GC	Cluster 4; Transponder @ 100m	at bottom	7.10.23 9:44	23° 46.641' S, 69° 32.678' E	3034	Gravity corer INDEX	
INDEX2023-031GC	Cluster 4; Transponder @ 100m	end of station	7.10.23 10:50	23° 46.643' S, 69° 32.683' E	3034	Gravity corer INDEX	Results: core length 0,28 m
INDEX2023-032FishCam	Cluster 4; recovery FishCam	start of station	7.10.23 11:21	23° 47.763' S, 69° 33.015' E	3118	Camera lander for fish filming	
INDEX2023-032FishCam	Cluster 4; recovery FishCam	end of station	7.10.23 12:25	23° 47.776' S, 69° 33.072' E	3121	Camera lander for fish filming	
INDEX2023-033HMS	Cluster 4; eastern flank of ALPHA	start of station	7.10.23 13:55	23° 47.529' S, 69° 29.483' E	3588	HOMESIDE	
INDEX2023-033HMS	Cluster 4; eastern flank of ALPHA	start of track	7.10.23 15:20	23° 47.537' S, 69° 29.465' E	3588	HOMESIDE	
INDEX2023-033HMS	Cluster 4; eastern flank of ALPHA	end of track	7.10.23 23:59	23° 55.057' S, 69° 40.593' E	2607	HOMESIDE	
INDEX2023-033HMS	Cluster 4; eastern flank of ALPHA	end of station	8.10.23 1:10	23° 55.16' S, 69° 40.753' E	2619	HOMESIDE	Results: ca. 22 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no indication of Redox from 2022; 1 MAPR did not recorded
INDEX2023-034ROPOS	Cluster 4; ALPHA vent field mapping of S-extension	start of station	8.10.23 3:01	23° 46.584' S, 69° 32.095' E	3094	Remote operated plattform for ocean science	
INDEX2023-034ROPOS	Cluster 4; ALPHA vent field mapping of S-extension	start of track	8.10.23 5:52	23° 46.552' S, 69° 32.044' E	3093	Remote operated plattform for ocean science	

INDEX2023-034ROPOS	Cluster 4; ALPHA vent field mapping of S-extension	end of track	8.10.23 12:02	23° 47.108' S, 69° 32.556' E	3018	Remote operated plattform for ocean science	
INDEX2023-034ROPOS	Cluster 4; ALPHA vent field mapping of S-extension	end of station	8.10.23 14:14	23° 47.105' S, 69° 33.255' E	3050	Remote operated plattform for ocean science	Results: 5 push corer (2xBGR; 3xINES); 3 ATAP measurements; watersample for Uni Kiel; photos, videos
INDEX2023-035HMS	Cluster 4; NE of EGS (broder of license block)	start of station	8.10.23 14:50	23° 46.066' S, 69° 33.419' E	3278	HOMESIDE	
INDEX2023-035HMS	Cluster 4; NE of EGS (broder of license block)	start of track	8.10.23 16:45	23° 45.942' S, 69° 33.719' E	3350	HOMESIDE	
INDEX2023-035HMS	Cluster 4; NE of EGS (broder of license block)	end of track	9.10.23 0:40	23° 54.627' S, 69° 44.091' E	2409	HOMESIDE	
INDEX2023-035HMS	Cluster 4; NE of EGS (broder of license block)	end of station	9.10.23 1:50	23° 54.847' S, 69° 44.347' E	2933	HOMESIDE	Results: ca. 22 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; 2 small SP anomaly; no indication of SMS
INDEX2023-036FishCam	Cluster 4; Deployment FishCam	start of station	9.10.23 2:08	23° 55.524' S, 69° 45.051' E	2521	Camera lander for fish filming	
INDEX2023-036FishCam	Cluster 4; Deployment FishCam	end of station	9.10.23 2:15	23° 55.504' S, 69° 45.065' E	2510	Camera lander for fish filming	
INDEX2023-037ROPOS	Cluster 4; ALPHA vent field, active vent sites 1-3	start of station	9.10.23 3:20	23° 46.954' S, 69° 32.849' E	3049	Remote operated plattform for ocean science	
INDEX2023-037ROPOS	Cluster 4; ALPHA vent field, active vent sites 1-3	start of track	9.10.23 6:43	23° 46.951' S, 69° 32.774' E	3022	Remote operated plattform for ocean science	
INDEX2023-037ROPOS	Cluster 4; ALPHA vent field, active vent sites 1-3	end of track	9.10.23 12:29	23° 46.959' S, 69° 32.428' E	3022	Remote operated plattform for ocean science	
INDEX2023-037ROPOS	Cluster 4; ALPHA vent field, active vent sites 1-3	end of station	9.10.23 14:35	23° 46.962' S, 69° 32.52' E	3034	Remote operated plattform for ocean science	Results: 8 push corer (2xBGR; 6xINES); 8 sulphide and 2 rock samples; watersample for Uni Kiel and INES; Biology sample, photos, videos
INDEX2023-038HMS	Cluster 4; eastern	start of station	9.10.23 15:18	23° 45.597' S, 69° 33.86' E	3322	HOMESIDE	
INDEX2023-038HMS	Cluster 4; eastern	start of track	9.10.23 16:38	23° 45.6' S, 69° 33.838' E	3328	HOMESIDE	
INDEX2023-038HMS	Cluster 4; eastern	end of track	10.10.23 0:50	23° 55.291' S, 69° 45.373' E	2390	HOMESIDE	

INDEX2023-038HMS	Cluster 4; eastern	end of station	10.10.23 2:05	23° 55.5' S, 69° 45.594' E	2398	HOMESIDE	Results: ca. 25 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; 2 small SP anomaly; no further indication of SMS; SP not re confirmed
INDEX2023-039FishCam	Cluster 4; recovery of FishCam	start of station	10.10.23 2:13	23° 55.5' S, 69° 45.591' E	2399	Camera lander for fish filming	
INDEX2023-039FishCam	Cluster 4; recovery of FishCam	end of station	10.10.23 3:30	23° 55.618' S, 69° 44.783' E	2538	Camera lander for fish filming	
INDEX2023-040GC	Cluster 4; EGS	start of station	10.10.23 4:50	23° 51.99' S, 69° 36.437' E	2990	Gravity corer INDEX	
INDEX2023-040GC	Cluster 4; EGS	at bottom	10.10.23 5:48	23° 51.948' S, 69° 36.423' E	3001	Gravity corer INDEX	
INDEX2023-040GC	Cluster 4; EGS	end of station	10.10.23 6:50	23° 51.943' S, 69° 36.412' E	3004	Gravity corer INDEX	Results: core length 0,50 m
INDEX2023-041GC	Cluster 4; EGS sampling of mount structure	start of station	10.10.23 7:02	23° 51.904' S, 69° 36.363' E	3035	Gravity corer INDEX	
INDEX2023-041GC	Cluster 4; EGS sampling of mount structure	at bottom	10.10.23 7:59	23° 51.915' S, 69° 36.366' E	3045	Gravity corer INDEX	
INDEX2023-041GC	Cluster 4; EGS sampling of mount structure	end of station	10.10.23 9:02	23° 51.91' S, 69° 36.369' E	3034	Gravity corer INDEX	Results: core length 1,41 m
INDEX2023-042CTD	Cluster 4; CTD - Cast at location 04-07	start of station	10.10.23 10:09	23° 52.538' S, 69° 31.308' E	3530	CTD Rosette	
INDEX2023-042CTD	Cluster 4; CTD - Cast at location 04-07	final depth	10.10.23 11:23	23° 52.539' S, 69° 31.31' E	3530	CTD Rosette	
INDEX2023-042CTD	Cluster 4; CTD - Cast at location 04-07	end of station	10.10.23 12:36	23° 52.538' S, 69° 31.315' E	3530	CTD Rosette	Results: Water Samples for UUH and INES
INDEX2023-043CTD	Cluster 4; CTD Cast 0-800m at Cluster 04-07 Position	start of station	10.10.23 13:08	23° 52.541' S, 69° 31.306' E	3528	CTD Rosette	
INDEX2023-043CTD	Cluster 4; CTD Cast 0-800m at Cluster 04-07 Position	final depth	10.10.23 13:27	23° 52.544' S, 69° 31.308' E	3528	CTD Rosette	
INDEX2023-043CTD	Cluster 4; CTD Cast 0-800m at Cluster 04-07 Position	end of station	10.10.23 13:51	23° 52.536' S, 69° 31.31' E	3524	CTD Rosette	Results: Water Samples for UHH and INES
INDEX2023-044HMS	Cluster 4; ridge SE of EGS, near central valley	start of station	10.10.23 16:04	24° 5.807' S, 69° 42.39' E	2544	HOMESIDE	
INDEX2023-044HMS	Cluster 4; ridge SE of EGS, near central valley	start of track	10.10.23 17:03	24° 5.869' S, 69° 42.387' E	2529	HOMESIDE	
INDEX2023-044HMS	Cluster 4; ridge SE of EGS, near central valley	end of track	11.10.23 1:00	23° 53.196' S, 69° 36.251' E	3444	HOMESIDE	

INDEX2023 -044HMS	Cluster 4; ridge SE of EGS, near central valley	end of station	11.10.23 2:27	23° 52.873' S, 69° 35.983' E	3370	HOMESIDE	Results: ca. 23 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; MAPR No. 3 stopped the recording ~ 19 pm and MAPR No. 5 stopped ~9.15 pm
INDEX2023 - 045ROPOS	Cluster 4; EDMOND hydrothermal field	start of station	11.10.23 2:55	23° 52.874' S, 69° 35.991' E	3375	Remote operated plattform for ocean science	
INDEX2023 - 045ROPOS	Cluster 4; EDMOND hydrothermal field	start of track	11.10.23 5:50	23° 52.884' S, 69° 35.928' E	3421	Remote operated plattform for ocean science	
INDEX2023 - 045ROPOS	Cluster 4; EDMOND hydrothermal field	end of track	11.10.23 12:10	23° 52.59' S, 69° 35.81' E	3296	Remote operated plattform for ocean science	
INDEX2023 - 045ROPOS	Cluster 4; EDMOND hydrothermal field	end of station	11.10.23 14:45	23° 52.584' S, 69° 35.878' E	3256	Remote operated plattform for ocean science	Results: 9 push corer (1xBGR; 1xGEOMAR, 7xINES); 2 sulphide and 1 rock samples; watersample for INES and GEOMAR; Biology sample; KIPS sample; photos, videos
INDEX2023 -046HMS	Cluster 4; East/ South of EDMOND	start of station	11.10.23 16:34	24° 3.512' S, 69° 40.796' E	2575	HOMESIDE	
INDEX2023 -046HMS	Cluster 4; East/ South of EDMOND	start of track	11.10.23 17:38	24° 3.51' S, 69° 40.798' E	2572	HOMESIDE	
INDEX2023 -046HMS	Cluster 4; East/ South of EDMOND	end of track	12.10.23 1:00	23° 51.87' S, 69° 35.262' E	3280	HOMESIDE	
INDEX2023 -046HMS	Cluster 4; East/ South of EDMOND	end of station	12.10.23 2:30	23° 51.422' S, 69° 35.052' E	3295	HOMESIDE	Results: ca. 21 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; MAPR No. 5 stopped the recording; no further evidences of SMS
INDEX2023 - 047ROPOS	Cluster 4; EDMOND hydrothermal field	start of station	12.10.23 5:06	23° 53.382' S, 69° 36.845' E	3147	Remote operated plattform for ocean science	
INDEX2023 - 047ROPOS	Cluster 4; EDMOND hydrothermal field	start of track	12.10.23 7:28	23° 53.347' S, 69° 36.721' E	3158	Remote operated plattform for ocean science	
INDEX2023 - 047ROPOS	Cluster 4; EDMOND hydrothermal field	end of track	12.10.23 12:30	23° 52.467' S, 69° 36.423' E	3107	Remote operated plattform for ocean science	
INDEX2023 - 047ROPOS	Cluster 4; EDMOND hydrothermal field	end of station	12.10.23 15:15	23° 52.446' S, 69° 36.595' E	3032	Remote operated plattform for ocean science	Results: 4 push corer (1xBGR; 3xINES); 2 sulphide ; watersample GEOMAR; Biology sample; photos, videos

INDEX2023 -048HMS	Cluster 4; South / East of EGS	start of station	12.10.23 17:13	24° .96' S, 69° 39.242' E	2999	HOMESIDE	
INDEX2023 -048HMS	Cluster 4; South / East of EGS	start of track	12.10.23 18:12	24° .903' S, 69° 39.237' E	3030	HOMESIDE	
INDEX2023 -048HMS	Cluster 4; South / East of EGS	end of track	13.10.23 0:45	23° 50.044' S, 69° 33.953' E	4520	HOMESIDE	
INDEX2023 -048HMS	Cluster 4; South / East of EGS	end of station	13.10.23 2:12	23° 49.731' S, 69° 33.807' E	3429	HOMESIDE	Results: ca. 20 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023 - 049ROPOS	Cluster 4; ALPHA vent field active site 1-3	start of station	13.10.23 3:11	23° 47.163' S, 69° 32.751' E	3084	Remote operated plattform for ocean science	
INDEX2023 - 049ROPOS	Cluster 4; ALPHA vent field active site 1-3	start of track	13.10.23 5:48	23° 47.204' S, 69° 32.706' E	3111	Remote operated plattform for ocean science	
INDEX2023 - 049ROPOS	Cluster 4; ALPHA vent field active site 1-3	end of track	13.10.23 12:00	23° 46.977' S, 69° 32.446' E	3022	Remote operated plattform for ocean science	
INDEX2023 - 049ROPOS	Cluster 4; ALPHA vent field active site 1-3	end of station	13.10.23 14:36	23° 46.963' S, 69° 32.461' E	3028	Remote operated plattform for ocean science	Results: 2 push corer (BGR); 5 sulphide; Biology sample; KIPS sample; ATAP; photos, videos
INDEX2023 -050HMS	Cluster 4; mapping EGS to the south	start of station	13.10.23 15:20	23° 50.525' S, 69° 33.763' E	3577	HOMESIDE	
INDEX2023 -050HMS	Cluster 4; mapping EGS to the south	start of track	13.10.23 16:26	23° 50.57' S, 69° 33.782' E	3105	HOMESIDE	
INDEX2023 -050HMS	Cluster 4; mapping EGS to the south	end of track	13.10.23 23:50	24° 2.306' S, 69° 39.62' E	2750	HOMESIDE	
INDEX2023 -050HMS	Cluster 4; mapping EGS to the south	end of station	14.10.23 1:20	24° 2.775' S, 69° 39.849' E	2702	HOMESIDE	Results: 23 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023 - 051ROPOS	Cluster 4; inactive GAUSS and SCORE vent field	start of station	14.10.23 3:10	23° 52.49' S, 69° 36.543' E	3099	Remote operated plattform for ocean science	
INDEX2023 - 051ROPOS	Cluster 4; inactive GAUSS and SCORE vent field	start of track	14.10.23 5:35	23° 52.488' S, 69° 36.564' E	3091	Remote operated plattform for ocean science	
INDEX2023 - 051ROPOS	Cluster 4; inactive GAUSS and SCORE vent field	end of track	14.10.23 12:31	23° 52.464' S, 69° 36.43' E	3153	Remote operated plattform for ocean science	
INDEX2023 - 051ROPOS	Cluster 4; inactive GAUSS and SCORE vent field	end of station	14.10.23 15:02	23° 52.534' S, 69° 36.545' E	3117	Remote operated plattform for ocean science	Results: 1 push corer (BGR); 2 sulphide ; ATAP measurements; Biology sample; photos, videos
INDEX2023 -052HMS	Cluster 4; along a ridge East of ALPHA and EGS	start of station	14.10.23 16:30	23° 43.956' S, 69° 37.54' E	3050	HOMESIDE	
INDEX2023 -052HMS	Cluster 4; along a ridge East of ALPHA and EGS	start of track	14.10.23 17:28	23° 43.965' S, 69° 37.609' E	2967	HOMESIDE	

INDEX2023-052HMS	Cluster 4; along a ridge East of ALPHA and EGS	end of track	15.10.23 5:50	24° 3.307' S, 69° 47.209' E	2660	HOMESIDE	
INDEX2023-052HMS	Cluster 4; along a ridge East of ALPHA and EGS	end of station	15.10.23 7:10	24° 3.456' S, 69° 47.36' E	2647	HOMESIDE	Results: 39 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023-053ST	Cluster 4; Deployment SedimentTrap Mooring 04-08	start of station	15.10.23 9:16	23° 51.96' S, 69° 35.77' E	3107	Sedimenttrap	
INDEX2023-053ST	Cluster 4; Deployment SedimentTrap Mooring 04-08	anchor drop	15.10.23 12:39	23° 52.485' S, 69° 36.279' E	3150	Sedimenttrap	
INDEX2023-053ST	Cluster 4; Deployment SedimentTrap Mooring 04-08	triangulation	15.10.23 13:35	23° 52.22' S, 69° 35.325' E	3143	Sedimenttrap	
INDEX2023-053ST	Cluster 4; Deployment SedimentTrap Mooring 04-08	end of station	15.10.23 14:25	23° 51.659' S, 69° 36.365' E	3160	Sedimenttrap	Results: deployment of 3 Sediment Trap (872, 2597, 3130m); 3 passive samplers BGR (889, 2653, 3090m); 2 Current Meters (2603, 3035); Mooring Position 23°52.38S; 69°36.04E
INDEX2023-054FishCam	Cluster 5; Deployment FishCam	start of station	16.10.23 1:57	25° 26.812' S, 69° 55.393' E	3233	Camera lander for fish filming	
INDEX2023-054FishCam	Cluster 5; Deployment FishCam	end of station	16.10.23 2:02	25° 26.811' S, 69° 55.389' E	3233	Camera lander for fish filming	
INDEX2023-055ROPOS	Cluster 5; KAIMANA field	start of station	16.10.23 3:10	25° 28.132' S, 69° 55.884' E	2706	Remote operated plattform for ocean science	
INDEX2023-055ROPOS	Cluster 5; KAIMANA field	start of track	16.10.23 5:28	25° 28.13' S, 69° 55.808' E	2665	Remote operated plattform for ocean science	
INDEX2023-055ROPOS	Cluster 5; KAIMANA field	end of track	16.10.23 12:40	25° 27.831' S, 69° 56.051' E	2885	Remote operated plattform for ocean science	
INDEX2023-055ROPOS	Cluster 5; KAIMANA field	end of station	16.10.23 14:55	25° 27.824' S, 69° 56.121' E	2972	Remote operated plattform for ocean science	Results: 3 push corer (BGR); 5 sulphide; 2 rocks ; ATAP measurements; Biology sample; watersample, photos, videos
INDEX2023-056HMS	Cluster 5; west of KAIMANA	start of station	16.10.23 16:13	25° 32.262' S, 69° 48.877' E	2674	HOMESIDE	
INDEX2023-056HMS	Cluster 5; west of KAIMANA	start of track	16.10.23 17:05	25° 32.212' S, 69° 48.881' E	2675	HOMESIDE	
INDEX2023-056HMS	Cluster 5; west of KAIMANA	end of track	16.10.23 23:30	25° 21.35' S, 69° 44.266' E	3186	HOMESIDE	

INDEX2023-056HMS	Cluster 5; west of KAIMANA	end of station	17.10.23 0:46	25° 21.057' S, 69° 44.143' E	3088	HOMESIDE	Results: 29 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023-057FishCam	Cluster 5; recovery FishCam	start of station	17.10.23 2:12	25° 26.898' S, 69° 55.377' E	3234	Camera lander for fish filming	
INDEX2023-057FishCam	Cluster 5; recovery FishCam	end of station	17.10.23 3:43	25° 27.119' S, 69° 55.206' E	3235	Camera lander for fish filming	
INDEX2023-058ROPOS	Cluster 5; active vent sites of KAIMANA	start of station	17.10.23 4:40	25° 28.068' S, 69° 55.827' E	2753	Remote operated plattform for ocean science	
INDEX2023-058ROPOS	Cluster 5; active vent sites of KAIMANA	start of track	17.10.23 6:38	25° 28.181' S, 69° 55.813' E	2657	Remote operated plattform for ocean science	
INDEX2023-058ROPOS	Cluster 5; active vent sites of KAIMANA	end of track	17.10.23 12:40	25° 27.889' S, 69° 56.224' E	2959	Remote operated plattform for ocean science	
INDEX2023-058ROPOS	Cluster 5; active vent sites of KAIMANA	end of station	17.10.23 14:40	25° 27.842' S, 69° 56.274' E	3005	Remote operated plattform for ocean science	Results: 3 sulphide; Biology sample; KIPS samples, micro biology, photos, videos
INDEX2023-059HMS	Cluster 5; KAIMANA	start of station	17.10.23 15:47	25° 21.666' S, 69° 53.933' E	3245	HOMESIDE	
INDEX2023-059HMS	Cluster 5; KAIMANA	start of track	17.10.23 16:59	25° 21.681' S, 69° 53.947' E	3237	HOMESIDE	
INDEX2023-059HMS	Cluster 5; KAIMANA	end of track	18.10.23 1:04	25° 36.245' S, 69° 54.134' E	3964	HOMESIDE	
INDEX2023-059HMS	Cluster 5; KAIMANA	end of station	18.10.23 2:30	25° 36.447' S, 69° 54.135' E	3986	HOMESIDE	Results: 25 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023-060FishCam	Cluster 5; Deployment FishCam	start of station	18.10.23 4:27	25° 24.256' S, 69° 45.754' E	2812	Camera lander for fish filming	
INDEX2023-060FishCam	Cluster 5; Deployment FishCam	end of station	18.10.23 4:45	25° 24.307' S, 69° 45.67' E	2810	Camera lander for fish filming	
INDEX2023-061GC	Cluster 5; KAIREI	start of station	18.10.23 6:37	25° 19.521' S, 70° 2.31' E	2648	Gravity corer INDEX	
INDEX2023-061GC	Cluster 5; KAIREI	at bottom	18.10.23 7:24	25° 19.483' S, 70° 2.308' E	2639	Gravity corer INDEX	
INDEX2023-061GC	Cluster 5; KAIREI	end of station	18.10.23 8:18	25° 19.404' S, 70° 2.303' E	2620	Gravity corer INDEX	
INDEX2023-062GC	Cluster 5; small basin at foot of KAIREI	start of station	18.10.23 8:29	25° 19.405' S, 70° 2.3' E	2620	Gravity corer INDEX	
INDEX2023-062GC	Cluster 5; small basin at foot of KAIREI	at bottom	18.10.23 9:16	25° 19.403' S, 70° 2.3' E	2630	Gravity corer INDEX	

INDEX2023-062GC	Cluster 5; small basin at foot of KAIREI	end of station	18.10.23 10:12	25° 19.409' S, 70° 2.299' E	2630	Gravity corer INDEX	Results: core length 0,29 m
INDEX2023-063CTD	Cluster 5; Mooring Position for Cluster 05-02	start of station	18.10.23 11:36	25° 28.001' S, 69° 55.885' E	2765	CTD Rosette	
INDEX2023-063CTD	Cluster 5; Mooring Position for Cluster 05-02	final depth	18.10.23 12:33	25° 28.017' S, 69° 55.913' E	2754	CTD Rosette	
INDEX2023-063CTD	Cluster 5; Mooring Position for Cluster 05-02	end of station	18.10.23 13:35	25° 28.018' S, 69° 55.914' E	2756	CTD Rosette	Results: Water Samples for UUH and 1 Bottle for Uni Kiel (Kips)
INDEX2023-064CTD	Cluster 5; at Mooring Position for Cluster 05-02	start of station	18.10.23 14:12	25° 28.015' S, 69° 55.908' E	2757	CTD Rosette	
INDEX2023-064CTD	Cluster 5; at Mooring Position for Cluster 05-02	final depth	18.10.23 14:28	25° 28.019' S, 69° 55.909' E	2752	CTD Rosette	
INDEX2023-064CTD	Cluster 5; at Mooring Position for Cluster 05-02	end of station	18.10.23 14:49	25° 28.017' S, 69° 55.908' E	2757	CTD Rosette	Results: CTD-Cast 0-600 m; 18 Bottles Water Samples for UUH
INDEX2023-065HMS	Cluster 5; green rock hill	start of station	18.10.23 16:22	25° 21.639' S, 69° 44.642' E	3280	HOMESIDE	
INDEX2023-065HMS	Cluster 5; green rock hill	start of track	18.10.23 17:24	25° 21.692' S, 69° 44.646' E	3276	HOMESIDE	
INDEX2023-065HMS	Cluster 5; green rock hill	end of track	18.10.23 23:40	25° 32.851' S, 69° 49.56' E	2656	HOMESIDE	
INDEX2023-065HMS	Cluster 5; green rock hill	end of station	19.10.23 1:00	25° 33.323' S, 69° 49.771' E	2659	HOMESIDE	Results: 20 km mapping, 2 MAPR on the cable, no further evidences of SMS
INDEX2023-066FishCam	Cluster 5; recovery Fish Cam	start of station	19.10.23 2:15	25° 24.393' S, 69° 45.192' E	2787	Camera lander for fish filming	
INDEX2023-066FishCam	Cluster 5; recovery Fish Cam	end of station	19.10.23 3:40	25° 24.393' S, 69° 45.193' E	2782	Camera lander for fish filming	
INDEX2023-067ROPOS	Cluster 5; KAIMANA vent field, NE sites	start of station	19.10.23 5:19	25° 27.936' S, 69° 56.254' E	2958	Remote operated plattform for ocean science	
INDEX2023-067ROPOS	Cluster 5; KAIMANA vent field, NE sites	start of track	19.10.23 7:35	25° 27.862' S, 69° 56.232' E	2982	Remote operated plattform for ocean science	
INDEX2023-067ROPOS	Cluster 5; KAIMANA vent field, NE sites	end of track	19.10.23 12:43	25° 27.902' S, 69° 56.211' E	2960	Remote operated plattform for ocean science	
INDEX2023-067ROPOS	Cluster 5; KAIMANA vent field, NE sites	end of station	19.10.23 14:43	25° 27.957' S, 69° 56.224' E	2947	Remote operated plattform for ocean science	Results: 5 push corer (BGR) 1 was empty; 7 sulphide rocks ; ATAP measurements; Biology sample; mirco biology, photos, videos
INDEX2023-068CTD	Cluster 7; CTD-Cast at Mooring site 07-05	start of station	19.10.23 21:36	26° 3.519' S, 70° 51.057' E	3933	CTD Rosette	

INDEX2023-068CTD	Cluster 7; CTD-Cast at Mooring site 07-05	final depth	19.10.23 22:51	26° 3.522' S, 70° 51.06' E	3932	CTD Rosette	
INDEX2023-068CTD	Cluster 7; CTD-Cast at Mooring site 07-05	end of station	20.10.23 0:15	26° 3.523' S, 70° 51.055' E	3920	CTD Rosette	
INDEX2023-069CTD	Cluster 7; CTD-Cast 0-900m at Mooring site Cluster 07-05,	start of station	20.10.23 0:47	26° 3.517' S, 70° 51.064' E	3929	CTD Rosette	
INDEX2023-069CTD	Cluster 7; CTD-Cast 0-900m at Mooring site Cluster 07-05,	final depth	20.10.23 1:08	26° 3.525' S, 70° 51.051' E	3930	CTD Rosette	
INDEX2023-069CTD	Cluster 7; CTD-Cast 0-900m at Mooring site Cluster 07-05,	end of station	20.10.23 1:37	26° 3.517' S, 70° 51.063' E	3930	CTD Rosette	Results: Water Samples for UUH
INDEX2023-070ROPOS	Cluster 7; SOORAJ vent field	start of station	20.10.23 3:00	26° 5.588' S, 70° 53.401' E	2597	Remote operated plattform for ocean science	
INDEX2023-070ROPOS	Cluster 7; SOORAJ vent field	start of track	20.10.23 5:07	26° 5.537' S, 70° 53.341' E	2672	Remote operated plattform for ocean science	
INDEX2023-070ROPOS	Cluster 7; SOORAJ vent field	end of track	20.10.23 12:24	26° 5.609' S, 70° 53.29' E	2685	Remote operated plattform for ocean science	
INDEX2023-070ROPOS	Cluster 7; SOORAJ vent field	end of station	20.10.23 14:32	26° 5.635' S, 70° 53.295' E	2681	Remote operated plattform for ocean science	Results: 10 push corer (INES) 2 sulphide rocks ; KIPS sampling; Biology sample; water sample, photos, videos
INDEX2023-071HMS	Cluster 7; north of SOORAJ	start of station	20.10.23 15:28	26° 4.037' S, 70° 51.415' E	3672	HOMESIDE	
INDEX2023-071HMS	Cluster 7; north of SOORAJ	start of track	20.10.23 16:38	26° 4.018' S, 70° 51.419' E	3677	HOMESIDE	
INDEX2023-071HMS	Cluster 7; north of SOORAJ	end of track	20.10.23 23:30	26° 9.244' S, 71° 3.434' E	4216	HOMESIDE	
INDEX2023-071HMS	Cluster 7; north of SOORAJ	end of station	21.10.23 1:05	26° 9.325' S, 71° 3.668' E	4200	HOMESIDE	Results: ca. 20 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; very small evidences of SMS
INDEX2023-072ST	Cluster 7; recovery Sediment Trap Mooring Cluster 07-05	start of station	21.10.23 2:49	26° 2.945' S, 70° 50.141' E	3077	Sedimenttrap	
INDEX2023-072ST	Cluster 7; recovery Sediment Trap Mooring Cluster 07-05	end of station	21.10.23 5:06	26° 3.253' S, 70° 50.089' E	0	Sedimenttrap	Results: recovery Sediment Trap cup 18 only, sampled 354 days, 1 of 1 Current Meter; 2 of 2 passive samplers (BGR)
INDEX2023-073CTD	Cluster 7; vent Site	start of station	21.10.23 5:49	26° 5.557' S, 70° 53.338' E	2679	CTD Rosette	
INDEX2023-073CTD	Cluster 7; vent Site	final depth	21.10.23 6:49	26° 5.538' S, 70° 53.348' E	2668	CTD Rosette	

INDEX2023 -073CTD	Cluster 7; vent Site	end of station	21.10.23 7:51	26° 5.537' S, 70° 53.344' E	2665	CTD Rosette	Results: Water Samples for INES, small "Plume Signal at 2600 m and Turbidity signal at 1820 m
INDEX2023 -074CTD	Cluster 9; at future Mooring Site Cluster 09-01	start of station	21.10.23 12:54	26° 28.155' S, 71° 41.629' E	2927	CTD Rosette	
INDEX2023 -074CTD	Cluster 9; at future Mooring Site Cluster 09-01	final depth	21.10.23 13:47	26° 28.141' S, 71° 41.592' E	2929	CTD Rosette	
INDEX2023 -074CTD	Cluster 9; at future Mooring Site Cluster 09-01	end of station	21.10.23 14:54	26° 28.142' S, 71° 41.593' E	2922	CTD Rosette	Results: Water Samples for UUH and 1 Bottle for Uni Kiel (Kips)
INDEX2023 -075CTD	Cluster 9; CTD Profile 0-600m water depth	start of station	21.10.23 15:21	26° 28.132' S, 71° 41.594' E	2917	CTD Rosette	
INDEX2023 -075CTD	Cluster 9; CTD Profile 0-600m water depth	final depth	21.10.23 15:42	26° 28.141' S, 71° 41.594' E	2925	CTD Rosette	
INDEX2023 -075CTD	Cluster 9; CTD Profile 0-600m water depth	end of station	21.10.23 16:06	26° 28.134' S, 71° 41.586' E	2921	CTD Rosette	Results: Water Samples for UUH
INDEX2023 -076ST	Cluster 10; recovery Sediment Trap Mooring Cluster 10-05	start of station	22.10.23 0:18	26° 53.529' S, 72° 20.757' E	3320	Sedimenttrap	
INDEX2023 -076ST	Cluster 10; recovery Sediment Trap Mooring Cluster 10-05	end of station	22.10.23 1:55	26° 53.441' S, 72° 21.624' E	3400	Sedimenttrap	Results: recovery Sediment Trap 20 cups fillet, 1 of 1 Current Meter; 2 of 2 passive samplers (BGR)
INDEX2023 -077GC	Cluster 9; sulphidic mound in JIM field	start of station	22.10.23 7:03	26° 27.134' S, 71° 41.319' E	2636	Gravity corer INDEX	
INDEX2023 -077GC	Cluster 9; sulphidic mound in JIM field	at bottom	22.10.23 7:51	26° 27.079' S, 71° 41.241' E	2638	Gravity corer INDEX	
INDEX2023 -077GC	Cluster 9; sulphidic mound in JIM field	end of station	22.10.23 8:44	26° 26.887' S, 71° 41.216' E	2701	Gravity corer INDEX	Results: empty
INDEX2023 -078GC	Cluster 9; sulphidic mound JIM field	start of station	22.10.23 8:54	26° 26.885' S, 71° 41.22' E	2700	Gravity corer INDEX	
INDEX2023 -078GC	Cluster 9; sulphidic mound JIM field	at bottom	22.10.23 9:44	26° 26.882' S, 71° 41.214' E	2699	Gravity corer INDEX	
INDEX2023 -078GC	Cluster 9; sulphidic mound JIM field	end of station	22.10.23 10:40	26° 26.883' S, 71° 41.215' E	2699	Gravity corer INDEX	Results: empty
INDEX2023 -079HMS	Cluster 9; NE-JIM	start of station	22.10.23 11:28	26° 24.346' S, 71° 41.158' E	3320	HOMESIDE	
INDEX2023 -079HMS	Cluster 9; NE-JIM	start of track	22.10.23 12:34	26° 24.358' S, 71° 41.107' E	3314	HOMESIDE	
INDEX2023 -079HMS	Cluster 9; NE-JIM	end of track	23.10.23 1:15	26° 26.48' S, 71° 42.677' E	3067	HOMESIDE	

INDEX2023-079HMS	Cluster 9; NE-JIM	end of station	23.10.23 2:26	26° 26.653' S, 71° 42.831' E	3086	HOMESIDE	Results: ca. 30 km mapping, 2 MAPR on the cable, SP (self potential) = 89m
INDEX2023-080ROPOS	Cluster 9; JIM vent field, new active site	start of station	23.10.23 3:10	26° 26.802' S, 71° 40.925' E	2669	Remote operated plattform for ocean science	
INDEX2023-080ROPOS	Cluster 9; JIM vent field, new active site	end of station	23.10.23 4:10	26° 26.823' S, 71° 40.893' E	2639	Remote operated plattform for ocean science	Results: station abort, ROV back on deck to check the system
INDEX2023-081ROPOS	Cluster 9; JIM vent field new active site	start of station	23.10.23 6:12	26° 26.825' S, 71° 40.896' E	2636	Remote operated plattform for ocean science	
INDEX2023-081ROPOS	Cluster 9; JIM vent field new active site	start of track	23.10.23 8:16	26° 26.771' S, 71° 40.912' E	2675	Remote operated plattform for ocean science	
INDEX2023-081ROPOS	Cluster 9; JIM vent field new active site	end of track	23.10.23 13:04	26° 27.09' S, 71° 41.243' E	2614	Remote operated plattform for ocean science	
INDEX2023-081ROPOS	Cluster 9; JIM vent field new active site	end of station	23.10.23 14:54	26° 27.085' S, 71° 41.244' E	2620	Remote operated plattform for ocean science	Results: 1 push corer (BGR) 9 sulphide rocks ; 3 rocks; KIPS sampling; Biology sample; photos, videos
INDEX2023-082HMS	Cluster 9; JIM	start of station	23.10.23 15:51	26° 26.264' S, 71° 38.623' E	3053	HOMESIDE	
INDEX2023-082HMS	Cluster 9; JIM	start of track	23.10.23 16:56	26° 26.27' S, 71° 38.627' E	3078	HOMESIDE	
INDEX2023-082HMS	Cluster 9; JIM	end of track	24.10.23 1:05	26° 25.631' S, 71° 32.643' E	3009	HOMESIDE	
INDEX2023-082HMS	Cluster 9; JIM	end of station	24.10.23 2:27	26° 25.381' S, 71° 37.417' E	3165	HOMESIDE	Results: 21 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no further evidences of SMS
INDEX2023-083FishCam	Cluster 9; deployment of FishCam	start of station	24.10.23 3:25	26° 26.802' S, 71° 41.724' E	2739	Camera lander for fish filming	
INDEX2023-083FishCam	Cluster 9; deployment of FishCam	end of station	24.10.23 3:32	26° 26.811' S, 71° 41.739' E	2750	Camera lander for fish filming	
INDEX2023-084ROPOS	Cluster 9; JIM vent field, active site with black smoker	start of station	24.10.23 4:25	26° 27.027' S, 71° 40.862' E	2585	Remote operated plattform for ocean science	
INDEX2023-084ROPOS	Cluster 9; JIM vent field, active site with black smoker	start of track	24.10.23 6:20	26° 26.907' S, 71° 40.916' E	2625	Remote operated plattform for ocean science	
INDEX2023-084ROPOS	Cluster 9; JIM vent field, active site with black smoker	end of track	24.10.23 13:06	26° 26.291' S, 71° 41.011' E	2581	Remote operated plattform for ocean science	

INDEX2023-084ROPOS	Cluster 9; JIM vent field, active site with black smoker	end of station	24.10.23 14:56	26° 26.35' S, 71° 41.006' E	2620	Remote operated plattform for ocean science	Results: 2 push corer (INES nodules from the surface) 1 sulphide rock; 1 rock; KIPS sampling; Biology sample; photos, videos
INDEX2023-085HMS	Cluster 9; JIM field	start of station	24.10.23 15:42	26° 25.439' S, 71° 38.619' E	3073	HOMESIDE	
INDEX2023-085HMS	Cluster 9; JIM field	start of track	24.10.23 16:42	26° 25.461' S, 71° 38.592' E	3098	HOMESIDE	
INDEX2023-085HMS	Cluster 9; JIM field	end of track	24.10.23 23:35	26° 22.846' S, 71° 38.297' E	3962	HOMESIDE	
INDEX2023-085HMS	Cluster 9; JIM field	end of station	25.10.23 1:17	26° 22.607' S, 71° 38.297' E	4084	HOMESIDE	Results: 16 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; clear evidences for hydrothermal plume 4,2km from JIM active site
INDEX2023-086FishCam	Cluster 9; recovery FishCam	start of station	25.10.23 2:02	26° 26.787' S, 71° 41.768' E	2747	Camera lander for fish filming	
INDEX2023-086FishCam	Cluster 9; recovery FishCam	end of station	25.10.23 3:10	26° 26.745' S, 71° 42.148' E	0	Camera lander for fish filming	
INDEX2023-087GC	Cluster 9;	start of station	25.10.23 3:52	26° 27.147' S, 71° 41.853' E	2774	Gravity corer INDEX	
INDEX2023-087GC	Cluster 9;	at bottom	25.10.23 4:42	26° 27.099' S, 71° 41.784' E	2766	Gravity corer INDEX	
INDEX2023-087GC	Cluster 9;	end of station	25.10.23 5:38	26° 27.096' S, 71° 41.787' E	2765	Gravity corer INDEX	Results: core length 1,17 m
INDEX2023-088GC	Cluster 9;	start of station	25.10.23 5:53	26° 27.153' S, 71° 41.984' E	2803	Gravity corer INDEX	
INDEX2023-088GC	Cluster 9;	at bottom	25.10.23 6:44	26° 27.143' S, 71° 41.984' E	2794	Gravity corer INDEX	
INDEX2023-088GC	Cluster 9;	end of station	25.10.23 7:40	26° 27.136' S, 71° 41.977' E	2791	Gravity corer INDEX	Results: 3 cm of hard rock fragments
INDEX2023-089STR	Cluster 9; JIM hydrothermal field southern and central part	start of station	25.10.23 9:01	26° 27.613' S, 71° 41.513' E	2763	STROMER	
INDEX2023-089STR	Cluster 9; JIM hydrothermal field southern and central part	start of track	25.10.23 10:04	26° 27.606' S, 71° 41.512' E	2773	STROMER	
INDEX2023-089STR	Cluster 9; JIM hydrothermal field southern and central part	end of track	25.10.23 14:46	26° 27.213' S, 71° 42.763' E	2989	STROMER	
INDEX2023-089STR	Cluster 9; JIM hydrothermal field southern and central part	end of station	25.10.23 15:45	26° 27.216' S, 71° 42.781' E	2995	STROMER	Results: same indications für hydrothermal along E-W structureand as Fe staining , SP anomaly
INDEX2023-090HMS	Cluster 9; NW of JIM	start of station	25.10.23 16:58	26° 24.182' S, 71° 37.883' E	3665	HOMESIDE	

INDEX2023 -090HMS	Cluster 9; NW of JIM	start of track	25.10.23 18:05	26° 24.17' S, 71° 37.848' E	3679	HOMESIDE	
INDEX2023 -090HMS	Cluster 9; NW of JIM	end of track	26.10.23 1:00	26° 23.681' S, 71° 37.488' E	3877	HOMESIDE	
INDEX2023 -090HMS	Cluster 9; NW of JIM	end of station	26.10.23 2:24	26° 23.454' S, 71° 37.485' E	4002	HOMESIDE	Results: 15 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no evidence for SMS
INDEX2023 - 091ROPOS	Cluster 9; JIM vent field	start of station	26.10.23 3:20	26° 26.919' S, 71° 41.132' E	2693	Remote operated plattform for ocean science	
INDEX2023 - 091ROPOS	Cluster 9; JIM vent field	start of track	26.10.23 5:20	26° 26.943' S, 71° 41.077' E	2663	Remote operated plattform for ocean science	
INDEX2023 - 091ROPOS	Cluster 9; JIM vent field	end of track	26.10.23 12:44	26° 26.506' S, 71° 40.726' E	2714	Remote operated plattform for ocean science	
INDEX2023 - 091ROPOS	Cluster 9; JIM vent field	end of station	26.10.23 14:45	26° 26.502' S, 71° 40.806' E	2726	Remote operated plattform for ocean science	Results: 3 precipitati rock; 6 rock ; KIPS sampling; Biology sample; photos, videos
INDEX2023 -092HMS	Cluster 9; W of JIM	start of station	26.10.23 15:25	26° 28.959' S, 71° 41.277' E	2995	HOMESIDE	
INDEX2023 -092HMS	Cluster 9; W of JIM	start of track	26.10.23 16:19	26° 28.895' S, 71° 41.229' E	2981	HOMESIDE	
INDEX2023 -092HMS	Cluster 9; W of JIM	end of track	27.10.23 1:31	26° 28.449' S, 71° 43.574' E	3900	HOMESIDE	
INDEX2023 -092HMS	Cluster 9; W of JIM	end of station	27.10.23 2:32	26° 28.405' S, 71° 43.396' E	3132	HOMESIDE	Results: 19 km mapping, 2 MAPR on the cable, SP (self potential) = 89m;
INDEX2023 - 093ROPOS	Cluster 9; Photogrammetrie JIM - mound 4	start of station	27.10.23 3:15	26° 27.819' S, 71° 41.504' E	2820	Remote operated plattform for ocean science	
INDEX2023 - 093ROPOS	Cluster 9; Photogrammetrie JIM - mound 4	start of track	27.10.23 5:28	26° 27.888' S, 71° 41.461' E	2829	Remote operated plattform for ocean science	
INDEX2023 - 093ROPOS	Cluster 9; Photogrammetrie JIM - mound 4	end of track	27.10.23 12:58	26° 27.873' S, 71° 41.441' E	2782	Remote operated plattform for ocean science	
INDEX2023 - 093ROPOS	Cluster 9; Photogrammetrie JIM - mound 4	end of station	27.10.23 14:50	26° 27.82' S, 71° 41.46' E	2810	Remote operated plattform for ocean science	Results: only photos, no samples
INDEX2023 -094HMS	Cluster 9; NE of JIM	start of station	27.10.23 15:28	26° 25.549' S, 71° 41.782' E	2991	HOMESIDE	
INDEX2023 -094HMS	Cluster 9; NE of JIM	start of track	27.10.23 16:24	26° 25.544' S, 71° 41.82' E	3008	HOMESIDE	
INDEX2023 -094HMS	Cluster 9; NE of JIM	end of track	28.10.23 0:00	26° 35.514' S, 71° 51.126' E	3402	HOMESIDE	
INDEX2023 -094HMS	Cluster 9; NE of JIM	end of station	28.10.23 1:23	26° 35.818' S, 71° 51.406' E	3319	HOMESIDE	Results: 21 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no evidence for SMS

INDEX2023-095FishCam	Cluster 9; Deployment of FishCam	start of station	28.10.23 3:09	26° 27.654' S, 71° 38.835' E	3515	Camera lander for fish filming	
INDEX2023-095FishCam	Cluster 9; Deployment of FishCam	end of station	28.10.23 4:15	26° 27.668' S, 71° 38.93' E	3508	Camera lander for fish filming	
INDEX2023-096ROPOS	Cluster 9; JIM vent field inactive mound	start of station	28.10.23 5:05	26° 27.833' S, 71° 41.491' E	2812	Remote operated plattform for ocean science	
INDEX2023-096ROPOS	Cluster 9; JIM vent field inactive mound	start of track	28.10.23 7:23	26° 27.881' S, 71° 41.445' E	2818	Remote operated plattform for ocean science	
INDEX2023-096ROPOS	Cluster 9; JIM vent field inactive mound	end of track	28.10.23 13:09	26° 27.17' S, 71° 42.177' E	2812	Remote operated plattform for ocean science	
INDEX2023-096ROPOS	Cluster 9; JIM vent field inactive mound	end of station	28.10.23 15:03	26° 27.101' S, 71° 42.2' E	2831	Remote operated plattform for ocean science	Results: 3 push corer (BGR) 7 sulphide rock; 1 rock; Biology sample; photos, videos
INDEX2023-097HMS	Cluster 9; JIM	start of station	28.10.23 15:46	26° 27.115' S, 71° 38.706' E	3333	HOMESIDE	
INDEX2023-097HMS	Cluster 9; JIM	start of track	28.10.23 16:46	26° 27.114' S, 71° 38.701' E	3327	HOMESIDE	
INDEX2023-097HMS	Cluster 9; JIM	end of track	29.10.23 4:51	26° 23.947' S, 71° 35.567' E	4026	HOMESIDE	
INDEX2023-097HMS	Cluster 9; JIM	end of station	29.10.23 6:18	26° 23.932' S, 71° 35.564' E	4036	HOMESIDE	Results: 30 km mapping, 2 MAPR on the cable, no evidence for SMS
INDEX2023-098FishCam	Cluster 9; Recovery FishCam	start of station	29.10.23 6:59	26° 27.657' S, 71° 38.858' E	3518	Camera lander for fish filming	
INDEX2023-098FishCam	Cluster 9; Recovery FishCam	end of station	29.10.23 8:35	26° 27.573' S, 71° 39.128' E	3376	Camera lander for fish filming	
INDEX2023-099GC	Cluster 9; JIM	start of station	29.10.23 9:04	26° 27.909' S, 71° 41.488' E	2842	Gravity corer INDEX	
INDEX2023-099GC	Cluster 9; JIM	at bottom	29.10.23 9:56	26° 27.874' S, 71° 41.558' E	2856	Gravity corer INDEX	
INDEX2023-099GC	Cluster 9; JIM	end of station	29.10.23 10:55	26° 27.875' S, 71° 41.557' E	2854	Gravity corer INDEX	Results: core length 0,69 m
INDEX2023-100ST	Cluster 9; Deployment of Sediment Trap Mooring Cluster 09-01	start of station	29.10.23 11:24	26° 28.596' S, 71° 41.921' E	3133	Sedimenttrap	
INDEX2023-100ST	Cluster 9; Deployment of Sediment Trap Mooring Cluster 09-01	anchor drop	29.10.23 12:38	26° 27.87' S, 71° 41.319' E	2834	Sedimenttrap	
INDEX2023-100ST	Cluster 9; Deployment of Sediment Trap Mooring Cluster 09-01	triangulation	29.10.23 13:27	26° 27.17' S, 71° 41.362' E	2857	Sedimenttrap	

INDEX2023 -100ST	Cluster 9; Deployment of Sediment Trap Mooring Cluster 09-01	end of station	29.10.23 14:25	26° 27.96' S, 71° 41.38' E	2826	Sedimenttrap	Results: deployment of 2 Sediment Trap (29 m.a.b, 560 m.a.b); 2 passive samplers BGR ; 2 Current Meters
INDEX2023 -101CTD	Cluster 10; CTD Cast Cluster 10 at Sediment Trap Mooring	start of station	29.10.23 19:08	26° 53.609' S, 72° 20.489' E	3334	CTD Rosette	
INDEX2023 -101CTD	Cluster 10; CTD Cast Cluster 10 at Sediment Trap Mooring	final depth	29.10.23 20:14	26° 53.613' S, 72° 20.491' E	3346	CTD Rosette	
INDEX2023 -101CTD	Cluster 10; CTD Cast Cluster 10 at Sediment Trap Mooring	end of station	29.10.23 21:23	26° 53.609' S, 72° 20.49' E	3337	CTD Rosette	Results: Water Samples for UUH and 1 Bottle for Uni Kiel (Kips); full cast 0 - 3324 m
INDEX2023 -102CTD	Cluster 10; CTD Cast 0-700m Cluster 10 at Sediment Mooring	start of station	29.10.23 21:50	26° 53.61' S, 72° 20.494' E	3337	CTD Rosette	
INDEX2023 -102CTD	Cluster 10; CTD Cast 0-700m Cluster 10 at Sediment Mooring	final depth	29.10.23 22:11	26° 53.611' S, 72° 20.491' E	3347	CTD Rosette	
INDEX2023 -102CTD	Cluster 10; CTD Cast 0-700m Cluster 10 at Sediment Mooring	end of station	29.10.23 22:32	26° 53.607' S, 72° 20.493' E	3344	CTD Rosette	Results: Water Samples for UUH
INDEX2023 - 103ROPOS	Cluster 11; NEW SONNE vent field	start of station	30.10.23 3:10	27° 14.932' S, 72° 42.971' E	2916	Remote operated plattform for ocean science	
INDEX2023 - 103ROPOS	Cluster 11; NEW SONNE vent field	start of track	30.10.23 5:11	27° 15.013' S, 72° 42.983' E	2896	Remote operated plattform for ocean science	
INDEX2023 - 103ROPOS	Cluster 11; NEW SONNE vent field	end of track	30.10.23 12:35	27° 15.467' S, 72° 43.422' E	2883	Remote operated plattform for ocean science	
INDEX2023 - 103ROPOS	Cluster 11; NEW SONNE vent field	end of station	30.10.23 14:43	27° 15.393' S, 72° 43.459' E	2891	Remote operated plattform for ocean science	Results: 7 push corer, 1 push core empty (BGR); 11 sulphide; 5 rock sample; water sample; Biology sample; KIPS sample; photos, videos
INDEX2023 -104ST	Cluster 12; Recovery of Sediment Trap Mooring Cluster 12-05	start of station	31.10.23 2:00	27° 48.226' S, 73° 53.486' E	3965	Sedimenttrap	
INDEX2023 -104ST	Cluster 12; Recovery of Sediment Trap Mooring Cluster 12-05	end of station	31.10.23 6:55	27° 49.336' S, 73° 51.591' E	3920	Sedimenttrap	Results: recovery Sediment Trap Cluster 12-05; 3 Sediment Trap; 3 passive samplers, 3 Current Meter;

INDEX2023 -105GC	Cluster 12; between PENUMBRA and UMBRA	start of station	31.10.23 8:35	27° 37.466' S, 73° 53.791' E	2468	Gravity corer INDEX	
INDEX2023 -105GC	Cluster 12; between PENUMBRA and UMBRA	at bottom	31.10.23 9:10	27° 37.459' S, 73° 53.793' E	2468	Gravity corer INDEX	
INDEX2023 -105GC	Cluster 12; between PENUMBRA and UMBRA	end of station	31.10.23 2:17	27° 37.752' S, 73° 53.757' E	2437	Gravity corer INDEX	Results: core length 1,20 m
INDEX2023 -106GC	Cluster 12; between PENUMBRA and UMBRA	start of station	31.10.23 10:16	27° 37.748' S, 73° 53.751' E	2437	Gravity corer INDEX	
INDEX2023 -106GC	Cluster 12; between PENUMBRA and UMBRA	at bottom	31.10.23 10:58	27° 37.748' S, 73° 53.755' E	2436	Gravity corer INDEX	
INDEX2023 -106GC	Cluster 12; between PENUMBRA and UMBRA	end of station	31.10.23 11:47	27° 37.801' S, 73° 53.414' E	2428	Gravity corer INDEX	Results: core length 2,01 m
INDEX2023 -107GC	Cluster 12; between UMBRA and PENUMBRA	start of station	31.10.23 11:59	27° 37.82' S, 73° 53.318' E	2443	Gravity corer INDEX	
INDEX2023 -107GC	Cluster 12; between UMBRA and PENUMBRA	at bottom	31.10.23 12:43	27° 37.857' S, 73° 53.115' E	2448	Gravity corer INDEX	
INDEX2023 -107GC	Cluster 12; between UMBRA and PENUMBRA	end of station	31.10.23 13:21	27° 38.051' S, 73° 53.041' E	2420	Gravity corer INDEX	Results: core length 0,10 m
INDEX2023 -108HMS	Cluster 12; new site	start of station	31.10.23 14:13	27° 38.099' S, 73° 53.02' E	2432	HOMESIDE	
INDEX2023 -108HMS	Cluster 12; new site	start of track	31.10.23 15:08	27° 38.099' S, 73° 53.02' E	2418	HOMESIDE	
INDEX2023 -108HMS	Cluster 12; new site	end of track	1.11.23 1:30	27° 38.358' S, 73° 53.547' E	2401	HOMESIDE	
INDEX2023 -108HMS	Cluster 12; new site	end of station	1.11.23 2:48	27° 38.656' S, 73° 53.813' E	2454	HOMESIDE	Results: 27 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; turbidty deteded at end of the line
INDEX2023 - 109ROPOS	Cluster12; new field	start of station	1.11.23 3:36	27° 37.677' S, 73° 53.031' E	2483	Remote operated plattform for ocean science	
INDEX2023 - 109ROPOS	Cluster12; new field	start of track	1.11.23 5:25	27° 37.76' S, 73° 52.983' E	2424	Remote operated plattform for ocean science	
INDEX2023 - 109ROPOS	Cluster12; new field	end of track	1.11.23 13:03	27° 37.768' S, 73° 53.556' E	2380	Remote operated plattform for ocean science	
INDEX2023 - 109ROPOS	Cluster12; new field	end of station	1.11.23 14:46	27° 37.71' S, 73° 53.56' E	2429	Remote operated plattform for ocean science	Results: 4 push corer (BGR), 1 push core micro biology (GEOMAR); 10 sulphide sample; water sample; Biology sample; photos, videos

INDEX2023-110HMS	Cluster 12; east of UMBRA; north-east of PENUMBRA	start of station	1.11.23 15:13	27° 36.316' S, 73° 54.369' E	2701	HOMESIDE	
INDEX2023-110HMS	Cluster 12; east of UMBRA; north-east of PENUMBRA	start of track	1.11.23 16:09	27° 36.308' S, 73° 54.363' E	2713	HOMESIDE	
INDEX2023-110HMS	Cluster 12; east of UMBRA; north-east of PENUMBRA	end of track	2.11.23 1:15	27° 32.128' S, 73° 50.205' E	2642	HOMESIDE	
INDEX2023-110HMS	Cluster 12; east of UMBRA; north-east of PENUMBRA	end of station	2.11.23 2:29	27° 31.922' S, 73° 50.023' E	2633	HOMESIDE	Results: 24 km mapping, 2 MAPR on the cable, little SP anomaly
INDEX2023-111FishCam	Cluster 12; deployment of FishCam	start of station	2.11.23 3:23	27° 38.386' S, 73° 52.4' E	2520	Camera lander for fish filming	
INDEX2023-111FishCam	Cluster 12; deployment of FishCam	end of station	2.11.23 3:35	27° 38.326' S, 73° 52.411' E	2523	Camera lander for fish filming	
INDEX2023-112ROPOS	Cluster 12; PENUMBRA vent field	start of station	2.11.23 4:05	27° 38.411' S, 73° 52.952' E	2486	Remote operated plattform for ocean science	
INDEX2023-112ROPOS	Cluster 12; PENUMBRA vent field	start of track	2.11.23 5:57	27° 38.467' S, 73° 52.993' E	2491	Remote operated plattform for ocean science	
INDEX2023-112ROPOS	Cluster 12; PENUMBRA vent field	end of track	2.11.23 13:13	27° 38.673' S, 73° 53.466' E	2359	Remote operated plattform for ocean science	
INDEX2023-112ROPOS	Cluster 12; PENUMBRA vent field	end of station	2.11.23 14:54	27° 38.558' S, 73° 53.448' E	2376	Remote operated plattform for ocean science	Results: 9 push corer (INES), 1 push core micro biology (GEOMAR); 5 sulphide sample; water sample; KIPS sampling; Biology sample; photos, videos
INDEX2023-113HMS	Cluster 12; SW of PENUMBRA	start of station	2.11.23 16:00	27° 44.845' S, 73° 56.666' E	3290	HOMESIDE	
INDEX2023-113HMS	Cluster 12; SW of PENUMBRA	start of track	2.11.23 17:00	27° 44.838' S, 73° 56.621' E	3282	HOMESIDE	
INDEX2023-113HMS	Cluster 12; SW of PENUMBRA	end of track	3.11.23 0:00	27° 35.78' S, 73° 47.872' E	3024	HOMESIDE	
INDEX2023-113HMS	Cluster 12; SW of PENUMBRA	end of station	3.11.23 1:19	27° 35.634' S, 73° 47.736' E	3020	HOMESIDE	Results: 21 km mapping, 2 MAPR on the cable, no evidence for SMS
INDEX2023-114FishCam	Cluster 12; recovery FishCam	start of station	3.11.23 1:49	27° 38.327' S, 73° 52.43' E	2494	Camera lander for fish filming	
INDEX2023-114FishCam	Cluster 12; recovery FishCam	end of station	3.11.23 2:58	27° 38.519' S, 73° 52.223' E	2471	Camera lander for fish filming	
INDEX2023-115ROPOS	Cluster 12; HUNNA vent field	start of station	3.11.23 3:35	27° 38.294' S, 73° 51.658' E	2454	Remote operated plattform for ocean science	

INDEX2023-115ROPOS	Cluster 12; HUNNA vent field	start of track	3.11.23 5:28	27° 38.33' S, 73° 51.617' E	2530	Remote operated plattform for ocean science	
INDEX2023-115ROPOS	Cluster 12; HUNNA vent field	end of track	3.11.23 13:08	27° 37.346' S, 73° 50.527' E	2651	Remote operated plattform for ocean science	
INDEX2023-115ROPOS	Cluster 12; HUNNA vent field	end of station	3.11.23 15:04	27° 37.278' S, 73° 50.566' E	2560	Remote operated plattform for ocean science	Results: 3 push corer (BGR), 2 push core empty; 9 sulphide sample; KIPS sampling; Biology sample; photos, videos
INDEX2023-116HMS	Cluster 12; Plateauand flank SW of HUNA	start of station	3.11.23 15:42	27° 36.685' S, 73° 48.361' E	2915	HOMESIDE	
INDEX2023-116HMS	Cluster 12; Plateauand flank SW of HUNA	start of track	3.11.23 16:40	27° 36.668' S, 73° 48.319' E	2925	HOMESIDE	
INDEX2023-116HMS	Cluster 12; Plateauand flank SW of HUNA	end of track	4.11.23 0:30	27° 37.511' S, 73° 48.745' E	2858	HOMESIDE	
INDEX2023-116HMS	Cluster 12; Plateauand flank SW of HUNA	end of station	4.11.23 1:40	27° 37.297' S, 73° 48.549' E	2867	HOMESIDE	Results: 19 km mapping, 2 MAPR on the cable
INDEX2023-117ROPOS	Cluster 12; "new vent field"	start of station	4.11.23 3:07	27° 37.88' S, 73° 53.788' E	2425	Remote operated plattform for ocean science	
INDEX2023-117ROPOS	Cluster 12; "new vent field"	start of track	4.11.23 4:56	27° 37.926' S, 73° 53.729' E	2406	Remote operated plattform for ocean science	
INDEX2023-117ROPOS	Cluster 12; "new vent field"	end of track	4.11.23 12:59	27° 37.588' S, 73° 54.092' E	2439	Remote operated plattform for ocean science	
INDEX2023-117ROPOS	Cluster 12; "new vent field"	end of station	4.11.23 14:43	27° 37.549' S, 73° 54.08' E	2442	Remote operated plattform for ocean science	Results: 7 push corer (BGR), 6 sulphide sample; 1 rock sample; Biology sample; photos, videos
INDEX2023-118HMS	Cluster 12; SW of HUNA	start of station	4.11.23 15:39	27° 41.177' S, 73° 51.826' E	2809	HOMESIDE	
INDEX2023-118HMS	Cluster 12; SW of HUNA	start of track	4.11.23 16:35	27° 41.143' S, 73° 51.787' E	2815	HOMESIDE	
INDEX2023-118HMS	Cluster 12; SW of HUNA	end of track	5.11.23 1:00	27° 41.278' S, 73° 52.147' E	2729	HOMESIDE	
INDEX2023-118HMS	Cluster 12; SW of HUNA	end of station	5.11.23 1:48	27° 41.301' S, 73° 52.129' E	2727	HOMESIDE	Results: 20 km mapping, 2 MAPR on the cable, no evidence for SMS
INDEX2023-119FishCam	Cluster 12; Deployment of FishCam	start of station	5.11.23 2:58	27° 40.63' S, 73° 48.724' E	2900	Camera lander for fish filming	
INDEX2023-119FishCam	Cluster 12; Deployment of FishCam	end of station	5.11.23 3:03	27° 40.634' S, 73° 48.715' E	2897	Camera lander for fish filming	
INDEX2023-120STR	Cluster 12; AURORA field	start of station	5.11.23 4:15	27° 37.955' S, 73° 53.879' E	2422	STROMER	
INDEX2023-120STR	Cluster 12; AURORA field	start of track	5.11.23 5:18	27° 37.938' S, 73° 53.88' E	2429	STROMER	
INDEX2023-120STR	Cluster 12; AURORA field	end of track	5.11.23 13:08	27° 37.662' S, 73° 52.893' E	2457	STROMER	

INDEX2023-120STR	Cluster 12; AURORA field	end of station	5.11.23 14:01	27° 37.661' S, 73° 52.894' E	2471	STROMER	Results: viodeo und SP mapping; clear SP anomaly
INDEX2023-121HMS	Cluster 12; NE UMBRA	start of station	5.11.23 15:04	27° 39.092' S, 73° 57.384' E	2775	HOMESIDE	
INDEX2023-121HMS	Cluster 12; NE UMBRA	start of track	5.11.23 15:59	27° 39.023' S, 73° 57.336' E	2740	HOMESIDE	
INDEX2023-121HMS	Cluster 12; NE UMBRA	end of track	5.11.23 23:17	27° 30.343' S, 73° 48.984' E	2726	HOMESIDE	
INDEX2023-121HMS	Cluster 12; NE UMBRA	end of station	6.11.23 0:12	27° 30.259' S, 73° 48.879' E	2721	HOMESIDE	Results: 20 km mapping, 2 MAPR on the cable, SP (self potential) = 89m; no evidence for SMS
INDEX2023-122FishCam	Cluster 12; recovery of FishCam	start of station	6.11.23 2:00	27° 40.765' S, 73° 48.594' E	2899	Camera lander for fish filming	
INDEX2023-122FishCam	Cluster 12; recovery of FishCam	end of station	6.11.23 3:20	27° 40.837' S, 73° 48.5' E	2905	Camera lander for fish filming	
INDEX2023-123CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	start of station	6.11.23 4:45	27° 48.197' S, 73° 53.546' E	3968	CTD Rosette	
INDEX2023-123CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	final depth	6.11.23 6:07	27° 48.198' S, 73° 53.545' E	3971	CTD Rosette	
INDEX2023-123CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	end of station	6.11.23 7:35	27° 48.197' S, 73° 53.545' E	3969	CTD Rosette	Results: 22 Water Samples for UUH; full cast 0 - 3958 m
INDEX2023-124CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	start of station	6.11.23 7:59	27° 48.202' S, 73° 53.551' E	3970	CTD Rosette	
INDEX2023-124CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	final depth	6.11.23 8:22	27° 48.195' S, 73° 53.546' E	3969	CTD Rosette	
INDEX2023-124CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	end of station	6.11.23 8:48	27° 48.2' S, 73° 53.552' E	3971	CTD Rosette	Results: 18 Water Samples for UUH; CTD Profil 0 - 800 m water depth
INDEX2023-125CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	start of station	6.11.23 9:19	27° 48.197' S, 73° 53.548' E	3969	CTD Rosette	
INDEX2023-125CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	final depth	6.11.23 10:35	27° 48.2' S, 73° 53.549' E	3971	CTD Rosette	
INDEX2023-125CTD	Cluster 12; CTD at Mooring Position Cluster 12-05	end of station	6.11.23 12:14	27° 48.195' S, 73° 53.549' E	3971	CTD Rosette	Results: 1water Samples for Uni Kiel (KIPS) 1 Bottle for BGR and 15 Bottles for INES; full cast 0
INDEX2023-126HMS	Cluster 12; AURORA	start of station	6.11.23 14:14	27° 38.642' S, 73° 53.884' E	2458	HOMESIDE	

INDEX2023 -126HMS	Cluster 12; AURORA	start of track	6.11.23 15:02	27° 38.639' S, 73° 53.886' E	2448	HOMESIDE	
INDEX2023 -126HMS	Cluster 12; AURORA	end of track	7.11.23 0:45	27° 34.923' S, 73° 49.082' E	2619	HOMESIDE	
INDEX2023 -126HMS	Cluster 12; AURORA	end of station	7.11.23 1:45	27° 34.171' S, 73° 48.712' E	2724	HOMESIDE	Results: ultra high Bathymetri, SP (self potential) = 24m
INDEX2023 - 127ROPOS	Cluster 12; drilling sulfid / oxide mounds in Aurora	start of station	7.11.23 5:12	27° 37.736' S, 73° 53.606' E	2428	Remote operated plattform for ocean science	
INDEX2023 - 127ROPOS	Cluster 12; drilling sulfid / oxide mounds in Aurora	start of track	7.11.23 6:35	27° 37.724' S, 73° 53.609' E	2417	Remote operated plattform for ocean science	
INDEX2023 - 127ROPOS	Cluster 12; drilling sulfid / oxide mounds in Aurora	end of track	7.11.23 11:33	27° 37.484' S, 73° 53.42' E	2450	Remote operated plattform for ocean science	
INDEX2023 - 127ROPOS	Cluster 12; drilling sulfid / oxide mounds in Aurora	end of station	7.11.23 13:31	27° 37.527' S, 73° 53.422' E	2445	Remote operated plattform for ocean science	Results: 3 cores and 1 muddy
INDEX2023 -128HMS	Cluster 12; AURORA field	start of station	7.11.23 14:17	27° 39.086' S, 73° 55.279' E	2524	HOMESIDE	
INDEX2023 -128HMS	Cluster 12; AURORA field	start of track	7.11.23 14:58	27° 39.041' S, 73° 55.22' E	2409	HOMESIDE	
INDEX2023 -128HMS	Cluster 12; AURORA field	end of track	8.11.23 1:30	27° 37.596' S, 73° 51.71' E	2517	HOMESIDE	
INDEX2023 -128HMS	Cluster 12; AURORA field	end of station	8.11.23 2:30	27° 37.542' S, 73° 51.626' E	2551	HOMESIDE	Results: 22 km mapping, no MAPR on the cable, SP (self potential) = 15m
INDEX2023 -129GC	Cluster 12; AURORA sampling sulphide mound	start of station	8.11.23 3:46	27° 37.786' S, 73° 53.015' E	2447	Gravity corer INDEX	
INDEX2023 -129GC	Cluster 12; AURORA sampling sulphide mound	at bottom	8.11.23 4:31	27° 37.785' S, 73° 53.019' E	2447	Gravity corer INDEX	
INDEX2023 -129GC	Cluster 12; AURORA sampling sulphide mound	end of station	8.11.23 5:19	27° 37.787' S, 73° 53.014' E	2445	Gravity corer INDEX	Results: core length 0,83 m
INDEX2023 -130GC	Cluster 12; AURORA sampling sulfid structure	start of station	8.11.23 5:40	27° 37.741' S, 73° 53.302' E	2426	Gravity corer INDEX	
INDEX2023 -130GC	Cluster 12; AURORA sampling sulfid structure	at bottom	8.11.23 6:26	27° 37.743' S, 73° 53.309' E	2424	Gravity corer INDEX	
INDEX2023 -130GC	Cluster 12; AURORA sampling sulfid structure	end of station	8.11.23 7:15	27° 37.747' S, 73° 53.311' E	2427	Gravity corer INDEX	Results: only Mn, Fe-crust fragments in core catcher
INDEX2023 -131CTD	Cluster 12; CTD cast above active vent site PENUMBRA	start of station	8.11.23 7:47	27° 38.445' S, 73° 53.011' E	2479	CTD Rosette	
INDEX2023 -131CTD	Cluster 12; CTD cast above active	final depth	8.11.23 8:42	27° 38.45' S, 73° 53' E	2487	CTD Rosette	

	vent site PENUMBRA						
INDEX2023 -131CTD	Cluster 12; CTD cast above active vent site PENUMBRA	end of station	8.11.23 9:41	27° 38.444' S, 73° 53.016' E	2478	CTD Rosette	Results: CTD Profil full water depth 0-2490m; water Samples for INES; Plum Signal from turbidity senor detected, signal between 2300-2170m water depth
INDEX2023 -132ST	Cluster 12; Deployment of Sediment Trap Mooring Cluster 12-06	start of station	8.11.23 10:30	27° 38.415' S, 73° 51.686' E	2503	Sedimenttrap	
INDEX2023 -132ST	Cluster 12; Deployment of Sediment Trap Mooring Cluster 12-06	anchor drop	8.11.23 13:57	27° 38.421' S, 73° 52.54' E	2475	Sedimenttrap	
INDEX2023 -132ST	Cluster 12; Deployment of Sediment Trap Mooring Cluster 12-06	triangulation	8.11.23 14:40	27° 38.934' S, 73° 53.084' E	2470	Sedimenttrap	
INDEX2023 -132ST	Cluster 12; Deployment of Sediment Trap Mooring Cluster 12-06	end of station	8.11.23 15:55	27° 38.644' S, 73° 51.526' E	2480	Sedimenttrap	Results: deployment of 3 Sediment Trap; 3 passive samplers BGR; 3 Current Meters; Mooring Position 23°38.69S; 73°52.41E at 2480m water depth
INDEX2023 -133GC	Cluster 9; JIM field sampling sulphidic mound	start of station	9.11.23 7:54	26° 26.903' S, 71° 41.556' E	2750	Gravity corer INDEX	
INDEX2023 -133GC	Cluster 9; JIM field sampling sulphidic mound	at bottom	9.11.23 8:42	26° 26.903' S, 71° 41.566' E	2725	Gravity corer INDEX	
INDEX2023 -133GC	Cluster 9; JIM field sampling sulphidic mound	end of station	9.11.23 9:35	26° 27.036' S, 71° 41.301' E	2675	Gravity corer INDEX	Results: core length 0,74 m
INDEX2023 -134GC	Cluster 9; JIM field small basin under the active mound	start of station	9.11.23 9:47	26° 27.048' S, 71° 41.277' E	2664	Gravity corer INDEX	
INDEX2023 -134GC	Cluster 9; JIM field small basin under the active mound	at bottom	9.11.23 10:37	26° 27.057' S, 71° 41.272' E	2660	Gravity corer INDEX	
INDEX2023 -134GC	Cluster 9; JIM field small basin under the active mound	end of station	9.11.23 11:28	26° 27.052' S, 71° 41.273' E	2663	Gravity corer INDEX	Results: core length 0,80 m; only archive half
INDEX2023 -135HMS	Cluster 9; NE of JIM	start of station	9.11.23 12:37	26° 25.971' S, 71° 43.381' E	3007	HOMESIDE	
INDEX2023 -135HMS	Cluster 9; NE of JIM	start of track	9.11.23 13:35	26° 25.97' S, 71° 43.379' E	3002	HOMESIDE	
INDEX2023 -135HMS	Cluster 9; NE of JIM	end of track	10.11.23 1:10	26° 26.607' S, 71° 43.676' E	3243	HOMESIDE	

INDEX2023 -135HMS	Cluster 9; NE of JIM	end of station	10.11.23 2:31	26° 26.35' S, 71° 43.415' E	3178	HOMESIDE	Results: 27 km mapping, 2 MAPR on the cable, SP (self potential) = 86m; no presence of hydrothermal activity
INDEX2023 -136GC	Cluster 9; sulphide mound sampling	start of station	10.11.23 4:09	26° 26.911' S, 71° 41.343' E	2704	Gravity corer INDEX	
INDEX2023 -136GC	Cluster 9; sulphide mound sampling	at bottom	10.11.23 4:58	26° 26.918' S, 71° 41.347' E	2703	Gravity corer INDEX	
INDEX2023 -136GC	Cluster 9; sulphide mound sampling	end of station	10.11.23 5:50	26° 26.908' S, 71° 41.353' E	2704	Gravity corer INDEX	
INDEX2023 -137GC	Cluster 9; sulphide mound sampling	start of station	10.11.23 6:01	26° 26.881' S, 71° 41.243' E	2706	Gravity corer INDEX	
INDEX2023 -137GC	Cluster 9; sulphide mound sampling	at bottom	10.11.23 6:52	26° 26.886' S, 71° 41.249' E	2706	Gravity corer INDEX	
INDEX2023 -137GC	Cluster 9; sulphide mound sampling	end of station	10.11.23 7:43	26° 26.486' S, 71° 41.613' E	2729	Gravity corer INDEX	Results: core length 0,69 m
INDEX2023 -138GC	Cluster 9; sulphide mound sampling	start of station	10.11.23 7:53	26° 26.485' S, 71° 41.607' E	2721	Gravity corer INDEX	
INDEX2023 -138GC	Cluster 9; sulphide mound sampling	at bottom	10.11.23 8:43	26° 26.496' S, 71° 41.602' E	2719	Gravity corer INDEX	
INDEX2023 -138GC	Cluster 9; sulphide mound sampling	end of station	10.11.23 9:34	26° 26.598' S, 71° 41.583' E	2736	Gravity corer INDEX	Results: core length 1,12 m; upper 12cm completely disturbed
INDEX2023 -139GC	Cluster 9; sulphide mound sampling	start of station	10.11.23 10:09	26° 26.989' S, 71° 41.53' E	2720	Gravity corer INDEX	
INDEX2023 -139GC	Cluster 9; sulphide mound sampling	at bottom	10.11.23 10:58	26° 26.996' S, 71° 41.528' E	2718	Gravity corer INDEX	
INDEX2023 -139GC	Cluster 9; sulphide mound sampling	end of station	10.11.23 11:50	26° 26.995' S, 71° 41.528' E	2713	Gravity corer INDEX	Results: core length 0,83 m; only archive half
INDEX2023 - 140ROPOS	Cluster 5; KAIMANA vent field, site 4	start of station	11.11.23 3:05	25° 27.865' S, 69° 56.29' E	3001	Remote operated plattform for ocean science	
INDEX2023 - 140ROPOS	Cluster 5; KAIMANA vent field, site 4	start of track	11.11.23 5:20	25° 27.879' S, 69° 56.215' E	2968	Remote operated plattform for ocean science	
INDEX2023 - 140ROPOS	Cluster 5; KAIMANA vent field, site 4	end of track	11.11.23 9:20	25° 27.9' S, 69° 56.219' E	2969	Remote operated plattform for ocean science	
INDEX2023 - 140ROPOS	Cluster 5; KAIMANA vent field, site 4	end of station	11.11.23 11:45	25° 27.955' S, 69° 56.266' E	2977	Remote operated plattform for ocean science	Results: 4 cores drilled; 3 cores with 10-15 cm fragmentsof sulfid and 1 muddy
INDEX2023 -141HMS	Cluster 5; KAIMANA	start of station	11.11.23 12:27	25° 28.767' S, 69° 54.342' E	2760	HOMESIDE	
INDEX2023 -141HMS	Cluster 5; KAIMANA	start of track	11.11.23 13:21	25° 28.778' S, 69° 54.352' E	2870	HOMESIDE	
INDEX2023 -141HMS	Cluster 5; KAIMANA	end of track	12.11.23 0:30	25° 20.909' S, 69° 53.663' E	3570	HOMESIDE	

INDEX2023 -141HMS	Cluster 5; KAIMANA	end of station	12.11.23 1:45	25° 20.762' S, 69° 53.664' E	3617	HOMESIDE	Results: 27 km mapping, 2 MAPR on the cable, SP (self potential) = 86m; good Redox and turbility anomaly detected
INDEX2023 - 142ROPOS	Cluster 5; drilling KAIMANA vent field, site No. 9	start of station	12.11.23 3:45	25° 27.833' S, 69° 56.075' E	2939	Remote operated plattform for ocean science	
INDEX2023 - 142ROPOS	Cluster 5; drilling KAIMANA vent field, site No. 9	start of track	12.11.23 5:56	25° 27.842' S, 69° 56.059' E	2904	Remote operated plattform for ocean science	
INDEX2023 - 142ROPOS	Cluster 5; drilling KAIMANA vent field, site No. 9	end of track	12.11.23 12:37	25° 27.854' S, 69° 56.052' E	2902	Remote operated plattform for ocean science	
INDEX2023 - 142ROPOS	Cluster 5; drilling KAIMANA vent field, site No. 9	end of station	12.11.23 14:45	25° 27.793' S, 69° 56.061' E	2972	Remote operated plattform for ocean science	Results: 4 cores drilled; 1 core with fragments
INDEX2023 -143STR	Cluster 5; NNE of KAIMANA	start of station	12.11.23 15:45	25° 24.2' S, 69° 53.8' E	3056	STROMER	
INDEX2023 -143STR	Cluster 5; NNE of KAIMANA	start of track	12.11.23 16:52	25° 24.257' S, 69° 53.78' E	3090	STROMER	
INDEX2023 -143STR	Cluster 5; NNE of KAIMANA	end of track	12.11.23 19:03	25° 24.567' S, 69° 53.816' E	2950	STROMER	
INDEX2023 -143STR	Cluster 5; NNE of KAIMANA	end of station	12.11.23 20:02	25° 25.035' S, 69° 54.121'	2730	STROMER	Results: no confirmation of hydrothermal occurences along the track
INDEX2023 -144STR	Cluster 5; south of KAIMANA	start of station	12.11.23 21:12	25° 29.523' S, 69° 55.998' E	2660	STROMER	
INDEX2023 -144STR	Cluster 5; south of KAIMANA	start of track	12.11.23 22:11	25° 29.528' S, 69° 56.003' E	2670	STROMER	
INDEX2023 -144STR	Cluster 5; south of KAIMANA	end of track	13.11.23 1:10	25° 28.412' S, 69° 56.31' E	2850	STROMER	
INDEX2023 -144STR	Cluster 5; south of KAIMANA	end of station	13.11.23 2:08	25° 28.403' S, 69° 56.314' E	2886	STROMER	Results: SP anomaly between WP5 and WP6
INDEX2023 - 145ROPOS	Cluster 5; KAIMANA field	start of station	13.11.23 3:09	25° 28.461' S, 69° 55.382' E	2333	Remote operated plattform for ocean science	
INDEX2023 - 145ROPOS	Cluster 5; KAIMANA field	start of track	13.11.23 4:46	25° 28.522' S, 69° 55.358' E	2284	Remote operated plattform for ocean science	
INDEX2023 - 145ROPOS	Cluster 5; KAIMANA field	end of track	13.11.23 11:12	25° 27.942' S, 69° 55.566' E	2754	Remote operated plattform for ocean science	
INDEX2023 - 145ROPOS	Cluster 5; KAIMANA field	end of station	13.11.23 13:08	25° 27.903' S, 69° 55.562' E	2806	Remote operated plattform for ocean science	Results: 2 cores and 1 core fragments
INDEX2023 -146HMS	Cluster 5; west of KAIMANA	start of station	13.11.23 13:55	25° 27.085' S, 69° 52.97' E	2870	HOMESIDE	
INDEX2023 -146HMS	Cluster 5; west of KAIMANA	end of station	13.11.23 14:33	25° 27.092' S, 69° 52.965' E	2870	HOMESIDE	Results: stations aborted
INDEX2023 -147HMS	Cluster 5; west of KAIMANA	start of station	13.11.23 14:48	25° 27.089' S, 69° 52.963' E	2868	HOMESIDE	

INDEX2023 -147HMS	Cluster 5; west of KAIMANA	start of track	13.11.23 15:41	25° 27.078' S, 69° 52.959' E	2868	HOMESIDE	
INDEX2023 -147HMS	Cluster 5; west of KAIMANA	end of track	14.11.23 1:15	25° 29.54' S, 69° 53.373' E	2963	HOMESIDE	
INDEX2023 -147HMS	Cluster 5; west of KAIMANA	end of station	14.11.23 2:03	25° 30.184' S, 69° 53.161' E	2984	HOMESIDE	Results: 23 km mapping, 2 MAPR on the cable, SP (self potential) = 86m; clear plume mapped
INDEX2023 - 148ROPOS	Cluster 5; KAIMANA vent field, site no. 3	start of station	14.11.23 3:23	25° 27.907' S, 69° 56.161' E	2967	Remote operated plattform for ocean science	
INDEX2023 - 148ROPOS	Cluster 5; KAIMANA vent field, site no. 3	start of track	14.11.23 5:29	25° 27.932' S, 69° 56.103' E	2885	Remote operated plattform for ocean science	
INDEX2023 - 148ROPOS	Cluster 5; KAIMANA vent field, site no. 3	end of track	14.11.23 12:02	25° 27.958' S, 69° 56.266' E	2961	Remote operated plattform for ocean science	
INDEX2023 - 148ROPOS	Cluster 5; KAIMANA vent field, site no. 3	end of station	14.11.23 14:03	25° 27.879' S, 69° 56.319' E	2992	Remote operated plattform for ocean science	Results: 2 cores and 1 core fragments
INDEX2023 -149HMS	Cluster 5; west of KAIMANA	start of station	14.11.23 15:38	25° 25.611' S, 69° 54.423' E	3047	HOMESIDE	
INDEX2023 -149HMS	Cluster 5; west of KAIMANA	start of track	14.11.23 16:34	25° 25.604' S, 69° 54.421' E	3052	HOMESIDE	
INDEX2023 -149HMS	Cluster 5; west of KAIMANA	end of track	15.11.23 0:51	25° 24.277' S, 69° 55.847' E	3019	HOMESIDE	
INDEX2023 -149HMS	Cluster 5; west of KAIMANA	end of station	15.11.23 1:50	25° 24.229' S, 69° 55.908' E	3137	HOMESIDE	Results: 2 MAPR on the cable, SP (self potential) = 89m; no evidence for SMS
INDEX2023 -150ST	Cluster 5; Deployment of Sediment Trap Mooring 05-02	start of station	15.11.23 3:00	25° 28.173' S, 69° 55.672' E	2780	Sedimenttrap	
INDEX2023 -150ST	Cluster 5; Deployment of Sediment Trap Mooring 05-02	anchor drop	15.11.23 3:56	25° 27.939' S, 69° 55.637' E	2770	Sedimenttrap	
INDEX2023 -150ST	Cluster 5; Deployment of Sediment Trap Mooring 05-02	triangulation	15.11.23 4:44	25° 27.626' S, 69° 56.465' E	2730	Sedimenttrap	
INDEX2023 -150ST	Cluster 5; Deployment of Sediment Trap Mooring 05-02	end of station	15.11.23 5:55	25° 27.978' S, 69° 54.776' E	2550	Sedimenttrap	Results: deployment of 2 Sediment Trap; 2 passive samplers BGR; 2 Current Meters; Mooring Position 25°28.02S; 69°55.63E