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RV SONNE
Short Cruise Report
Cruise SO294

Vancouver (Canada) – Port Hueneme (USA)

13.09.2022 - 27.10.2022

Chief Scientist: Michael Riedel

Captain: Tilo Birnbaum

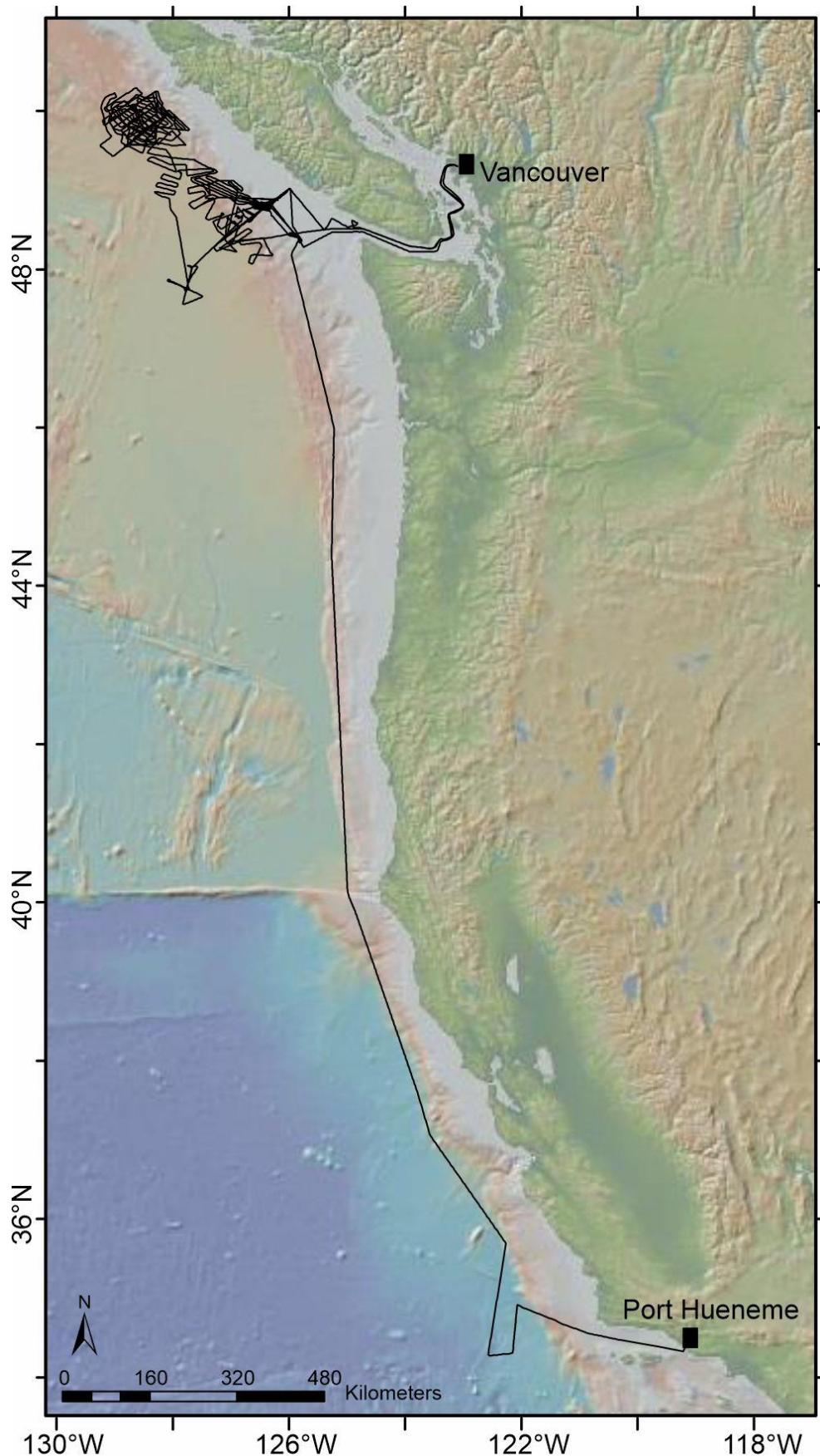


Figure 1: cruise track of SO294.

Objectives

CLOCKS: Earthquakes at subduction zones with magnitudes M>8.5 are among the most dangerous earthquakes worldwide. The Cascadia subduction zone is one of the regions for which such an earthquake is expected in the near future. Expedition SO294 focuses on the behaviour of the Cascadia seismogenic zone and the detailed tectonic structure along the deformation front off Vancouver Island. The transition to the Explorer Plate along the Nootka fault and the spatial delineation of subduction have not been mapped accurately to date. The aim of SO294 is to determine the delineation of the seismogenic zone, particularly the seaward limit. To do this, seismic reflection data will be used along with multibeam data to map the deformation structure and fragmentation of the deformation front. Thermal data will be combined with seismic methods to determine the temperature at the plate boundary. Magnetotelluric data will be acquired to determine the eastern limit of the locked zone and fluid accumulations at the lower limit of the seismogenic zone. All this data will help to answer the question if during previous earthquakes the seismogenic zone has ruptured to the foot of the accretionary wedge. The extent of Explorer Plate subduction north of the Nootka fault is currently poorly understood. Long-term earthquake monitoring as well as active-source seismic tomography will be used to determine the location of the plate boundaries. In addition, an estimate of the earthquake rate at the Explorer Plate is obtained from sediment sampling at landslides. This would allow geohazards from subduction earthquakes off Cascadia to be better constrained, and additionally an estimate of the tsunami hazard be determined. The investigation is based on collaboration with the Geological Survey of Canada, University of Alberta, Japan Agency of Marine-Earth Science & Technology (JAMSTEC), and Ocean Networks Canada (ONC).

Cascadia-CO₂ (CCO₂): In order to limit the global temperature-increase to 1.5° C, the emission of 580 Gt of CO₂ needs to be avoided within the next 30 years. The typical carbon storage application utilizes sandstone formations (depleted gas and oil reservoirs) where the CO₂ will be stored as a mobile cloud within the porosity of the host rock. In contrast, the new process of CO₂ storage in basalt formations will fix the carbon as a solid carbonate as the result of a mineralization process. First onshore trials (CarbFix, Wallula) have shown that about 90% of the injected CO₂ has been mineralized within two years. Marine basalt formations offer large volumes of porous rock for this process. The project CCO₂ aims to contribute to pre-site surveys for a test injection of CO₂ into basalt formations in the Cascadia Basin, Canada. Beside velocity-depth models, lateral changes in the porosity of the basalt formations will be determined. For this purpose, ocean-bottom seismometers will be deployed, that will record not only compressional but also converted shear wave events. Along two orthogonal lines, velocity-depth models will be developed for V_p and V_s. Undertaken over several years, fluid flow cross-hole tests between IODP wells have shown that there is a distinct anisotropy in the basalt layer. This will be tested with the V_p and V_s models. In the following new routines will be established to deduce the porosity distribution from the V_p to V_s ratios. The results will be made available for CO₂ injection modelling. These experiments lay ground for future investigations in volcanic provinces along the NW European continental margin offshore Norway.

Narrative

Expedition SO294 started on September 12 with regular boarding procedures in the port of Vancouver, Canada. Prior to the arrival of the main science-team, a team of six members from GEOMAR, two from JASCO, and two from LGL and Toyon prepared various components of the equipment to be used during SO294.

R/V SONNE departed on Tuesday, September 13 at 02:00 in the morning from the Pembina terminal in North Vancouver and started its journey to the region offshore Vancouver Island. On Tuesday, September 13 at 10:00, the pilot disembarked off Victoria Island and R/V SONNE continued its way out of the Juan de Fuca Strait. Due to sever fog and low visibility, no proper marine mammal watch was possible that would have allowed a possible start of multibeam surveying during day-light hours around a region called Swiftsure Bank, known for abundant natural gas seepage. We therefore switched our plan and continued our way to the first site for testing the acoustic releasers. We arrived on station on Wednesday, September 14 at 00:45 at night. Three cages with releasers were prepared and the test went well, with all releasers functional. After completion of the test we started our first multibeam and sediment echo sounder surveying while preparation of seismometers continued. We were then heading to the first deployment site for a long-term OBS and within one day we completed deploying four OBS, three OBPs, as well as eight OBMT stations. After that, the SONNE headed back to Vancouver to pick up needed spares and scientific equipment, esp. the broad band seismometers. On our 2nd way out of the port of Vancouver back to the scientific study site, we had an opportunity to map gas flares across Swiftsure Bank again. We successfully completed recording the data from 14:00 to 19:30 implementing the mandated mitigation measures. Deployments of the remaining OBMT stations started at midnight, September 18, and was followed by deploying the remaining three OBS and OBP monitoring stations as well as the six broad band seismometers.

Using the weather conditions and other operational constraints, we headed out to the Cascadia Basin to complete the CCO2-Experiment. We started with mapping a seamount (referred to as Mama Bare) and started a deployment sequence of 22 OBS across the ONC study region. The six G-Gun array was deployed, followed by our streamer and the PAM system. Use of the seismic sources started at 15:30 on September 21. The airgun array was ramped up to full strength over the course of 20 minutes. Two refraction seismic profiles were successfully completed. After recovery of all seismic gear, the OBS stations were recovered, data copied from the recorders and all units refurbished for the next deployment in the Winona Basin.

On September 22, we participated in the first Ship-2-Shore event in collaboration with our collaborators ONC and GSC. Nearly 100 students from two schools from the West Coast of Vancouver Island participated. Two First Nations represented by the Nuu-Chah-Nulth Tribal council are within the region of the two schools, thus we were particularly happy to be able to participate in this online session as contribution to our outreach-program with the First Nations of Vancouver Island.

After completion of the CCO2 experiment, we headed north to the Explorer plate and added several tracks across the Nootka Fault zone to image the fault trace and mud volcanoes. At the end of this transit, we deployed the first of 11 long-term OBS to monitor seismicity on the Explorer Plate. Within the following two days, all OBS were deployed and multibeam mapping of the region was achieved in between stations.

Prior to deploying short-term OBS for an active-source seismic experiment, we took four cores at submarine slope failures with the aim to record small slump events that may be correlated to the large subduction zone earthquakes. Despite increasing wind and wave heights we deployed successfully all 20 short-term OBS but could not immediately follow with seismic data acquisition. We used the weather down time to complete multibeam mapping of the Winona Basin.

Once weather had calmed, we deployed the airgun array, streamer, and PAM system and started our two seismic refraction profiles on the Explorer Plate and Winona Basin. The data collection with the large airgun array took ~36 hours, after which we swapped the array with a single GI gun. We continued to collect seismic reflection data for 4 days until Tuesday, October 4.

Despite some challenging wind conditions, we started the OBS recovery sequence on October 4 and all 20 stations were successfully recovered by October 6. We then spent three days alternating science operations with heat probe measurements during night and gravity coring during the day. Overall, 29 heat flux measurements along the two main seismic refraction profiles were completed and we took 8 cores at three different slope failure deposits. In the evening of October 9, we started our transit south to the central study region off Vancouver Island on the Juan de Fuca plate. We used the transit to fill gaps in the multibeam coverage and added a triangulation to define the location of one of the long-term OBS, which had failed at the first time.

During some deteriorating weather, we postponed the start of the seismic data acquisition and added instead more multibeam mapping and when wind & waves allowed, we deployed the remaining 12 OBS along a seismic transect that follows the geometry of the OBMT profile. On Wednesday, October 12, we finally were able to deploy the single GI gun, streamer and PAM system and started our sequence of MCS data collection along and across the deformation front of the accretionary prism of the Juan de Fuca Plate. A total of 15 profiles imaging the fault-patterns of the fragmented deformation front were acquired. On Friday, October 14, we exchanged the GI gun with the G-gun array and acquired seismic data for ~22 hours to complete the last refraction seismic experiment during SO294.

After recovery of all seismic gear, we started the OBMT station recovery on Saturday, October 15, at the shallowest and eastern-most portion of the transect. All MT and OBS gear along the transect was recovered by October 18. One OBMT station was not releasing itself from the seafloor but was recovered with the use of the ship's own ocean floor observation system (OFOS), for which we were granted special permission by the Canadian authorities within two days. After a final heat-probe transect across the deformation front (night operation from October 17-18) we mapped the upper slope of Father Charles Canyon and added two survey regions for repeat pockmark imaging and habitat mapping in collaboration with the Canadian DFO and scientists from the CAU in Kiel.

On October 20, official earthquake awareness and "shake-out" day in British Columbia, we participated in a second Ship-to-Shore event in collaboration with the GSC and ONC. This time, five classes from two different schools on Vancouver Island with 110 students attended simultaneously in the online session.

The remaining days of the cruise were used to also prepare to pack all gear, and switching the position of our containers on deck, which had to be done during calm sea state.

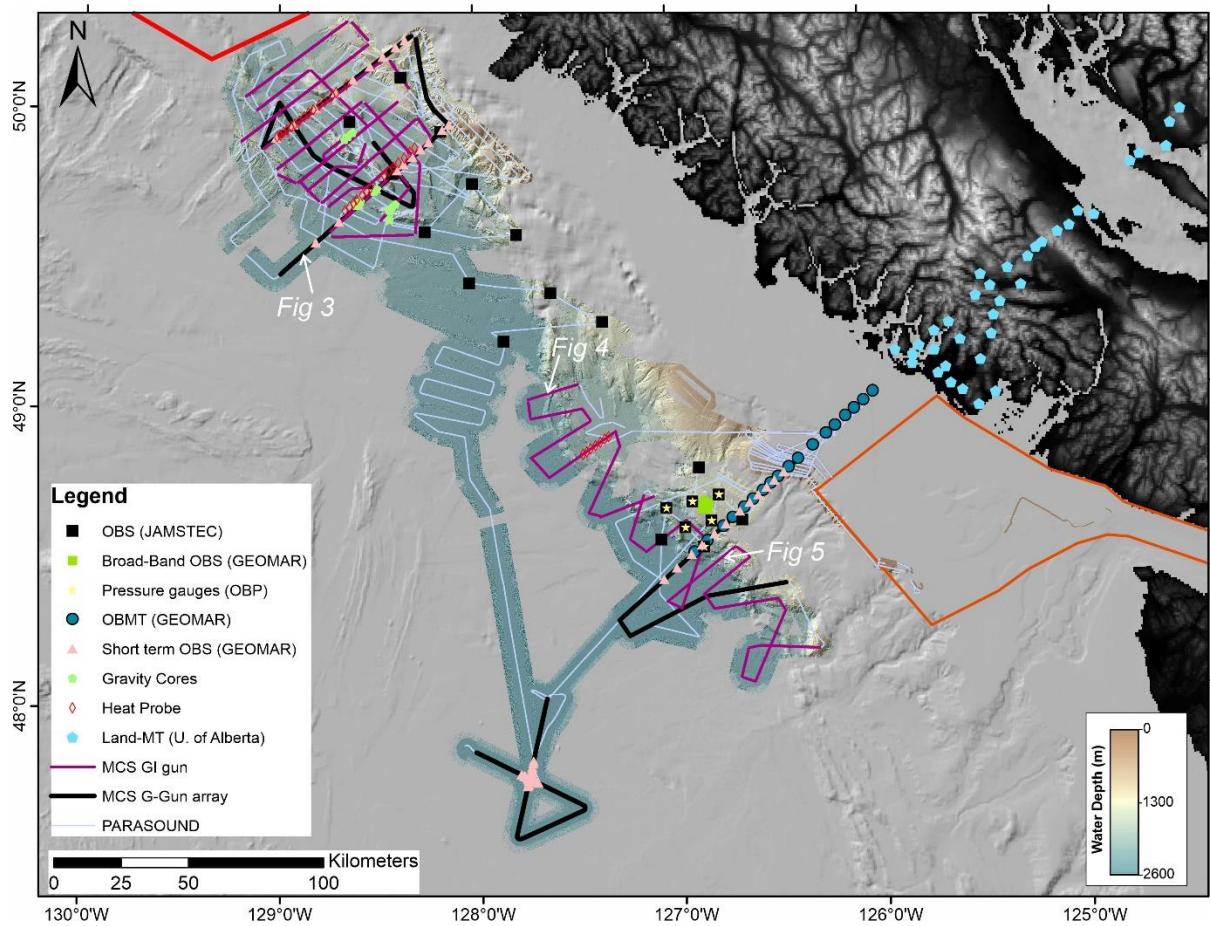


Figure 2: Station locations and profiles acquired together with EM122 and Em710 multibeam bathymetry coverage of the expedition SO294. Basemap contains data from GMRT (Ryan et al., 2009) in grey-scale.

Ryan, W.B.F., S.M. Carbotte, J.O. Coplan, S. O'Hara, A. Melkonian, R. Arko, R.A. Weissel, V. Ferrini, A. Goodwillie, F. Nitsche, J. Bonczkowski, and R. Zemsky (2009), Global Multi-Resolution Topography synthesis, *Geochem. Geophys. Geosyst.*, 10, Q03014, doi: 10.1029/2008GC002332

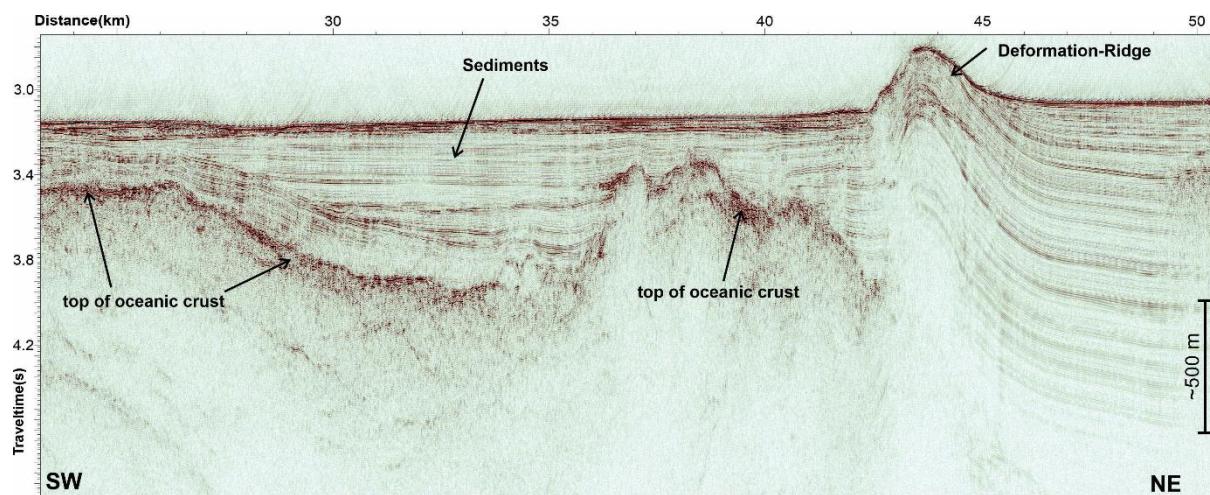


Figure 3: Example of a seismic line from the Winona Basin acquired with the G-gun array showing strongly changing topography of the oceanic crust and sedimentary deformation ridges (Location see Fig. 1).

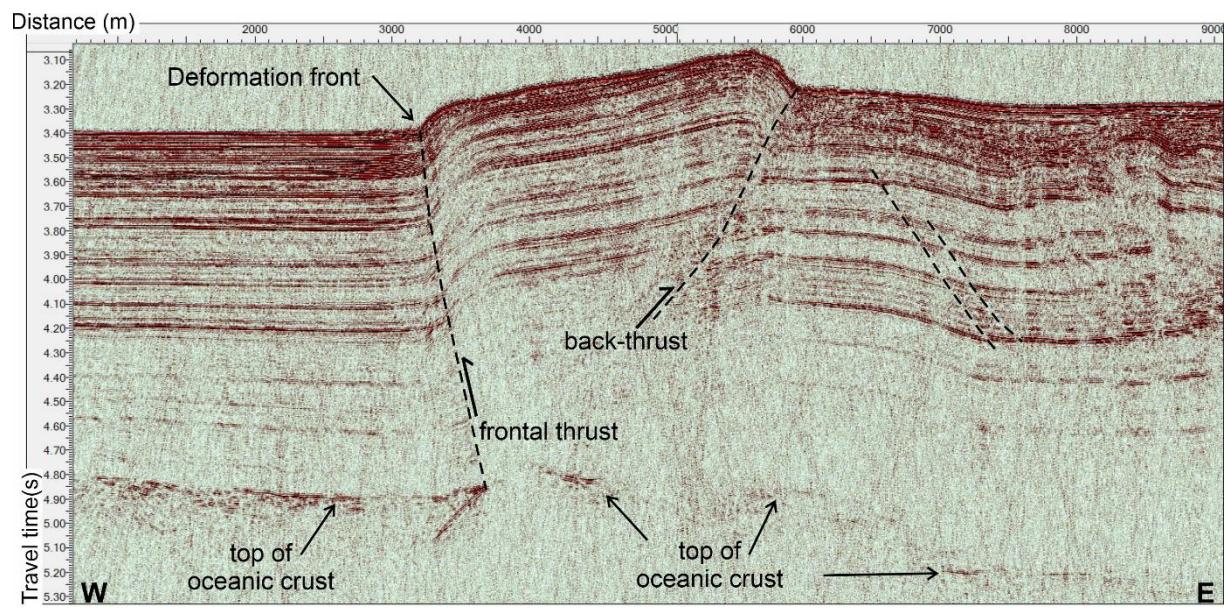


Figure 4: Example of a seismic section at the northern part of the deformation front with strongly pronounced frontal thrust (Location see Fig. 1).

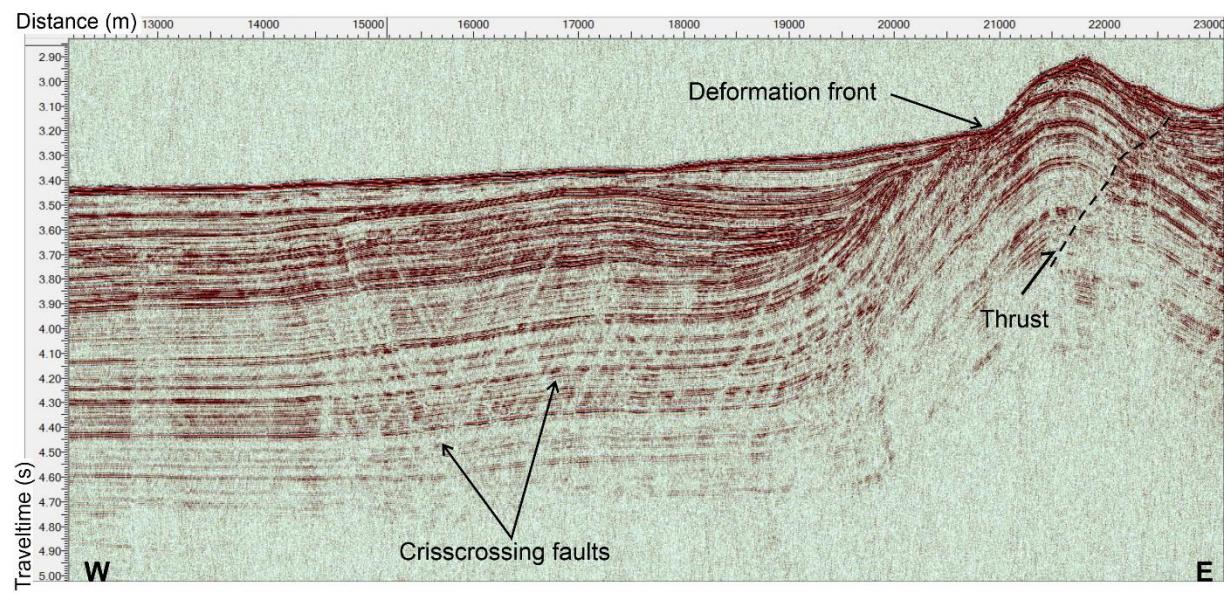


Figure 5: Example of a seismic section with clearly pronounced, crisscrossing proto-faults, west of the deformation front. A seaward dipping thrust is visible at the eastern end of the seismic section (Location see Fig. 1).

Acknowledgements

We acknowledge the Nuu-Chah-Nulth Tribal council (NTC) and their member Nations as well as the Quatsino and Pacheedaht Nations on whose marine traditional territories we conducted our science. We thank Eric Angel and Doug Neff from the NTC for their participation and support in planning this expedition and providing helpful guidance on everything from outreach and communications to connecting us with local geohazard modelling teams.

We would like to thank the Government of Canada for granting opportunity to work within their territorial waters. DFO and DND in Canada are thanked for the efficient permitting process for this complex undertaking. In particular, we would like to extend our special thanks to Mr. El-Haddad from Global Affairs Canada in Ottawa.

We are grateful for the continued strong support by colleagues from the Geological Survey of Canada office in Sidney, BC, foremost Michelle Côté, Andrew Schaeffer, Kelin Wang, Malaika Ulmi, Sonia Talwar, Randy Enkin, and Kristin Rohr. We also appreciate the support from DFO scientists Tammy Norgard and Cheriesse Du Preez. Ocean Networks Canada (ONC) contributed significantly to our outreach activities for which we are especially grateful to their education and engagement team. Scientific support, also for outreach and permitting efforts, was provided by Martin Scherwath, ONC.

The ambitious planning and preparation for SO294 related to the transportation of infrastructure and the safe travel of the scientific and nautical crews would not have been possible without the excellent shore-based administrative and logistical support of the German Research Fleet Coordination Centre, Universität Hamburg, the shipping company Briese Research, LPL-Logistics, the port agents in Vancouver and Port Hueneme, and the Project Management Jülich (PtJ). We also gratefully acknowledge the support of the Embassy of the Federal Republic of Germany in Ottawa and the German Consulate in Vancouver.

Special Thanks go to Captain Tilo Birnbaum and his entire crew for managing the complicated logistics of the scientific groups, the deployment of equipment, and for their skillful execution of the complex scientific program, especially the successful use of the OFOS for the recovery of our failed OBMT station. They contributed exceptionally to the pleasant and professional atmosphere onboard RV SONNE including a strict discipline in adhering to the safety and hygiene measures related to COVID-19.

The cruise and scientific work is financed by the Federal Ministry of Education and Research (BMBF) under grant 03G0294A (CLOCKS), with extra funding and use of large-scale equipment from GEOMAR. Additional funding is provided through the Japan Society for the promotion of Science (JSPS), Japan Agency for Marine-Earth Science and Technology (JAMSTEC), University of Tokyo, Kobe University, Geological Survey of Canada (Public Safety Geoscience Program), Ocean Networks Canada, and the University of Alberta for the land MT-Program.

Participants

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GSC – Geological Survey of Canada – Pacific

JAMSTEC – Japan Agency for Marine-Earth Science and Technology

JASCO Applied Sciences

LGL Limited, Environmental Consultants

NME – Nippon Marine Enterprises

NOB - National Observatory Brazil

U. Hamburg – Universität Hamburg

U. Ottawa – University of Ottawa



Figure 6: Picture of the SO294 Science team.

Seismic Profile List

Station No. SO294	Profile	Date 2022	Time SOL [UTC]	Time EOL [UTC]	Latitude SOL [N]	Longitude SOL [W]	Latitude EOL [N]	Longitude EOL [W]	FFN Start	FFN End	Remarks
69	P1000	20.09.	23:12:00	05:00	48°01.300'	127°40.200'	47°34.258'	127°49.713'	1108	1455	Gun Array, 60s
69	P1001	21.09.	05:20:00	08:15	47°33.541'	127°48.400'	47°39.012'	127°29.784'	1475	1651	Gun Array, 60s
69	P1002	21.09.	08:30:00	13:30	47°50.914'	128°01.517'	47°39.908'	127°29.725'	1665	1966	Gun Array, 60s
135	P2000	29.09.	02:41:00	13:15	49°26.248'	129°00.655'	49°55.851'	128°08.783'	3131	3765	Gun Array, 60s
135	P2001	29.09.	13:30:00	17:56	49°56.930'	128°08.200'	50°03.072'	128°14.707'	3780	4046	Gun Array, 60s
135	P2002	29.09.	18:15:00	05:30	50°14.282'	128°19.153'	49°52.097'	129°05.345'	4065	4740	Gun Array, 60s
135	P2002	29.09.	01:40:00	04:19	49°54.864'	128°59.412'	49°55.098'	128°59.080'	4197	4669	Gun Array, 60s
135	P3000	30.09.	05:47:00	07:45	49°52.725'	129°06.427'	50°01.003'	129°02.110'	5007	5244	Gun Array, 30s
135	P3001	30.09.	08:15:00	15:53	50°00.996'	128°59.956'	49°40.320'	128°19.808'	5304	6220	Gun Array, 30s
135	P3002	30.09.	16:45:00	20:00	49°43.064'	128°18.715'	49°53.206'	128°31.085'	6323	6714	Gun Array, 30s
136	P4001	30.09.	22:24:40	00:52	49°59.877'	128°38.205'	50°07.480'	128°49.897'	7375	8604	GI Gun, 10 s
136	P4002	01.10.	01:02:39	04:11	50°07.523'	128°51.057'	49°59.696'	129°06.979'	8672	9805	GI Gun, 10 s
136	P4003	01.10.	05:13:00	10:55	50°02.510'	129°10.277'	50°17.357'	128°38.910'	10175	12226	GI Gun, 10 s
136	P4004	01.10.	11:12:00	12:13	50°16.959'	128°37.182'	50°14.012'	128°32.285'	12325	12696	GI Gun, 10 s
136	P4005	01.10.	12:28:00	19:47	50°12.681'	128°32.607'	49°53.357'	129°12.006'	12783	15420	GI Gun, 10 s
136	P4005	01.10.	15:21:00	16:05	50°04.496'	128°49.243'	50°02.560'	128°53.191'	13823	14090	shut down, no repeat
136	P4006	01.10.	21:45:00	04:38	49°52.032'	129°04.738'	50°09.878'	128°27.365'	16124	18604	GI Gun, 10 s
136	P4007	02.10.	04:50:00	06:5	50°09.832'	128°26.125'	50°03.864'	128°19.844'	18678	19404	GI Gun, 10 s
136	P4008	02.10.	07:12:00	13:13	50°02.716'	128°20.592'	49°45.720'	128°53.082'	19540	21697	GI Gun, 10 s
136	P4008	02.10.	11:03:00	11:43	49°51.764'	128°41.539'	49°50.003'	128°44.887'	20915	21157	Data gap, repeat in P5018
136	P4008	02.10.	12:42:26	13:11	49°47.223'	128°50.243'	49°45.835'	128°52.867'	21511	21682	shut down, repeat in P5018
136	P4009	02.10.	13:23:54	14:28	49°44.966'	128°53.147'	49°41.364'	128°47.840'	21757	22147	GI Gun, 10 s
136	P4010	02.10.	14:39:00	20:41	49°41.232'	128°45.804'	49°57.552'	128°18.101'	22212	24383	GI Gun, 10 s
136	P4011	02.10.	20:53:20	21:45	49°57.562'	128°16.838'	49°54.232'	128°13.329'	24455	24764	GI Gun, 10 s
136	P4012	02.10.	21:56:40	04:00	49°53.492'	128°13.471'	49°36.115'	128°43.131'	24834	27014	GI Gun, 10 s
136	P5013	03.10.	04:23:00	08:06	49°34.330'	128°43.673'	49°34.606'	128°19.007'	29087	30424	GI Gun, 10 s
136	P5014	03.10.	08:19:00	11:48	49°35.057'	128°18.190'	49°48.454'	128°16.662'	30502	31759	GI Gun, 10 s
136	P5014	03.10.	11:05:03	11:31	49°45.619'	128°16.978'	49°47.301'	128°16.792'	31498	31650	shut down, no repeat
136	P5015	03.10.	11:56:12	11:49	49°48.885'	128°16.871'	49°48.454'	128°16.662'	31803	31759	GI Gun, 10 s
136	P5015	03.10.	14:55:56	15:35	49°57.366'	128°28.496'	49°59.266'	128°31.118'	32882	33119	shut down, no repeat
136	P5016	03.10.	16:23:00	20:50	50°01.122'	128°34.862'	49°47.857'	129°00.861'	33407	35009	GI Gun, 10 s
136	P5017	03.10.	21:13:00	21:58	49°46.685'	129°00.260'	49°45.095'	128°55.056'	35142	35414	GI Gun, 10 s
136	P5018	03.10.	22:05:30	03:40	49°45.276'	128°54.085'	49°54.258'	128°36.860'	35458	37471	GI Gun, 10 s
136	P5018	04.10.	00:06:00	02:17	49°51.681'	128°41.815'	49°50.026'	128°44.918'	36184	36970	shut down, repeat
136	P5019	04.10.	04:18:00	05:11	49°52.695'	128°33.540'	49°48.635'	128°35.688'	37695	38021	GI Gun, 10 s
136	P5020	04.10.	05:22:00	06:10	49°48.186'	128°36.526'	49°48.380'	128°41.885'	38080	38368	GI Gun, 10 s
136	P5021	04.10.	06:17:00	07:55	49°48.268'	128°42.670'	49°43.466'	128°51.617'	38410	38996	GI Gun, 10 s
136	P5022	04.10.	08:10:00	09:00	49°42.491'	128°51.657'	49°40.465'	128°45.846'	39085	39385	GI Gun, 10 s
136	P5023	04.10.	09:09:00	12:12	49°40.468'	128°44.739'	49°48.163'	128°26.198'	39439	40537	GI Gun, 10 s
136	P5024	04.10.	12:24:00	13:19	49°48.134'	128°24.837'	49°44.593'	128°20.270'	40618	40939	GI Gun, 10 s
136	P5025	04.10.	13:30:00	15:30	49°43.779'	128°20.252'	49°37.474'	128°28.977'	41006	41661	GI Gun, 10 s
136	P5025	04.10.	13:35:00	15:30	49°43.466'	128°20.674'	49°37.474'	128°28.977'	41038	41545	shut down, no repeat
208	P6000	12.10.	17:03:58	17:36	49°01.431'	127°26.706'	49°03.777'	127°28.288'	43188	43382	GI Gun, 10 s
208	P6001	12.10.	17:48:01	20:17	49°04.161'	127°29.325'	49°01.499'	127°43.515'	43452	44343	GI Gun, 10 s
208	P6002	12.10.	21:20:59	23:30	48°57.622'	127°42.242'	48°59.150'	127°28.054'	44700	45506	GI Gun, 10 s
208	P6003	12.10.	00:11:00	02:49	48°56.485'	127°26.517'	48°50.030'	127°42.825'	45749	46702	GI Gun, 10 s
208	P6004	13.10.	04:10:00	07:25	48°45.918'	127°37.844'	48°45.103'	127°19.200'	47187	48354	GI Gun, 10 s
208	P6005	13.10.	08:25:30	11:22	48°50.968'	127°17.306'	48°39.078'	127°26.151'	48717	49777	GI Gun, 10 s
208	P6006	13.10.	11:59:50	14:14	48°37.613'	127°22.885'	48°41.162'	127°08.159'	50003	50808	GI Gun, 10 s
208	P6007	13.10.	14:57:00	17:04	48°42.266'	127°09.659'	48°33.543'	127°14.035'	51067	51803	GI Gun, 10 s
208	P6008	13.10.	18:07:00	20:16	48°30.698'	127°09.149'	48°36.405'	126°57.367'	52206	52984	GI Gun, 10 s
208	P6009	13.10.	21:28:00	00:34	48°32.655'	126°51.784'	48°19.656'	126°58.851'	53417	54532	GI Gun, 10 s
208	P6010	14.10.	01:27:00	05:10	48°20.994'	127°02.326'	48°30.699'	126°43.508'	54848	56186	GI Gun, 10 s
208	P6011	14.10.	06:09:00	08:25	48°28.567'	126°38.982'	48°22.060'	126°51.696'	56541	57354	GI Gun, 10 s
208	P6012	14.10.	09:25:00	12:15	48°18.837'	126°48.697'	48°20.388'	126°31.129'	57715	58734	GI Gun, 10 s
208	P6013	14.10.	13:01:00	16:00	48°17.508'	126°28.541'	48°04.634'	126°37.402'	59015	60084	GI Gun, 10 s
208	P6014	14.10.	16:48:54	17:55	48°05.524'	126°41.608'	48°10.148'	126°39.745'	60361	60786	GI Gun, 10 s
208	P6015	14.10.	18:38:00	21:23	48°11.132'	126°35.606'	48°10.308'	126°18.281'	61035	62024	GI Gun, 10 s
209	P7000	15.10.	01:15:00	08:30	48°23.571'	126°27.755'	48°13.978'	127°14.104'	64716	65585	Gun Array, 30s
209	P7001	15.10.	09:32:57	16:50	48°17.249'	127°17.410'	48°37.839'	126°41.160'	65711	66586	Gun Array, 30s
209	P7002	15.10.	18:39:00	22:30	48°37.049'	126°42.420'	48°47.946	126°23.268	67141	67600	five guns from 67314

Station List

Station	Label	Event Time (2022)	Event Comment	Action	Latitude	Longitude
SO294_0_Underway-1	EM122	09/14 07:35:32		profile start	48° 16,298' N	127° 11,507' W
SO294_1-1	EL1	09/14 07:36:20	Releaser Test Start	station start	48° 16,296' N	127° 11,507' W
SO294_1-1	EL1	09/14 08:24:02	SLmax = 2500 m	information	48° 16,244' N	127° 11,517' W
SO294_1-1	EL1	09/14 10:24:33	Box on deck	Box1 on deck	48° 16,244' N	127° 11,518' W
SO294_1-2	EL1	09/14 10:51:39		Box2 in water	48° 16,248' N	127° 11,519' W
SO294_1-2	EL1	09/14 11:38:13	SLmax: 2500m	information	48° 16,256' N	127° 11,523' W
SO294_1-3	EL1	09/14 13:35:03	Releaser Test	Box 3 in water	48° 16,245' N	127° 11,528' W
SO294_1-3	EL1	09/14 14:20:20	SLmax: 2500 m	information	48° 16,254' N	127° 11,519' W
SO294_1-3	EL1	09/14 15:50:58		Box 3 on deck	48° 16,249' N	127° 11,525' W
SO294_1-3	EL1	09/14 15:53:24	End of Releaser test	station end	48° 16,249' N	127° 11,524' W
SO294_2-1	MB	09/14 15:55:46	Transit	station start	48° 16,249' N	127° 11,521' W
SO294_2-1	MB	09/14 20:57:09		profile end	48° 32,777' N	127° 04,957' W
SO294_3-1	SEISOBR	09/14 21:00:23	JSCS09	OBS deployed	48° 32,778' N	127° 04,951' W
SO294_3-1	SEISOBR	09/14 21:10:49		Triangulation 1	48° 32,636' N	127° 05,320' W
SO294_3-1	SEISOBR	09/14 21:58:28		Triangulation 2	48° 32,624' N	127° 04,570' W
SO294_3-1	SEISOBR	09/14 22:12:24		Triangulation 3	48° 33,061' N	127° 04,914' W
SO294_4-1	SEISOBR	09/14 23:14:45	JSCS04	OBS deployed	48° 39,056' N	127° 03,160' W
SO294_4-1	SEISOBR	09/14 23:23:51		information	48° 39,091' N	127° 03,094' W
SO294_5-1	SEISOBR	09/14 23:57:48	OBP4	OBS deployed	48° 39,108' N	127° 03,054' W
SO294_5-1	SEISOBR	09/15 00:20:15		Triangulation 1	48° 38,867' N	127° 03,601' W
SO294_5-1	SEISOBR	09/15 00:45:42		Triangulation 2	48° 39,455' N	127° 03,111' W
SO294_5-1	SEISOBR	09/15 01:09:56		Triangulation 3	48° 38,803' N	127° 02,618' W
SO294_6-1	SEISOBR	09/15 02:11:35	JSCS05	OBS deployed	48° 35,130' N	126° 57,544' W
SO294_7-1	SEISOBR	09/15 02:32:58	OBP5	OBS deployed	48° 35,177' N	126° 57,452' W
SO294_7-1	SEISOBR	09/15 02:47:42		Triangulation 1	48° 35,526' N	126° 57,579' W
SO294_7-1	SEISOBR	09/15 03:19:25		Triangulation 2	48° 34,944' N	126° 58,055' W

SO294_7-1	SEISOBR	09/15 03:47:43		Triangulation 3	48° 34,916' N	126° 57,072' W
SO294_8-1	SEISOBR	09/15 04:52:57	JSCS06	OBS deployed	48° 31,162' N	126° 52,067' W
SO294_9-1	SEISOBR	09/15 05:06:16	OBP6	OBS deployed	48° 31,226' N	126° 51,954' W
SO294_9-1	SEISOBR	09/15 05:29:41		Triangulation 1	48° 30,996' N	126° 51,613' W
SO294_9-1	SEISOBR	09/15 05:54:12		Triangulation 2	48° 30,982' N	126° 52,603' W
SO294_9-1	SEISOBR	09/15 06:25:05		Triangulation 3	48° 31,504' N	126° 52,063' W
SO294_10-1	OBEM	09/15 07:55:47	OBMT01	deployed	48° 30,164' N	126° 54,939' W
SO294_11-1	OBEM	09/15 08:45:20	OBMT02	deployed	48° 32,422' N	126° 51,021' W
SO294_12-1	OBEM	09/15 09:31:03	OBMT03	deployed	48° 35,176' N	126° 46,065' W
SO294_13-1	OBEM	09/15 10:11:57	OBMT04	deployed	48° 36,875' N	126° 43,125' W
SO294_14-1	OBEM	09/15 10:50:23	OBMT05	deployed	48° 38,883' N	126° 39,609' W
SO294_15-1	OBEM	09/15 11:28:13	OBMT-6	deployed	48° 40,475' N	126° 36,875' W
SO294_16-1	OBEM	09/15 12:01:31	OBMT-7	deployed	48° 42,169' N	126° 33,905' W
SO294_17-1	OBEM	09/15 12:37:02	OBMT-8	deployed	48° 43,487' N	126° 31,450' W
SO294_19-1	PAM	09/17 21:31:53	EM 710 Swiftsure Bank survey	profile start	48° 33,298' N	124° 51,414' W
SO294_19-1	PAM	09/18 02:31:08		profile end	48° 31,660' N	125° 21,528' W
SO294_19-1	PAM	09/18 03:13:19	PAM recovered	on deck	48° 30,184' N	125° 23,742' W
SO294_20-1	CTD	09/18 03:22:23	CTD / SVP	station start	48° 30,161' N	125° 24,140' W
SO294_20-1	CTD	09/18 03:40:14	SLmax: 129 m	max depth	48° 30,161' N	125° 24,145' W
SO294_20-1	CTD	09/18 03:48:31	CTD an Deck	on deck	48° 30,160' N	125° 24,149' W
SO294_21-1	OBEM	09/18 07:58:33	OBMT-18	deployed	49° 01,224' N	125° 59,495' W
SO294_22-1	OBEM	09/18 08:36:17	OBMT-17	deployed	48° 59,531' N	126° 02,477' W
SO294_23-1	OBEM	09/18 09:15:11	OBMT-16	deployed	48° 57,979' N	126° 05,374' W
SO294_24-1	OBEM	09/18 09:51:27	OBMT-15	deployed	48° 56,492' N	126° 08,076' W
SO294_25-1	OBEM	09/18 10:32:44	OBMT-14	deployed	48° 54,655' N	126° 11,353' W
SO294_26-1	OBEM	09/18 11:24:43	OBMT-13	deployed	48° 53,142' N	126° 14,117' W
SO294_27-1	OBEM	09/18 12:06:56	OBMT-12	deployed	48° 50,898' N	126° 18,250' W
SO294_28-1	OBEM	09/18 12:54:56	OBMT-11	deployed	48° 48,312' N	126° 22,788' W

SO294_29-1	OBEM	09/18 13:29:02	OBMT-10	deployed	48° 46,623' N	126° 25,771' W
SO294_30-1	OBEM	09/18 14:07:22	OBMT-09	deployed	48° 44,803' N	126° 29,160' W
SO294_31-1	SEISOBR	09/18 16:38:09	JSCS08	OBS deployed	48° 36,379' N	126° 40,325' W
SO294_31-1	SEISOBR	09/18 16:58:15		Triangulation 1	48° 36,236' N	126° 39,974' W
SO294_31-1	SEISOBR	09/18 17:24:18		Triangulation 2	48° 36,241' N	126° 40,674' W
SO294_31-1	SEISOBR	09/18 17:54:20		Triangulation 3	48° 36,652' N	126° 40,308' W
SO294_32-1	SEISOBR	09/18 19:20:19	JSCS01	OBS deployed	48° 41,484' N	126° 47,267' W
SO294_32-1	SEISOBR	09/18 19:36:33		Triangulation 1	48° 41,320' N	126° 46,865' W
SO294_32-1	SEISOBR	09/18 19:59:48		Triangulation 2	48° 41,324' N	126° 47,735' W
SO294_32-1	SEISOBR	09/18 20:24:49		Triangulation 3	48° 41,911' N	126° 47,121' W
SO294_33-1	SEISOBR	09/18 21:55:38	JSCS07	station start	48° 47,001' N	126° 53,000' W
SO294_33-1	SEISOBR	09/18 22:11:25		Triangulation 1	48° 47,241' N	126° 53,003' W
SO294_33-1	SEISOBR	09/18 22:39:56		Triangulation 2	48° 46,863' N	126° 52,622' W
SO294_33-1	SEISOBR	09/18 23:04:19		Triangulation 3	48° 46,863' N	126° 53,187' W
SO294_34-1	SEISOBR	09/19 00:12:15	JSCS02	OBS deployed	48° 40,264' N	126° 55,271' W
SO294_35-1	SEISOBR	09/19 00:30:52	OBP2	OBS deployed	48° 40,340' N	126° 55,136' W
SO294_35-1	SEISOBR	09/19 00:51:24		Triangulation 1	48° 40,046' N	126° 54,832' W
SO294_35-1	SEISOBR	09/19 01:24:53		Triangulation 2	48° 40,065' N	126° 55,724' W
SO294_35-1	SEISOBR	09/19 01:50:31		Triangulation 3	48° 40,653' N	126° 55,196' W
SO294_36-1	SEISOBR	09/19 02:29:39	BB1	OBS deployed	48° 40,302' N	126° 51,629' W
SO294_37-1	SEISOBR	09/19 02:46:01	BB2	OBS deployed	48° 39,679' N	126° 50,301' W
SO294_38-1	SEISOBR	09/19 03:02:27	BB3	OBS deployed	48° 38,684' N	126° 50,808' W
SO294_39-1	SEISOBR	09/19 03:28:31	BB4	OBS deployed	48° 39,444' N	126° 51,571' W
SO294_40-1	SEISOBR	09/19 03:49:14	BB5	OBS deployed	48° 39,723' N	126° 52,818' W
SO294_41-1	SEISOBR	09/19 04:05:40	BB6	OBS deployed	48° 38,801' N	126° 52,407' W
SO294_42-1	SEISOBR	09/19 15:53:27	OBP1	OBS deployed	48° 41,551' N	126° 47,148' W
SO294_42-1	SEISOBR	09/19 16:15:31		Triangulation 1	48° 41,289' N	126° 46,786' W
SO294_42-1	SEISOBR	09/19 16:56:28		Triangulation 2	48° 41,306' N	126° 47,781' W
SO294_42-1	SEISOBR	09/19 17:35:58		Triangulation 3	48° 41,862' N	126° 47,246' W
SO294_43-1	SEISOBR	09/19 19:09:11	JSCS03	OBS deployed	48° 36,328' N	126° 49,658' W

SO294_44-1	SEISOBR	09/19 19:33:32	OBP3	OBS deployed	48° 36,384' N	126° 49,549' W
SO294_44-1	SEISOBR	09/19 19:44:28		Triangulation 1	48° 36,157' N	126° 49,283' W
SO294_44-1	SEISOBR	09/19 20:22:59		Triangulation 2	48° 36,144' N	126° 50,024' W
SO294_44-1	SEISOBR	09/19 20:54:47		Triangulation 3	48° 36,634' N	126° 49,688' W
SO294_45-1	EM122	09/19 21:19:09	EM profiling	profile start	48° 36,722' N	126° 49,546' W
SO294_45-1	EM122	09/20 02:35:47		profile end	48° 01,269' N	127° 40,055' W
SO294_46-1	SEISTR	09/20 02:41:17	Streamer-Test	station start	48° 01,210' N	127° 40,584' W
SO294_46-1	SEISTR	09/20 03:25:24	End of Test	information	48° 02,633' N	127° 43,881' W
SO294_46-1	SEISTR	09/20 03:41:45		on deck	48° 02,810' N	127° 44,555' W
SO294_47-1	SEISOBR	09/20 06:14:15	OBS_CCO2_01	OBS deployed	47° 44,566' N	127° 43,053' W
SO294_48-1	SEISOBR	09/20 06:27:41	OBS_CCO2_02	OBS deployed	47° 44,852' N	127° 43,837' W
SO294_49-1	SEISOBR	09/20 06:37:38	OBS_CCO2_03	OBS deployed	47° 44,920' N	127° 44,134' W
SO294_50-1	SEISOBR	09/20 06:47:32	OBS_CCO2_04	OBS deployed	47° 45,014' N	127° 44,371' W
SO294_51-1	SEISOBR	09/20 07:14:42	OBS_CCO2_05	OBS deployed	47° 45,389' N	127° 45,410' W
SO294_52-1	SEISOBR	09/20 07:24:34	OBS_CCO2_06	OBS deployed	47° 45,489' N	127° 45,687' W
SO294_53-1	SEISOBR	09/20 07:51:06	OBS_CCO2_07	OBS deployed	47° 45,575' N	127° 45,912' W
SO294_54-1	SEISOBR	09/20 08:08:48	OBS_CCO2_08	OBS deployed	47° 45,900' N	127° 46,888' W
SO294_55-1	SEISOBR	09/20 08:15:40	OBS_CCO2_09	OBS deployed	47° 45,974' N	127° 47,120' W
SO294_56-1	SEISOBR	09/20 08:20:56	OBS_CCO2_10	OBS deployed	47° 46,050' N	127° 47,341' W
SO294_57-1	SEISOBR	09/20 08:33:33	OBS_CCO2_11	OBS deployed	47° 46,326' N	127° 48,122' W
SO294_58-1	SEISOBR	09/20 12:10:40	OBS_CCO2_12	OBS deployed	47° 43,936' N	127° 46,219' W
SO294_59-1	SEISOBR	09/20 12:20:32	OBS_CCO2_13	OBS deployed	47° 44,213' N	127° 46,127' W
SO294_60-1	SEISOBR	09/20 12:28:26	OBS_CCO2_14	OBS deployed	47° 44,484' N	127° 46,040' W
SO294_61-1	SEISOBR	09/20 12:45:06	OBS_CCO2_15	OBS deployed	47° 45,222' N	127° 45,800' W
SO294_62-1	SEISOBR	09/20 13:00:44	OBS_CCO2_16	OBS deployed	47° 45,741' N	127° 45,575' W
SO294_63-1	SEISOBR	09/20 13:16:00	OBS_CCO2_17	OBS deployed	47° 46,478' N	127° 45,342' W
SO294_64-1	SEISOBR	09/20 13:24:22	OBS_CCO2_18	OBS deployed	47° 46,749' N	127° 45,227' W
SO294_65-1	SEISOBR	09/20 16:21:09	OBS_CCO2_19	OBS deployed	47° 46,996' N	127° 45,138' W
SO294_66-1	SEISOBR	09/20 16:52:04	OBS_CCO2_20	OBS deployed	47° 47,763' N	127° 44,886' W
SO294_67-1	SEISOBR	09/20 17:21:38	OBS_CCO2_21	OBS deployed	47° 48,522' N	127° 44,629' W

SO294_68-2	SEISOBR	09/20 17:40:39	OBS_CCO2_22	OBS deployed	47° 49,016' N	127° 44,454' W
SO294_69-1	SEISSRC	09/20 20:03:37	Airgun array deployment	station start	47° 56,022' N	127° 39,832' W
SO294_69-1	SEISSRC	09/20 20:25:01	Streamer deployment	information	47° 56,522' N	127° 39,193' W
SO294_69-1	SEISSRC	09/20 21:15:49	Streamer completed out: 300 m	information	47° 58,315' N	127° 37,316' W
SO294_69-1	SEISSRC	09/20 21:20:44	PAM deployment	information	47° 58,512' N	127° 37,145' W
SO294_69-1	SEISSRC	09/20 22:09:54	PAM completely out: 280 m	information	48° 01,369' N	127° 34,820' W
SO294_69-1	SEISSRC	09/20 22:28:01	Start "Ramp up"	information	48° 02,275' N	127° 35,638' W
SO294_69-1	SEISSRC	09/20 22:53:49	Ramp up completed	information	48° 02,270' N	127° 38,683' W
SO294_69-1	SEISSRC	09/20 23:13:38	start profile	profile start	48° 01,150' N	127° 40,232' W
SO294_69-1	SEISSRC	09/21 05:01:11		profile end	47° 34,171' N	127° 49,744' W
SO294_69-1	SEISSRC	09/21 08:31:24		profile start	47° 39,981' N	127° 29,877' W
SO294_69-1	SEISSRC	09/21 13:29:12		profile end	47° 50,904' N	128° 01,490' W
SO294_69-1	SEISSRC	09/21 15:08:24	Airguns switched off	information	47° 49,867' N	127° 59,597' W
SO294_69-1	SEISSRC	09/21 15:25:07	Recovery PAM	information	47° 49,467' N	127° 58,220' W
SO294_69-1	SEISSRC	09/21 15:44:44	PAM recovered	on deck	47° 49,145' N	127° 57,328' W
SO294_69-1	SEISSRC	09/21 15:45:50	Recovery Streamers	information	47° 49,128' N	127° 57,283' W
SO294_69-1	SEISSRC	09/21 16:02:42	Streamer recovered	information	47° 48,874' N	127° 56,782' W
SO294_69-1	SEISSRC	09/21 16:11:31	Recovery Airgun array	information	47° 48,922' N	127° 56,507' W
SO294_69-1	SEISSRC	09/21 16:22:09	Airgun array fully recovered	on deck	47° 49,130' N	127° 56,404' W
SO294_69-1	SEISSRC	09/21 16:22:34			47° 49,137' N	127° 56,401' W

SO294_70-1	SEISOBR	09/21 17:55:06	OBS_CCO2_01	station start	47° 44,487' N	127° 43,191' W
SO294_70-1	SEISOBR	09/21 17:56:39		released	47° 44,487' N	127° 43,185' W
SO294_70-1	SEISOBR	09/21 18:36:47		at surface	47° 44,487' N	127° 43,196' W
SO294_70-1	SEISOBR	09/21 18:50:15		on deck	47° 44,509' N	127° 43,052' W
SO294_71-1	SEISOBR	09/21 18:51:40	OBS_CCO2_02	station start	47° 44,511' N	127° 43,053' W
SO294_71-1	SEISOBR	09/21 18:54:36		released	47° 44,512' N	127° 43,057' W
SO294_71-1	SEISOBR	09/21 19:32:58		at surface	47° 44,672' N	127° 43,758' W
SO294_71-1	SEISOBR	09/21 19:45:26		on deck	47° 44,889' N	127° 43,694' W
SO294_72-1	SEISOBR	09/21 19:32:33	OBS_CCO2_03	released	47° 44,672' N	127° 43,758' W
SO294_72-1	SEISOBR	09/21 20:30:18		at surface	47° 44,788' N	127° 43,981' W
SO294_72-1	SEISOBR	09/21 20:41:07		on deck	47° 44,843' N	127° 44,101' W
SO294_73-1	SEISOBR	09/21 20:43:03	OBS_CCO2_04	station start	47° 44,820' N	127° 44,046' W
SO294_73-1	SEISOBR	09/21 20:50:59		released	47° 44,739' N	127° 43,918' W
SO294_73-1	SEISOBR	09/21 21:47:25		on deck	47° 44,916' N	127° 44,392' W
SO294_74-1	SEISOBR	09/21 21:51:54	OBS_CCO2_05	station start	47° 44,917' N	127° 44,385' W
SO294_74-1	SEISOBR	09/21 22:51:40		on deck	47° 45,275' N	127° 45,457' W
SO294_75-1	SEISOBR	09/21 22:52:28	OBS_CCO2_06	station start	47° 45,272' N	127° 45,466' W
SO294_75-1	SEISOBR	09/21 23:00:59		released	47° 45,266' N	127° 45,521' W
SO294_75-1	SEISOBR	09/21 23:31:29		at surface	47° 45,295' N	127° 45,504' W
SO294_75-1	SEISOBR	09/21 23:42:25		on deck	47° 45,409' N	127° 45,706' W
SO294_76-1	SEISOBR	09/21 23:44:37	OBS_CCO2_07	station start	47° 45,412' N	127° 45,704' W
SO294_76-1	SEISOBR	09/21 23:46:39		released	47° 45,411' N	127° 45,703' W
SO294_76-1	SEISOBR	09/22 02:37:05		at surface	47° 45,489' N	127° 45,846' W
SO294_76-1	SEISOBR	09/22 02:47:10		on deck	47° 45,507' N	127° 45,899' W
SO294_77-1	SEISOBR	09/22 00:05:56	OBS_CCO2_08	station start	47° 45,418' N	127° 45,719' W
SO294_77-1	SEISOBR	09/22 00:06:38		released	47° 45,418' N	127° 45,721' W
SO294_77-1	SEISOBR	09/22 01:13:48		at surface	47° 45,464' N	127° 45,848' W
SO294_77-1	SEISOBR	09/22 01:34:42		on deck	47° 45,841' N	127° 46,812' W
SO294_78-1	SEISOBR	09/22 02:49:02	OBS_CCO2_09	station start	47° 45,508' N	127° 45,895' W
SO294_78-1	SEISOBR	09/22 02:52:02		released	47° 45,506' N	127° 45,890' W

SO294_78-1	SEISOBR	09/22 03:24:09		at surface	47° 45,901' N	127° 47,133' W
SO294_78-1	SEISOBR	09/22 03:32:07		on deck	47° 45,915' N	127° 47,142' W
SO294_79-1	SEISOBR	09/22 03:34:21	OBS_CCO2_10	station start	47° 45,914' N	127° 47,137' W
SO294_79-1	SEISOBR	09/22 03:38:31		released	47° 45,910' N	127° 47,128' W
SO294_79-1	SEISOBR	09/22 04:10:37		at surface	47° 45,979' N	127° 47,363' W
SO294_79-1	SEISOBR	09/22 04:16:42		on deck	47° 46,000' N	127° 47,365' W
SO294_80-1	SEISOBR	09/22 04:00:20	OBS_CCO2_11	station start	47° 45,975' N	127° 47,365' W
SO294_80-1	SEISOBR	09/22 04:07:17		released	47° 45,978' N	127° 47,363' W
SO294_80-1	SEISOBR	09/22 04:37:50		at surface	47° 46,250' N	127° 48,107' W
SO294_80-1	SEISOBR	09/22 04:44:15		on deck	47° 46,301' N	127° 48,142' W
SO294_81-1	SEISOBR	09/22 05:46:05	OBS_CCO2_12	station start	47° 43,608' N	127° 46,182' W
SO294_81-1	SEISOBR	09/22 05:48:18		released	47° 43,617' N	127° 46,171' W
SO294_81-1	SEISOBR	09/22 06:39:30		at surface	47° 43,775' N	127° 46,204' W
SO294_81-1	SEISOBR	09/22 06:46:36		on deck	47° 43,825' N	127° 46,136' W
SO294_82-1	SEISOBR	09/22 06:48:50	OBS_CCO2_13	station start	47° 43,830' N	127° 46,143' W
SO294_82-1	SEISOBR	09/22 06:50:15		released	47° 43,831' N	127° 46,139' W
SO294_82-1	SEISOBR	09/22 07:45:56		on deck	47° 44,148' N	127° 46,075' W
SO294_83-1	SEISOBR	09/22 07:46:44	OBS_CCO2_14	station start	47° 44,147' N	127° 46,073' W
SO294_83-1	SEISOBR	09/22 07:53:09		released	47° 44,138' N	127° 46,074' W
SO294_83-1	SEISOBR	09/22 08:40:37		on deck	47° 44,404' N	127° 46,022' W
SO294_84-1	SEISOBR	09/22 08:42:45	OBS_CCO2_15	station start	47° 44,404' N	127° 46,019' W
SO294_84-1	SEISOBR	09/22 08:48:02		released	47° 44,397' N	127° 46,017' W
SO294_84-1	SEISOBR	09/22 09:37:45		on deck	47° 45,126' N	127° 45,817' W
SO294_85-1	SEISOBR	09/22 09:38:19	OBS_CCO2_16	station start	47° 45,126' N	127° 45,817' W
SO294_85-1	SEISOBR	09/22 09:42:32		released	47° 45,126' N	127° 45,815' W
SO294_85-1	SEISOBR	09/22 10:36:29		on deck	47° 45,628' N	127° 45,627' W
SO294_86-1	SEISOBR	09/22 10:36:58	OBS_CCO2_17	station start	47° 45,628' N	127° 45,627' W
SO294_86-1	SEISOBR	09/22 10:43:11		released	47° 45,628' N	127° 45,613' W
SO294_86-1	SEISOBR	09/22 11:18:34		at surface	47° 46,375' N	127° 45,197' W
SO294_86-1	SEISOBR	09/22 11:25:52		on deck	47° 46,409' N	127° 45,399' W

SO294_87-1	SEISOBR	09/22 11:30:02	OBS_CCO2_18	station start	47° 46,397' N	127° 45,429' W
SO294_87-1	SEISOBR	09/22 11:31:40		released	47° 46,388' N	127° 45,429' W
SO294_87-1	SEISOBR	09/22 12:09:31		at surface	47° 46,646' N	127° 45,113' W
SO294_87-1	SEISOBR	09/22 12:18:59		on deck	47° 46,676' N	127° 45,223' W
SO294_88-1	SEISOBR	09/22 12:21:02	OBS_CCO2_19	station start	47° 46,674' N	127° 45,225' W
SO294_88-1	SEISOBR	09/22 12:25:27		released	47° 46,676' N	127° 45,219' W
SO294_88-1	SEISOBR	09/22 13:04:24		at surface	47° 46,884' N	127° 45,054' W
SO294_88-1	SEISOBR	09/22 13:11:36		on deck	47° 46,974' N	127° 45,093' W
SO294_89-1	SEISOBR	09/22 13:13:19	OBS_CCO2_20	station start	47° 46,977' N	127° 45,088' W
SO294_89-1	SEISOBR	09/22 13:16:19		released	47° 46,979' N	127° 45,083' W
SO294_89-1	SEISOBR	09/22 14:05:05		at surface	47° 47,653' N	127° 44,790' W
SO294_89-1	SEISOBR	09/22 14:11:23		on deck	47° 47,748' N	127° 44,827' W
SO294_90-1	SEISOBR	09/22 14:14:02	OBS_CCO2_21	station start	47° 47,752' N	127° 44,825' W
SO294_90-1	SEISOBR	09/22 14:17:36		released	47° 47,750' N	127° 44,825' W
SO294_90-1	SEISOBR	09/22 14:52:26		at surface	47° 48,403' N	127° 44,532' W
SO294_90-1	SEISOBR	09/22 15:03:23		on deck	47° 48,489' N	127° 44,628' W
SO294_91-1	SEISOBR	09/22 15:05:52	OBS_CCO2_22	station start	47° 48,486' N	127° 44,626' W
SO294_91-1	SEISOBR	09/22 15:07:10		released	47° 48,484' N	127° 44,624' W
SO294_91-1	SEISOBR	09/22 15:43:07		at surface	47° 48,867' N	127° 44,442' W
SO294_91-1	SEISOBR	09/22 15:55:27		on deck	47° 49,002' N	127° 44,438' W
SO294_91-1	SEISOBR	09/22 15:55:59	End CCO2 project	station end	47° 49,002' N	127° 44,437' W
SO294_92-1	EM122	09/22 15:58:00	Transit	station start	47° 49,000' N	127° 44,435' W
SO294_93-1	SEISOBR	09/23 15:32:42	JSCN-11	OBS deployed	49° 13,008' N	127° 51,536' W
SO294_93-1	SEISOBR	09/23 15:49:20		Triangulation 1	49° 12,864' N	127° 51,244' W
SO294_93-1	SEISOBR	09/23 16:41:45		Triangulation 2	49° 12,871' N	127° 51,970' W
SO294_93-1	SEISOBR	09/23 17:14:51		Triangulation 3	49° 13,274' N	127° 51,609' W
SO294_94-1	SEISOBR	09/23 20:48:47	JSCN-09	OBS deployed	49° 16,558' N	127° 21,378' W
SO294_94-1	SEISOBR	09/23 20:58:02		Triangulation 1	49° 16,780' N	127° 21,323' W
SO294_94-1	SEISOBR	09/23 21:25:12		Triangulation 2	49° 16,441' N	127° 21,058' W
SO294_94-1	SEISOBR	09/23 21:41:09		Triangulation 3	49° 16,451' N	127° 21,603' W

SO294_95-1	SEISOBR	09/23 23:39:45	JSCN-10	OBS deployed	49° 22,573' N	127° 36,998' W
SO294_95-1	SEISOBR	09/24 00:02:20		Triangulation 1	49° 22,420' N	127° 36,674' W
SO294_95-1	SEISOBR	09/24 00:21:36		Triangulation 2	49° 22,450' N	127° 37,358' W
SO294_95-1	SEISOBR	09/24 00:39:27		Triangulation 3	49° 22,860' N	127° 36,981' W
SO294_96-1	SEISOBR	09/24 02:41:19	JSCN-08	OBS deployed	49° 24,731' N	128° 01,805' W
SO294_96-1	SEISOBR	09/24 02:58:12		Triangulation 1	49° 24,608' N	128° 01,501' W
SO294_96-1	SEISOBR	09/24 03:51:15		Triangulation 2	49° 24,614' N	128° 02,210' W
SO294_96-1	SEISOBR	09/24 04:26:05		Triangulation 3	49° 25,015' N	128° 01,852' W
SO294_97-1	EM122	09/24 04:41:05	EM profiling	station start	49° 25,014' N	128° 01,845' W
SO294_97-1	EM122	09/24 15:32:37	end profiling	station end	49° 34,298' N	127° 47,331' W
SO294_98-1	SEISOBR	09/24 15:37:15	JSCN-07	OBS deployed	49° 34,299' N	127° 47,190' W
SO294_98-1	SEISOBR	09/24 15:50:13		Triangulation 1	49° 34,155' N	127° 46,855' W
SO294_98-1	SEISOBR	09/24 16:37:06		Triangulation 2	49° 34,173' N	127° 47,568' W
SO294_98-1	SEISOBR	09/24 17:10:36		Triangulation 3	49° 34,562' N	127° 47,206' W
SO294_99-1	SEISOBR	09/24 19:21:54	JSCN-05	OBS deployed	49° 44,616' N	128° 00,593' W
SO294_99-1	SEISOBR	09/24 19:29:22		Triangulation 1	49° 44,499' N	128° 00,387' W
SO294_99-1	SEISOBR	09/24 20:13:46		Triangulation 2	49° 44,519' N	128° 00,937' W
SO294_99-1	SEISOBR	09/24 20:30:54		Triangulation 3	49° 44,808' N	128° 00,572' W
SO294_100-1	SEISOBR	09/24 22:50:48	JSCN-06	OBS deployed	49° 35,042' N	128° 15,281' W
SO294_100-1	SEISOBR	09/24 22:59:05		Triangulation 1	49° 34,925' N	128° 15,083' W
SO294_100-1	SEISOBR	09/24 23:44:55		Triangulation 2	49° 34,918' N	128° 15,605' W
SO294_100-1	SEISOBR	09/25 00:02:02		Triangulation 3	49° 35,322' N	128° 15,250' W
SO294_0_Underway-5	EM122	09/24 22:59:40	EM profiling	profile start	49° 34,925' N	128° 15,083' W
SO294_102-1	GC	09/25 02:16:54	GC01 with SVP	in the water	49° 37,723' N	128° 26,168' W
SO294_102-1	GC	09/25 03:08:31	SLmax: 2338m	max depth	49° 37,692' N	128° 26,198' W
SO294_102-1	GC	09/25 03:08:57	SZmax: 53.3 kN	hoisting	49° 37,693' N	128° 26,199' W
SO294_102-1	GC	09/25 04:01:44		on deck	49° 37,696' N	128° 26,193' W
SO294_103-1	EM122	09/25 04:06:33	Profiling	station start	49° 37,691' N	128° 26,199' W
SO294_103-1	EM122	09/25 13:30:21	end of profiling, distance: 66.3 nm	profile end	49° 46,705' N	128° 25,333' W

SO294_104-1	SEISOBR	09/25 15:38:13	JSCN-04	OBS deployed	49° 46,816' N	128° 25,137' W
SO294_104-1	SEISOBR	09/25 15:51:11		Triangulation 1	49° 46,681' N	128° 24,769' W
SO294_104-1	SEISOBR	09/25 16:38:35		Triangulation 2	49° 46,687' N	128° 25,492' W
SO294_104-1	SEISOBR	09/25 17:11:42		Triangulation 3	49° 47,096' N	128° 25,127' W
SO294_105-1	SEISOBR	09/25 19:25:15	JSCN-03	OBS deployed	49° 55,121' N	128° 10,155' W
SO294_105-1	SEISOBR	09/25 19:32:59		Triangulation 1	49° 55,005' N	128° 09,954' W
SO294_105-1	SEISOBR	09/25 20:07:24		Triangulation 2	49° 54,965' N	128° 10,488' W
SO294_105-1	SEISOBR	09/25 20:28:12		Triangulation 3	49° 55,394' N	128° 10,137' W
SO294_106-1	SEISOBR	09/25 22:40:16	JSCN-01	OBS deployed	50° 06,021' N	128° 22,437' W
SO294_106-1	SEISOBR	09/25 22:56:16		Triangulation 1	50° 05,763' N	128° 22,186' W
SO294_106-1	SEISOBR	09/25 23:15:22		Triangulation 2	50° 05,880' N	128° 22,829' W
SO294_106-1	SEISOBR	09/25 23:31:35		Triangulation 3	50° 06,289' N	128° 22,436' W
SO294_107-1	SEISOBR	09/26 01:10:58	JSCN-02	OBS deployed	49° 57,256' N	128° 38,311' W
SO294_107-1	SEISOBR	09/26 01:24:32		Triangulation 1	49° 57,118' N	128° 37,953' W
SO294_107-1	SEISOBR	09/26 01:58:41		Triangulation 2	49° 57,095' N	128° 38,662' W
SO294_107-1	SEISOBR	09/26 02:18:46		Triangulation 3	49° 57,547' N	128° 38,287' W
SO294_108-1	EM122	09/26 02:30:26	Profiling	profile start	49° 57,360' N	128° 38,410' W
SO294_108-1	EM122	09/26 15:14:30	end of profiling: distance covered 121.6 nm	station end	49° 53,711' N	128° 39,967' W
SO294_109-1	GC	09/26 15:56:17	GC02	station start	49° 55,115' N	128° 37,427' W
SO294_109-1	GC	09/26 16:41:13	SLmax: 2064m	max depth	49° 55,065' N	128° 37,457' W
SO294_109-1	GC	09/26 16:41:41	SZmax: 52.8 kN	hoisting	49° 55,064' N	128° 37,456' W
SO294_109-1	GC	09/26 17:27:51		on deck	49° 55,072' N	128° 37,463' W
SO294_110-1	GC	09/26 17:58:47	GC03 with SVP	station start	49° 54,327' N	128° 38,836' W
SO294_110-1	GC	09/26 18:48:58	SLmax: 2032 m	max depth	49° 54,277' N	128° 38,849' W
SO294_110-1	GC	09/26 18:49:29	SZmax: 49.8 kN	hoisting	49° 54,276' N	128° 38,849' W
SO294_110-1	GC	09/26 19:35:57		on deck	49° 54,276' N	128° 38,856' W
SO294_111-1	GC	09/26 19:57:10	GC04	station start	49° 53,730' N	128° 39,934' W
SO294_111-1	GC	09/26 21:05:09	SL max = 1870 m	max depth	49° 53,667' N	128° 39,989' W

SO294_111-1	GC	09/26 21:05:19		hoisting	49° 53,667' N	128° 39,989' W
SO294_112-1	EM122	09/26 21:48:34	Profiling	station start	49° 53,666' N	128° 39,999' W
SO294_112-1	EM122	09/27 17:06:52	end of profiling, distance: 160 nm	profile end	49° 34,180' N	128° 47,127' W
SO294_113-1	SEISOBR	09/27 17:27:28	OBS_Ex_01	OBS deployed	49° 33,104' N	128° 48,892' W
SO294_114-1	SEISOBR	09/27 18:16:27	OBS_Ex_02	OBS deployed	49° 37,254' N	128° 41,780' W
SO294_115-1	SEISOBR	09/27 19:01:33	OBS_Ex_03	OBS deployed	49° 40,722' N	128° 35,672' W
SO294_116-1	SEISOBR	09/27 19:38:06	OBS_Ex_04	OBS deployed	49° 43,797' N	128° 30,250' W
SO294_117-1	SEISOBR	09/27 20:21:25	OBS_Ex_05	OBS deployed	49° 47,449' N	128° 23,780' W
SO294_118-1	SEISOBR	09/27 20:41:17	OBS_Ex_06	OBS deployed	49° 48,631' N	128° 21,685' W
SO294_119-1	SEISOBR	09/27 21:02:07	OBS_Ex_07	OBS deployed	49° 50,144' N	128° 18,966' W
SO294_120-1	SEISOBR	09/27 21:27:18	OBS_Ex_08	OBS deployed	49° 51,655' N	128° 16,389' W
SO294_121-1	SEISOBR	09/27 21:46:23	OBS_Ex_09	OBS deployed	49° 53,078' N	128° 13,838' W
SO294_122-1	SEISOBR	09/27 22:14:33	OBS_Ex_10	OBS deployed	49° 55,462' N	128° 09,625' W
SO294_123-1	SEISOBR	09/27 22:31:34	OBS_Ex_11	OBS deployed	49° 56,554' N	128° 07,674' W
SO294_124-1	SEISOBR	09/28 00:51:33	OBS_Ex_12	OBS deployed	50° 13,482' N	128° 20,970' W
SO294_125-1	SEISOBR	09/28 01:13:11	OBS_Ex_13	OBS deployed	50° 12,114' N	128° 23,901' W
SO294_126-1	SEISOBR	09/28 01:41:52	OBS_Ex_14	OBS deployed	50° 10,196' N	128° 27,880' W
SO294_127-1	SEISOBR	09/28 02:09:10	OBS_Ex_15	OBS deployed	50° 08,297' N	128° 31,875' W
SO294_128-1	SEISOBR	09/28 02:43:03	OBS_Ex_16	OBS deployed	50° 05,710' N	128° 37,265' W
SO294_129-1	SEISOBR	09/28 03:22:36	OBS_Ex_17	OBS deployed	50° 03,177' N	128° 42,577' W
SO294_130-1	SEISOBR	09/28 04:08:04	OBS_Ex_18	OBS deployed	50° 00,091' N	128° 48,797' W
SO294_131-1	SEISOBR	09/28 04:55:43	OBS_Ex_19	OBS deployed	49° 56,770' N	128° 55,608' W
SO294_132-1	SEISOBR	09/28 05:31:00	OBS_Ex_20	OBS deployed	49° 54,150' N	129° 00,928' W
SO294_133-1	EM122	09/28 05:40:02	Profiling	station start	49° 53,601' N	129° 01,515' W
SO294_133-1	EM122	09/28 13:41:45	end of profiling, distance: 77.8 nm	profile end	49° 51,735' N	129° 05,692' W
SO294_135-1	SEISTR	09/28 23:25:23	Deployment Airgun array	station start	49° 33,379' N	129° 14,653' W

SO294_135-1	SEISTR	09/28 23:40:46	array completely deployed		49° 33,036' N	129° 14,091' W
SO294_135-1	SEISTR	09/29 00:02:14	Streamer deployment	information	49° 32,462' N	129° 13,138' W
SO294_135-1	SEISTR	09/29 00:20:22	Streamer completely deployed	information	49° 31,740' N	129° 12,011' W
SO294_135-1	SEISTR	09/29 00:23:24	PAM deployment	information	49° 31,613' N	129° 11,814' W
SO294_135-1	SEISTR	09/29 00:44:30	PAM deployment completed, SL: 300m	information	49° 30,699' N	129° 10,265' W
SO294_135-1	SEISTR	09/29 01:37:06	start ramp-up	start airguns	49° 28,306' N	129° 06,241' W
SO294_135-1	SEISTR	09/29 03:01:24	ramp-up completed	information	49° 27,018' N	128° 59,424' W
SO294_135-1	SEISTR	09/29 03:17:00		profile start	49° 27,631' N	128° 58,403' W
SO294_135-1	SEISTR	09/30 16:00:52	mammal sighting	shut-down	49° 40,337' N	128° 19,114' W
SO294_135-1	SEISTR	09/30 16:30:15	Begin Ramp-up	information	49° 42,118' N	128° 18,660' W
SO294_135-1	SEISTR	09/30 16:34:04	sounders back on	information	49° 42,365' N	128° 18,643' W
SO294_135-1	SEISTR	09/30 16:51:51	ramp-up completed	information	49° 43,407' N	128° 19,119' W
SO294_135-1	SEISTR	09/30 20:01:35		profile end	49° 53,290' N	128° 31,189' W
SO294_135-1	SEISTR	09/30 20:21:55	Begin recovery airgun array	information	49° 54,113' N	128° 31,822' W
SO294_136-1	SEISTR	09/30 20:29:22	PAM + Streamer remain deployed	station start	49° 54,443' N	128° 32,015' W
SO294_136-1	SEISTR	09/30 21:13:24	GI airgun deployed	information	49° 56,266' N	128° 33,078' W
SO294_136-1	SEISTR	10/01 01:11:12	start MCS with GI airgun	profile start	50° 07,161' N	128° 51,865' W
SO294_136-1	SEISTR	10/01 15:21:38	mammal sighting	shutdown	50° 04,489' N	128° 49,257' W
SO294_136-1	SEISTR	10/01 15:46:08	sounders back on	information	50° 03,404' N	128° 51,467' W
SO294_136-1	SEISTR	10/01 16:06:17	airgun back on	information	50° 02,540' N	128° 53,235' W

SO294_136-1	SEISTR	10/03 14:56:18	mammal sighting	shutdown	49° 57,383' N	128° 28,520' W
SO294_136-1	SEISTR	10/03 15:27:00	sounders back on	information	49° 58,859' N	128° 30,557' W
SO294_136-1	SEISTR	10/04 00:34:22	turn back due to airgun shutdown	information	49° 53,280' N	128° 39,332' W
SO294_136-1	SEISTR	10/04 15:19:47	end of survey	profile end	49° 37,454' N	128° 29,005' W
SO294_136-1	SEISTR	10/04 15:33:38	recovery PAM	information	49° 36,565' N	128° 29,104' W
SO294_136-1	SEISTR	10/04 15:57:30	PAM fully recovered	information	49° 35,821' N	128° 27,810' W
SO294_136-1	SEISTR	10/04 15:58:32	recovery Streamer	information	49° 35,788' N	128° 27,756' W
SO294_136-1	SEISTR	10/04 16:15:30	Streamer fully recovered	information	49° 35,352' N	128° 27,112' W
SO294_136-1	SEISTR	10/04 16:15:52	recovery Airgun	information	49° 35,343' N	128° 27,099' W
SO294_136-1	SEISTR	10/04 16:19:51	Airgun recovered	information	49° 35,243' N	128° 26,970' W
SO294_137-1	SEISOBR	10/04 18:27:07	OBS_Ex_01	station start	49° 33,546' N	128° 49,376' W
SO294_137-1	SEISOBR	10/04 18:36:08		released	49° 33,542' N	128° 49,364' W
SO294_137-1	SEISOBR	10/04 19:07:55		at surface	49° 33,544' N	128° 49,358' W
SO294_137-1	SEISOBR	10/04 19:26:57		on deck	49° 33,289' N	128° 48,863' W
SO294_138-1	SEISOBR	10/04 20:23:24	OBS_Ex_02	station start	49° 37,635' N	128° 42,242' W
SO294_138-1	SEISOBR	10/04 20:28:23		released	49° 37,637' N	128° 42,237' W
SO294_138-1	SEISOBR	10/04 21:20:49		on deck	49° 37,401' N	128° 41,735' W
SO294_139-1	SEISOBR	10/04 22:10:44	OBS_Ex_03	station start	49° 41,121' N	128° 36,083' W
SO294_139-1	SEISOBR	10/04 22:15:37		released	49° 41,120' N	128° 36,084' W
SO294_139-1	SEISOBR	10/04 23:07:55		on deck	49° 41,159' N	128° 35,631' W
SO294_140-1	SEISOBR	10/04 23:47:03	OBS_Ex_04	station start	49° 44,204' N	128° 30,373' W
SO294_140-1	SEISOBR	10/04 23:51:53		released	49° 44,206' N	128° 30,374' W
SO294_140-1	SEISOBR	10/05 00:23:33		at surface	49° 44,209' N	128° 30,373' W
SO294_140-1	SEISOBR	10/05 00:54:12		on deck	49° 43,993' N	128° 30,335' W
SO294_141-1	SEISOBR	10/05 01:39:34	OBS_Ex_05	station start	49° 47,757' N	128° 23,823' W
SO294_141-1	SEISOBR	10/05 01:45:59		released	49° 47,748' N	128° 23,819' W
SO294_141-1	SEISOBR	10/05 02:11:45		at surface	49° 47,747' N	128° 23,811' W

SO294_141-1	SEISOBR	10/05 02:30:49		on deck	49° 47,536' N	128° 23,799' W
SO294_142-1	EM122	10/05 03:08:43	EM profiling	profile start	49° 47,086' N	128° 18,781' W
SO294_142-1	EM122	10/05 12:06:01		profile end	49° 46,079' N	127° 42,909' W
SO294_143-1	SEISOBR	10/05 15:00:37	OBS_Ex_06	station start	49° 48,790' N	128° 21,185' W
SO294_143-1	SEISOBR	10/05 15:08:03		released	49° 48,783' N	128° 21,191' W
SO294_143-1	SEISOBR	10/05 15:30:26		at surface	49° 48,790' N	128° 21,194' W
SO294_143-1	SEISOBR	10/05 16:00:00		on deck	49° 48,385' N	128° 21,158' W
SO294_144-1	SEISOBR	10/05 16:01:36	OBS_Ex_07	station start	49° 48,398' N	128° 21,132' W
SO294_144-1	SEISOBR	10/05 16:07:18		released	49° 48,433' N	128° 21,048' W
SO294_144-1	SEISOBR	10/05 16:34:11		at surface	49° 50,461' N	128° 19,077' W
SO294_144-1	SEISOBR	10/05 16:54:13		on deck	49° 50,080' N	128° 18,878' W
SO294_145-1	SEISOBR	10/05 17:32:30	OBS_Ex_08	station start	49° 51,967' N	128° 15,979' W
SO294_145-1	SEISOBR	10/05 17:41:43		released	49° 51,969' N	128° 15,980' W
SO294_145-1	SEISOBR	10/05 18:06:01		at surface	49° 51,970' N	128° 15,970' W
SO294_145-1	SEISOBR	10/05 18:22:52		on deck	49° 51,606' N	128° 16,340' W
SO294_146-1	SEISOBR	10/05 19:07:00	OBS_Ex_09	station start	49° 53,418' N	128° 13,329' W
SO294_146-1	SEISOBR	10/05 19:11:21		released	49° 53,417' N	128° 13,320' W
SO294_146-1	SEISOBR	10/05 19:59:03		on deck	49° 53,020' N	128° 13,871' W
SO294_147-1	SEISOBR	10/05 20:43:18	OBS_Ex_10	station start	49° 55,552' N	128° 10,052' W
SO294_147-1	SEISOBR	10/05 20:46:24		released	49° 55,559' N	128° 10,047' W
SO294_148-1	SEISOBR	10/05 22:02:13	OBS_Ex_11	station start	49° 56,600' N	128° 08,094' W
SO294_148-1	SEISOBR	10/05 22:06:36		released	49° 56,598' N	128° 08,093' W
SO294_148-1	SEISOBR	10/05 22:34:10		on deck	49° 56,627' N	128° 07,653' W
SO294_149-1	SEISOBR	10/06 01:27:50	OBS_Ex_12	station start	50° 13,414' N	128° 20,832' W
SO294_149-1	SEISOBR	10/06 01:31:33		released	50° 13,417' N	128° 20,829' W
SO294_149-1	SEISOBR	10/06 01:45:21		at surface	50° 13,420' N	128° 20,832' W
SO294_149-1	SEISOBR	10/06 01:51:43		on deck	50° 13,472' N	128° 20,861' W
SO294_150-1	SEISOBR	10/06 01:54:16	OBS_Ex_13	station start	50° 13,477' N	128° 20,852' W
SO294_150-1	SEISOBR	10/06 01:57:18		released	50° 13,480' N	128° 20,829' W
SO294_150-1	SEISOBR	10/06 02:15:11		at surface	50° 12,434' N	128° 22,706' W

SO294_150-1	SEISOBR	10/06 02:28:21		on deck	50° 11,951' N	128° 23,695' W
SO294_151-1	SEISOBR	10/06 03:03:40	OBS_Ex_14	station start	50° 10,030' N	128° 27,578' W
SO294_151-1	SEISOBR	10/06 03:09:22		released	50° 10,030' N	128° 27,568' W
SO294_151-1	SEISOBR	10/06 03:20:07		at surface	50° 10,033' N	128° 27,570' W
SO294_151-1	SEISOBR	10/06 03:35:29		on deck	50° 10,126' N	128° 27,847' W
SO294_152-1	SEISOBR	10/06 04:13:38	OBS_Ex_15	station start	50° 08,083' N	128° 31,327' W
SO294_152-1	SEISOBR	10/06 04:19:05		released	50° 08,082' N	128° 31,328' W
SO294_152-1	SEISOBR	10/06 04:33:02		at surface	50° 08,079' N	128° 31,336' W
SO294_152-1	SEISOBR	10/06 04:50:05		on deck	50° 08,163' N	128° 31,872' W
SO294_153-1	SEISOBR	10/06 05:39:36	OBS_Ex_16	station start	50° 05,268' N	128° 36,772' W
SO294_153-1	SEISOBR	10/06 05:45:06		released	50° 05,265' N	128° 36,781' W
SO294_153-1	SEISOBR	10/06 06:08:53		at surface	50° 05,265' N	128° 36,790' W
SO294_153-1	SEISOBR	10/06 07:31:13		on deck	50° 04,174' N	128° 37,983' W
SO294_154-1	SEISOBR	10/06 08:05:35	OBS_Ex_17	station start	50° 02,819' N	128° 42,520' W
SO294_154-1	SEISOBR	10/06 08:05:51		information	50° 02,819' N	128° 42,521' W
SO294_154-1	SEISOBR	10/06 08:10:37		released	50° 02,834' N	128° 42,514' W
SO294_154-1	SEISOBR	10/06 09:09:58		on deck	50° 02,689' N	128° 42,822' W
SO294_155-1	SEISOBR	10/06 10:00:54	OBS_Ex_18	station start	49° 59,767' N	128° 48,777' W
SO294_155-1	SEISOBR	10/06 10:06:50		released	49° 59,768' N	128° 48,775' W
SO294_155-1	SEISOBR	10/06 10:44:27		on deck	49° 59,902' N	128° 48,740' W
SO294_156-1	SEISOBR	10/06 11:33:55	OBS_Ex_19	station start	49° 56,623' N	128° 55,443' W
SO294_156-1	SEISOBR	10/06 11:37:07		released	49° 56,624' N	128° 55,432' W
SO294_156-1	SEISOBR	10/06 12:09:35		at surface	49° 56,627' N	128° 55,437' W
SO294_156-1	SEISOBR	10/06 12:28:22		on deck	49° 56,868' N	128° 55,149' W
SO294_157-1	SEISOBR	10/06 13:12:03	OBS_Ex_20	station start	49° 53,987' N	129° 00,802' W
SO294_157-1	SEISOBR	10/06 13:15:14		released	49° 53,986' N	129° 00,795' W
SO294_157-1	SEISOBR	10/06 13:46:33		at surface	49° 53,983' N	129° 00,799' W
SO294_157-1	SEISOBR	10/06 13:58:05		on deck	49° 54,102' N	129° 00,483' W
SO294_158-1	HF	10/06 14:39:25	Winona P1_T1	station start	49° 54,306' N	129° 00,608' W
SO294_158-1	HF	10/06 15:46:45	SLmax: 2300 m	max depth	49° 54,308' N	129° 00,719' W

SO294_158-1	HF	10/06 16:02:51	SZmax: 62.7 kN	hoisting	49° 54,319' N	129° 00,709' W
SO294_159-1	HF	10/06 17:28:53	Winona_P1_T2	station start	49° 54,686' N	128° 59,840' W
SO294_159-1	HF	10/06 17:32:14	SLmax: 2262 m	max depth	49° 54,690' N	128° 59,817' W
SO294_159-1	HF	10/06 17:49:04	SZmax: 54.6 kN	hoisting	49° 54,692' N	128° 59,793' W
SO294_160-1	HF	10/06 18:50:20	Winona_P1_T3	station start	49° 55,270' N	128° 58,774' W
SO294_160-1	HF	10/06 18:54:39	SLmax: 1892 m	max depth	49° 55,257' N	128° 58,786' W
SO294_160-1	HF	10/06 19:12:51	SZmax: 57.2 kN	hoisting	49° 55,250' N	128° 58,802' W
SO294_161-1	HF	10/06 20:08:38	Winona_P1_T4	station start	49° 55,715' N	128° 57,653' W
SO294_161-1	HF	10/06 20:21:07	SLmax = 2075 m	max depth	49° 55,710' N	128° 57,760' W
SO294_161-1	HF	10/06 20:37:43	SZmax = 63.4 kN	hoisting	49° 55,707' N	128° 57,762' W
SO294_162-1	HF	10/06 21:50:57	Winona_P1_T5	station start	49° 56,262' N	128° 56,467' W
SO294_162-1	HF	10/06 22:06:39	SLmax = 2243 m	max depth	49° 56,294' N	128° 56,472' W
SO294_162-1	HF	10/06 22:24:41	SLmax = 62.3 kN	hoisting	49° 56,295' N	128° 56,454' W
SO294_163-1	HF	10/06 23:29:02	Winona_P1_T6	station start	49° 56,881' N	128° 55,223' W
SO294_163-1	HF	10/06 23:44:44	SLmax: 2275 m	max depth	49° 56,895' N	128° 55,221' W
SO294_163-1	HF	10/07 00:01:58	SZmax: 62.3 kN	hoisting	49° 56,896' N	128° 55,232' W
SO294_164-1	HF	10/07 01:09:25	Winona_P1_T7	station start	49° 57,522' N	128° 53,934' W
SO294_164-1	HF	10/07 01:23:38	SLmax: 2292 m	max depth	49° 57,488' N	128° 54,011' W
SO294_164-1	HF	10/07 01:40:19	SZmax: 60.1 kN	hoisting	49° 57,486' N	128° 54,008' W
SO294_165-1	HF	10/07 03:28:54	Winona_P1_T8	station start	49° 58,354' N	128° 52,388' W
SO294_165-1	HF	10/07 03:32:36	SLmax: 1994 m	max depth	49° 58,356' N	128° 52,398' W
SO294_165-1	HF	10/07 03:51:43	SZmax: 64 kN	hoisting	49° 58,353' N	128° 52,382' W
SO294_166-1	HF	10/07 04:53:28	Winora_P1_T9	station start	49° 59,030' N	128° 51,025' W
SO294_166-1	HF	10/07 05:00:00	SLmax: 1645 m	max depth	49° 59,022' N	128° 51,029' W
SO294_166-1	HF	10/07 05:18:20	SZmax: 53.7 kN	hoisting	49° 59,026' N	128° 51,040' W
SO294_167-1	HF	10/07 06:43:48	Winora_P1_T10	station start	49° 59,747' N	128° 49,564' W
SO294_167-1	HF	10/07 06:54:45	SLmax: 2047 m	max depth	49° 59,741' N	128° 49,568' W
SO294_167-1	HF	10/07 07:13:28	SZmax: 54.7 kN	hoisting	49° 59,742' N	128° 49,573' W
SO294_168-1	HF	10/07 08:53:29	Winora_P1_T11	station start	50° 00,646' N	128° 47,698' W
SO294_168-1	HF	10/07 09:18:07	SLmax = 2047 m	max depth	50° 00,643' N	128° 47,708' W

SO294_168-1	HF	10/07 09:35:57	SZmax = 57.9 kN	hoisting	50° 00,649' N	128° 47,692' W
SO294_169-1	HF	10/07 11:06:17	Winora_P1_T12	station start	50° 01,347' N	128° 46,022' W
SO294_169-1	HF	10/07 11:30:55	SLmax: 2070 m	max depth	50° 01,355' N	128° 46,030' W
SO294_169-1	HF	10/07 11:49:25	SZmax: 59.2 kN	hoisting	50° 01,358' N	128° 46,018' W
SO294_170-1	HF	10/07 13:35:01	Winora_P1_T14	station start	50° 02,482' N	128° 43,657' W
SO294_170-1	HF	10/07 13:47:09	SLmax: 1641 m	max depth	50° 02,489' N	128° 43,673' W
SO294_170-1	HF	10/07 14:08:12	SZmax: 49.2 kN	hoisting	50° 02,488' N	128° 43,673' W
SO294_171-1	HF	10/07 15:18:53	Winona_P1_T15	station start	50° 03,203' N	128° 42,367' W
SO294_171-1	HF	10/07 15:28:17	SLmax: 1734 m	max depth	50° 03,203' N	128° 42,378' W
SO294_171-1	HF	10/07 15:45:44	SZmax: 54.2 kN	hoisting	50° 03,207' N	128° 42,372' W
SO294_172-1	HF	10/07 18:36:22	Winona_P1_T17	station start	50° 04,803' N	128° 39,125' W
SO294_172-1	HF	10/07 18:40:07	SLmax: 1732 m	max depth	50° 04,800' N	128° 39,127' W
SO294_172-1	HF	10/07 18:59:35	SZmax = 62.9 kN	hoisting	50° 04,798' N	128° 39,137' W
SO294_172-1	HF	10/07 19:42:29		station end	50° 04,802' N	128° 39,120' W
SO294_173-1	GC	10/07 22:14:47	GC05 + SVP	station start	49° 43,830' N	128° 29,961' W
SO294_173-1	GC	10/07 23:07:32	SLmax: 2288 m	max depth	49° 43,833' N	128° 30,041' W
SO294_173-1	GC	10/07 23:08:03	SZmax: 50.2 kN	hoisting	49° 43,834' N	128° 30,041' W
SO294_173-1	GC	10/07 23:57:47		on deck	49° 43,834' N	128° 30,041' W
SO294_174-1	GC	10/08 00:39:21	GC06	station start	49° 43,287' N	128° 31,008' W
SO294_174-1	GC	10/08 01:29:37	SLmax: 2288 m	max depth	49° 43,288' N	128° 30,991' W
SO294_174-1	GC	10/08 01:30:13	SZmax: 45.4 kN	hoisting	49° 43,288' N	128° 30,991' W
SO294_174-1	GC	10/08 02:18:21		on deck	49° 43,285' N	128° 30,998' W
SO294_175-1	HF	10/08 04:00:34	Winona_P2_T8	station start	49° 52,005' N	128° 18,114' W
SO294_175-1	HF	10/08 04:44:51	SLmax: 2081 m	max depth	49° 52,002' N	128° 18,182' W
SO294_175-1	HF	10/08 05:02:22	SZmax: 62.3 kN	hoisting	49° 51,998' N	128° 18,186' W
SO294_176-1	HF	10/08 06:32:50	Winona_P2_T7	station start	49° 51,125' N	128° 19,704' W
SO294_176-1	HF	10/08 06:40:07	SLmax: 2117 m	max depth	49° 51,128' N	128° 19,701' W
SO294_176-1	HF	10/08 06:51:42	SZmax: 62.9 kN	hoisting	49° 51,128' N	128° 19,704' W
SO294_177-1	HF	10/08 08:42:02	Winona_P2_T6	station start	49° 50,064' N	128° 21,486' W
SO294_177-1	HF	10/08 08:44:33	SLmax = 2118.9 m	max depth	49° 50,062' N	128° 21,486' W

SO294_177-1	HF	10/08 09:01:02	SZmax = 63.9 kN	hoisting	49° 50,068' N	128° 21,483' W
SO294_178-1	HF	10/08 10:47:37	Winona_P2_T5	station start	49° 49,042' N	128° 23,270' W
SO294_178-1	HF	10/08 10:51:48	SLmax = 2141.6 m	max depth	49° 49,042' N	128° 23,266' W
SO294_178-1	HF	10/08 11:09:45	SZmax: 58.7 kN	hoisting	49° 49,046' N	128° 23,251' W
SO294_179-1	HF	10/08 12:28:11	Winona_P2_T4	station start	49° 48,179' N	128° 24,799' W
SO294_179-1	HF	10/08 12:43:26	SLmax: 2144 m	max depth	49° 48,175' N	128° 24,795' W
SO294_179-1	HF	10/08 13:01:16	SZmax: 58.8 kN	hoisting	49° 48,175' N	128° 24,808' W
SO294_180-1	HF	10/08 14:14:43	Winona_P2_T3	station start	49° 47,420' N	128° 26,145' W
SO294_180-1	HF	10/08 14:27:55	SLmax: 2051 m	max depth	49° 47,420' N	128° 26,152' W
SO294_180-1	HF	10/08 14:44:02	SZmax: 65.1 kN	hoisting	49° 47,420' N	128° 26,145' W
SO294_181-1	HF	10/08 16:01:30	Winona_P2_T2	station start	49° 46,571' N	128° 27,701' W
SO294_181-1	HF	10/08 16:22:41	SLmax: 1538 m	max depth	49° 46,553' N	128° 27,729' W
SO294_181-1	HF	10/08 16:23:23	SZmax: 38.2 kN	hoisting	49° 46,552' N	128° 27,731' W
SO294_181-1	HF	10/08 17:00:37	HF an Deck	on deck	49° 46,556' N	128° 27,714' W
SO294_182-1	GC	10/08 18:10:51	GC07	station start	49° 41,280' N	128° 35,084' W
SO294_182-1	GC	10/08 19:08:20	SLmax = 2317.1 m	max depth	49° 41,263' N	128° 35,155' W
SO294_182-1	GC	10/08 19:09:14	SZmax = 46.7 kN	hoisting	49° 41,264' N	128° 35,155' W
SO294_182-1	GC	10/08 19:56:05		on deck	49° 41,261' N	128° 35,150' W
SO294_183-1	GC	10/08 20:18:56	GC08	station start	49° 40,921' N	128° 35,669' W
SO294_183-1	GC	10/08 21:08:45	SLmax = 2338.8 m	max depth	49° 40,910' N	128° 35,815' W
SO294_183-1	GC	10/08 21:09:50	SZmax = 53.6 kN	hoisting	49° 40,908' N	128° 35,815' W
SO294_183-1	GC	10/08 21:55		on deck	49° 40,908' N	128° 35,813' W
SO294_184-1	GC	10/08 22:17	GC09	station start	49° 40,530' N	128° 36,394' W
SO294_184-1	GC	10/08 23:19	SLmax: 2340 m	max depth	49° 40,525' N	128° 36,503' W
SO294_184-1	GC	10/08 23:20	SZmax: 50.1 kN	hoisting	49° 40,525' N	128° 36,503' W
SO294_184-1	GC	10/09 0:08		on deck	49° 40,527' N	128° 36,494' W
SO294_185-1	HF	10/09 1:50	Winona_P2_T9	station start	49° 44,079' N	128° 31,914' W
SO294_185-1	HF	10/09 2:38	SLmax: 2291 m	max depth	49° 44,119' N	128° 31,931' W
SO294_185-1	HF	10/09 2:55	SZmax: 61.9 kN	hoisting	49° 44,120' N	128° 31,928' W
SO294_186-1	HF	10/09 4:04	Winona_P2_T10	station start	49° 43,423' N	128° 33,094' W

SO294_186-1	HF	10/09 4:19	SLmax: 2294 m	max depth	49° 43,422' N	128° 33,100' W
SO294_186-1	HF	10/09 4:35	SZmax: 63.7 kN	hoisting	49° 43,422' N	128° 33,100' W
SO294_187-1	HF	10/09 5:57	Winona_P2_T11	station start	49° 42,609' N	128° 34,537' W
SO294_187-1	HF	10/09 6:10	SLmax: 2220 m	max depth	49° 42,608' N	128° 34,536' W
SO294_187-1	HF	10/09 6:27	SZmax: 61.1 kN	hoisting	49° 42,609' N	128° 34,538' W
SO294_188-1	HF	10/09 8:15	Winona_P2_T12	station start	49° 41,697' N	128° 36,220' W
SO294_188-1	HF	10/09 8:20	SLmax = 2334.9 m	max depth	49° 41,691' N	128° 36,231' W
SO294_188-1	HF	10/09 8:37	SZmax = 67.2 kN	hoisting	49° 41,692' N	128° 36,231' W
SO294_189-1	HF	10/09 9:46	Winona_P2_T13	station start	49° 41,061' N	128° 37,224' W
SO294_189-1	HF	10/09 9:49	SLmax = 2344.9 m	max depth	49° 41,060' N	128° 37,224' W
SO294_189-1	HF	10/09 10:07	SZmax = 64.8 kN	hoisting	49° 41,061' N	128° 37,224' W
SO294_190-1	HF	10/09 11:25	Winona_P2_T14	station start	49° 40,269' N	128° 38,515' W
SO294_190-1	HF	10/09 11:40	maxSL: 2348 m	max depth	49° 40,270' N	128° 38,513' W
SO294_190-1	HF	10/09 11:57	maxSZ: 60.6 kN	hoisting	49° 40,269' N	128° 38,513' W
SO294_191-1	HF	10/09 13:14	Winona_P2_T15	station start	49° 39,503' N	128° 39,880' W
SO294_191-1	HF	10/09 13:31	maxSL: 2348 m	max depth	49° 39,503' N	128° 39,880' W
SO294_191-1	HF	10/09 13:48	maxZ: 63.4 kN	hoisting	49° 39,503' N	128° 39,880' W
SO294_191-1	HF	10/09 15:10	HF an Deck	on deck	49° 39,099' N	128° 40,579' W
SO294_192-1	GC	10/09 17:20	GC10	station start	49° 40,748' N	128° 24,278' W
SO294_192-1	GC	10/09 18:10	SLmax: 2248 m	max depth	49° 40,765' N	128° 24,465' W
SO294_192-1	GC	10/09 18:10	SZmax: 47.5 kN	hoisting	49° 40,765' N	128° 24,465' W
SO294_192-1	GC	10/09 18:56		on deck	49° 40,885' N	128° 24,264' W
SO294_193-1	GC	10/09 19:13	GC11	station start	49° 40,976' N	128° 24,111' W
SO294_193-1	GC	10/09 20:02	SLmax = 2254.3 m	max depth	49° 40,953' N	128° 24,189' W
SO294_193-1	GC	10/09 20:02	SLmax = 45.3 kN	hoisting	49° 40,953' N	128° 24,189' W
SO294_193-1	GC	10/09 20:48		on deck	49° 40,953' N	128° 24,189' W
SO294_194-1	GC	10/09 21:10	GC12	station start	49° 40,139' N	128° 25,285' W
SO294_194-1	GC	10/09 21:53	SLmax = 2224 m	max depth	49° 40,146' N	128° 25,391' W
SO294_194-1	GC	10/09 21:53	SZmax = 45.3 kN	hoisting	49° 40,146' N	128° 25,392' W
SO294_194-1	GC	10/09 22:40		on deck	49° 40,145' N	128° 25,394' W

SO294_195-1	SEISOBR	10/10 18:02	JSCN09	Triangulation 1	49° 16,842' N	127° 21,340' W
SO294_195-2	SEISOBR	10/10 18:33	JSCN09	Triangulation 2	49° 16,429' N	127° 21,000' W
SO294_195-3	SEISOBR	10/10 19:08	JSCN09	Triangulation 3	49° 16,439' N	127° 21,701' W
SO294_195-4	SEISOBR	10/10 19:31	JSCN09	Triangulation 4	49° 16,903' N	127° 21,907' W
SO294_196-1	SEISOBR	10/11 19:38	OBS_C_01	OBS deployed	48° 24,805' N	127° 04,382' W
SO294_197-1	SEISOBR	10/11 20:09	OBS_C_02	OBS deployed	48° 27,069' N	127° 00,415' W
SO294_198-1	SEISOBR	10/11 20:46	OBS_C_03	OBS deployed	48° 29,651' N	126° 55,865' W
SO294_199-1	SEISOBR	10/11 21:13	OBS_C_04	OBS deployed	48° 31,500' N	126° 52,645' W
SO294_200-1	SEISOBR	10/11 21:42	OBS_C_05	OBS deployed	48° 33,616' N	126° 48,832' W
SO294_201-1	SEISOBR	10/11 22:09	OBS_C_06	OBS deployed	48° 35,580' N	126° 45,317' W
SO294_202-1	SEISOBR	10/11 22:42	OBS_C_07	OBS deployed	48° 38,090' N	126° 40,948' W
SO294_203-1	SEISOBR	10/11 23:08	OBS_C_08	OBS deployed	48° 39,726' N	126° 37,981' W
SO294_204-1	SEISOBR	10/11 23:36	OBS_C_09	OBS deployed	48° 41,256' N	126° 35,293' W
SO294_205-1	SEISOBR	10/12 0:02	OBS_C_10	OBS deployed	48° 42,683' N	126° 32,715' W
SO294_206-1	SEISOBR	10/12 0:26	OBS_C_11	OBS deployed	48° 44,019' N	126° 30,310' W
SO294_207-1	SEISOBR	10/12 0:53	OBS_C_12	OBS deployed	48° 45,649' N	126° 27,403' W
SO294_208-1	SEISSRC	10/12 15:53		station start	48° 57,515' N	127° 22,601' W
SO294_208-1	SEISSRC	10/12 15:54	deployment GI-Gun	information	48° 57,547' N	127° 22,641' W
SO294_208-1	SEISSRC	10/12 15:55		Gi-gun in water	48° 57,591' N	127° 22,693' W
SO294_208-1	SEISSRC	10/12 16:00	deployment Steamers	information	48° 57,810' N	127° 22,956' W
SO294_208-1	SEISSRC	10/12 16:25	Streamer deployment completed	information	48° 59,005' N	127° 24,210' W
SO294_208-1	SEISSRC	10/12 16:27	Deployment PAM	information	48° 59,114' N	127° 24,320' W
SO294_208-1	SEISSRC	10/12 16:52	PAM fully deployed: 300 m	information	49° 00,662' N	127° 26,027' W
SO294_208-1	SEISSRC	10/12 17:05	Airgun started	information	49° 01,507' N	127° 26,756' W
SO294_208-1	SEISSRC	10/12 17:52	profile start MCS with GI gun	profile start	49° 04,092' N	127° 29,825' W

SO294_208-1	SEISSRC	10/14 21:23		profile end	48° 10,312' N	126° 18,350' W
SO294_208-1	SEISSRC	10/14 21:46	recovery GI airgun	information	48° 11,179' N	126° 17,105' W
SO294_208-1	SEISSRC	10/14 21:51	swap for airgun array	on deck	48° 11,398' N	126° 17,333' W
SO294_209-1	SEISSRC	10/14 21:52	Streamer und PAM remain deployed	station start	48° 11,441' N	126° 17,388' W
SO294_209-1	SEISSRC	10/14 22:21	start deployment G-gun array	Airgun array	48° 12,587' N	126° 18,930' W
SO294_209-1	SEISSRC	10/14 22:29	airgun array deployed	Gi-gun in water	48° 12,914' N	126° 19,366' W
SO294_209-1	SEISSRC	10/15 1:16		profile start	48° 23,566' N	126° 27,879' W
SO294_209-1	SEISSRC	10/15 22:30		profile end	48° 47,984' N	126° 23,202' W
SO294_209-1	SEISSRC	10/15 22:38	Begin recovery PAM	information	48° 48,169' N	126° 22,652' W
SO294_209-1	SEISSRC	10/15 22:57	PAM fully recovered	on deck	48° 48,367' N	126° 21,488' W
SO294_209-1	SEISSRC	10/15 22:58	Begin recovery Streamer	information	48° 48,380' N	126° 21,406' W
SO294_209-1	SEISSRC	10/15 23:14	Streamer fully recovered	on deck	48° 48,415' N	126° 20,830' W
SO294_209-1	SEISSRC	10/15 23:16	start recovery airgun array	information	48° 48,415' N	126° 20,763' W
SO294_210-1	OBEM	10/16 1:36	OBMT_18	station start	49° 01,147' N	125° 59,762' W
SO294_210-1	OBEM	10/16 1:38		released	49° 01,176' N	125° 59,761' W
SO294_210-1	OBEM	10/16 1:39		on surface	49° 01,177' N	125° 59,759' W
SO294_210-1	OBEM	10/16 1:51		on deck	49° 01,216' N	125° 59,511' W
SO294_211-1	OBEM	10/16 2:18	OBMT_17	station start	48° 59,513' N	126° 02,666' W
SO294_211-1	OBEM	10/16 2:24		released	48° 59,514' N	126° 02,651' W
SO294_211-1	OBEM	10/16 2:25		on surface	48° 59,516' N	126° 02,648' W
SO294_211-1	OBEM	10/16 2:33		on deck	48° 59,517' N	126° 02,497' W

SO294_212-1	OBEM	10/16 3:07	OBMT_16	station start	48° 57,759' N	126° 05,784' W
SO294_212-1	OBEM	10/16 3:10		released	48° 57,759' N	126° 05,785' W
SO294_212-1	OBEM	10/16 3:10		on surface	48° 57,759' N	126° 05,784' W
SO294_212-1	OBEM	10/16 3:25		on deck	48° 57,918' N	126° 05,493' W
SO294_213-1	OBEM	10/16 3:59	OBMT_15	station start	48° 56,356' N	126° 08,289' W
SO294_213-1	OBEM	10/16 4:03		released	48° 56,356' N	126° 08,289' W
SO294_213-1	OBEM	10/16 4:03		on surface	48° 56,356' N	126° 08,290' W
SO294_213-1	OBEM	10/16 4:15		on deck	48° 56,479' N	126° 08,212' W
SO294_214-1	OBEM	10/16 4:55	OBMT_14	station start	48° 54,501' N	126° 11,551' W
SO294_214-1	OBEM	10/16 4:58		released	48° 54,502' N	126° 11,550' W
SO294_214-1	OBEM	10/16 5:00		on surface	48° 54,502' N	126° 11,549' W
SO294_214-1	OBEM	10/16 5:13		on deck	48° 54,675' N	126° 11,446' W
SO294_215-1	OBEM	10/16 5:48	OBMT_13	station start	48° 53,028' N	126° 14,392' W
SO294_215-1	OBEM	10/16 5:51		released	48° 53,026' N	126° 14,390' W
SO294_215-1	OBEM	10/16 7:14		Triangulation 1	48° 52,947' N	126° 14,498' W
SO294_215-1	OBEM	10/16 7:25		Triangulation 2	48° 52,942' N	126° 13,702' W
SO294_215-1	OBEM	10/16 7:42		Triangulation 3	48° 53,426' N	126° 14,127' W
SO294_215-1	OBEM	10/16 7:51	OBMT did not surface	Stop search	48° 53,425' N	126° 14,125' W
SO294_216-1	OBEM	10/16 8:31	OBMT_12	station start	48° 51,011' N	126° 18,754' W
SO294_216-1	OBEM	10/16 8:34		released	48° 51,011' N	126° 18,755' W
SO294_216-1	OBEM	10/16 8:38		on surface	48° 51,011' N	126° 18,753' W
SO294_216-1	OBEM	10/16 8:54		on deck	48° 50,953' N	126° 18,444' W
SO294_217-1	OBEM	10/16 9:36	OBMT_11	station start	48° 48,388' N	126° 23,215' W
SO294_217-1	OBEM	10/16 9:39		released	48° 48,388' N	126° 23,216' W
SO294_217-1	OBEM	10/16 9:52		on surface	48° 48,388' N	126° 23,212' W
SO294_217-1	OBEM	10/16 10:05		on deck	48° 48,338' N	126° 22,845' W
SO294_218-1	OBEM	10/16 10:36	OBMT_10	station start	48° 46,767' N	126° 26,212' W
SO294_218-1	OBEM	10/16 10:41		released	48° 46,766' N	126° 26,214' W
SO294_218-1	OBEM	10/16 10:51		on surface	48° 46,767' N	126° 26,213' W

SO294_218-1	OBEM	10/16 11:05		on deck	48° 46,723' N	126° 25,973' W
SO294_219-1	SEISOBR	10/16 11:28	OBS C_12	station start	48° 45,783' N	126° 27,749' W
SO294_219-1	SEISOBR	10/16 11:31		released	48° 45,782' N	126° 27,751' W
SO294_219-1	SEISOBR	10/16 11:41		at surface	48° 45,781' N	126° 27,747' W
SO294_219-1	SEISOBR	10/16 11:49		on deck	48° 45,755' N	126° 27,619' W
SO294_220-1	OBEM	10/16 12:11	OBMT_9	station start	48° 44,879' N	126° 29,487' W
SO294_220-1	OBEM	10/16 12:15		released	48° 44,882' N	126° 29,486' W
SO294_220-1	OBEM	10/16 12:22		at surface	48° 44,878' N	126° 29,493' W
SO294_220-1	OBEM	10/16 12:39		on deck	48° 44,850' N	126° 29,123' W
SO294_221-1	SEISOBR	10/16 12:56	OBS_C11	station start	48° 44,171' N	126° 30,551' W
SO294_221-1	SEISOBR	10/16 13:02		released	48° 44,170' N	126° 30,551' W
SO294_221-1	SEISOBR	10/16 13:08		at surface	48° 44,167' N	126° 30,555' W
SO294_221-1	SEISOBR	10/16 13:16		on deck	48° 44,010' N	126° 30,322' W
SO294_222-1	OBEM	10/16 13:33	OBMT_8	station start	48° 43,620' N	126° 31,742' W
SO294_222-1	OBEM	10/16 13:37		released	48° 43,613' N	126° 31,734' W
SO294_222-1	OBEM	10/16 13:45		at surface	48° 43,617' N	126° 31,738' W
SO294_222-1	OBEM	10/16 13:58		on deck	48° 43,452' N	126° 31,325' W
SO294_223-1	SEISOBR	10/16 14:16	OBS_C10	station start	48° 42,819' N	126° 32,904' W
SO294_223-1	SEISOBR	10/16 14:19		released	48° 42,813' N	126° 32,911' W
SO294_223-1	SEISOBR	10/16 14:29		at surface	48° 42,819' N	126° 32,909' W
SO294_223-1	SEISOBR	10/16 14:38		on deck	48° 42,636' N	126° 32,699' W
SO294_224-1	OBEM	10/16 14:52	OBMT_7	station start	48° 42,192' N	126° 33,988' W
SO294_224-1	OBEM	10/16 14:55		released	48° 42,182' N	126° 33,983' W
SO294_224-1	OBEM	10/16 15:09		at surface	48° 42,188' N	126° 33,979' W
SO294_224-1	OBEM	10/16 15:18		on deck	48° 42,228' N	126° 34,056' W
SO294_225-1	SEISOBR	10/16 15:44	OBS_C_09	station start	48° 41,634' N	126° 35,524' W
SO294_225-1	SEISOBR	10/16 15:48		released	48° 41,637' N	126° 35,521' W
SO294_225-1	SEISOBR	10/16 16:22		at surface	48° 41,488' N	126° 35,301' W
SO294_225-1	SEISOBR	10/16 16:33		on deck	48° 41,363' N	126° 35,171' W
SO294_226-1	CTD	10/16 18:00	SVP / CTD	station start	48° 45,108' N	126° 47,516' W

SO294_226-1	CTD	10/16 18:33	SLmax: 1348 m	max depth	48° 45,103' N	126° 47,524' W
SO294_226-1	CTD	10/16 19:01		on deck	48° 45,100' N	126° 47,530' W
SO294_227-1	OBEM	10/16 20:03	OBMT_06	station start	48° 40,761' N	126° 37,043' W
SO294_227-1	OBEM	10/16 20:08		released	48° 40,758' N	126° 37,043' W
SO294_227-1	OBEM	10/16 20:34		at surface	48° 40,757' N	126° 37,047' W
SO294_227-1	OBEM	10/16 20:56		on deck	48° 40,660' N	126° 36,505' W
SO294_228-1	SEISOBR	10/16 21:25	OBS_C_08	station start	48° 40,060' N	126° 38,190' W
SO294_228-1	SEISOBR	10/16 21:26		released	48° 40,061' N	126° 38,189' W
SO294_228-1	SEISOBR	10/16 21:45		at surface	48° 40,054' N	126° 38,200' W
SO294_228-1	SEISOBR	10/16 22:03		on deck	48° 39,787' N	126° 37,693' W
SO294_229-1	OBEM	10/16 22:29	OBMT_5	station start	48° 39,237' N	126° 39,886' W
SO294_229-1	OBEM	10/16 22:33		released	48° 39,239' N	126° 39,879' W
SO294_229-1	OBEM	10/16 22:58		at surface	48° 39,235' N	126° 39,885' W
SO294_229-1	OBEM	10/16 23:14		on deck	48° 39,057' N	126° 39,455' W
SO294_230-1	SEISOBR	10/16 23:33	OBS_C_07	station start	48° 38,368' N	126° 41,186' W
SO294_230-1	SEISOBR	10/16 23:40		released	48° 38,367' N	126° 41,188' W
SO294_230-1	SEISOBR	10/16 23:56		at surface	48° 38,368' N	126° 41,188' W
SO294_230-1	SEISOBR	10/17 0:07		on deck	48° 38,059' N	126° 40,883' W
SO294_231-1	OBEM	10/17 0:30	OBMT_4	station start	48° 37,024' N	126° 43,277' W
SO294_231-1	OBEM	10/17 0:34		released	48° 37,027' N	126° 43,284' W
SO294_231-1	OBEM	10/17 0:59		at surface	48° 37,021' N	126° 43,279' W
SO294_231-1	OBEM	10/17 1:14		on deck	48° 36,878' N	126° 43,090' W
SO294_232-1	SEISOBR	10/17 1:41	OBS_C_06	station start	48° 35,785' N	126° 45,550' W
SO294_232-1	SEISOBR	10/17 1:46		released	48° 35,794' N	126° 45,561' W
SO294_232-1	SEISOBR	10/17 2:03		at surface	48° 35,796' N	126° 45,563' W
SO294_232-1	SEISOBR	10/17 2:16		on deck	48° 35,578' N	126° 45,400' W
SO294_233-1	OBEM	10/17 2:27	OBMT_3	station start	48° 35,268' N	126° 46,208' W
SO294_233-1	OBEM	10/17 2:31		released	48° 35,281' N	126° 46,210' W
SO294_233-1	OBEM	10/17 2:56		at surface	48° 35,346' N	126° 46,195' W
SO294_233-1	OBEM	10/17 3:11		on deck	48° 35,202' N	126° 46,235' W

SO294_234-1	SEISOBR	10/17 3:41	OBS_C_05	station start	48° 33,926' N	126° 49,182' W
SO294_234-1	SEISOBR	10/17 3:47		released	48° 33,931' N	126° 49,173' W
SO294_234-1	SEISOBR	10/17 4:14		at surface	48° 33,845' N	126° 49,050' W
SO294_234-1	SEISOBR	10/17 4:23		on deck	48° 33,692' N	126° 48,896' W
SO294_235-1	OBEM	10/17 4:47	recovery OBMT_2	station start	48° 32,624' N	126° 51,313' W
SO294_235-1	OBEM	10/17 4:52		released	48° 32,624' N	126° 51,301' W
SO294_235-1	OBEM	10/17 5:37		at surface	48° 32,572' N	126° 51,201' W
SO294_235-1	OBEM	10/17 6:32		on deck	48° 32,421' N	126° 50,875' W
SO294_236-1	SEISOBR	10/17 6:54	OBS_C_04	station start	48° 31,664' N	126° 52,862' W
SO294_236-1	SEISOBR	10/17 6:58		information	48° 31,663' N	126° 52,854' W
SO294_236-1	SEISOBR	10/17 7:28		information	48° 31,664' N	126° 52,861' W
SO294_236-1	SEISOBR	10/17 7:45		on deck	48° 31,624' N	126° 52,631' W
SO294_237-1	OBEM	10/17 8:15	OBMT_01	station start	48° 30,412' N	126° 55,419' W
SO294_237-1	OBEM	10/17 8:20		information	48° 30,406' N	126° 55,415' W
SO294_237-1	OBEM	10/17 9:16		information	48° 30,348' N	126° 55,077' W
SO294_237-1	OBEM	10/17 9:28		on deck	48° 30,272' N	126° 54,837' W
SO294_238-1	SEISOBR	10/17 9:30	OBS_C_03	station start	48° 30,273' N	126° 54,834' W
SO294_238-1	SEISOBR	10/17 9:35		released	48° 30,269' N	126° 54,837' W
SO294_238-1	SEISOBR	10/17 10:08		At surface	48° 29,846' N	126° 56,308' W
SO294_238-1	SEISOBR	10/17 10:28		on deck	48° 29,772' N	126° 55,956' W
SO294_239-1	SEISOBR	10/17 11:14	OBS_C_02	station start	48° 27,196' N	127° 00,616' W
SO294_239-1	SEISOBR	10/17 11:21		released	48° 27,205' N	127° 00,601' W
SO294_239-1	SEISOBR	10/17 11:54		at surface	48° 27,201' N	127° 00,602' W
SO294_239-1	SEISOBR	10/17 12:08		on deck	48° 27,235' N	127° 00,486' W
SO294_240-1	SEISOBR	10/17 12:42	OBS_C_01	station start	48° 24,976' N	127° 04,614' W
SO294_240-1	SEISOBR	10/17 12:48		released	48° 24,981' N	127° 04,607' W
SO294_240-1	SEISOBR	10/17 13:22		at surface	48° 24,976' N	127° 04,612' W
SO294_240-1	SEISOBR	10/17 13:37		on deck	48° 24,895' N	127° 04,517' W

SO294_241-1	OBEM	10/17 20:10	OBMT_13	Recovery 2 nd attempt	48° 53,257' N	126° 14,600' W
SO294_242-1	HF	10/18 3:02	TL03_01	station start	48° 50,223' N	127° 28,045' W
SO294_242-1	HF	10/18 3:53	SLmax: 2286 m	max depth	48° 50,198' N	127° 28,021' W
SO294_242-1	HF	10/18 4:09	SZmax: 55.2 kN	hoisting	48° 50,196' N	127° 28,022' W
SO294_243-1	HF	10/18 5:08	TL03_02	station start	48° 50,706' N	127° 26,843' W
SO294_243-1	HF	10/18 5:23	SLmax: 2286 m	max depth	48° 50,707' N	127° 26,834' W
SO294_243-1	HF	10/18 5:40	SZmax: 55.4 kN	hoisting	48° 50,706' N	127° 26,840' W
SO294_244-1	HF	10/18 6:38	TL03_03	station start	48° 51,253' N	127° 25,617' W
SO294_244-1	HF	10/18 6:51	SLmax: 2069 m	max depth	48° 51,253' N	127° 25,619' W
SO294_244-1	HF	10/18 7:07	SZmax: 62.0 kN	hoisting	48° 51,253' N	127° 25,612' W
SO294_245-1	HF	10/18 8:32	HF TL03_04	station start	48° 51,878' N	127° 24,182' W
SO294_245-1	HF	10/18 8:36	SLmax = 2110.3 m	max depth	48° 51,882' N	127° 24,189' W
SO294_245-1	HF	10/18 8:54	SZmax = 51.7 kN	hoisting	48° 51,879' N	127° 24,185' W
SO294_246-1	HF	10/18 10:29	HF TL03_05	station start	48° 52,581' N	127° 22,636' W
SO294_246-1	HF	10/18 10:33	SLmax = 2098.2 m	max depth	48° 52,587' N	127° 22,633' W
SO294_246-1	HF	10/18 10:51	SZmax = 46.8 kN	hoisting	48° 52,581' N	127° 22,642' W
SO294_247-1	HF	10/18 11:54	HF TL03_06	station start	48° 53,165' N	127° 21,330' W
SO294_247-1	HF	10/18 12:10	SLmax: 2102 m	max depth	48° 53,165' N	127° 21,334' W
SO294_247-1	HF	10/18 12:26	SZmax: 54.9 kN	hoisting	48° 53,159' N	127° 21,336' W
SO294_248-1	HF	10/18 13:23	HF TL03_07	station start	48° 53,645' N	127° 20,147' W
SO294_248-1	HF	10/18 13:36	SLmax: 2087 m	max depth	48° 53,642' N	127° 20,153' W
SO294_248-1	HF	10/18 13:53	SZmax: 59.5 kN	hoisting	48° 53,639' N	127° 20,155' W
SO294_248-1	HF	10/18 14:40		on deck	48° 53,644' N	127° 20,141' W
SO294_249-1	OBEM	10/18 20:42	OBMT_13	OFOS	48° 53,069' N	126° 14,051' W
SO294_249-1	OBEM	10/18 20:54	OFOS deployed	information	48° 53,137' N	126° 14,089' W
SO294_249-1	OBEM	10/18 22:07	OFOS recovered	on deck	48° 53,104' N	126° 14,133' W
SO294_249-1	OBEM	10/18 22:11	OBMT_13	on deck	48° 53,100' N	126° 14,131' W
SO294_250-1	CTD	10/19 15:10	CTD – SVP	station start	48° 24,260' N	125° 51,985' W
SO294_250-1	CTD	10/19 15:19	SLmax: 135 m	max depth	48° 24,260' N	125° 51,987' W

SO294_250-1	CTD	10/19 15:19	SZmax: 4.9 kN	hoisting	48° 24,260' N	125° 51,987' W
SO294_250-1	CTD	10/19 15:26		on deck	48° 24,258' N	125° 51,987' W
SO294_251-1	PAM	10/19 15:40	PAM deployment	station start	48° 24,264' N	125° 52,080' W
SO294_251-1	PAM	10/19 16:02	PAM fully deployed: 300 m	information	48° 24,523' N	125° 53,516' W
SO294_251-1	PAM	10/19 16:50	start profiling	profile start	48° 24,853' N	125° 55,136' W
SO294_251-1	PAM	10/20 0:30	end profiling: 79 nm	profile end	48° 25,871' N	125° 56,969' W
SO294_251-1	PAM	10/20 0:40	Recovery PAM	information	48° 25,728' N	125° 56,059' W
SO294_251-1	PAM	10/20 0:57	PAM fully recovered	station end	48° 25,496' N	125° 54,734' W
SO294_252-1	CTD	10/20 1:34	CTD – SVP	station start	48° 26,046' N	126° 00,056' W
SO294_252-1	CTD	10/20 1:46	SLmax: 172 m	max depth	48° 26,042' N	126° 00,067' W
SO294_252-1	CTD	10/20 1:54		on deck	48° 26,036' N	126° 00,063' W
SO294_253-1	CTD	10/20 15:06	CTD - SVP	station start	48° 21,510' N	125° 47,316' W
SO294_253-1	CTD	10/20 15:16	SLmax: 146 m	max depth	48° 21,510' N	125° 47,313' W
SO294_253-1	CTD	10/20 15:16	SZmax: 5.6 kN	hoisting	48° 21,509' N	125° 47,311' W
SO294_253-1	CTD	10/20 15:22		on deck	48° 21,507' N	125° 47,312' W
SO294_254-1	PAM	10/20 15:37	PAM deployment	station start	48° 21,540' N	125° 47,236' W
SO294_254-1	PAM	10/20 15:54	PAM fully deployed: 300m	information	48° 21,815' N	125° 48,462' W
SO294_254-1	PAM	10/20 16:52	start profiling	profile start	48° 21,241' N	125° 48,669' W
SO294_254-1	PAM	10/21 1:32	end profiling	profile end	48° 21,604' N	125° 48,198' W
SO294_254-1	PAM	10/21 1:34	recovery PAM	information	48° 21,679' N	125° 48,251' W
SO294_254-1	PAM	10/21 1:52	end of cruise	station end	48° 22,239' N	125° 48,942' W