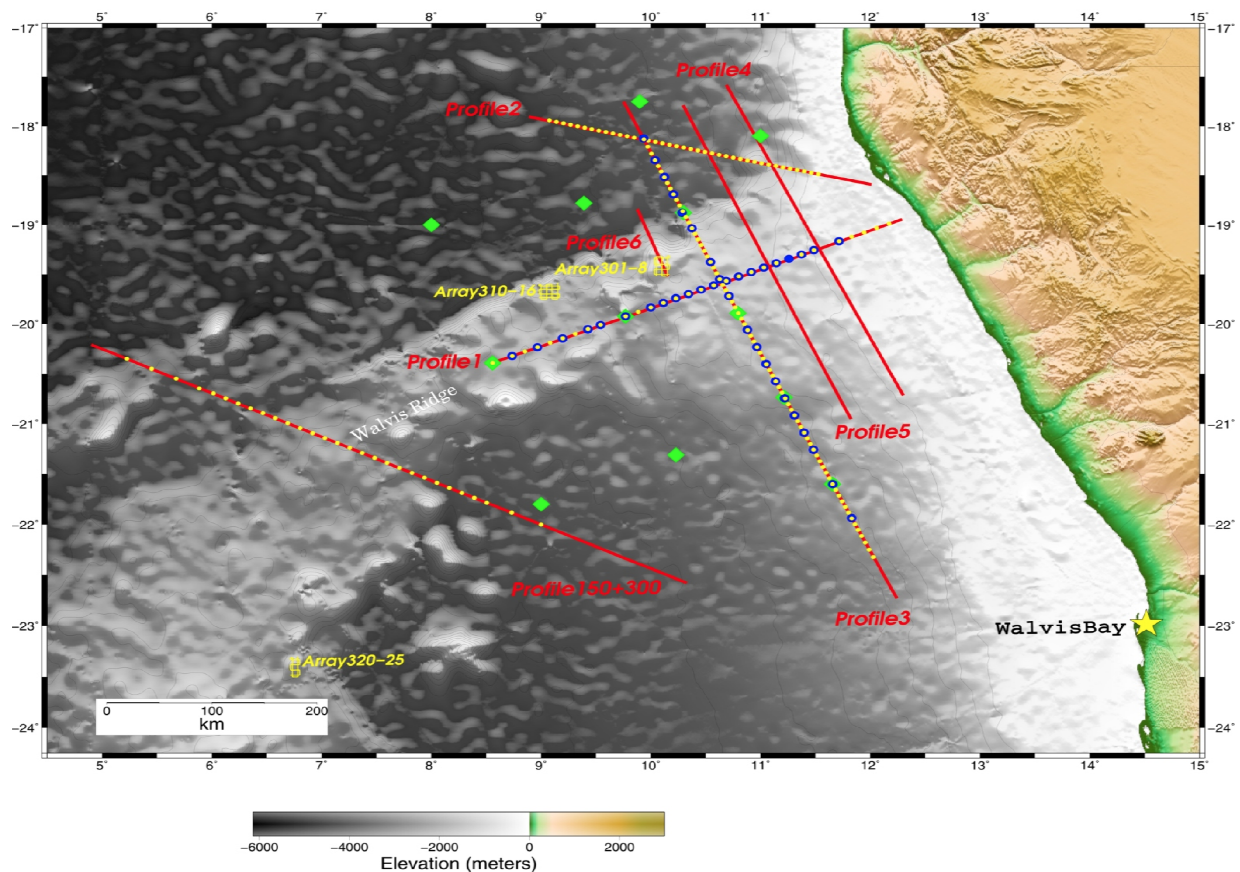


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Short Cruise Report Maria S. Merian; Cruise No. MSM 17/2

Walvis Bay – Walvis Bay
31th December 2010 – 27th January 2011
Chief Scientist: Wilfried Jokat
Captain: Ralf Schmidt



Objectives (almost identical with MSM17-1 report)

Continental break-up is closely related to the question regarding the driving forces behind processes related to such an incisive geological event. A common explanation is that mantle plumes are the most important triggers for the separation of continents. Around the head of a plume the upper mantle temperatures are strongly increased. After weakening of the continental crust by horizontal extension the high temperatures cause extensive volcanism, forming flood basalts as parts of so-called Large Igneous Provinces (LIP) on the continents, and in some cases also in the newly formed oceanic basin. Following this theory, in the ideal case flood basalts are deposited on the continents before break-up. After the start of the drifting stage with formation of oceanic crust between the continents, the mantle plume should create an aseismic ridge due to its continuing activity. The aseismic ridge in the adjacent oceanic basin will mark the plume position through space and time.

However, such a clear relationship between volcanism on the continents and the adjoining ocean basins is rarely observed on a global scale. Among the best examples on Earth for such a relationship are the Parana/Etendeka flood basalts and the Rio Grande Rise/Walvis Ridges on both margins of the South Atlantic. Expedition MSM17/1+2 was designed to investigate critical parameters, like crustal thickness and structure of the subjacent Earth's mantle in this model region offshore northern Namibia for a globally important plate tectonic process. Our work was led by the hypothesis that in the uppermost Earth's mantle and in the overlying crust structures relating to fossil plume and/or deformation processes are frozen in and can be visualized by geophysical methods.

Our approach mandated us to investigate the structure of the Namibian continental margin, and near-shore parts of Walvis Ridge with all geophysical methods available. Scientific techniques used were marine wide-angle active seismic, single channel reflection seismic, ocean bottom magnetotelluric, and high-resolution bathymetric swath mapping.

Short cruise description

For logistical reasons the geophysical experiments of the Pleiades project were split onto two legs, MSM17-1 and MSM17-2. This report concentrates on the second leg. The geophysical program was divided into five parts: active seismic measurements in which the OBS/OBH (ocean bottom seismometers/ocean bottom hydrophones) are deployed for a maximum of 5 days, the magnetotelluric (OBMT) measurement program with instrument deployment for a few weeks (OBMT deployed on Cruise MSM 17/1), some seismic reflection profiling, marine seismology and high-resolution bathymetric mapping along the profiles and on a grid covering the ocean-continent boundary on the northwestern side of Walvis Ridge. For the passive seismological experiment offshore Namibia in total 12 Broadband-Seismometers (BB-OBS) were deployed across the Walvis Ridge. They will be recovered in January 2012.

R/V MARIA S. MERIAN left Walvis Bay (Namibia) on January 1st, 2011 in the morning. The first task was to recover 24 OBS-MT stations, which were deployed during the first leg MSM17/1. The recovery started at January 2nd, 20:30 UTC and was finished on January 4th, 12:30 UTC without any instrument loss. Along this profile and in the prolongation of the line in total 6 long-term BB-OBS were deployed for earthquake recording. Afterwards the ship shifted to one of the main seismic refraction lines of the project. Within two days 33 OBS and 21 OBMT stations were deployed. The OBMT stations were partly on the same location as the OBS instruments but offsetted by 2 NM. They were recovered only at the end of the cruise. An important aspect of our amphibian experiment was that the airgun shots were also recorded by several hundred land stations onshore Namibia, and that the ship interrupted shooting for recording the explosions onshore Namibia for our project. For coordinating our activities we were in contact with Albrecht Schulze (GFZ, Potsdam), who informed us via Iridium telephone about the onshore shooting windows. According to his information the airgun shooting was interrupted several times for 10 minutes, respectively. However, because of strong thunderstorms/rain in Namibia the land party could not reach in time the three shot point locations. Therefore, we delayed the marine experiment for 2 days in first deploying the BB-OBS in that area. The airgun operation started, therefore, at January 8th, 08:00 UTC. Because of the water depth and the expected long signal

range of the seismic signals a shooting interval of 90 s were chosen for firing the eight airguns. The towing arrangement for the airguns and the short streamer was identical to the one on leg MSM17/1. By January 12th, 11:00 UTC all operations for this profile were finished. While the OBMT stations remained on the seafloor, with the exception of one OBS close to Namibian coast, all OBS instruments were recovered.

Then the ship steamed towards the start of the next profile located in international waters, and crossing the Walvis Ridge perpendicular to its strike (22°02'S/009°04'E – 20°12'S/004°54'E). Here, only 30 OBS instruments were deployed. Shooting interval and airgun towing arrangement were identical to the first profile. In general, the operation for this profile was terminated at January 18th, 16:00 UTC. However, since two OBS stations did not show up after releasing them, we had to wait for the automatic release time. We used the time in between to acquire some seismic reflection data on a proposed IODP drill site. At January 19th, 17:30 UTC we started to recover the two remaining instruments till midnight. On the way to recover the 21 OBMT instruments we acquired some seismic reflection data across another proposed IODP drill location. This survey started on January 20th, 08:00 UTC and was finished at January 21st, 04:00 UTC. At January 21st, 08:00 UTC we started to recover the 21 OBMT stations from the first profile. All instruments were on board by January 22nd, 12:30 UTC. Still we had to wait for one automatic release time at January 19th, 23:00 UTC. We used this ship time to gather another seismic reflection data set of a proposed IODP location nearby. This survey started on January 22nd, 20:00 and terminated at January 23rd, 13:00 UTC. Being in time at the last OBS station, we waited with no success for one hour for the automatic diving up of the instrument. Since the water depth was only 340 m, it was decided to try to dredge for the instrument. This entire operation lasted from January 23rd, 23:00 to January 24th, 05:00 without recovering the instrument. Since some fishing boats were close by when we showed up for the automatic time release, it is very likely that the instrument was displaced in an unknown direction by fishing activities. After conducting a final site survey across the Walvis Ridge around 23°18'S/006°47'E for a few hours, the scientific activities were terminated. The ship arrived at Walvis Bay on January 27th, 06:00.

In summary, we accomplished deployment and successful recovery of 63 ocean bottom seismometer (OBS) or ocean bottom hydrophone (OBH) stations, 12 broadband Ocean bottom stations (BB-OBS), and recovered/re-deployed 45 ocean bottom magnetotelluric (OBMT) instruments for mid-term (about 14 days) recording of data. Instruments could be deployed along two profiles, which were more than expected. The reason for this was, that the OBS instruments along the last line of leg 1 could already be recovered during the first leg, and of course, that the ship and its crew allowed us to work faster than originally calculated. Thus, three proposed IODP sites could be investigated in addition with single channel seismic, because at least two of them were very close to our operating area.

Acknowledgements

We thank the master and the crew of R/V MARIA S. MERIAN for their professional support of the scientific work at sea. Support by the "Leitstelle Meteor/Merian" in Hamburg, the "Senatskommission für Ozeanografie der DFG", the "Deutsche Forschungsgemeinschaft (DFG)" and Briesse Schifffahrts GmbH & Co. KG was essential for the success of the cruise MSM17/2. We thank the DFG, and especially Dr. Susanne Faulhaber for the support in making the combined land-sea experiments possible. The scientific coordination of the DFG Priority Program SAMPLE and the colleagues working on SAMPLE companion projects have helped us in many ways in preparing and carrying out our experiments. Albrecht Schulze (GFZ Potsdam) ensured that we had the opportunity to gather the full information from the land explosives. Special thanks to Dr. Gabi Schneider, Director of the Geological Survey of Namibia, and the German Ministry of Foreign Affairs for supporting our experiment by making the research permits possible.

Participants

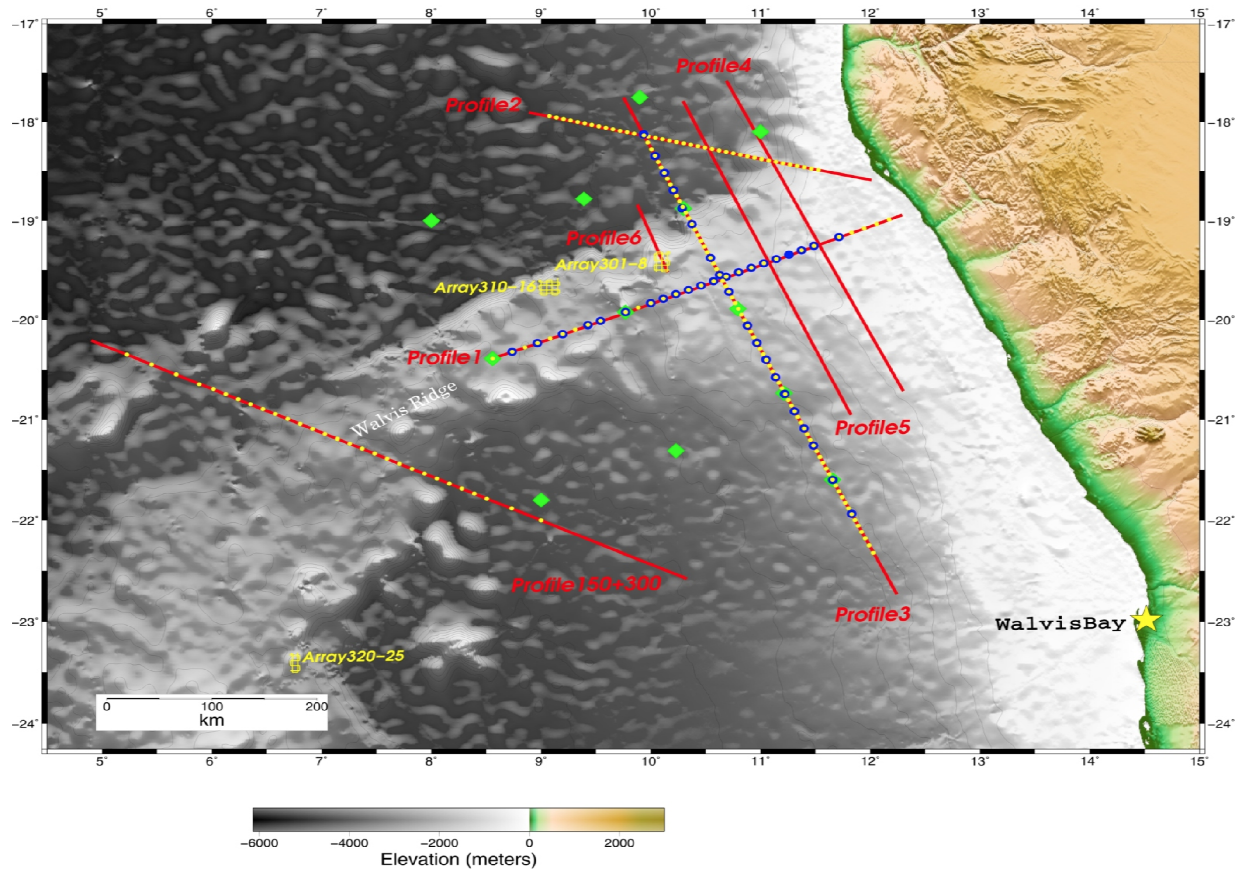
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Seismic profiles acquired during the two legs MSM17/1+2. Profile 1 perpendicular to the Namibian coast and profile 150+300 were acquired during the second leg. OBMT stations were recovered/deployed along profiles 1+3. The areas labelled e.g. "array320-25" are the locations where IODP single channel seismic pre-site surveys were conducted. The green diamonds mark the locations where long-term BB-OBS were deployed. They will remain there till January 2012, and will be recovered with another MS Merian expedition. Blue circles indicate the position of the OBMT stations. The yellow dots are the positions of the OBS stations. Walvis Bay was the departure and arrival harbour for the second leg. All other profiles were acquired during the MS Merian leg MSM17/1.

Station Book for Leg MSM 17-2

Station No.	Date	Time [UTC]	Position Lat	Position Lon	Depth [m]	Gear Abbreviation	Action
MSM17/001-1	02.01.2011	20:32	22° 7,62' S	11° 55,39' E	0	OBMT	released
MSM17/001-1	02.01.2011	21:05	22° 7,25' S	11° 55,34' E	0	OBMT	sighted
MSM17/001-1	02.01.2011	21:17	22° 6,99' S	11° 55,21' E	0	OBMT	on deck
MSM17/002-1	02.01.2011	22:20	21° 58,39' S	11° 50,73' E	0	OBMT	released
MSM17/002-1	02.01.2011	22:51	21° 56,58' S	11° 49,98' E	0	OBMT	sighted
MSM17/002-1	02.01.2011	23:04	21° 56,13' S	11° 49,64' E	0	OBMT	on deck
MSM17/003-1	02.01.2011	23:47	21° 48,66' S	11° 45,83' E	0	OBMT	released
MSM17/003-1	03.01.2011	0:24	21° 45,87' S	11° 44,45' E	0	OBMT	sighted
MSM17/003-1	03.01.2011	0:34	21° 46,06' S	11° 44,53' E	0	OBMT	on deck
MSM17/004-1	03.01.2011	1:21	21° 38,58' S	11° 40,76' E	0	OBMT	released
MSM17/004-1	03.01.2011	1:59	21° 35,50' S	11° 39,14' E	0	OBMT	sighted
MSM17/004-1	03.01.2011	2:15	21° 35,91' S	11° 39,23' E	0	OBMT	on deck
MSM17/005-1	03.01.2011	2:26	21° 35,93' S	11° 39,37' E	2034	BB-OBS	Surface
MSM17/006-1	03.01.2011	3:21	21° 28,48' S	11° 35,53' E	0	OBMT	released
MSM17/006-1	03.01.2011	3:55	21° 26,02' S	11° 34,35' E	2121,8	OBMT	sighted
MSM17/006-1	03.01.2011	4:02	21° 25,73' S	11° 34,26' E	2115,3	OBMT	on deck
MSM17/007-1	03.01.2011	4:55	21° 18,22' S	11° 30,36' E	0	OBMT	released
MSM17/007-1	03.01.2011	5:32	21° 15,77' S	11° 29,16' E	2258,9	OBMT	sighted
MSM17/007-1	03.01.2011	5:39	21° 15,50' S	11° 28,89' E	2269,3	OBMT	on deck
MSM17/008-1	03.01.2011	6:28	21° 8,69' S	11° 25,53' E	2274,8	OBMT	released
MSM17/008-1	03.01.2011	7:00	21° 5,78' S	11° 24,12' E	2249	OBMT	sighted
MSM17/008-1	03.01.2011	7:11	21° 5,14' S	11° 23,76' E	2242,6	OBMT	on deck
MSM17/009-1	03.01.2011	8:09	20° 57,31' S	11° 19,79' E	2240,9	OBMT	released
MSM17/009-1	03.01.2011	8:42	20° 55,28' S	11° 18,84' E	2209,7	OBMT	sighted
MSM17/009-1	03.01.2011	8:48	20° 55,04' S	11° 18,58' E	2205,3	OBMT	on deck
MSM17/010-1	03.01.2011	9:50	20° 47,42' S	11° 14,56' E	1788,8	OBMT	released
MSM17/010-1	03.01.2011	10:11	20° 46,13' S	11° 13,76' E	1713,5	OBMT	sighted
MSM17/010-1	03.01.2011	10:29	20° 44,77' S	11° 13,21' E	1635,9	OBMT	on deck
MSM17/011-1	03.01.2011	10:46	20° 44,08' S	11° 12,84' E	1603,9	BB-OBS	Surface
MSM17/012-1	03.01.2011	11:37	20° 36,26' S	11° 8,93' E	1430	OBMT	released
MSM17/012-1	03.01.2011	11:59	20° 35,14' S	11° 8,39' E	1429,6	OBMT	sighted
MSM17/012-1	03.01.2011	12:10	20° 34,48' S	11° 8,17' E	1416,9	OBMT	on deck
MSM17/013-1	03.01.2011	13:00	20° 25,58' S	11° 3,96' E	1440,4	OBMT	released
MSM17/013-1	03.01.2011	13:25	20° 24,62' S	11° 3,24' E	1446,1	OBMT	sighted
MSM17/013-1	03.01.2011	13:38	20° 23,94' S	11° 2,99' E	1452,8	OBMT	on deck
MSM17/014-1	03.01.2011	14:32	20° 15,86' S	10° 59,06' E	1459,4	OBMT	released
MSM17/014-1	03.01.2011	14:57	20° 14,28' S	10° 58,24' E	1454,3	OBMT	sighted
MSM17/014-1	03.01.2011	15:05	20° 13,77' S	10° 57,97' E	1454,3	OBMT	on deck
MSM17/015-1	03.01.2011	16:01	20° 5,49' S	10° 53,82' E	1419,3	OBMT	released
MSM17/015-1	03.01.2011	16:31	20° 3,85' S	10° 53,05' E	1403	OBMT	sighted
MSM17/015-1	03.01.2011	16:39	20° 3,48' S	10° 52,82' E	1394,3	OBMT	on deck
MSM17/016-1	03.01.2011	17:34	19° 55,31' S	10° 48,80' E	0	OBMT	released
MSM17/016-1	03.01.2011	17:57	19° 53,81' S	10° 47,93' E	1227,4	OBMT	sighted
MSM17/016-1	03.01.2011	18:08	19° 53,38' S	10° 47,60' E	1227,1	OBMT	on deck
MSM17/017-1	03.01.2011	18:11	19° 53,37' S	10° 47,61' E	1226,2	BB-OBS	Surface
MSM17/018-1	03.01.2011	19:07	19° 44,62' S	10° 43,58' E	1198,4	OBMT	released
MSM17/018-1	03.01.2011	19:25	19° 43,60' S	10° 43,06' E	1198,6	OBMT	sighted
MSM17/018-1	03.01.2011	19:37	19° 43,19' S	10° 42,81' E	1200,5	OBMT	on deck
MSM17/019-1	03.01.2011	20:33	19° 34,04' S	10° 38,51' E	1229,9	OBMT	released
MSM17/019-1	03.01.2011	20:52	19° 33,15' S	10° 37,91' E	1235,4	OBMT	sighted
MSM17/019-1	03.01.2011	21:00	19° 32,93' S	10° 37,65' E	1238,2	OBMT	on deck
MSM17/020-1	03.01.2011	21:59	19° 24,04' S	10° 33,26' E	1286,3	OBMT	released
MSM17/020-1	03.01.2011	22:19	19° 23,05' S	10° 32,79' E	1295,8	OBMT	sighted

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/020-1	03.01.2011	22:26	19°22,59' S	10°32,65' E	1299,8	OBMT	on deck
MSM17/021-1	03.01.2011	23:16	19°14,05' S	10°28,43' E	1456,9	OBMT	released
MSM17/021-1	03.01.2011	23:43	19°12,56' S	10°27,70' E	1493,7	OBMT	sighted
MSM17/021-1	03.01.2011	23:52	19°12,30' S	10°27,58' E	1501,1	OBMT	on deck
MSM17/022-1	04.01.2011	0:40	19°4,27' S	10°23,56' E	1875,1	OBMT	released
MSM17/022-1	04.01.2011	1:17	19°2,50' S	10°22,61' E	2057,1	OBMT	sighted
MSM17/022-1	04.01.2011	1:22	19°2,14' S	10°22,47' E	2102,3	OBMT	on deck
MSM17/023-1	04.01.2011	2:12	18°54,66' S	10°18,88' E	14,2	OBMT	released
MSM17/024-1	04.01.2011	2:47	18°52,71' S	10°17,91' E	14,2	BB-OBS	Surface
MSM17/023-1	04.01.2011	3:18	18°52,05' S	10°17,58' E	3891	OBMT	sighted
MSM17/023-1	04.01.2011	3:32	18°51,67' S	10°17,09' E	3912,6	OBMT	on deck
MSM17/025-1	04.01.2011	4:23	18°44,73' S	10°13,94' E	0	OBMT	released
MSM17/025-1	04.01.2011	5:33	18°41,77' S	10°12,54' E	4013,1	OBMT	sighted
MSM17/025-1	04.01.2011	5:40	18°41,45' S	10°12,34' E	4022,5	OBMT	on deck
MSM17/026-1	04.01.2011	6:31	18°33,57' S	10°8,54' E	4049,5	OBMT	released
MSM17/026-1	04.01.2011	7:43	18°31,46' S	10°7,52' E	4053,1	OBMT	sighted
MSM17/026-1	04.01.2011	7:56	18°30,99' S	10°7,47' E	4049,3	OBMT	on deck
MSM17/027-1	04.01.2011	8:46	18°23,30' S	10°3,56' E	4116,5	OBMT	released
MSM17/027-1	04.01.2011	9:51	18°20,97' S	10°2,47' E	4120,3	OBMT	sighted
MSM17/027-1	04.01.2011	10:02	18°20,69' S	10°2,36' E	4121,7	OBMT	on deck
MSM17/028-1	04.01.2011	11:05	18°10,47' S	9°56,77' E	4155,6	OBMT	released
MSM17/028-1	04.01.2011	12:15	18°8,47' S	9°56,25' E	4155,7	OBMT	sighted
MSM17/028-1	04.01.2011	12:28	18°7,52' S	9°56,06' E	4153	OBMT	on deck
MSM17/029-1	04.01.2011	14:24	17°44,98' S	9°53,94' E	4084,3	BB-OBS	Surface
MSM17/030-1	04.01.2011	21:27	18°5,98' S	10°59,98' E	2744,5	BB-OBS	Surface
MSM17/031-1	05.01.2011	7:41	19°34,79' S	12°39,99' E	82,2	OBS	surface
MSM17/032-1	05.01.2011	8:31	19°36,29' S	12°32,32' E	113,8	OBS	surface
MSM17/033-1	05.01.2011	9:19	19°37,81' S	12°24,64' E	131,8	OBS	surface
MSM17/034-1	05.01.2011	10:10	19°39,31' S	12°16,94' E	186,5	OBS	surface
MSM17/035-1	05.01.2011	14:06	18°56,68' S	12°17,13' E	95,7	OBS	surface
MSM17/036-1	05.01.2011	14:52	18°59,30' S	12°10,31' E	126,4	OBS	surface
MSM17/037-1	05.01.2011	15:36	19°1,98' S	12°3,48' E	187,8	OBS	surface
MSM17/038-1	05.01.2011	16:20	19°4,66' S	11°56,64' E	258,2	OBS	surface
MSM17/039-1	05.01.2011	17:03	19°7,30' S	11°49,80' E	304,3	OBS	surface
MSM17/040-1	05.01.2011	17:47	19°9,97' S	11°42,95' E	334,8	OBS	surface
MSM17/041-1	05.01.2011	17:55	19°9,99' S	11°42,89' E	333,5	OBMT	surface
MSM17/042-1	05.01.2011	18:39	19°12,62' S	11°36,12' E	344,5	OBS	surface
MSM17/043-1	05.01.2011	19:23	19°15,31' S	11°29,23' E	446,9	OBS	surface
MSM17/044-1	05.01.2011	19:31	19°15,33' S	11°29,19' E	449,8	OBMT	surface
MSM17/045-1	05.01.2011	20:11	19°17,95' S	11°22,43' E	613,8	OBS	surface
MSM17/046-1	05.01.2011	20:22	19°17,95' S	11°22,39' E	615,4	OBMT	surface
MSM17/047-1	05.01.2011	21:04	19°20,62' S	11°15,58' E	781,4	OBS	surface
MSM17/048-1	05.01.2011	21:13	19°20,63' S	11°15,55' E	781,7	OBMT	surface
MSM17/049-1	05.01.2011	21:54	19°23,29' S	11°8,65' E	972,3	OBS	surface
MSM17/050-1	05.01.2011	22:05	19°23,29' S	11°8,61' E	973,7	OBMT	surface
MSM17/051-1	05.01.2011	22:48	19°25,91' S	11°1,84' E	1165,3	OBS	surface
MSM17/052-1	05.01.2011	22:53	19°25,98' S	11°1,77' E	1166,1	OBMT	surface
MSM17/053-1	05.01.2011	23:31	19°28,62' S	10°54,98' E	1185,3	OBS	surface
MSM17/054-1	05.01.2011	23:37	19°28,66' S	10°54,89' E	1192,7	OBMT	surface
MSM17/055-1	06.01.2011	0:16	19°31,25' S	10°48,11' E	1179	OBS	surface
MSM17/056-1	06.01.2011	0:21	19°31,29' S	10°48,03' E	1178,7	OBMT	surface
MSM17/057-1	06.01.2011	1:00	19°33,89' S	10°41,30' E	1203,1	OBS	surface
MSM17/058-1	06.01.2011	1:04	19°33,94' S	10°41,22' E	1204	OBMT	surface
MSM17/059-1	06.01.2011	1:41	19°36,60' S	10°34,42' E	1290,5	OBS	surface
MSM17/060-1	06.01.2011	1:45	19°36,62' S	10°34,31' E	1292,9	OBMT	surface
MSM17/061-1	06.01.2011	2:27	19°39,27' S	10°27,52' E	1339,9	OBS	surface

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/062-1	06.01.2011	2:34	19°39,29' S	10°27,46' E	1343,5	OBMT	surface
MSM17/063-1	06.01.2011	3:18	19°41,96' S	10°20,64' E	1360,3	OBS	surface
MSM17/064-1	06.01.2011	3:30	19°41,98' S	10°20,59' E	1360,5	OBMT	surface
MSM17/065-1	06.01.2011	4:14	19°44,63' S	10°13,76' E	1397,5	OBS	surface
MSM17/066-1	06.01.2011	4:22	19°44,65' S	10°13,70' E	1399,7	OBMT	surface
MSM17/067-1	06.01.2011	5:05	19°47,28' S	10°6,92' E	1549,3	OBS	surface
MSM17/068-1	06.01.2011	5:11	19°47,30' S	10°6,86' E	1551,7	OBMT	surface
MSM17/069-1	06.01.2011	5:53	19°49,97' S	10°0,01' E	2309,1	OBS	surface
MSM17/070-1	06.01.2011	6:01	19°49,99' S	9°59,97' E	2013	OBMT	surface
MSM17/071-1	06.01.2011	6:42	19°52,64' S	9°53,16' E	2170,9	OBS	surface
MSM17/072-1	06.01.2011	7:26	19°55,27' S	9°46,28' E	2250,9	OBS	surface
MSM17/073-1	06.01.2011	7:35	19°55,29' S	9°46,23' E	2252,2	OBMT	surface
MSM17/074-1	06.01.2011	7:54	19°55,32' S	9°46,18' E	2252,4	BB-OBS	Surface
MSM17/075-1	06.01.2011	8:40	19°58,05' S	9°39,34' E	2373,9	OBS	surface
MSM17/076-1	06.01.2011	9:18	20°0,60' S	9°32,54' E	2109	OBS	surface
MSM17/077-1	06.01.2011	9:26	20°0,62' S	9°32,50' E	2115,9	OBMT	surface
MSM17/078-1	06.01.2011	10:07	20°3,22' S	9°25,68' E	2215,4	OBS	surface
MSM17/079-1	06.01.2011	10:11	20°3,26' S	9°25,61' E	2218,1	OBMT	surface
MSM17/080-1	06.01.2011	10:49	20°5,92' S	9°18,73' E	2229,4	OBS	surface
MSM17/081-1	06.01.2011	11:29	20°8,57' S	9°11,86' E	2146,4	OBS	surface
MSM17/082-1	06.01.2011	11:34	20°8,63' S	9°11,77' E	2143,5	OBMT	surface
MSM17/083-1	06.01.2011	12:14	20°11,22' S	9°4,99' E	2210,1	OBS	surface
MSM17/084-1	06.01.2011	12:53	20°13,91' S	8°58,07' E	2109,3	OBS	surface
MSM17/085-1	06.01.2011	12:59	20°13,97' S	8°57,98' E	2102,7	OBMT	surface
MSM17/086-1	06.01.2011	13:39	20°16,57' S	8°51,17' E	1994,4	OBS	surface
MSM17/087-1	06.01.2011	14:19	20°19,26' S	8°44,24' E	2055,7	OBS	surface
MSM17/088-1	06.01.2011	14:28	20°19,30' S	8°44,20' E	2054,8	OBMT	surface
MSM17/089-1	06.01.2011	15:29	20°23,41' S	8°33,54' E	2049,9	OBS	surface
MSM17/090-1	06.01.2011	15:35	20°23,43' S	8°33,49' E	2050,6	BB-OBS	Surface
MSM17/091-1	06.01.2011	22:39	21°47,97' S	9°0,03' E	4264,5	BB-OBS	Surface
MSM17/092-1	07.01.2011	4:41	21°18,60' S	10°13,78' E	3520	BB-OBS	Surface
MSM17/093-1	07.01.2011	17:07	18°46,83' S	9°23,44' E	4589,1	BB-OBS	Surface
MSM17/094-1	07.01.2011	23:45	19°0,00' S	8°0,04' E	5121,5	BB-OBS	Surface
MSM17/095-1	08.01.2011	7:01	20°22,29' S	8°30,91' E	2061,3	SEISREFR	Airguns out
MSM17/095-1	08.01.2011	7:13	20°22,83' S	8°30,74' E	2060,4	SEISREFR	Airguns out
MSM17/095-1	08.01.2011	7:18	20°23,06' S	8°30,67' E	2061,4	SEISREFR	Streamer to water
MSM17/095-1	08.01.2011	8:08	20°23,36' S	8°33,62' E	0	SEISREFR	start profile
MSM17/095-1	08.01.2011	11:31	20°15,89' S	8°52,96' E	0	SEISREFR	information
MSM17/095-1	09.01.2011	10:13	19°38,79' S	10°28,80' E	1335,2	SEISREFR	information
MSM17/095-1	09.01.2011	14:29	19°31,48' S	10°47,65' E	1179,7	SEISREFR	information
MSM17/095-1	10.01.2011	0:58	19°13,57' S	11°33,73' E	363,3	SEISREFR	information
MSM17/095-1	10.01.2011	10:52	18°56,64' S	12°17,20' E	95	SEISREFR	end profile
MSM17/095-1	10.01.2011	11:05	18°56,98' S	12°17,76' E	95,7	SEISREFR	Streamer on deck
MSM17/095-1	10.01.2011	11:13	18°57,22' S	12°17,77' E	87	SEISREFR	Airguns on deck
MSM17/096-1	10.01.2011	12:01	18°56,40' S	12°17,07' E	87,2	OBS	at surface
MSM17/096-1	10.01.2011	12:09	18°56,69' S	12°17,12' E	88	OBS	on deck
MSM17/097-1	10.01.2011	15:40	19°34,56' S	12°40,06' E	74,8	OBS	released
MSM17/097-1	10.01.2011	15:43	19°34,56' S	12°40,06' E	74,1	OBS	at surface
MSM17/097-1	10.01.2011	15:54	19°34,76' S	12°39,96' E	75,6	OBS	on deck

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/098-1	10.01.2011	16:39	19°35,95' S	12°32,31' E	114,7	OBS	released
MSM17/098-1	10.01.2011	16:42	19°35,94' S	12°32,33' E	114,3	OBS	at surface
MSM17/098-1	10.01.2011	16:53	19°36,25' S	12°32,34' E	116	OBS	on deck
MSM17/099-1	10.01.2011	17:39	19°37,48' S	12°24,61' E	136,8	OBS	released
MSM17/099-1	10.01.2011	17:42	19°37,48' S	12°24,61' E	136,8	OBS	at surface
MSM17/099-1	10.01.2011	17:50	19°37,76' S	12°24,61' E	136,3	OBS	on deck
MSM17/100-1	10.01.2011	18:32	19°38,92' S	12°16,79' E	185,1	OBS	released
MSM17/100-1	10.01.2011	18:35	19°39,00' S	12°16,81' E	184,6	OBS	at surface
MSM17/100-1	10.01.2011	18:45	19°39,32' S	12°16,95' E	187,8	OBS	on deck
MSM17/101-1	10.01.2011	22:08	18°58,91' S	12°10,02' E	119,4	OBS	released
MSM17/101-1	10.01.2011	22:09	18°58,94' S	12°10,04' E	119,4	OBS	at surface
MSM17/101-1	10.01.2011	22:17	18°59,28' S	12°10,24' E	119,1	OBS	on deck
MSM17/102-1	10.01.2011	22:59	19°1,84' S	12°3,74' E	178,3	OBS	released
MSM17/102-1	10.01.2011	23:01	19°1,87' S	12°3,67' E	178,3	OBS	at surface
MSM17/102-1	10.01.2011	23:08	19°1,99' S	12°3,36' E	182,4	OBS	on deck
MSM17/103-1	10.01.2011	23:47	19°4,55' S	11°56,90' E	247,5	OBS	released
MSM17/103-1	10.01.2011	23:52	19°4,57' S	11°56,72' E	249,2	OBS	at surface
MSM17/103-1	10.01.2011	23:56	19°4,69' S	11°56,59' E	250,6	OBS	on deck
MSM17/104-1	11.01.2011	0:33	19°7,15' S	11°50,29' E	288,3	OBS	released
MSM17/104-1	11.01.2011	0:38	19°7,25' S	11°49,95' E	290,7	OBS	at surface
MSM17/104-1	11.01.2011	0:43	19°7,31' S	11°49,76' E	291,4	OBS	on deck
MSM17/105-1	11.01.2011	1:22	19°9,88' S	11°43,28' E	322,5	OBS	released
MSM17/105-1	11.01.2011	1:24	19°9,90' S	11°43,19' E	323,4	OBS	at surface
MSM17/105-1	11.01.2011	1:29	19°9,96' S	11°42,95' E	324,4	OBS	on deck
MSM17/106-1	11.01.2011	2:16	19°12,35' S	11°35,96' E	332,5	OBS	released
MSM17/106-1	11.01.2011	2:59	19°12,52' S	11°35,93' E	334,4	OBS	Information
MSM17/107-1	11.01.2011	3:40	19°14,95' S	11°29,68' E	430,1	OBS	released
MSM17/107-1	11.01.2011	3:41	19°14,92' S	11°29,67' E	430,1	OBS	at surface
MSM17/107-1	11.01.2011	3:54	19°15,19' S	11°29,06' E	446	OBS	on deck
MSM17/108-1	11.01.2011	4:34	19°17,93' S	11°22,86' E	71,6	OBS	released
MSM17/108-1	11.01.2011	4:41	19°17,93' S	11°22,64' E	492	OBS	at surface
MSM17/108-1	11.01.2011	4:48	19°17,86' S	11°22,31' E	167,5	OBS	on deck
MSM17/109-1	11.01.2011	5:28	19°20,62' S	11°16,11' E	28,3	OBS	released
MSM17/109-1	11.01.2011	5:38	19°20,63' S	11°15,74' E	620,4	OBS	at surface
MSM17/109-1	11.01.2011	5:45	19°20,55' S	11°15,52' E	808,4	OBS	on deck
MSM17/110-1	11.01.2011	6:27	19°22,95' S	11°8,50' E	975,7	OBS	released
MSM17/110-1	11.01.2011	6:36	19°22,96' S	11°8,51' E	976,5	OBS	at surface
MSM17/110-1	11.01.2011	6:48	19°23,32' S	11°8,60' E	975,3	OBS	on deck
MSM17/111-1	11.01.2011	7:32	19°25,63' S	11°1,64' E	1170	OBS	released
MSM17/111-1	11.01.2011	7:47	19°25,63' S	11°1,63' E	1170	OBS	at surface
MSM17/111-1	11.01.2011	8:00	19°25,84' S	11°1,76' E	1169,1	OBS	on deck
MSM17/112-1	11.01.2011	8:44	19°28,34' S	10°54,74' E	1186,8	OBS	released
MSM17/112-1	11.01.2011	8:57	19°28,33' S	10°54,75' E	1187,9	OBS	at surface
MSM17/112-1	11.01.2011	9:10	19°28,59' S	10°54,97' E	1193,6	OBS	on deck
MSM17/113-1	11.01.2011	9:51	19°30,61' S	10°48,85' E	1177,9	OBS	released
MSM17/113-1	11.01.2011	10:01	19°30,72' S	10°47,76' E	1178,9	OBS	at surface
MSM17/113-1	11.01.2011	10:11	19°31,21' S	10°48,13' E	1179	OBS	on deck
MSM17/114-1	11.01.2011	10:48	19°33,11' S	10°42,13' E	1198,1	OBS	released
MSM17/114-1	11.01.2011	11:10	19°33,69' S	10°41,16' E	1203,7	OBS	at surface
MSM17/114-1	11.01.2011	11:20	19°33,90' S	10°41,32' E	1205,9	OBS	on deck
MSM17/115-1	11.01.2011	12:25	19°36,61' S	10°34,40' E	1290	OBS	on deck
MSM17/116-1	11.01.2011	12:59	19°38,35' S	10°28,95' E	1335,1	OBS	released
MSM17/116-1	11.01.2011	13:15	19°38,72' S	10°27,57' E	1341,9	OBS	at surface
MSM17/116-1	11.01.2011	13:24	19°39,27' S	10°27,43' E	1339,5	OBS	on deck
MSM17/117-1	11.01.2011	13:56	19°41,01' S	10°22,22' E	1357,1	OBS	released
MSM17/117-1	11.01.2011	14:22	19°41,70' S	10°20,48' E	1359,8	OBS	at surface

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/117-1	11.01.2011	14:30	19°41,95' S	10°20,52' E	1361,5	OBS	on deck
MSM17/118-1	11.01.2011	15:10	19°43,69' S	10°14,90' E	1389,6	OBS	released
MSM17/118-1	11.01.2011	15:26	19°44,17' S	10°14,00' E	1392,5	OBS	at surface
MSM17/118-1	11.01.2011	15:37	19°44,51' S	10°13,59' E	1399,1	OBS	on deck
MSM17/119-1	11.01.2011	16:17	19°46,19' S	10°7,49' E	1475,7	OBS	released
MSM17/119-1	11.01.2011	16:34	19°46,95' S	10°6,66' E	1529,9	OBS	at surface
MSM17/119-1	11.01.2011	16:42	19°47,15' S	10°6,82' E	1536,8	OBS	on deck
MSM17/120-1	11.01.2011	17:27	19°49,01' S	10°1,22' E	1940,6	OBS	released
MSM17/120-1	11.01.2011	18:00	19°49,79' S	9°59,93' E	1977,6	OBS	at surface
MSM17/120-1	11.01.2011	18:08	19°49,82' S	9°59,91' E	0	OBS	on deck
MSM17/121-1	11.01.2011	18:49	19°51,11' S	9°53,92' E	2148,4	OBS	released
MSM17/121-1	11.01.2011	19:10	19°51,72' S	9°52,69' E	0	OBS	at surface
MSM17/121-1	11.01.2011	19:30	19°52,40' S	9°52,84' E	0	OBS	on deck
MSM17/122-1	11.01.2011	20:06	19°53,87' S	9°47,57' E	0	OBS	released
MSM17/122-1	11.01.2011	20:28	19°54,69' S	9°46,04' E	0	OBS	at surface
MSM17/122-1	11.01.2011	20:40	19°55,07' S	9°46,17' E	0	OBS	on deck
MSM17/123-1	11.01.2011	21:19	19°56,50' S	9°40,86' E	0	OBS	released
MSM17/123-1	11.01.2011	21:39	0°0,00' N	0°0,00' E	0	OBS	at surface
MSM17/123-1	11.01.2011	21:53	19°57,81' S	9°39,28' E	0	OBS	on deck
MSM17/124-1	11.01.2011	22:30	19°59,46' S	9°33,96' E	0	OBS	released
MSM17/124-1	11.01.2011	23:24	20°0,30' S	9°32,44' E	0	OBS	at surface
MSM17/124-1	11.01.2011	23:32	20°0,48' S	9°32,49' E	0	OBS	on deck
MSM17/125-1	12.01.2011	0:08	20°1,79' S	9°27,51' E	0	OBS	released
MSM17/125-1	12.01.2011	0:57	20°2,90' S	9°25,52' E	0	OBS	Information
MSM17/125-1	12.01.2011	1:02	20°2,89' S	9°25,43' E	0	OBS	at surface
MSM17/125-1	12.01.2011	1:14	20°3,21' S	9°25,63' E	0	OBS	on deck
MSM17/126-1	12.01.2011	1:50	20°4,40' S	9°20,65' E	0	OBS	released
MSM17/126-1	12.01.2011	2:20	20°5,65' S	9°18,59' E	0	OBS	at surface
MSM17/126-1	12.01.2011	2:33	20°5,94' S	9°18,66' E	0	OBS	on deck
MSM17/127-1	12.01.2011	3:15	20°7,34' S	9°13,76' E	0	OBS	released
MSM17/127-1	12.01.2011	3:39	20°7,98' S	9°11,65' E	0	OBS	at surface
MSM17/127-1	12.01.2011	3:54	20°8,62' S	9°11,72' E	0	OBS	on deck
MSM17/128-1	12.01.2011	4:38	20°10,10' S	9°6,93' E	0	OBS	released
MSM17/128-1	12.01.2011	5:07	20°11,00' S	9°4,83' E	0	OBS	at surface
MSM17/128-1	12.01.2011	5:15	20°11,25' S	9°4,87' E	0	OBS	on deck
MSM17/129-1	12.01.2011	5:57	20°12,54' S	8°59,96' E	0	OBS	released
MSM17/129-1	12.01.2011	6:27	20°13,55' S	8°57,74' E	0	OBS	at surface
MSM17/129-1	12.01.2011	6:39	20°14,07' S	8°58,05' E	0	OBS	on deck
MSM17/130-1	12.01.2011	7:22	20°15,14' S	8°52,29' E	0	OBS	released
MSM17/130-1	12.01.2011	7:34	20°15,83' S	8°50,94' E	0	OBS	at surface
MSM17/130-1	12.01.2011	7:50	20°16,64' S	8°51,13' E	0	OBS	on deck
MSM17/131-1	12.01.2011	8:34	20°18,12' S	8°45,53' E	0	OBS	released
MSM17/131-1	12.01.2011	8:52	20°19,01' S	8°44,08' E	0	OBS	at surface
MSM17/131-1	12.01.2011	9:00	20°19,32' S	8°44,15' E	0	OBS	on deck
MSM17/132-1	12.01.2011	9:59	20°22,07' S	8°34,59' E	0	OBS	released
MSM17/132-1	12.01.2011	10:14	20°22,83' S	8°33,40' E	0	OBS	at surface
MSM17/132-1	12.01.2011	10:40	20°23,48' S	8°33,33' E	0	OBS	on deck
MSM17/133-1	13.01.2011	7:16	20°20,94' S	5°13,53' E	5096	OBS	surface
MSM17/133-1	13.01.2011	7:19	20°20,93' S	5°13,54' E	5096,4	OBS	Information
MSM17/133-1	13.01.2011	7:30	20°20,93' S	5°13,50' E	5094,3	OBS	on deck
MSM17/133-2	13.01.2011	7:41	20°20,94' S	5°13,50' E	5093,5	OBS	surface
MSM17/134-1	13.01.2011	9:04	20°26,89' S	5°27,06' E	4535,3	OBS	surface
MSM17/135-1	13.01.2011	10:24	20°32,80' S	5°40,50' E	4376	OBS	surface
MSM17/136-1	13.01.2011	11:40	20°38,77' S	5°54,07' E	4426,6	OBS	surface
MSM17/137-1	13.01.2011	12:20	20°41,71' S	6°0,81' E	4376,9	OBS	surface

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/138-1	13.01.2011	13:01	20°44,69' S	6°7,61' E	4318,7	OBS	surface
MSM17/139-1	13.01.2011	13:39	20°47,70' S	6°14,42' E	4284,3	OBS	surface
MSM17/140-1	13.01.2011	14:30	20°50,61' S	6°21,15' E	4156,3	OBS	surface
MSM17/141-1	13.01.2011	15:16	20°53,59' S	6°27,94' E	4154,4	OBS	surface
MSM17/142-1	13.01.2011	15:59	20°56,55' S	6°34,69' E	4464,4	OBS	surface
MSM17/143-1	13.01.2011	16:42	20°59,54' S	6°41,48' E	3850,4	OBS	surface
MSM17/144-1	13.01.2011	17:25	21°2,50' S	6°48,28' E	3661,4	OBS	surface
MSM17/145-1	13.01.2011	18:06	21°5,45' S	6°55,10' E	3405,4	OBS	surface
MSM17/146-1	13.01.2011	18:50	21°8,46' S	7°1,83' E	3320,3	OBS	surface
MSM17/147-1	13.01.2011	19:32	21°11,40' S	7°8,64' E	3230,3	OBS	surface
MSM17/148-1	13.01.2011	20:16	21°14,38' S	7°15,43' E	3078,9	OBS	surface
MSM17/149-1	13.01.2011	20:59	21°17,35' S	7°22,19' E	2993,5	OBS	surface
MSM17/150-1	13.01.2011	21:43	21°20,31' S	7°29,02' E	3128,3	OBS	surface
MSM17/151-1	13.01.2011	22:26	21°23,28' S	7°35,80' E	3173,9	OBS	surface
MSM17/152-1	13.01.2011	23:09	21°26,26' S	7°42,65' E	3150,2	OBS	surface
MSM17/153-1	13.01.2011	23:51	21°29,22' S	7°49,40' E	3323,6	OBS	surface
MSM17/154-1	14.01.2011	0:33	21°32,22' S	7°56,26' E	3614,2	OBS	surface
MSM17/155-1	14.01.2011	1:15	21°35,21' S	8°3,08' E	4109,4	OBS	surface
MSM17/156-1	14.01.2011	1:55	21°38,18' S	8°9,88' E	4363,8	OBS	surface
MSM17/157-1	14.01.2011	2:39	21°41,12' S	8°16,67' E	4360,1	OBS	surface
MSM17/158-1	14.01.2011	3:22	21°44,09' S	8°23,50' E	4357,2	OBS	surface
MSM17/159-1	14.01.2011	4:05	21°47,08' S	8°30,33' E	4358,7	OBS	surface
MSM17/160-1	14.01.2011	5:21	21°53,01' S	8°43,95' E	4355,8	OBS	surface
MSM17/161-1	14.01.2011	6:46	21°59,94' S	8°59,84' E	4306,3	OBS	surface
MSM17/162-1	14.01.2011	7:28	22°2,10' S	9°2,27' E	4291,5	SEISREFR	Airguns out
MSM17/162-1	14.01.2011	7:36	22°2,50' S	9°2,68' E	4296,1	SEISREFR	Airguns out
MSM17/162-1	14.01.2011	7:39	22°2,62' S	9°2,84' E	4294,6	SEISREFR	Streamer to water
MSM17/162-1	14.01.2011	8:08	22°1,81' S	9°4,27' E	4283,5	SEISREFR	start profile
MSM17/162-1	14.01.2011	18:00	21°43,08' S	8°21,13' E	4356,9	SEISREFR	information
MSM17/162-1	16.01.2011	8:49	20°20,96' S	5°13,55' E	5098,9	SEISREFR	information
MSM17/162-1	16.01.2011	12:50	20°12,45' S	4°54,19' E	5334,8	SEISREFR	end profile
MSM17/162-1	16.01.2011	13:06	20°13,00' S	4°53,78' E	5333,7	SEISREFR	Streamer on deck
MSM17/162-1	16.01.2011	13:14	20°13,21' S	4°53,96' E	5334,5	SEISREFR	Airguns on deck
MSM17/162-1	16.01.2011	13:34	20°13,77' S	4°54,52' E	5339	SEISREFR	Airguns on deck
MSM17/163-1	16.01.2011	14:52	20°19,07' S	5°8,48' E	0	OBS	released
MSM17/163-1	16.01.2011	16:07	20°20,45' S	5°12,86' E	0	OBS	at surface
MSM17/163-1	16.01.2011	16:16	20°20,93' S	5°13,19' E	0	OBS	on deck
MSM17/164-1	16.01.2011	17:14	20°24,77' S	5°22,04' E	0	OBS	released
MSM17/164-1	16.01.2011	17:58	20°26,41' S	5°25,94' E	0	OBS	at surface
MSM17/164-1	16.01.2011	18:11	20°26,91' S	5°26,80' E	0	OBS	on deck
MSM17/165-1	16.01.2011	19:05	20°31,01' S	5°36,06' E	0	OBS	released
MSM17/165-1	16.01.2011	19:47	20°32,57' S	5°40,31' E	0	OBS	at surface
MSM17/165-1	16.01.2011	19:58	20°32,81' S	5°40,40' E	0	OBS	on deck
MSM17/166-1	16.01.2011	20:57	20°37,19' S	5°50,29' E	0	OBS	released
MSM17/166-1	16.01.2011	22:01	20°38,51' S	5°53,85' E	0	OBS	at surface
MSM17/167-1	16.01.2011	23:22	20°41,33' S	6°0,63' E	0	OBS	at surface
MSM17/167-1	16.01.2011	23:35	20°41,71' S	6°0,79' E	0	OBS	on deck
MSM17/168-1	16.01.2011	23:56	20°42,47' S	6°2,95' E	0	OBS	released
MSM17/168-1	17.01.2011	1:07	20°44,33' S	6°7,29' E	0	OBS	at surface
MSM17/168-1	17.01.2011	1:16	20°44,60' S	6°7,42' E	0	OBS	on deck
MSM17/169-1	17.01.2011	1:37	20°45,40' S	6°9,63' E	0	OBS	released
MSM17/169-1	17.01.2011	2:42	20°47,38' S	6°14,29' E	0	OBS	at surface

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/169-1	17.01.2011	2:50	20°47,35' S	6°14,11' E	0	OBS	on deck
MSM17/170-1	17.01.2011	3:21	20°48,96' S	6°17,03' E	0	OBS	released
MSM17/170-1	17.01.2011	4:02	20°49,76' S	6°20,33' E	0	OBS	at surface
MSM17/170-1	17.01.2011	4:19	20°50,67' S	6°21,01' E	0	OBS	on deck
MSM17/171-1	17.01.2011	4:49	20°51,79' S	6°23,95' E	0	OBS	released
MSM17/171-1	17.01.2011	5:32	20°53,35' S	6°27,77' E	0	OBS	at surface
MSM17/171-1	17.01.2011	5:41	20°53,73' S	6°27,75' E	0	OBS	on deck
MSM17/172-1	17.01.2011	6:11	20°55,01' S	6°31,06' E	0	OBS	released
MSM17/172-1	17.01.2011	6:48	20°56,25' S	6°34,54' E	0	OBS	at surface
MSM17/172-1	17.01.2011	6:57	20°56,59' S	6°34,58' E	0	OBS	on deck
MSM17/173-1	17.01.2011	7:28	20°58,23' S	6°37,85' E	0	OBS	released
MSM17/173-1	17.01.2011	8:03	20°59,29' S	6°41,31' E	0	OBS	at surface
MSM17/173-1	17.01.2011	8:12	20°59,60' S	6°41,36' E	0	OBS	on deck
MSM17/174-1	17.01.2011	8:39	21°0,87' S	6°44,65' E	0	OBS	released
MSM17/174-1	17.01.2011	9:09	21°2,27' S	6°48,21' E	0	OBS	at surface
MSM17/174-1	17.01.2011	9:16	21°2,53' S	6°48,19' E	0	OBS	on deck
MSM17/175-1	17.01.2011	9:45	21°3,63' S	6°51,65' E	0	OBS	released
MSM17/175-1	17.01.2011	10:53	21°5,10' S	6°54,82' E	0	OBS	at surface
MSM17/175-1	17.01.2011	11:03	21°5,45' S	6°54,93' E	0	OBS	on deck
MSM17/176-1	17.01.2011	11:21	21°6,20' S	6°57,04' E	0	OBS	released
MSM17/176-1	17.01.2011	12:05	21°7,60' S	7°1,34' E	0	OBS	at surface
MSM17/176-1	17.01.2011	12:23	21°8,33' S	7°1,59' E	0	OBS	on deck
MSM17/177-1	17.01.2011	12:46	21°9,18' S	7°4,09' E	0	OBS	released
MSM17/177-1	17.01.2011	13:26	21°10,81' S	7°8,32' E	0	OBS	at surface
MSM17/177-1	17.01.2011	13:33	21°11,28' S	7°8,44' E	0	OBS	on deck
MSM17/178-1	17.01.2011	13:56	21°12,15' S	7°10,85' E	0	OBS	released
MSM17/178-1	17.01.2011	14:50	21°14,00' S	7°15,30' E	0	OBS	at surface
MSM17/178-1	17.01.2011	15:00	21°14,23' S	7°15,08' E	0	OBS	on deck
MSM17/179-1	17.01.2011	15:33	21°15,27' S	7°18,41' E	0	OBS	released
MSM17/179-1	17.01.2011	16:18	21°16,90' S	7°21,98' E	0	OBS	at surface
MSM17/179-1	17.01.2011	16:27	21°17,24' S	7°21,93' E	0	OBS	on deck
MSM17/180-1	17.01.2011	17:01	21°18,18' S	7°25,13' E	0	OBS	released
MSM17/180-1	17.01.2011	17:49	21°20,01' S	7°28,92' E	0	OBS	at surface
MSM17/180-1	17.01.2011	17:53	21°20,27' S	7°28,86' E	0	OBS	on deck
MSM17/181-1	17.01.2011	18:00	21°20,20' S	7°28,75' E	0	OBS	released
MSM17/181-1	17.01.2011	18:54	21°22,43' S	7°35,52' E	0	OBS	at surface
MSM17/181-1	17.01.2011	19:08	21°23,32' S	7°35,66' E	0	OBS	on deck
MSM17/182-1	17.01.2011	19:16	21°23,36' S	7°35,69' E	0	OBS	released
MSM17/182-1	17.01.2011	20:00	21°25,06' S	7°41,87' E	0	OBS	at surface
MSM17/182-1	17.01.2011	20:16	21°26,31' S	7°42,33' E	0	OBS	on deck
MSM17/183-1	17.01.2011	20:23	21°26,36' S	7°42,35' E	0	OBS	released
MSM17/183-1	17.01.2011	21:10	21°28,59' S	7°49,05' E	0	OBS	at surface
MSM17/183-1	17.01.2011	21:18	21°29,29' S	7°49,20' E	0	OBS	on deck
MSM17/184-1	17.01.2011	21:25	21°29,46' S	7°49,24' E	0	OBS	released
MSM17/184-1	17.01.2011	22:12	21°31,26' S	7°55,80' E	0	OBS	at surface
MSM17/184-1	17.01.2011	22:24	21°32,27' S	7°56,17' E	0	OBS	on deck
MSM17/185-1	17.01.2011	22:27	21°32,32' S	7°56,20' E	0	OBS	released
MSM17/185-1	17.01.2011	23:12	21°34,64' S	8°2,71' E	0	OBS	at surface
MSM17/186-1	18.01.2011	0:33	21°37,76' S	8°9,63' E	0	OBS	hydrophone into water
MSM17/186-1	18.01.2011	0:45	21°37,73' S	8°9,68' E	0	OBS	hydrophone back to deck
MSM17/186-1	18.01.2011	0:57	21°37,68' S	8°9,68' E	0	OBS	at surface
MSM17/187-1	18.01.2011	1:00	21°37,78' S	8°9,73' E	0	OBS	released

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/186-1	18.01.2011	1:07	21°38,09' S	8°9,87' E	0	OBS	on deck
MSM17/187-1	18.01.2011	2:05	21°40,70' S	8°16,58' E	0	OBS	at surface
MSM17/187-1	18.01.2011	2:15	21°41,00' S	8°16,65' E	0	OBS	on deck
MSM17/188-1	18.01.2011	2:17	21°41,02' S	8°16,62' E	0	OBS	released
MSM17/188-1	18.01.2011	3:20	21°43,42' S	8°23,25' E	0	OBS	at surface
MSM17/188-1	18.01.2011	3:30	21°43,90' S	8°23,44' E	0	OBS	on deck
MSM17/189-1	18.01.2011	3:33	21°43,88' S	8°23,41' E	0	OBS	released
MSM17/189-1	18.01.2011	8:01	21°46,69' S	8°30,41' E	0	OBS	Information
MSM17/190-1	18.01.2011	9:01	21°50,85' S	8°39,36' E	0	OBS	released
MSM17/190-1	18.01.2011	10:06	21°52,65' S	8°43,97' E	0	OBS	at surface
MSM17/190-1	18.01.2011	10:14	21°52,93' S	8°43,94' E	0	OBS	on deck
MSM17/191-1	18.01.2011	11:17	21°57,96' S	8°55,21' E	0	OBS	released
MSM17/191-1	18.01.2011	12:40	21°59,34' S	8°59,97' E	0	OBS	hydrophone into water
MSM17/191-1	18.01.2011	12:58	21°59,30' S	8°59,87' E	0	OBS	hydrophone back to deck
MSM17/191-1	18.01.2011	13:06	21°59,36' S	8°59,77' E	0	OBS	Information
MSM17/191-1	18.01.2011	15:45	21°59,46' S	8°59,90' E	0	OBS	Information
MSM17/192-1	18.01.2011	16:17	21°58,21' S	8°59,22' E	0	SEISREFL	airguns in the water
MSM17/192-1	18.01.2011	16:20	21°58,38' S	8°59,21' E	0	SEISREFL	Streamer into water
MSM17/192-1	18.01.2011	16:43	21°59,93' S	8°59,94' E	4309	SEISREFL	profile start
MSM17/192-1	19.01.2011	9:00	22°34,63' S	10°19,58' E	3969,6	SEISREFL	end of profile
MSM17/192-1	19.01.2011	9:07	22°34,87' S	10°19,85' E	3968,7	SEISREFL	streamer on deck
MSM17/192-1	19.01.2011	9:16	22°35,04' S	10°19,97' E	3963,4	SEISREFL	airgun on deck
MSM17/193-1	19.01.2011	17:22	21°59,54' S	8°59,82' E	0	OBS	Information
MSM17/193-1	19.01.2011	19:40	21°59,54' S	8°59,82' E	4303,5	OBS	at surface
MSM17/193-1	19.01.2011	19:52	22°0,08' S	9°0,13' E	4306,3	OBS	on deck
MSM17/194-1	19.01.2011	22:00	21°47,02' S	8°31,19' E	4355,8	OBS	at surface
MSM17/194-1	19.01.2011	22:22	21°46,59' S	8°29,70' E	4359	OBS	on deck
MSM17/195-1	20.01.2011	8:43	19°43,13' S	8°57,94' E	2649,9	SEISREFL	airguns in the water
MSM17/195-1	20.01.2011	8:46	19°43,27' S	8°58,04' E	2629,8	SEISREFL	Streamer into water
MSM17/195-1	20.01.2011	9:00	19°43,99' S	8°59,00' E	2505	SEISREFL	profile start
MSM17/195-1	20.01.2011	11:23	19°42,32' S	9°10,00' E	2578,6	SEISREFL	alter course
MSM17/195-1	20.01.2011	14:00	19°39,30' S	8°59,00' E	2892,7	SEISREFL	alter course
MSM17/195-1	20.01.2011	16:30	19°37,03' S	9°9,79' E	2802,8	SEISREFL	alter course
MSM17/195-1	20.01.2011	18:59	19°36,60' S	8°59,95' E	2767,1	SEISREFL	alter course
MSM17/195-1	20.01.2011	21:12	19°44,74' S	9°2,99' E	2357,4	SEISREFL	alter course
MSM17/195-1	20.01.2011	23:25	19°36,00' S	9°5,63' E	2148,7	SEISREFL	alter course
MSM17/195-1	21.01.2011	4:00	19°35,23' S	9°9,98' E	2912,3	SEISREFL	streamer on deck
MSM17/195-1	21.01.2011	4:09	19°35,50' S	9°10,25' E	2867,5	SEISREFL	airgun on deck
MSM17/196-1	21.01.2011	8:05	20°15,84' S	8°46,41' E	2070,6	OBMT	released
MSM17/196-1	21.01.2011	8:37	20°18,97' S	8°44,02' E	0	OBMT	sighted
MSM17/196-1	21.01.2011	8:46	20°19,29' S	8°44,05' E	0	OBMT	on deck
MSM17/197-1	21.01.2011	9:47	20°15,76' S	8°54,27' E	0	OBMT	released
MSM17/197-1	21.01.2011	10:26	20°13,69' S	8°57,92' E	0	OBMT	sighted
MSM17/197-1	21.01.2011	10:33	20°14,01' S	8°57,93' E	0	OBMT	on deck
MSM17/198-1	21.01.2011	11:34	20°9,88' S	9°8,57' E	0	OBMT	released
MSM17/198-1	21.01.2011	12:13	20°8,29' S	9°11,59' E	0	OBMT	sighted

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/198-1	21.01.2011	12:26	20°8,71' S	9°11,73' E	0	OBMT	on deck
MSM17/199-1	21.01.2011	13:31	20°4,92' S	9°22,15' E	0	OBMT	released
MSM17/199-1	21.01.2011	14:12	20°2,86' S	9°25,44' E	2238,3	OBMT	sighted
MSM17/199-1	21.01.2011	14:27	20°3,10' S	9°25,51' E	2232,2	OBMT	on deck
MSM17/200-1	21.01.2011	15:04	20°1,71' S	9°29,07' E	2170,7	OBMT	released
MSM17/200-1	21.01.2011	15:39	20°0,03' S	9°32,20' E	2156,2	OBMT	sighted
MSM17/200-1	21.01.2011	15:49	20°0,32' S	9°32,35' E	2158	OBMT	on deck
MSM17/201-1	21.01.2011	16:56	19°55,94' S	9°42,73' E	0	OBMT	released
MSM17/201-1	21.01.2011	17:37	19°54,74' S	9°46,09' E	0	OBMT	sighted
MSM17/201-1	21.01.2011	17:47	19°55,13' S	9°46,18' E	0	OBMT	on deck
MSM17/202-1	21.01.2011	18:47	19°50,46' S	9°57,00' E	0	OBMT	released
MSM17/202-1	21.01.2011	19:24	19°49,64' S	9°59,88' E	0	OBMT	sighted
MSM17/202-1	21.01.2011	19:35	19°49,93' S	10°0,13' E	0	OBMT	on deck
MSM17/203-1	21.01.2011	20:07	19°47,37' S	10°4,97' E	0	OBMT	released
MSM17/203-1	21.01.2011	20:36	19°46,95' S	10°6,74' E	0	OBMT	sighted
MSM17/203-1	21.01.2011	20:42	19°47,07' S	10°6,72' E	0	OBMT	on deck
MSM17/204-1	21.01.2011	21:16	19°44,79' S	10°11,80' E	0	OBMT	released
MSM17/204-1	21.01.2011	21:40	19°44,24' S	10°13,51' E	0	OBMT	sighted
MSM17/204-1	21.01.2011	21:49	19°44,54' S	10°13,69' E	0	OBMT	on deck
MSM17/205-1	21.01.2011	22:21	19°42,41' S	10°18,37' E	0	OBMT	released
MSM17/205-1	21.01.2011	22:45	19°41,65' S	10°20,53' E	0	OBMT	sighted
MSM17/205-1	21.01.2011	22:54	19°41,93' S	10°20,66' E	0	OBMT	on deck
MSM17/206-1	21.01.2011	23:26	19°39,37' S	10°25,14' E	0	OBMT	released
MSM17/206-1	21.01.2011	23:47	19°38,85' S	10°27,27' E	0	OBMT	sighted
MSM17/206-1	21.01.2011	23:57	19°39,35' S	10°27,58' E	0	OBMT	on deck
MSM17/207-1	22.01.2011	0:28	19°37,19' S	10°32,01' E	0	OBMT	released
MSM17/207-1	22.01.2011	0:51	19°36,49' S	10°34,31' E	0	OBMT	sighted
MSM17/207-1	22.01.2011	0:59	19°36,74' S	10°34,54' E	0	OBMT	on deck
MSM17/208-1	22.01.2011	1:27	19°34,85' S	10°38,76' E	0	OBMT	released
MSM17/208-1	22.01.2011	1:49	19°33,75' S	10°41,13' E	0	OBMT	sighted
MSM17/208-1	22.01.2011	1:55	19°33,81' S	10°41,18' E	0	OBMT	on deck
MSM17/209-1	22.01.2011	2:33	19°31,89' S	10°46,07' E	0	OBMT	released
MSM17/209-1	22.01.2011	3:00	19°31,42' S	10°48,06' E	0	OBMT	sighted
MSM17/209-1	22.01.2011	3:06	19°31,50' S	10°48,04' E	0	OBMT	on deck
MSM17/210-1	22.01.2011	3:40	19°29,12' S	10°52,97' E	0	OBMT	released
MSM17/210-1	22.01.2011	4:02	19°28,35' S	10°54,86' E	0	OBMT	sighted
MSM17/210-1	22.01.2011	4:11	19°28,57' S	10°54,95' E	0	OBMT	on deck
MSM17/211-1	22.01.2011	4:46	19°26,38' S	10°59,74' E	0	OBMT	released
MSM17/211-1	22.01.2011	5:06	19°25,73' S	11°1,65' E	0	OBMT	sighted
MSM17/211-1	22.01.2011	5:12	19°25,99' S	11°1,83' E	0	OBMT	on deck
MSM17/212-1	22.01.2011	5:48	19°23,78' S	11°6,65' E	0	OBMT	released
MSM17/212-1	22.01.2011	6:04	19°23,15' S	11°8,33' E	0	OBMT	sighted
MSM17/212-1	22.01.2011	6:12	19°23,29' S	11°8,68' E	0	OBMT	on deck
MSM17/213-1	22.01.2011	6:55	19°20,23' S	11°15,19' E	0	OBMT	released
MSM17/214-1	22.01.2011	8:16	19°17,65' S	11°22,14' E	615,1	OBMT	released
MSM17/214-1	22.01.2011	8:25	19°17,74' S	11°22,28' E	609,3	OBMT	sighted
MSM17/214-1	22.01.2011	8:34	19°18,07' S	11°22,40' E	609,3	OBMT	on deck
MSM17/215-1	22.01.2011	9:32	19°15,10' S	11°29,13' E	441,4	OBMT	released
MSM17/215-1	22.01.2011	9:40	19°15,45' S	11°29,19' E	443,8	OBMT	sighted
MSM17/215-1	22.01.2011	9:44	19°15,46' S	11°29,16' E	444,3	OBMT	on deck
MSM17/216-1	22.01.2011	10:50	19°12,12' S	11°35,94' E	330,9	OBS	Information
MSM17/216-1	22.01.2011	11:16	19°12,12' S	11°35,94' E	329	OBS	Information
MSM17/217-1	22.01.2011	12:08	19°9,77' S	11°42,97' E	324,6	OBMT	released
MSM17/217-1	22.01.2011	12:14	19°9,70' S	11°42,93' E	325,1	OBMT	sighted
MSM17/217-1	22.01.2011	12:21	19°10,11' S	11°42,91' E	324,1	OBMT	on deck

Station	Date	Time	Position	Position	Depth	Gear	Action
No.		[UTC]	Lat	Lon	[m]	Abbreviation	
MSM17/218-1	22.01.2011	19:59	19°29,06' S	10°10,57' E	1402,5	SEISREFL	Streamer into water
MSM17/218-1	22.01.2011	20:07	19°29,43' S	10°10,70' E	1438,9	SEISREFL	airguns in the water
MSM17/218-1	22.01.2011	20:19	19°29,99' S	10°10,19' E	1418,2	SEISREFL	profile start
MSM17/218-1	22.01.2011	22:20	19°27,51' S	10°2,00' E	1163,6	SEISREFL	alter course
MSM17/218-1	23.01.2011	0:23	19°24,47' S	10°10,00' E	1107,3	SEISREFL	alter course
MSM17/218-1	23.01.2011	2:37	19°20,48' S	10°2,00' E	1146	SEISREFL	alter course
MSM17/218-1	23.01.2011	4:08	19°20,00' S	10°9,66' E	1144,8	SEISREFL	alter course
MSM17/218-1	23.01.2011	7:28	19°30,99' S	10°6,34' E	1389,9	SEISREFL	alter course
MSM17/218-1	23.01.2011	10:19	19°19,00' S	10°3,53' E	1021,3	SEISREFL	alter course
MSM17/218-1	23.01.2011	12:47	19°30,98' S	10°3,00' E	1341,2	SEISREFL	end of profile
MSM17/218-1	23.01.2011	12:58	19°31,51' S	10°3,09' E	1386,3	SEISREFL	streamer on deck
MSM17/218-1	23.01.2011	13:04	19°31,70' S	10°3,15' E	1401,7	SEISREFL	airgun on deck
MSM17/219-1	23.01.2011	22:00	19°12,01' S	11°35,86' E	337,6	OBS	Information
MSM17/219-1	23.01.2011	22:40	19°12,18' S	11°35,96' E	340	OBS	Information
MSM17/220-1	23.01.2011	23:08	19°12,56' S	11°36,23' E	14,2	DR-IGL	search harness into water
MSM17/220-1	24.01.2011	0:26	19°12,56' S	11°36,23' E	344,7	DR-IGL	search wire shackeled on
MSM17/220-1	24.01.2011	0:30	19°12,56' S	11°36,23' E	342,6	DR-IGL	search harness grounded
MSM17/220-1	24.01.2011	0:30	19°12,56' S	11°36,23' E	342,6	DR-IGL	information
MSM17/220-1	24.01.2011	1:40	19°13,11' S	11°36,63' E	347,8	DR-IGL	start heaving
MSM17/220-1	24.01.2011	4:42	19°12,64' S	11°36,44' E	346,1	DR-IGL	information
MSM17/220-1	24.01.2011	5:18	19°12,64' S	11°36,44' E	345,1	DR-IGL	search harness on deck
MSM17/221-1	25.01.2011	9:16	23°17,78' S	6°46,60' E	2130,9	SEISREFL	Streamer into water
MSM17/221-1	25.01.2011	9:23	23°18,10' S	6°46,65' E	0	SEISREFL	airguns in the water
MSM17/221-1	25.01.2011	9:33	23°18,92' S	6°46,99' E	1994,4	SEISREFL	profile start
MSM17/221-1	25.01.2011	11:44	23°30,00' S	6°44,51' E	2518,1	SEISREFL	alter course
MSM17/221-1	25.01.2011	13:51	23°19,47' S	6°42,94' E	2413,9	SEISREFL	alter course
MSM17/221-1	25.01.2011	14:37	23°20,02' S	6°47,55' E	2087,1	SEISREFL	alter course
MSM17/221-1	25.01.2011	14:37	23°20,02' S	6°47,55' E	2087,1	SEISREFL	alter course
MSM17/221-1	25.01.2011	17:17	23°27,13' S	6°48,00' E	2687,5	SEISREFL	alter course
MSM17/221-1	25.01.2011	18:19	23°29,00' S	6°43,07' E	2245,3	SEISREFL	end of profile
MSM17/221-1	25.01.2011	18:35	23°29,66' S	6°42,50' E	2255,9	SEISREFL	streamer on deck
MSM17/221-1	25.01.2011	18:42	23°29,87' S	6°42,55' E	2330,1	SEISREFL	airgun on deck