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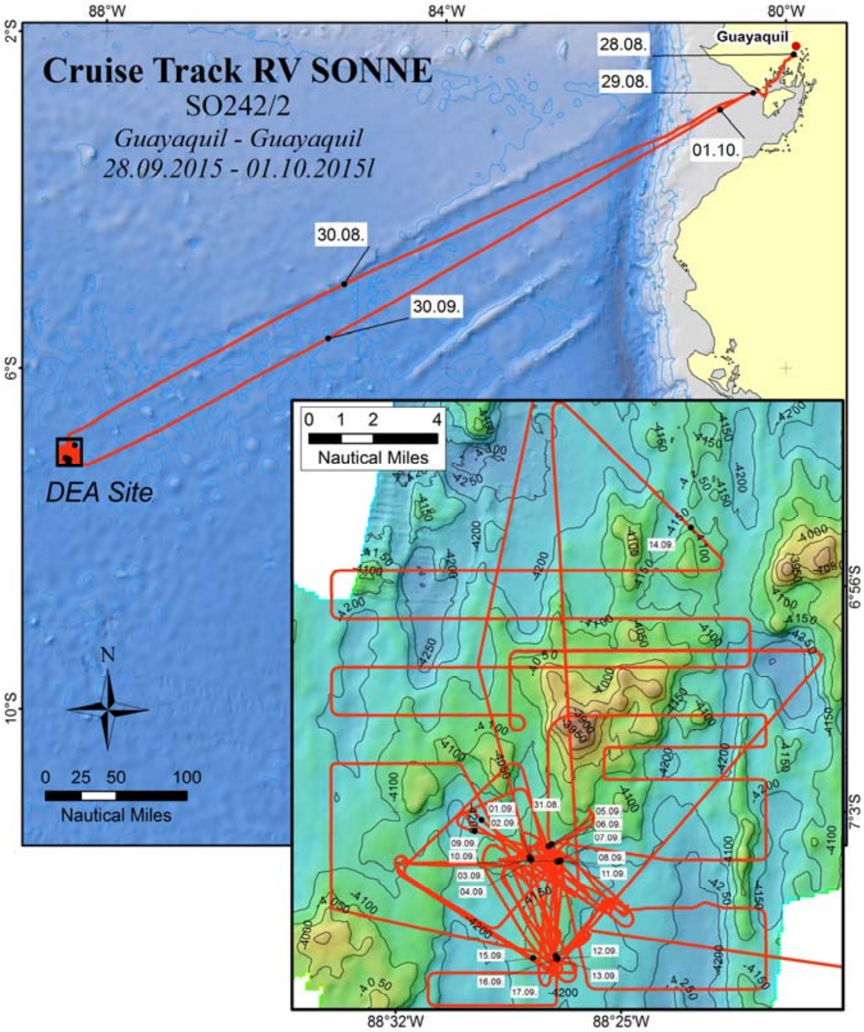
# Short Cruise Report
# RV SONNE – SO242/2

## Guayaquil – Guayaquil
## 28.08.2015 – 01.10.2015
## Chief Scientist: Prof. Dr. Antje Boetius
## Captain: Oliver Meyer



**Objectives**

Leg 2 aimed at high resolution surveying of the impact of the DISCOL disturbance on the benthic community structure of microbial assemblages and ecosystem function, including geochemical fluxes. It will also provide an assessment of ecosystem state for various levels of nodule coverage. Scientific investigations during cruise SO242-2 include the study of communities of benthic organisms of different size classes (mainly mega-, meio-, and microfauna), connected to detailed studies of biogeochemical and food-web processes. Leg SO242-1 had assembled maps of the plough tracks in the working area (DISCOL experimental area; DEA) that were created in 1989 by means of a 'deep-sea plough'. Leg SO242-1 had planned to carry out high-resolution studies of the plough tracks, their immediate vicinity and the reference area outside DEA. In addition, localized disturbance experiments were planned. The main research questions were targeted at the effect of disturbances on different ecosystem compartments and processes including:

- Physicochemical habitat characteristics
- Geochemical and biogeochemical processes at the seafloor and in the bottom waters
- Composition of benthic assemblages (mainly mega-, meio-, and microfauna)
- Metabolic activity and transfer of energy and matter in benthic communities
- Release, bioaccumulation, and ecotoxicological effects of contaminants

Specific scientific questions to be addressed during leg 2 included:

- Have ecosystem functions such as respiration, productivity and nutrient remineralization recovered 26 years after the disturbance?
- How is the state of re-equilibration in the surface sediment 26 years after the
- disturbance?
- What will be the immediate release of chemical components during a sediment surface disturbance?
- What is the natural baseline of relevant ecosystem functions for areas of different nodule coverage?
- How do abundance, diversity and community structure of microorganisms and megafauna compare between disturbed (DEA) and undisturbed nearby sites?
- How do the diversity and morphotype composition of sessile and motile megafauna as derived from images from the 1980s compare to those in 2015 in the DEA and undisturbed control sites?

With the data, we will contribute mostly to JPIO WP2 that will investigate the biodiversity and community structure of benthic microbial and metazoan communities at disturbed and undisturbed sites in the DISCOL area. As contribution to WP3 we will investigate geochemical and biogeochemical conditions and processes in the surface sediments, to quantify solute fluxes across the sediment-water interface and trophic interactions including the flow of energy and the bioaccumulation of metals and other toxicants. Additionally, by in situ experimentation with the ROV, and by deploying in situ pumps on a CTD water sampler, we will contribute data to WP4, assessing potential impacts resulting from the release and dispersion of sediment plumes in the water column. We have put a lot of attention to data management for the fully integrated ecological studies (WP6), and to communication of observations and first results to the public already during the cruise by interviews, and a project blog.

**Narrative**

The mission SO242/2 started on 28 August 2016. We left the port of Guayaquil at around noon, after the last bits of freight and technical support had been provided to the ship. It took about 4 hours to transit the river Guayas, and then 2 days to reach our working area, the DISCOL experimental area DEA at 7°S and 88.5°W (Fig. 3.1). Due to good weather conditions, the new SONNE could reach an average velocity of around 14 knots.

We started a multibeam survey (station 137-1) when we had left the EEZ of Peru, at 10 pm UTC on 30 August. Station work started with a CTD to set the sound velocity profiles and to get an impression of the background turbidity in the waters. We detected a large oxygen minimum zone hovering above our working area, extending from 150 to 1000 m with oxygen concentration below 63 µM, and reaching almost zero between 400-600, which we observed during the cruise as a side program in addition to our deep CTD casts.

In the night we carried out the first OFOS track to get an impression of seafloor landscapes and the nodule coverage, as well as the main types disturbance traces and fauna to be surveyed in the coming weeks. We also placed the first combined chamber and profiler lander to measure respiration rates in undisturbed zones of low nodule coverage.

On 31 August we started the day with the first ROV dive targeting the plough tracks of the western DEA. We quickly identified typical microhabitats that were created by the 1989 ploughing activities: the plough pushed the otherwise very smooth abyssal deep-sea muds into ripples, and created heaps of mud at the side of the tracks. Inside the tracks, sometimes the brownish surface sediments were completely scraped off and we could see the whitish-grey color of the underlying subsurface sediments. In the early morning hours of 1 September we placed another chamber lander, and a deep-sea elevator to transport our sampling equipment to the seafloor for the next ROV dives. We quickly developed a routine for the dives, with an exchange of elevators before and after the dives, and an almost daily ROV dive from 08:30 am till about 8:00 pm. Every 4-5 days, one day was used for ROV maintenance and other station works.

The deep-sea elevators are deployed by a telemetry-navigated launcher, that allows precise positioning of the elevators next to the tracks, to minimize the dive time needed to place and recover our various instruments. We sampled the DEA West plough track between 01 and 04 September with ROV dives during the day, and CTD with in situ pumps, and OFOS surveys during the nights. The in situ pumps filter large volumes of waters, we use them to determine the baseline particle content in bottom waters from natural turbidity, as well as to obtain information as to the increase in turbidity due to surveying activities.

The Southern Reference area was sampled by multiple corer, to complete the measurements of leg 242/1. Between 5 and 10 September, we focused on the East DEA and deployed experiments for food web studies (CUBEs, Respirometers), ecotoxicology (Corrals) in and around plough tracks. We also carried out the high-resolution sampling for biogeochemistry, meiofauna and microbiology a second time, in a plough track with clear signs of plume sedimentation. On 8 September a highlight of the dive 196 was the deployment of the new ROBEX crawler Tramper for technical tests. At night between dives, we alternated between the OFOS and the CTD with in situ pumps. In the early morning hours, we redeployed the elevator with the in situ biogeochemical tools, the benthic chamber and profiler. Any gap in the program we filled with Parasound tracks to contribute to the sonar survey of the area started by leg 242/1. On 11 September we dove at the Southern Reference area, to start a small disturbance experiment (Sediment dispensers) aiming to test the response of meiofauna to getting covered by nodule debris.

We also recovered and redeployed landers and carried out more in situ pumping of bottom waters. On 13 September, we carried out a short dive to test a hyperspectral camera for deep-sea surveys, and to look for the LBL mooring of leg 242-1 that was not recovered due to imploded glass spheres. Between 15-16 September we continued diving for the experiments at the Southern Reference, and did some more OFOS and parasound surveys at night.

Then we started the next sampling and survey set in the Southwestern area of the DEA where fresh tracks of the epibenthic sledge used during leg 242/1 crossed old plough tracks. During OFOS surveys we found that the fresh sledge marks of a few meters width could serve as a new disturbance category for our measurements, to compare benthic functions and geochemical processes to the old tracks that were created 26 years earlier.

We sampled the EBS track between 17-21 September, and then returned on 22 September to the Southern Reference to recover the samples from the “sediment dispenser” experiment by a dedicated ROV dive. This dive (216) was also used to deploy the ROBEX Crawler “Tramper” a second time and observe its behavior at the deep-sea floor. Unfortunately it did not release, and had to be recovered by the ship’s wire hooked into the crawler by the ROV which stayed at the seafloor until the crawler was safely recovered.

During the last week of the expedition we deployed experiments in the central DEA and sampled in high-resolution the microhabitats of the 12m-wide plough tracks between 23-26 September. At night, we carried out lander recoveries and deployments, the last shallow (OMZ survey) and deep CTD casts and more OFOS dives. The OFOS strategy was to collect similar amounts of seafloor images from the DEA and its surrounding reference areas, as well as for the different habitat categories “plough track”, “next to track”, “undisturbed DEA”. Finally, also a calibration dive was carried out, to repeat a dive of the OFOS of leg 242-1 at 3.5 m above seafloor. On 26 and 27 September winds increased to 6-7 Bft, and wave height to 4 m. Hence, on 27 September we could not dive with the ROV. All other station work was not affected, and we could retrieve all moorings and landers as planned, including the BoBo lander and thermistor mooring of leg 242/1. Also, we carried out another multiple corer sampling of the Central DEA 15 m off the plough track by precise Posidonia positioning. On 28 September weather conditions slightly improved, and a last scientific ROV dive was carried out at Central DEA to recover the remaining instruments and experiments from the seafloor.

The last ROV dive was dedicated to the search of the DOS lander (221-1), which we could not release, despite multiple attempts. It was placed on a mound structure with very rough and rocky terrain. The ROV could not find the DOS lander by its sonar, and it was given up shortly before the last station works of this cruise leg. The last OFOS dive was carried out on 29 September to rescue the collapsed LBL mooring by mounting a hook to the OFOS frame and using the ship’s high resolution DP to hover above the mooring position. The recovery was successful. After the retrieval of the last benthic lander from the central DEA, the station work was ended on 29 September at 10:00 UTC, and the transit back to Guayaquil was started, along a multibeam track for seafloor mapping (station 237-1).

We arrived at the Guayas pilot station in the early morning hours of the 1 October, and end the cruise in Guayaquil port (Ecuador). The leg SO242/2 to the DEA with the new SONNE and the ROV Kiel 6000 was highly successful, the working program was completed to almost 100%. All 40 scientists on board thank captain and crew of RV SONNE for the excellent support at sea.

**Acknowledgements**

We thank captain and crew of SO242-2 for their excellent support with work at sea, and the Control Station German Research Vessels Hamburg for help with expedition preparations and logistics. This expedition contributes to the project JPIO Pilot Action “Ecological aspects of deep-sea mining” and was funded by the BMBF (03F0707A-G). We acknowledge further financial support from the Helmholtz Association (Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Bremerhaven), the Max Planck Society; NWO (Netherlands Organisation for Scientific Research / Nederlandse Organisatie voor Wetenschappelijk Onderzoek) grant 856.14.002; the Portuguese Science Foundation FCT (IF/00029/2014/CP1230/CT0002). The research has also received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under the MIDAS project, grant agreement n∞ 603418.

## Teilnehmerliste / Participants

| | | | |
|---|---|---|---|
| 1. | Prof. Dr. Antje Boetius | Fahrtleiterin / Chief Scientist | MPI / AWI |
| 2. | Dr. Fritz Abegg | ROV Team Koordinator / ROV team coordinator | GEOMAR |
| 3. | Volker Asendorf | Landertechniker /lander technician | MPI |
| 4. | Jana Bäger | Laborechnikerin Mikrobiologie / Lab technician Microbiology | MPI |
| 5. | Jakob Barz | Laborechniker TV-MUC / Lab technician TV-MUC | MPI |
| 6. | Viola Beier | Labortechnikerin Biogeochemie / Lab technician Biogeochemistry | MPI |
| 7. | Harald Biebow | Techniker OFOS / Technician OFOS | iSiTEC |
| 8. | Anke Bleyer | Labortechnikerin Geochemie / Lab technician geochemistry | GEOMAR |
| 9. | Matthias Bodendorfer | ROV Pilot / ROV pilot | GEOMAR |
| 10. | Seinab Bohsung | Studentin Metallgeochemie / Student metal geochemistry | JUB |
| 11. | Dr. Alastair Brown | Wissenschaftler Ecotox Untersuchungen / Scientist ecotox studies | USOU |
| 12. | Patrick Cuno | ROV Pilot / ROV pilot | GEOMAR |
| 13. | Samuel Müller | Student KIPS Probennehmer / Student KIPS sampler | CAU Kiel |
| 14. | Dr. Mattias Haeckel | Wissenschaftler Geochemie / Scientist geochemistry | GEOMAR |
| 15. | Kristin Hamann | Wissenschaftlerin Geochemie / Scientist geochemistry | GEOMAR |
| 16. | Jan Hennke | ROV Pilot / ROV pilot | GEOMAR |
| 17. | Dr. Felix Janssen | Wissenschaftlerbenthische Flüsse / Scientist benthic fluxes | MPI / AWI |
| 18. | Dr. Johannes Lemburg | Crawler Ingenieur / Crawler engineer | MPI / AWI |
| 19. | Dr. Peter Linke | Wissenschaftler BBL Studien / Scientist BBL studies | GEOMAR |
| 20. | Lidia Lins | Doktorandin Meiofauna / PhD student meiofauna | UGent |
| 21. | Dr. Yann Marcon | Wissenschaftlerhabitat mapping / Scientist habitat mapping | MPI / AWI |
| 22. | Arne Meier ROV | Pilot / ROV pilot | GEOMAR |
| 23. | Lisa Mevenkamp | Doktorandin Meiofauna / PhD student meiofauna | UGent |
| 24. | Stein Melvær Nornes | Doktorand hyperspektrale Aufnahmen / PhD student hyperspectral imaging | NTNU |
| 25. | Sophie Paul | Doktorandin Metallgeochemie / PhD student metal geochemistry | JUB |
| 26. | Martin Pieper | ROV Pilot / ROV pilot | GEOMAR |
| 27. | Miriam Plöger | ROV Pilot / ROV pilot | GEOMAR |
| 28. | Dr. Autun Purser | Wissenschaftler Megafauna surveys / Scientist megafauna surveys | JUB |
| 29. | Dr. Sebastian Roessler | Datenmanager, CTD, Parasound / Data manager, CTD, Parasound | FIELAX |
| 30. | Fabian Schramm | ROV ModulTechniker / ROV payload technician | MPI |
| 31. | Manfred Schulz | Dokumentation (Filmer) / Documentation (Film Maker) | Manfred Schulz TV & Film |
| 32. | Ralf Schwarz | Techniker Elevator / Technician elevator | GEOMAR |
| 33. | Rafael Stiens | Labortechniker Biogeochemie / Lab technician biogeochemistry | MPI |
| 34. | Tanja Stratmann | Doktorand Nahrungsnetzstudien / PhD student food web studies | NIOZ |
| 35. | Dr. Inken Suck | ROV Pilot / ROV pilot | GEOMAR |
| 36. | Dr. Andrew K. Sweetman | Wissenschaftler Nahrungsnetzstudien / Scientist food web studies | IRIS |
| 37. | Dr. Dick van Oevelen | Wissenschaftler Nahrungsnetzstudien / Scientist food web studies | NIOZ |
| 38. | Tobias Vonnahme | Master Student Mikrobiologie / Masters student mircrobiology | MPI |
| 39. | Dr. Frank Wenzhoefer | Wissenschaftler benthische Flüsse / Scientist benthic fluxes | MPI / AWI |
| 40. | Cäcilia Wigand | Laborechnikerin Mikrosensoren / Lab technician Microsensors | MPI |

## Institute / Institutes

| Abbreviation | Institute | City | Country |
|---|---|---|---|
| AWI | Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research | Bremerhaven | Germany |
| CAU | Kiel Christian-Albrechts-University | Kiel | Germany |
| FIELAX | Gesellschaft für wissenschaftliche Datenverarbeitung mbH | Bremerhaven | Germany |
| GEOMAR | Helmholtz Centre For Ocean Research | Kiel | Germany |
| IRIS | International Research Institute of Stavanger | Randaberg | Norway |
| iSiTEC | iSiTEC GmbH | Bremerhaven | Germany |
| JUB | Jacobs University Bremen GmbH | Bremen | Germany |
| MPI | Max-Planck-Institute for Marine Microbiology | Bremen | Germany |
| NIOZ | Royal Netherlands Institute for Sea Research | Texel / Yerseke | Netherlands |
| NTNU | NTNU Norwegian University of Science and Technology | Trondheim | Norway |
| Ugent | UGent Ghent University | Gent | Belgium |
| USOU | University of Southampton | Southampton | United Kingdom |

## Stations list

| Station | DateTime [UTC] | Device | SHIP_Lat | SHIP_Lon | DEVICE_Lat | DEVICE_Lon | Depth |
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| 242-2_137-1 | 29.08.2015 22:21:00 | Parasound P70 | -4:50.391 | -84:51.78 | | | 4053.7 |
| 242-2_137-1 | 30.08.2015 17:10:00 | Parasound P70 | -7:03.91 | -88:27.991 | | | 4140.4 |
| 242-2_138-1 | 30.08.2015 19:30:23 | CTD | -7:04.418 | -88:27.859 | | | 4140.6 |
| 242-2_139-1 | 31.08.2015 03:34:03 | OFOS | -7:07.97 | -88:26.962 | -7:07.837 | -88:27.012 | 4120.9537 |
| 242-2_140-1 | 31.08.2015 07:52:00 | Parasound P70 | -7:01.534 | -88:28.528 | | | 4052.4 |
| 242-2_140-1 | 31.08.2015 10:28:51 | Parasound P70 | -7:04.586 | -88:27.078 | | | 4149.5 |
| 242-2_141-1 | 03.09.2015 07:00:59 | LANDER (generic) | -7:04.544 | -88:27.027 | -7:04.611 | -88:27.048 | 4148.1 |
| 242-2_142-1 | 31.08.2015 14:55:43 | Remote Operated Vehicle | -7:04.443 | -88:27.835 | -7:04.443 | -88:27.886 | 4129.32 |
| 242-2_143-1 | 01.09.2015 00:47:42 | OFOS | -7:03.239 | -88:29.352 | -7:03.253 | -88:29.37 | 4186.0552 |
| 242-2_144-1 | 01.09.2015 06:51:06 | LANDER (generic) | -7:04.438 | -88:27.816 | -7:04.43 | -88:27.823 | 4130 |
| 242-2_145-1 | 01.09.2015 10:41:32 | Deep-sea Elevator | -7:04.435 | -88:27.818 | -7:04.453 | -88:27.812 | 4134.2 |
| 242-2_146-1 | 01.09.2015 15:10:14 | Remote Operated Vehicle | -7:04.463 | -88:27.797 | -7:04.419 | -88:27.851 | 4130.08 |
| 242-2_147-1 | 02.09.2015 04:51:01 | Multi Corer | -7:06.042 | -88:24.84 | -7:06.058 | -88:24.835 | 4198.2 |
| 242-2_148-1 | 02.09.2015 08:35:00 | Multi Corer | -7:06.039 | -88:24.835 | -7:06.053 | -88:24.827 | 4195.8 |
| 242-2_149-1 | 02.09.2015 12:14:13 | CTD | -7:05.947 | -88:25.371 | | | 4196.5 |
| 242-2_150-1 | 02.09.2015 15:22:18 | Remote Operated Vehicle | -7:04.448 | -88:27.837 | -7:04.42 | -88:27.852 | 4079.2 |
| 242-2_151-1 | 03.09.2015 03:32:59 | Multi Corer | -7:06.033 | -88:24.836 | | | 4197.8 |
| 242-2_152-1 | 03.09.2015 06:20:08 | CTD | -7:04.545 | -88:27.032 | | | 4139.7 |
| 242-2_153-1 | 03.09.2015 12:02:12 | Deep-sea Elevator | -7:04.434 | -88:27.817 | -7:04.434 | -88:27.823 | 4134.8 |
| 242-2_154-1 | 03.09.2015 15:11:38 | Remote Operated Vehicle | -7:04.469 | -88:27.785 | -7:04.443 | -88:27.823 | 4091.03333 |
| 242-2_155-1 | 04.09.2015 04:27:30 | OFOS | -7:04.484 | -88:28.68 | -7:04.506 | -88:28.753 | 4128.6891 |
| 242-2_156-1 | 08.09.2015 13:51:14 | LANDER (generic) | -7:07.743 | -88:27.108 | | | 4157.8 |
| 242-2_157-1 | 04.09.2015 14:57:20 | CTD | -7:04.418 | -88:27.85 | | | 4133.1 |
| 242-2_158-1 | 07.09.2015 04:40:33 | LANDER (generic) | -7:07.51 | -88:27.026 | -7:07.455 | -88:26.98 | 4045 |
| 242-2_159-1 | 07.09.2015 07:57:21 | LANDER (generic) | -7:06.018 | -88:24.85 | -7:05.991 | -88:24.778 | 4143.5 |
| 242-2_160-1 | 05.09.2015 00:01:07 | OFOS | -7:04.06 | -88:27.261 | -7:04.051 | -88:27.263 | 4142.3105 |

| Station | DateTime [UTC] | Device | SHIP_Lat | SHIP_Lon | DEVICE_Lat | DEVICE_Lon | Depth |
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| 242-2_161-1 | 05.09.2015 03:17:39 | Parasound P70 | -7:00.064 | -88:26.817 | | | 4064 |
| 242-2_161-1 | 05.09.2015 08:27:32 | Parasound P70 | -7:04.009 | -88:26.658 | | | 4168.9 |
| 242-2_162-1 | 05.09.2015 11:28:54 | Deep-sea Elevator | -7:04.453 | -88:27.042 | -7:04.458 | -88:27.04 | 4134.2 |
| 242-2_163-1 | 05.09.2015 15:09:59 | Remote Operated Vehicle | -7:04.525 | -88:26.939 | -7:04.463 | -88:27.016 | 4085.22727 |
| 242-2_164-1 | 06.09.2015 01:19:59 | OFOS | -7:03.981 | -88:27.111 | -7:03.976 | -88:27.112 | 4149.3257 |
| 242-2_165-1 | 08.09.2015 01:55:00 | Deep-sea Elevator | -7:04.517 | -88:26.933 | -7:04.44 | -88:26.941 | 4034.6 |
| 242-2_166-1 | 06.09.2015 15:00:25 | Remote Operated Vehicle | -7:04.519 | -88:26.991 | -7:04.473 | -88:27.046 | 4099.1 |
| 242-2_167-1 | 07.09.2015 02:39:51 | CTD | -7:07.506 | -88:27.03 | | | 3912.2 |
| 242-2_168-1 | 07.09.2015 09:57:28 | Parasound P70 | -7:06.031 | -88:24.896 | | | 4196.3 |
| 242-2_168-1 | 07.09.2015 13:07:10 | Parasound P70 | -7:04.482 | -88:26.928 | | | 4133.1 |
| 242-2_169-1 | 07.09.2015 15:21:15 | Remote Operated Vehicle | -7:04.508 | -88:26.895 | -7:04.472 | -88:26.916 | 4099.38 |
| 242-2_170-1 | 07.09.2015 18:06:11 | Benthic Crawler | -7:04.509 | -88:26.891 | -7:04.522 | -88:26.91 | 4142.32975 |
| 242-2_171-1 | 08.09.2015 06:10:42 | OFOS | -7:04.39 | -88:28.223 | -7:04.396 | -88:28.242 | 4136.1018 |
| 242-2_172-1 | 08.09.2015 17:58:01 | CTD | -7:04.48 | -88:26.927 | | | 4131.1 |
| 242-2_173-1 | 08.09.2015 23:00:35 | Parasound P70 | -7:04.047 | -88:27.299 | | | 4134.6 |
| 242-2_173-1 | 09.09.2015 00:33:02 | Parasound P70 | -7:04.304 | -88:27.263 | | | 4138.7 |
| 242-2_174-1 | 09.09.2015 02:07:07 | OFOS | -7:04.385 | -88:27.466 | -7:04.377 | -88:27.461 | 4155.387 |
| 242-2_175-1 | 09.09.2015 12:07:39 | Deep-sea Elevator | -7:04.449 | -88:26.928 | -7:04.456 | -88:26.941 | 4118.3 |
| 242-2_176-1 | 09.09.2015 15:11:32 | Remote Operated Vehicle | -7:04.523 | -88:26.924 | -7:04.478 | -88:26.921 | 4100.11429 |
| 242-2_177-1 | 10.09.2015 03:00:50 | OFOS | -7:04.663 | -88:28.392 | -7:04.655 | -88:28.447 | 4139.0105 |
| 242-2_178-1 | 10.09.2015 11:57:33 | Benthic Crawler | -7:04.461 | -88:26.863 | -7:04.469 | -88:26.884 | 4141.34545 |
| 242-2_179-1 | 10.09.2015 15:07:29 | Remote Operated Vehicle | -7:04.509 | -88:26.901 | -7:04.468 | -88:26.92 | 4049.86154 |
| 242-2_180-1 | 14.09.2015 15:35:06 | LANDER (generic) | -7:07.68 | -88:27.21 | | | 4156.7 |
| 242-2_181-1 | 11.09.2015 08:21:30 | Parasound P70 | -7:07.903 | -88:27.017 | | | 4157.2 |
| 242-2_181-1 | 11.09.2015 10:18:33 | Parasound P70 | -7:07.993 | -88:27.036 | | | 4171.9 |
| 242-2_182-1 | 11.09.2015 13:23:42 | Deep-sea Elevator | -7:07.51 | -88:27.012 | -7:07.514 | -88:27.036 | 4152.7 |
| 242-2_183-1 | 11.09.2015 16:31:13 | Remote Operated Vehicle | -7:07.569 | -88:26.96 | -7:07.512 | -88:27.048 | 4104.9625 |

| Station | DateTime [UTC] | Device | SHIP_Lat | SHIP_Lon | DEVICE_Lat | DEVICE_Lon | Depth |
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| 242-2_184-1 | 12.09.2015 03:54:13 | OFOS | -7:07.651 | -88:27.188 | -7:07.653 | -88:27.2 | 4152.7457 |
| 242-2_185-1 | 12.09.2015 11:01:22 | Deep-sea Elevator | -7:07.506 | -88:27.02 | -7:07.522 | -88:27.014 | 4144.9 |
| 242-2_186-1 | 15.09.2015 02:50:35 | LANDER (generic) | -7:04.566 | -88:31.575 | -7:04.568 | -88:31.606 | 4106.3 |
| 242-2_187-1 | 15.09.2015 05:18:30 | LANDER (generic) | -7:04.682 | -88:28.622 | -7:04.707 | -88:28.462 | 4136.5 |
| 242-2_188-1 | 12.09.2015 16:26:54 | Remote Operated Vehicle | -7:07.542 | -88:27.009 | -7:07.512 | -88:27.039 | 4179.05714 |
| 242-2_189-1 | 13.09.2015 02:55:21 | OFOS | -7:04.547 | -88:28.443 | -7:04.525 | -88:28.472 | 4139.917 |
| 242-2_190-1 | 13.09.2015 10:43:46 | CTD | -7:05.344 | -88:26.764 | | | 4005 |
| 242-2_191-1 | 13.09.2015 16:00:04 | Remote Operated Vehicle | -7:05.432 | -88:26.719 | -7:05.403 | -88:26.775 | 4185.45 |
| 242-2_192-1 | 13.09.2015 22:13:26 | Parasound P70 | -6:50.316 | -88:27.012 | | | 4219.2 |
| 242-2_192-1 | 14.09.2015 15:09:26 | Parasound P70 | -7:07.766 | -88:26.97 | | | 4145.4 |
| 242-2_193-1 | 14.09.2015 19:06:00 | CTD | -7:07.524 | -88:27.013 | | | 4140.5 |
| 242-2_194-1 | 15.09.2015 02:36:11 | Multi Corer | -7:04.566 | -88:31.574 | -7:04.567 | -88:31.596 | 4078.88 |
| 242-2_195-1 | 15.09.2015 09:06:17 | OFOS | -7:07.5 | -88:26.983 | -7:07.5 | -88:27 | 4152.077 |
| 242-2_196-1 | 15.09.2015 15:25:07 | Remote Operated Vehicle | -7:07.576 | -88:26.999 | -7:07.529 | -88:27.057 | 4181.3 |
| 242-2_197-1 | 16.09.2015 04:36:54 | OFOS | -7:04.019 | -88:28.915 | -7:04.022 | -88:28.93 | 4139.6784 |
| 242-2_198-1 | 16.09.2015 15:17:28 | Remote Operated Vehicle | -7:07.578 | -88:27.002 | -7:07.537 | -88:27.056 | 4166.6 |
| 242-2_199-1 | 17.09.2015 01:32:49 | Parasound P70 | -7:07.585 | -88:27.319 | | | 4143.3 |
| 242-2_199-1 | 17.09.2015 05:22:00 | Parasound P70 | -7:04.822 | -88:28.269 | | | 4138.5 |
| 242-2_200-1 | 17.09.2015 08:07:46 | Deep-sea Elevator | -7:04.974 | -88:28.165 | -7:04.992 | -88:28.164 | 3984.8 |
| 242-2_201-1 | 17.09.2015 12:13:25 | Deep-sea Elevator | -7:04.983 | -88:28.163 | -7:05.003 | -88:28.155 | 4137.8 |
| 242-2_202-1 | 17.09.2015 15:30:50 | Remote Operated Vehicle | -7:05.016 | -88:28.138 | -7:04.981 | -88:28.178 | 4177.2 |
| 242-2_203-1 | 18.09.2015 03:27:35 | OFOS | -7:03.236 | -88:28.015 | -7:03.239 | -88:28.028 | 4140.2613 |
| 242-2_204-1 | 18.09.2015 14:00:54 | CTD | -7:06.083 | -88:27.259 | | | 4135.8 |
| 242-2_205-1 | 18.09.2015 17:08:12 | Remote Operated Vehicle | -7:05.003 | -88:28.16 | -7:04.969 | -88:28.192 | 4175.9 |
| 242-2_206-1 | 19.09.2015 05:26:12 | OFOS | -7:05.386 | -88:27.777 | -7:05.394 | -88:27.797 | 4156.8982 |
| 242-2_207-1 | 19.09.2015 15:42:09 | CTD | -7:04.977 | -88:28.162 | | | 4141.7 |
| 242-2_208-1 | 19.09.2015 22:12:42 | Multi Corer | -7:07.536 | -88:27.031 | -7:07.532 | -88:27.041 | 4071.46977 |

| Station | DateTime [UTC] | Device | SHIP_Lat | SHIP_Lon | DEVICE_Lat | DEVICE_Lon | Depth |
|---|---|---|---|---|---|---|---|
| 242-2_209-1 | 20.09.2015 02:16:36 | CTD | -7:04.983 | -88:28.166 | | | 4134.1 |
| 242-2_210-1 | 22.09.2015 04:56:45 | Deep-sea Elevator | -7:04.893 | -88:28.279 | -7:05.006 | -88:28.204 | 4130.2 |
| 242-2_211-1 | 20.09.2015 15:14:35 | Remote Operated Vehicle | -7:05.019 | -88:28.14 | -7:04.996 | -88:28.193 | 4169.63333 |
| 242-2_212-1 | 21.09.2015 01:12:08 | OFOS | -7:05.579 | -88:27.413 | -7:05.581 | -88:27.426 | 4078.2985 |
| 242-2_212-2 | 21.09.2015 10:34:00 | LANDER (generic) | -7:04.024 | -88:29.148 | | | 4117.7 |
| 242-2_213-1 | 21.09.2015 15:08:47 | Remote Operated Vehicle | -7:05.01 | -88:28.125 | -7:04.998 | -88:28.153 | 4181.9 |
| 242-2_214-1 | 25.09.2015 11:58:38 | LANDER (generic) | -7:07.261 | -88:27.157 | | | 4126.4 |
| 242-2_215-1 | 22.09.2015 13:08:00 | Benthic Crawler | -7:07.534 | -88:27.023 | -7:07.532 | -88:27.041 | 4126.93636 |
| 242-2_216-1 | 22.09.2015 16:36:27 | Remote Operated Vehicle | -7:07.55 | -88:27.002 | -7:07.522 | -88:27.032 | 4169.01429 |
| 242-2_217-1 | 23.09.2015 10:30:53 | Deep-sea Elevator | -7:04.679 | -88:27.466 | -7:04.682 | -88:27.481 | 4149.1 |
| 242-2_218-1 | 23.09.2015 14:50:49 | Deep-sea Elevator | -7:04.682 | -88:27.456 | -7:04.683 | -88:27.471 | 4143.8 |
| 242-2_219-1 | 23.09.2015 18:05:11 | Remote Operated Vehicle | -7:04.722 | -88:27.434 | -7:04.685 | -88:27.483 | 4170.15 |
| 242-2_220-1 | 24.09.2015 05:23:41 | OFOS | -7:07.737 | -88:25.945 | -7:07.75 | -88:25.962 | 4158.6908 |
| 242-2_221-1 | 24.09.2015 13:19:06 | LANDER (generic) | -7:00.131 | -88:26.551 | | | 3884.5 |
| 242-2_222-1 | 24.09.2015 16:29:41 | Remote Operated Vehicle | -7:04.729 | -88:27.423 | -7:04.704 | -88:27.46 | 4174.14286 |
| 242-2_223-1 | 25.09.2015 05:16:19 | OFOS | -7:04.793 | -88:28.209 | -7:04.806 | -88:28.218 | 4124.7415 |
| 242-2_224-1 | 25.09.2015 16:25:45 | CTD | -7:07.354 | -88:24.195 | | | 4201.5 |
| 242-2_225-1 | 25.09.2015 21:33:17 | LANDER (generic) | -7:03.932 | -88:27.034 | -7:03.954 | -88:27.094 | 4145.41429 |
| 242-2_226-1 | 26.09.2015 02:06:14 | LANDER (generic) | -7:04.695 | -88:27.371 | -7:04.69 | -88:27.389 | 4147.91538 |
| 242-2_227-1 | 26.09.2015 05:18:08 | OFOS | -7:04.639 | -88:28.157 | | | 4128.7 |
| 242-2_228-1 | 26.09.2015 14:57:52 | Deep-sea Elevator | -7:04.675 | -88:27.463 | -7:04.68 | -88:27.478 | 4117.3 |
| 242-2_229-1 | 26.09.2015 18:23:04 | Multi Corer | -7:04.697 | -88:27.397 | -7:04.698 | -88:27.418 | 4105.98889 |
| 242-2_230-1 | 26.09.2015 21:56:30 | LANDER (generic) | -7:07.479 | -88:25.499 | | | 4145.7 |
| 242-2_231-1 | 27.09.2015 02:42:37 | OFOS | -7:03.927 | -88:32.306 | -7:03.923 | -88:32.317 | 4116.8638 |
| 242-2_232-1 | 27.09.2015 15:33:46 | Remote Operated Vehicle | -7:04.717 | -88:27.427 | -7:04.68 | -88:27.488 | 4168.3 |
| 242-2_233-1 | 28.09.2015 08:39:09 | OFOS | -7:04.358 | -88:27.997 | -7:04.365 | -88:28.009 | 4131.0221 |
| 242-2_234-1 | 28.09.2015 14:28:39 | Mooring | -7:07.065 | -88:24.537 | -7:07.349 | -88:24.195 | 4180.3 |

| Station | DateTime [UTC] | Device | SHIP_Lat | SHIP_Lon | DEVICE_Lat | DEVICE_Lon | Depth |
|---|---|---|---|---|---|---|---|
| 242-2_235-1 | 28.09.2015 22:54:40 | Remote Operated Vehicle | -7:00.097 | -88:26.456 | -7:00.085 | -88:26.516 | 3860.825 |
| 242-2_236-1 | 29.09.2015 07:17:22 | OFOS | -7:05.362 | -88:26.76 | -7:05.351 | -88:26.774 | 4135.6 |
| 242-2_237-1 | 29.09.2015 11:41:51 | KONGSBERG EM122 | -7:04.806 | -88:27.427 | | | 4140.2 |
| 242-2_237-1 | 30.09.2015 09:00:00 | KONGSBERG EM122 | -5:23.356 | -84:43.897 | | | 3986.6 |