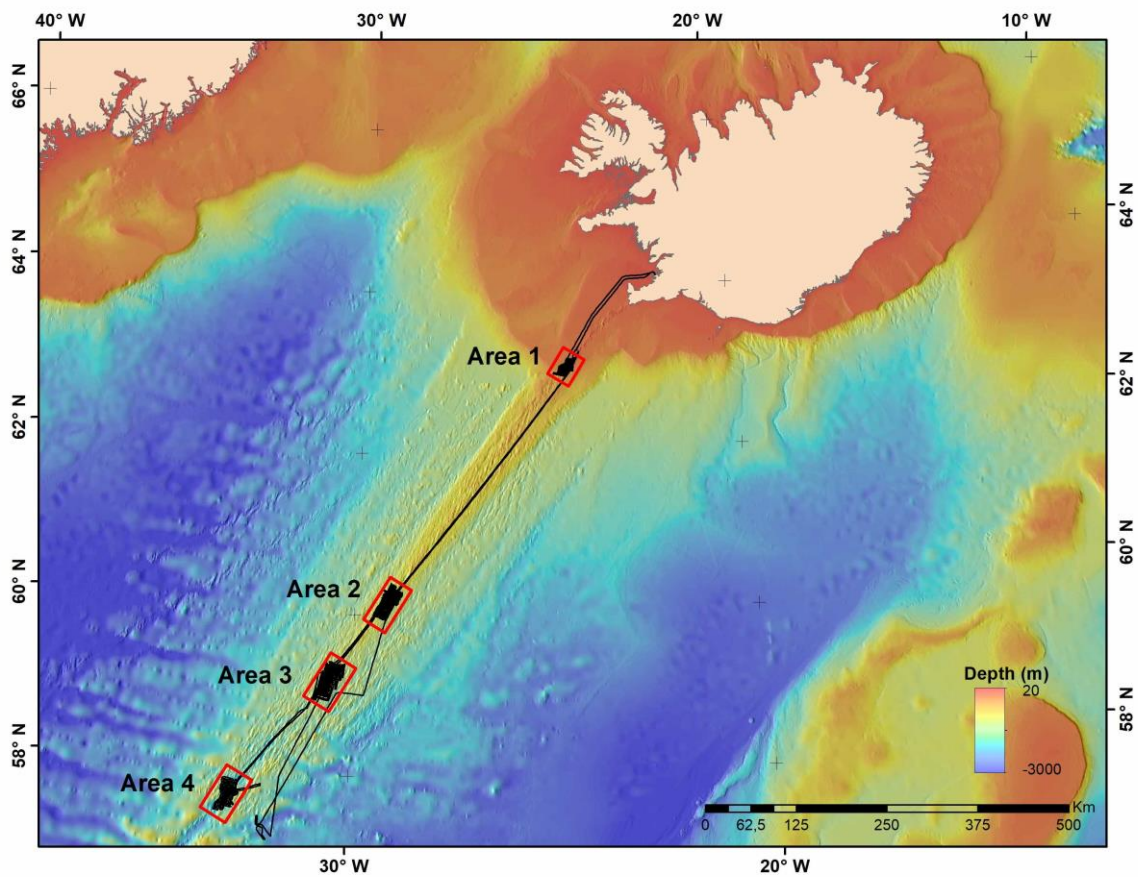


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## Short Cruise Report MERIAN MSM75

Reykjavik - Reykjavik  
29.06.18 – 08.08.18

Chief Scientist: Prof. Dr. Colin Devey  
Captain: Björn Maaß



## Objectives

This cruise combines geological with biological sampling as well as high resolution mapping with detailed and targeted visual observations and sampling of volcanic and hydrothermal sites along the Reykjanes Ridge.

The overall goals of the cruise are to answer the following questions:

- **Is the reduction in crustal thickness observed away from Iceland coupled to fewer eruptions or to eruptions with the same frequency but smaller volume?** The crust thins southward along the Reykjanes Ridge from ca. 20 km on the Reykjanes Peninsula to ca. 7 km near the Bight Fracture Zone. This implies less magmatic input to the crust southwards. Does this take place with fewer magmatic events occurring in unit time, or is the frequency of events roughly similar along axis with the size of the magmatic pulses decreasing southwards? Only when we know the sizes and ages of flows at various positions along the ridge we can answer this first-order question of ridge function.
- **Is the reduction in magmatic activity away from Iceland matched by a parallel increase in tectonic activity?** There is a general consensus that spreading activity is partitioned between magmatic and tectonic activity, with the tectonic end-member being represented by core-complex formation, the volcanic end-member by a fault-free axial volcanic zone. Mapping of faults, their throws and their relationship to dated lavas will allow us to answer this questions.
- **Are the V-shaped ridges related to areas of increased eruption frequency/volume?** It has been postulated that the V-shaped ridges are regions of increased crustal production, a conclusion which has been supported by geophysical demonstrations of thickened crust beneath the off-axis ridges. Is this reflected in the size and/or repeat rate of eruptions?
- **How is the thick crust cooled despite the apparent paucity of high-temperature vent fields?** Near-axis high-temperature hydrothermal systems are thought to remove a significant proportion (10 to 30%) of the heat incorporated into the crust during its formation. As a result, thicker crust would normally be expected to have more such systems per km of ridge length and per cm/yr of spreading. That such systems have not, up to pre-sent, been found in the expected frequency along the Reykjanes Ridge is a major problem of plate heat balance models. Only with detailed exploration of the axial and off-axial re-gions will we be able to find the zones where heat is escaping and characterize whether this is happening at high temperature but without generating the water-column signals found on other ridges or is occurring by more widespread low-temperature venting. Observations and sampling of the one known and presumed high-temperature field at Steinahóll will provide important information on the nature of such fields and perhaps enable us to refine our prospecting methods.
- **Do the macro-and megabenthic faunal communities collected at the nearest and the most distant stations to hydrothermal activity show different faunal composition?** To date in the North Atlantic, the biology of 12 vent fields has been described from 12° to 45°N in 850 - 4200 m depth along the MAR and of two vents field along the Arctic Mid Ocean Ridge (AMOR). The macrofauna of the MAR vent fields are characterized by the presence of vent-endemic and chemosynthetic taxa. In the macrofauna communities of the AMOR vent fields, and Loki's Castle on the Knipovich Ridge in 2350 m, no vent endemic taxa overlap with the MAR.
- **Do the macro-and megabenthic faunal communities in the vicinity of hydrothermal activity use chemo-lithotroph bacteria as an additional food sources?** Overall the fauna in the vicinity of the vent sites north of Iceland are dominated by local shallow water animals and no vent-endemic, chemosynthetic taxa have been reported. The effect of the hydrothermal activity on the benthic community and its food-web structure will be tested in comparison with the food-web and isotope studies carried out previously in the frame of the IceAGE project.
- **Do oceanic topographic structures such as ridges house different habitats supporting allopatric speciation in the Atlantic invertebrate benthic macrofauna?** In order to predict future faunal distribution changes, next to collecting biological specimens, incorporated sampling of multiple abiotic parameters to facilitate multivariate modelling of the connections between the benthic biodiversity assemblages and environmental factors.

## **Narrative**

With a full compliment of scientists and fully bunkered, the Merian left Reykjavik at 14:00 on 29th June. Ahead of us were geological and biological investigations of four working areas along the Reykjanes Ridge covering a range of water depths from 300 – 2000m and a corresponding range of crustal thicknesses from ca. 20km – 8km.

The transit to the first working area in the region known as Steinaholl took only 10 hours and we began before midnight with the deployment of the AUV – due to the shallow water depths we did not need transponders for navigation and could launch the AUV with bottom lock already available.

There followed 4 days of intensive work, with the AUV returning side-scan sonar maps of the various lava fields, the ROV being used to investigate features on these maps and collect in-situ biological samples and the epibenthic sled (EBS) and Van Veen grab (VV) being used to collect additional biological material. When not sampling we used the ship's own EM712 multibeam echosounder to make highly detailed (5m gridded) maps of the Steinaholl area.

Once we had gained this initial overview of Area 1 we continued south to Area 2, aiming both to have a first comparison with what we had found at Area 1 and also to give us time to interpret all the results from Area 1. Area 2, located on the crest of one of the "V-shaped ridges" which spread out across the seafloor around Iceland, turned out to have a wider axial region than expected and required extensive bathymetric mapping with the ship. We made use of a period of bad weather, which made diving with ROV and AUV impossible, to complete this mapping. The central axial high appeared from the maps to be relatively highly faulted, and impression confirmed by subsequent AUV dives which made bathymetric maps of the region (an initial dive with side-scan sonar showed little variation in acoustic reflectance across the axis, probably due to much lower sedimentation rates in Area 2 compared to Area 1). Little sign of hydrothermal activity was found although one ROV dive did find patches of barnacles in the region where the AUV had detected Eh anomalies. A program of volcanic wax coring was initiated to sample the different flow units imaged on the AUV maps and seen during the ROV dives.

Just over two weeks after leaving port, on 15 July, we moved to Area 3. This area was supposed, pre-cruise, to be much less magmatically active than Area 2. Initial bathymetric mapping suggested that this assumption may have been wrong as the axis showed little sign of faulting and some large, probably polygenetic volcanoes with craters. As at the other areas a program of ROV dives during the day, AUV dives, sampling and mapping during the night was initiated. Although we spent a total of 5 days at Area 3, technical problems with both ROV and AUV meant that we only managed 2 ROV and 2 AUV dives during this time.

The arrival of bad weather on 20th July meant that we decided to make the transit to Area 4 and begin mapping there. Upon arrival in the area we deployed AUV transponders and then sent the AUV on a long profile along the ridge axis and close to one of the axial-valley-bounding faults. With better weather arriving we then performed two ROV dives and an AUV multibeam dive in the comparatively deep water (down to 2100m) of Area 4. As these dives returned no indications of hydrothermal activity at what was supposed to be an axial segment underlain by a magma chamber, we attempted to survey the off-axis areas for hydrothermal activity with an AUV deployment on 24th July. The AUV did not return to the appointed pick-up position on the morning of the 25th July and, after several hours searching and the weather and sea state rapidly deteriorating we were forced to abandon the search and wait out the bad weather. No signals were received from the AUV over the following days while we completed our sampling and mapping program at Area 4. Without an AUV to generate more exploration targets, we concluded the work at Area 4 on 28th July and transitted back to Area 3. There, dives on the large cratered volcano which had been visited once on the route southwards yielded many samples of barnacles and detailed geological information on how such a volcano forms. They were also the first dives successfully transmitted live to land and visible to friends and colleagues in real-time over the internet.

We were preparing to use MAPR and the wax corer for a cross-axis tow-yo on 29th July when, over five days after its deployment, the AUV sent emergency signals via the Iridium satellite phone system. Unfortunately these signals did not include a GPS position as normal (Lat. and Long. were

consistently given as 00°00.00'N and 00°00.00'E) meaning that we had to rely on rough fixes provided by the Iridium emergency service centre to narrow down the location of the AUV. These fixes indicated consistently that the vehicle was somewhere in a 70x30km region about 50km ESE of the deployment position. We departed Area 3 late in the evening for the 12 hour transit into this search region. Starting at around 12:00 on 30th July we began systematically sweeping the area, with continued updates of the vehicles possible position from Iridium implying a ESE drift. Bad weather and high seas during the daylight hours severely hampered this search as visibility was low and the state of the upper water column not conducive to acoustic communications with the vehicle, nevertheless watches of 4 scientists on the bridge and a member of the AUV continually tending the acoustic modem were initiated. Darkness brought more hope of finding the vehicle, as its top flashlight is easily visible at night. At around 23:15 one of the bridge observers saw the flashlight and not long afterwards, at 23:32, the AUV was once again safely on board. Having spent 24 hours searching for the AUV and being far from our remaining target areas, we had to prioritize targets and decided to abandon further work at Area 3 and move our activities to Area 2, where two biology dives were planned to investigate very localized barnacle occurrence in a region where the AUV had registered Eh hits. The first dive was used for biological sampling, the second using a high-definition camera and flash system to perform photogrammetry of the barnacle fields. On the afternoon of 2<sup>nd</sup> August we departed Area 2 for the 20-hour transit to Area 1. On our approach to Area 1 we slowed the ship to 1-2 kn to use the EM-712 multibeam in "water column" mode to search for bubble-plumes above hydrothermal systems. This search was successful and on the morning of 3<sup>rd</sup> August we dove on the active and hot (boiling) Steinaholl hydrothermal field, the first time this field had been seen. During the next few days we performed a photogrammetry dive at this position and along the nearby volcanic ridge previously known to have low-temperature activity associated with bacterial mats. These dives led to the discovery of more high-temperature venting. In the evenings after diving we completed the biological sampling of Area 1 with Van Veen and EBS deployments and began the magmatic sampling with wax-coring stations. On the evening of 3<sup>rd</sup> August the AUV was also deployed for the first time following repairs and successfully completed a side-scan dive to the west of the axial volcanic zone. A further dive was completed until the evening of 5<sup>th</sup> August, at which time AUV and ROV activities were ended to allow time for packing of the equipment. On Monday 6<sup>th</sup> August and Tuesday 7<sup>th</sup> August the working program saw a completion of the magmatic sampling and detailed mapping of the off-axis regions. At 22:00 UTC on 7<sup>th</sup> August 2018 the scientific activities were ended and we began the 10-hour transit to Reykjavik in heavy seas. The ship made fast in Reykjavik at 08:00 on 8<sup>th</sup> August, ending this successful scientific voyage.

## **Acknowledgements**

We sincerely thank Captain Björn Maas and the professional crew of the MARIA S. MERIAN for their enthusiastic support during the MSM75 expedition that enabled us to successfully complete our ambitious working program in a good atmosphere on board. The ship time of R/V MARIA S. MERIAN was provided by the Deutsche Forschungsgemeinschaft DFG. The participation of GEOMAR scientists, ROV and AUV was financed by the Helmholtz-Gemeinschaft. The biological sampling program was supported by the DFG through a grant to S. Brix. Participation of Dominik Palgan was financed by grant 530-G240-D430-17-1E from the University of Gdansk and Ada Tomkowicz was financed by EU H2020 grant POWR.03.01.00-00-S183/17 to the University of Gdansk, Poland.

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## Stationsliste

Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-1	Area 1	ESV	63°09.222'/24°33.017' - 63°09.067'/24°33.072'	28.06.18/22:45 29.06.18/22:45		
MSM75-2	Area 1	MB	63°08.268'/24°33.660' - 63°05.805'/24°20.768'	29.06.18/23:02 01.07.18/17:45	312.7	Centre and eastern part of area 1 5 meter resolution Good data
MSM75-3	Area 1	AUV	63°05.175'/24°32.637' - 63°06.345'/24°30.994'	30.06.18/16:56 01.07.18/08:55	159.7- 285.7	Sensors: SSS120 - 410
MSM75-4	Area 1	ROV	63°05.496'/24°32.569' - 63°04.744'/24°32.485'	01.07.18/09:34 01.07.18/16:26	241.8- 244.5	Biology/Geology Biological samples
MSM75-5	Area 1	AUV	63°05.225'/24°32.631' - 63°04.721'/24°29.238'	01.07.18/16:59 02.07.18/10:56	188- 360.3	Sensor: SSS120
MSM75-6	Area 1	MB	63°07.747'/24°26.565' - 63°10.937'/24°29.071'	01.07.18/17:50 02.07.18/09:20	253.4- 295.7	Northern part of area 1 5 meter resolution
MSM75-7	Area 1	EBS	63°04.687'/24°34.581' - 63°04.619'/24°34.665'	02.07.18/11:46 02.07.18/11:51	250- 276.9	Good samples taken
MSM75-8	Area 1	VVG	63°04.520'/24°34.784'	02.06.18/12:55	285.7	Good samples taken
MSM75-9	Area 1	EBS	63°04.469'/24°30.849' - 63°04.433'/24°30.897'	02.07.18/14:12 02.07.18/14:15	293- 285.1	Empty. tipped over
MSM75-10-1	Area 1	VVG	63°04.443'/24°30.876'	02.07.18/15:06	285.5	No samples. not triggered
MSM75-10-2	Area 1	VVG	63°04.441'/24°30.875'	02.07.18/15:33	285.2	No samples. not triggered
MSM75-11	Area 1	AUV	63°06.647'/24°21.801' - 63°03.706'/24°24.466'	02.07.18/16:36 03.07.18/12:21	129.5- 367.9	Sensor: SSS120
MSM75-12	Area 1	MB	63°09.490'/24°34.754' - 63°02.159'/24°30.914'	02.07.18/17:40 03.07.18/11:33	329.6- 377.6	Mapped flanked volcano system Western part of area 1
MSM75-13	Area 1	ROV	63°05.521'/24°32.525' - 63°05.523'/24°32.775'	03.07.18/13:16 03.07.18/14:05	229.3- 260.9	Short circle in system Early end
MSM75-14	Area 1	ROV	63°05.5888'/24°32.552' - 63°06.039'/24°33.177'	03.07.18/14:43 03.07.18/20:02	252.4- 257.6	Many fishing lines One camera broken
MSM75-15	Area 1	AUV	63°06.24'/24°33.152' - 63°02.510'/24°25.959'	03.07.18/20:33 04.07.18/14:24	272.5-	Sensor: SSS120
MSM75-16	Area 1	MB	63°02.807'/24°37.206' - 62°58.176'/24°32.101'	03.07.18/21:11 04.11.18/11:13	426.7- 460.6	Mapped south of area 1 Of and on axis
MSM75-17	Area 1	VVG	63°05.903'/24°32.648'	04.07.18/12:17	301.7	Good samples
MSM75-18	Area 1	EBS	63°05.889'/24°32.741' - 63°05.898'/24°32.794'	04.07.18/12:58 04.07.18/13:03	293.4-	Few samples Not effective
MSM75-19-1	Area 2	MO	60°13.414'/29°03.231' - 60°14.712'/29°02.569'	04.07.18/14:15 04.07.18/14:44	968.9- 1019.6	
MSM75-19-2	Area 2	MO	60°14.085'/29°03.282' - 60°13.388'/29°03.127'	04.07.18/13:48 04.07.18/14:15	928.5- 999.3	
MSM75-20	Area 2	ESV	60°14.090'/29°00.897' - 60°14.770'/29°00.851'	05.07.18/10:41 05.07.18/10:48	967.1- 947.2	
MSM75-21	Area 2	AUV	60°14.125'/29°03.412' - 60°21.821'/29°05.374'	05.07.18/11:53 06.07.18/13:04	900.1- 1015.2	Sensor: Eh
MSM75-22-1	Area 2	MB	60°13.065'/28°54.069' - 60°11.30'/29°11.801'	05.07.18/13:00 06.07.18/11:53	1191.8- 847.9	
MSM75-22-2	Area 2	DSMB	60°14.210'/28°59.479' - 60°14.862'/29°02.518'	05.07.18/13:35 05.07.18/13:55	964.4- 997	
MSM75-23	Area 2	VVG	60°12.079'/29°00.035'	06.07.18/14:48	1169.7	Very full Good samples taken
MSM75-24	Area 2	EBS	60°11.868'/29°00.269' - 60°11.452'/29°00.745'	06.07.18/16:28 06.07.18/16:57	1170.3- 1157.4	Many sponges Much sediment
MSM75-25	Area 2	AUV	60°14.129'/29°03.349' - 60°15.239'/29°08.937'	06.07.18/20:00 07.07.18/09:00	919.4- 788.4	Sensor: SSS120
MSM75-26	Area 2	VVG	60°15.411'/29°12.786'	06.07.18/21:23	1052.5	Very full Lots of sponges
MSM75-27	Area 2	EBS	60°15.189'/29°12.910' - 60°14.861'/29°13.090'	06.07.18/21:55 06.07.18/23:44	1058.3- 1068.7	lots of spicules Many big rocks stuck in frame
MSM75-28	Area 2	VVG	60°15.691'/29°07.413'	07.07.18/00:53	647.5	Empty
MSM75-29	Area 2	EBS	60°15.522'/29°07.522' - 60°15.502'/29°07.537'	07.07.18/01:54 07.07.18/01:56	731.9- 738	Small sample from volcano EBS got scratched
MSM70-30	Area 2	MB	60°16.689'/29°08.692' - 60°14.002'/28°53.476'	07.07.18/02:54 07.07.18/07:15	3095- 2684	
MSM75-31	Area 2	ROV	60°13.709'/29°07.273' - 60°14.665'/29°08.751'	07.07.18/09:27 07.07.18/19:28	729- 754.8	HD camera. directly on volcanic ridge Cable caught twice Biological / Geological samples taken
MSM75-32	Area 3	MB	59°21.173'/30°22.613' - 59°17.854'/30°40.378'	08.07.18/01:39 10.07.18/03:45	1225.9- 1310.2	
MSM75-33	Area 2	AUV	60°14.122'/29°03.323' - 60°14.415'/29°07.907'	10.07.18/10:02 11.07.18/08:21	924- 699.9	Sensor: MB200
MSM75-34	Area 2	VVG	60°12.961'/28°55.011'	10.07.18/13:29	1199.4	



Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-35	Area 2	EBS	60°13.486'/28°54.772' - 60°13.572'/28°54.734'	10.07.18/15:10 10.07.18/15:15	1189.1- 1189.3	Samples taken
MSM75-36	Area 2	VVG	60°14.876'/28°58.753'	10.07.18/17:00	932.6	Soft sediment with spicules and clay
MSM75-37	Area 2	EBS	60°14.737'/28°58.934' - 60°14.645'/28°59.051'	10.07.18/18:26 10.07.18/18:34	933.4	Flat top volcano with 400m space for trawl
MSM75-38	Area 2	VVG	60°14.208'/28°53.660'	10.07.18/20:06	1203.2	Samples taken
MSM75-39	Area 2	EBS	60°13.874'/28°53.646' - 60°13.729'/28°53.640'	10.07.18/21:45 10.07.18/21:55	1199.1- 1195.3	Samples taken
MSM75-40	Area 2	MB	60°13.462'/28°52.142' - 60°17.064'/29°07.980'	10.07.18/23:01 11.07.18/07:45	1197.6- 910	
MSM75-41	Area 2	VSR	60°14.75'/29°08.25'	11.07.18/09:25	725.3	Wire length: 731m, 2 cups taken
MSM75-42	Area 2	VSR	60°14.75'/29°08.25'	11.07.18/10:12	740.1	Wire length: 738m, 3 cups taken
MSM75-43	Area 2	VSR	60°14.75'/29°08.16'	11.07.18/10:59	744.4	Wire length: 742m, Empty
MSM75-44	Area 2	VSR	60°14.75'/29°08.16'	11.07.18/11:35	743.9	Wire length: 742m, 1 cup taken
MSM75-45	Area 2	VSR	60°14.75'/29°08.11'	11.07.18/12:17	739.8	Wire length: 739m, 1 cup taken
MSM75-46	Area 2	VSR	60°14.75'/29°08.05'	11.07.18/12:55	746	Wire length: 742m, 2 cups taken
MSM75-47	Area 2	VSR	60°14.75'/29°08.01'	11.07.18/13:30	744.3	Wire length: 736m, Empty. sediment only
MSM75-48	Area 2	VSR	60°14.75'/29°07.96'	11.07.18/14:08	741.8	Wire length: 738m, 2 cups taken
MSM75-49	Area 2	VSR	60°14.75'/29°07.91'	11.07.18/14:44	735.3	Wire length: 736m, 2 cups taken
MSM75-50	Area 2	VSR	60°14.74'/29°07.83'	11.07.18/15:22	718.4	Wire length: 732m, 1 cup taken
MSM75-51	Area 2	VSR	60°14.74'/29°07.73'	11.07.18/16:01	670.6	Wire length: 681m, 3 cups taken
MSM75-52	Area 2	VSR	60°14.71'/29°07.72'	11.07.18/16:44	668.7	Wire length: 674m, 2 cups taken
MSM75-53	Area 2	VSR	60°14.6'/29°07.74'	11.07.18/17:22	668.4	Wire length: 662m, 2 cups taken
MSM75-54	Area 2	VSR	60°14.65'/29°07.76'	11.07.18/18:04	687.6	Wire length: 685m, 1 cup taken + MAPR
MSM75-55	Area 2	VSR	60°14.63'/29°07.79'	11.07.18/18:45	683.5	Wire length: 690m, Empty + MAPR
MSM75-56	Area 2	VSR	60°14.62'/29°07.80'	11.07.18/19:20	683.1	Wire length: 688m, 2 cups taken + MAPR
MSM75-57	Area 2	AUV	60°14.107'/29°03.343' - 60°11.867'/29°08.905'	11.07.18/20:13 12.07.18/08:44	897- 787.3	Sensor: MB200
MSM75-58	Area 2	MB	60°16.586'/29°03.805' - 60°19.137'/29°11.541'	11.07.18/20:46 12.07.18/07:15	775.6- 995.6	
MSM75-59	Area 2	VVG	60°15.452'/29°17.837'	12.07.18/09:56	1178.6	Samples taken
MSM75-60	Area 2	EBS	60°15.810'/29°17.702' - 60°15.854'/29°17.686'	12.07.18/11:32 12.07.18/11:35	1173.8- 1174.1	Sponge spicules in sample
MSM75-61	Area 2	VVG	60°15.383'/29°16.595'	12.07.18/14:04	1210	Samples taken
MSM75-62	Area 2	EBS	60°15.668'/29°16.273' - 60°15.668' /29°16.272'	12.07.18/16:00 12.07.18/16:31	1222.1- 1221.5	Samples taken
MSM75-63	Area 2	VVG	60°17.244'/29°15.381'	12.07.18/17:38	1124.4	Samples taken
MSM75-64	Area 2	EBS	60°16.713'/29°13.855' - 60°16.713'/29°13.855'	12.07.18/19:48 12.07.18/19:58	907.5- 904.9	Samples taken
MSM75-65	Area 2	AUV	60°14.101' /29°03.330' - 60°14.264'/29°07.846'	12.07.18/21:04 13.07.18/09:49	895.9- 729.9	Sensor: MB200
MSM75-66	Area 2	MB	60°12.920'/29°19.199' - 60°09.511'/29°07.863'	12.07.18/21:58 13.07.18/07:32	963.4 944.2	
MSM75-67	Area 2	ROV	60°14.222'/29°08.283' - 60°15.622'/29°07.526'	13.07.18/10:00 13.07.18/18:41	729.9- 654.6	Biology/Geology
MSM75-68	Area 2	AUV	60°14.111' /29°03.349' - 60°17.189'/29°12.821'	13.07.18/20:10 14.07.18/13:02	897- 928.7	Sensor: Eh
MSM75-69	Area 2	MB	60°08.307'/29°02.103' - 60°09.828'/29°10.654'	13.07.18/20:53 14.07.18/11:13	1065.6- 779.3	
MSM75-70	Area 2	MB	60°09.684' /29°08.976' - 59°59.548'/29°32.822'	14.07.18/15:35 15.07.18/11:14	910.8- 1083.8	
MSM75-71	Area 3	MB	59°22.431'/30°24.237' - 59°24.354'/30°33.617'	15.07.18/16:22 15.07.18/17:26	1182.9- 1333.5	
MSM75-72	Area 3	AUV	59°22.249'/30°25.374' - 59°02.129'/30°48.385'	15.07.18/19:09 16.07.18/21:09	1536.2- 1195.3	Sensor: Eh
MSM75-73	Area 3	MB	59°21.689'/30°20.385' - 59°12.129'/30°45.546'	15.07.18/19:56 16.07.18/08:09	1374.1- 1273.1	
MSM75-74	Area 3	ESV	59°12.708'/30°45.229' - 59°12.186'/30°45.512'	16.07.18/08:02 16.07.18/08:09		
MSM75-75	Area 3	ROV	59°00.392' /59°00.392' - 59°00.955'/30°43.223'	16.07.18/09:21 16.07.18/17:54	1409.5- 1161.3	Biology/Geology
MSM75-76	Area 3	VVG	59°02.488'/30°36.071'	16.07.18/19:29	1566.5	Fine light brown mud. sticky sediment
MSM75-77	Area 3	MB	59°02.159'/30°49.540' - 59°19.447'/30°19.828'	16.07.18/21:21 17.07.18/05:24	1223.7- 1276.5	
MSM75-78	Area 3	MO	59°16.142'/30°28.384' - 59°16.378' /30°28.609'	17.07.18/06:05 28.07.18/19:03	1078.1-	
MSM75-79-1	Area 3	MO	59°15.766'/30°27.012' - 59°15.922' /30°27.257'	17.07.18/06:50 28.07.18/18:43	1077.8-	
MSM75-79-2	Area 3	AUV	59°15.900'/30°27.495' - 59°15.995'/30°27.474'	17.07.18/19:51 17.07.18/20:17	1103.3- 1121.5	
MSM75-80	Area 3	ROV	59°15.479'/30°26.676' - 59°15.115'/30°29.055'	17.07.18/09:12 17.07.18/17:54	992- 941.1	Biology/Geology
MSM75-81	Area 3	MB	59°19.567'/30°19.823' - 59°16.221'/30°16.222'	17.07.18/20:55 18.07.18/07:07	1281.5- 1275.8	

Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-82	Area 3	VVG	59°19.491'/30°32.621'	18.07.18/08:32	1217.8	Close to fault where activity is expected
MSM75-83	Area 3	EBS	59°19.326'/30°33.082' - 59°19.178'/30°33.497'	18.07.18/09:59 18.07.18/10:15	1216.8- 1266.7	
MSM75-84	Area 3	VVG	59°17.097'/30°36.231'	18.07.18/12:10	1243.3	Samples taken
MSM75-85	Area 3	EBS	59°17.198'/30°35.691' - 59°17.198'/30°35.691'	18.07.18/13:55 18.07.18/14:04	1229.7- 1232.3	Samples taken
MSM75-86	Area 3	VSR	59°16.02'/30°27.61'	18.07.18/15:54	1142	Wire length: 1130m, 3 cups taken
MSM75-87	Area 3	VSR	59°15.94'/30°27.41'	18.07.18/16:54	1101.3	Wire length: 1137m 5 cups + 8 rock fragments
MSM75-88	Area 3	VSR	59°15.94'/30°27.52'	18.07.18/17:45	1100.4	Wire length: 1100m, 3 cups taken
MSM75-89	Area 3	VSR	59°15.94'/30°27.63'	18.07.18/18:37	1103.4	Wire length: 1100m, 5 cups taken
MSM75-79-3	Area 3	VSR	59°15.93'/30°27.75'	18.07.18/19:25	1114.1	Wire length: 1109m, 3 cups taken
MSM75-90	Area 3	VSR	59°15.84'/30°27.81'	18.07.18/20:23	1072.3	Wire length:11160m, empty
MSM75-91	Area 3	VSR	59°15.86'/30°27.74'	18.07.18/21:13	1089.7	Wire length:1108m, 3 cups taken
MSM75-92	Area 3	VSR	59°15.87'/30°27.63'	18.07.18/22:04	1110.2	Wire length: 1107m, 3 cups + 2 fragment on top
MSM75-93	Area 3	VSR	59°15.87'/30°27.54'	18.07.18/22:54	1110.5	Wire length:1112m, 2 cups taken
MSM75-94	Area 3	VSR	59°15.85'/30°27.47'	18.07.2108/23:43	1109.2	Wire length: 1107m, 2 cups taken
MSM75-95	Area 3	MB	59°16.14'/30°16.33' - 59°13.00'/30°12.87'	19.07.18/01:15 19.07.18/08:01	1291.6- 1113.9	
MSM75-96	Area 3	VSR	59°15.83'/30°27.38'	19.07.18/08:17	1115	Wire length: 1115m, 3 cups taken
MSM75-97	Area 3	VSR	59°15.80'/30°27.59'	19.07.18/09:05	1109.5	Wire length: 1107m, 2 cups taken
MSM75-98	Area 3	VSR	59°15.80'/30°27.71'	19.07.18/09:53	1103.3	Wire length: 1111m, sediment in all cups
MSM75-99	Area 3	ROV	59°14.916'/30°28.960' - 59°14.969'/30°29.076'	19.07.18/10:34 19.07.18/11:04	953.2- 971.9	Cancelled
MSM75-100	Area 3	VSR	59°15.73'/30°27.59'	19.07.18/11:41	1141.3	Wire length: 1142m, 2 cups taken
MSM75-101	Area 3	VSR	59°15.71'/30°27.11'	19.07.18/12:40	1136.9	Wire length: 1100m, 2 cups taken
MSM75-102	Area 3	VSR	59°15.68'/30°26.98'	19.07.18/13:29	1083.3	Wire length: 1045m, 2 cups taken
MSM75-103	Area 3	VSR	59°15.62'/30°22.75'	19.07.18/14:22	954	Wire length: 988m, 1 cup taken
MSM75-104	Area 3	ROV	59°14.921'/30°28.958' - 59°15.082'/30°29.250'	19.07.18/15:03 19:35	927.4- 868.7	Biology/Geology
MSM75-105	Area 3	AUV	59°15.897'/30°27.494' - 59°14.686'/30°29.083'	19.07.18/20:05 20.07.18/16:19	1101- 999.1	Sensor: MB200
MSM75-106	Area 3	EBS	59°02.815'/30°35.707' - 59°03.045'/30°35.460'	19.05.18/22:35 19.05.18/22:51	1562.2- 1550.6	Samples taken
MSM75-107	Area 3	VVG	59°03.522'/30°42.769'	20.07.18/00:49	969.8	Closed but nearly empty
MSM75-108	Area 3	VVG	59°03.524'/30°42.771'	20.07.18/01:33	970.1	Closed but only few stones
MSM75-109	Area 3	EBS	59°03.292'/30°43.301' - 59°03.292'/30°43.301'	20.07.18/02:55 20.07.18/03:05	954.2- 971.2	Samples taken
MSM75-110	Area 3	MB	59°03.722'/30°50.704' - 58°55.790'/30°54.473'	20.07.18/04:10 20.07.18/06:51	1465.3 1466.8	
MSM75-111	Area 3	ROV	59°17.580'/30°28.214' - 59°17.350'/30°26.880'	20.07.18/09:04 20.07.18/15:28	1279.1 1056.6	Biology/Geology
MSM75-112	Area 4	MB	57°53.514'/032°31.666' - 57°34.381'/032°50.995'	21.07.18/05:30 21.07.18/07:54	2315.7 2029.1	
MSM75-113	Area 4	AUV	57°34.301'/032°45.293' - 57°33.753'/032°41.916'	21.07.18/18:49 22.07.18/08:41	2811.8- 1735.9	
MSM75-114	Area 4	MB	57°31.74'/032°38.93' - 57°44.17'/32°48.60'	22.07.18/09:12 22.07.18/12:14	1723- 1748	
MSM75-115	Area 4	MO	57°44.033' /032°38.157' - 57°43.928' /032°38.257'	22.07.18/13:05 27.07.18/20:51	1134.5-	
MSM75-116	Area 4	MO	57°43.309' /032°38.294' - 57°43.225' /032°38.257'	22.07.18/13:53 27.07.18/20:30	1637.5	
MSM75-117	Area 4	VSR	57°47.07'/32°40.83'	22.07.18/16:52	1612.6	Wire length: 1609m, 1 cup taken + MAPR
MSM75-118	Area 4	VSR	57°45.97'/32°41.09'	22.07.18/18:16	1582.3	Wire length: 1574m, 2 cups taken + MAPR
MSM75-119	Area 4	VSR	57°44.17'/32°41.56'	22.07.18/19:40	1370.2	Wire length: 1481m, 3 cups taken + MAPR
MSM75-120	Area 4	AUV	57°43.571'/032°38.045' - 57°40.857'/032°41.055'	22.07.18/20:45 23.07.18/19:21	1778.1- 1838.8	Sensor: Eh
MSM75-121	Area 4	VSR	57°42.99'/32°41.97'	22.07.18/21:47	1692.5	Wire length: 1643m, 3 cups taken + MAPR
MSM75-122	Area 4	VSR	57°40.83'/32°43.86'	22.07.18/23:46	1616	Wire length: 1553m, 1 cup taken + MAPR
MSM75-123	Area 4	MB	57°46.231'/032°43.388' - 57°45.392'/032°44.490'	23.07.18/00:30 23.07.18/11:04	1997.2- 1985.7	
MSM75-124	Area 4	ROV	57°43.595'/032°38.806' - 57°44.216'/032°41.635'	23.07.18/11:33 23.07.18/18:28	2046.4- 1569.6	Biology/Geology
MSM75-125	Area 4	VSR	57°31.322'/032°55.051'	23.07.18/21:16	2174	Wire length: 2192m, Empty
MSM75-126	Area 4	MB	57°28.688'/032°50.545' - 57°34.125'/033°00.805'	23.07.18/22:30 24.07.18/07:52	1785.3- 2056.7	
MSM75-127	Area 4	ROV	57°42.402'/032°45.629' - 57°41.272'/032°43.842'	24.07.18/09:01 24.07.18/17:41	2047.9- 1632.2	
MSM75-128	Area 4	AUV	57°43.585'/032°38.039' - 57°21.186'/031°56.618'	24.07.18/18:27 30.07.18/23:40	1732.1-	Sensor: Eh/SSS120 AUV got lost
MSM75-129	Area 4	VSR	57°50.423'/032°38.831'	24.07.18/20:26	1790.2	Wire length: 1813m, Empty
MSM75-130	Area 4	MB	57°45.675'/032°49.179' - 57°42.174'/032°54.947'	24.07.18/21:49 25.07.18/03:35	1682.2- 1243.7	
MSM75-131	Area 4	VSR	57°42.549'/032°45.773'	25.07.18/21:56	2044.2	Wire length: 2048m, 3 cups taken

Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-132	Area 4	VSR	57°42.759'/032°44.557'	25.07.18/23:41	1998.7	Wire length: 1981m, 4 cups taken
MSM75-133	Area 4	VSR	57°42.305'/032°44.892'	26.07.18/01:12	1846.4	Wire length: 1851m, 1 cup taken
MSM75-134	Area 4	VSR	57°41.706'/032°45.994'	26.07.18/20:51	1932.3	Wire length: 1936m, 3 cups taken
MSM75-135	Area 4	MB	57°41.811'/032°45.747' - 57°44.970'/032°54.873'	26.07.18/04:26 26.07.18/08:32	1951.2- 1521.2	
MSM75-136	Area 4	EBS	57°44.160'/032°37.833' - 57°44.160'/032°37.832'	26.07.18/15:49 26.07.18/15:57	1780- 1779.9	Samples taken
MSM75-137	Area 4	EBS	57°37.451'/032°52.121' - 57°37.452'/032°52.118'	26.07.18/22:43 26.07.18/23:04	2320.7- 2323	Samples taken
MSM75-138	Area 4	EBS	57°34.096'/032°36.008' - 57°34.092'/032°36.011'	27.07.18/02:28 27.07.18/02:32	1272.9- 1266	Samples taken
MSM75-139	Area 4	VSR	57°41.769'/032°45.047'	27.07.18/05:54	1769.9	Wire length: 1781m, 1 cup taken
MSM75-140	Area 4	VSR	57°41.679'/032°43.861'	27.07.18/07:24	1639.3	Wire length: 1629m, 3 cups taken
MSM75-141	Area 4	VSR	57°41.445'/032°42.899'	27.07.18/08:57	1773.3	Wire length: 1765m, 6 cups taken
MSM75-142	Area 4	VSR	57°40.934'/032°45.803'	27.07.18/10:19	1839.3	Wire length: 1834m, 3 cups taken
MSM75-143	Area 4	VSR	57°40.933'/032°46.247'	27.07.18/11:44	1950.6	Wire length: 1944m, 2 cups taken
MSM75-144	Area 4	VSR	57°40.280'/032°44.611'	27.07.18/13:13	1633.9	Wire length: 1648m, 1 cup taken
MSM75-145	Area 4	VSR	57°39.357'/032°44.419'	27.07.18/14:39	1690	Wire length: 1672m, 3 cups taken
MSM75-146	Area 4	VSR	57°39.435'/032°46.295'	27.07.18/16:03	2146.3	Wire length: 2137m, Empty. sediment
MSM75-147	Area 4	VSR	57°39.929'/032°46.937'	27.07.18/17:26	2138.8	Wire length: 2117m, Sediment
MSM75-148	Area 4	VSR	57°40.857'/032°43.057'	27.07.18/18:56	1774.4	Wire length: 1748m, 1 cup taken
MSM75-149	Area 3	ROV	59°15.050' /30°28.966' - 59°15.169' /30°28.983'	28.07.18/08:24 28.07.18/17:56	889.3- 977.6	Biology/Geology
MSM75-150	Area 3	VSR	59°06.999'/30°40.714'	28.07.18/20:46	1111.1	Wire length: 1112m, Sediment. coral + MAPR
MSM75-151	Area 3	VSR	59°06.987'/30°40.401'	28.07.18/21:46	1093.4	Wire length: 1078m, 3 cups (coral/sediment) + MAPR
MSM75-152	Area 3	VSR	59°06.854'/30°40.377'	28.07.18/22:46	1111.9	Wire length: 1111m, 1 cup. sediment + MAPR
MSM75-153	Area 3	VSR	59°06.878'/30°40.706'	28.07.18/23:47	1123.5	Wire length: 1118m, 1 cup. sediment + MAPR
MSM75-154	Area 3	VSR	59°06.692'/30°40.902'	29.07.18/01:01	1116.4	Wire length: 1114m, 1 cup + MAPR
MSM75-155	Area 3	VSR	59°06.561'/30°41.639'	29.07.18/02:18	1110	Wire length: 1116m, 1 cup taken
MSM75-156	Area 3	VSR	59°06.212'/30°41.747'	29.07.18/03:31	1078.4	Wire length: 1060m, 2 cups taken
MSM75-157	Area 3	VSR	59°06.015'/30°41.643'	29.07.18/04:30	1065.8	Wire length: 1069m, 1 cup taken + MAPR
MSM75-158	Area 3	VSR	59°05.938'/30°41.292'	29.07.18/05:26	1026.7	Wire length: 1027m, 4 cups taken + MAPR
MSM75-159	Area 3	VSR	59°06.207'/30°41.076'	29.07.18/06:19	1078.6	Wire length: 1083m, 2 cups taken
MSM75-160	Area 3	VSR	59°16.310'/30°27.614'	29.07.18/19:06	1110.8	Wire length: 1094m, 1 cup taken
MSM75-161	Area 3	ROV	59°19.153'/30°33.312' - 59°19.549'/30°31.144'	29.07.18/08:42 29.07.18/17:58	1217.7- 1213.9	Biology/Geology
MSM75-162	Area 3	VSR	59°06.207'/30°41.076'	29.07.18/19:06	1110.8	Wire length: 1091m, 3 cups taken
MSM75-163	Area 3	VSR	59°16.202' /30°27.552'	29.07.18/19:55	1104.4	Wire length: 1101m, 2 cups taken
MSM75-164	Area 3	VSR	59°16.118' /30°27.839'	29.07.18/20:48	1063.9	Wire length: 1066m, Few bits taken
MSM75-165	Area 3	VSR	59°16.106' /30°28.027'	29.07.18/21:37	1069.6	Wire length: 1079m, 1 cup taken
MSM75-166	Area 3	VSR	59°16.340' /30°28.332'	29.07.18/22:31	1082.6	Wire length: 1085m, Few bits taken
MSM75-167	Area 3	VSR	59°16.348' /30°28.806'	29.07.18/23:27	1083.8	Wire length: 1084m, 1 cup taken
MSM75-168	Area 3	VSR	59°16.250'/30°29.001'	30.07.18/00:21	1040	Wire length: 1074m, 1 cup taken
MSM75-169	Area 3	VSR	59°16.035'/30°28.826'	30.07.18/01:22	1073.7	Wire length: 1078m, 2 cups taken
MSM75-170	Area 2	VVG	60°15.609' /29°04.790'	31.07.18/22:27	699.6	Lava pebbles
MSM75-171	Area 2	EBS	60°15.826' /29°04.701' - 60°15.826' /29°04.702'	31.07.18/23:38 31.07.18/23:45	680- 678.7	Samples taken
MSM75-172	Area 2	VSR	60°16.320' /29°07.031'	01.08.18/00:43	686.1	Wire length: 694m, 1 cup taken
MSM75-173	Area 2	VSR	60°16.200' /29°07.367'	01.08.18/01:31	732.4	Wire length: 722m, 3 cups taken
MSM75-174	Area 3	VSR	60°16.172'/29°07.104'	01.08.18/02:18	697.1	Wire length: 694m, 2 cups taken
MSM75-175	Area 2	VSR	60°15.974'/29°07.241'	01.08.18/03:05	701.1	Wire length: 681m, 2 cups taken
MSM75-176	Area 2	VSR	60°16.054'/29°07.589'	01.08.18/03:54	721.8	Wire length: 707m, 1 cup taken
MSM75-177	Area 2	VSR	60°16.075'/29°07.776'	01.08.18	696.7	Wire length: 695m, 1 cup taken
MSM75-178	Area 2	VSR	60°15.901'/29°07.944'	01.08.18/05:09	698.5	Wire length: 697m, Few bits
MSM75-179	Area 2	VSR	60°15.462'/29°07.728'	01.08.18/05:57	726.2	Wire length: 706m, 1 cup + bits taken
MSM75-180	Area 2	VSR	60°15.456'/29°07.464'	01.08.18/06:37	699.6	Wire length: 694m, 2 cups + bits taken
MSM75-181	Area 2	VSR	60°15.295'/29°07.144'	01.08.18/07:22	768.5	Wire length: 756m, Bits from 2 cups taken
MSM75-182	Area 2	VSR	60°15.234'/29°07.319'	01.08.18/07:58	726.5	Wire length: 710m, 1 cup taken
MSM75-183	Area 2	VSR	60°15.258' /29°07.565'	01.08.18/08:35	714.1	Wire length: 677m, 2 cups taken
MSM75-184	Area 2	VSR	60°15.300'/29°07.763'	01.08.18/09:14	704.9	Wire length: 714m, 4 cups taken
MSM75-185	Area 2	VSR	60°15.013'/29°08.369'	01.08.18/09:58	669.3	Wire length: 677m, 1 cup + bits taken
MSM75-186	Area 2	VSR	60°15.066'/29°07.962'	01.08.18/10:39	648.5	Wire length: 652m, 1 cup + bits taken
MSM75-187	Area 2	VSR	60°15.036'/29°07.751'	01.08.18/11:16	674.5	Wire length: 641m, 1 cup taken
MSM75-188	Area 2	ROV	60°14.142'/29°08.392' - 60°14.296'/29°06.930'	01.08.18/11:54 01.08.18/17:40	712.7- 705.8	Biology/Geology
MSM75-189	Area 2	VSR	60°14.784'/29°07.654'	01.08.18/18:24	701	Wire length: 688m, 3 cups taken
MSM75-190	Area 2	VSR	60°14.759'/29°08.404'	01.08.18/19:15	724.8	Wire length: 721m, Empty
MSM75-191	Area 2	VSR	60°14.759'/29°08.404'	01.08.18/19:48	724.7	Wire length: 722m, 1 cup taken
MSM75-192	Area 2	VSR	60°14.633'/29°08.506'	01.08.18/20:28	742.1	Wire length: 737m, 1 cup taken
MSM75-193	Area 2	VSR	60°14.496' /29°08.295'	01.08.18/21:28	715.4	Wire length: 715m, 3 cups taken
MSM75-194	Area 2	VSR	60°14.393'/29°08.266'	01.08.18/21:47	729.1	Wire length: 731m, 2 cups taken
MSM75-195	Area 2	VSR	60°14.262' /29°08.301'	01.08.18/22:24	725.3	Wire length: 728m, 2 cups taken

Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-196	Area 2	VSR	60°14.261'/29°08.451'	01.08.18/23:02	723.7	Wire length: 718m, 1 cup taken
MSM75-197	Area 2	VSR	60°14.369'/29°08.506'	01.08.18/23:39	731	Wire length: 725m, 4 cups taken
MSM75-198	Area 2	VSR	60°14.386' /29°08.796'	02.08.18/00:25	784	Wire length: 734m, 7 cups taken
MSM75-199	Area 2	VSR	60°14.224' /29°08.190'	02.08.18/01:16	722.9	Wire length: 686m, 1 cup + bits taken
MSM75-200	Area 2	VSR	60°14.404'/29°08.057'	02.08.18/20:00	697.9	Wire length: 667m , few bits taken
MSM75-201	Area 2	VSR	60°14.386' /29°07.866'	02.08.18/02:40	708.1	Wire length: 684m, 1 cup + bits taken
MSM75-202	Area 2	VSR	60°14.554'/29°07.901'	02.08.18/03:23	708.6	Wire length: 684m, 3 cups + bits taken
MSM75-203	Area 2	VSR	60°14.206'/29°07.128'	02.08.18/04:23	704.1	Wire length: 691m, 3 cups + bits taken
MSM75-204	Area 2	VSR	60°14.081'/29°07.221'	02.08.18/04:58	1222.1	Wire length: 667m, Few bits taken
MSM75-205	Area 2	VSR	60°14.015' /29°06.986'	02.08.18/05:38	691.7	Wire length: 683m, 7 cups taken
MSM75-206	Area 2	VSR	60°13.878'/29°07.468'	02.08.18/06:18	709.2	Wire length: 696m, Few bits taken
MSM75-207	Area 2	VSR	60°13.735'/29°07.531'	20.08.18/06:57	688	Wire length: 695m, 1 cup + bits taken
MSM75-208	Area 2	VSR	60°13.640'/29°07.707'	02.08.18/07:32	696.6	Wire length: 684m, Few bits taken
MSM75-209	Area 2	VSR	60°13.549'/29°08.062'	02.08.18/08:10	697.1	Wire length: 695m, Few bits taken
MSM75-210	Area 2	ROV	60°14.280' /29°08.060' - 60°14.045'/29°07.919'	02.08.18/08:46 02.08.18/13:39	712.4- 607.2	Photogrammetry
MSM75-211	Area 1	MB	63°03.120'/24°34.297' - 63°06.658'/24°31.658'	03.08.18/08:00 03.08.18/09:55	290.8- 282.6	
MSM75-212	Area 1	ROV	63°06.100'/ 24°32.007' - 63°05.965'/24°31.905'	03.08.18/10:12 03.08.18/14:01	288.7- 278	Biology
MSM75-213	Area 1	ROV	63°05.829'/24°32.139' - 63°05.443'/24°32.517'	03.08.18/14:45 03.08.18/18:20	254.6- 156.3	Biology
MSM75-214	Area 1	AUV	63°05.208'/24°32.642' - 63°03.710'/24°33.624'	03.08.18/18:20 04.08.18/07:59	156.3- 282.8	Sensor: Eh/SSS120
MSM75-215	Area 1	VVG	63°04.239'/24°24.260'	03.08.18/19:12	322.6	Samples taken
MSM75-216	Area 1	EBS	63°04.348'/24°24.238' - 63°04.348'/24°24.239'	03.08.18/19:48 03.08.18/19:51	313.9- 314.7	Samples taken
MSM75-217	Area 1	VVG	63°04.652'/24°36.270'	03.08.18/20:56	360	Samples taken
MSM75-218	Area 1	SVP	63°04.652'/24°36.269' - 63°04.652'/24°36.269'	03.08.18/21:01 03.08.18/21:03	359- 358.8	
MSM75-219	Area 1	EBS	63°04.563'/24°36.326' - 63°04.564'/24°36.324'	03.08.18/21:33 03.08.18/21:36	355.3- 354.5	Samples taken
MSM75-220	Area 1	MB	63°04.025'/24°34.389' - 63°04.209'/24°32.309'	03.08.18/22:04 04.08.18/05:24	228- 275.7	
MSM75-221	Area 1	ROV	63°05.942'/24°32.046' - 63°05.837'/24°32.095'	04.08.18/08:30 04.08.18/15:50	312.3- 290.6	Photogrammetry
MSM75-222	Area 1	VVG	63°05.582'/24°35.155'	04.08.18/15:50	290.6	Samples taken
MSM75-223	Area 1	EBS	63°05.708'/24°35.154' - 63°05.708'/24°35.155'	04.08.18/16:24 04.08.18/16:29	280.1- 280.1	Samples taken
MSM75-224	Area 1	VVG	63°04.343'/24°28.707'	04.08.18/17:22	362.9	Samples taken
MSM75-225	Area 1	EBS	63°04.470'/24°28.623' - 63°04.470'/24°28.623'	04.08.18/18:03 04.08.18/18:07	359.4- 358.6	Samples taken
MSM75-226	Area 1	AUV	63°05.188' /24°32.670' - 63°05.433'/24°34.217'	04.08.18/20:19 05.08.18/16:57	156.3- 262.2	Sensor: Eh/SSS120
MSM75-227	Area 1	MB	63°06.001'/24°33.789' - 63°03.942'/24°35.698'	04.08.18/20:42 05.08.18/08:32	268.3- 341.9	
MSM75-228	Area 1	ROV	63°05.623'/24°32.449' - 63°05.407'/24°32.544'	05.08.18/09:01 05.08.18/14:39	249.6- 273.2	Biology
MSM75-229	Area 1	VSR	63°04.559'/24°31.810'	05.08.18/14:39	268.7	Wire length: 269m, 2 cups + bits taken
MSM75-230	Area 1	VSR	63°04.267'/24°31.132'	05.08.18/15:28	286.2	Wire length: 291m, 2 cups + bits taken
MSM75-231	Area 1	VSR	63°04.170'/24°30.147'	05.08.18/17:36	322.2	Wire length: 323m, Empty
MSM75-232	Area 1	VSR	63°04.537'/24°30.687'	05.08.18/18:18	292.8	Wire length:292m, 2 cups + bits taken
MSM75-233	Area 1	VSR	63°04.637' /24°31.180'	05.08.18/18:50	282.3	Wire length: 285m, Empty
MSM75-234	Area 1	VSR	63°04.638' /24°31.179'	05.08.18/19:12	282.3	Wire length: 284m, 1 cup taken
MSM75-235	Area 1	VSR	63°04.993' /24°31.389'	05.08.18/19:58	281.1	Wire length: 283m, 1 cup + mud + glass
MSM75-236	Area 1	VSR	63°04.889' /24°30.189'	05.08.18/20:40	339.5	Wire length: 345m, 1 cup + scrapings taken
MSM75-237	Area 1	VSR	63°04.848' /24°29.956'	05.08.18/21:09	351.4	Wire length: 355m, Mud taken. no glass
MSM75-238	Area 1	VSR	63°04.848' /24°29.960'	05.08.18/21:36	352.6	Wire length: 354m, Mud only
MSM75-239	Area 1	VSR	63°05.142' /24°29.713'	05.08.18/22:14	345.9	Wire length: 350m, 1 cup + mud taken
MSM75-240	Area 1	VSR	63°05.179' /24°30.262'	05.08.18/22:45	306.7	Wire length: 308m, 1 cup taken
MSM75-241	Area 1	VSR	63°05.412' /24°31.027'	05.08.18/23:21	301.5	Wire length: 303m, 4 cups + mud taken
MSM75-242	Area 1	VSR	63°05.490' /24°31.653'	05.08.18/23:51	270.2	Wire length: 269m, 1 cup taken
MSM75-243	Area 1	MB	62°58.827' /24°36.377' - 63°00.732' /24°51.357'	06.08.18/00:49 06.08.18/02:01	451.7- 427.3	
MSM75-243-2	Area 1	MB	63°00.732'/24°51.357' - 62°58.272'/24°36.668'	06.08.18/02:01 06.08.18/07:10	427.3- 460.2	
MSM75-244	Area 1	VSR	63°04.213' /24°32.890'	06.08.18/08:08	262.9	Wire length: 265m, 1 cup taken
MSM75-245	Area 1	VSR	63°05.678' /24°31.459'	06.08.18/08:49	259.5	Wire length: 263m, Scrapings + bits taken
MSM75-246	Area 1	VSR	63°05.730' /24°31.603'	06.08.18/09:24	243.1	Wire length: 247m, Empty
MSM75-247	Area 1	VSR	63°05.732' /24°31.601'	06.08.18/09:39	242.6	Wire length: 249m, 1 cup taken
MSM75-248	Area 1	VSR	63°05.978'/24°33.964'	06.08.18/10:16	265	Wire length: 273m, 3 cups + sediment taken
MSM75-249	Area 1	VSR	63°06.327' /24°34.094'	06.08.18/11:02	274.7	Wire length: 281m, 1 cup + mud taken
MSM75-250	Area 1	VSR	63°06.562'/24°35.247'	06.08.18/11:47	360.3	Wire length: 369m, Scrapings taken

Station	Area	Gear	Latitude (°N)/ Longitude (°W)	Date/Time (UTC) Start - End	Depth (m)	Comments
MSM75-251	Area 1	VSR	63°06.031'/24°37.047'	06.08.18/12:36	399.8	Wire length: 401m, Empty
MSM75-252	Area 1	VSR	63°06.034'/24°37.041'	06.08.18/13:03	399	Wire length: 400m, Empty
MSM75-253	Area 1	VSR	63°05.733'/24°34.589'	06.08.18/14:01	293.6	Wire length: 298m, 3 cups taken
MSM75-254	Area 1	VSR	63°05.396'/24°33.976'	06.08.18/14:51	258.1	Wire length: 251m, Empty
MSM75-254-2	Area 1	VSR	63°05.399'/24°33.980'	06.08.18/15:08	261.2	Wire length: 255m, Empty
MSM75-255	Area 1	VSR	63°05.429'/24°35.305'	06.08.18/16:21	309.8	Wire length: 318m, Bits from 3 cups taken
MSM75-256	Area 1	VSR	63°05.165'/24°35.486'	06.08.18/17:18	334.4	Wire length: 341m, 2 cups + bits taken
MSM75-257	Area 1	VSR	63°05.343'/24°37.291'	06.08.18/18:09	385.4	Wire length: 388m, 1 cup taken
MSM75-258	Area 1	MB	63°06.348'/24°20.695' - 63°10.857'/24°25.020'	06.08.18/19:15 07.08.18/07:16	303.3- 374.9	
MSM75-259	Area 1	VSR	63°06.405'/24°29.753'	07.08.18/08:08	362.3	Wire length: 377m, Few bits taken
MSM75-260	Area 1	VSR	63°06.516'/24°30.815'	07.08.18/08:52	280.7	Wire length: 282m, 3 cups taken
MSM75-261	Area 1	VSR	63°06.127' /24°31.123'	07.08.18/09:26	300.2	Wire length: 290m, 4 cups taken
MSM75-262	Area 1	VSR	63°05.849' /24°31.082'	07.08.18/09:54	274.5	Wire length: 283m, 4 cups taken
MSM75-263	Area 1	VSR	63°05.929'/24°30.598'	07.08.18/10:23	291.8	Wire length: 302m, 4 cups + sediment taken
MSM75-264	Area 1	VSR	63°05.530'/24°29.377'	07.08.18/11:07	352.3	Wire length: 362m, Mud taken
MSM75-265	Area 1	VSR	63°05.531'/24°29.376'	07.08.18/11:30	353.2	Wire length: 362m, Sediment taken
MSM75-266	Area 1	VSR	63°05.907'/24°29.526'	07.08.18/12:00	322.1	Wire length: 319m, Few bits taken
MSM75-267	Area 1	VSR	63°05.946' /24°29.011'	07.08.18/12:41	313	Wire length: 324m, Few bits + sediment taken
MSM75-268	Area 1	VSR	63°06.095' /24°29.462'	07.08.18/13:37	350.1	Wire length: 351m, Few bits + mud taken
MSM75-269	Area 1	VSR	63°06.255' /24°28.970'	07.08.18/13:58	321.4	Wire length: 328m, 1 cup + bits taken
MSM75-270	Area 1	VSR	63°04.347' /24°27.569'	07.08.18/14:53	373.1	Wire length: 375m , 2 cups + mud taken
MSM75-271	Area 1	VSR	63°04.125'/24°26.441'	07.08.18/15:49	345.2	Wire length: 338m, 1 cup + bits taken
MSM75-272	Area 1	VSR	63°04.277'/24°25.774'	07.08.18/16:33	310.4	Wire length: 316m, 1 cup + bits taken
MSM75-273	Area 1	MB	63°17.001'/24°15.280' - 63°18.574'/24°13.625'	07.08.18/18:14 07.08.18/18:34	159.3- 151.1	
MSM75-274	Area 1	VSR	63°17.512'/24°14.805'	07.08.18/19:08	127.2	Wire length: 128m, Few bits taken
MSM75-275	Area 1	VSR	63°17.854'/24°14.424'	07.08.18/19:36	106.8	Wire length: 105m, 2 cups + fragments taken
MSM75-276	Area 1	VSR	63°18.028' /24°14.295'	07.08.18/19:57	102.6	Wire length: 101m, Few bits taken
MSM75-277	Area 1	MB	63°17.615'/24°14.812' - 63°18.706'/24°13.216'	07.08.18/20:21 07.08.18/21:00	128.7- 154.2	