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Cruise report CAGE 16-4

Recovery of observatories and water column survey offshore Svalbard

Longyearbyen – Longyearbyen 01-05-16 to 09-15-16

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Contents

1. INTRODUCTION AND OBJECTIVES

The cruise occurred from May 1st to May 9th 2016 and was part of the Centre of Excellence for Arctic Gas Hydrate, Environment and Climate (CAGE) at UiT – The Arctic of Norway.

The main goal of the cruise was to recover two observatories that were deployed on June 30th and July 2nd 2015 during CAGE 15-3 (chief scientist Anna Silyakova). The sites were selected according to pictures taken during CAGE 15-2 cruise (chief scientist Giuliana Panieri) illustrating bacterial mats on the sea floor. The exact locations were decided just prior to deployment according to flare locations. The coordinates of the observatories were:
OS1: 78 39.2779N 9 25.9871E
OS2: 78 33.6765N 10 08.5356E

The present cruise also aimed at investigating an area of extensive flares western Svalbard, particularly the shallow shelf and shelf edge. The addressed scientific topics include quantification of methane concentration in the water column, dissolved inorganic carbon, pH, microbial activity and identification, nutrients, DMSP, CDOM and current amplitude and direction.

2. STUDY AREA

The survey included the 14 km wide and 30 km long relatively shallow shelf area close to Prins Karls Forland (Figure 1). Here, the depth is ~100 m on average and the seabed morphology is diverse with ridges and depressions distributed all over the shelf. Figure 1 also shows identified flare locations (Sahling et al. 2012).

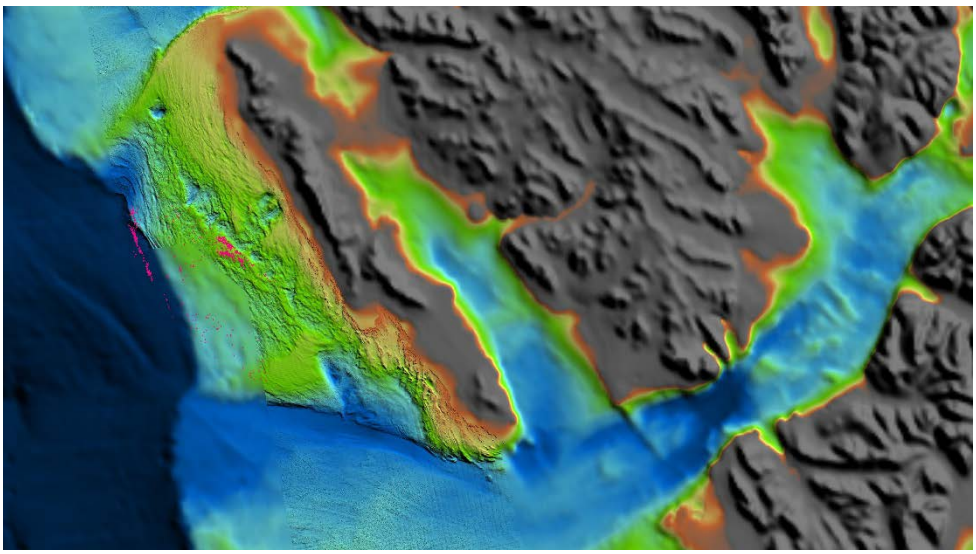

Figure 1. Map of the area with known flares location (red dots)

3. PARTICIPANT LIST

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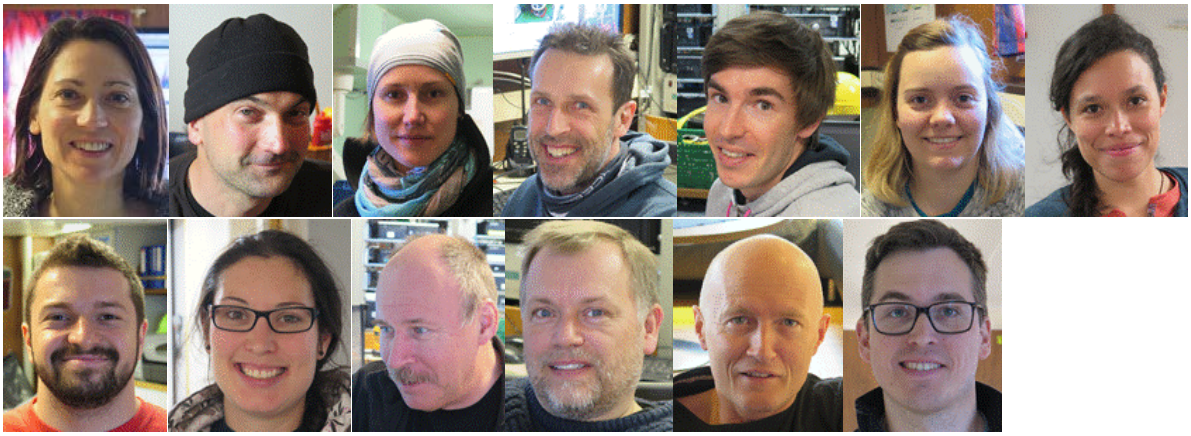

4. METHODS

The multibeam echosounder and the chirp were turned off before departure in order to prevent interferences with the ADCP. The trajectory and the area have been covered in many occasions so we estimated that we had enough information on bathymetry. We turned the multibeam echosounder back on when we started the survey across and along the flares line at the shelf edge. Figure 2 shows the CTD stations along Isfjorden, towards and in the 90m grid.

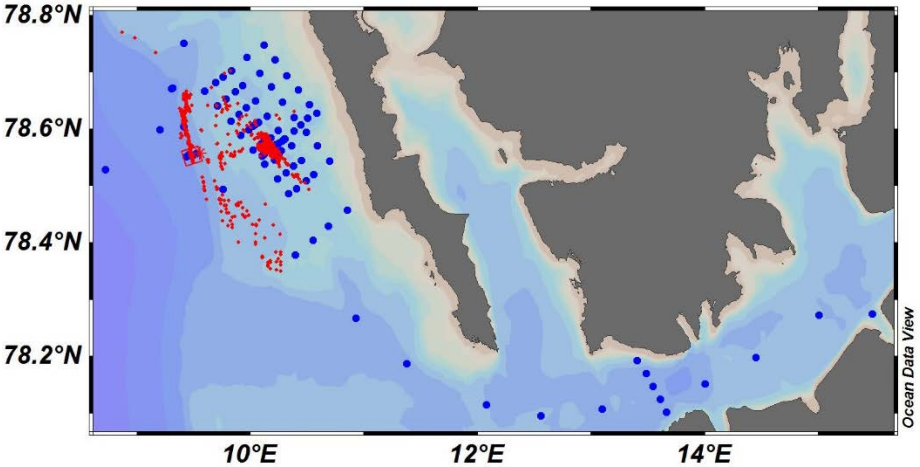

Figure 2. Map of the area with CTD stations (blue dots) and know flares locations (red dots, Sahling et al. 2012)

➢ ECHOSOUNDER EK60 FOR FLARE OBSERVATION

Single beam echo sounders are common among all types of ships with the main purpose of detecting fish in the water. Here, the Simrad EK60 scientific echosounder system was used at 18 KHz, 38 KHz and 120 KHz to identify active seeps. In a single beam echo sounder, the transducer projects a sound pulse through water in a controlled direction and the reflected wave is received. The depth is calculated from the travel time of the sound pulse.

The echosounder was on during the entire cruise. The new data was used to identify active flares and locate new sampling sites, and expand the CAGE flares data set.

➢ ADCP

The ship is equipped with a traditional "Ocean Surveyor" Acoustic Doppler Current Profiler (ADCP) from Teledyne RD, operating at 75 kHz. The setup consists of an ADCP transducer / receiver mounted on the lowered keel, 7 meters below the sea surface, a deck unit, communicating with the device and a standard PC in the Instrument room. The ADCP provides current amplitude and direction, as well as backscatter information.

➢ CTD

CTD (Conductivity, Temperature, Depth) sensors measure the physical properties of seawater. In addition to measuring the conductivity, temperature and pressure (from which depth is calculated), the CTD sensors can measure or calculate salinity of seawater, density, P-wave velocity, turbidity, fluorescence/chlorophyll, and oxygen content.

R/V Helmer Hanssen uses SBE 911plus CTD to produce vertical profiles of seawater properties. A winch is used to lower the CTD system into the water at 0.1 m/s. The CTD sensors record data at a rate of 24 samples per second.

A total of 12 × 5-liters Niskin bottles are attached to the CTD instrument set up to collect water samples from chosen depth. A single conductor cable supplies power to the system and transmits data from and to the CTD system in real time.

We collected CTD data and water sampling at 96 stations during the cruise and water samples from 8 discrete depths for further analysis (see water sampling section for details).

➢ WATER SAMPLING

Figure 2 shows the CTD stations. However, not all components detailed below were measured at each station.

1) Methane (P. Serov)

To prepare water samples for measurements of methane concentrations we applied the conventional headspace gas extraction technique. Water samples were collected bubble free into 120 mL crimp seal bottles, and poisoned with 1 mL NaOH solution. We injected 5 ml of nitrogen through the rubber septa into with simultaneous removal of 5 mL of sample. By shaking the bottle for two minutes the headspace nitrogen equilibrated with the in situ water sample gas. Bottles were kept in the fridge (5 degrees C) until analysis within a few hours. Equilibrated headspace gas (100 µl)

was injected to FID gas chromatograph ThermoScientific Trace 1310 using a gastight syringe. Measured headspace methane concentrations were converted to nmol concentrations in the water sample according to methane solubility considering the sample temperature, salinity, and the atmospheric pressure in the laboratory.

Set up for the gas chromatograph:

- Injector Temperature: 200°C,
- Detector temperature: 270°C,
- oven temperature constant at 100°C,
- column flow – 30 ml/min,
- Air flow: 350 ml/min,
- H2 flow: 50 ml/min,
- makeup gas (N2) flow: 45 ml/min,
- Injections volume: 100 µl,
- FID acquisition rate – 60Hz.

2) Sampling for Dissolved Inorganic Carbon concentration, natural stable isotopes and radiocarbon (F. Garcia Tigreros)

Objective: To collect Niskin bottle samples to measure DIC.
Procedure:
Rinse sample bottles – Rinse bottle three times with sea water to remove any traces of previous sample.
Fill sample bottle – Insert drawing tube till touching bottom of the glass bottle, fill the bottle smoothly from bottom to top using the tube. It is critical to **remove any bubbles** from the drawing tube before filling. Overflow the water by a full bottle volume or about 60 seconds.
Headspace – To determine headspace volume: close nisking bottle and pinch off the drawing tube before removing it from the sample bottle. The water level should be as a few mm from the bottle neck.
Adding Cupper Sulfate – Once all samples have been collected and taken to inside the lab, poison water samples with 150 µl of a 2 M cupric sulfate solution.
Close and secure the stopcock – close bottles with rubber stopper and crimp bottles until analysis.

3) pH and UV-Vis (F. Garcia Tigreros)

Objective: To measure pH in seawater samples. **UV-VIS:** A Cary 100 UV-Vis Spectrophotometer was used.
Reagents: A 2 mM L−3 dye solution of m-cresol purple is adjusted to match pH measurements from an oceanic profile using a 0.1N NaOH solution. This implies that for m-cresol purple A578/A434 _ 1.6. Indicator solution is susceptible to atmospheric contamination and should be stored minimizing contact with atmospheric CO2 (collapsible container or syringe). **Sampling:** Flush cell for 15-20 seconds and seal with teflon cap ensuring there is no headspace. While awaiting analysis store sample in the dark at room temperature.
Procedure:
1. Warm sample cell to 250C (±0.1)
2. Measure absorbances for the cell + seawater
3. Injest 50 - 100 μL of dye. The amount of dye required is that which will produce absorbance values bewteen 0.4 and 1 and each of the two absorbance peaks.

4. Measure absorbances of cell + seawater + dye

References: information was taken from the UV-Vis manual, SOP6b and Clayton and Byrne (1993).

4) δ13C (M. Leonte)

Based on the fractionation of carbon isotopes and the change in methane concentrations, a kinetic isotope model is used to calculate the fraction of methane in a water parcel that is removed through microbial oxidation. Current velocities are then used to determine the travel time of water and thus how quickly oxidation is occurring. Water samples were collected separately for methane concentration and isotopic ratio analysis. Samples for dissolved methane concentrations will be analyzed using a GC-FID ate the University of Rochester and will be compared against the concentrations measured on the ship. Isotopic ratio samples will be sent to Woods Hole Oceanographic Institute where they will be analyzed for the isotopic ratio of carbon via IRMS. Water current velocities were measured throughout the course of the expedition using a ship mounted ADCP.

5) Microbial activity and identity (H. Nienman and F. Gründger)

Aerobic methane oxidation (MOx) is final barrier for methane before its release to the atmosphere, where it acts as a potent greenhouse gas. MOx is mediated by bacteria and proceeds according to the following net reaction:

$$CH4 + 2\ O2 \rightleftharpoons CO2 + 2\ H2O$$

For analysis of MOx rates at discrete water depths, we sampled the water column with a 12 × 5-liter CTD/Rosette sampler and sub-samples were taken immediately upon recovery of the sampler. MOx rates were determined at sea from ex situ incubations with trace amounts of tritium labelled methane (C3H4), allowing to trace the label transfer by measuring the activity of substrate (C3H4) and product pools (3H2O) after incubation (Berndt et al., 2014; Niemann et al., 2015, Steinle et al., 2015). For each sampling depth, six 20-ml crimp-top vials were filled and closed bubble-free with PTFE coated bromobutyl stoppers (Wheaton, USA). Subsequently, each sample was amended with 5 µl gaseous C3H4/N2 mixture (~5 kBq, <50 pmol CH4, American Radiolabeled Chemicals, USA) and incubated for 48 h at in situ temperature in the dark. The incubations were terminated by unsealing one triplicate and subsampling a 10 ml aliquot of the incubation medium. This was then amended with aqueous NaCl solution (1 ml, 20%, w/v) and purged for 30 min with air to strip out the remaining methane. The activity of the produced 3H2O will be determined in our home laboratories by liquid scintillation counting. The radioactivity of both, the remaining C3H4 and the produced 3H2O will be determined from the second triplicate (fixed with 0.5 ml HgCl solution after incubation) by liquid scintillation counting in our home laboratories. MOx rates will be corrected for (most probably insubstantial) tracer turnover in killed controls (fixed with HgCl solution just after tracer amendments). MOx rates will be calculated from the fractional turnover of labelled CH4 and water column CH4 concentration assuming first order kinetics (Reeburgh, 2007):

$$rMOx = k \times [CH4]$$

where k is the first-order rate constant (determined from the fractional turnover of labelled CH4 per unit time and corrected for tracer turnover in killed controls) and [CH4] is the concentration of CH4 at the beginning of the incubation.

Additional samples were collected for determining the identity and abundance of key microbial communities through fluorescence in situ hybridisation (FISH) (Pernthaler and Pernthaler, 2007). For this, 300 ml of aqueous sample were fixed with 7 ml formaldehyde solution (30%) for 3-4 h at 4°C.

Subsequently, samples were filtered through polycarbonate filters (0.2 µm pore size) rinsed with deionised water and stored at -20°C until further analyses in our home laboratories.
Finally, we also collected particulate organic matter (POM) for microbial community analyses with DNA tools (next generation sequencing, Illumina). POM was collected from ~1000 ml of sea water filtered through polycarbonate filters (0.2 µm pore size) and stored at -20°C until further treatment/analyses in our laboratories.

MOx rates will be determined from all collected samples (5 transects, ~350 distinct water depth amounting to ~2100 replicates). The resolution of microbial community analyses (FISH, DNA) will depend on the results of rate measurements, but we aim to cover at least one transect.

6) Nutrients

Water from Niskin bottle was subsampled into 20 ml scintillation vial and 200 µl of chlorophorm was added to each sample immediately after sampling. Samples were stores in dark box in the fridge at temperature 2 centigrade.

We sampled water from the Niskin bottles at the same stations as MOx, focusing on the long East-to-West transect from the deep to the shallow end of our survey area (Fig. 1.1). Plastic vials were used for the samples, and were flushed three times with sample water before they were filled and chloroform was added. The samples were stored in closed boxes (dark) in the ship's lab-refrigerator. We expect that results from these measurements will be analyzed by IMR in Bergen in August.

7) DMSP

Water from Niskin bottle was subsampled into 60 ml falcon tube with 167 umol H_2SO_4 added prior sampling. Samples were stored in dark and cold.

8) C-DOM

C-DOM is an optically active fraction of the dissolved organic matter (DOM) that absorbs light in the ultraviolet (UV) and visible bands (Bricaud et al., 1981) and can originate from both terrestrial and marine sources (Blough and Del Vecchio, 2002). Practically, due to its effect on remotely sensed ocean color, C-DOM must be properly taken into consideration when primary productivity is assessed in the Arctic Ocean (e.g. Bélanger et al., 2013).

5. LOOKING FOR OS2

The buoy from OS2 did not appear after release on May 2nd and was nowhere to be seen even though we could get contact with the c-pap transmisser. We went back the next day in the morning without success. Around 20:00, we decided to cross the area of the lander, hoping to see it with the echosounder. We observed a strange feature on the seafloor showing a shape floating on top of another feature (figure 4 top). We came back 2 hours later and saw the same feature (figure 4 bottom). The next day (May 4th) in the evening, we went back on the site to make sure we have the right coordinates, and saw that the buoy was finally at the surface. We recovered it 2 days later (May 6th).

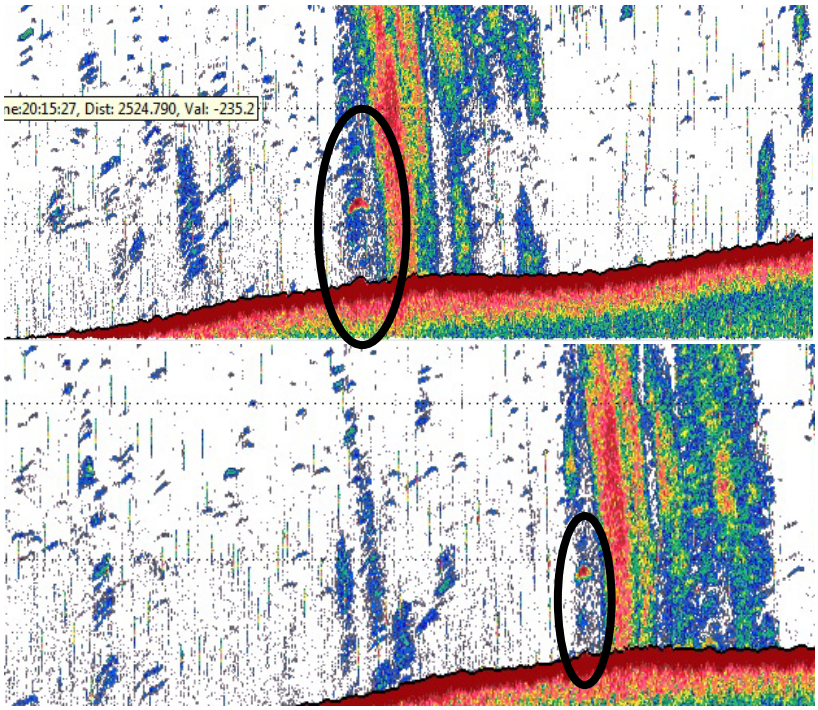

Figure 4. Screen shots of the echosounder showing the floating shape above another feature.

6. DEVIATION FROM INITIAL PLAN

We had to adjust the cruise planning at several occasions. The number of stations were slightly reduced in order to optimize the time on the grid, not knowing how long the recoveries will take. Stations 17 and 19 were removed, and the location for station #20 changed. We had to interrupt the main trajectory after CTD #18 to retrieve the observatories at CTD locations 23 and 37, as the recoveries have to happen when the waves are below 2m and the wind is below 10m/s. We initially managed to recover OS1 but not OS2, and went back where the survey stopped to sample CTD #20. The 90m grid was also finished sooner than expected, giving us time to:

- Redo the short transect that was repeated in 2014,
- Do a transect across the known flares
- Do a transect across the "MASOX" site
- Perform an extensive echosounder survey along the known flare ~240m depth (Sahling et al. 2012) (Appendix 1)
- Perform an extensive echosounder survey in the south area (Appendix 1)
- Intensively look for OS2 with the echosounder to get the exact location, and eventually retrieve it.

7. CRUISE NARRATIVE

Date	*Time (TOS, UTC+2)*	
30.04	19:35	We arrive in Longyearbyen without Per Inge's bag. Missing tools and calibration equipment as well as the release system backup
1.05	09:30	We arrive on the Helmer Hansen. B. Ferre informs the captain of the cruise plan with CTD positions.
	12:00	The yellow box for recovery is located and working properly
	14:00	Per Inge gets his bag from the next flight
	14:15	Cruise plan presentation to the team - setting up shifts and decision on water sampling
	15:00	safety briefing in auditorium
	15:30	Departure from Longyearbyen
	16:30	Station 569 (station 2). Bottle 8 did not close but we had just enough water to sample and we decide to go to the next station.
	17:11	The echosounder was not on, so we turned it on
	17:35	Station 570. Four bottles did not close. We cast again with 3 new bottles.
	17:52	Bottle 11 did not close (one of the new one) and bottle 9 was empty. As they were doubled, we decide to go to the next station. Bjørn and Roy repared the bottle release loop of the 3 replaced bottles. #3, 8, 11 bottles replaced
	19:06	571. 200m depth. All bottles closed
	20:40	Interference between the echosounder and the ADCP. We tried to change the interval between the pings of the echosounder without success. Steinar found the trigger for the ADCP and tried to trick it but it was set up right.
	continue	CTD. No issue mentioned during the night concerning the rosette.
2.05	07:30	All the cruise participants agree that we will reduce the transect 16-21 in order to save some time. We will go directly from 16 to 18, and the number 20 becomes 10.5454E/78.4064N. Number 21 remains the same and so on
	08:45	after finishing with #18, heading to OS1 as the weather and wave conditions are ideal for recovery
	10:40	arrived at OS1 site. CTD sampling
	10:57	start looking for OS1
	11:00	contact with OS1- release
	11:05	flotation buoy located - dinghy at sea
	12:10	OS1 recovered. Recovery challenging because of the heavy and unpractical buoy. Major damages including ADCP which has a pierced transducer; hydrophone bent; funnel gone; c-node detached. We noticed water intrusion in the power cable to the DPU.
	13:30	arrived at OS2 site. CTD sampling
	13:53	start looking for OS2 – release. No visual
	15:20	research stopped. Direction station #20 to continue CTD and water sampling
	15:30	bottle closing setting changed from #20
	16:20	start disassembling OS1
	19:30	pause in disassembling, 3 more hours disassembling after dinner
	continue	CTD. No issue mentioned during the night
3.05	10:30	Direction finder to look for OS2 near location. Contact again with yellow box
	11:12	Research stopped. No visual. Direction station 46 to continue CTD where stopped

	21:45	approaching OS2 to locate the observatory
	22:20	visual of a feature that looks like something is floating 20mab on top of a bump
	23:10	after checking the given coordinates (both ship and Olex), showing no sign of lander, we went back on the previous site and witnessed the same feature. We conclude that this is probably the lander and marked the coordinates.
4.05	continue CTD. No issue mentioned during the night	
	15:30	Discussion with Mathias Meyer from Kongsberg concerning OS2 recovery. His offers a former ROV pilot from Kongsberg to join the ROV cruise.
	19:15	direction towards the locations of OS2
	20:35	Visual of OS2 buoy. The captain estimates that it is too wavy and too windy to risk the recovery operation. Recover planned on May 6th
	22:30	We decided to go a bit further north from #37 in order to avoid catching extra rope from OS2 in the propeller.
5.05	08:00	CTD finished. No issue mentioned during the night. Direction towards the flares at the shelf edge for a transversal survey with the echosounder and check if they moved
	08:34	Mulitbeam back on as we are lacking data in this area
	~11:00	start survey across the flares line
	11:40	start survey along the flares line
	Continue multibeam and echosounder survey, no issue mentioned during the night. Few flares observed	
6.05	09:00	CTD 670 to check theory of water masses signature on the echosounder
	10:30	CTD 671 for another pattern in the echosounder signal
	10:35	back on the survey line and towards MASOX
	12:00	start CTD 1km western MASOX
		start multibeam and echousounder survey on the south part and the know flare area around 140m depth (cf. appendix 1)
	18:50	back on OS2 site, buoy caught
	19:10	OS2 on deck, starting disassembling. No major damage except the tube connecting the oxygen sensor to the CTD that was detached and some panels missing. The funnel was also damaged
7.05	Continue survey. No issues mentioned during the night	
		disassembling OS2
8.05	Continue survey. No issues mentioned during the night	
	16:35	MASOX transect
9.05	08:30	Back in Longyearbyen

ACKNOWLEDGEMENTS

We thank the captain and his crew of R/V Helmer Hanssen of the University of Tromsø for their excellent support during the oceanographic survey and the recovery of the landers. This part of the cruise was conducted under the framework of the Centre of Excellence on Gas Hydrates, Environment and Climate (CAGE) (Norwegian Research Council (NFR) project number 223259/F5 at the University of Tromsø.

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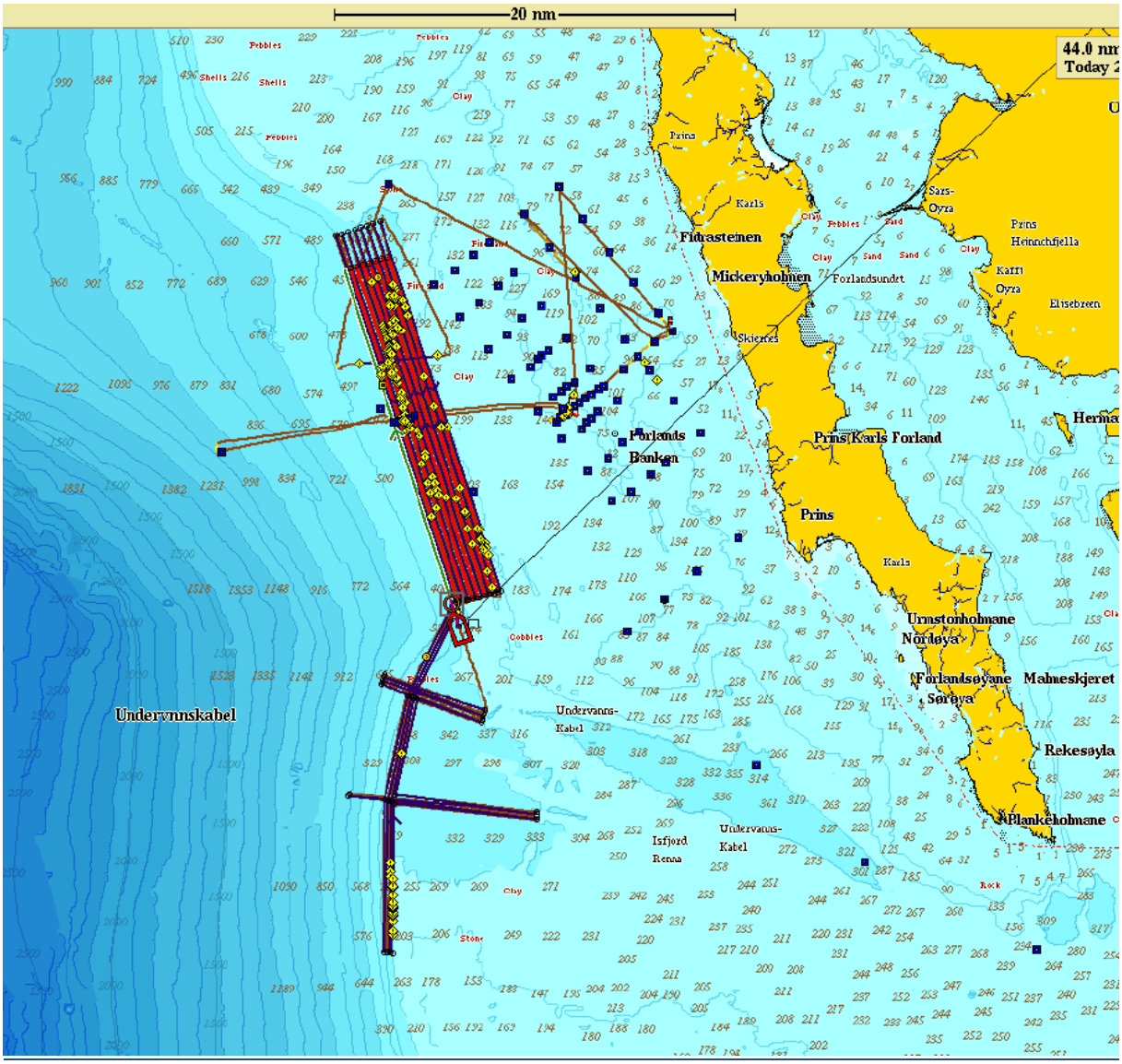
Sahling, H. and cruise participants: R/V Heincke cruise report HE-387. Gas emissions at the Svalbard continental margin, Longyearbyen – Bremerhaven, 20 August–16 September 2012., Berichte, MARUM – Zentrum für Marine Umweltwissenschaften, Fachbereich Geowissenschaften, Universität Bremen, No. 291, 170 pages, 2012.

APPENDIX 1: SURVEY AT THE SHELF EDGE IN SAHLING AREA AND IN THE SOUTH REGION AT THE EDGE OF THE GHSZ



APPENDIX 2: STASJONSLAPPER

CruiseNr	Date (UTC)	Time (UTC)	Logg	Stasjonstype	StNr	Speed	Latitude	Longitude	Depth (m)	Water Temp (°C)	Wind Speed (m/s)	Humidity (%)	Wind dir (deg)
1052016	01.05.2016	14:20:58	6064.15	CTD med vannhenter START	569	0	7816.513802 N	01528.496049 E	123.20	1.2	9.27	86	244
1052016	01.05.2016	14:32:55	6064.26	CTD med vannhenter STOPP	569	0.5	7816.496562 N	01528.638069 E	120.88	1.2	9.46	87	236
1052016	01.05.2016	15:19:38	6070.05	CTD med vannhenter START	570	0.3	7816.384149 N	01500.529989 E	232.35	1.4	13.25	89	234
1052016	01.05.2016	15:35:05	6070.15	CTD med vannhenter STOPP	570	0.5	7816.317631 N	01500.262398 E	227.69	1.4	10.27	92	233
1052016	01.05.2016	17:08:02	6078.76	CTD med vannhenter START	571	0.8	7811.910016 N	01426.993487 E	200.01	1.4	7.88	95	252
1052016	01.05.2016	17:21:04	6078.91	CTD med vannhenter STOPP	571	0.7	7811.973773 N	01427.172853 E	217.32	1.5	7.87	95	253
1052016	01.05.2016	18:04:46	6085.26	CTD med vannhenter START	572	0.6	7809.082252 N	01400.255580 E	296.85	2.1	8.64	96	243
1052016	01.05.2016	18:22:31	6085.52	CTD med vannhenter STOPP	572	1	7809.287996 N	01401.001687 E	284.84	3.3	7.92	96	261
1052016	01.05.2016	19:05:45	6091.31	CTD med vannhenter START	573	1.8	7806.107786 N	01339.778809 E	281.90	0.2	4.83	96	225
1052016	01.05.2016	19:24:00	6091.80	CTD med vannhenter STOPP	573	1.5	7806.506062 N	01341.153343 E	295.99	0.2	5.52	96	220
1052016	01.05.2016	20:01:48	6093.48	CTD med vannhenter START	574	0.8	7807.444463 N	01336.462769 E	352.46	3.7	6.55	96	262
1052016	01.05.2016	20:22:16	6093.75	CTD med vannhenter STOPP	574	0.7	7807.638761 N	01337.349748 E	359.87	3.7	6.07	96	257
1052016	01.05.2016	20:57:20	6095.53	CTD med vannhenter START	575	0.6	7808.815872 N	01332.573400 E	323.90	3.6	6.75	96	253
1052016	01.05.2016	21:15:20	6095.65	CTD med vannhenter STOPP	575	0.3	7808.918504 N	01332.421715 E	326.35	3.4	5.51	96	265
1052016	01.05.2016	21:57:41	6097.23	CTD med vannhenter START	576	0.6	7810.169582 N	01328.975189 E	359.12	1.6	5.46	96	265
1052016	01.05.2016	22:17:44	6097.40	CTD med vannhenter STOPP	576	0.4	7810.287763 N	01328.392196 E	356.47	1.3	5.99	96	262
1052016	01.05.2016	23:01:48	6099.05	CTD med vannhenter START	577	0.3	7811.571184 N	01324.073251 E	28.16	1.6	4.16	96	277
1052016	01.05.2016	23:06:05	6099.08	CTD med vannhenter STOPP	577	0.6	7811.596525 N	01324.133805 E	27.44	1.3	3.59	96	279
1052016	01.05.2016	23:52:05	6105.49	CTD med vannhenter START	578	0.7	7806.461515 N	01305.760506 E	280.69	2	4	92	275
1052016	02.05.2016	00:09:47	6105.67	CTD med vannhenter STOPP	578	0.8	7806.624995 N	01305.559130 E	284.65	1.3	3.84	93	271
1052016	02.05.2016	00:55:51	6112.52	CTD med vannhenter START	579	0.4	7805.718819 N	01233.574846 E	240.07	2.2	3.32	89	253
1052016	02.05.2016	01:11:05	6112.60	CTD med vannhenter STOPP	579	0.1	7805.735811 N	01233.890185 E	240.14	2	4.01	89	247
1052016	02.05.2016	01:55:40	6118.86	CTD med vannhenter START	580	0.2	7806.874938 N	01204.685820 E	243.89	1.3	4.17	88	256
1052016	02.05.2016	02:10:54	6118.93	CTD med vannhenter STOPP	580	0.6	7806.891295 N	01204.505935 E	242.91	1.2	4.4	88	234
1052016	02.05.2016	03:14:01	6128.83	CTD med vannhenter START	581	0.6	7811.260314 N	01122.370563 E	307.32	2.3	0.73	86	239
1052016	02.05.2016	03:30:19	6129.00	CTD med vannhenter STOPP	581	0.5	7811.429372 N	01122.169555 E	308.77	2.5	2.59	85	229

1052016	02.05.2016	04:18:02	6136.38	CTD med vannhenter START	582	0.3	7816.050088 N	01055.545760 E	332.34	3.4	2.24	84	219
1052016	02.05.2016	04:35:18	6136.43	CTD med vannhenter STOPP	582	0.2	7816.050821 N	01055.406629 E	333.94	3.5	2.2	84	310
1052016	02.05.2016	05:43:43	6148.00	CTD med vannhenter START	583	0.7	7827.441499 N	01050.989090 E	0.00	2	2.06	82	320
1052016	02.05.2016	05:51:12	6148.09	CTD med vannhenter STOPP	583	1	7827.507121 N	01051.166376 E	72.96	2.1	1.56	83	299
1052016	02.05.2016	06:28:43	6150.86	CTD med vannhenter START	584	0.5	7825.769911 N	01041.194893 E	146.83	2.1	0.34	83	100
1052016	02.05.2016	06:41:27	6151.08	CTD med vannhenter STOPP	584	1.2	7825.987712 N	01040.939778 E	145.65	2	0.92	82	7
1052016	02.05.2016	08:34:54	6171.36	CTD med vannhenter START	585	1.7	7839.399119 N	00925.847107 E	245.51	3.9	3.02	84	271
1052016	02.05.2016	08:51:24	6171.70	CTD med vannhenter STOPP	585	0.9	7839.705762 N	00925.380189 E	264.62	3.7	2.41	83	240
1052016	02.05.2016	11:20:57	6183.91	CTD med vannhenter START	586	0.5	7833.639939 N	01008.217328 E	92.25	2.2	3.3	87	214
1052016	02.05.2016	11:32:58	6183.99	CTD med vannhenter STOPP	586	1.1	7833.679934 N	01008.145151 E	91.92	2.4	2.37	86	225
1052016	02.05.2016	14:40:58	6199.11	CTD med vannhenter START	587	0.4	7824.251120 N	01032.876510 E	92.91	2.2	1.28	88	304
1052016	02.05.2016	14:49:25	6199.13	CTD med vannhenter STOPP	587	0.4	7824.259447 N	01032.817710 E	94.24	2.3	0.67	88	228
1052016	02.05.2016	15:22:54	6201.86	CTD med vannhenter START	588	0.2	7822.726507 N	01023.669302 E	98.40	3.3	0.64	87	208
1052016	02.05.2016	15:31:33	6201.91	CTD med vannhenter STOPP	588	0.5	7822.763808 N	01023.699553 E	101.02	3.3	0.83	86	221
1052016	02.05.2016	16:37:55	6212.45	CTD med vannhenter START	589	0.2	7829.674957 N	00945.350792 E	204.63	3.8	5.67	92	14
1052016	02.05.2016	16:51:12	6212.55	CTD med vannhenter STOPP	589	0.3	7829.686014 N	00944.927106 E	198.57	4.1	5.9	90	31
1052016	02.05.2016	18:16:29	6225.14	CTD med vannhenter START	590	0.4	7840.033911 N	00935.749866 E	197.10	3.2	5.26	84	357
1052016	02.05.2016	18:29:17	6225.21	CTD med vannhenter STOPP	590	0.5	7840.066773 N	00935.905621 E	196.80	3.2	3.1	85	9
1052016	02.05.2016	19:07:41	6227.42	CTD med vannhenter START	591	0.3	7838.471053 N	00942.448091 E	129.21	3	2.26	83	341
1052016	02.05.2016	19:17:44	6227.55	CTD med vannhenter STOPP	591	1.1	7838.494127 N	00943.069013 E	138.90	3.1	2.46	83	11
1052016	02.05.2016	19:41:10	6229.68	CTD med vannhenter START	592	0.5	7836.814660 N	00949.410341 E	142.89	2.7	3.9	82	343
1052016	02.05.2016	19:51:09	6229.73	CTD med vannhenter STOPP	592	0.5	7836.778333 N	00949.468212 E	143.19	2.5	4.11	83	344
1052016	02.05.2016	20:15:49	6231.58	CTD med vannhenter START	593	0.6	7835.346693 N	00954.840188 E	117.47	2.2	3.26	83	347
1052016	02.05.2016	20:24:16	6231.69	CTD med vannhenter STOPP	593	1	7835.346243 N	00955.354628 E	117.25	2.2	4.46	83	347
1052016	02.05.2016	20:45:21	6233.68	CTD med vannhenter START	594	0.6	7833.762760 N	01001.255827 E	112.92	2.3	4.53	83	334
1052016	02.05.2016	20:54:31	6233.89	CTD med vannhenter STOPP	594	1.1	7833.877794 N	01002.098354 E	102.99	2.4	3.7	84	347
1052016	02.05.2016	21:21:36	6236.56	CTD med vannhenter START	595	0.5	7832.326524 N	01007.452731 E	114.34	2	5.39	84	353
1052016	02.05.2016	21:39:24	6237.02	CTD med vannhenter STOPP	595	5.9	7831.978985 N	01008.758919 E	125.30	2.3	3.9	85	360
1052016	02.05.2016	21:56:07	6238.68	CTD med vannhenter START	596	0.3	7830.738086 N	01014.059043 E	138.48	2	4.13	84	354
1052016	02.05.2016	22:05:32	6238.76	CTD med vannhenter STOPP	596	0.5	7830.730036 N	01014.449501 E	134.47	2.1	4.18	84	0

1052016	02.05.2016	22:22:28	6240.68	CTD med vannhenter START	597	0.3	7829.213511 N	01019.978434 E	131.14	2.1	4.9	85	349
1052016	02.05.2016	22:31:54	6240.75	CTD med vannhenter STOPP	597	0.5	7829.180062 N	01020.235269 E	129.34	2.4	4.97	85	3
1052016	02.05.2016	23:07:42	6245.69	CTD med vannhenter START	598	1	7833.130602 N	01006.071503 E	107.47	2.1	3.21	90	18
1052016	02.05.2016	23:17:57	6245.76	CTD med vannhenter STOPP	598	0.8	7833.165871 N	01005.788044 E	111.19	2.3	0.01	90	172
1052016	03.05.2016	00:18:27	6250.99	CTD med vannhenter START	599	0.3	7829.729717 N	01024.390979 E	107.76	2.1	3.74	85	350
1052016	03.05.2016	00:28:44	6251.03	CTD med vannhenter STOPP	599	0.6	7829.688409 N	01024.354773 E	104.89	2	3.54	85	351
1052016	03.05.2016	01:04:07	6253.16	CTD med vannhenter START	600	0.2	7831.414629 N	01018.793836 E	105.10	2.3	4.2	85	323
1052016	03.05.2016	01:13:14	6253.17	CTD med vannhenter STOPP	600	0.2	7831.432397 N	01018.812542 E	104.54	2.3	2.99	86	345
1052016	03.05.2016	01:50:28	6255.08	CTD med vannhenter START	601	0.4	7832.765478 N	01012.463596 E	100.33	2.2	3.82	87	348
1052016	03.05.2016	02:33:59	6256.63	CTD med vannhenter STOPP	601	0.6	7833.352409 N	01007.111815 E	108.67	2	4.22	84	333
1052016	03.05.2016	02:34:01	6256.63	CTD med vannhenter START	602	0.4	7833.352578 N	01007.110943 E	108.58	2	4.09	84	333
1052016	03.05.2016	02:43:33	6256.67	CTD med vannhenter STOPP	602	0.2	7833.377253 N	01007.071978 E	107.44	2.2	3.22	84	357
1052016	03.05.2016	03:31:01	6257.88	CTD med vannhenter START	603	0.2	7834.410605 N	01005.383917 E	94.99	2.3	4.84	80	358
1052016	03.05.2016	03:39:10	6257.92	CTD med vannhenter STOPP	603	0.3	7834.398106 N	01005.195043 E	94.08	2.2	5.08	81	359
1052016	03.05.2016	04:14:55	6260.06	CTD med vannhenter START	604	0.3	7835.908415 N	00959.053927 E	111.85	2.1	3.95	78	318
1052016	03.05.2016	04:24:15	6260.10	CTD med vannhenter STOPP	604	0.7	7835.938591 N	00959.229818 E	111.06	2.2	2.73	79	324
1052016	03.05.2016	04:58:48	6262.08	CTD med vannhenter START	605	0.1	7837.521278 N	00953.741114 E	137.37	2.4	3.55	79	298
1052016	03.05.2016	05:08:35	6262.11	CTD med vannhenter STOPP	605	0.1	7837.542759 N	00953.840649 E	136.18	2.5	3.14	78	313
1052016	03.05.2016	05:39:17	6264.28	CTD med vannhenter START	606	0.5	7839.153230 N	00946.942405 E	142.20	2.6	3.83	77	302
1052016	03.05.2016	05:50:19	6264.32	CTD med vannhenter STOPP	606	0.3	7839.178532 N	00946.901076 E	144.47	2.7	3.87	76	315
1052016	03.05.2016	06:26:58	6266.42	CTD med vannhenter START	607	0.9	7840.893830 N	00941.513186 E	129.94	3	5.96	79	318
1052016	03.05.2016	06:38:02	6266.52	CTD med vannhenter STOPP	607	0.2	7840.983492 N	00941.572732 E	128.46	3	4.41	79	331
1052016	03.05.2016	07:32:20	6272.70	CTD med vannhenter START	608	0.3	7836.290729 N	01001.297979 E	119.07	2.5	3.79	75	332
1052016	03.05.2016	07:43:09	6272.74	CTD med vannhenter STOPP	608	0.3	7836.311337 N	01001.480968 E	122.03	2.3	4.38	78	331
1052016	03.05.2016	08:02:39	6274.73	CTD med vannhenter START	609	0.3	7834.743934 N	01007.232900 E	82.97	2.3	3.81	76	335
1052016	03.05.2016	08:18:12	6275.19	CTD med vannhenter STOPP	609	3.6	7834.447657 N	01008.627238 E	86.63	2.3	3.76	79	325
1052016	03.05.2016	08:31:52	6275.79	CTD med vannhenter START	610	0.3	7833.996742 N	01010.498337 E	81.94	2.3	4.81	76	312
1052016	03.05.2016	09:23:06	6278.41	CTD med vannhenter STOPP	610	0.4	7833.164325 N	01013.855460 E	92.28	2.2	4.01	77	323
1052016	03.05.2016	09:23:08	6278.41	CTD med vannhenter START	611	0.6	7833.164338 N	01013.856760 E	92.05	2.2	4.07	77	327
1052016	03.05.2016	09:31:11	6278.52	CTD med vannhenter STOPP	611	1.1	7833.207842 N	01014.362750 E	91.02	2.3	3.35	77	356

1052016	03.05.2016	09:53:54	6279.01	CTD med vannhenter START	612	0.4	7833.319196 N	01014.942723 E	92.76	2.4	3.78	77	339
1052016	03.05.2016	10:02:18	6279.10	CTD med vannhenter STOPP	612	1.1	7833.314196 N	01015.391955 E	89.26	2.2	2.31	77	303
1052016	03.05.2016	10:18:57	6280.23	CTD med vannhenter START	613	0.3	7834.159673 N	01011.905077 E	105.94	2.2	2.83	75	285
1052016	03.05.2016	10:27:44	6280.27	CTD med vannhenter STOPP	613	0.4	7834.178851 N	01011.764498 E	105.60	2.2	3.2	72	319
1052016	03.05.2016	11:05:21	6281.70	CTD med vannhenter START	614	0.6	7834.982179 N	01008.611856 E	88.28	2.3	3.13	69	305
1052016	03.05.2016	11:14:25	6281.79	CTD med vannhenter STOPP	614	0.8	7835.053586 N	01008.841931 E	95.92	2.3	2.37	70	332
1052016	03.05.2016	12:42:50	6284.52	CTD med vannhenter START	615	1	7836.550247 N	01002.349163 E	124.02	2.2	0.82	69	348
1052016	03.05.2016	12:53:02	6284.59	CTD med vannhenter STOPP	615	0.6	7836.553195 N	01002.614455 E	121.23	2.4	2.28	65	355
1052016	03.05.2016	13:37:02	6290.93	CTD med vannhenter START	616	0.4	7841.500770 N	00945.456265 E	130.77	2.4	2.81	71	4
1052016	03.05.2016	13:47:53	6290.97	CTD med vannhenter STOPP	616	0.4	7841.513652 N	00945.517968 E	131.70	2.3	3.39	67	358
1052016	03.05.2016	14:24:22	6292.96	CTD med vannhenter START	617	0.6	7839.971377 N	00951.687258 E	110.21	2.9	4.05	65	351
1052016	03.05.2016	14:34:27	6293.04	CTD med vannhenter STOPP	617	1	7839.974909 N	00952.108773 E	114.26	2.8	3.96	66	11
1052016	03.05.2016	14:57:10	6295.09	CTD med vannhenter START	618	0.3	7838.289793 N	00957.559048 E	142.38	2.5	2.06	63	344
1052016	03.05.2016	15:08:08	6295.13	CTD med vannhenter STOPP	618	0.4	7838.280895 N	00957.569229 E	142.80	2.2	1.01	63	335
1052016	03.05.2016	15:24:39	6297.24	CTD med vannhenter START	619	0.6	7836.712246 N	01004.191270 E	134.02	2.2	1.39	66	359
1052016	03.05.2016	15:35:51	6297.34	CTD med vannhenter STOPP	619	0.8	7836.665640 N	01004.530275 E	126.01	2.2	2.81	65	35
1052016	03.05.2016	15:52:25	6299.41	CTD med vannhenter START	620	0.2	7835.095226 N	01010.830368 E	0.00	2.3	3.14	66	338
1052016	03.05.2016	16:03:12	6299.49	CTD med vannhenter STOPP	620	0.7	7835.054022 N	01010.910079 E	133.04	2.3	1.46	61	26
1052016	03.05.2016	16:14:55	6300.33	CTD med vannhenter START	621	0.2	7834.368812 N	01013.136563 E	148.96	2.5	0.3	62	53
1052016	03.05.2016	16:26:43	6300.37	CTD med vannhenter STOPP	621	0.3	7834.392410 N	01013.254540 E	151.67	2.5	2.52	64	326
1052016	03.05.2016	17:08:43	6301.34	CTD med vannhenter START	622	0.8	7833.733805 N	01016.259621 E	138.94	2.4	1.44	65	19
1052016	03.05.2016	17:19:45	6301.39	CTD med vannhenter STOPP	622	0	7833.722899 N	01016.411628 E	133.24	2.4	1.84	66	340
1052016	03.05.2016	17:36:03	6303.41	CTD med vannhenter START	623	0.8	7832.125036 N	01022.495785 E	0.00	2.5	0.85	68	259
1052016	03.05.2016	17:46:10	6303.48	CTD med vannhenter STOPP	623	0.4	7832.141946 N	01022.740882 E	121.21	3.2	0.69	68	307
1052016	03.05.2016	18:06:24	6305.57	CTD med vannhenter START	624	0.9	7830.568058 N	01029.417283 E	98.05	3.1	2.41	69	331
1052016	03.05.2016	18:15:14	6305.68	CTD med vannhenter STOPP	624	0.6	7830.587936 N	01029.901829 E	100.71	3	1.72	67	19
1052016	03.05.2016	18:54:24	6310.71	CTD med vannhenter START	625	0.4	7834.528816 N	01014.932043 E	160.44	2.4	1.35	69	101
1052016	03.05.2016	19:09:46	6310.87	CTD med vannhenter STOPP	625	0.5	7834.385365 N	01014.626246 E	159.83	2.5	1.43	69	76
1052016	03.05.2016	21:26:24	6319.30	CTD med vannhenter START	626	0.7	7834.787727 N	01016.664343 E	130.09	2.3	1.1	68	88
1052016	03.05.2016	21:35:47	6319.40	CTD med vannhenter STOPP	626	0.8	7834.697200 N	01016.689493 E	131.71	2.5	1.41	68	101

1052016	03.05.2016	22:25:05	6324.24	CTD med vannhenter START	627	0.7	7831.214758 N	01033.232594 E	103.89	2.8	2.03	69	66
1052016	03.05.2016	22:34:01	6324.35	CTD med vannhenter STOPP	627	0.8	7831.127800 N	01032.957011 E	107.99	3.1	2.51	70	63
1052016	03.05.2016	23:00:30	6326.37	CTD med vannhenter START	628	0.6	7832.695332 N	01026.942913 E	113.06	2.8	2.83	70	82
1052016	03.05.2016	23:10:02	6326.51	CTD med vannhenter STOPP	628	0.9	7832.585428 N	01026.529765 E	113.79	3.1	4.23	71	82
1052016	03.05.2016	23:28:49	6328.50	CTD med vannhenter START	629	0.2	7834.233163 N	01021.530001 E	147.39	2.8	3.34	70	65
1052016	03.05.2016	23:39:37	6328.63	CTD med vannhenter STOPP	629	1.1	7834.204535 N	01020.886990 E	143.91	2.4	2.43	69	82
1052016	03.05.2016	23:54:33	6329.71	CTD med vannhenter START	630	0.4	7834.961345 N	01017.646030 E	121.60	2.5	4.17	70	86
1052016	04.05.2016	00:04:04	6329.77	CTD med vannhenter STOPP	630	0.9	7834.966009 N	01017.559478 E	121.42	2.6	3.38	70	59
1052016	04.05.2016	00:57:32	6331.11	CTD med vannhenter START	631	0.5	7835.839472 N	01014.693489 E	84.84	2.1	2.35	68	89
1052016	04.05.2016	01:14:32	6331.19	CTD med vannhenter STOPP	631	0.2	7835.867790 N	01014.558502 E	86.69	2.2	2.04	69	71
1052016	04.05.2016	01:31:15	6333.14	CTD med vannhenter START	632	0.5	7837.327778 N	01008.536088 E	101.85	2.1	1.59	68	119
1052016	04.05.2016	01:39:51	6333.18	CTD med vannhenter STOPP	632	0.2	7837.357788 N	01008.575426 E	102.20	2.3	1.72	68	106
1052016	04.05.2016	01:57:19	6335.23	CTD med vannhenter START	633	0.3	7838.961340 N	01002.378005 E	0.00	2.7	2.43	68	95
1052016	04.05.2016	02:09:01	6335.28	CTD med vannhenter STOPP	633	0.1	7838.956595 N	01002.303954 E	158.42	2.8	1.38	68	102
1052016	04.05.2016	02:35:35	6337.46	CTD med vannhenter START	634	0.2	7840.621313 N	00955.818315 E	199.75	3.3	1.22	65	70
1052016	04.05.2016	02:43:15	6337.49	CTD med vannhenter STOPP	634	0.7	7840.601559 N	00955.847328 E	201.39	3.4	2.06	65	96
1052016	04.05.2016	03:00:36	6339.48	CTD med vannhenter START	635	0.5	7842.139308 N	00949.891123 E	111.48	3.2	0.96	67	88
1052016	04.05.2016	03:08:49	6339.51	CTD med vannhenter STOPP	635	0.2	7842.132908 N	00949.779984 E	110.90	2.8	1.8	66	61
1052016	04.05.2016	04:08:58	6348.63	CTD med vannhenter START	636	0.4	7835.800205 N	01022.849131 E	140.29	2.5	7.28	74	152
1052016	04.05.2016	04:18:57	6348.69	CTD med vannhenter STOPP	636	0.9	7835.789046 N	01022.864439 E	139.56	2.3	7.6	80	142
1052016	04.05.2016	04:56:00	6353.67	CTD med vannhenter START	637	0.5	7832.602541 N	01041.824420 E	73.99	2.1	7.75	90	156
1052016	04.05.2016	05:02:45	6353.71	CTD med vannhenter STOPP	637	0.4	7832.639561 N	01041.877340 E	74.24	2.3	8.56	90	144
1052016	04.05.2016	05:39:24	6356.24	CTD med vannhenter START	638	0.5	7834.277116 N	01035.263727 E	66.27	2.2	8.74	88	157
1052016	04.05.2016	05:45:23	6356.28	CTD med vannhenter STOPP	638	0.3	7834.252036 N	01035.382380 E	66.63	2.3	9.38	87	158
1052016	04.05.2016	06:20:24	6358.21	CTD med vannhenter START	639	0.5	7835.694113 N	01029.490583 E	126.40	2.6	9.06	85	151
1052016	04.05.2016	06:31:50	6358.33	CTD med vannhenter STOPP	639	0.6	7835.787345 N	01029.137293 E	145.15	2.3	8.12	88	154
1052016	04.05.2016	07:10:28	6359.22	CTD med vannhenter START	640	0.4	7836.421805 N	01026.414352 E	115.53	2.1	8.69	90	158
1052016	04.05.2016	07:19:56	6359.35	CTD med vannhenter STOPP	640	1.5	7836.486339 N	01025.888310 E	132.33	2.4	7.34	91	169
1052016	04.05.2016	08:03:44	6360.31	CTD med vannhenter START	641	0.6	7837.211027 N	01023.016648 E	92.90	2.2	6.98	89	149
1052016	04.05.2016	08:57:47	6362.37	CTD med vannhenter STOPP	641	0.9	7838.821104 N	01016.896948 E	89.81	2	7.69	87	164

1052016	04.05.2016	08:57:49	6362.37	CTD med vannhenter START	642	0.5	7838.821007 N	01016.895128 E	90.26	2	8.03	87	160
1052016	04.05.2016	09:07:10	6362.51	CTD med vannhenter STOPP	642	0.9	7838.877300 N	01016.281893 E	87.40	2.5	8.47	88	161
1052016	04.05.2016	09:44:54	6364.40	CTD med vannhenter START	643	0.6	7840.421644 N	01011.146451 E	97.54	2.5	8.04	86	162
1052016	04.05.2016	09:54:35	6364.53	CTD med vannhenter STOPP	643	1	7840.516838 N	01010.747728 E	95.95	2.6	7.52	86	152
1052016	04.05.2016	10:36:17	6366.49	CTD med vannhenter START	644	0.6	7841.877341 N	01004.831205 E	89.80	2.6	7.55	84	163
1052016	04.05.2016	10:44:20	6366.60	CTD med vannhenter STOPP	644	1	7841.957431 N	01004.507917 E	88.64	3	7.79	83	160
1052016	04.05.2016	11:20:36	6368.74	CTD med vannhenter START	645	1	7843.561688 N	00958.185625 E	93.09	2.5	6.66	82	158
1052016	04.05.2016	11:30:15	6368.87	CTD med vannhenter STOPP	645	1	7843.659072 N	00957.792237 E	91.59	3	5.88	84	151
1052016	04.05.2016	13:17:00	6379.63	CTD med vannhenter START	646	0.2	7837.147284 N	01030.184405 E	125.14	2.1	5.33	79	177
1052016	04.05.2016	13:27:20	6379.71	CTD med vannhenter STOPP	646	0.2	7837.182974 N	01030.415619 E	124.67	2.1	5.39	80	185
1052016	04.05.2016	14:14:22	6381.04	CTD med vannhenter START	647	0.7	7837.644608 N	01035.047240 E	75.89	2.3	4.1	80	176
1052016	04.05.2016	14:22:24	6381.11	CTD med vannhenter STOPP	647	1.1	7837.683675 N	01034.942253 E	74.60	2.3	3.79	80	183
1052016	04.05.2016	15:08:07	6382.42	CTD med vannhenter START	648	0.3	7838.575625 N	01031.105687 E	140.38	2.2	1.79	79	171
1052016	04.05.2016	15:18:42	6382.50	CTD med vannhenter STOPP	648	0.8	7838.626508 N	01031.248109 E	133.57	2.2	1.97	80	149
1052016	04.05.2016	15:38:15	6384.69	CTD med vannhenter START	649	0.6	7840.118058 N	01025.142855 E	68.38	2.3	1.86	80	183
1052016	04.05.2016	15:44:59	6384.73	CTD med vannhenter STOPP	649	0.3	7840.137034 N	01025.186375 E	67.90	2.4	2.11	80	157
1052016	04.05.2016	16:03:08	6386.79	CTD med vannhenter START	650	0.6	7841.627138 N	01019.113368 E	72.63	2	1.77	80	170
1052016	04.05.2016	16:10:36	6386.85	CTD med vannhenter STOPP	650	0.3	7841.654308 N	01019.150906 E	71.29	2.1	1.95	80	150
1052016	04.05.2016	16:29:29	6389.11	CTD med vannhenter START	651	1.2	7843.304602 N	01012.830946 E	73.16	1.9	0.65	80	24
1052016	04.05.2016	16:36:33	6389.16	CTD med vannhenter STOPP	651	0.9	7843.336236 N	01012.654703 E	72.52	2	0.61	80	98
1052016	04.05.2016	16:54:44	6391.17	CTD med vannhenter START	652	0.6	7844.866437 N	01007.057654 E	75.20	2.8	1.38	80	145
1052016	04.05.2016	19:12:00	6404.84	CTD med vannhenter STOPP	652	0.7	7833.175675 N	01006.057731 E	109.78	2.2	4.39	80	132
1052016	04.05.2016	19:12:01	6404.84	CTD med vannhenter START	653	0.7	7833.175747 N	01006.056830 E	109.42	2.2	4.46	80	132
1052016	04.05.2016	19:21:39	6404.96	CTD med vannhenter STOPP	653	0.8	7833.228706 N	01005.706206 E	114.36	2.2	3.45	80	130
1052016	04.05.2016	19:58:06	6405.66	CTD med vannhenter START	654	0.8	7833.402634 N	01006.829753 E	105.56	2.2	3.72	81	114
1052016	04.05.2016	20:06:42	6405.78	CTD med vannhenter STOPP	654	1.1	7833.460197 N	01006.380917 E	101.81	2.3	3.79	81	110
1052016	04.05.2016	20:29:21	6406.31	CTD med vannhenter START	655	0.5	7833.850587 N	01007.875409 E	94.70	2.1	3.2	82	102
1052016	04.05.2016	20:38:16	6406.39	CTD med vannhenter STOPP	655	0.8	7833.912405 N	01007.696817 E	95.17	2.1	4.86	82	80
1052016	04.05.2016	21:18:59	6407.21	CTD med vannhenter START	656	0.7	7833.943142 N	01010.701113 E	80.56	2.1	3.22	81	52
1052016	04.05.2016	21:29:56	6407.28	CTD med vannhenter STOPP	656	0.2	7833.959222 N	01010.444909 E	81.49	2.1	1.91	80	77

1052016	04.05.2016	21:53:10	6407.80	CTD med vannhenter START	657	0.5	7834.136638 N	01012.076092 E	102.73	2.1	1.53	80	82
1052016	04.05.2016	22:02:02	6407.98	CTD med vannhenter STOPP	657	1	7834.200973 N	01011.596996 E	104.88	2.2	1.52	80	175
1052016	04.05.2016	22:26:39	6408.57	CTD med vannhenter START	658	0.7	7834.342560 N	01013.202893 E	151.83	2.1	2.77	80	146
1052016	04.05.2016	22:38:05	6408.69	CTD med vannhenter STOPP	658	0.9	7834.420490 N	01012.934823 E	143.72	2.2	3.44	80	153
1052016	04.05.2016	23:15:28	6409.40	CTD med vannhenter START	659	0.5	7834.530735 N	01014.992297 E	161.67	2.2	5.32	75	152
1052016	04.05.2016	23:27:11	6409.53	CTD med vannhenter STOPP	659	1	7834.593697 N	01014.529493 E	157.45	2.4	4.57	75	150
1052016	04.05.2016	23:52:38	6410.24	CTD med vannhenter START	660	0.2	7834.792342 N	01016.785843 E	129.71	2.2	4.54	71	142
1052016	05.05.2016	00:03:27	6410.37	CTD med vannhenter STOPP	660	0.4	7834.869521 N	01016.401915 E	122.88	2.3	4.74	74	145
1052016	05.05.2016	00:25:45	6410.80	CTD med vannhenter START	661	0.3	7834.945875 N	01017.996926 E	0.00	2.1	5.79	71	128
1052016	05.05.2016	00:36:06	6410.93	CTD med vannhenter STOPP	661	0.8	7835.050732 N	01017.599099 E	131.05	2.2	5.67	70	131
1052016	05.05.2016	01:09:16	6412.37	CTD med vannhenter START	662	0.1	7835.818980 N	01022.979080 E	139.08	2.1	1.62	72	322
1052016	05.05.2016	01:19:17	6412.41	CTD med vannhenter STOPP	662	0.1	7835.846559 N	01023.107517 E	137.86	2.1	1.68	71	310
1052016	05.05.2016	01:44:21	6413.43	CTD med vannhenter START	663	0.6	7836.443702 N	01026.514256 E	117.07	2	7.63	70	139
1052016	05.05.2016	01:53:25	6413.55	CTD med vannhenter STOPP	663	1.1	7836.536007 N	01026.231150 E	124.58	2.4	6.33	69	131
1052016	05.05.2016	02:37:37	6414.62	CTD med vannhenter START	664	0.5	7837.164532 N	01030.207249 E	124.50	2	5.5	72	159
1052016	05.05.2016	02:46:44	6414.68	CTD med vannhenter STOPP	664	0.4	7837.210619 N	01030.359887 E	122.51	2	4.53	69	139
1052016	05.05.2016	03:13:07	6416.30	CTD med vannhenter START	665	0.5	7837.668267 N	01034.875917 E	75.98	2.3	7.08	68	142
1052016	05.05.2016	03:19:40	6416.35	CTD med vannhenter STOPP	665	0.5	7837.691786 N	01034.882807 E	74.94	2.4	6.3	68	144
1052016	05.05.2016	05:01:43	6432.22	CTD med vannhenter START	666	0.3	7845.065220 N	00924.624741 E	250.80	3.7	4.67	64	152
1052016	05.05.2016	05:16:51	6432.28	CTD med vannhenter STOPP	666	0.1	7845.038995 N	00924.655104 E	250.61	3.7	5.56	67	165
1052016	05.05.2016	06:06:27	6433.66	CTD med vannhenter START	667	0.8	7845.035019 N	00924.751780 E	250.97	3.6	5.68	68	159
1052016	05.05.2016	06:17:35	6433.80	CTD med vannhenter STOPP	667	0.4	7845.125155 N	00924.275049 E	245.63	3.8	5.93	66	160
1052016	05.05.2016	07:26:36	6443.47	CTD uten vann START	668	0.4	7835.940186 N	00912.087972 E	489.92	4.3	8.57	68	129
1052016	05.05.2016	07:47:47	6443.65	CTD uten vann STOPP	668	0.3	7835.807223 N	00912.343851 E	487.53	4.3	9.76	65	131
1052016	05.05.2016	07:57:47	6444.54	Multibeam survey START	669	9.7	7836.074015 N	00916.130857 E	460.83	4.4	10.87	67	126
1052016	06.05.2016	06:31:13	6646.67	Multibeam survey STOPP	669	0.1	7836.265738 N	00924.725996 E	389.60	4.6	9.62	87	121
1052016	06.05.2016	06:50:31	6646.83	CTD uten vann START	670	0.4	7836.213718 N	00924.536534 E	391.52	4.7	9.84	86	113
1052016	06.05.2016	06:50:38	6646.83	CTD uten vann STOPP	670	0.4	7836.213990 N	00924.531894 E	390.80	4.7	9.5	86	120
1052016	06.05.2016	07:17:56	6650.01	Multibeam survey START	671	10.2	7839.185943 N	00919.595059 E	419.85	4.7	10.52	87	111
1052016	06.05.2016	07:28:20	6651.36	Multibeam survey STOPP	671	0.9	7840.314354 N	00918.234165 E	454.10	4.5	9.17	87	127

1052016	06.05.2016	07:28:29	6651.36	CTD uten vann START	672	1.2	7840.312101 N	00918.243827 E	454.04	4.5	9.44	87	128
1052016	06.05.2016	07:50:23	6651.71	CTD uten vann STOPP	672	1.6	7840.323579 N	00919.689025 E	457.32	4.1	9.9	85	123
1052016	06.05.2016	07:58:43	6652.09	CTD med vannhenter START	673	0.8	7840.327218 N	00918.631495 E	463.93	4.1	8.61	84	112
1052016	06.05.2016	08:27:36	6652.61	CTD med vannhenter STOPP	673	0.5	7840.342093 N	00921.159362 E	443.81	4.1	8.91	83	118
1052016	06.05.2016	09:50:00	6663.47	CTD med vannhenter START	674	0.4	7833.082187 N	00925.991591 E	410.88	4.7	10.52	72	132
1052016	06.05.2016	11:11:15	6672.58	CTD med vannhenter STOPP	674	2	7831.687222 N	00843.053513 E	968.80	4.2	9.34	73	137
1052016	06.05.2016	11:11:16	6672.58	CTD med vannhenter START	675	2	7831.687454 N	00843.050924 E	968.80	4.2	9.69	73	137
1052016	06.05.2016	11:49:01	6673.29	CTD med vannhenter STOPP	675	1.1	7832.180754 N	00842.542773 E	937.96	4.3	10.71	75	135
1052016	06.05.2016	12:51:21	6682.27	CTD med vannhenter START	676	0.7	7833.244486 N	00927.144034 E	403.92	4.6	9.47	67	121
1052016	06.05.2016	13:15:47	6682.49	CTD med vannhenter STOPP	676	0.5	7833.343591 N	00927.673789 E	400.60	4.7	9.64	68	114
1052016	06.05.2016	13:28:59	6682.74	CTD med vannhenter START	677	0.4	7833.212917 N	00928.475417 E	390.57	4.6	10.26	67	115
1052016	06.05.2016	13:51:58	6682.95	CTD med vannhenter STOPP	677	0.7	7833.304555 N	00928.589012 E	387.94	4.6	9.62	65	112
1052016	06.05.2016	14:37:26	6683.49	CTD med vannhenter START	678	0.2	7833.302190 N	00929.688717 E	384.76	4.7	11.5	65	119
1052016	06.05.2016	15:01:32	6683.67	CTD med vannhenter STOPP	678	0.7	7833.397742 N	00929.962618 E	379.03	4.7	10.26	65	109
1052016	06.05.2016	15:13:48	6683.93	CTD med vannhenter START	679	0.1	7833.373177 N	00931.060061 E	364.50	4.6	8.88	66	111
1052016	06.05.2016	15:36:07	6684.09	CTD med vannhenter STOPP	679	1.2	7833.405322 N	00931.420505 E	357.81	4.7	10.17	64	104
1052016	08.05.2016	00:59:00	6980.48	CTD uten vann START	680	0.7	7827.127666 N	00937.823175 E	404.95	4.6	3.85	66	82
1052016	08.05.2016	01:20:32	6980.70	CTD uten vann STOPP	680	0.3	7827.266304 N	00937.255903 E	404.98	4.8	2.80	67	88
1052016	08.05.2016	14:37:12	7102.73	CTD med vannhenter START	681	0.7	7833.188871 N	00927.269272 E	405.41	4.5	3.33	73	211
1052016	08.05.2016	15:05:50	7102.89	CTD med vannhenter STOPP	681	0.4	7833.209820 N	00927.326400 E	404.92	4.9	2.41	73	283
1052016	08.05.2016	15:20:04	7103.06	CTD med vannhenter START	682	0.5	7833.235208 N	00927.993501 E	396.33	4.8	1.88	67	305
1052016	08.05.2016	15:43:34	7103.20	CTD med vannhenter STOPP	682	1.1	7833.220714 N	00928.117982 E	394.55	4.9	2.72	67	276
1052016	08.05.2016	15:55:34	7103.47	CTD med vannhenter START	683	0.1	7833.348041 N	00928.622995 E	388.11	4.9	1.74	66	299
1052016	08.05.2016	16:19:58	7103.63	CTD med vannhenter STOPP	683	0.7	7833.281790 N	00928.480641 E	388.87	4.9	1.61	66	264
1052016	08.05.2016	16:28:34	7103.81	CTD med vannhenter START	684	0.5	7833.355224 N	00929.287524 E	386.47	4.8	1.77	66	314
1052016	08.05.2016	17:37:14	7110.32	CTD med vannhenter STOPP	684	0.0	7833.408087 N	00929.836408 E	380.76	4.4	1.20	69	278
1052016	08.05.2016	17:37:16	7110.32	CTD med vannhenter START	685	0.1	7833.408049 N	00929.836295 E	380.67	4.4	1.71	69	259
1052016	08.05.2016	17:55:08	7110.37	CTD med vannhenter STOPP	685	0.2	7833.399238 N	00929.958519 E	379.55	4.4	0.64	70	305