doi : 10.17596/0002673

KAIREI “Cruise Report”

KR18-12C

Off the east coast of Kyushu

Sept. 7th- 21th, 2018

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

KR18-12C Cruise Report Contents

1. Cruise Information

Cruise ID:KR18-12C

Name of vessel: R/V KAIREI

Chief scientist [Affiliation]: Toshiya Kanamatsu [CEAT JAMSTEC]

Representative of the Science Party [Affiliation]: Toshiya Kanamatsu [CEAT JAMSTEC]]

Proposal representative [affiliation]: Shuichi Kodaira [CEAT JAMSTEC]

Cruise period: Sept. 7th, 2018-Sept. 21th, 2018

Ports of departure / arrival: JAMSTEC/ JAMSTEC (**Figure 1**)

Research area: Kyusyu Toho oki (**Figure 2**)

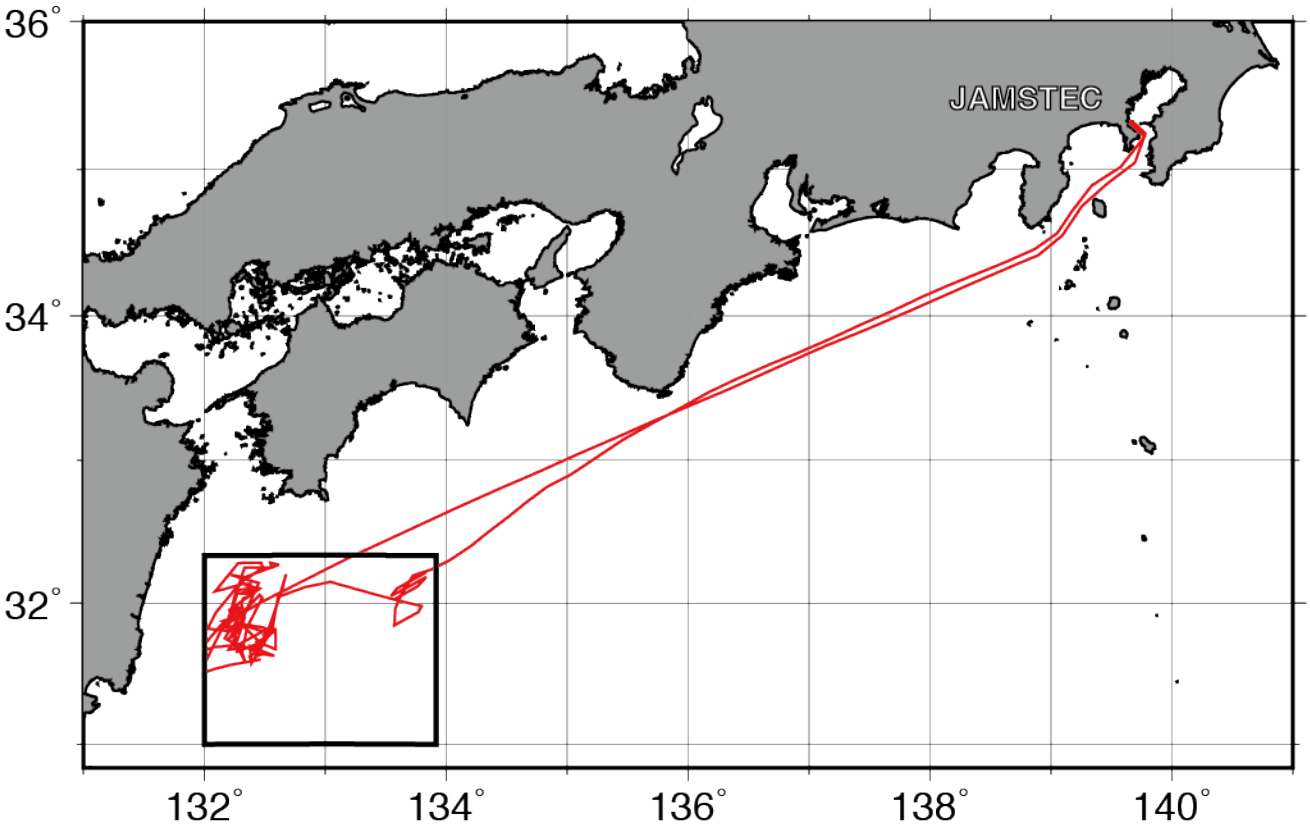


Figure 1. Red line: ship track of KR18-12C. Box of black line corresponds to **Figure 2**

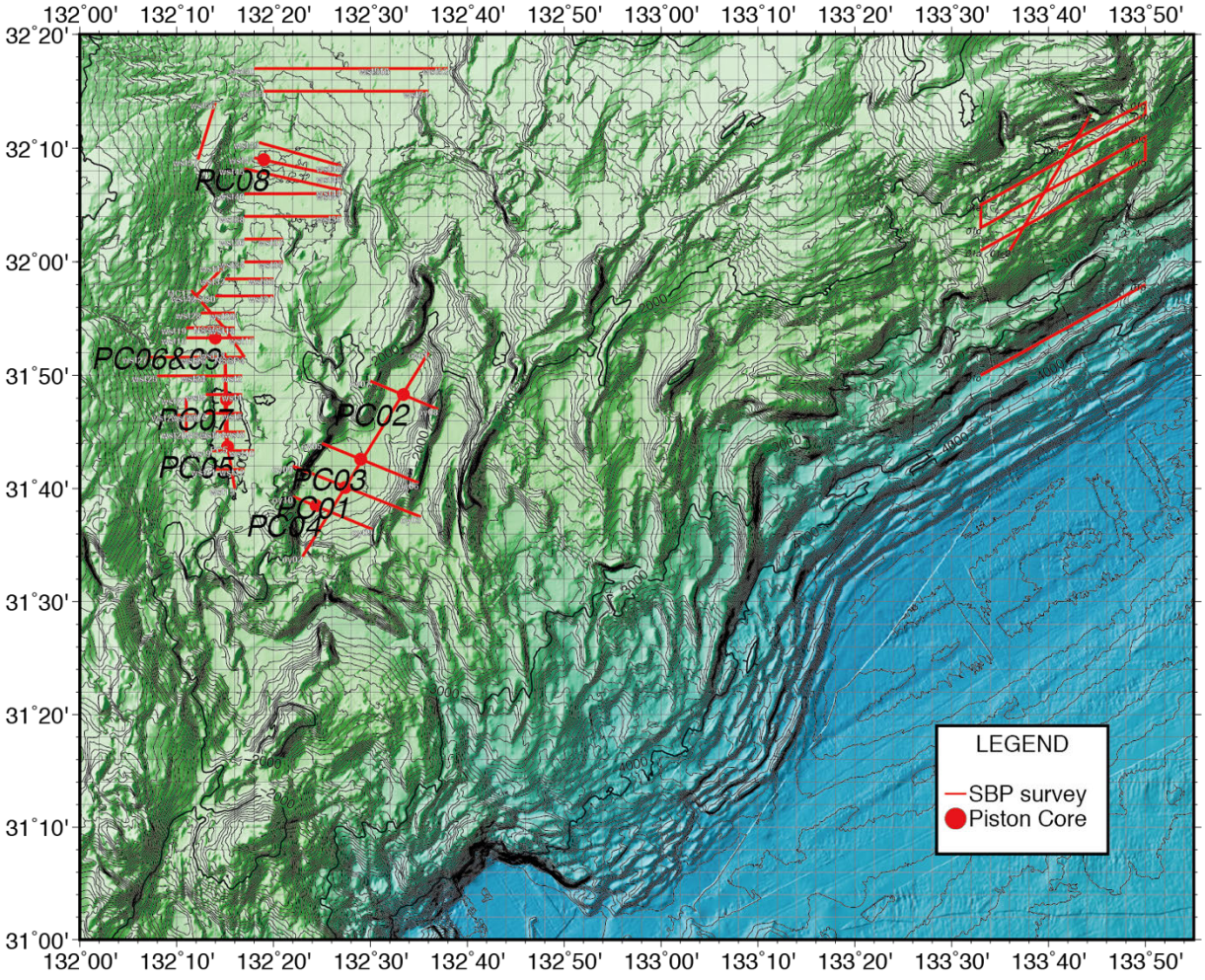


Figure 2. KR18-12C research area: Red line: SBP and MBES Lines. Red circle: coring point

2. Participant list

Scientific party	
Toshiya Kanamatsu	CEAT, JAMSTEC
Ken Ikehara	Geological Survey of Japan, AIST
Taku Ajioka	Geological Survey of Japan, AIST
Mika Yamaguchi	Marine Works Japan Ltd
Akira So	Marine Works Japan Ltd
Yuki Miyajima	Marine Works Japan Ltd
Akihiro Tame	Marine Works Japan Ltd
RV KAIREI Ship Crew	
Yoshiyuki Nakamura	Master
Takeshi Muramatsu	Chief Officer
Syunsuke Fujii	2nd Officer
Tatsumi Deguchi	3rd Officer
Yuta Uozumi	Jr.3rd Officer
Kazuhiko Kaneda	Chief Engineer
Shinichi Ikuta	1st Engineer
Akira Hanawa	2st Engineer
Yoshinobu Hiratsuk	Jr.2nd Engineer
Shohei Miyazaki	3rd Engineer
Hiroyasu Saitake	Chief Electronics Operator
Ryosuke Matsui	2nd Electronics Operator
Misato Taki	3rd Electronics Operator
Kaname Hirosaki	Boat Swain
Shuichi Yamamoto	Quarter Master
Kenji Nakae	Quarter Master
Nao Ishizuka	Quarter Master
Kenta Nasu	Sailor
Toshiya Saga	Sailor
Taisei Tanaka	Sailor
Ryo Nakanishi	Sailor
Junji Mori	No.1 Oiler
Toshinori Matsui	Oiler
Ryo Sato	Oiler
Makoto Kozaki	Oiler
Masakazu Ishida	Assistant Oiler
Fubuki Homma	Assistant Oiler
Kazuhiro Hirayama	Chief Steward
Masaru Sugiyama	Steward
Chikara Aohori	Steward
Koki Shinohara	Steward
Hodaka Wakisaka	Steward

3. Cruise Log

Date	Remarks
7th Sept	
10:00	Departure from JAMSTEC
11:00-	Briefing for safety and onboard life
16:30-	Konpira praying
	Transit to the survey area
8th Sept	
18:00-	SBP and MBES surveys
9th Sept	
	SBP and MBES surveys
11:45-	Cancel of piston coring operation
	SBP and MBES surveys
	Transit to the Oyodo survey area
10th Sept	
00:43	SBP and MBES surveys
10:00	Piston coring (PC01)
15:12	SBP and MBES surveys
11th Sept	
09:00	Suspended PC operation
12:40	Cancel of PC operation
10:52-	SBP and MBES surveys
12th Sept	
08:00	Piston coring (PC02)
14:00	Piston coring (PC03)
18:37-	SBP and MBES surveys
13th Sept	
09:00-	Cancel of PC operation SBP and MBES surveys
14th Sept	
09:00-	Piston coring (PC04)
	SBP and MBES surveys
15th Sept	

09:00-	Piston coring (PC05)
	SBP and MBES surveys

16th Sept

09:00-	Piston coring (PC06)
	SBP and MBES surveys

17th Sept

09:00-	Piston coring (PC07)
	SBP and MBES surveys
11:32-11:53	8 figure turn
18:34-18:55	8 figure turn

18th Sept

09:00-	Piston coring (PC08)
	SBP and MBES surveys

19th Sept

09:00-	Piston coring (PC09) Left research area Transit to JAMSTEC
16:23-16:43	8 figure turn

20h Sept.

	Transit to JAMSTEC

21th Sept.

09:00	Arrival in JAMSTEC port (end of cruise)

4. Objectives

This cruise was carried out under "Research Project for Compound Disaster Mitigation on the Great Earthquakes and Tsunamis around the Nankai Trough Region" entrusted by the Ministry of Education, Culture, Sports, Science, and Technology. The purpose is to investigate evidences of past -Tsunami in marine sediments. We planed to take marine sediment sample using a piston coring system, bathymetric and shallow sub-seafloor acoustic imaging surveys using a multi-beam echo-sounder system and sub-bottom profiler, visual core description, and sub-sampling for post-cruise researches on obtained during the cruise. Onboard results are reported in the followings sections.

5. Instruments and Operations

5-1. Multi-beam Echo-sounder System and Sub-bottom profiler

The ***SeaBeam3012*** Multi beam Echo sounder system (MBES), and ***Bathy 2010*** sub-bottom profiler (SBP) equipped with RV KAIREI were used to collect bathymetric and sub-bottom data in the study area. General specifications of the systems are summarized below.

MBES:	Frequency	12kHz
	Depth range	50～11,000m
	Swath width	Max150°(90° at Water depth 11000m)
	Max beam number	301beams
	Beam width	2°×1.6°
SBP:	Frequency	3.5 kHz
	Beam width	20°
	Depth range	10～12,000m

5-2. Temperature profile

The sound velocity profile of the local water column, which was used for calibration of depth data for the bathymetry, was estimated from a temperature profile based on in-situ Expendable Bathythermograph (XBT: T05). Locations of XBT measurements and temperature depth profile are shown in **Table 5-2-1** and **Figure 5-2-1.**

Table 5-2-1. Positions of XBT measurements.

Num	Date	time	Lat.	Long.	Probe Type	Max depth (m)
0549	2018/09/08	09:01:06	32-14.1770N	133- 54.6403E	T05	1830
0559	2018/09/09	14:48:04	31-59.4880N	132-33.1937E	T05	1830

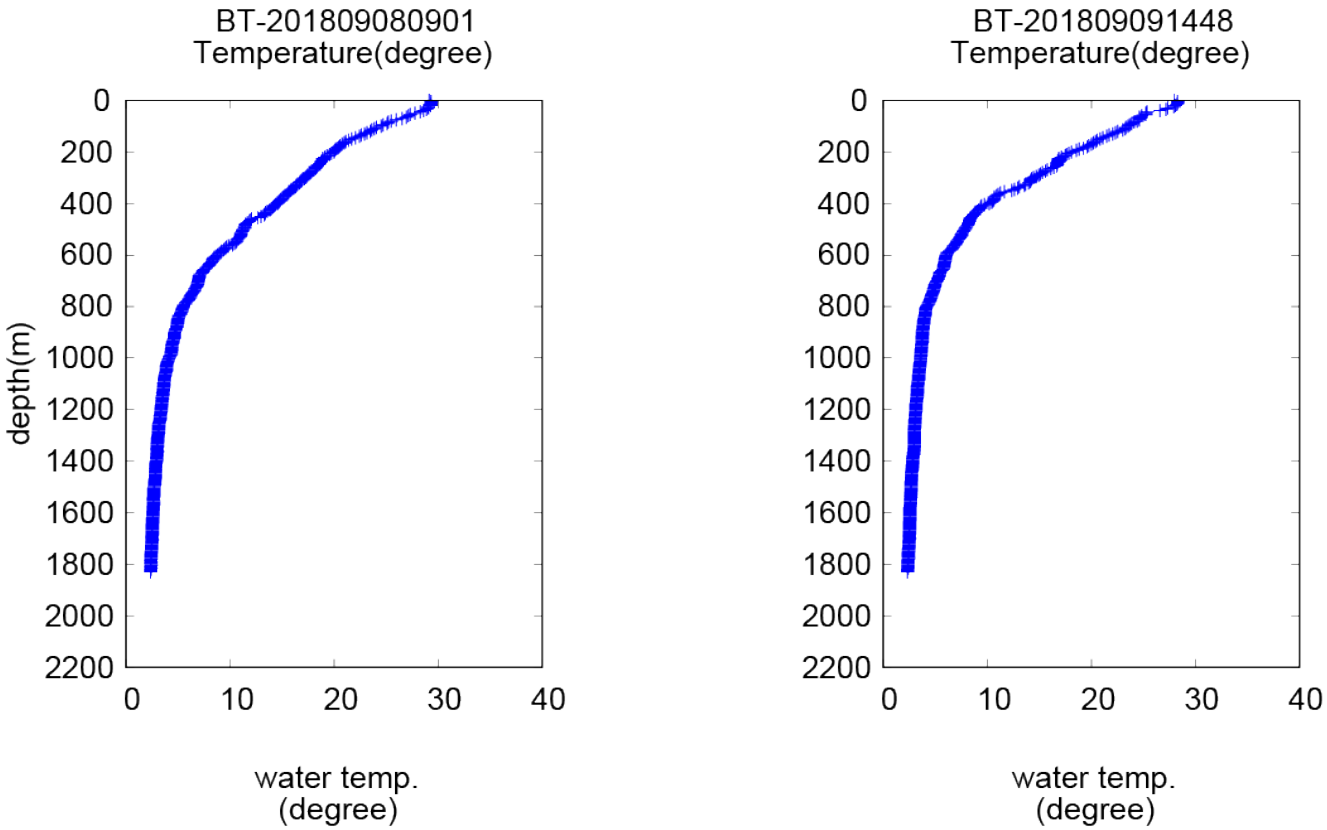


Figure 5-2-1. Temperature profiles obtained by XBT measurement on 2018/09/08 and 2018/09/9.

5-3. Piston corer system

5-3-1. Piston corer system (**Figure 5-3-1**)

A piston corer system consists of 0.59 ton weight, 4 m or 6 m long stainless steel barrels, a trigger, and a pilot core sampler. Polyvinyl chloride (PVC) tube is used as inner tube of barrels. The inner diameter (I.D.) of liner tube is 75 mm. The piston is composing of two O-rings (size: P63). For a pilot core sampler, we used a “75 mm diameter long-type pilot corer”. The pilot corer consists of 112 kg weight, 50 cm or 70 cm long stainless barrels and PVC liner tube. The total weight of the system is approximately 0.7 ton. The transponder (XXX and OKISB-1017A (13.0 and 13.5 kHz) was attached to the winch wire above 50 m from the top of PC system to monitor the PC position.

5-3-2. Winch operation

A winding speed of winch wire was set to 30 m/min up to XXX water depth, and increased speed up at 60 m/min gradually. Wire out was stopped at a depth about 100 m above the seafloor for about 3 minutes to reduce sway of PC system. The wire out was restarted at a speed of 50m/min. After the abrupt drop of wire tension, wire out was stopped immediately. Subsequently winding up was started at a speed of 50 m/min until the tension gauge indicates that the corers were lifted off seafloor. Then, winch wire was wound at 60m/min.

5-4. Shipboard core flow

The shipboard procedure on piston core samples is shown in **Figure 5-4-1**,

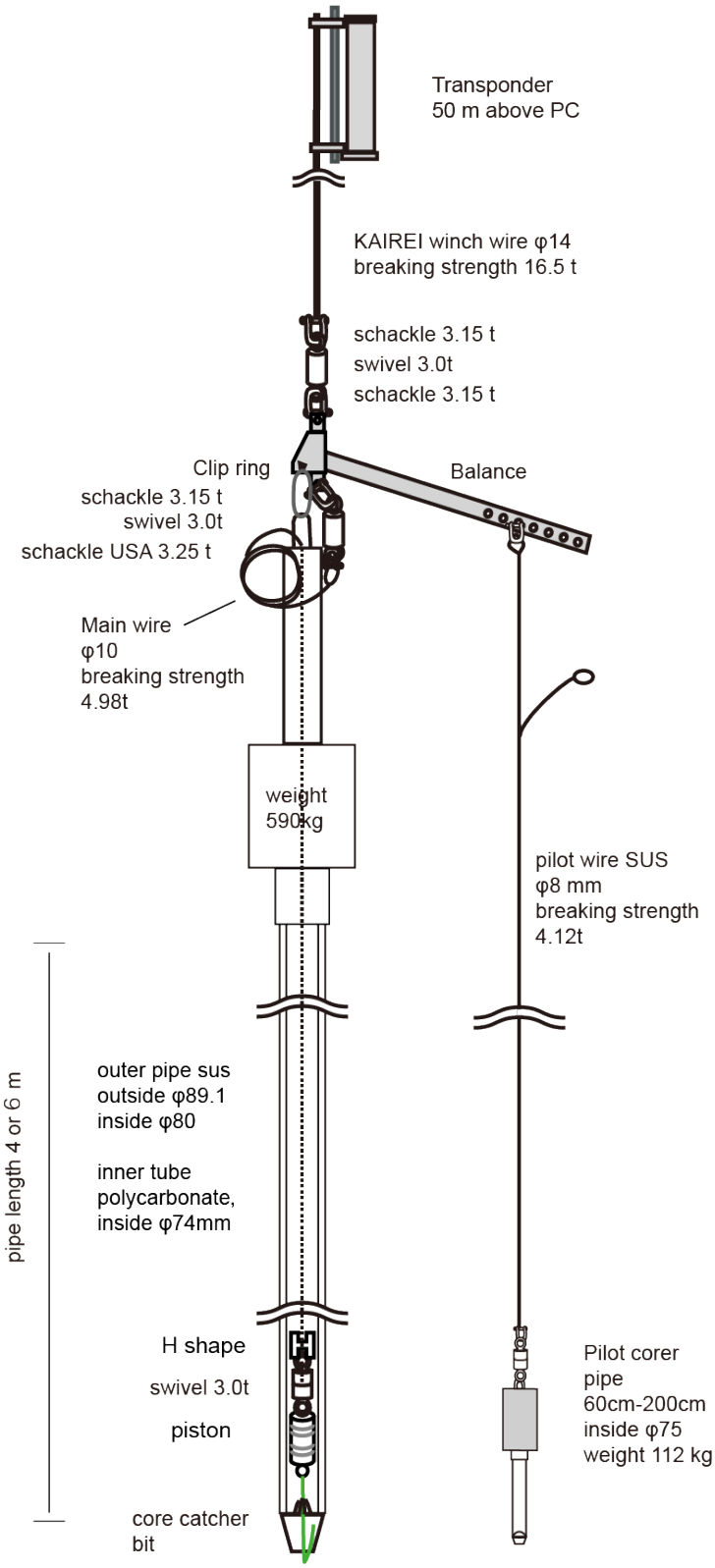
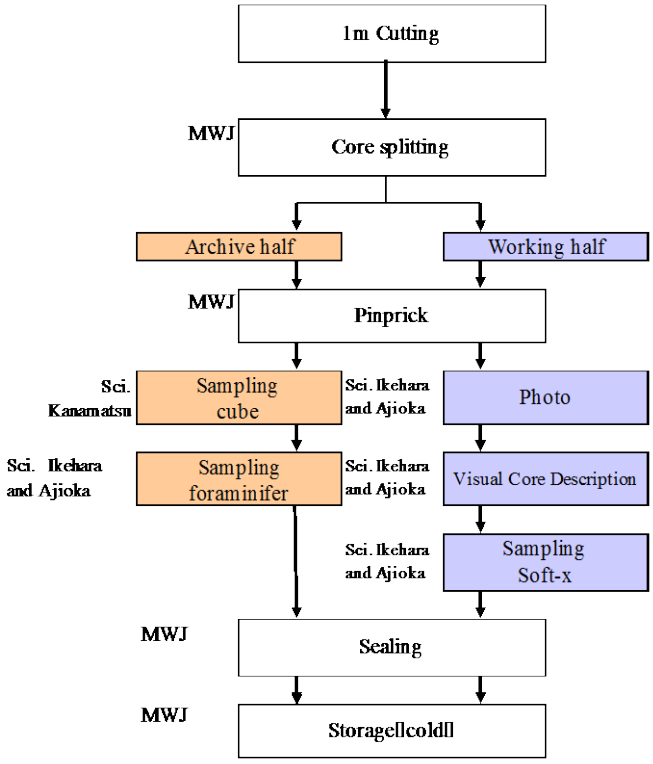


Fig. 5-3-1. Specifications of piston-corer system used for KR18-12C.

Flow chart of handling procedure in KR18-12C_for Piston core



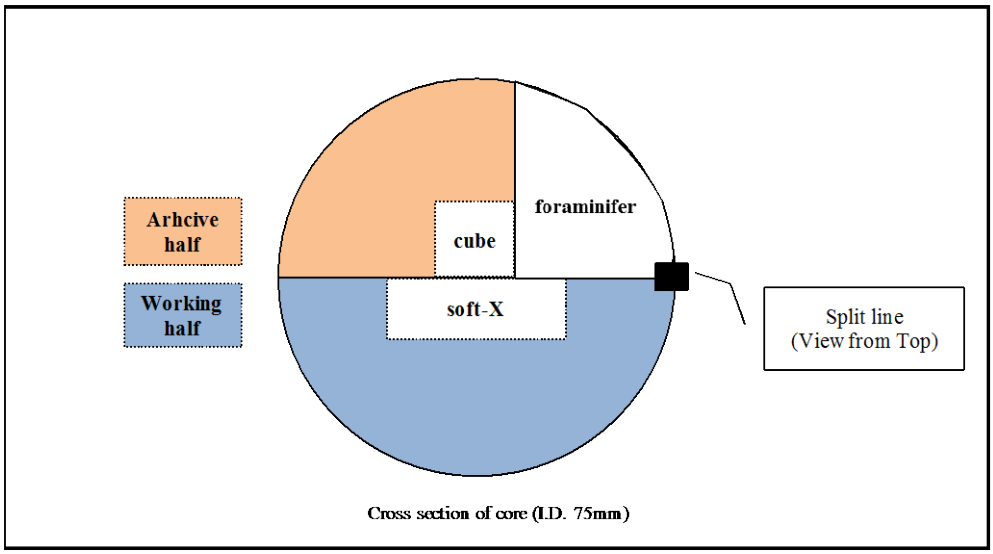


Figure 5-4-1. Shipboard core flow for KR18-12C

6. Preliminary results

6-1 MBES and SBP surveys

MBES and SBP surveys were carried out with ca. **5knt.** Lines listed in **Table 6-1** are on **Figs 6-1-1, and 6-1-2. Each capture SBP image were presented from Fig. 6-2-1 to 6-2-42.**

Table 6-1 survey line list

Date	Time UTC	IN/OUT	point	Lat	Long	Depth	heading (°)
2018/9/8	10:06:25	IN	01_1	32-13.0734N	133-44.4278E	2097	216.0
	12:57:30	OUT	01_2	32-00.9231N	133-35.9323E	2205	246.0
	13:35:01	IN	01_a	32-00.8927N	133-32.7906E	2240	56.0
	16:46:38	OUT	01_b	32-09.0236N	133-50.0236E	2537	62.0
	17:11:22	IN	01_c	32-10.7926N	133-49.5459E	2308	244.0
	20:23:00	OUT	01_d	32-02.9907N	133-32.9810E	2077	232.0
	21:01:22	IN	01_e	32-04.8974N	133-32.8331E	2077	76.0
	21:45:20	suspended		32-06.7340N	133-36.6857E	2192	81.0
	22:29:52	restart		32-06.6480N	133-36.6175E	2199	71.0
2018/9/9	00:54:22	OUT	01_f	32-13.0029N	133-50.0115E	1974	69.0
	01:08:33	IN	01_g	32-13.9935N	133-49.9940E	1976	239.0
	02:52:37	OUT	01_h	32-09.9785N	133-40.9794E	2012	238.0
	05:05:48	IN	01_o	31-50.0026N	133-33.0162E	3833	66.0
	08:18:52	OUT	01_p	31-58.0218N	133-50.0432E	3704	51.0
	15:43:00	IN	0y1	31-51.9830N	132-35.9815E	2158	225.0
	19:53:26	OUT	0y2	31-33.9860N	132-22.9936E	2240	217.0
	20:44:48	IN	0y3	31-42.0295N	132-21.8158E	2016	117.0
	23:08:57	OUT	0y4	31-37.6017N	132-34.9147E	2369	130.0
2018/9/10	06:11:19	IN	0y9	31-36.4149N	132-30.2006E	2155	289.0
	07:42:48	OUT	0y10	31-39.3204N	132-21.9557E	2409	283.0
	08:17:35	IN	0y5	31-43.9544N	132-25.0243E	2002	121.0
	10:09:40	OUT	0y6	31-40.4960N	132-35.0199E	1989	120.0
	11:00:47	IN	0y8	31-47.0221N	132-36.9812E	1895	290.0
	12:19:32	OUT	0y7	31-49.5441N	132-29.8504E	2018	278.0
	01:52:56	IN	NSSP4	31-51.6021N	132-17.0477E	1947	262.0
	02:33:54	OUT	wst1	31-51.6038N	132-12.9930E	1919	257.0
	02:52:12	IN	wst3	31-49.9662N	132-12.9099E	1905	113.0
	03:31:43	OUT	wst2	31-49.9466N	132-16.7716E	1949	108.0
	03:52:42	IN	wst4	31-48.33270N	132-16.71770E	1955	255.0
	04:29:30	OUT	wst5	31-48.2943N	132-12.9888E	1876	255.0
	05:08:29	IN	wst2	31-49.9518N	132-16.7339E	1953	256.0
	05:44:29	OUT	wst3	31-49.9522N	132-12.9885E	1899	255.0

	06:28:44	IN	wst6	31-46.6570N	132-16.7247E	1990	246.0
	07:06:13	OUT	wst7	31-46.6505N	132-12.9696E	1929	255.0
	07:48:06	IN	wst8	31-45.0124N	132-17.0627E	2015	254.0
	08:17:35	OUT	NSSP7	31-45.0108N	132-14.0705E	2016	253.0
	08:54:38	IN	wst10	31-43.3454N	132-18.0538E	1995	254.0
	09:41:33	OUT	wst9	31-43.3493N	132-13.4802E	1963	259.0
	10:21:33	IN	wst12	31-41.6981N	132-16.9692E	1982	255.0
	10:51:45	OUT	wst11	31-41.7028N	132-14.0398E	1830	256.0
	10:05:01	IN	wst15	31-40.0271N	132-15.9837E	2003	340.0
	11:03:11	mid point	wst14	31-45.0126N	132-14.9990E	2023	338.0
	12:24:13	OUT	wst13	31-52.0166N	132-14.9943E	1944	344.0
	23:48:54	IN	wst23	31-46.5010N	132-12.1184E	1896	249.0
2018/9/13	00:09:31	OUT	wst22	31-46.4953N	132-09.9649E	1879	254.0
	00:42:54	IN	wst20	31-44.9827N	132-11.0104E	1902	330.0
	01:14:59	OUT	wst21	31-48.0390N	132-11.0073E	1882	330.0
	01:46:02	IN	wst24	31-49.9402N	132-13.0868E	1906	253.0
	02:37:37	OUT	wst25	31-49.9467N	132-07.9814E	1788	253.0
	03:33:33	IN	wst26	31-51.5964N	132-12.9836E	1918	256.0
	04:32:00	OUT	wst27	31-51.5930N	132-06.9853E	1736	255.0
	05:57:00	IN	wst18	31-54.1982N	132-15.9825E	1931	251.0
	06:45:49	OUT	wst19	31-54.2014N	132-10.9876E	1906	252.0
	07:49:51	IN	wst29	31-55.4994N	132-15.9817E	1928	253.0
	08:22:53	OUT	wst28	31-55.4959N	132-12.4649E	1937	252.0
	09:43:28	IN	wst31	31-56.9958N	132-20.0760E	1846	250.0
	10:40:35	OUT	wst30	31-56.9989N	132-13.9695E	1935	253.0
2018/9/14	04:20:17	IN	PC05point	31-43.6919N	132-15.2923E	2018	323.0
	05:59:42	OUT	wst13	31-52.0155N	132-14.9940E	1941	333.0
	06:23:57	IN	NSSP4	31-51.6272N	132-17.0057E	1947	284.0
	07:02:35	midpoint	NSSP5	31-54.3114N	132-14.7856E	1956	294.0
	07:51:17	OUT	MC12	31-57.51000N	132-11.49180E	1793	301.0
	09:04:50	IN	wst33	31-58.4958N	132-20.0949E	1855	253.0
	09:43:33	OUT	wst32	31-58.4948N	132-15.9616E	1947	259.0
	10:40:35	IN	wst17	31-53.3010N	132-18.0689E	1904	252.0
	11:52:25	OUT	wst16	31-53.3011N	132-10.9896E	1923	250.0
2018/9/15	04:13:13	IN	wst35	31-59.9996N	132-21.0043E	1842	251.0
	04:54:15	OUT	wst34	32-00.0000N	132-16.9878E	1931	254.0
	05:28:40	IN	wst37	32-02.0014N	132-20.9823E	1841	253.0
	06:08:21	OUT	wst36	32-01.9964N	132-16.9808E	1875	260.0
	07:28:26	IN	wst39	32-03.9957N	132-26.9725E	1896	257.0
	09:07:26	OUT	wst38	32-03.9991N	132-16.9786E	1863	259.0

10:14:49	IN	wst41	32-05.9931N	132-27.2135E	1841	261.0
12:04:00	OUT	wst40	32-06.0000N	132-16.9935E	1893	260.0
03:13:09	IN	wst43	31-59.6840N	132-14.9953E	1886	227.0
03:57:27	OUT	wst42	31-56.9950N	132-11.9880E	1854	224.0
05:12:30	IN	wst44	32-06.3008N	132-26.9833E	1864	271.0
06:54:57	OUT	wst45	32-08.2110N	132-16.9826E	1852	273.0
07:51:36	IN	wst46	32-07.5051N	132-26.9845E	1809	266.0
09:21:50	OUT	wst47	32-09.1523N	132-17.9713E	1901	270.0
04:26:46	IN	wst49	32-08.4612N	132-26.9857E	1890	269.0
05:54:55	OUT	wst48	32-10.5043N	132-18.4899E	1886	273.0
07:08:05	IN	wst51	32-16.9992N	132-31.9735E	1641	265.0
09:28:31	OUT	wst50	32-16.9988N	132-17.9747E	1677	262.0
03:20:49	IN	wst56	32-13.9883N	132-14.0030E	1606	210.0
04:24:06	OUT	wst57	32-08.9584N	132-12.1836E	1515	206.0
06:15:04	IN	wst52	32-17.0043N	132-37.9860E	1561	259.0
07:14:56	OUT	wst51b	32-16.9979N	132-31.9878E	1642	259.0
07:47:04	IN	wst54	32-15.0057N	132-36.0067E	1561	256.0
10:36:22	OUT	wst55	32-15.0010N	132-18.9568E	1767	259.0 -

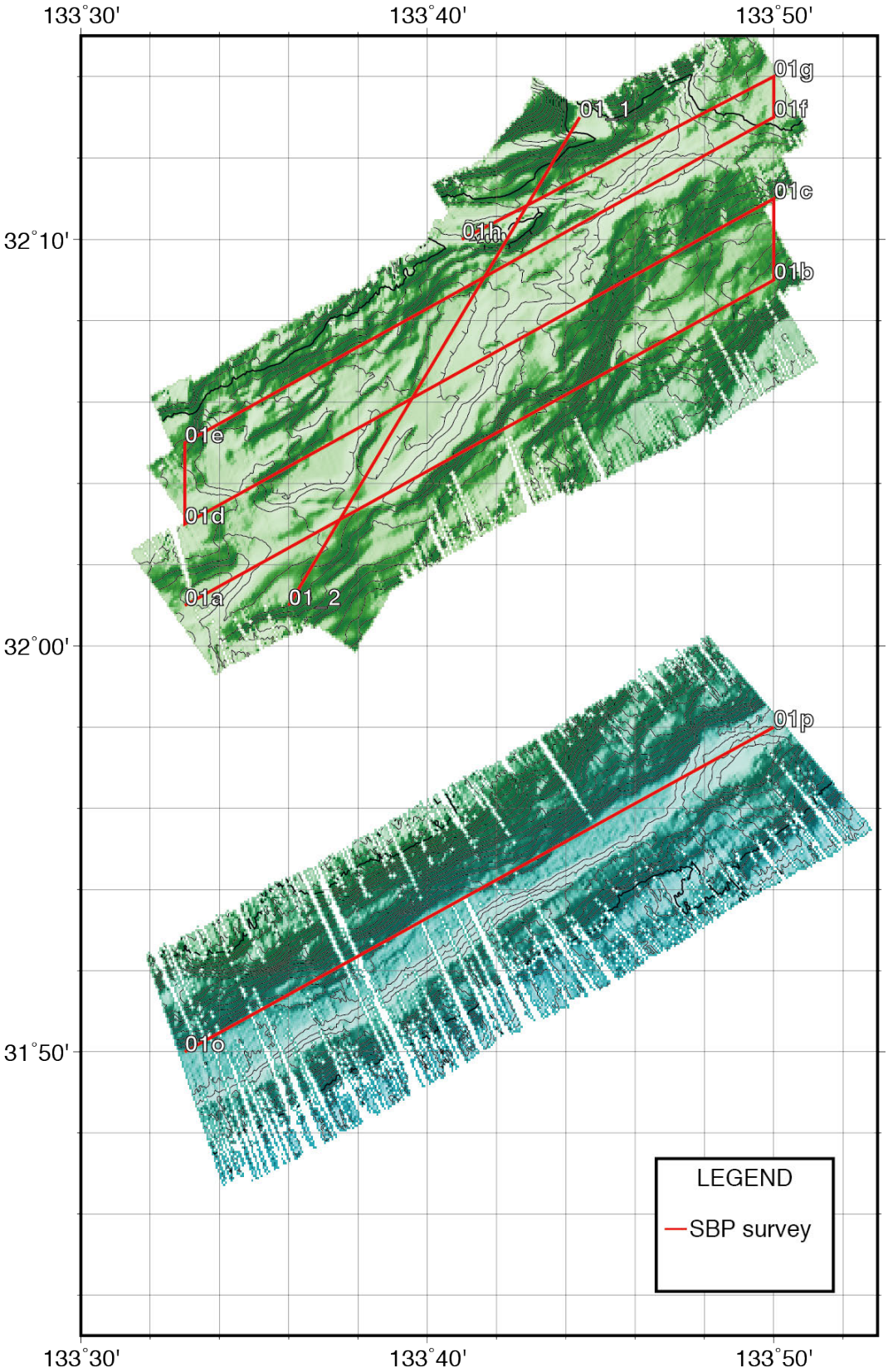


Figure 6-1-1: MBES and SBP survey lines in the east area.

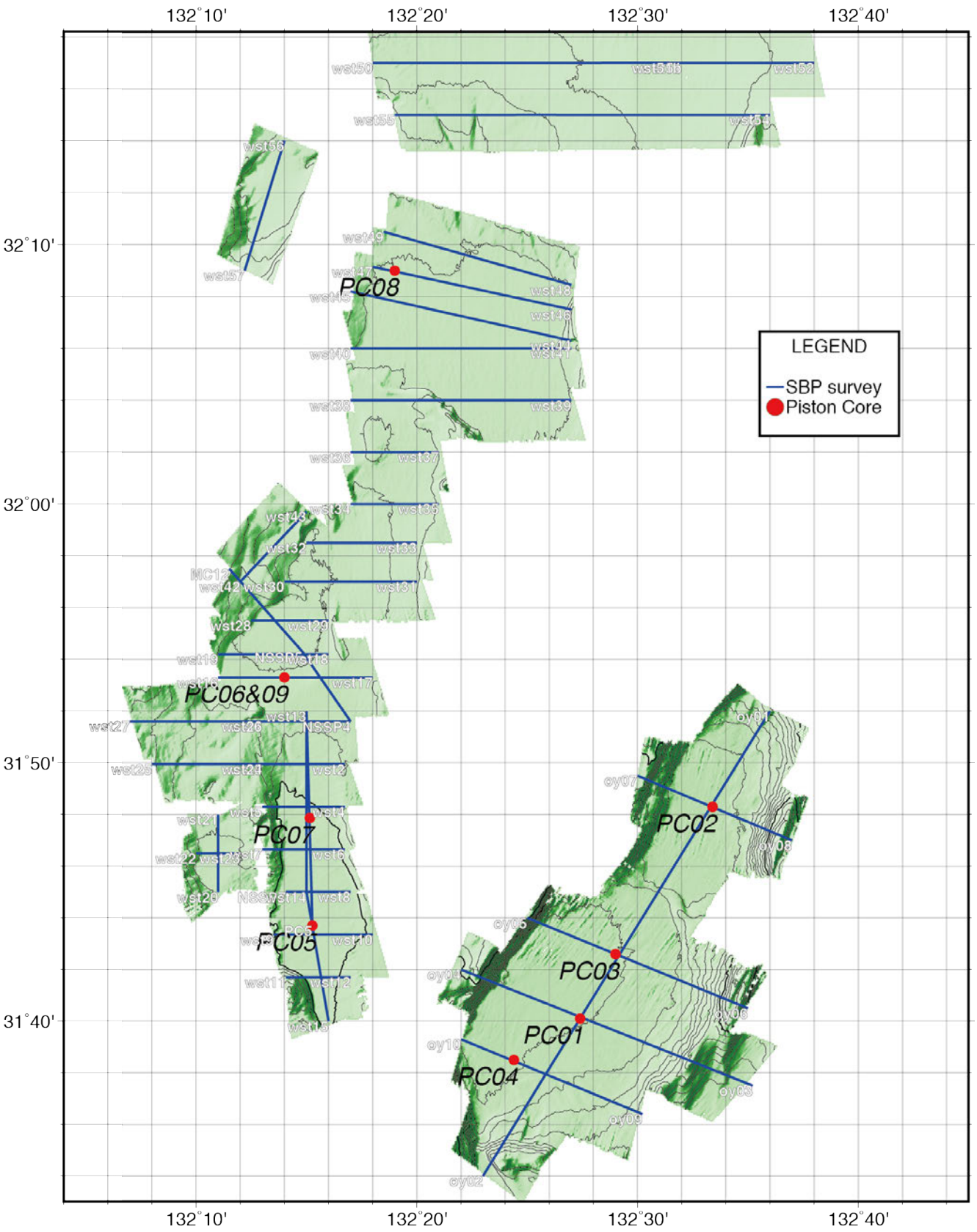


Figure 6-1-2. MBES and SBP survey lines in the west area.

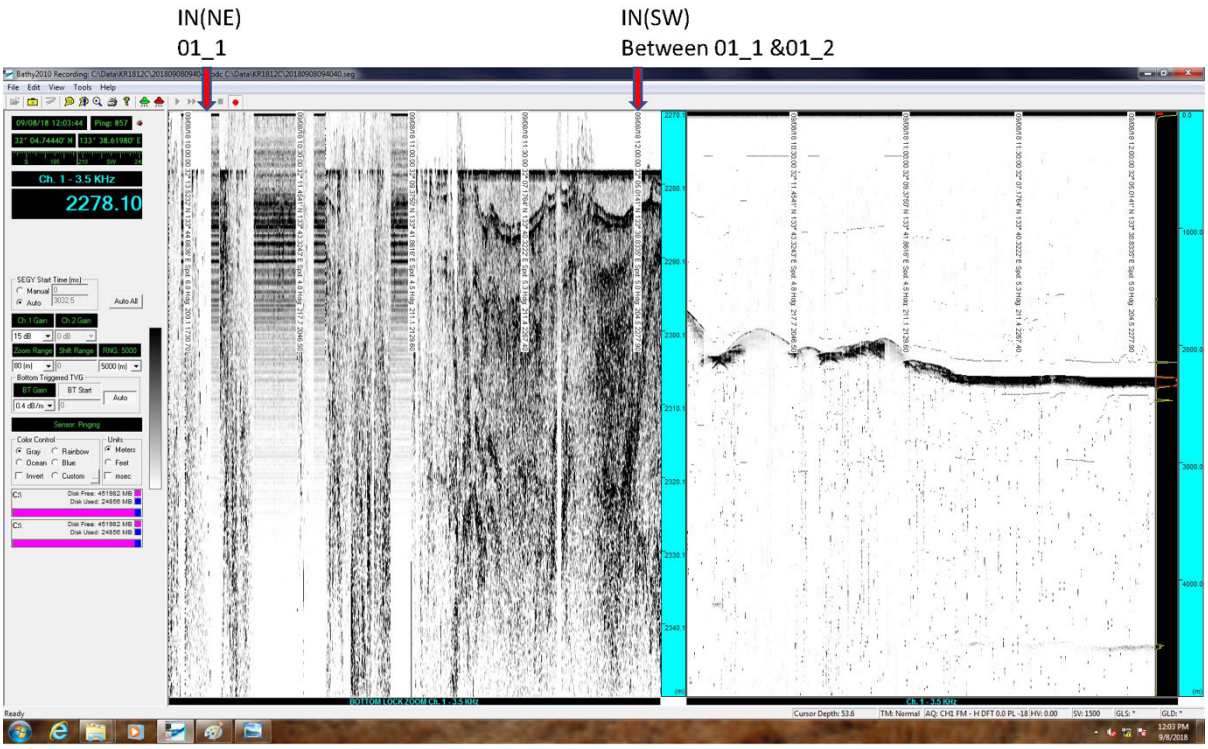


Fig 6-2-1 sub-bottom image of line 01_1-01_2. Sea Fig 6-1a for the location of survey line.

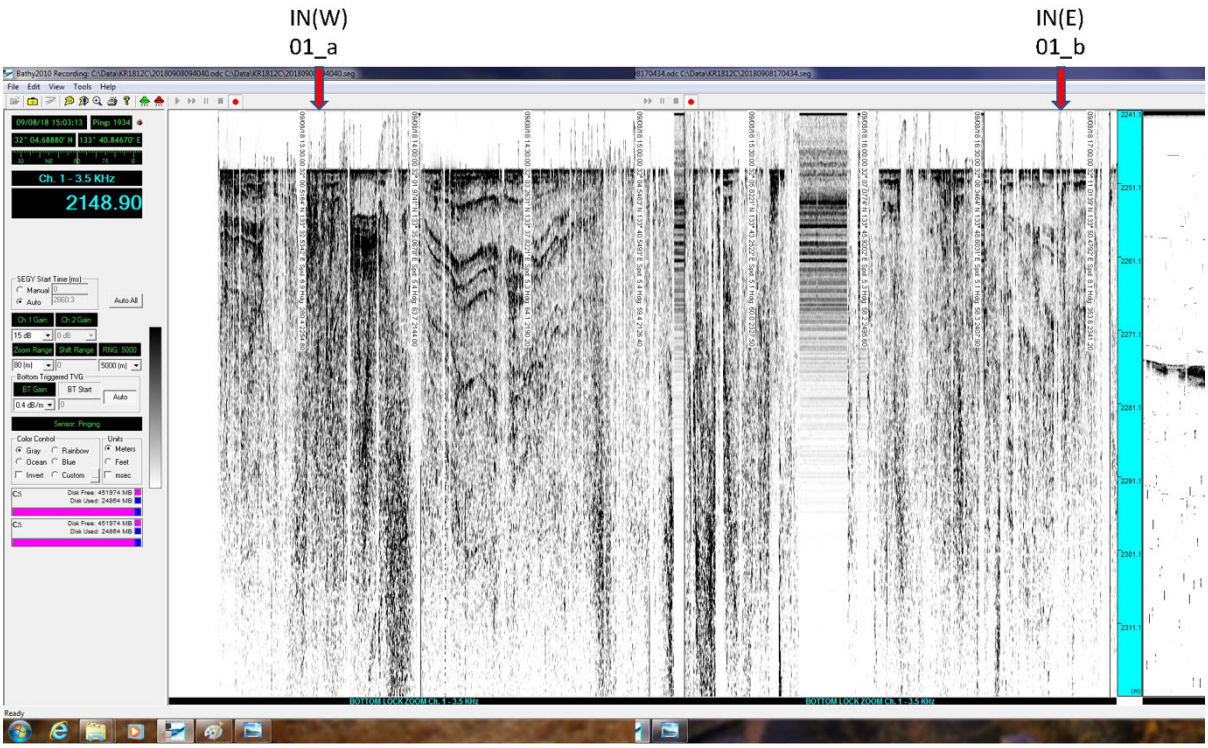


Fig 6-2-2 sub-bottom image of line 01a-01b. Sea Fig 6-1a for the location of survey line.

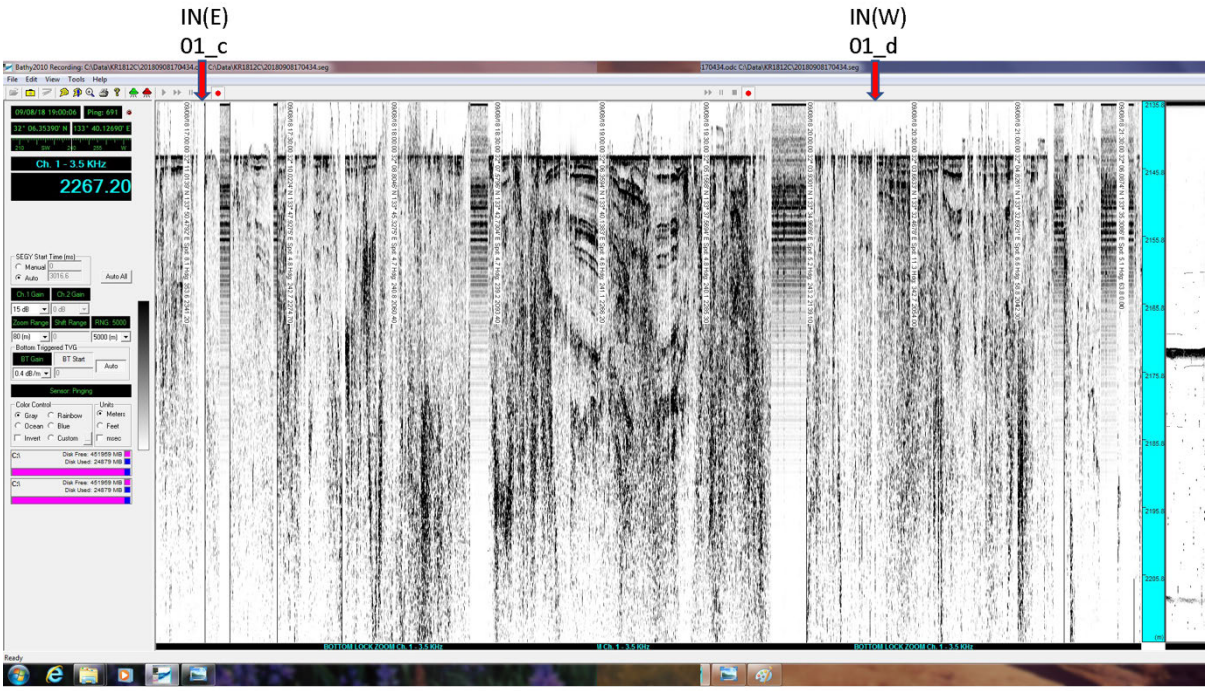


Fig 6-2-3 sub-bottom image of line 01c-01d. Sea Figure 6-1a for the location of survey line.

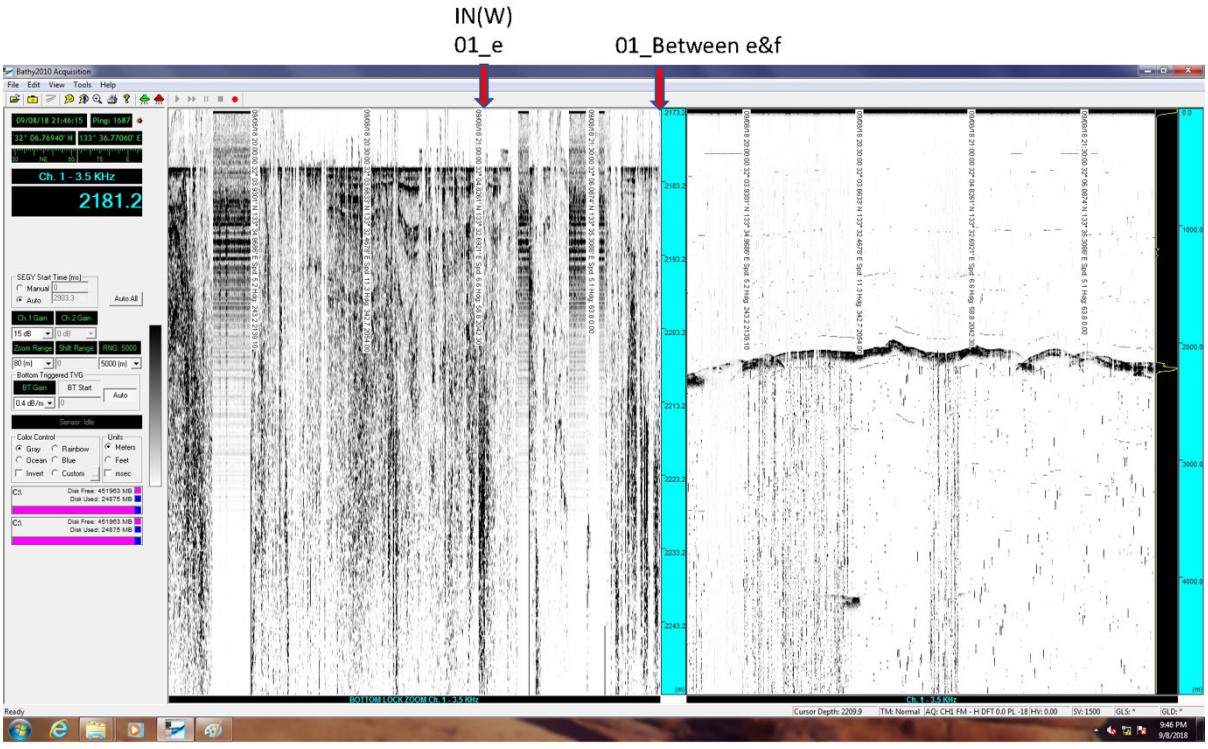


Fig 6-2-4 sub-bottom image of line 01 e - 01f. Sea Figure 6-1a for the location of survey line.

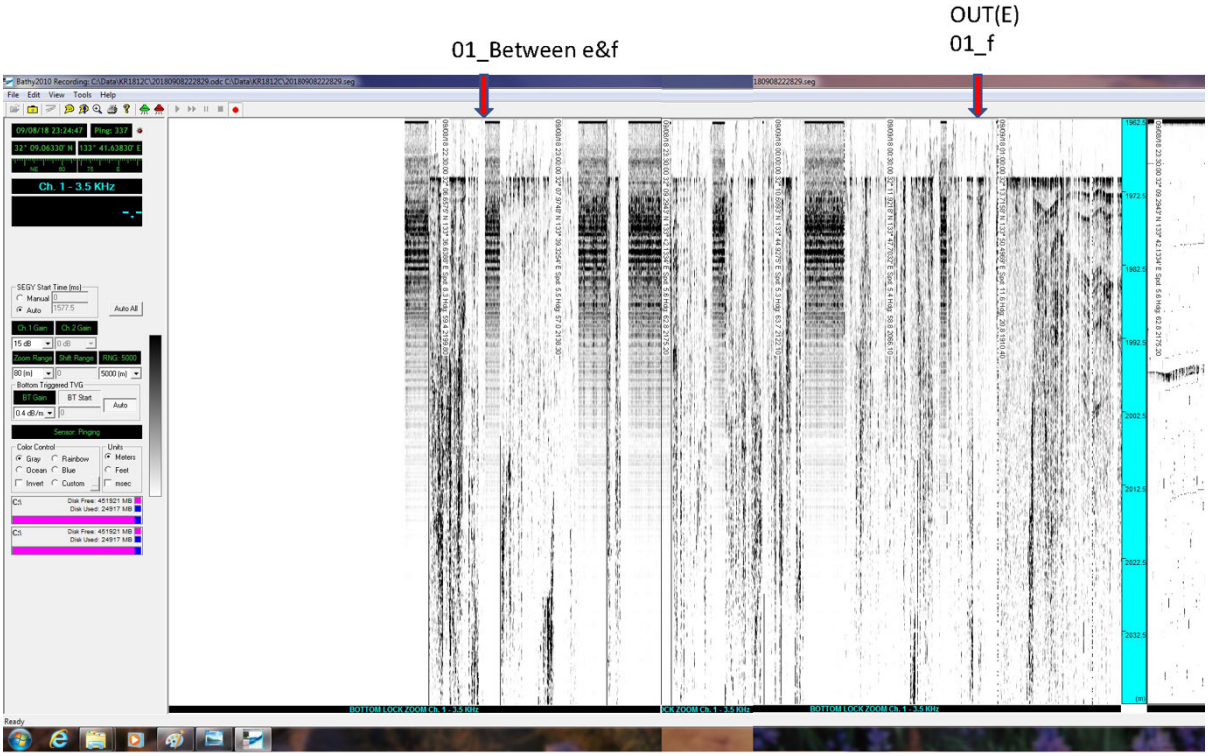


Fig 6-2-5 sub-bottom image of line 01 e - 01f. Sea Fig 6-1a for the location of survey line.

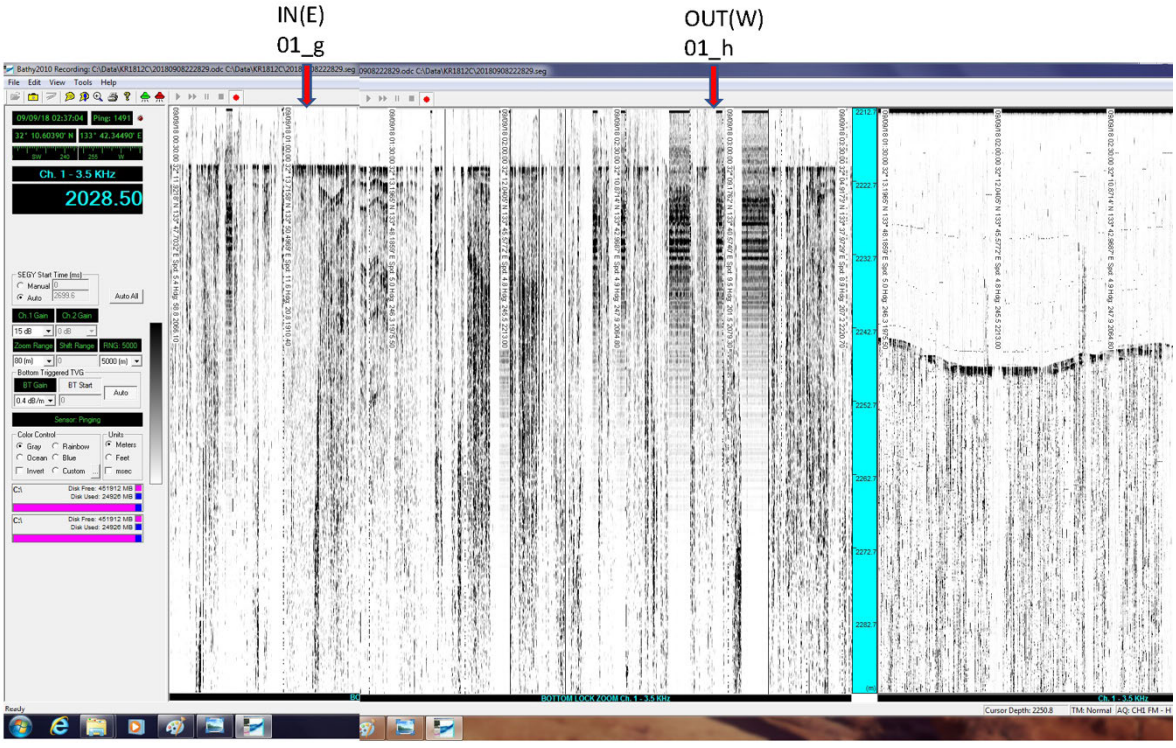


Fig 6-2-6 sub-bottom image of line 01g – 01h. Sea Fig 6-1a for the location of survey line.

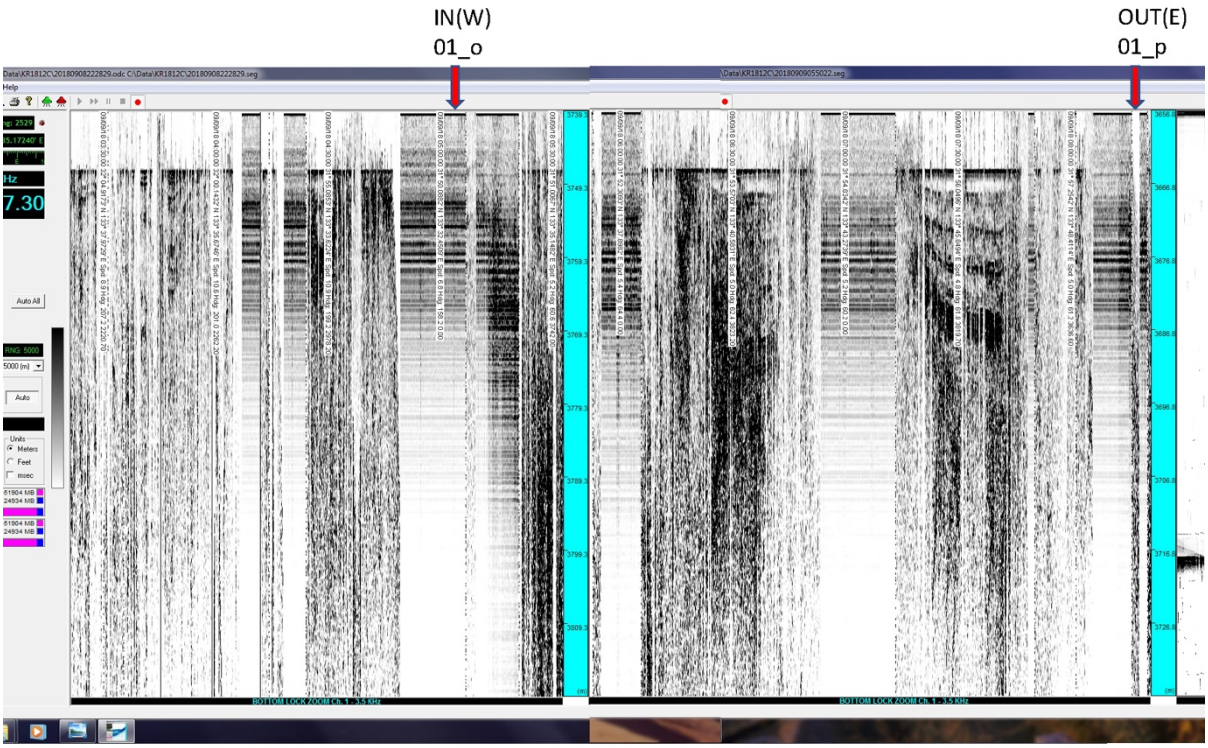


Fig 6-2-7 sub-bottom image of line 01o – 01p. Sea Fig 6-1a for the location of survey line.

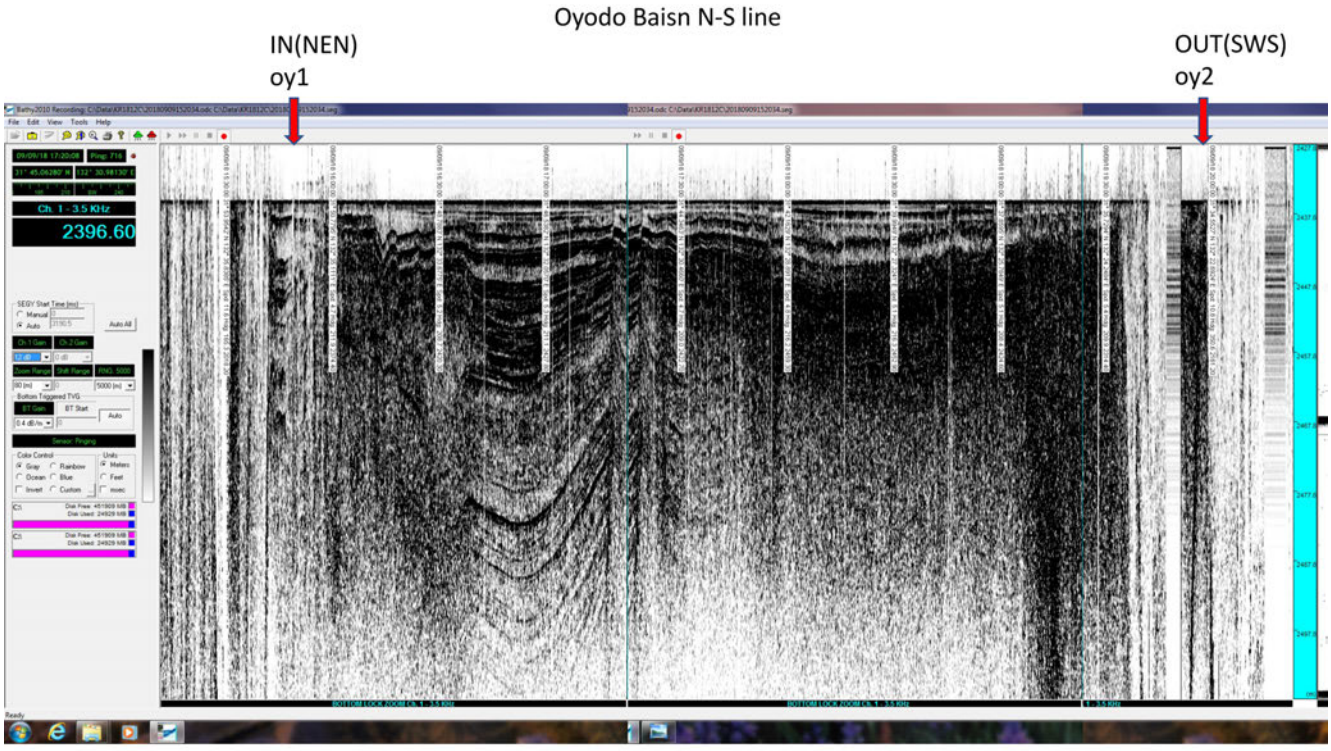


Fig 6-2-8 sub-bottom image of line oyo1 – oy2. Sea Fig 6-1b for the location of line.

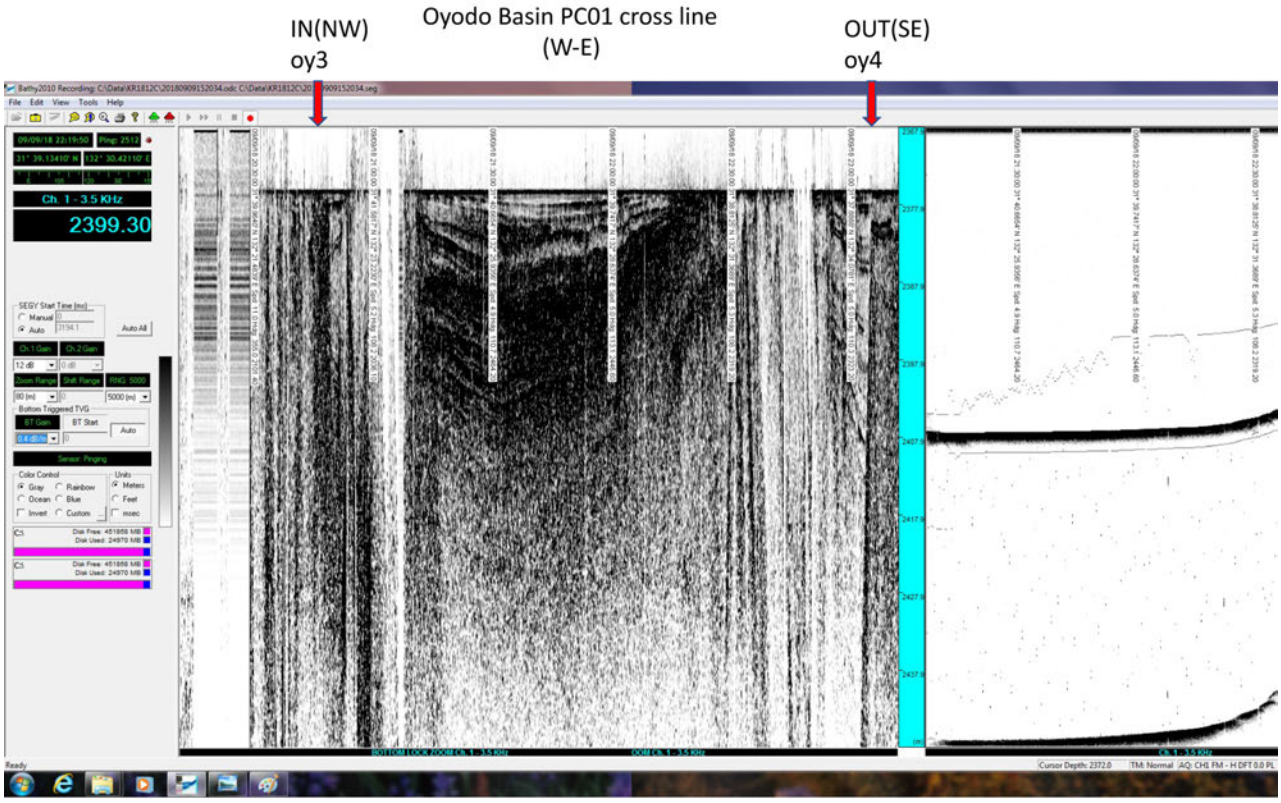


Fig 6-2-9 sub-bottom image of line oy3 – oy4. Sea Fig 6-1b for the location of line.

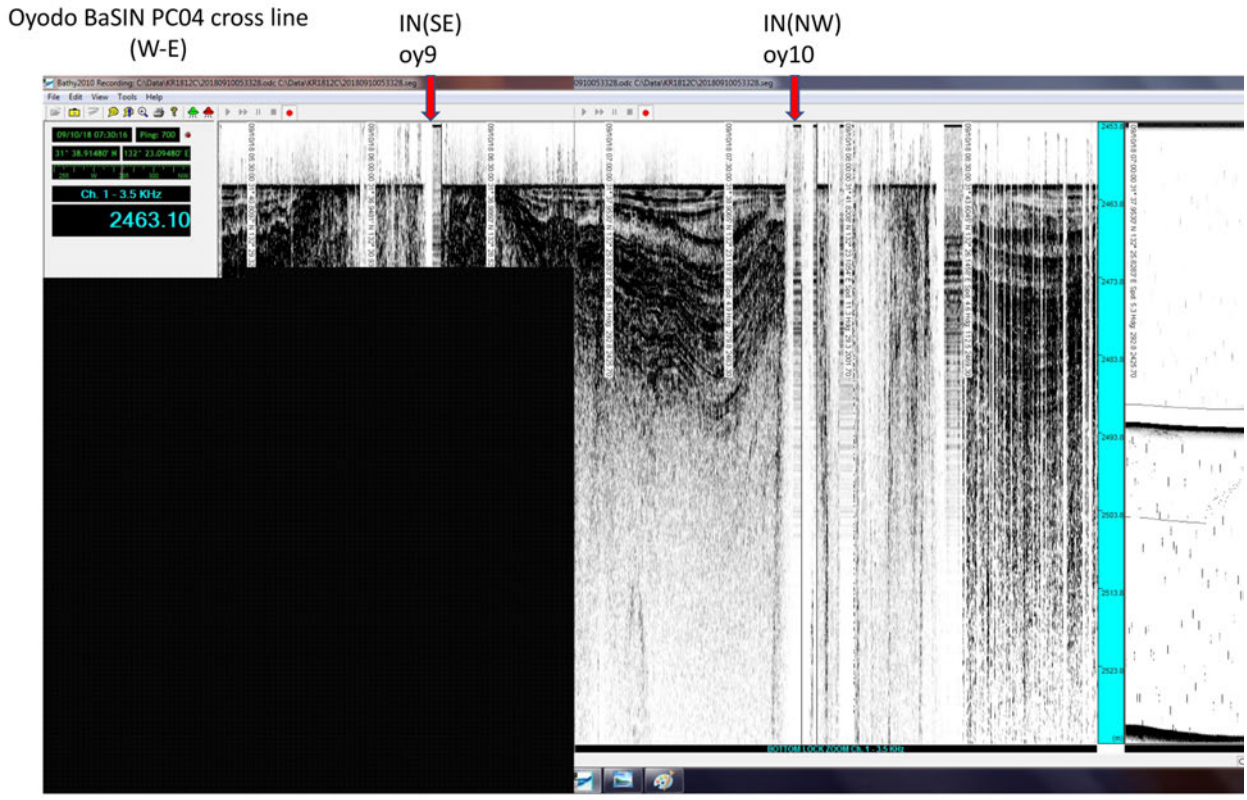


Fig 6-2-10 sub-bottom image of line oy8 – oy7. Sea Fig 6-1b for the location of line.

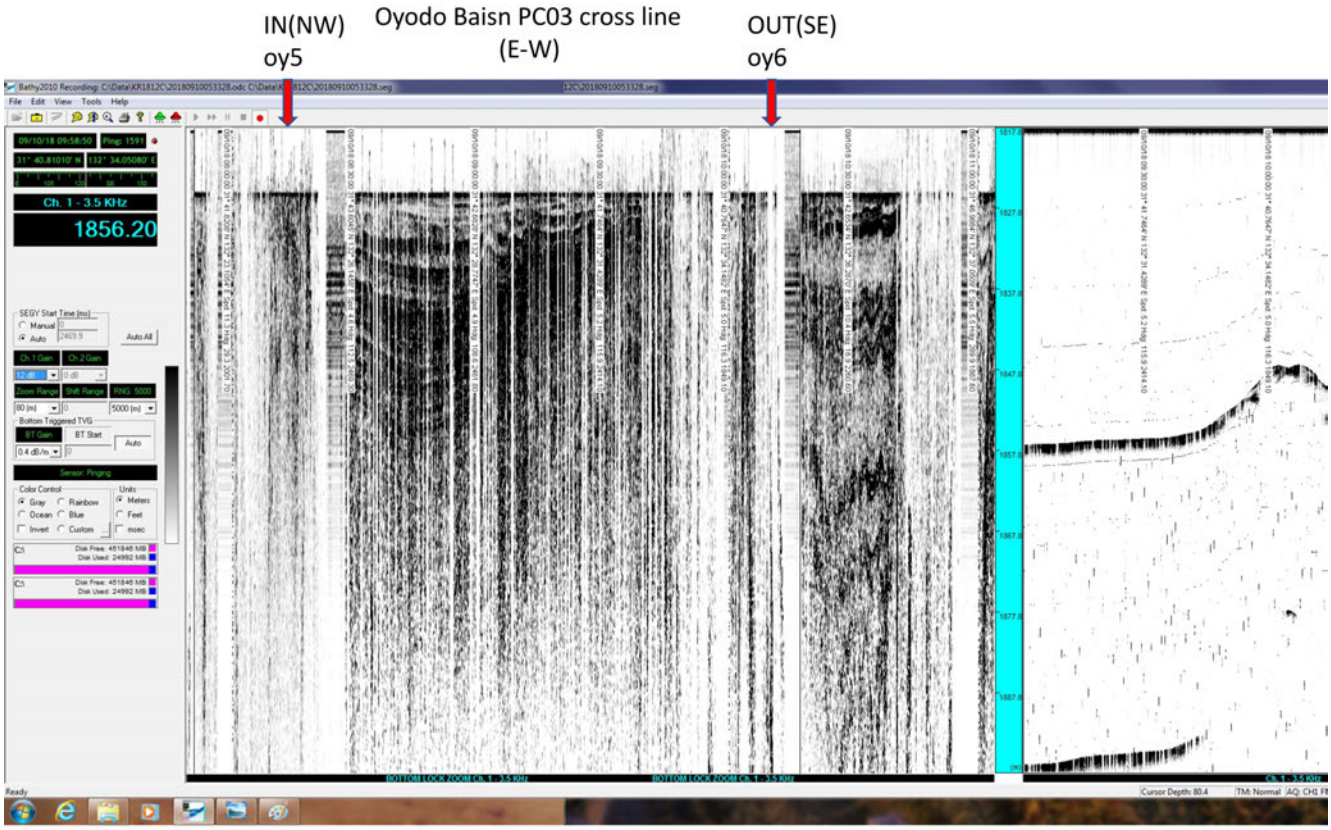


Fig 6-2-11 sub-bottom image of line oy5 – oy6. Sea Fig 6-1b for the location of line.

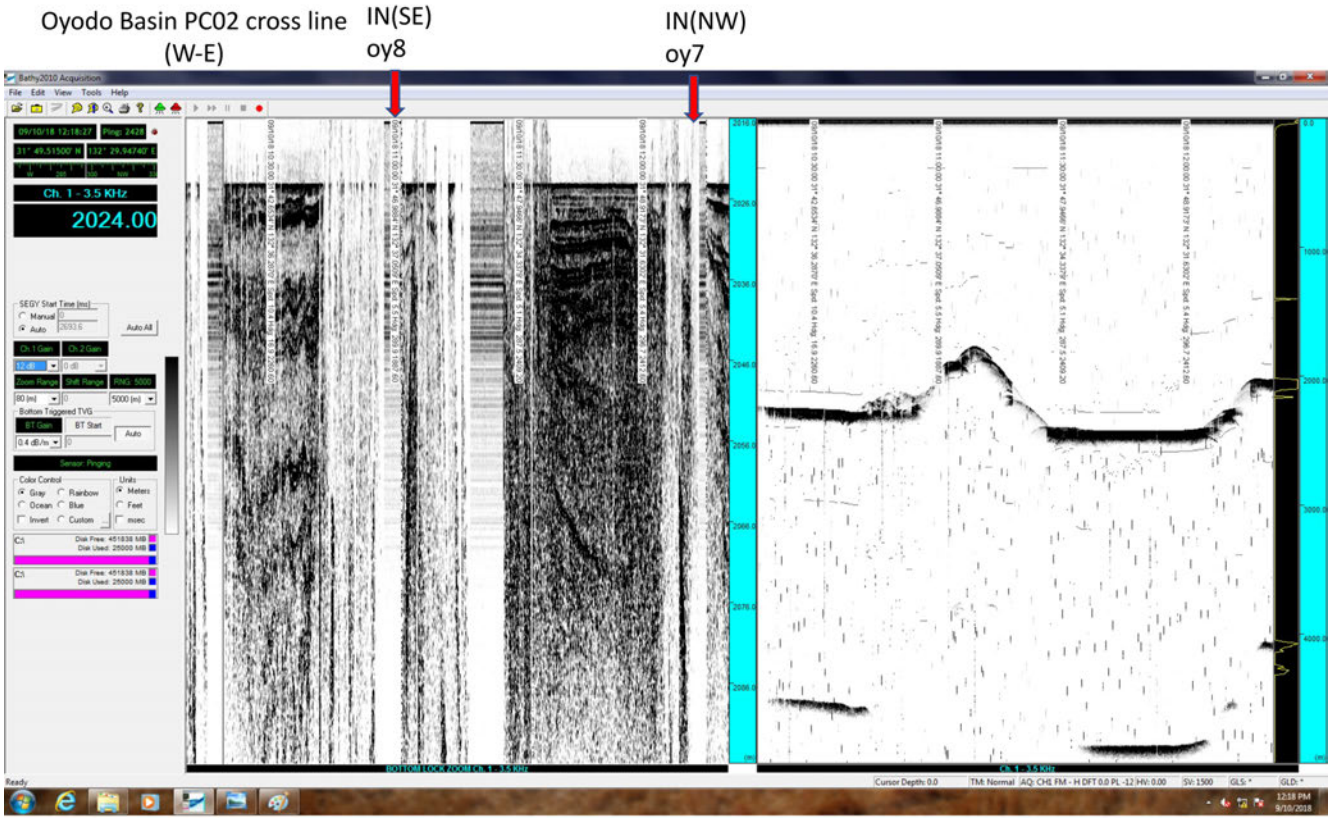


Fig 6-2-12 sub-bottom image of line oy8 – oy7. Sea Fig 6-1b for the location of line.

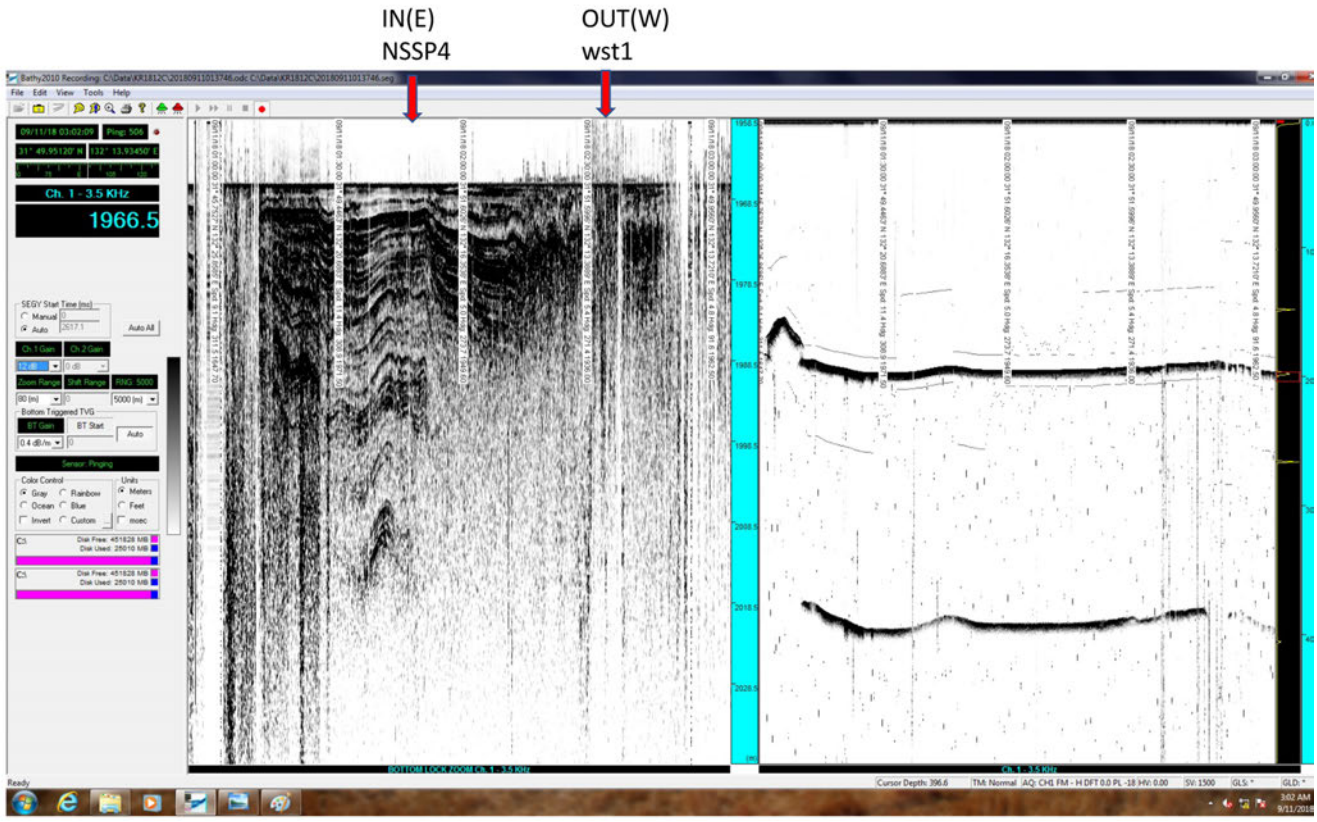


Fig 6-2-13 sub-bottom image of line NSSP4 – wst1. Sea Fig 6-1b for the location of line.

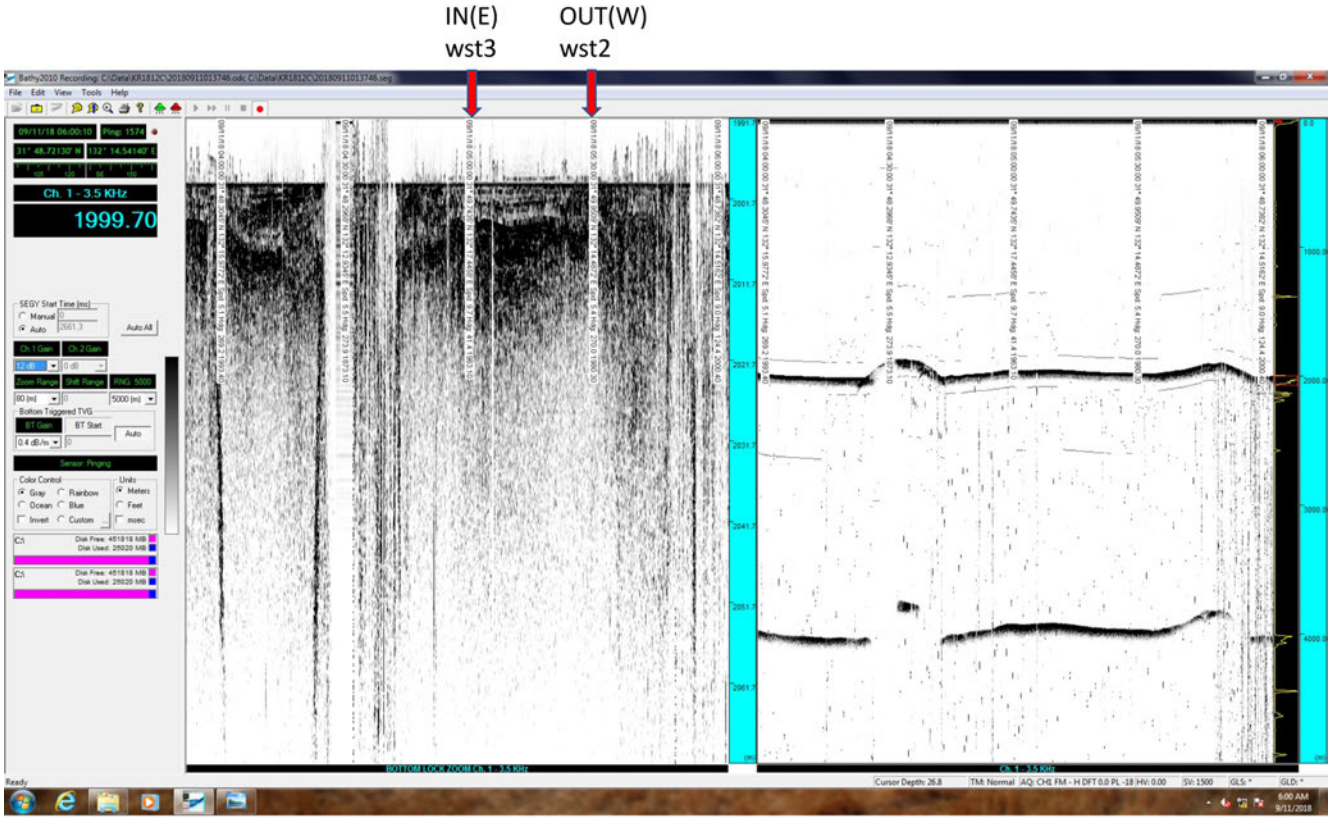


Fig 6-2-14 sub-bottom image of line wst3 – wst2. Sea Fig 6-1b for the location of line.

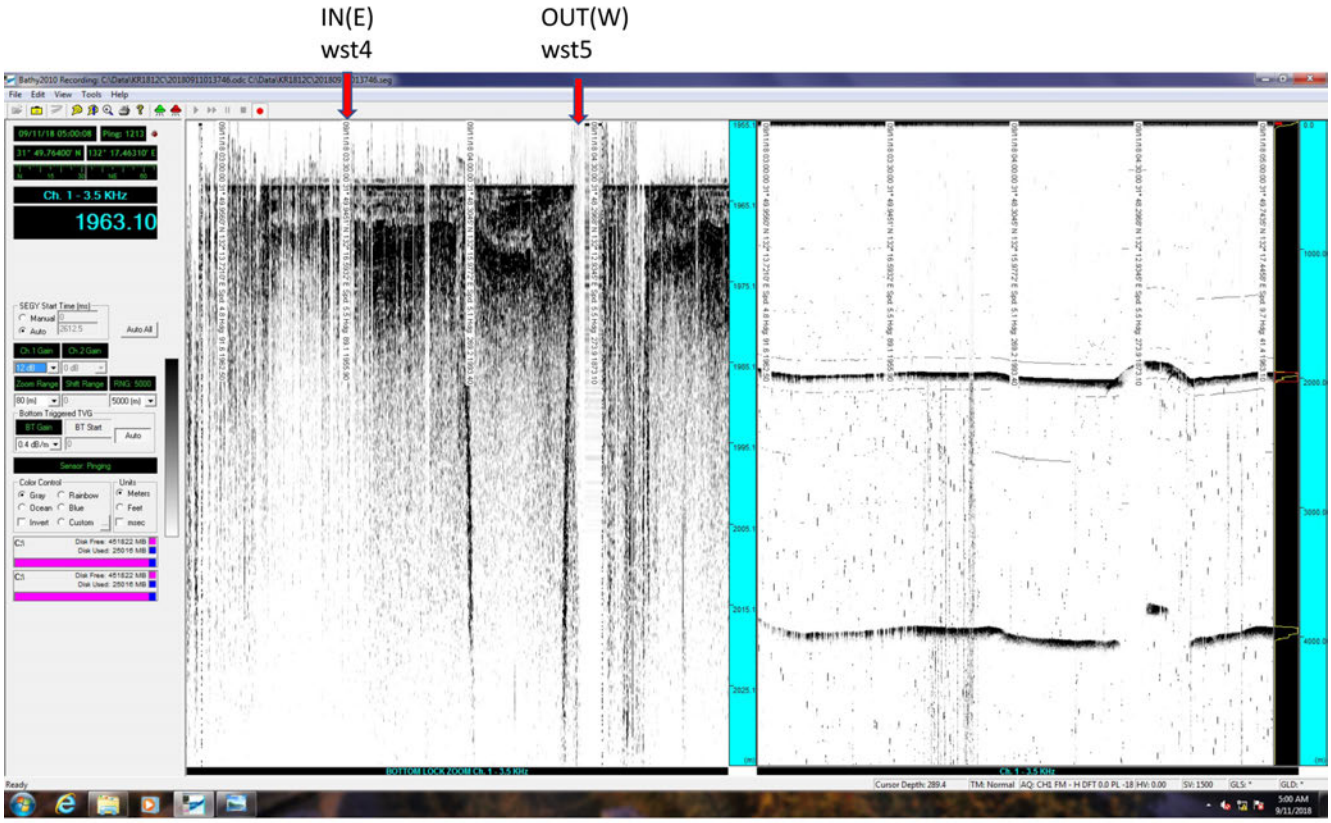


Fig 6-2-15 sub-bottom image of line wst4 – wst5. Sea Fig 6-1b for the location of line.

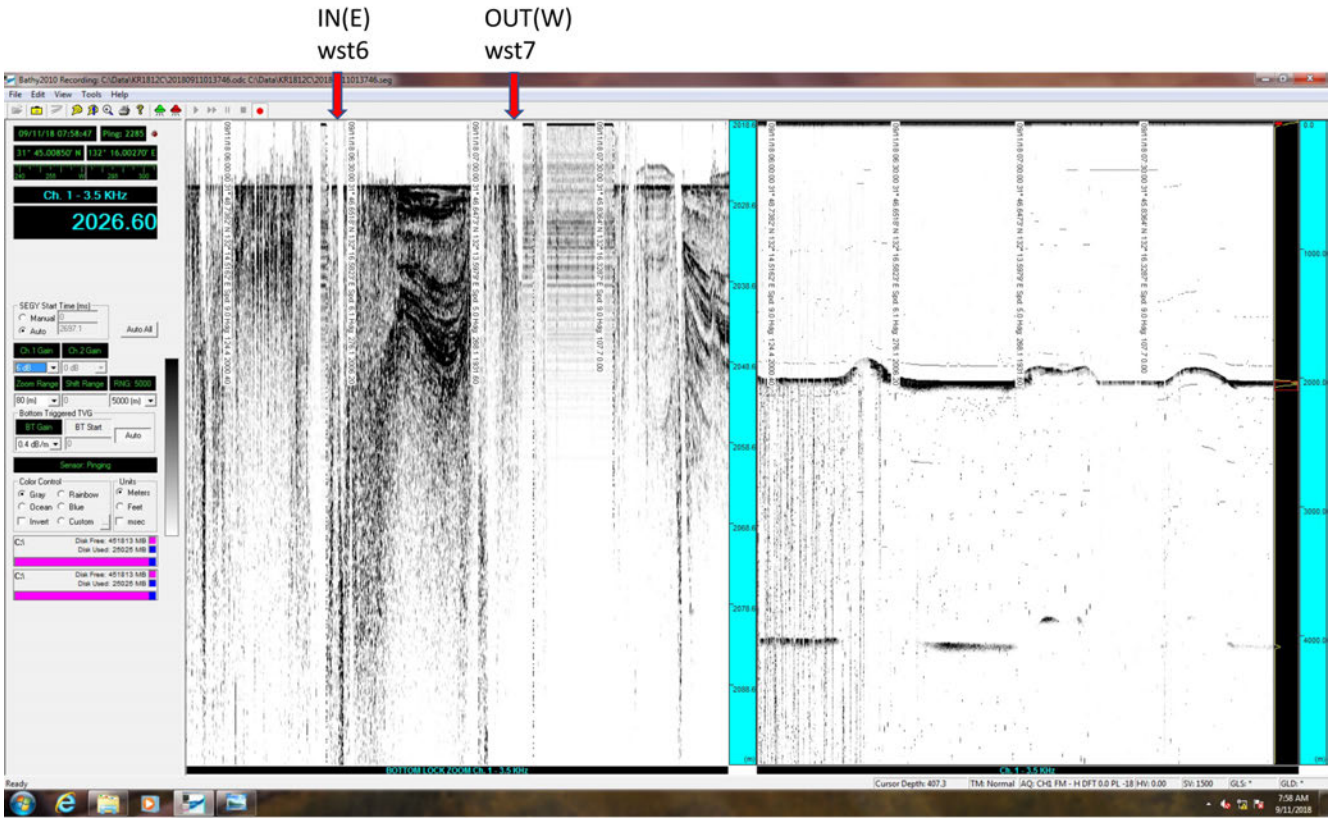


Fig 6-2-16 sub-bottom image of line wst6 – wst7. Sea Fig 6-1b for the location of line.

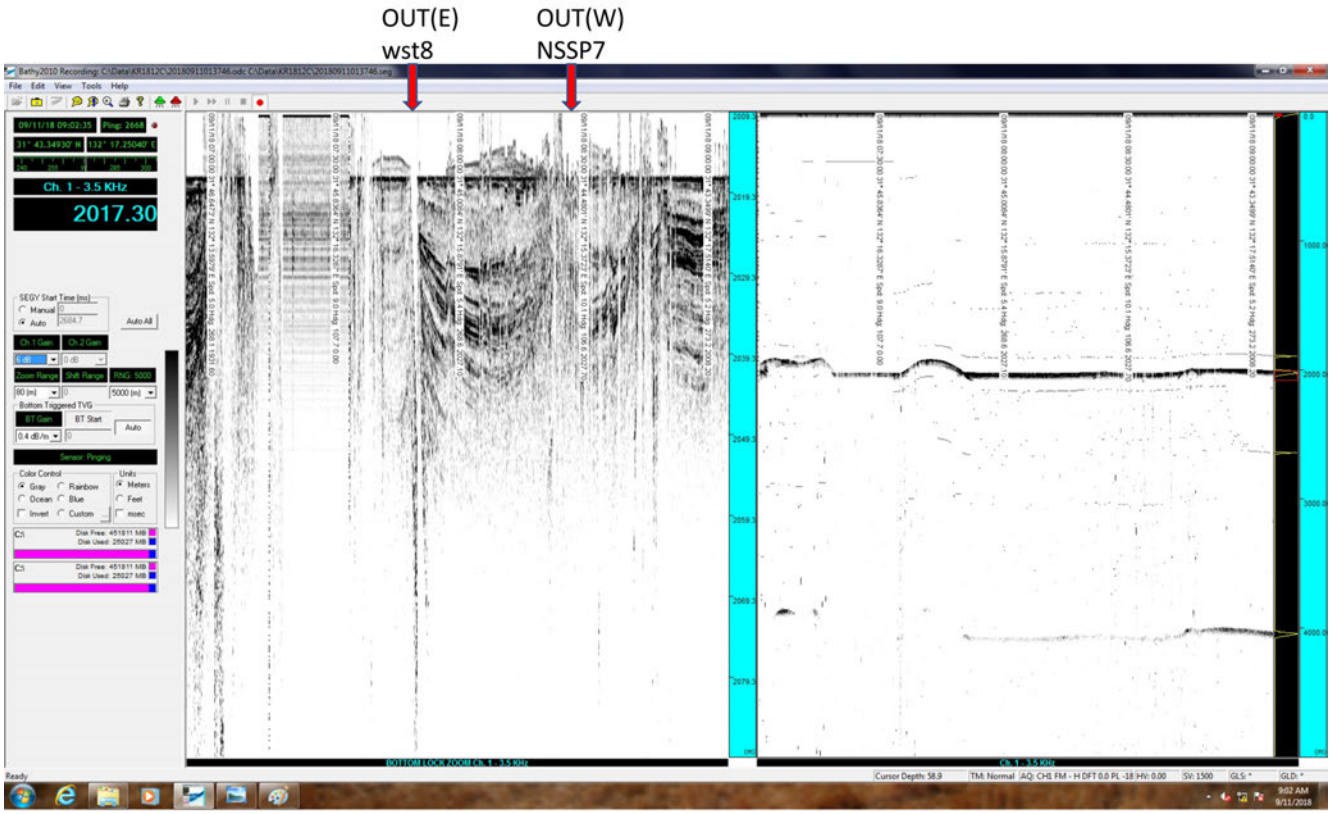


Fig 6-2-17 sub-bottom image of line wst8 – NSSP7. Sea Fig 6-1b for the location of line.

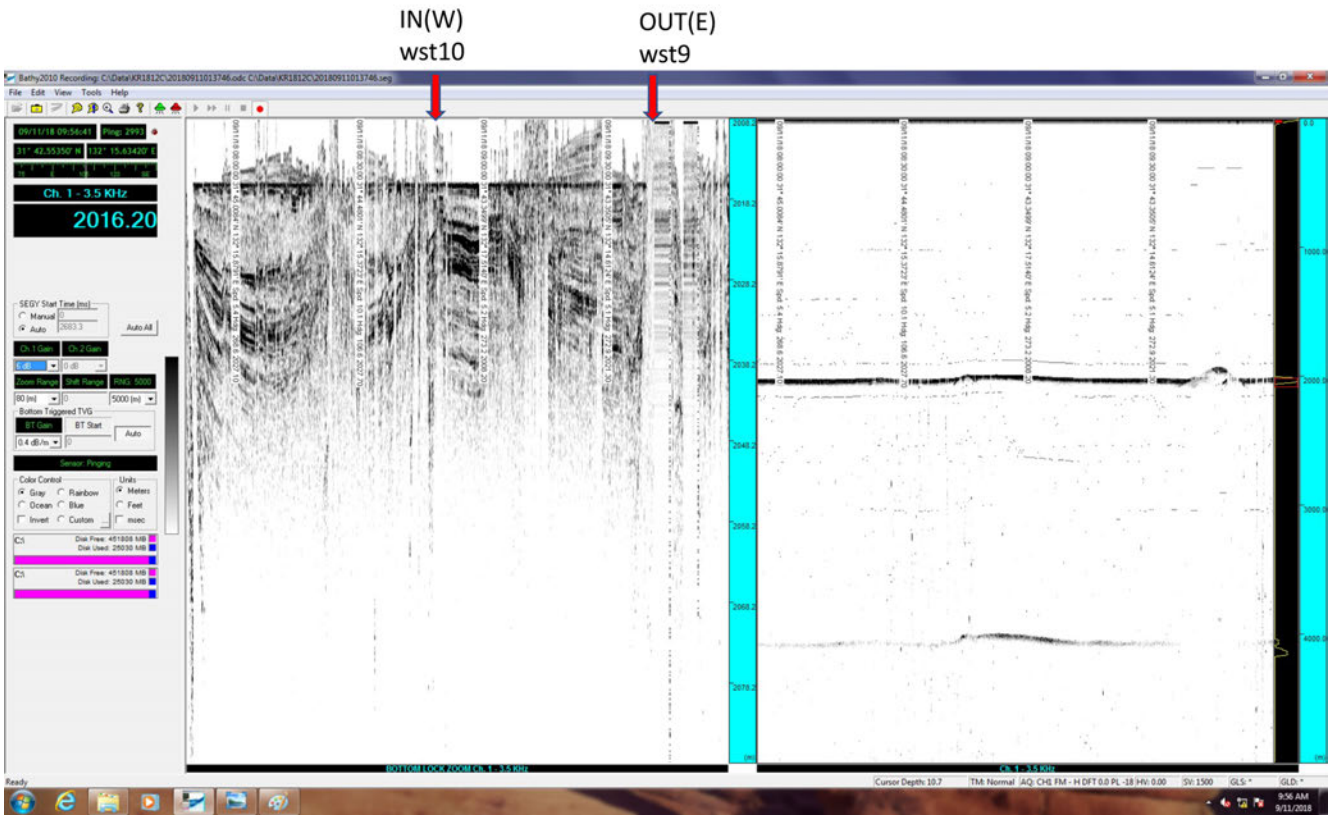


Fig 6-2-18 sub-bottom image of line wst10 – wst9. Sea Fig 6-1b for the location of line.

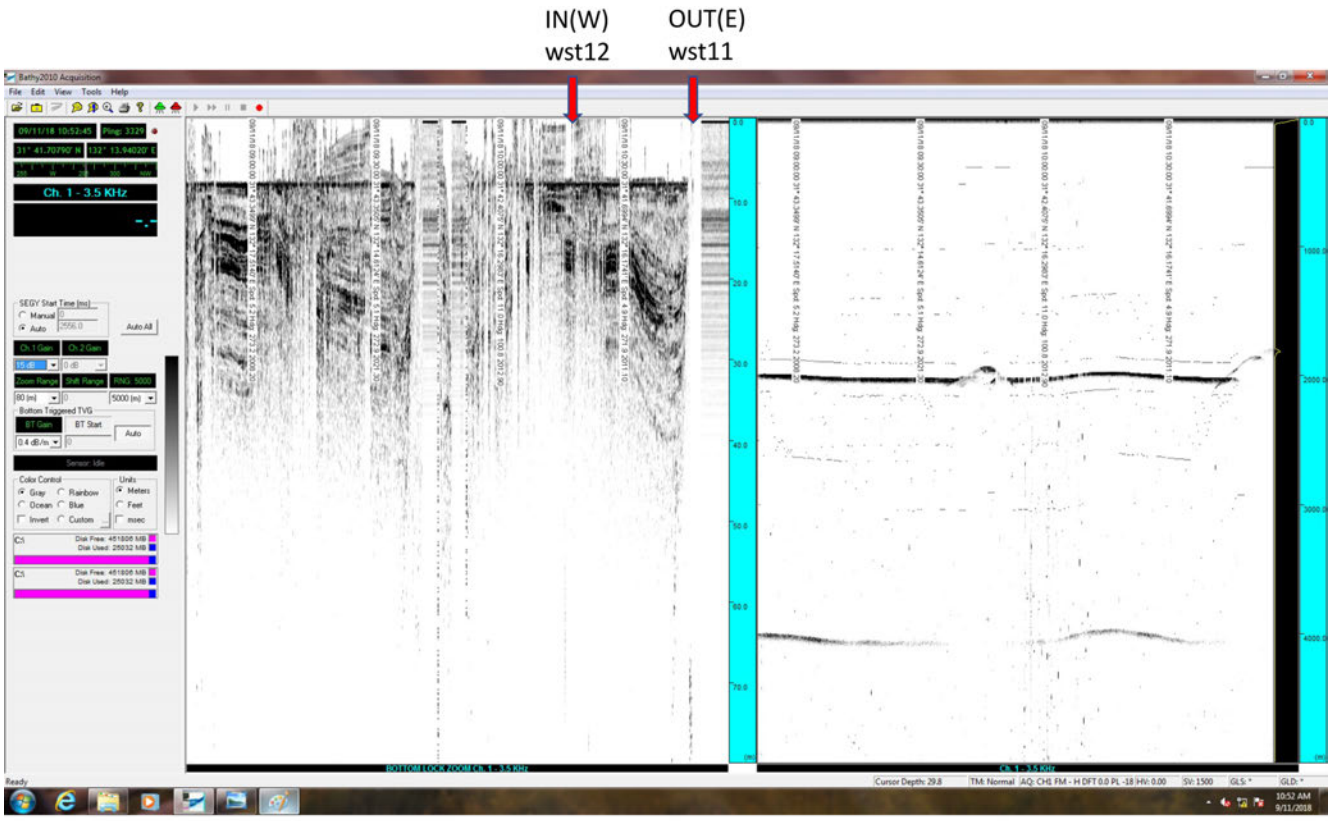


Fig 6-2-19 sub-bottom image of line wst12 – wst11. Sea Fig 6-1b for the location of line.

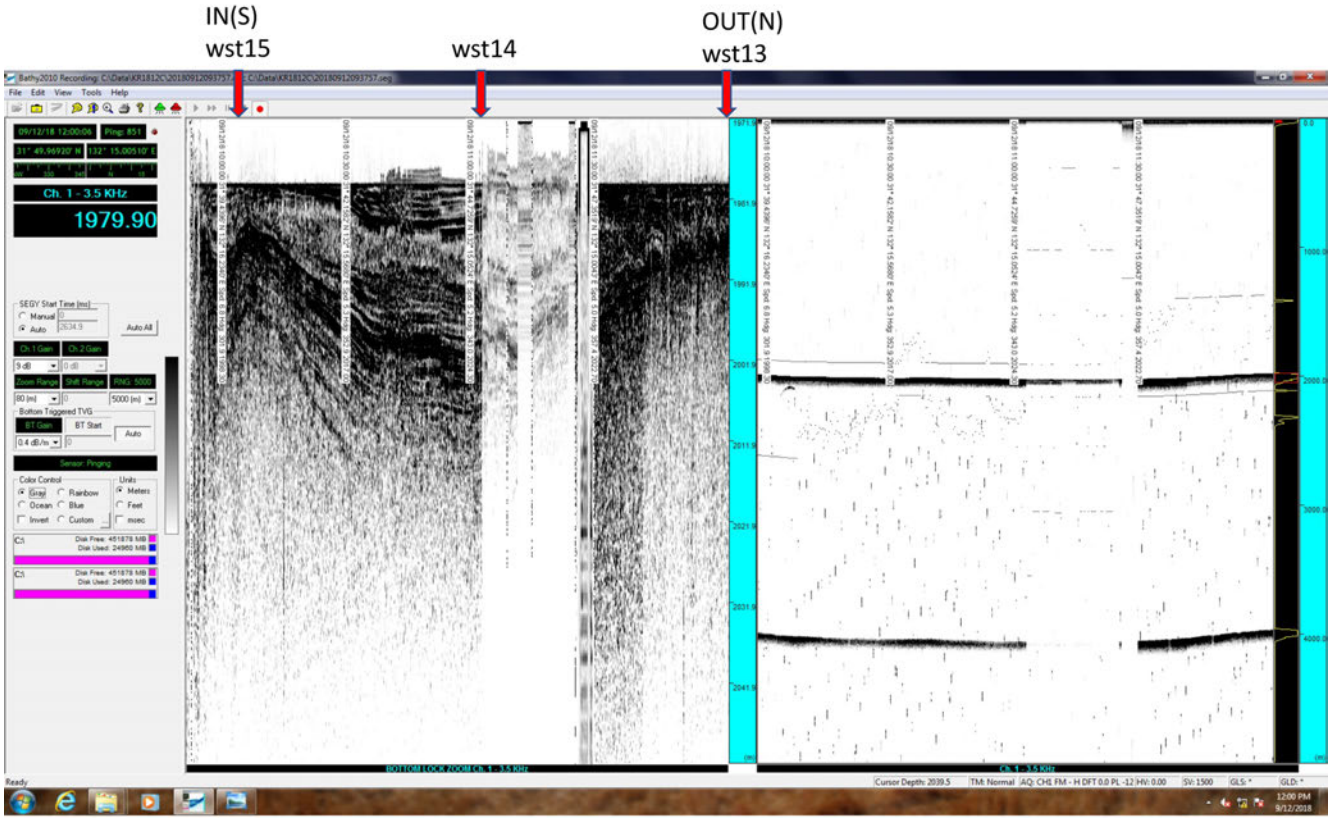


Fig 6-2-20 sub-bottom image of line wst15 – wst13. Sea Fig 6-1b for the location of line.

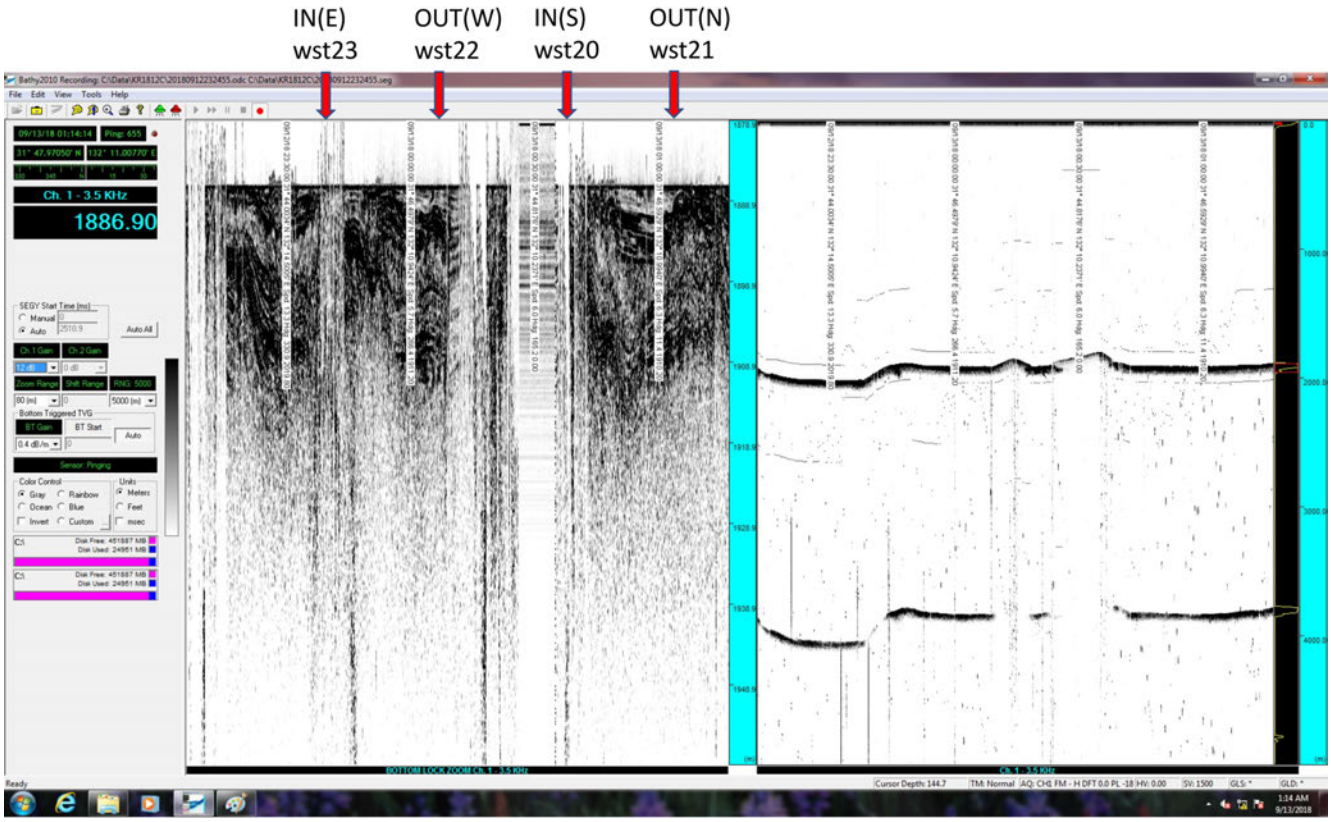


Fig 6-2-21 sub-bottom image of line wst23 – wst21. Sea Fig 6-1b for the location of line.

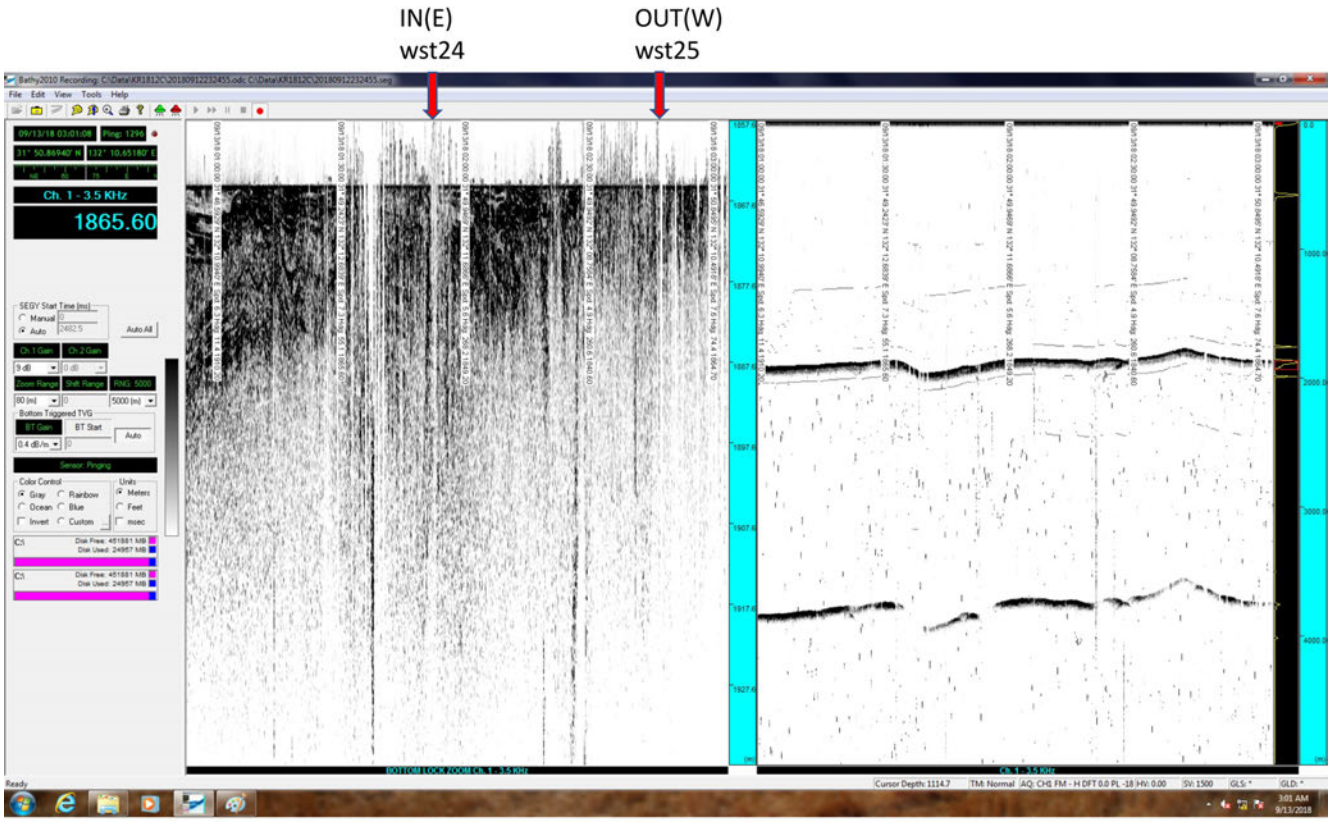


Fig 6-2-22 sub-bottom image of line wst24 – wst25. Sea Fig 6-1b for the location of line.

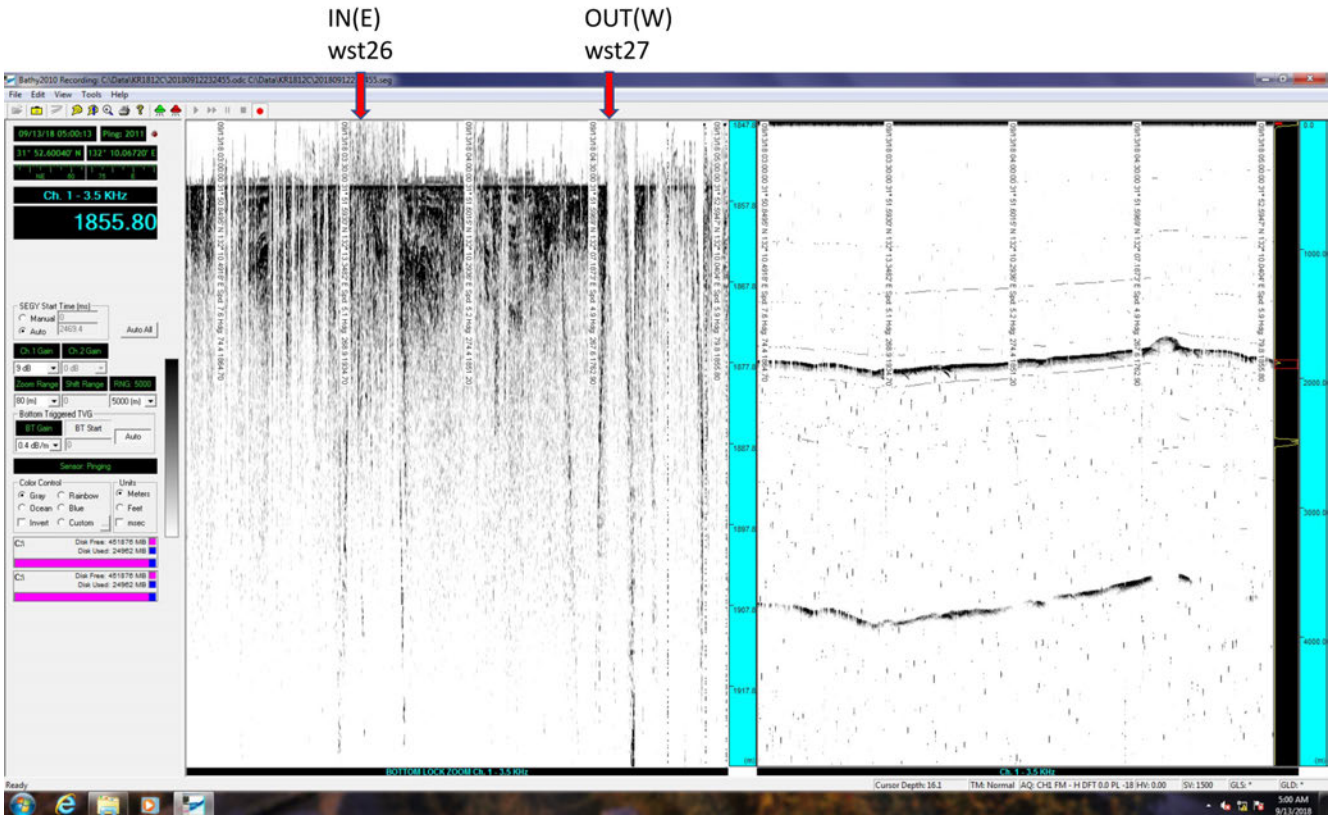


Fig 6-2-23 sub-bottom image of line wst26 – wst27. Sea Fig 6-1b for the location of line.

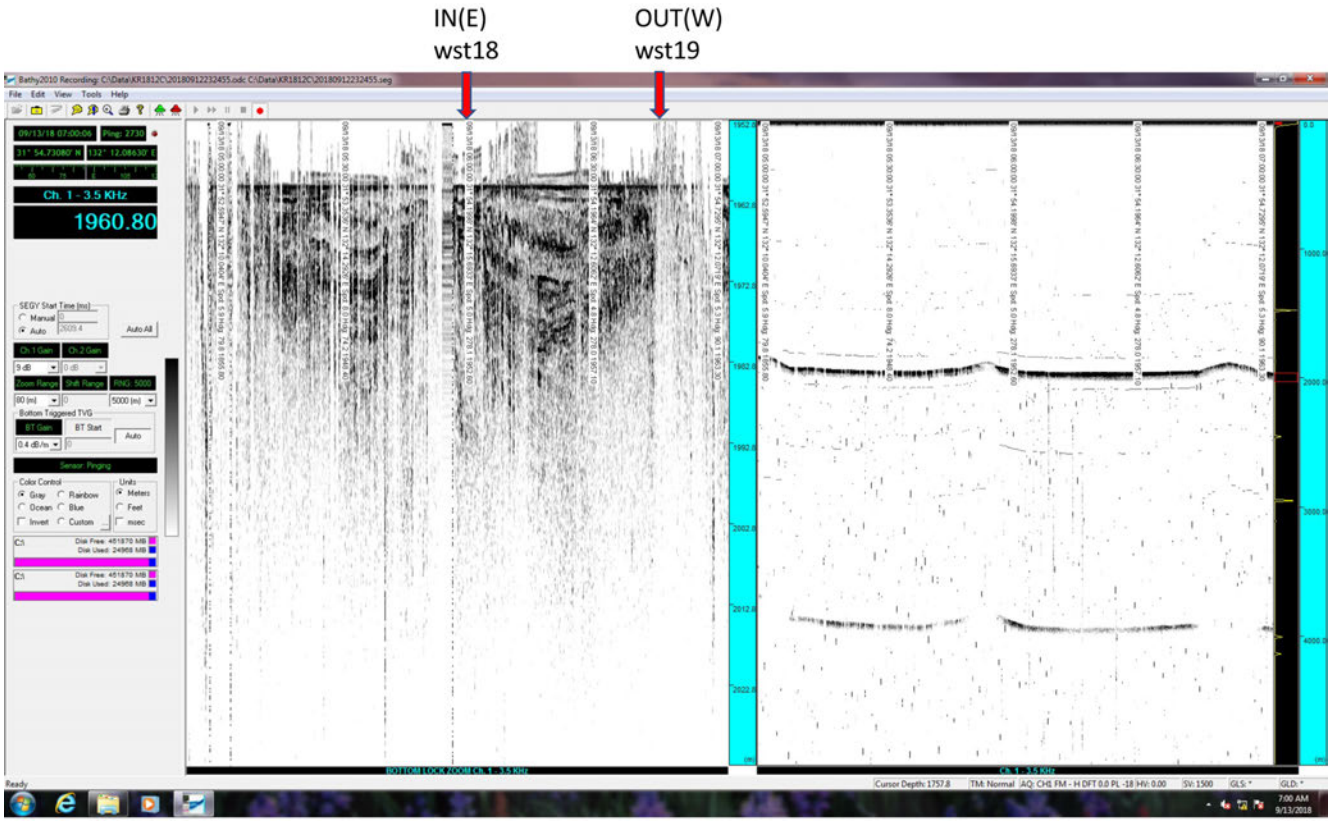


Fig 6-2-24 sub-bottom image of line wst18 – wst19. Sea Fig 6-1b for the location of line.

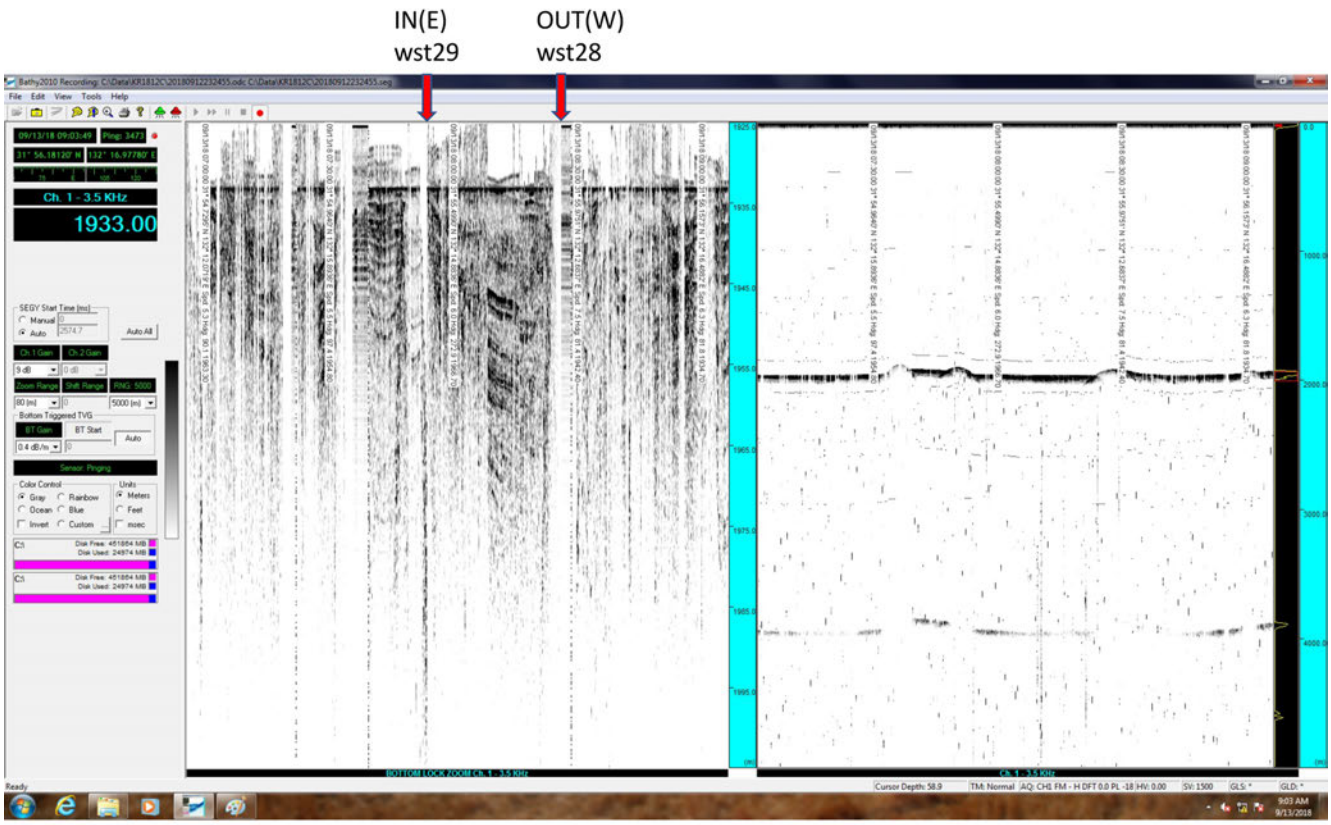


Fig 6-2-25 sub-bottom image of line wst29 – wst28. Sea Fig 6-1b for the location of line.

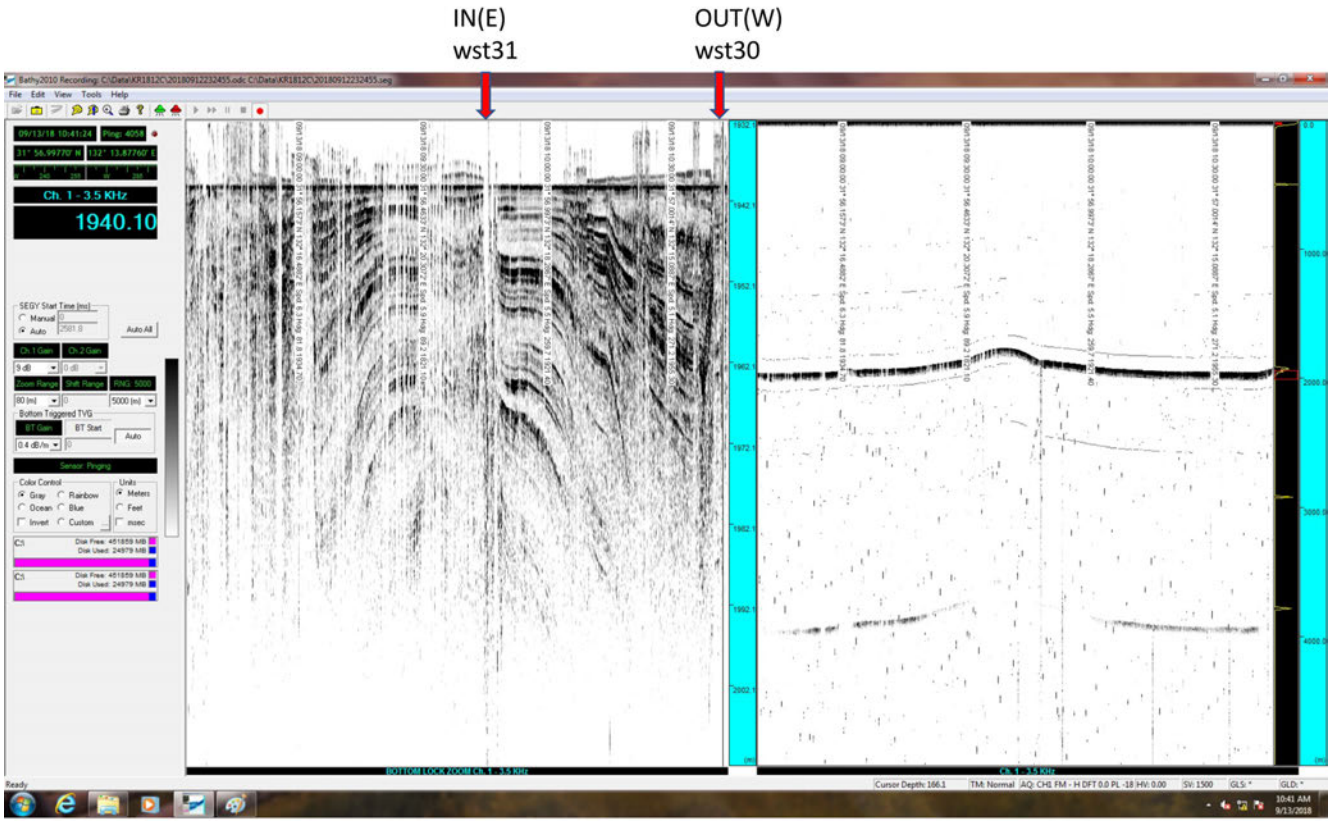


Fig 6-2-26 sub-bottom image of line wst31 – wst30. Sea Fig 6-1b for the location of line.

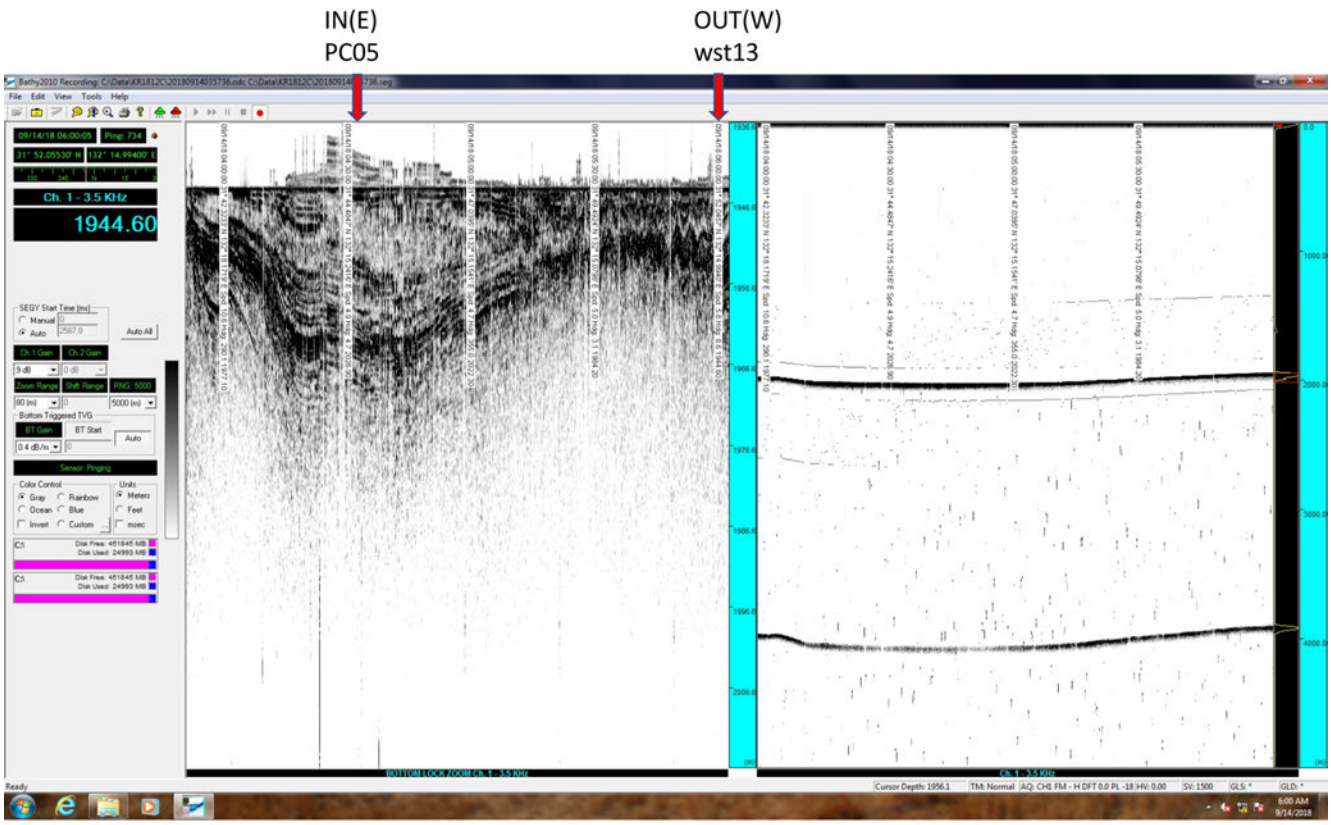


Fig 6-2-27 sub-bottom image of line PC05 – wst13. Sea Fig 6-1b for the location of line.

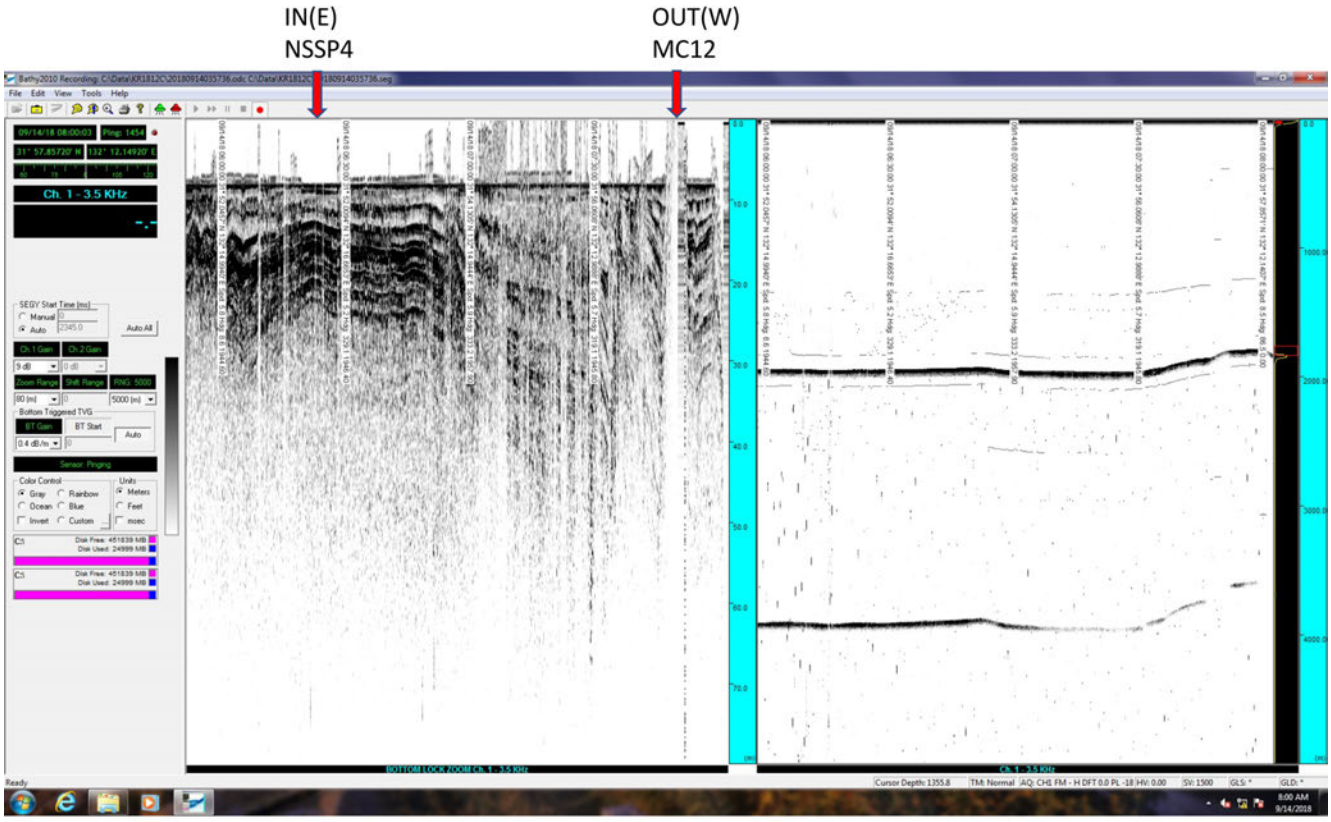


Fig 6-2-28 sub-bottom image of line NSSP4 – MC12. Sea Fig 6-1b for the location of line.

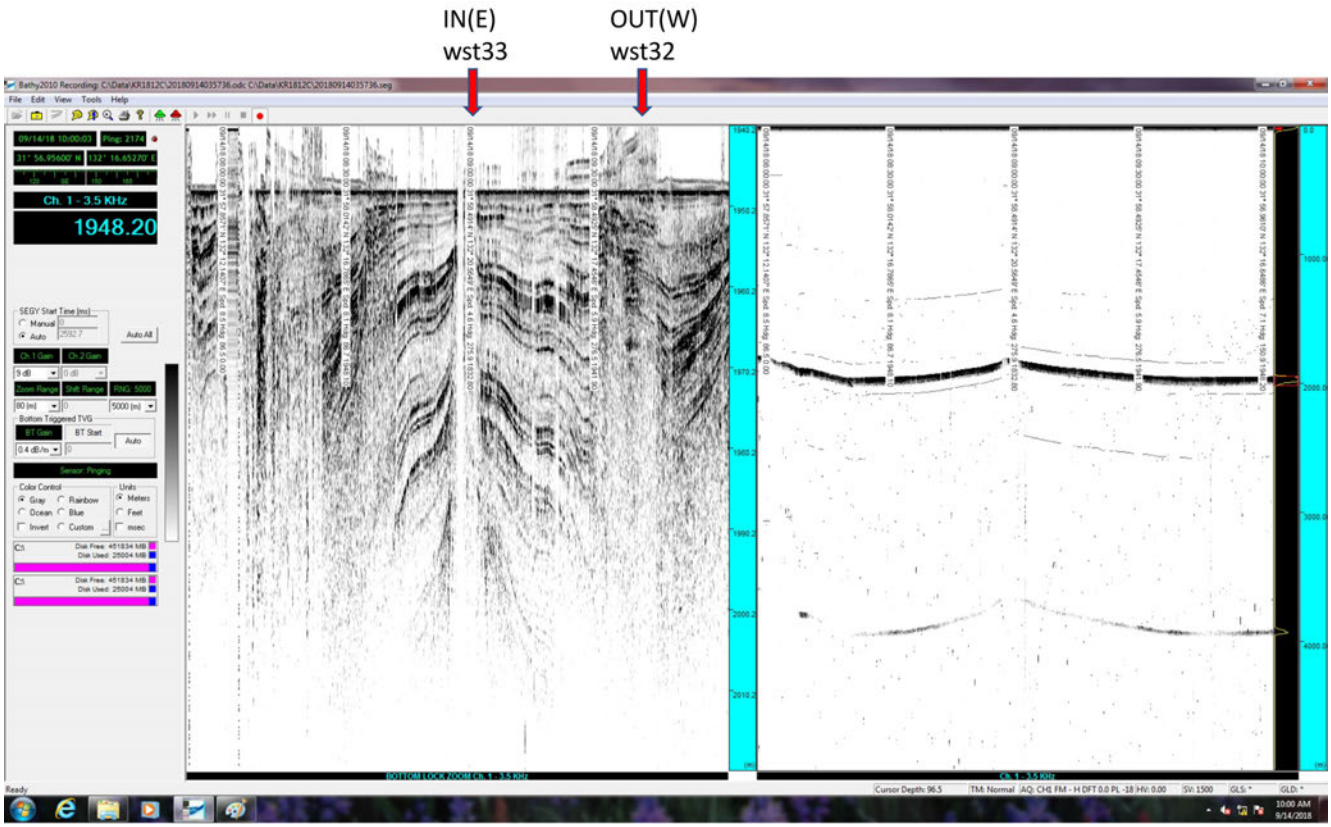


Fig 6-2-29 sub-bottom image of line wst33 – wst32. Sea Fig 6-1b for the location of line.

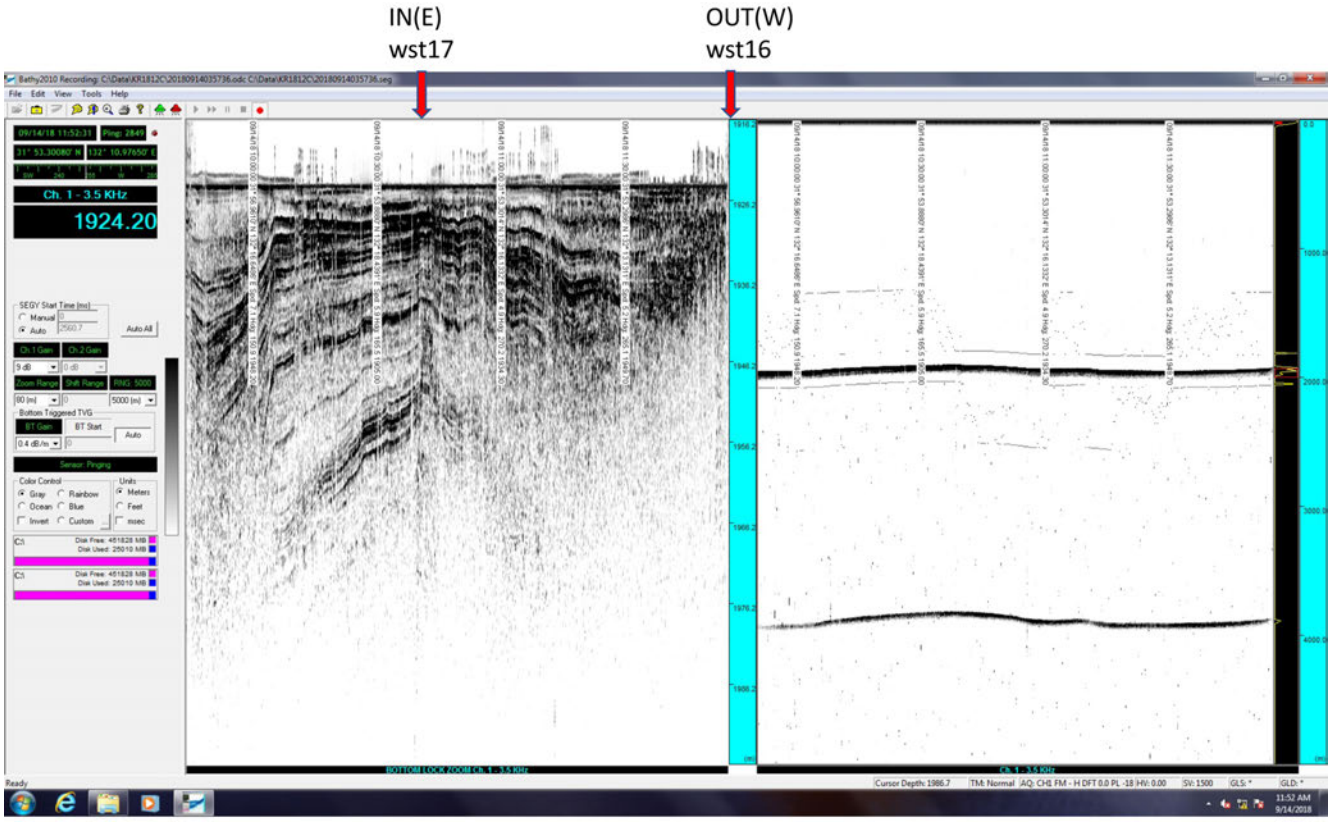


Fig 6-2-30 sub-bottom image of line wst17 – wst16. Sea Fig 6-1b for the location of line.

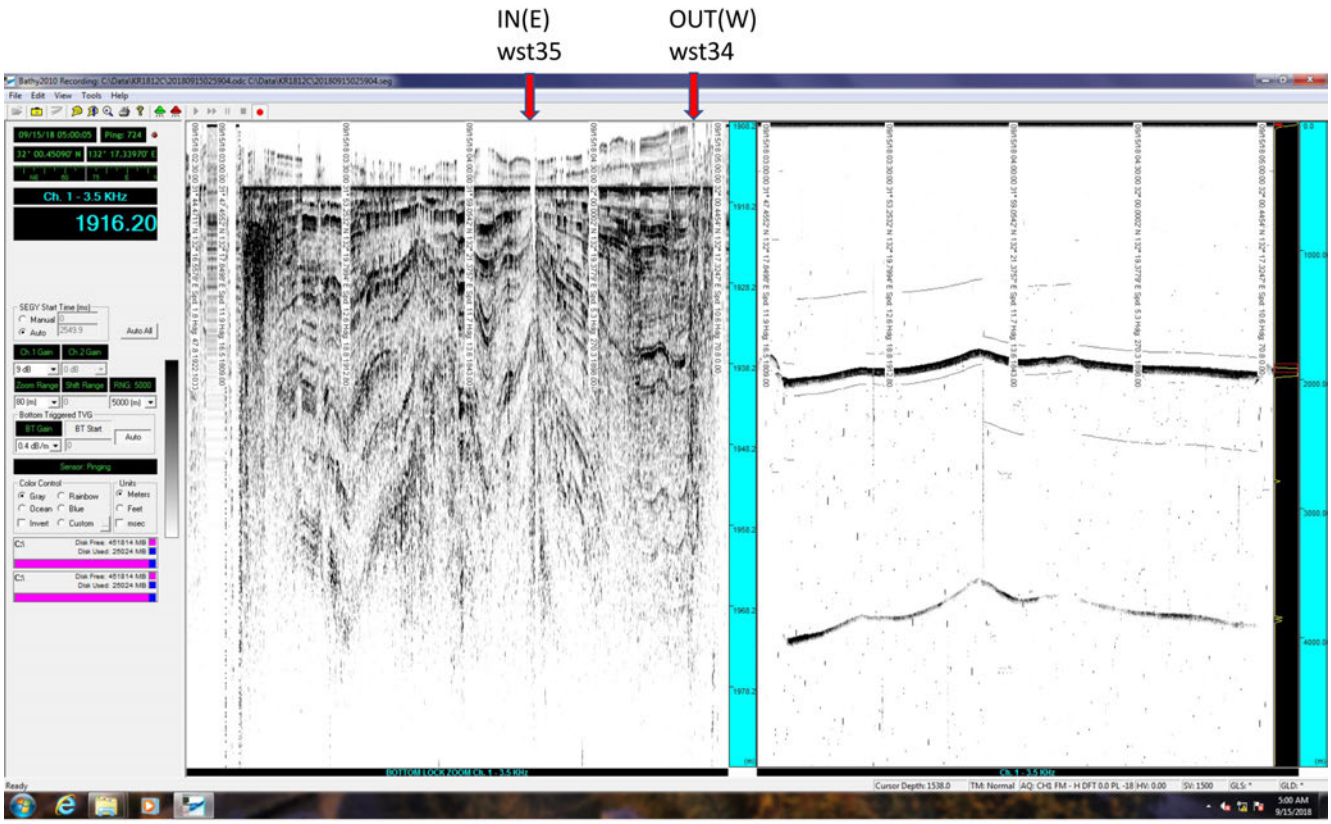


Fig 6-2-31 sub-bottom image of line wst35 – wst34. Sea Fig 6-1b for the location of line.

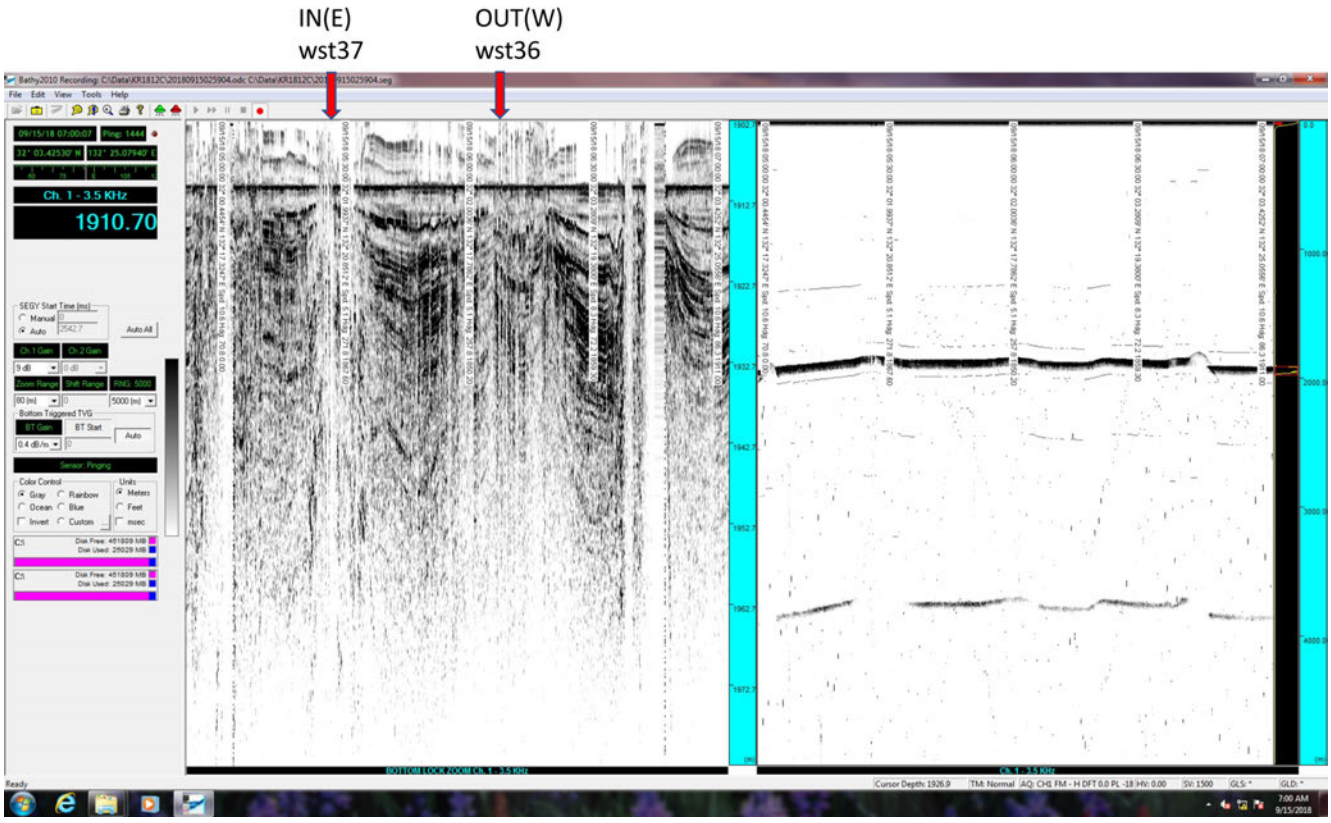


Fig 6-2-32 sub-bottom image of line wst37 – wst36. Sea Fig 6-1b for the location of line.

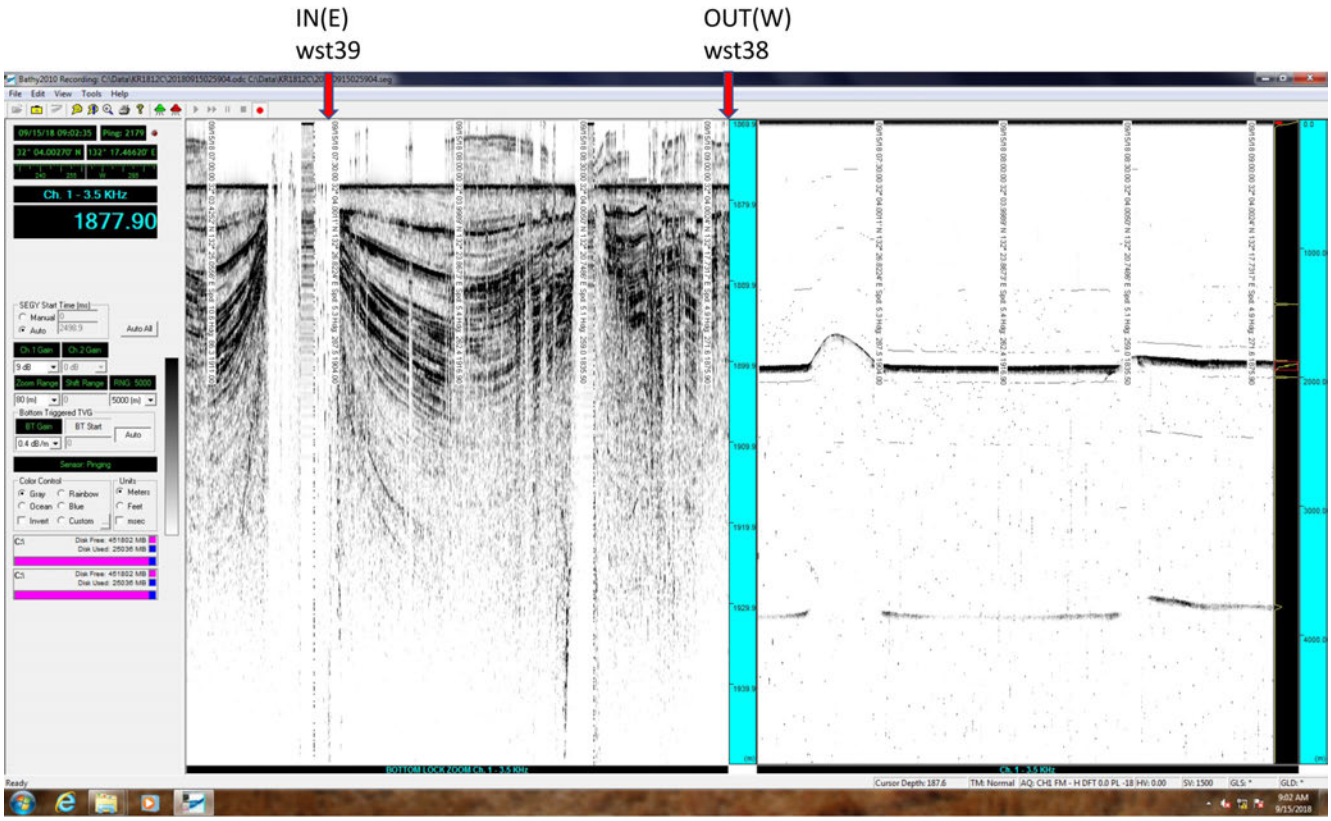


Fig 6-2-33 sub-bottom image of line wst39 – wst38. Sea Fig 6-1b for the location of line.

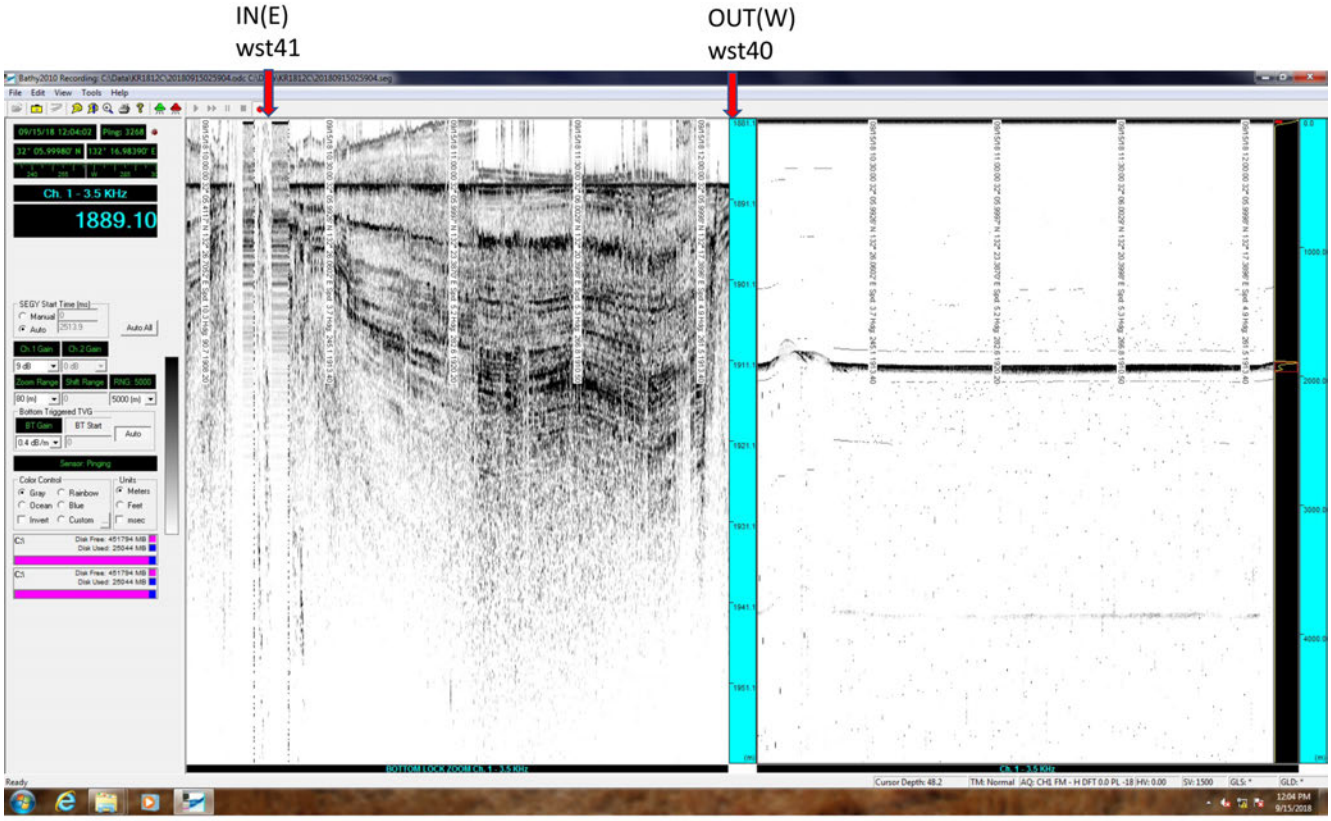


Fig 6-2-34 sub-bottom image of line wst41 – wst40. Sea Fig 6-1b for the location of line.

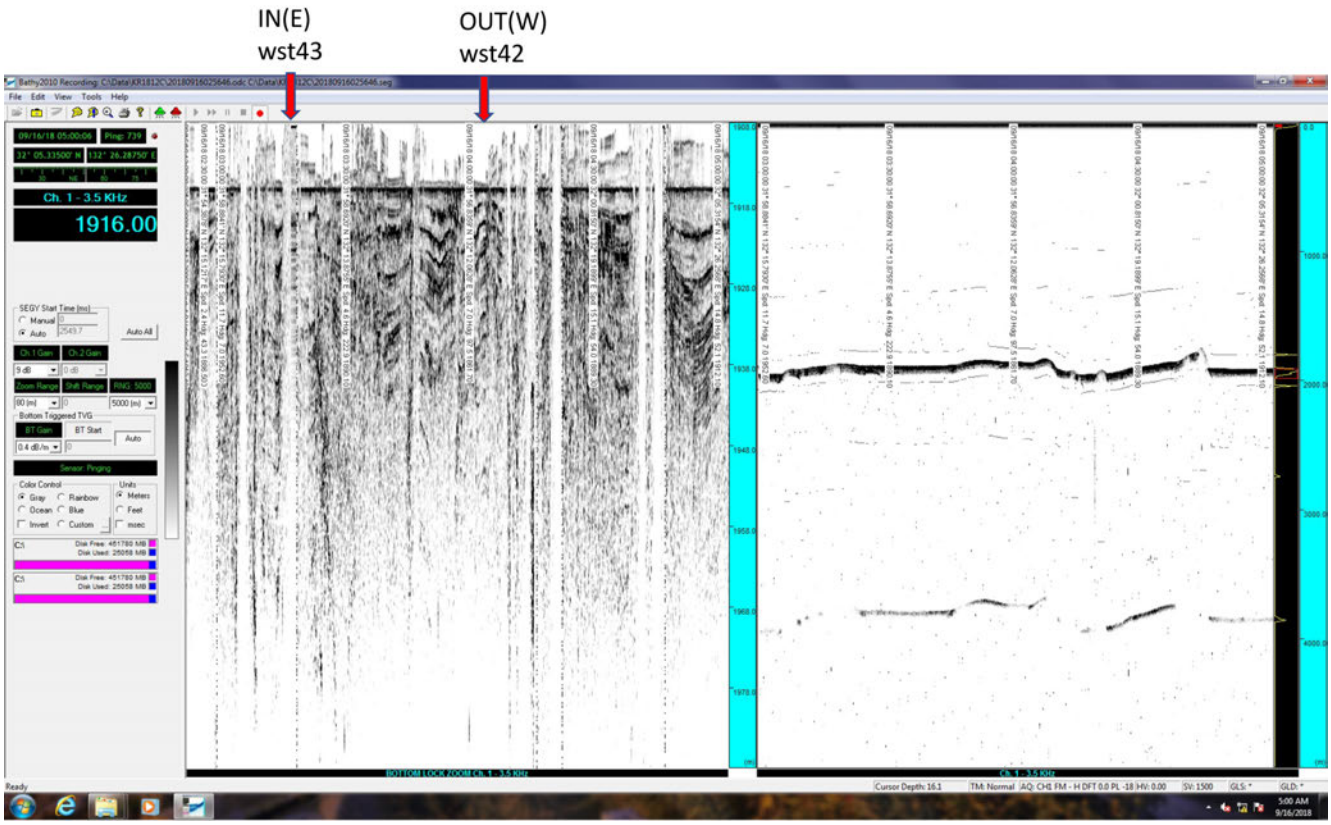


Fig 6-2-35 sub-bottom image of line wst43 – wst42. Sea Fig 6-1b for the location of line.

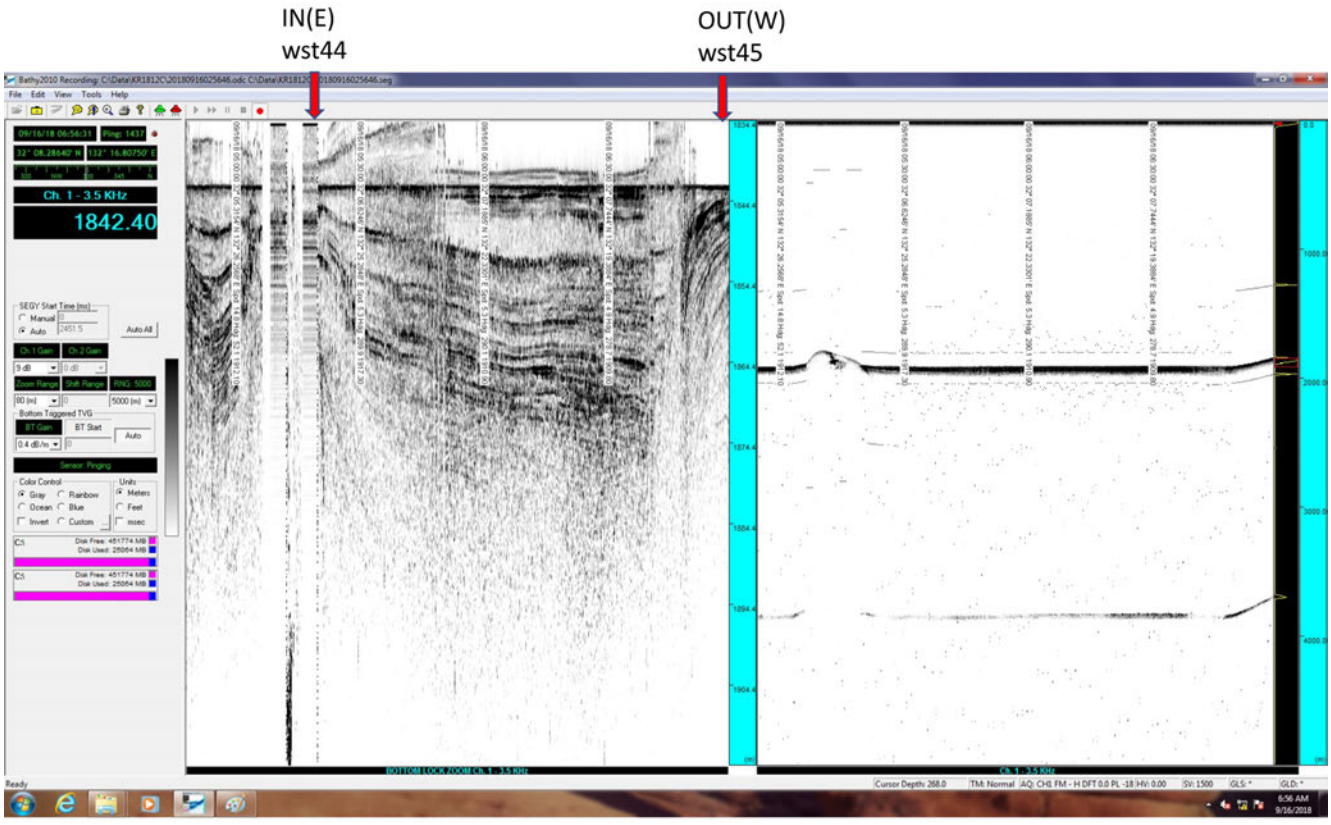


Fig 6-2-36 sub-bottom image of line wst44 – wst45. Sea Fig 6-1b for the location of line.

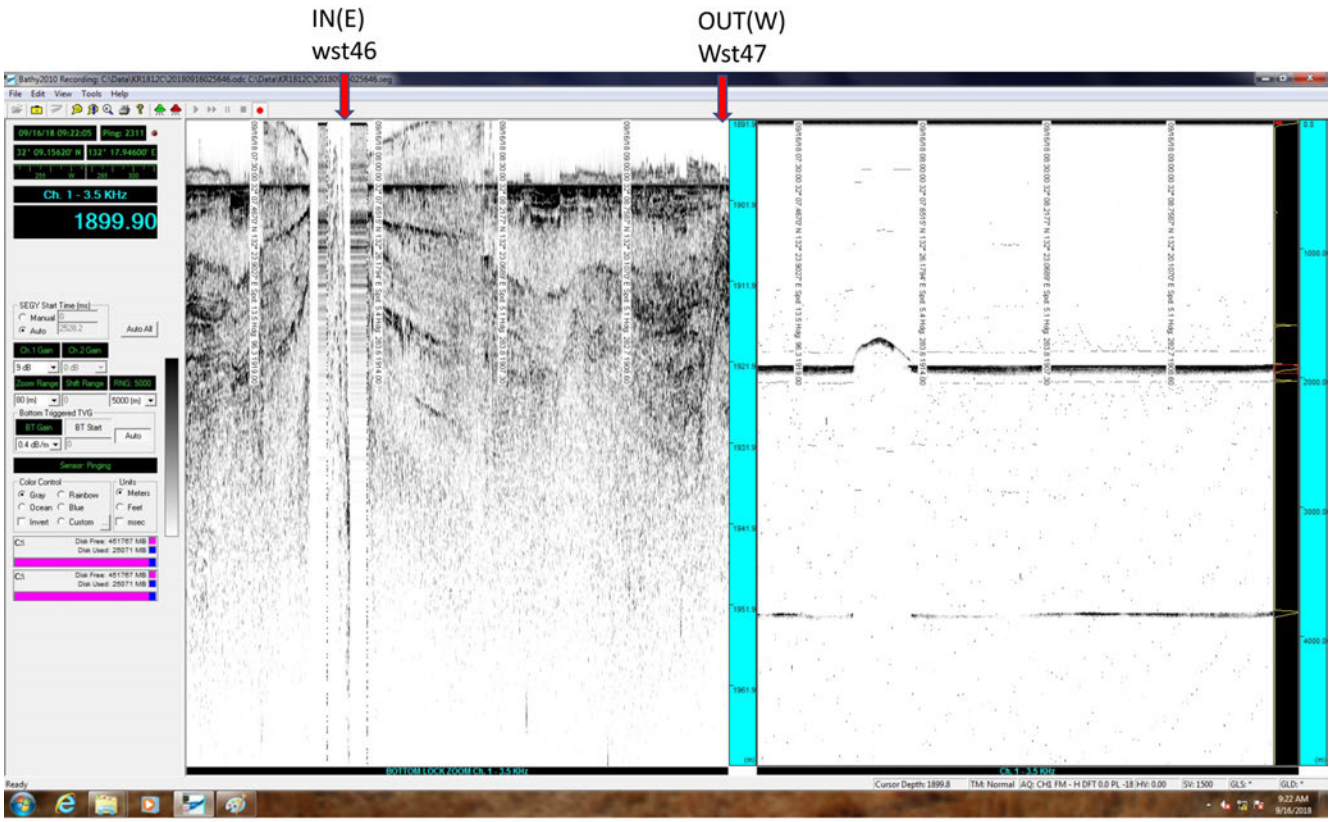


Fig 6-2-37 sub-bottom image of line wst46 – wst47. Sea Fig 6-1b for the location of line.

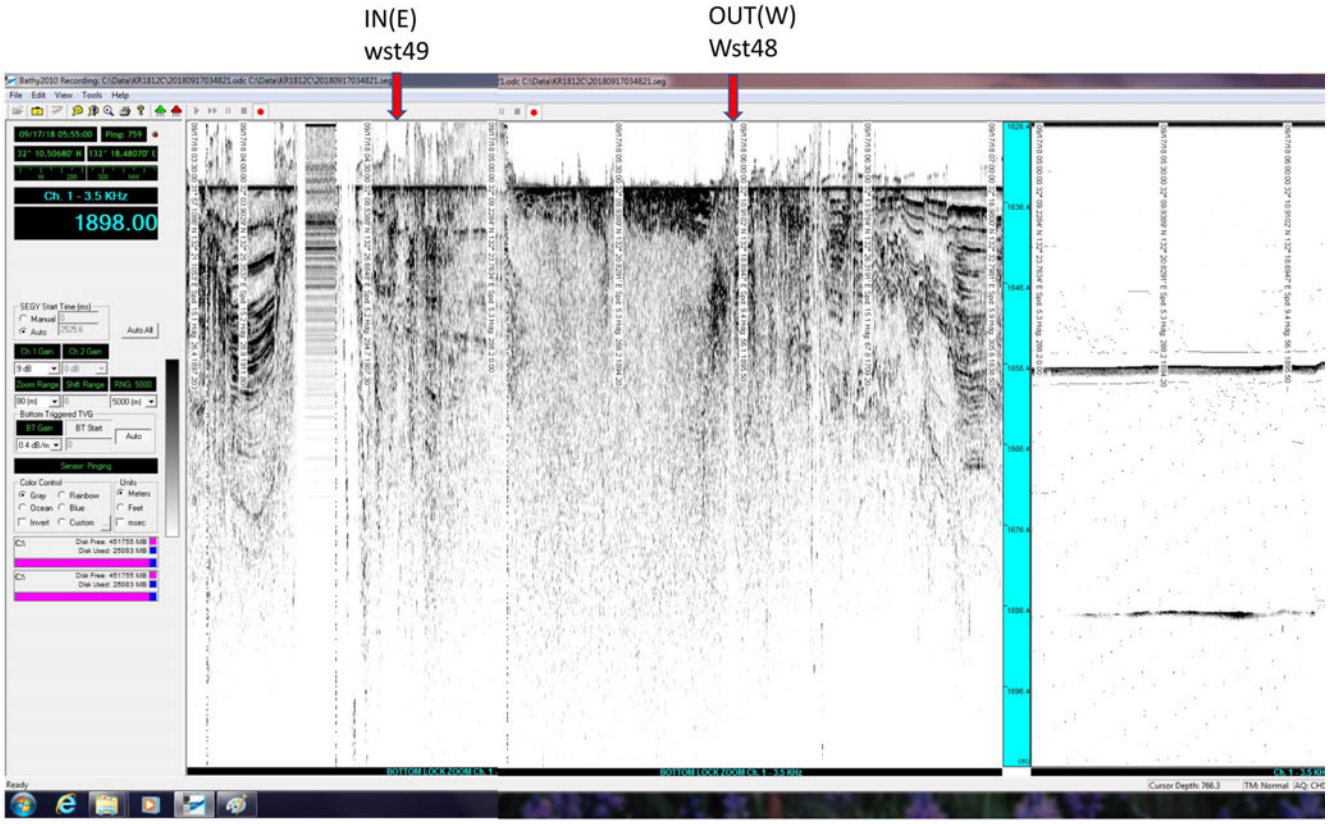


Fig 6-2-38 sub-bottom image of line wst49 – wst48. Sea Fig 6-1b for the location of line.

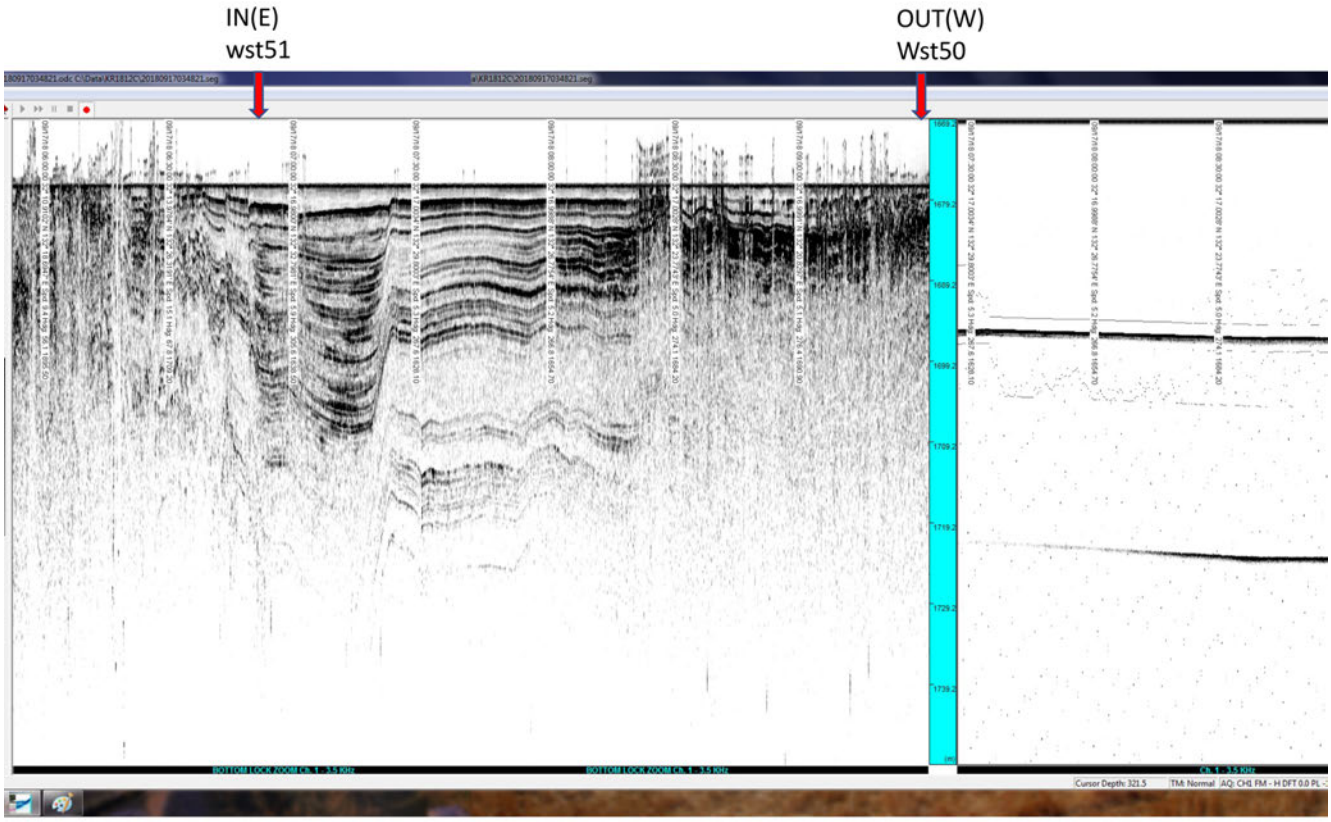


Fig 6-2-39 sub-bottom image of line wst51 – wst50. Sea Fig 6-1b for the location of line.

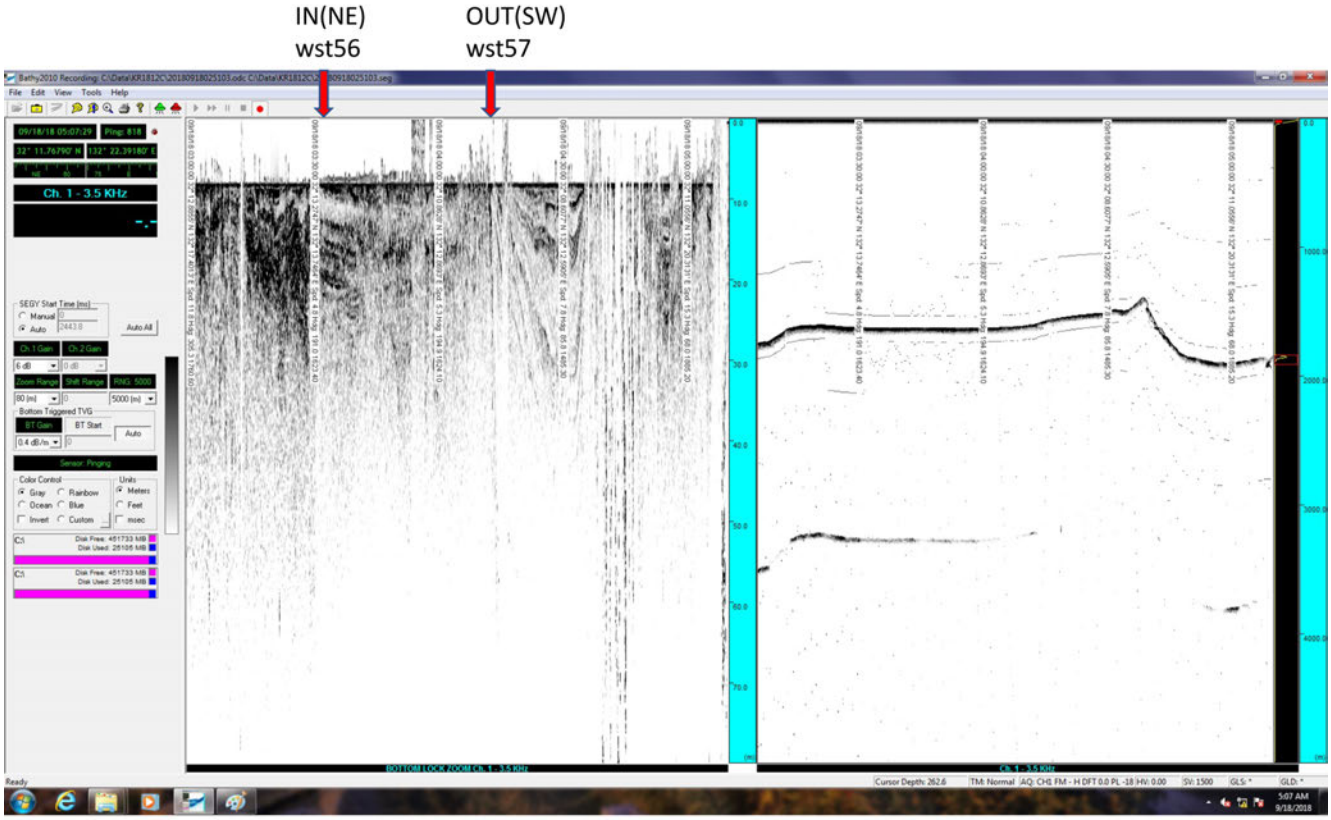


Fig 6-2-40 sub-bottom image of line wst56 – wst57. Sea Fig 6-1b for the location of line.

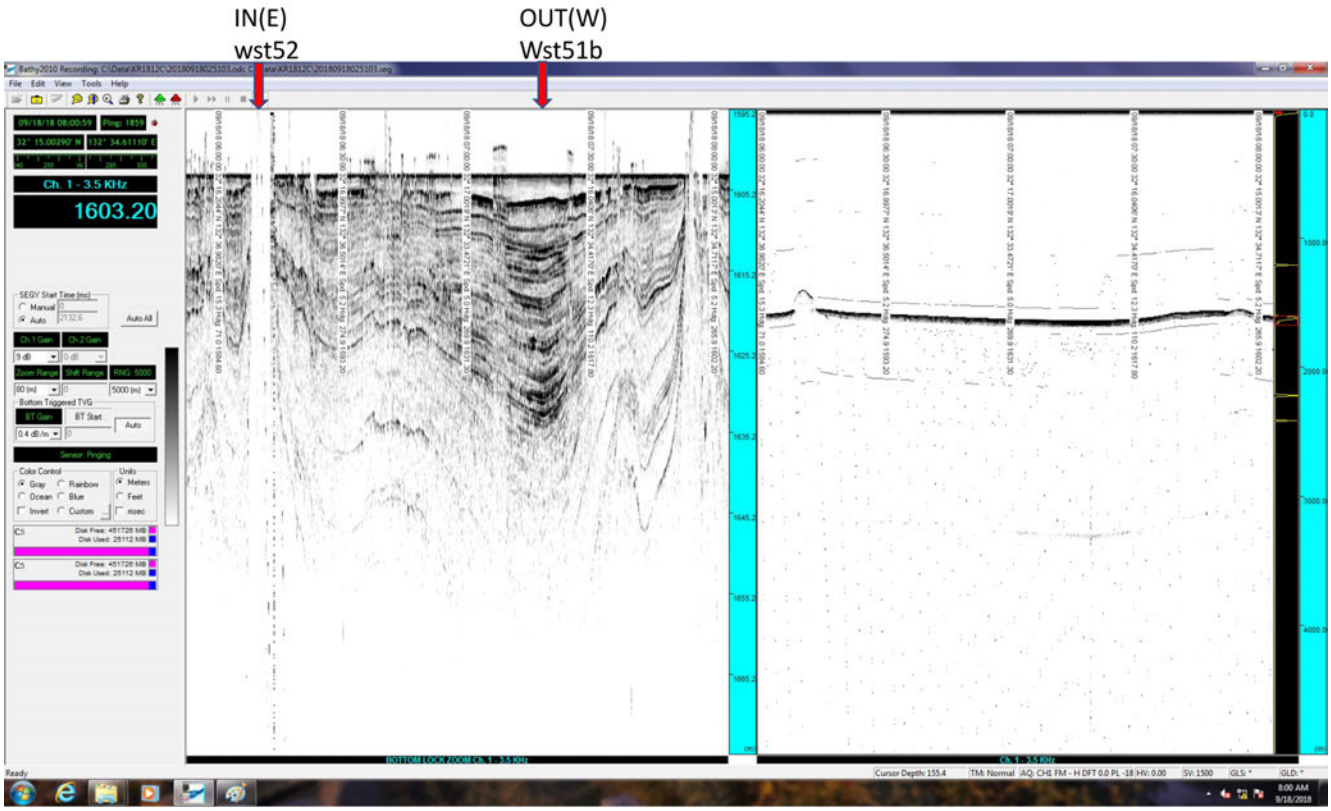


Fig 6-2-41 sub-bottom image of line wst52– wst51b. Sea Fig 6-1b for the location of line.

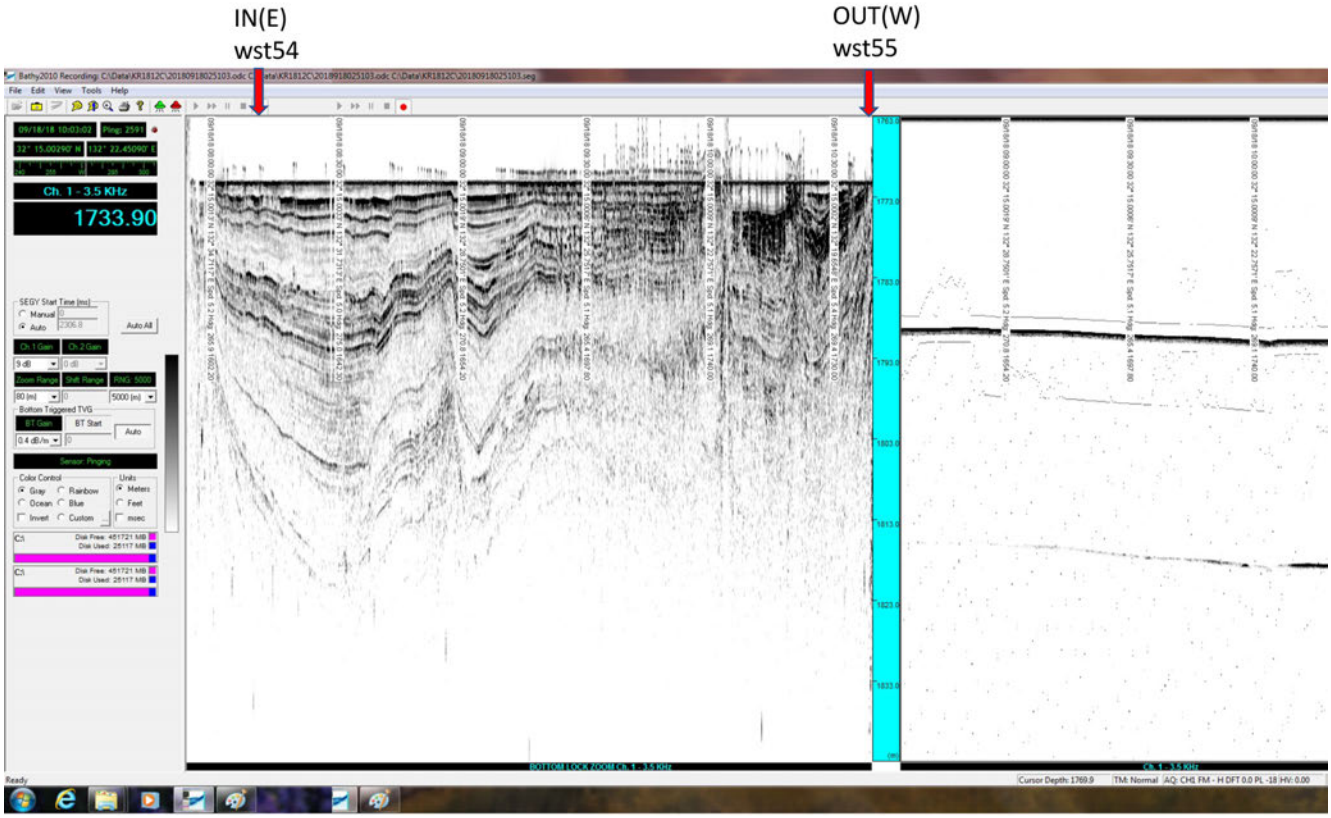


Fig 6-2-42 sub-bottom image of line wst54 – wst55. Sea Fig 6-1b for the location of line.

6-2. PC operations

Nine cores were recovered during the cruise. Information for their locations are summarized in **Table 6-2-1**. Operation inventory records are attached to APPENDIX**.**

Table 6-2-1. Summary of PC operation during KR18-12C

Date (UTC)	Core ID	Water depth (m)	Position		Core Length/Pipe		Winch wire Tension Max(ton)	K
			Latitude	Longitude	PC	PL		
20180910	PC01	2,449	31-40.1078N	132-27.3951E	3.81/6	0.51	43.6	0.63
20180912	PC02	2,425	31-48.2212N	132-33.4195E	2.49 /6	0.70	49.8	1.13
20180912	PC03	2,457	31-42.6024N	132-28.9377E	3.74/6	0.72	41.9	0.64
20180914	PC04	2,451	31-38.5079N	132-24.4124E	3.08 /4	0.90	46.5	0.66
20180915	PC05	2,014	31-43.6985N	132-15.2708E	4.77 /6	1.37	33.6	0.21
20180916	PC06	1,943	31-53.2951N	132-14.0010E	2.79 /6	1.19	34.5	0.45
20180917	PC07	2,012	31-47.8784N	132-15.1536E	3.57/6	0.76	37.1	0.43
20180918	PC08	1,905	32-09.0025N	132-18.9986E	4.30/6	0.65	25.8	0.09
20180919	PC09	1,944	31-53.3109N	132-14.0081E	3.57/4	0.84	30.0	0.27

6-3. Lithology of piston cores

Sediment lithology of the obtained piston and pilot gravity cores are summarized as **Figs. 6-3-1** and **6-3-2**. Core length of each core section on the visual description sheet is summarized in **Table 6-3-1**. We use the core length from **Table 6-3-1** for the core summary in this section. Detailed visual description is available in Appendix. Sediment lithology is different among the geographical areas, but thick reworked volcanic ash bed is found in all basins except of the Hyuga Basin; the Oyodo Basin (Sts. PC01, PC02, PC03 and PC04), a basin at the foot-of-slope (Sts. PC05 and PC07), a basin at the mouth of a submarine canyon connected to Miyazaki shelf (Sts. PC06 and PC09) and the Hyuga Basin (St. PC08). Sediment lithology of each area are summarized as below.

The Oyodo Basin

We obtained four piston cores with four pilot gravity cores from four sites in the Oyodo Basin. The Oyodo Basin is divided into the northern and southern basins separated by small bathymetric relief. Stratified acoustic facies above two thick acoustically transparent layers at the surface is found in the SBP profiles at each site. Coring sites were selected for depocenters at the northern basin (St. PC02) and north (St. PC03), central (St. PC01) and south (St. PC04) of the southern basin.

PC01, PC02, PC03, PC04, PL01, PL02, PL03 & PL04: Four cores (~250–380 cm long) recovered from the Oyodo Basin show similar lithology. The cores composed of grayish olive silt with bioturbation. A few thin coarse silt layers were intercalated. Thick volcanic ash layers, most of which were considered as the reworked layers, found at the lower part of the cores. Lower part of the cores were deformed and distorted during the coring. Grayish olive silt with bioturbation composed of all pilot gravity cores (~50–90 cm long).

A basin at the foot-of-slope

Two piston cores were recovered from a basin at the foot-of-slope off Miyazaki. Stratified acoustic facies is characteristic in the basin (Lines wst15–wst13 and wst13–PC05). A few acoustically transparent layers are found below the stratified facies. Thickness of the stratified facies becomes thinner north- and southward.

PC05, PC07, PL05 & PL07: A piston core (PC05: 477.3 cm long) was collected at the depocenter of a basin at the foot-of-slope off Miyazaki. Major lithology of the piston core was bioturbated silt. Many sand layers (a few to 33 cm thick) with upward fining grading structure found in the core. Another piston core (PC07: 357.4 cm long) from the southern part of the basin was also composed of bioturbated silt. Several sand layers with their thickness of <~10 cm were intercalated at the upper and middle part of the core. Many reworked volcanic ash layers were occurred at the lower part of the core.

Two pilot cores (PL05: 136.7 cm long, and PL07: 75.9 cm long) were composed of bioturbated silt. A thin volcanic ash layer was found in PL05 and a medium silt patch was occurred in PL07.

A basin at the mouth of submarine canyon connecting to Miyazaki shelf

Two piston cores at the same location were recovered from a basin at the mouth of submarine canyon connecting to Miyazaki shelf. Acoustically stratified facies is recognized on the SBP record (Line wst17–wst16). A few acoustically transparent layers are observed in SBP records.

PC06, PC09, PL06 & PL09: Two cores (PC06: 279 cm long, and PC09: 356.6 cm long) were obtained from a basin near the submarine canyon mouth. Main lithology of two cores was bioturbated silt with a few coarse silt layers. A thick reworked volcanic ash layer was occurred at the lower part of the cores. Although a reworked volcanic ash layer with plant debris was occurred at the core top of PC06, there was no corresponding layer in PC09. Volcanic ash layer with similar characteristics was observed at the lower part of PC09. Two pilot gravity cores (PL06: 118.7 cm long, and PL09: 83.7 cm long) were mainly composed of bioturbated silt. A volcanic ash layer and a volcanic ash spot was observed in PL06, and two and one event layer were found in PL06 and PL09.

The Hyuga Basin

A piston core was obtained from the deepest part of Hyuga Basin. Stratified acoustic facies covers at the basin floor, but a thick acoustically transparent layer is observed in subsurface (Line wst46–47).

PC08 & PL08: A piston core (PC08: 429.9 cm long) was composed of bioturbated silt. A few coarse silt layers, some of which showed upward-fining grading structure, were intercalated. Two thin volcanic ash layers were observed in the core. A pilot gravity core (PL08: 65.4 cm long) was composed of bioturbated silt.

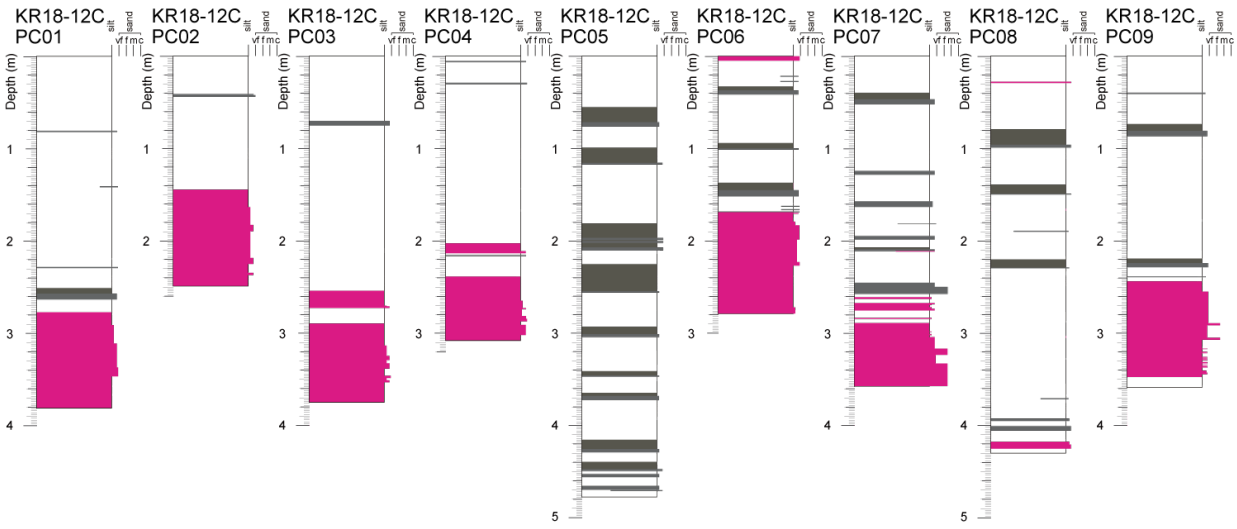


Fig. 6-3-1 Columnar section of each piston core

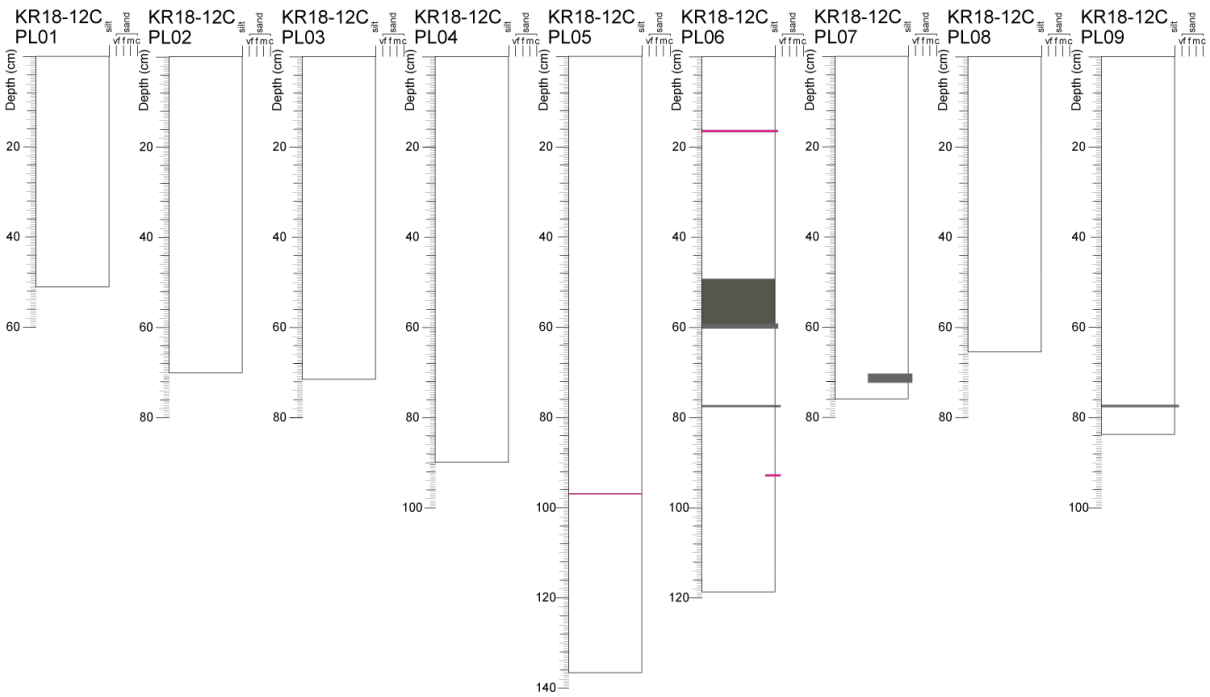


Fig. 6-3-2 Columnar section of each pilot and multiple core (Legend is the same as Fig. 6-4-1)

Table 6-3-1 Core length of each core section

Core	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Core Catcher	Total (cm)	Remarks
PC01	26.6	102.5	91.0	98.8	0.0	61.7		380.6	sec 3 15.5-19cm void
PL01	51.0							51.0	
PC02		63.7	100.0	16.4	18.4	50.5		249.0	
PL02	70.0							70.0	
PC03		70.0	100.0	90.0	18.4	96.0		374.4	sec 3A 0.8-5.5cm void; sec 6 74.5-76cm void
PL03	71.5							71.5	
PC04	32.2	100.0	81.2	94.4				307.8	
PL04	81.7						8.2	89.9	
PC05		66.4	100.6	100.0	99.8	98.5	12.0	477.3	sec 6/CC 4cm overlap
PL05	8.0	20.0	96.5				12.2	136.7	sec 3/CC 2.5cm overlap
PC06				82.0	101.0	96.0		279.0	sec 4A 0.8-5cm void
PL06	19.2	99.5						118.7	
PC07		73.2	100.0	100.4	43.0	40.8		357.4	
PL07	75.9							75.9	
PC08		46.8	100.7	99.6	100.2	73.0	9.6	429.9	
PL08	65.4							65.4	
PC09	48.0	100.0	101.1	93.5			14.0	356.6	sec 6A 0-60cm void
PL09	83.7							83.7	

7. Acknowledgement

We are grateful for the efforts of Captain Nakamura and his crews during the cruise. We thank all the support from staffs in JAMSTEC. Especially thanks to Mr. Maki in the Research Fleet Department for his considerable efforts.

8. Notice on Using

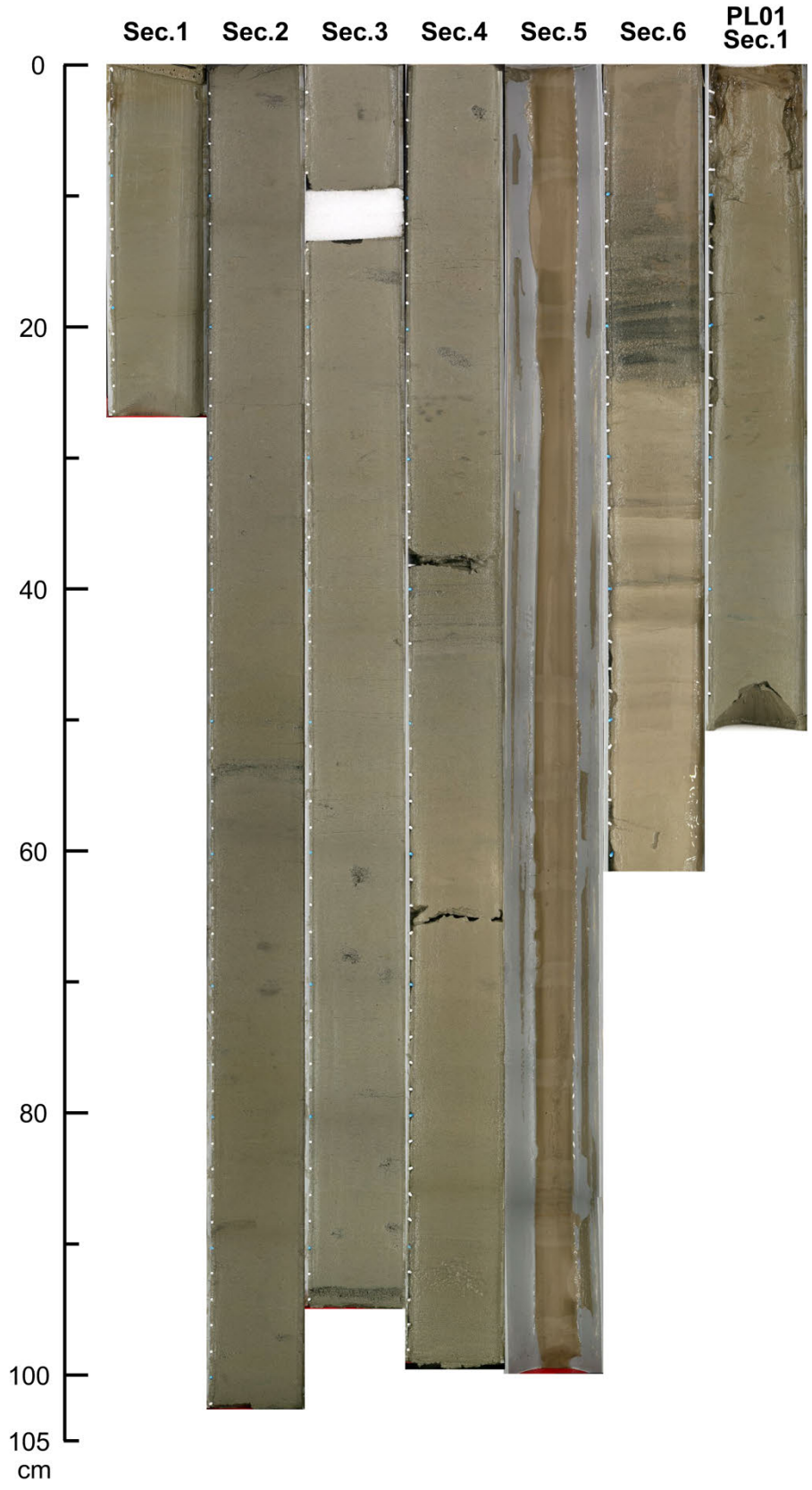
Notice on using: Insert the following notice to users regarding the data and samples obtained.

This cruise report is a preliminary documentation as of the end of the cruise.
This report may not be corrected even if changes on contents (i.e. taxonomic classifications) may be found after its publication. This report may also be changed without notice. Data on this cruise report may be raw or unprocessed. If you are going to use or refer to the data written on this report, please ask the Chief Scientist for latest information.
Users of data or results on this cruise report are requested to submit their results to the Data Management Group of JAMSTEC.

APPENDIX

Core Photo

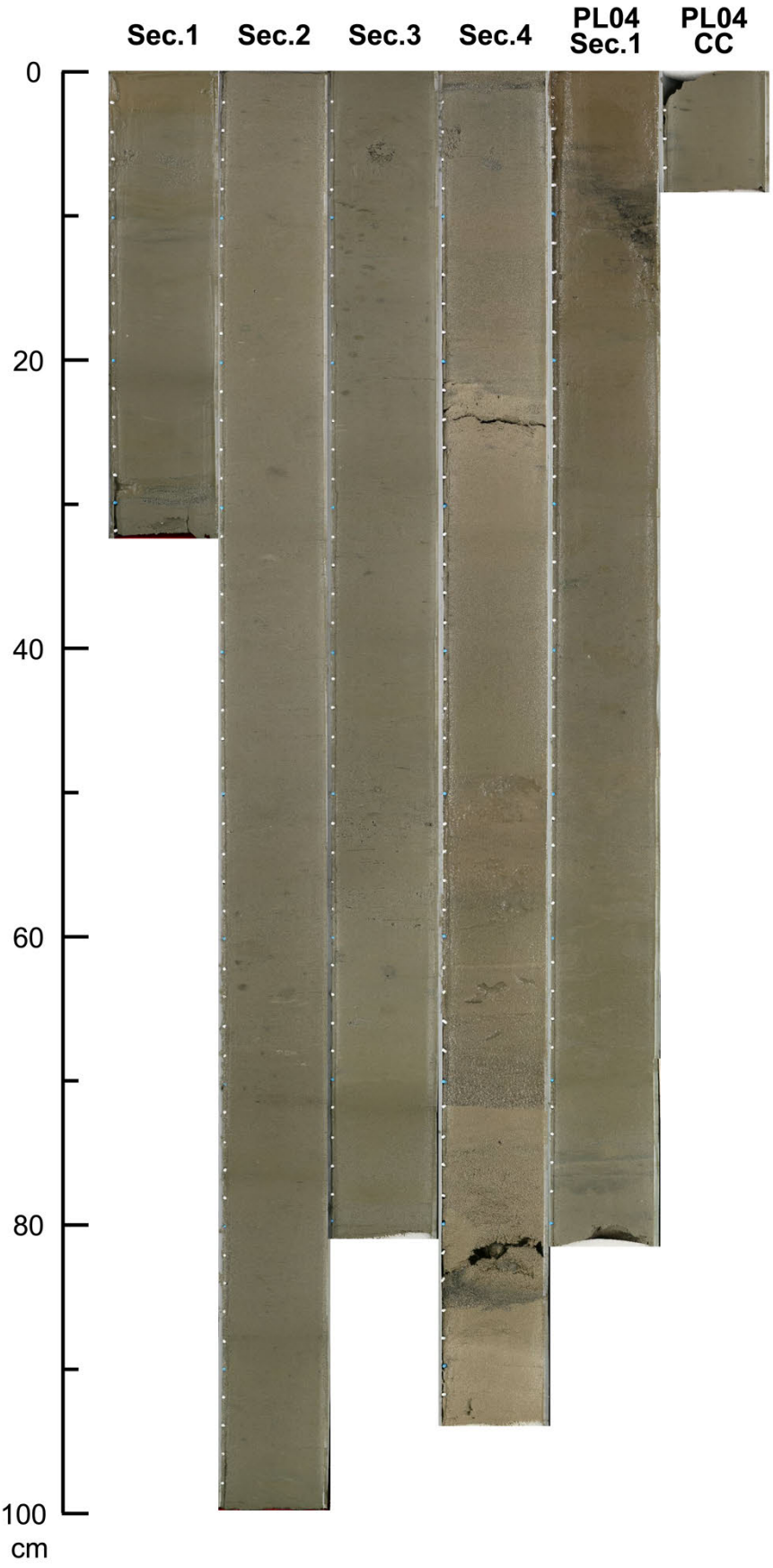
KR18-12C PC01



KR18-12C PC02

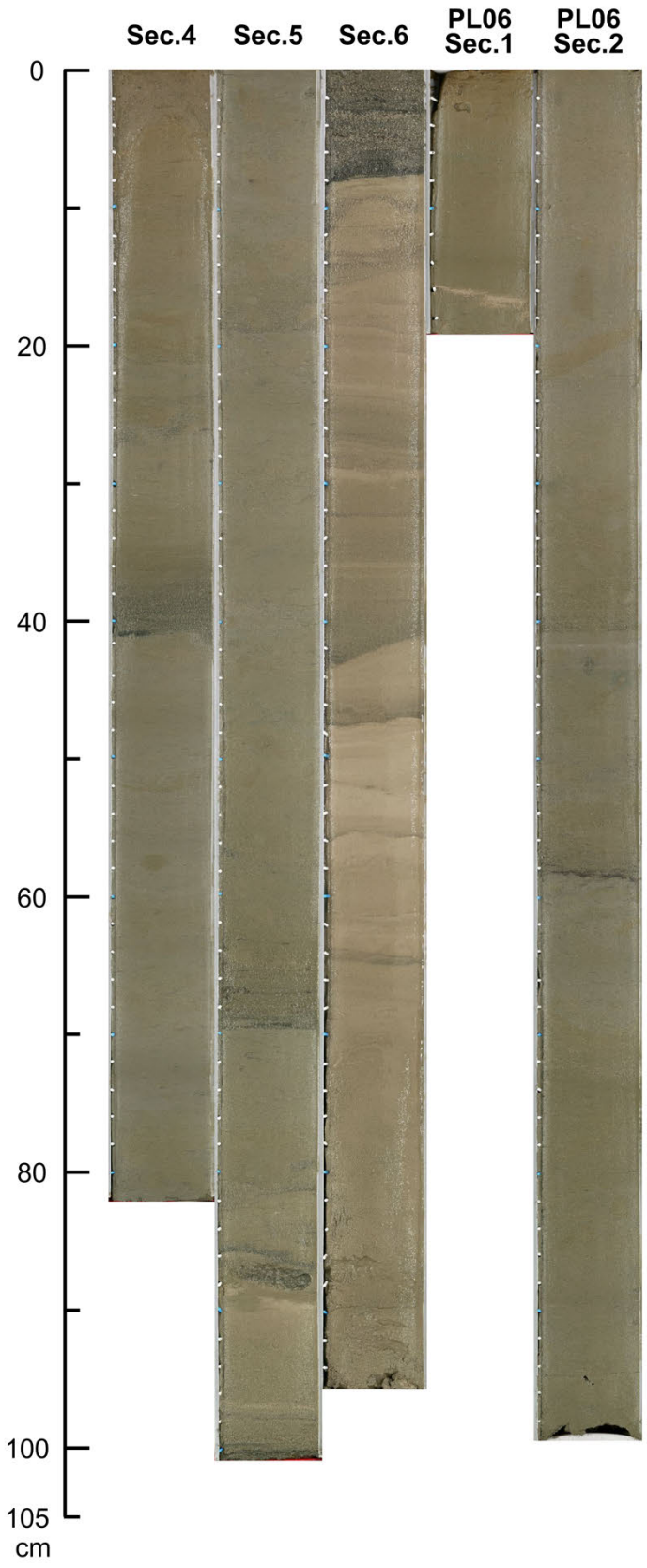
KR18-12C PC03

KR18-12C PC04

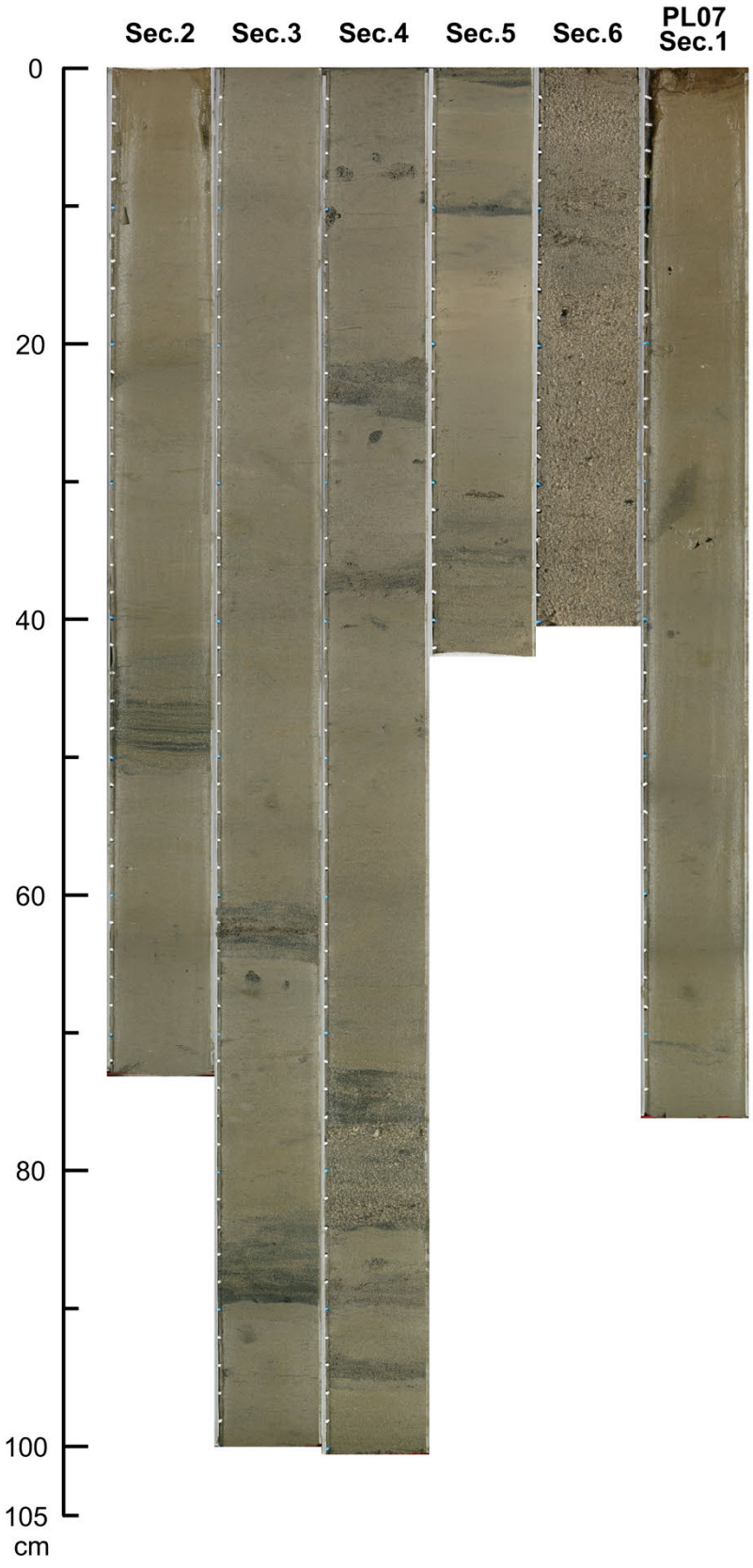


KR18-12C PC05

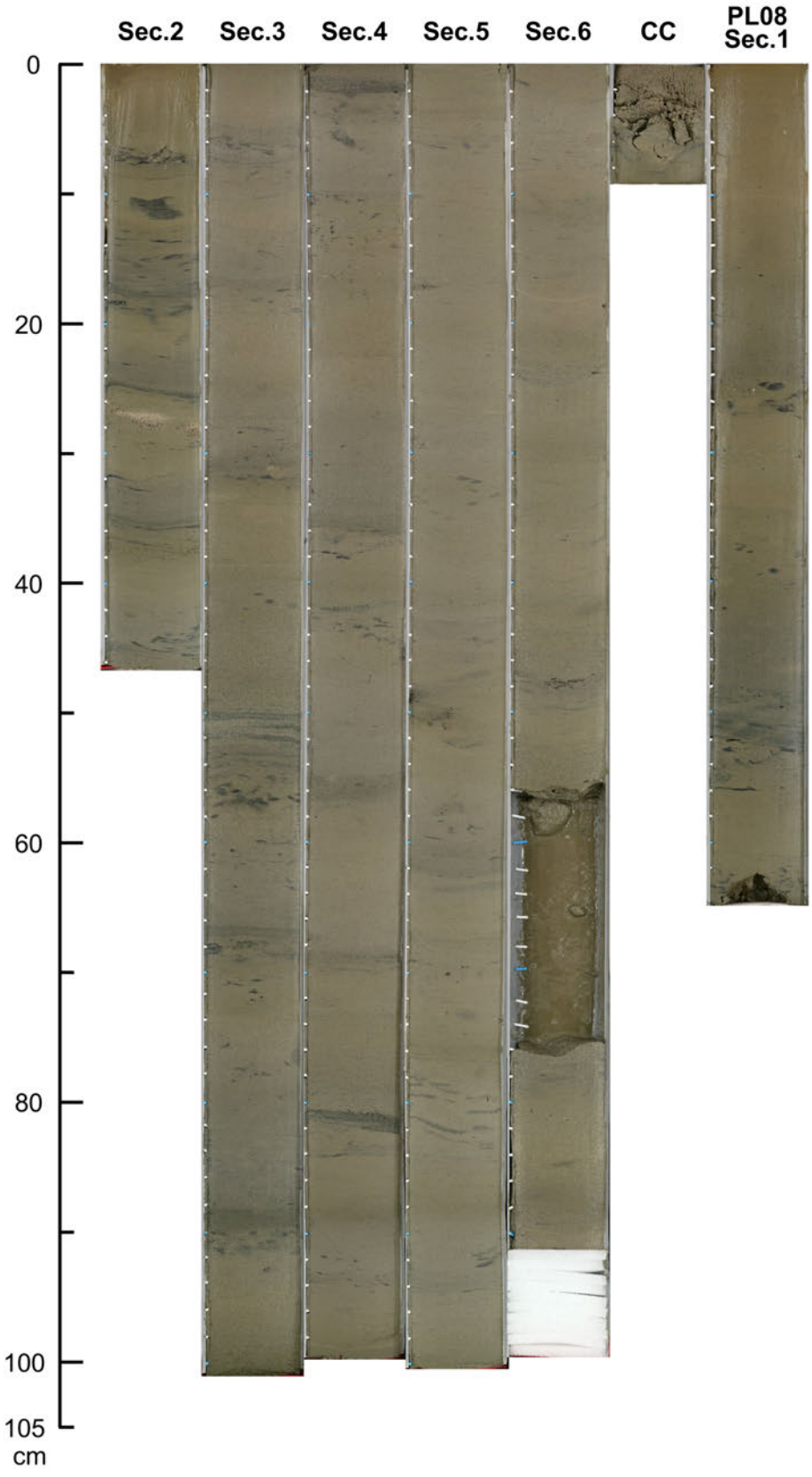
KR18-12C PC06



KR18-12C PC07



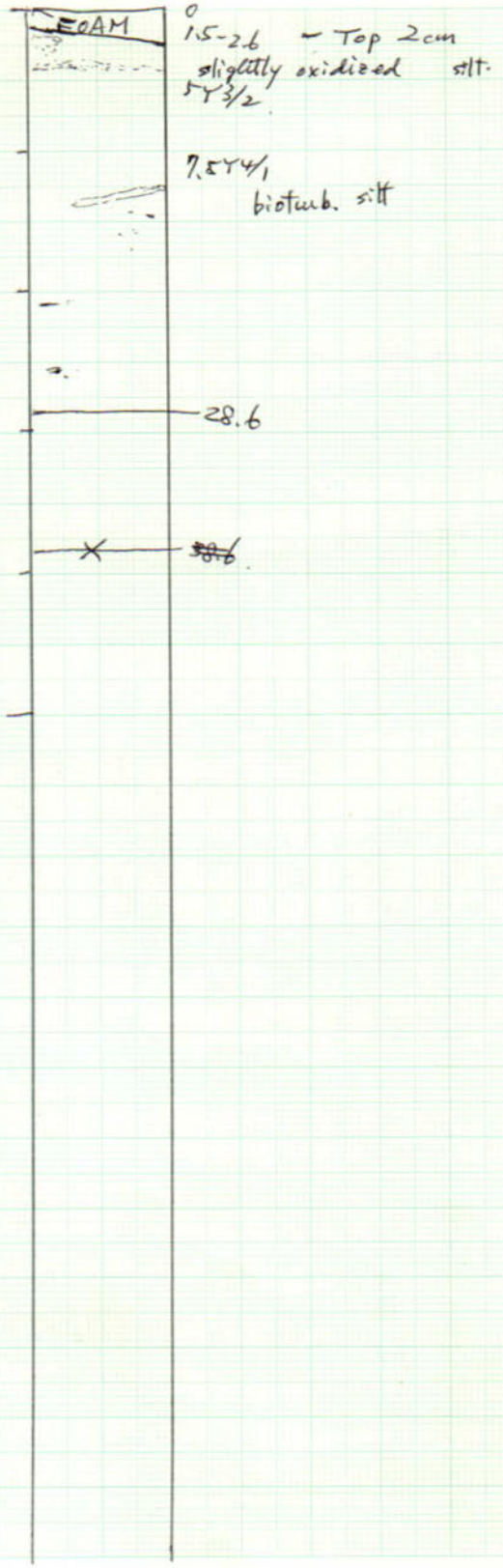
KR18-12C PC08



KR18-12C PC09

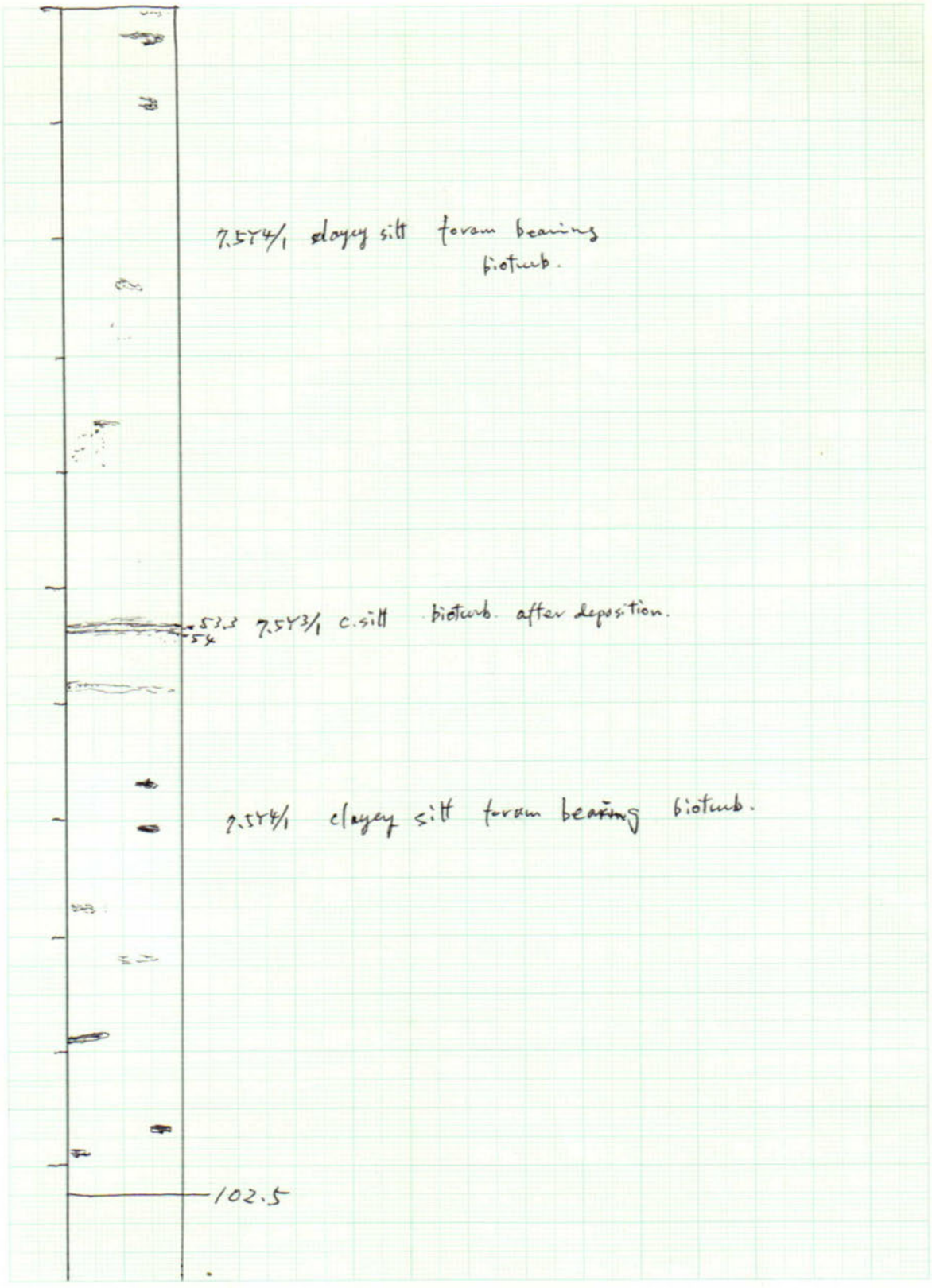
Visual Core Description

KR18-12C PC01 Sec. 1 W



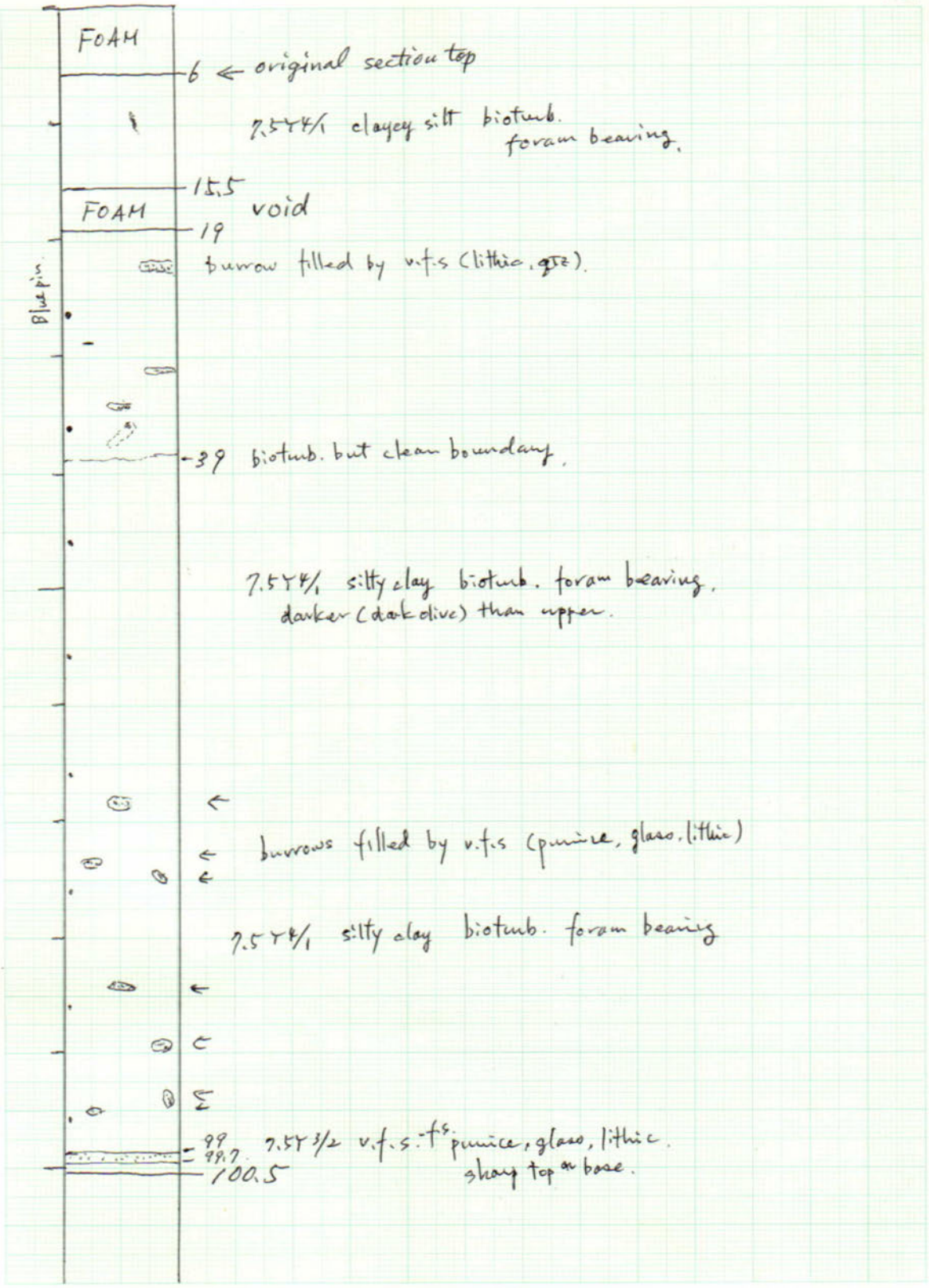
2-28.6 (0-26.6)

KR18-12C PC01 sec. 2 W



80 - 102.5 (26.6 - 129.1)

KR18-12C PC01 sec. 3 W

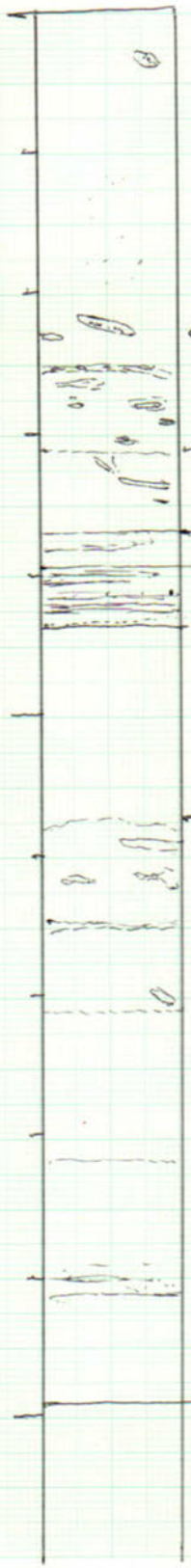


JIS B5 160×220

0 - 100.5 (129.1 - 220.1)

void 9.5cm

KR18-12C PC01 sec. 4 W



0 2.5Y4/1 silty clay bioturb. foram bearing.

← burrow filled by v.f.s. glass, lithic, pumice.

31 2.5Y3/2 silt massive.

37 ← crack.

2.5Y3/2 c.silt parallel laminated glass, lithic

43.5

2.5Y 4/1 silt slightly clayey bioturb. foram bearing.

57.

5Y 5/2 silt-sized ash (glass) massive with some burrows at the upper part

← crack

5Y 4/2 m-silt sized ash massive

5Y 4/1 m-silt sized ash massive

5Y 3/2 c.silt sized ash massive weakly graded?

98.8

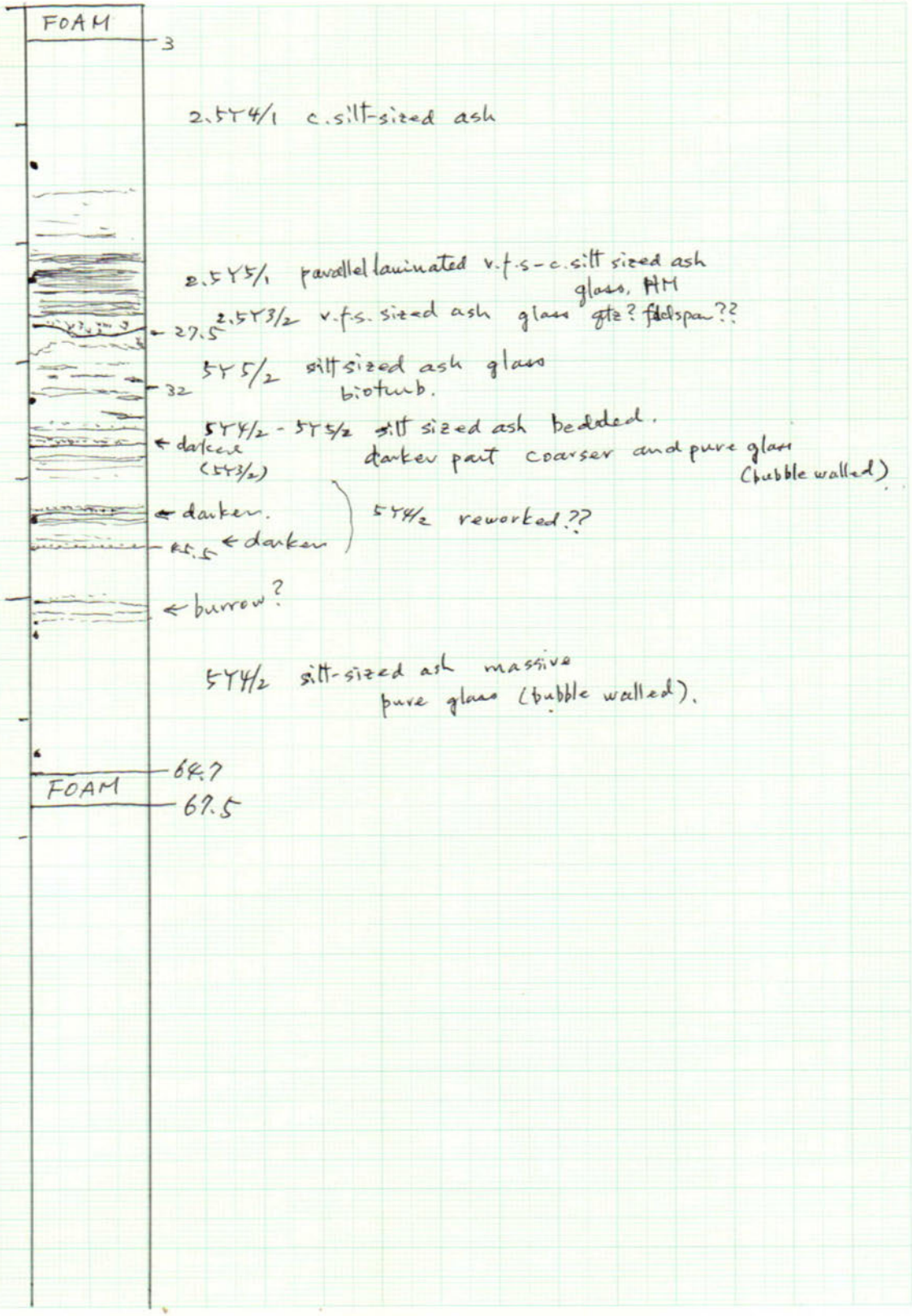
JIS B 5 160×220%

0-98.8 (220.1-318.9)

KR18-12c pc01 sec.5 W

Void
small amount of
fluidized ~~mud~~.
m-c. silt sized ash.

KR18-12c PC01 sec.6 W



3-64.7 (318.9-380.6)

KR18-12C PL01 sec. 1 W

2.5Y3/2 clayey silt oxidized ~~stained~~.

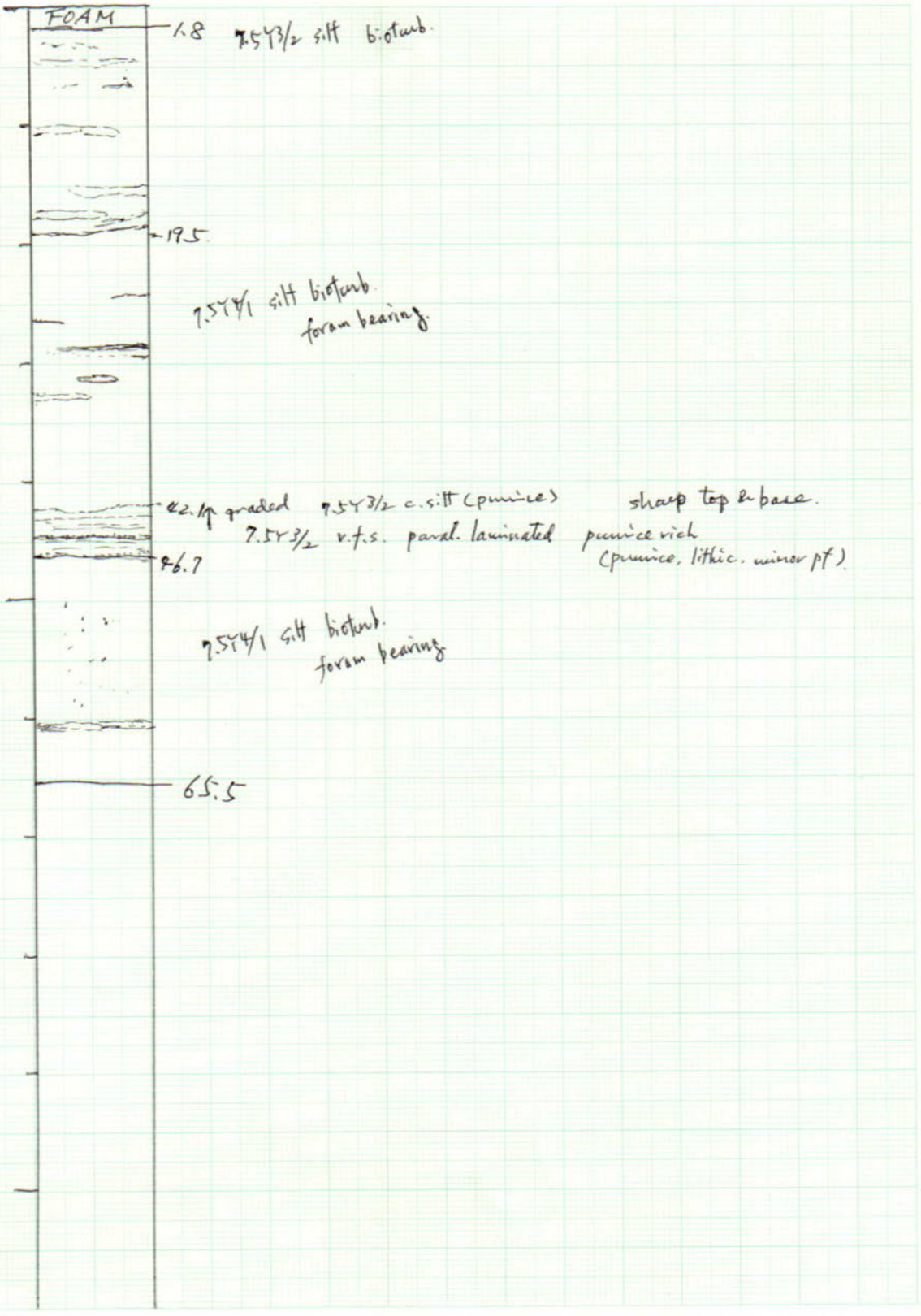
7.5Y3/2 clayey silt bioturb. foram bearing. high wc.

bioturb. boundary.

7.5Y4/1 clayey silt bioturb. foram bearing.

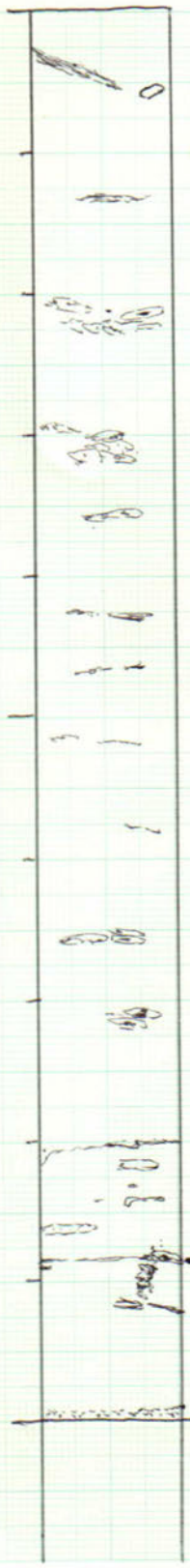
2-53 (0-51)

KR18-12c PC02 sec.2



1.8-65.5 (0-63.7)

KR18-12C PC02 sec:3



0

7.5Y4/1 silt bioturb.
foram bearing.

7.5Y4/1 silt bioturb
foram bearing.

80.5

5Y4/2 silt sized ash bioturb. after deposition?
lighter than the lower

88.5

5Y4/2 silt sized ash

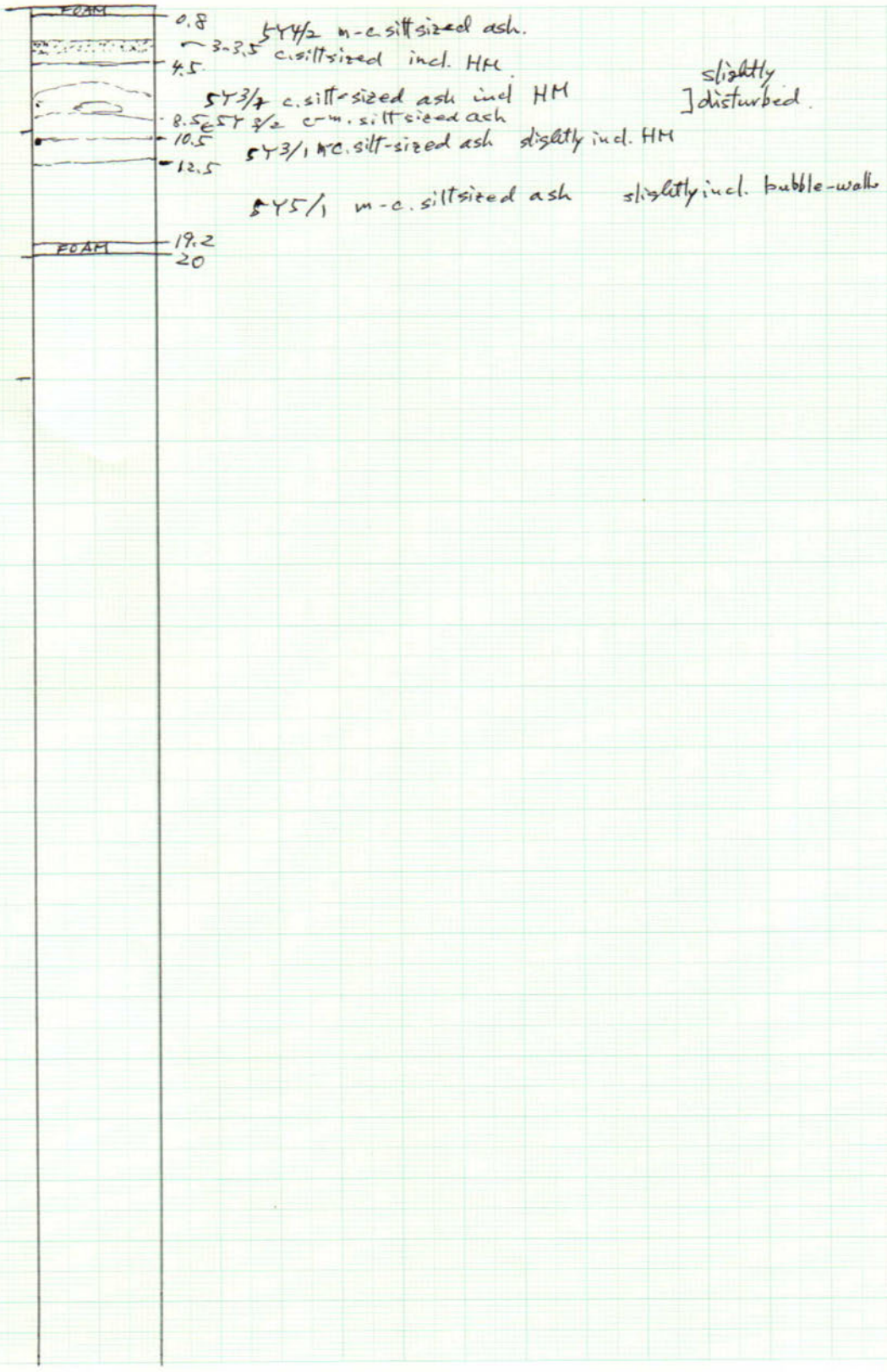
100 lowermost 7mm coarser m-c. silt sized ash
(bubble-walled)

0-100 (63.7-163.7)

KR18-12C PC02 sec.4 W

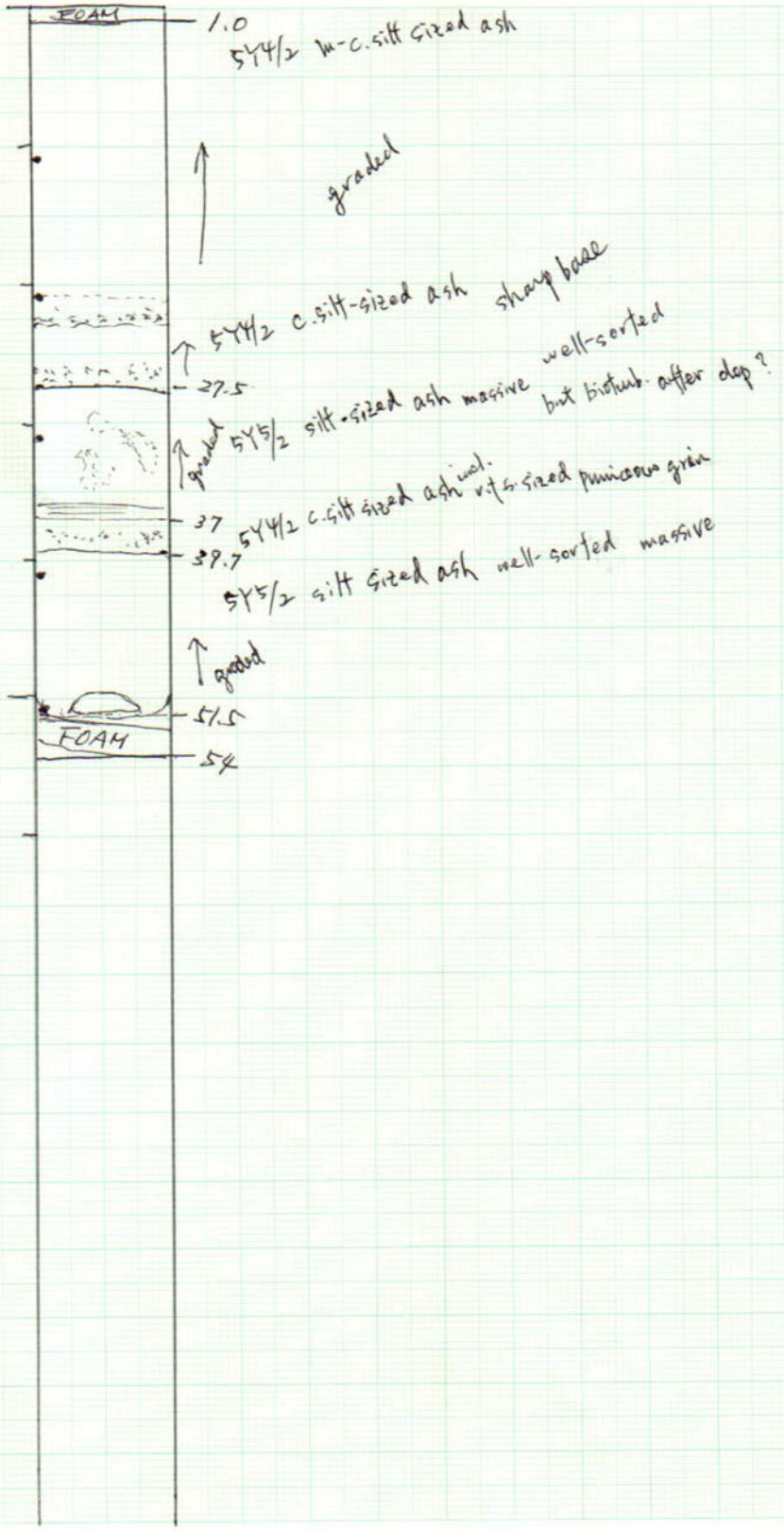
0 - 16.4 (163.7 - 180.1)

KR18-12C PC02 sec.5 W



0.8-19.2 (180.1-198.5)

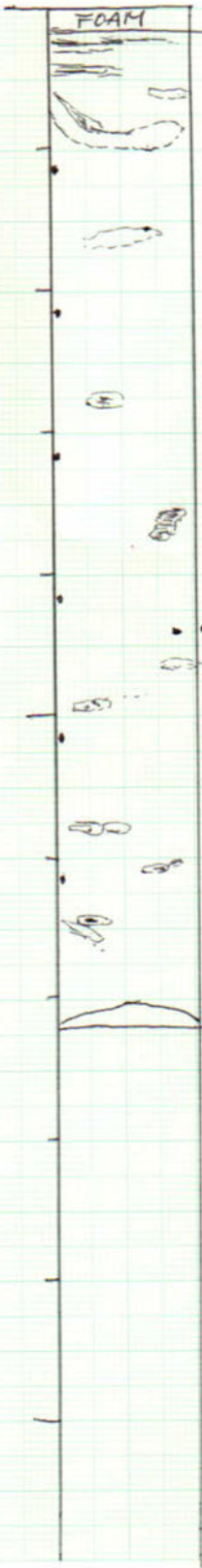
KR18-12C PC02 sec. 6 W



JIS B5 160×220%

1-51.5 (198.5-249.0)

KR18-12c PL02 sec. 1 W



1.5 5Y4/1 silt loose with 2.5Y3/2 oxidized bands

← modern burrow (hole)

7.5Y4/1 clayey silt bioturb. foram bearing.

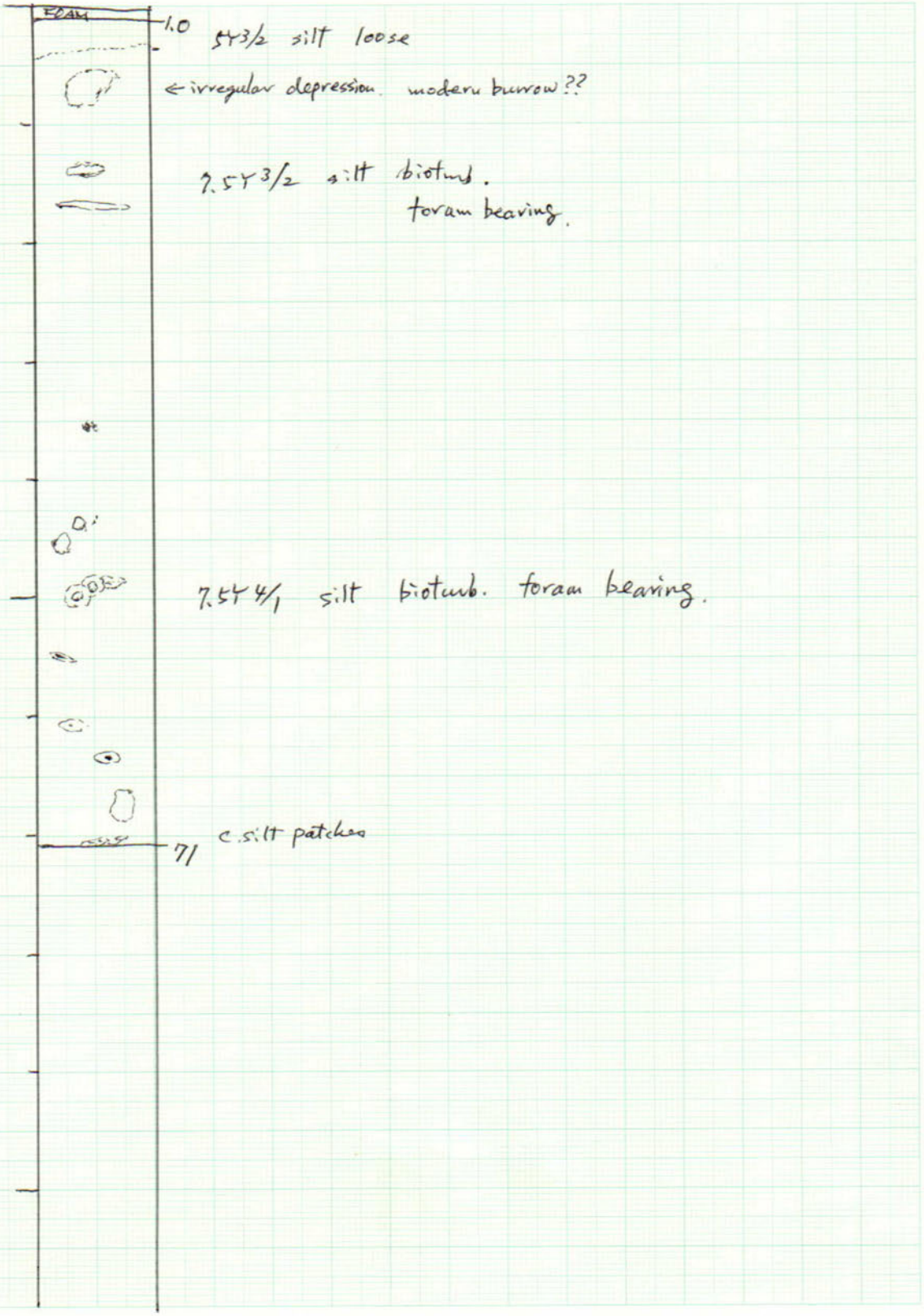
← sh. frag.

7.5Y4/1 silt bioturb. foram bearing.

71.5
72

1.5-71.5 (0-70)

KR18-12C PC03 sec.2 W



1-71 (0-70)

KR18-12C PC03 sec.3 W

7.5Y3/2 slightly muddy c. silt distorted.
sharp. ← void in archive half

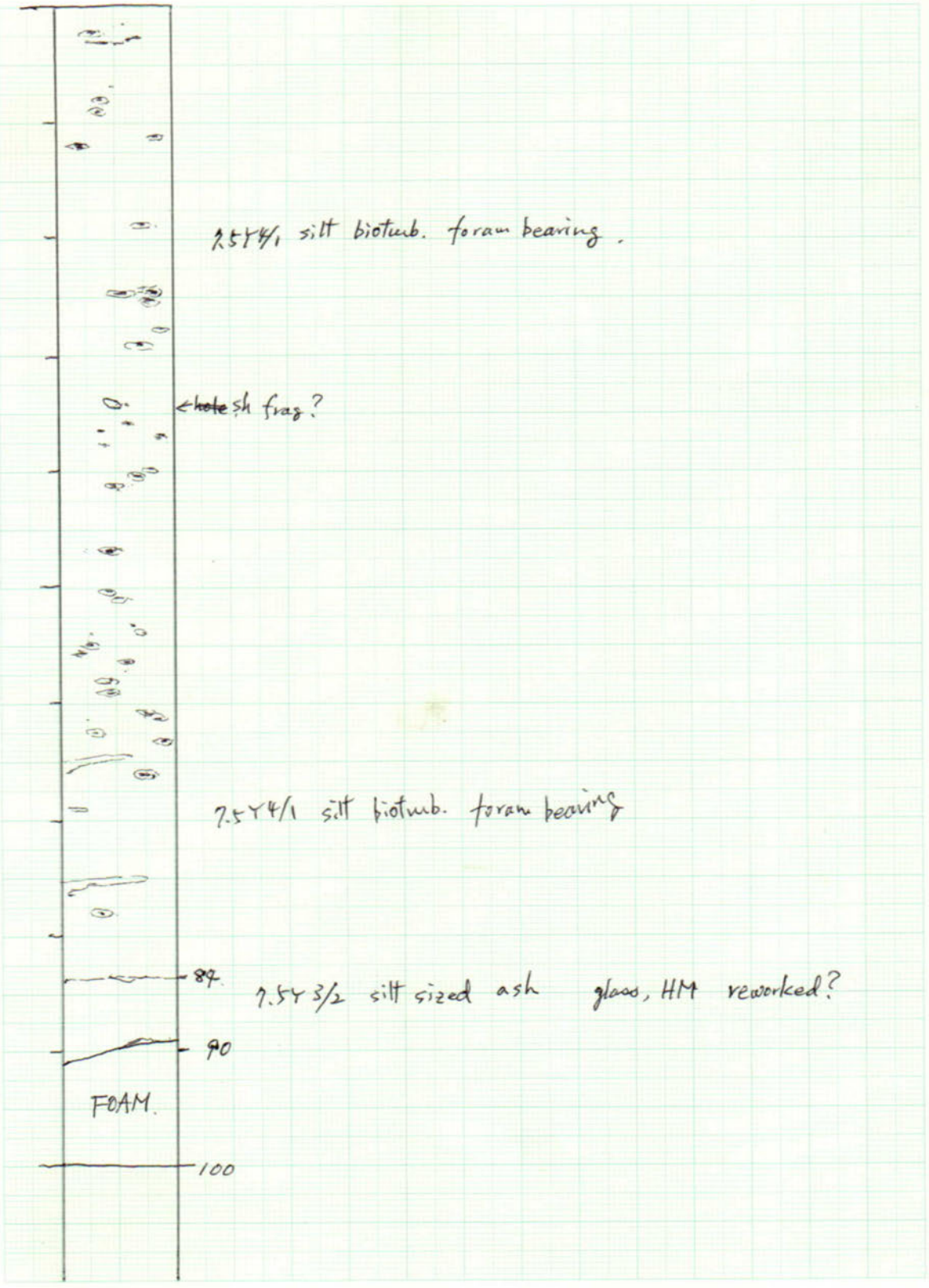
7.5Y4/1 silt biotub. foram bearing.

7.5Y4/1 silt biotub. foram bearing

← white sponge spicule.

0.8 - 100.8 (70 - 170)

KR18-12C PC03 sec.4 W



0-90 (170-260)

KR18-12C PC03 sec. 5 W

5Y4/2 silt sized ash glass, HH reworked?

← 5Y4/1 silt block?

11 — 5Y3/2 m-c. silt sized ash reworked?

5Y3/1 c. silt ash glass, HH parallel laminated sharp base

13.5

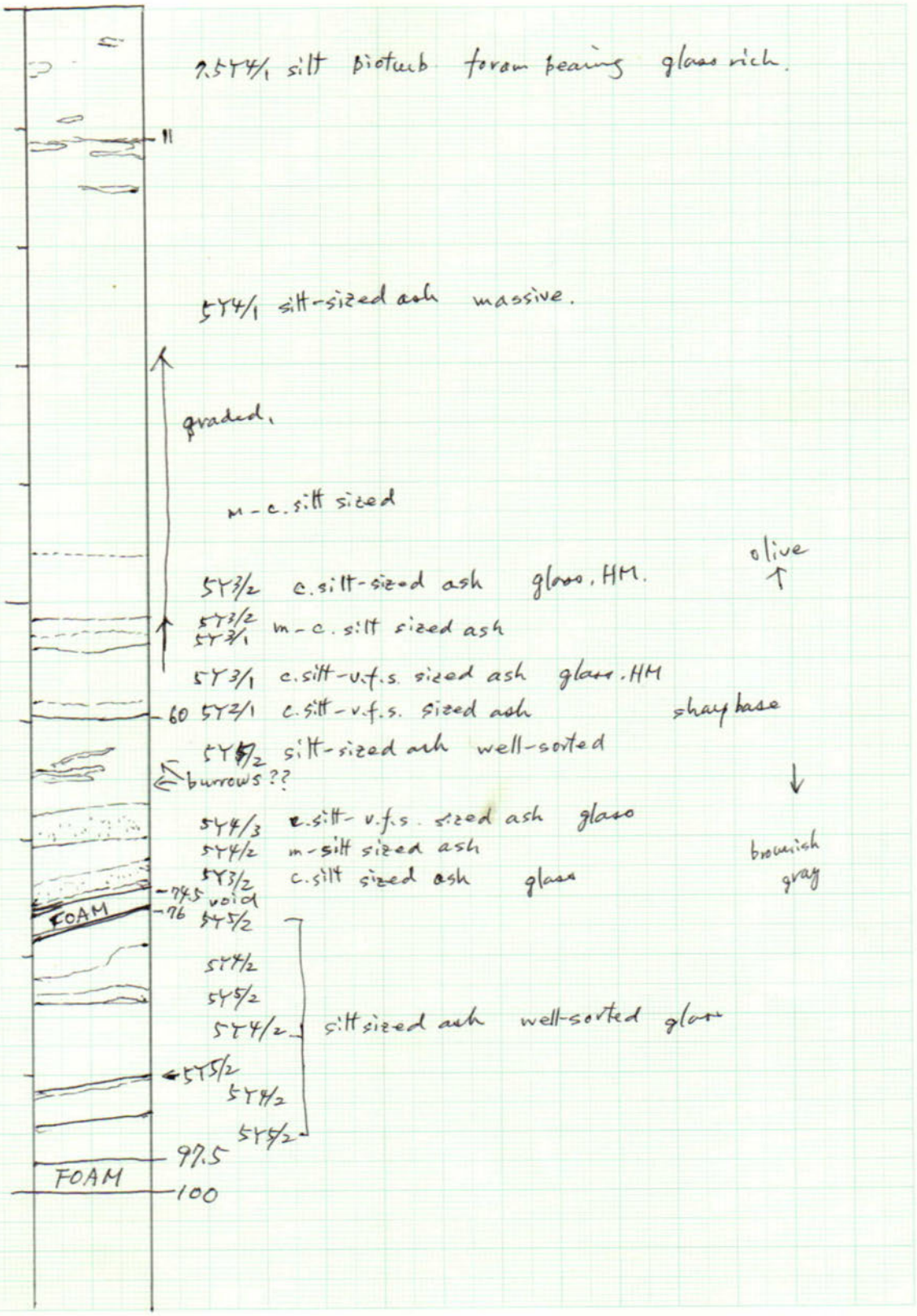
7.5Y4/1 silt bioturb. glass rich

small (amount of) < foram?

19.4

1-19.4 (260 -278.4)

KR18-12C PC03 sec.6 W



0-97.5 (278.4 - ~~375.9~~)
1.5cm void 374.4

KR18-12C PL03 sec. 1 W

1 5Y4/2 silt loose.] brown oxidized patches.

7.5Y4/1 clayey silt bioturb foram bearing.

7.5Y4/1 clayey silt bioturb. foram bearing.

1-72.5 (0-71.5)

KR18-12C PC04 1 W

2 5Y3/2 silt loose

5Y4/1 silt bioturb.

7.5 2.5Y3/2 c. silt bioturb.

← c. silt patch

2.5Y4/1 silt bioturb. foram bearing

top burrowed.

30.5 2.5Y3/1 c. silt - v.f.s paral. laminated sharp base

32 lithic, pF, bF

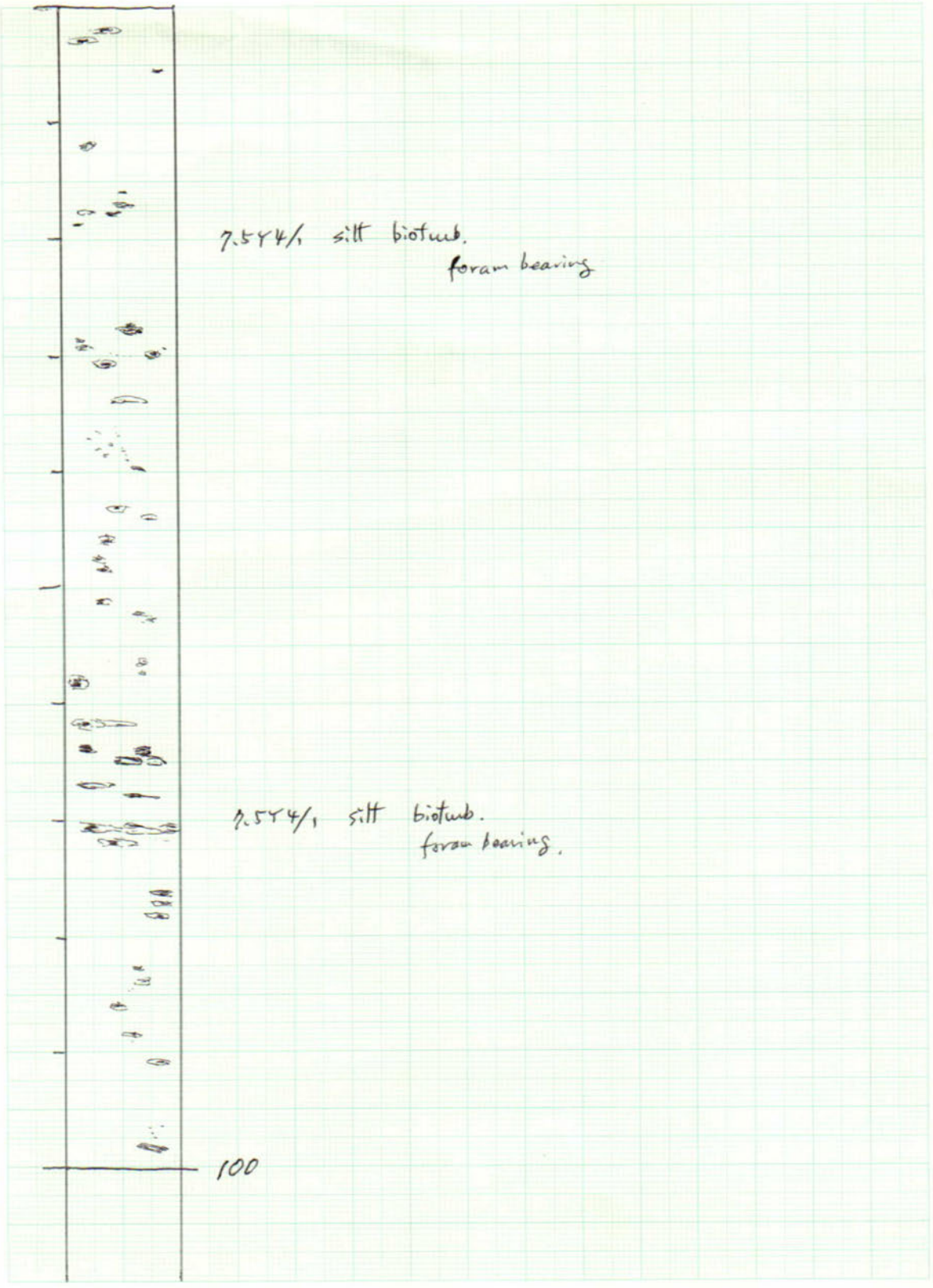
34.2

34.5

JIS B5 160×220

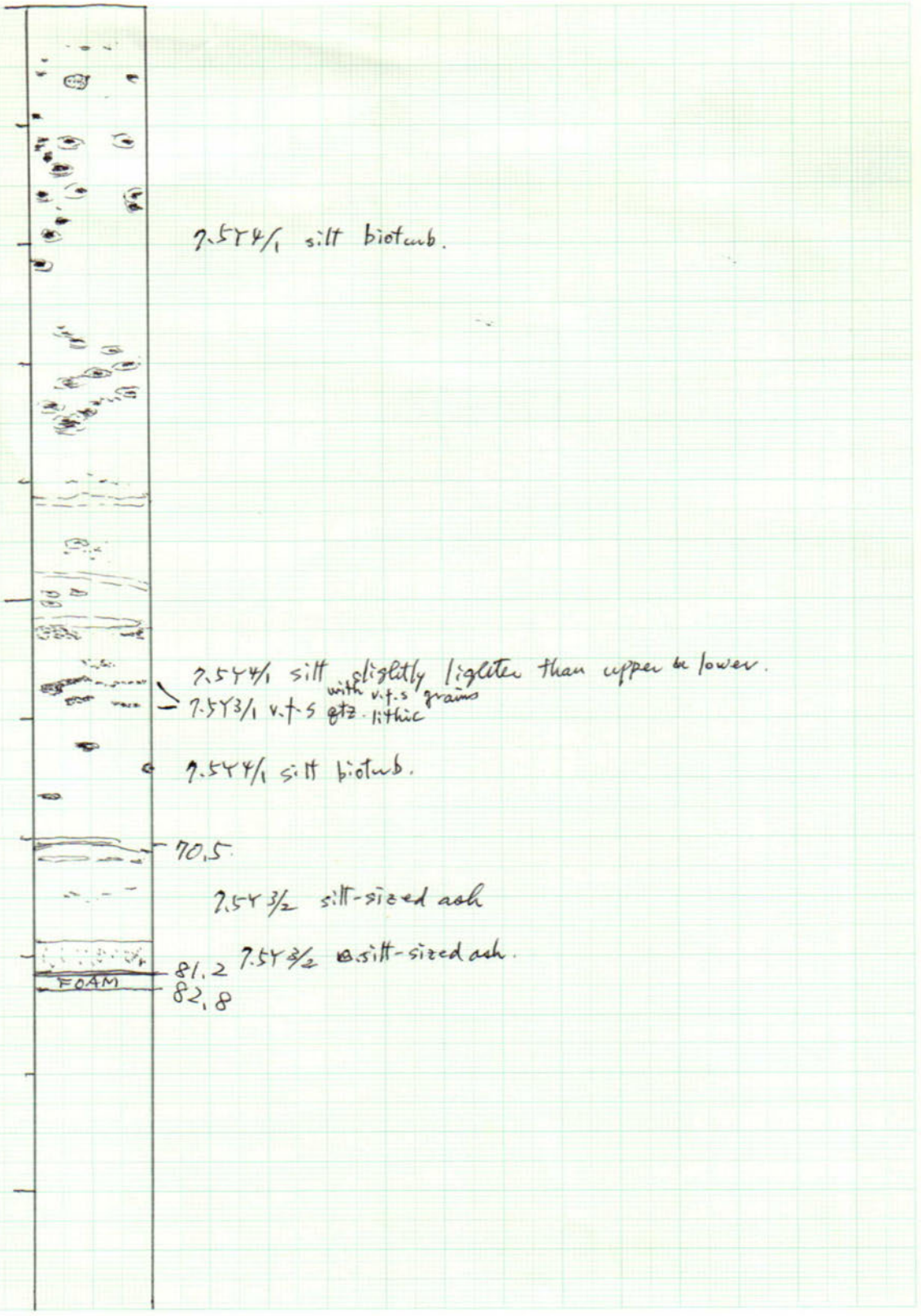
2-34.2 (0-32.2)

KR18-12C PC04 2 W



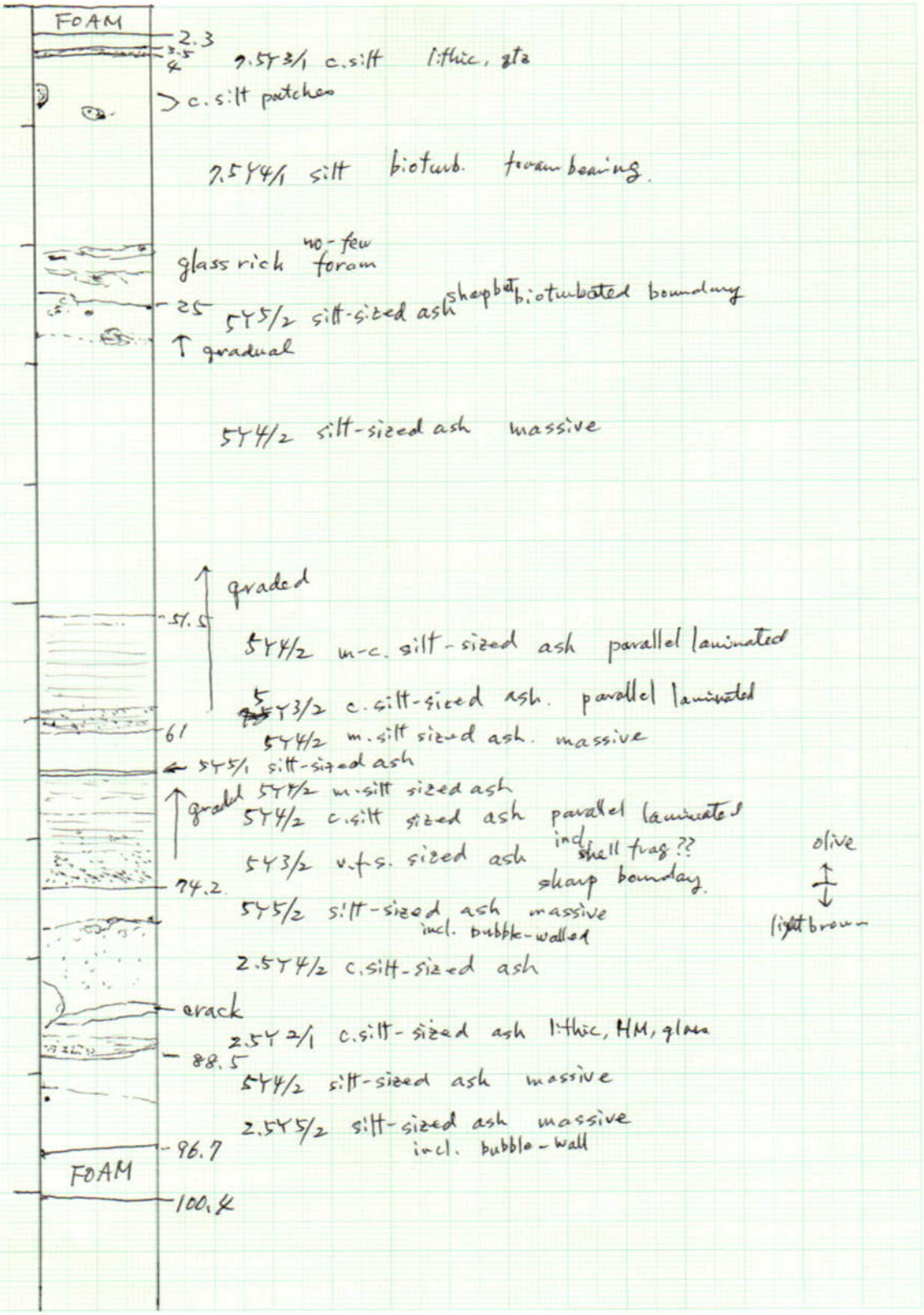
0-100 (32.2-132.2)

KR18-12c PC04 3 W



0-81.2 (132.2-213.4)

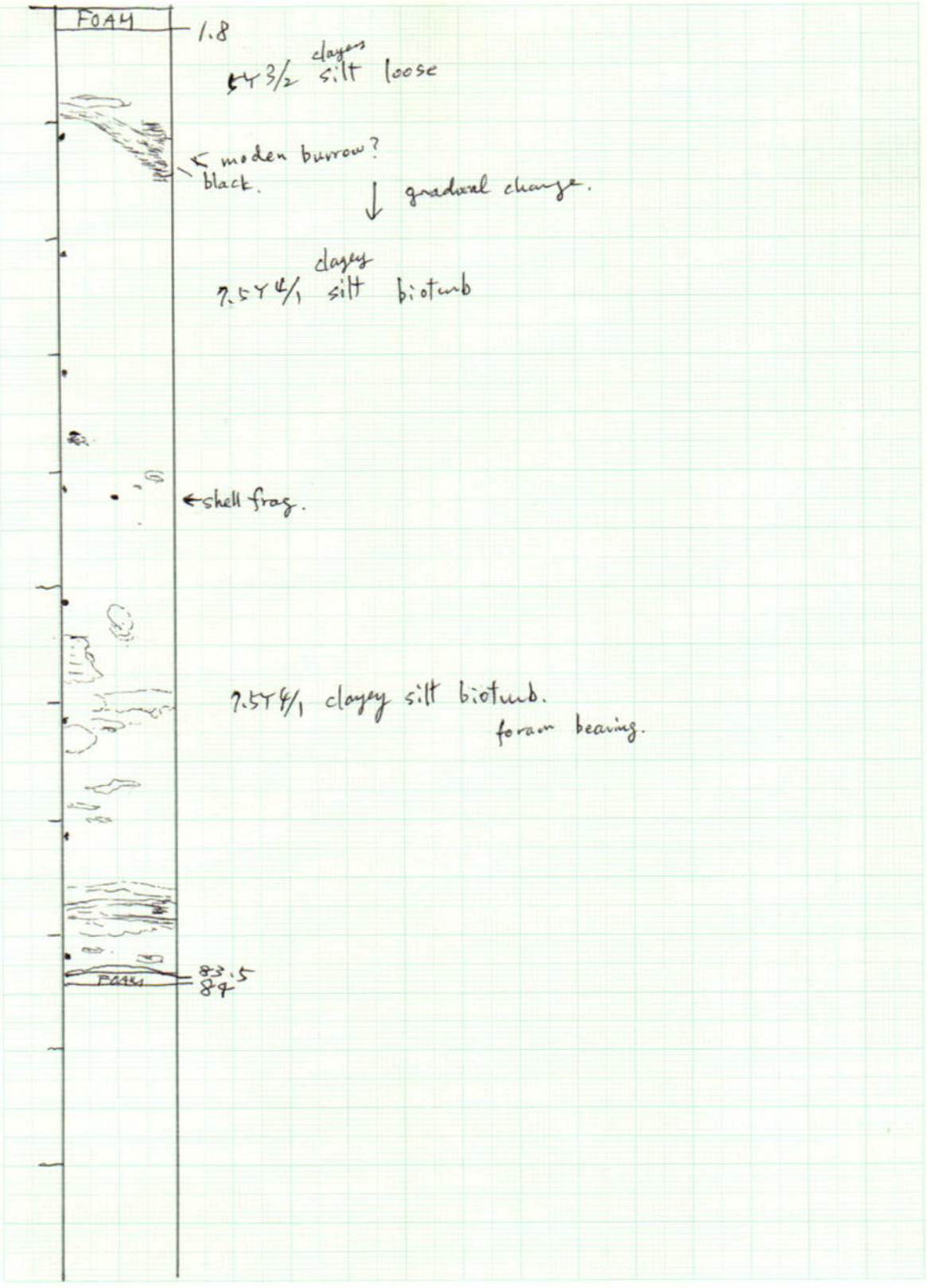
KR18-12C PC04 Sec. 4 W



2.3-96.7 (213.4-307.8)

94.4

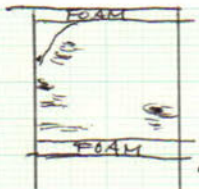
KR18-12C PL04 sec. 1 W



1.8 ~ 83.5 (0 ~ 81.7)

81.7

KR18-12C PL04 CC W



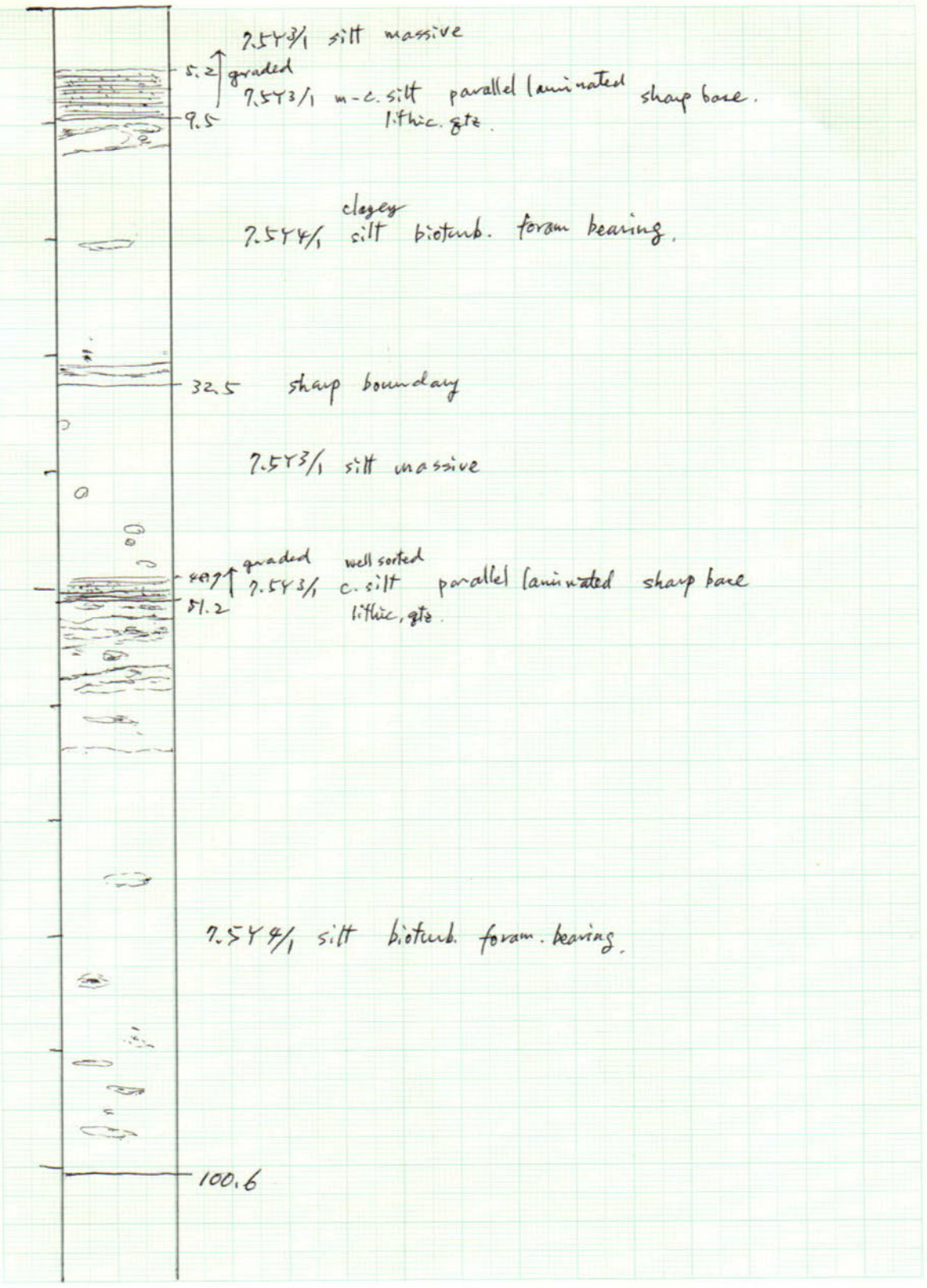
2.5Y 4/1 silt bioturb.
foram bearing.

0.8-9 (81.7-89.9)
8.2

KR-18-12C PC05 sec. 2 W

1.6 - 68 (0 - 66.4)

KR18-12C PC05 sec. 3 W



JIS B5 160×220%

0-100.6 (66.4-167.0)

KR18-12C PC05 sec. 4 W

7.5Y4/1 silt biotub. foram, sponge spicule.

14

7.5Y3/2 silt massive.

graded

7.5Y3/1 c. silt parallel laminated qtz, glass?, lithic, shell frag?

← plant debris??

graded

43.2 7.5Y3/1 c. silt parallel laminated sharp & erosional base
qtz, lithic, glass, pF?

7.5Y 4/1 silt biotub. foram. bearing

58.3

7.5Y3/2 silt massive

graded

69 7.5Y3/1 m-c. silt parallel laminated sharp base
qtz. lithic

7.5Y4/1 silt biotub.

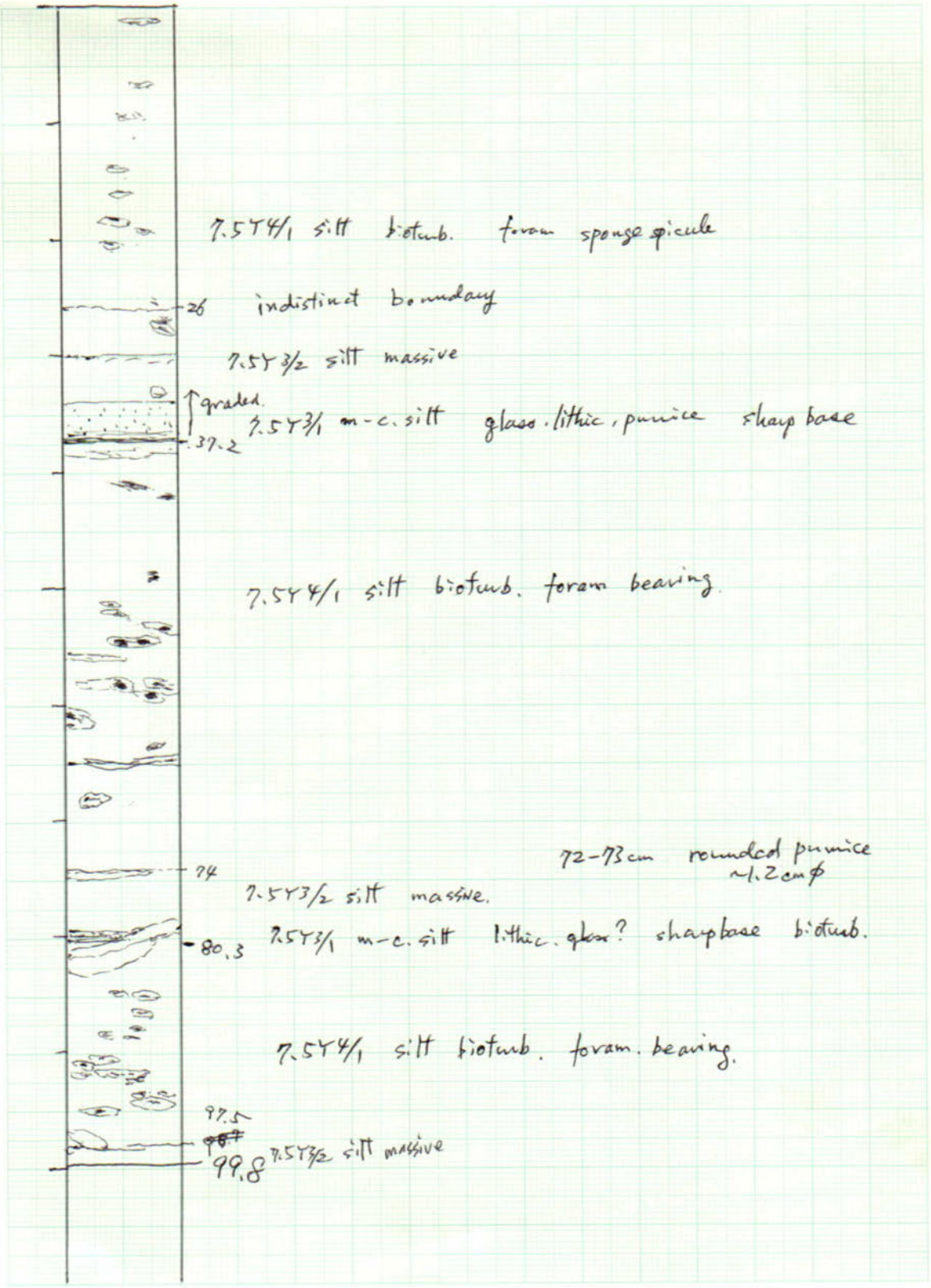
← slightly darker.

100

JIS B5 160×220%

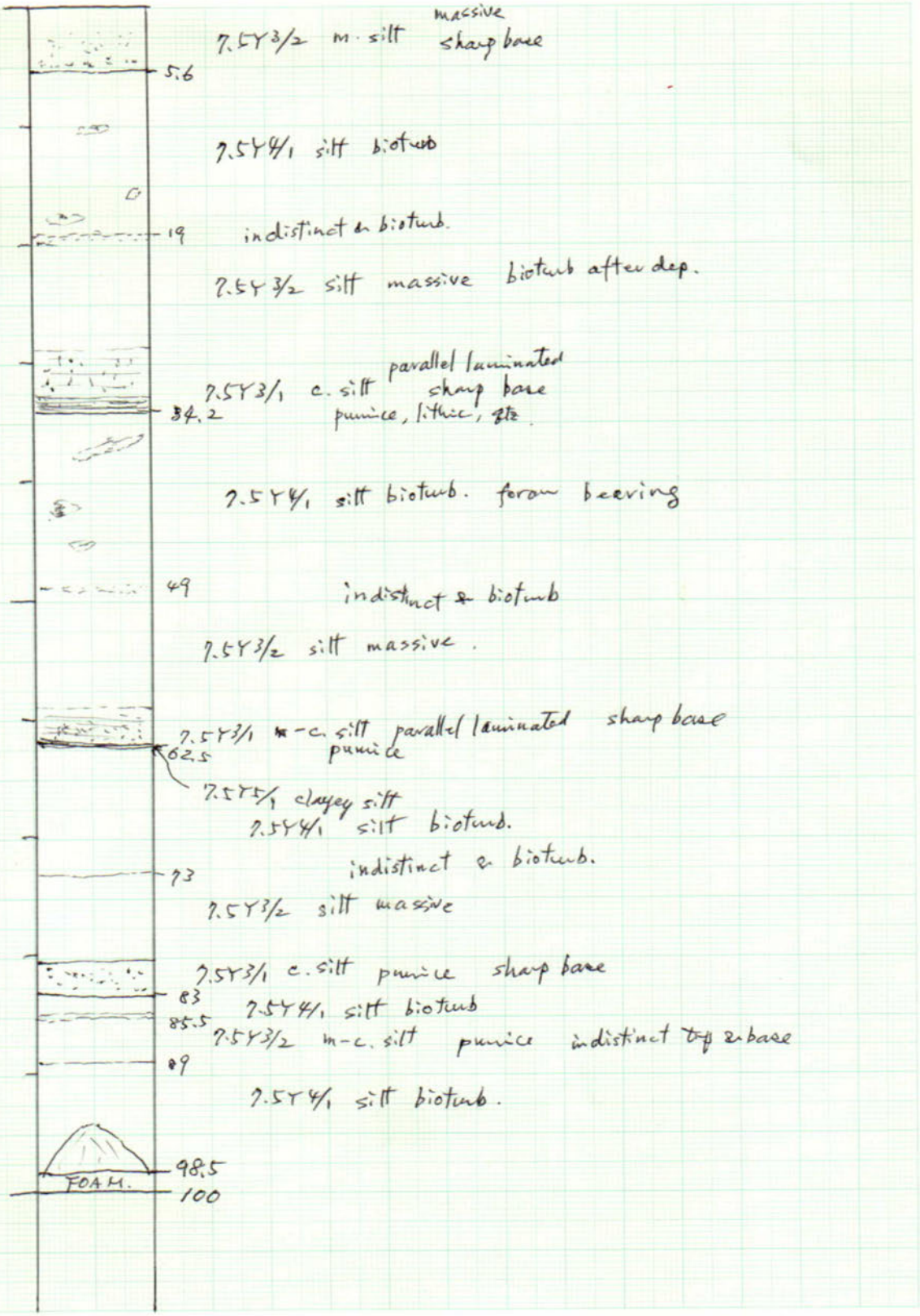
0-100 (167.0 -267.0)

KR18-12C PC05 sec. 5 W



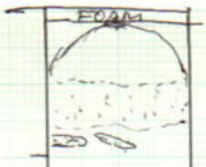
0-99.8 (267.0 - 366.8)

KR18-12C PC05 sec.6 W



0 - 98.5 (366.8 - 465.3)

KR18-12C PC05 CC W



0.8

7.5Y4/1 silt

7.5Y3/2 m. silt

← 7.5Y 3/2 v.f.s patches gte.

7.5Y4/1 silt bioturb. foram bearing

16.8

J I S B 5 160×220mm

0.8-16.8 (461.3-477.3)

16

upper 4cm overlap with sect. 6

KR18-12C PL05 sec. 1 W

2.5Y 4/1 silt slightly biotumb.

1-9 (0-8)

KR18-12C PL05 sec. 2 W

0-20 (8-28)

KR18-12C PL05 sec.3 W

7.5Y4/1 silt bioturb. foram bearing

68.8-69 5Y4/2 silt-sized ash.

7.5Y4/1 silt bioturb. foram bearing

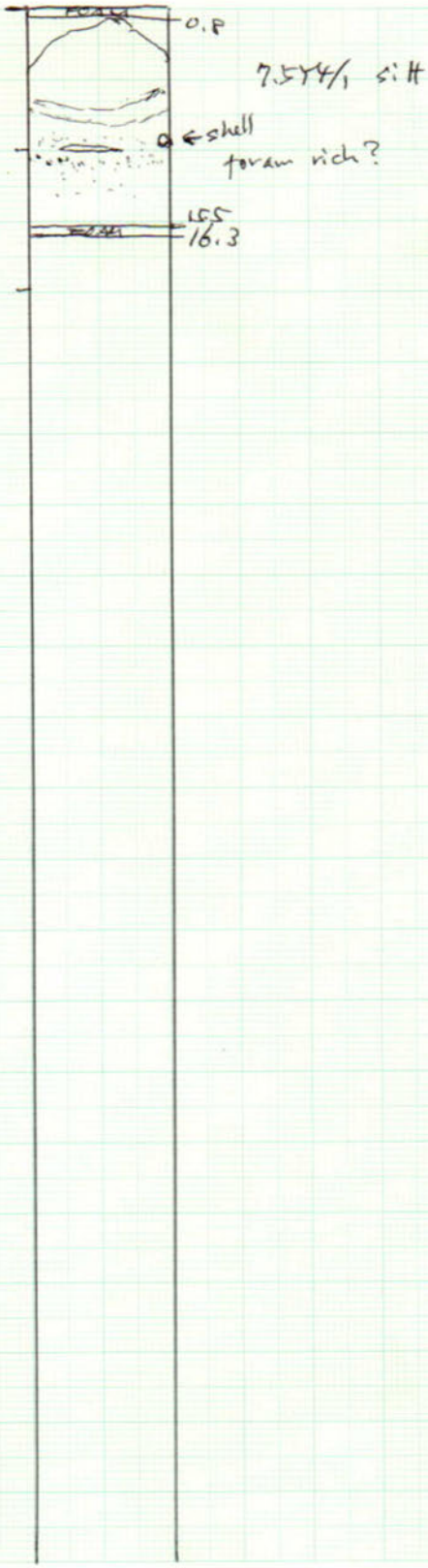
96.5

FOAM.

100.2

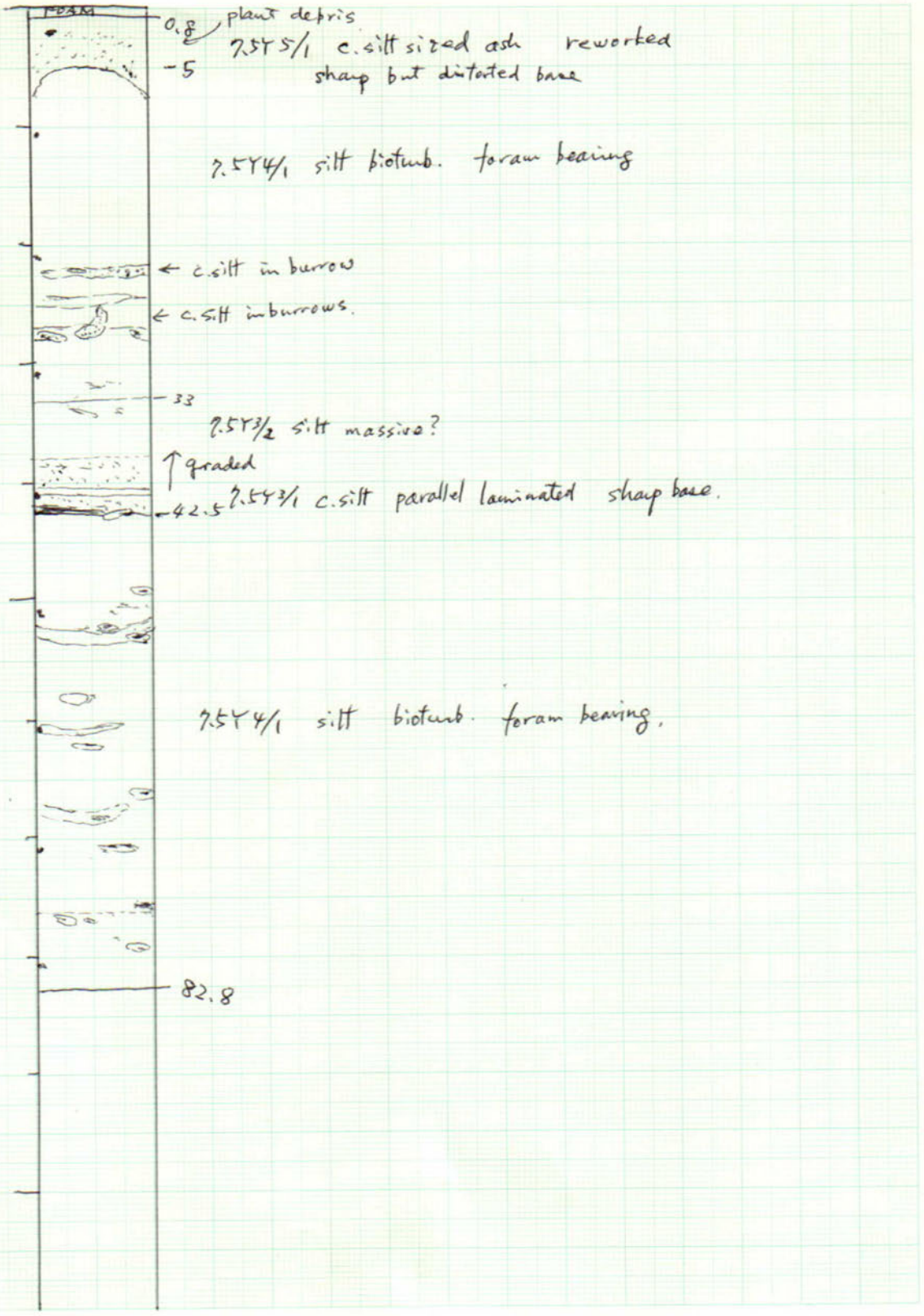
0-96.5 (28-124.5)

KR18-12C PL05 CC W



0.8 - 15.5 (122.0 - 136.7)
14.7
upper 2.5 cm overlap with sec. 3

KR18-12C PC06 sec. 4 W



0.8 - 82.8 (0 - 82.0)

KR18-12C PC06 sec. 5 W

7.5Y4/1 silt biotub. foram bearing.

12

highly biotubated boundary

7.5Y3/2 silt biotub. after dep. originally massive?

19 7.5Y3/1 c.silt burrowed sharp base.

7.5Y4/1 silt biotub. foram bearing.

55 indistinct & biotubated boundary

7.5Y3/2 silt massive

↑ graded

7.5Y3/1 c.silt parallel laminated

lithic, qtz, pF sharp base

70

7.5Y4/1 silt biotub. foram bearing

← 7.5Y3/2 c.silt in burrows

← glass rich.

86-86.5 7.5Y3/1 c.silt glass, lithic

← 5Y3/2 c.silt-sized ash burrow fill? 7.5Y3/2 silt-sized ash. 86.5 ash.

5Y5/1 silt sized ash (fine)

7.5Y4/2 silt-sized ash massive

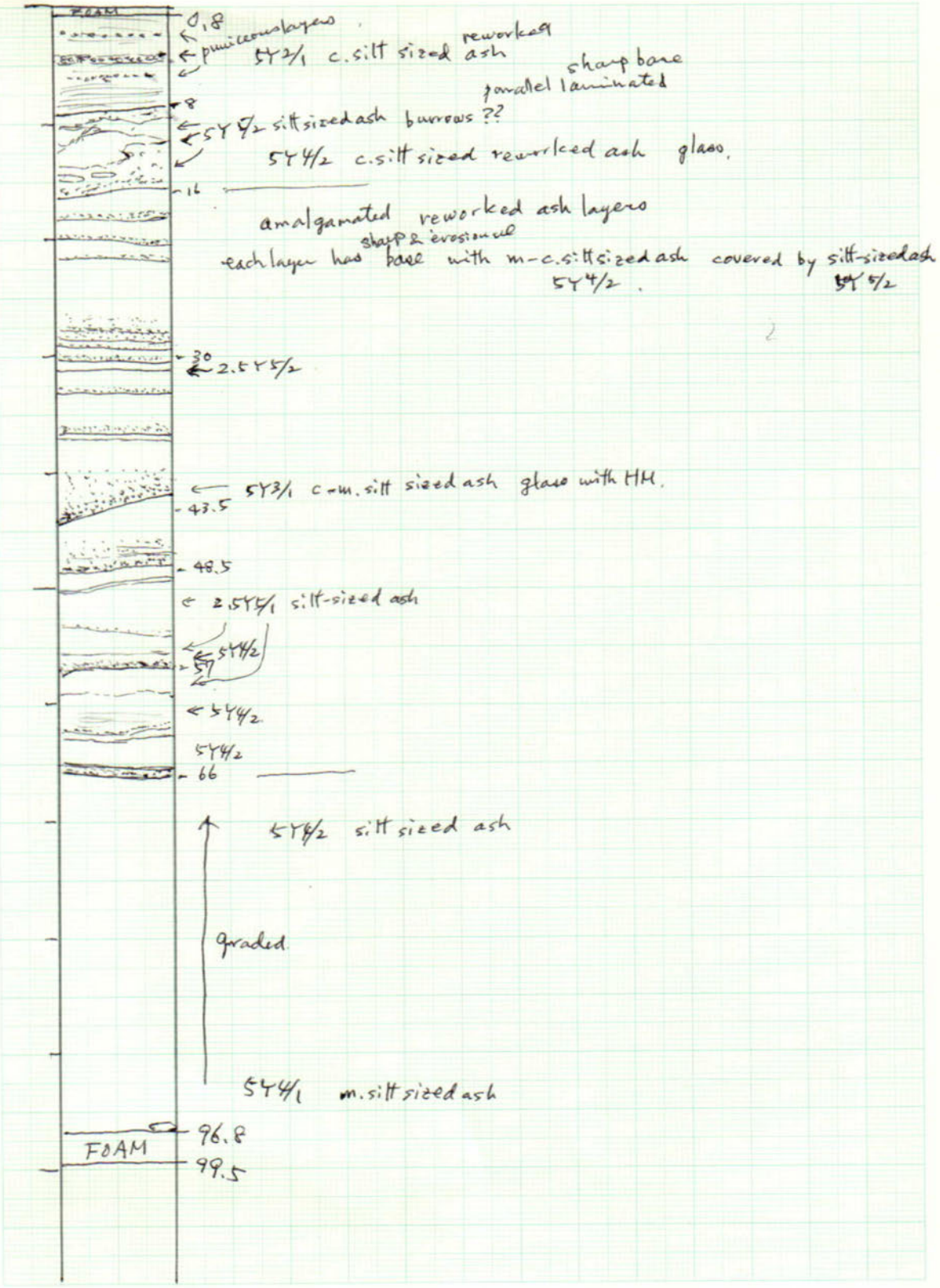
5Y3/2 m. silt-sized ash bedded

101 5Y3/1 m-c. silt sized ash glass, HM. lithic.

JIS B5 160×220㎜

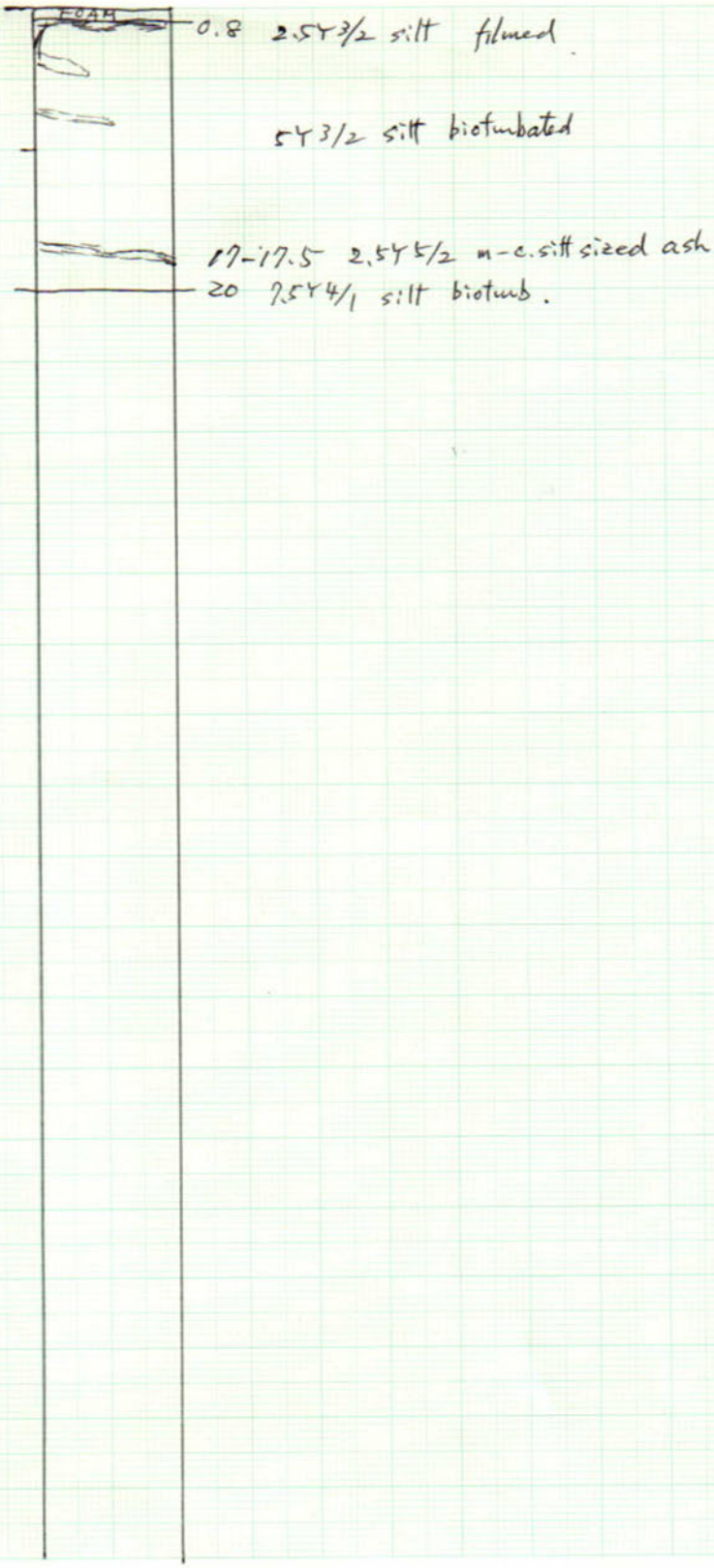
0-101 (82.0-183.0)

KR18-12C PC06 sec. 6 W



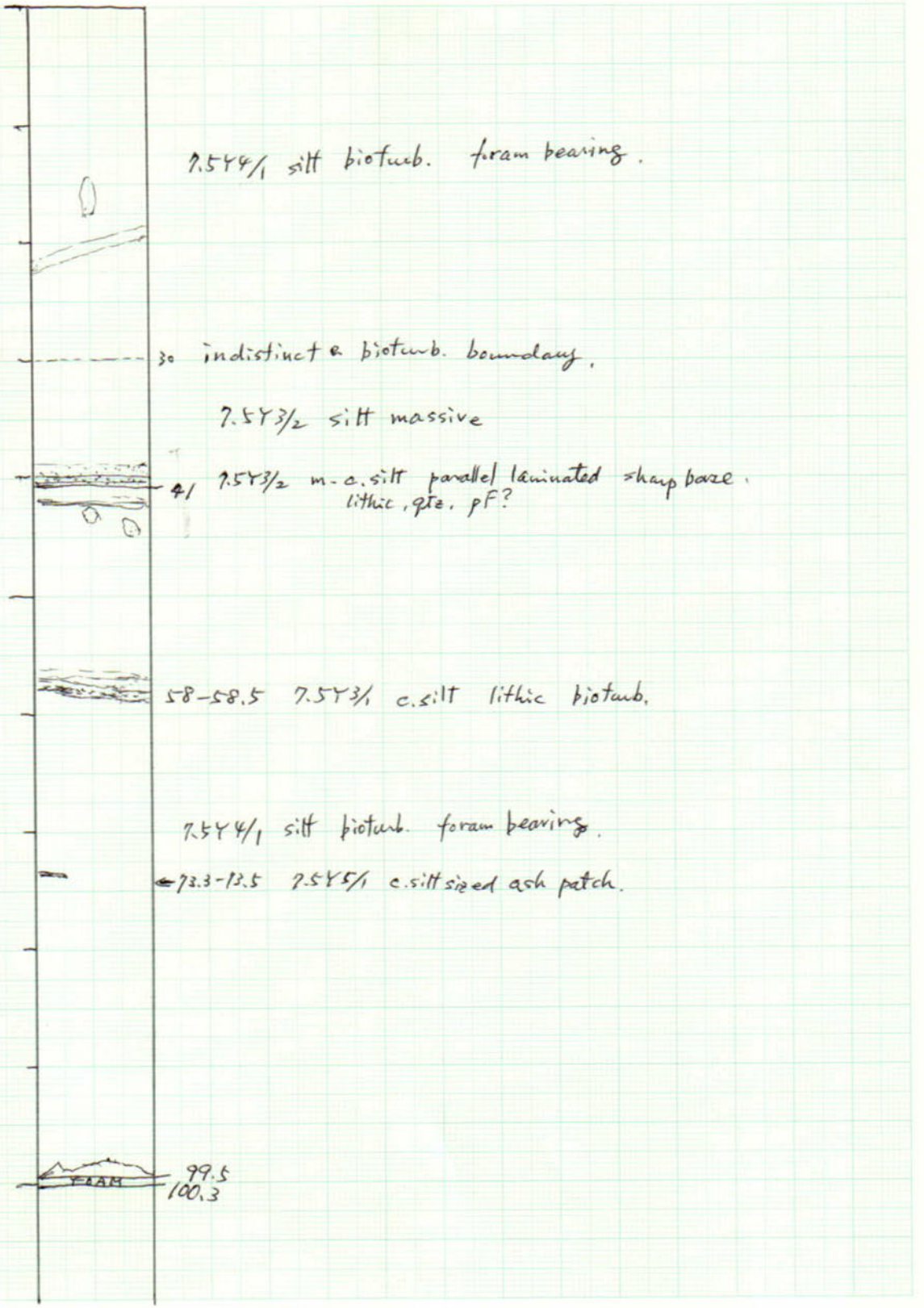
0.8-96.8 (1830-279.0)
96.0

KR18-12C PL06 sec. 1 W



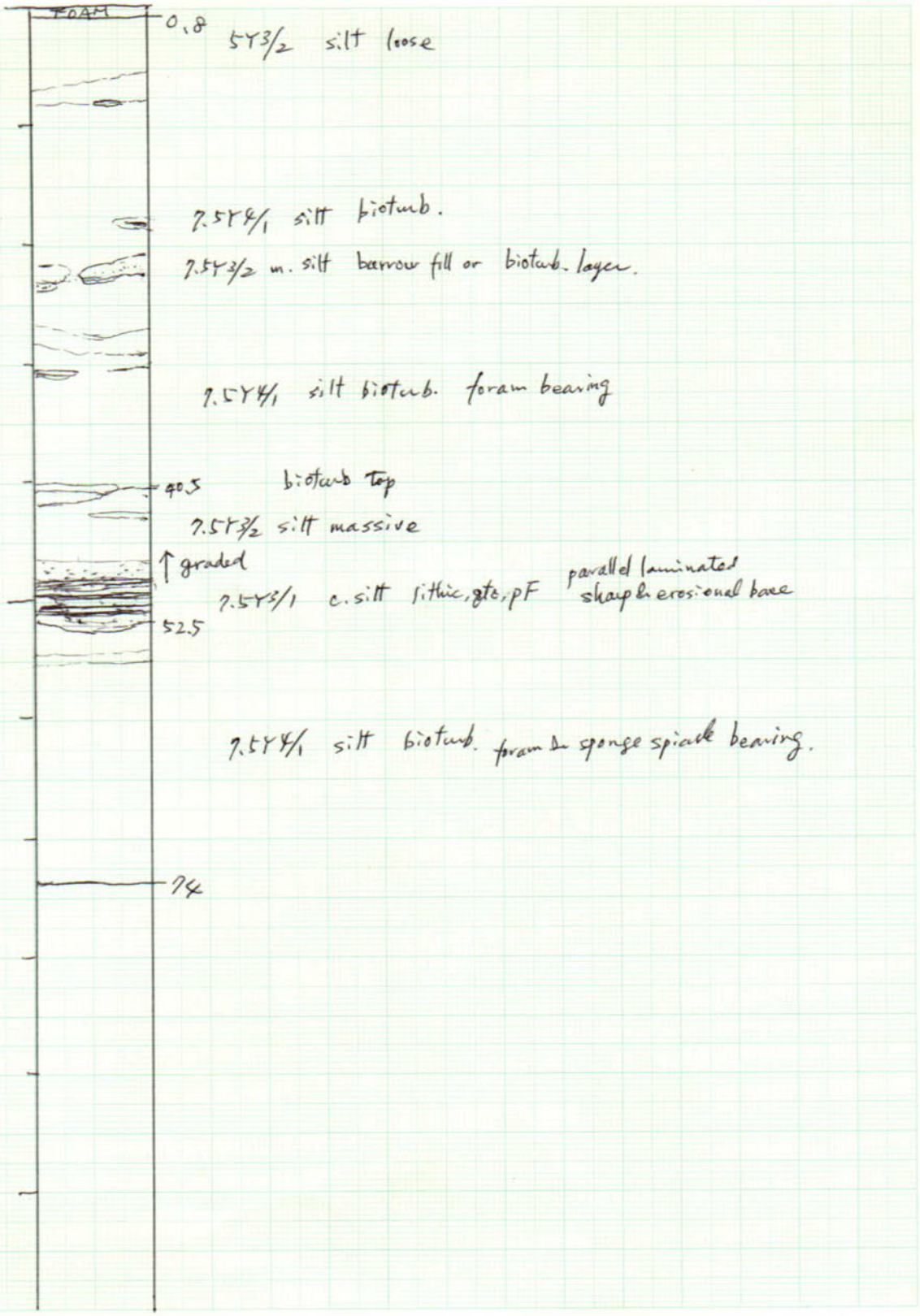
0.8-20 (0-19.2)

KR18-12C PL06 sec. 2 W



0-99.5 (19.2-118.7)

KR18-12C PC07 sec. 2W



0.8-74 (0-73.2)

KR18-12C PC07 sec.3 W

0-100 (73.2-173.2)

KR18-12C PC07 sec. 4 W

← 7.5Y4/1 c.silt-vf.s patches pumice, lithic, qtz

7.5Y4/1 silt bioturb. foram bearing.

21
25 7.5Y2/1 c.silt bioturb but sharp base & top
pumice, lithic, qtz

7.5Y4/1 silt bioturb. foram bearing.
indistinct boundary.

33.6 7.5Y3/2 silt massive?

37.6 7.5Y3/4 c.silt sharp base
glass, qtz, lithic

37.6→38.2 c.silt sideritish.

7.5Y4/1 silt bioturb. foram bearing.

m.silt rich (glass rich) indistinct top & base.

67.5 7.5Y4/1 m silt glass rich bioturb.

7.5Y4/1 silt glass rich massive

71.5
72 erosion surface

7.5Y2/1 c.silt parallel laminated lithic, glass

7.5Y 3/1 - 5/1 pumiceous f-m.s. parallel laminated or bedded
sharp base.

84.2 7.5Y4/1 silt bioturb. glass rich
7.5Y3/2 m-c.silt sized ash reworked

90 7.5Y4/1 silt bioturb.

95 7.5Y3/1 c.siltsized ash reworked

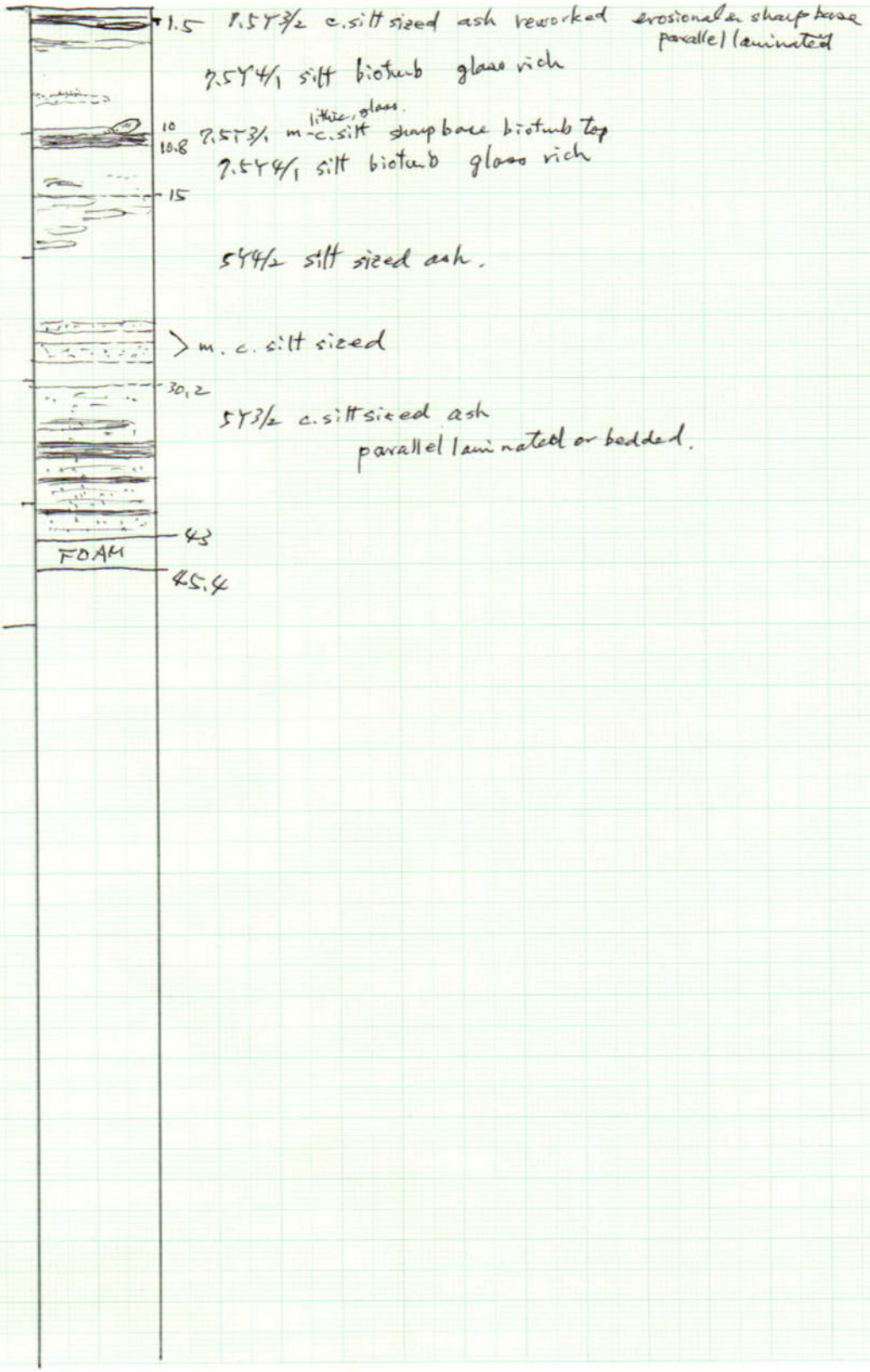
96.5 7.5Y3/2 m-c.siltsized ash graded

↑graded 7.5Y3/2 silt sized ash massive

100.4 7.5Y3/2 m.silt sized ash reworked?

80-100.4 (173.2-273.6)

KR18-12C PC07 sec. 5 W



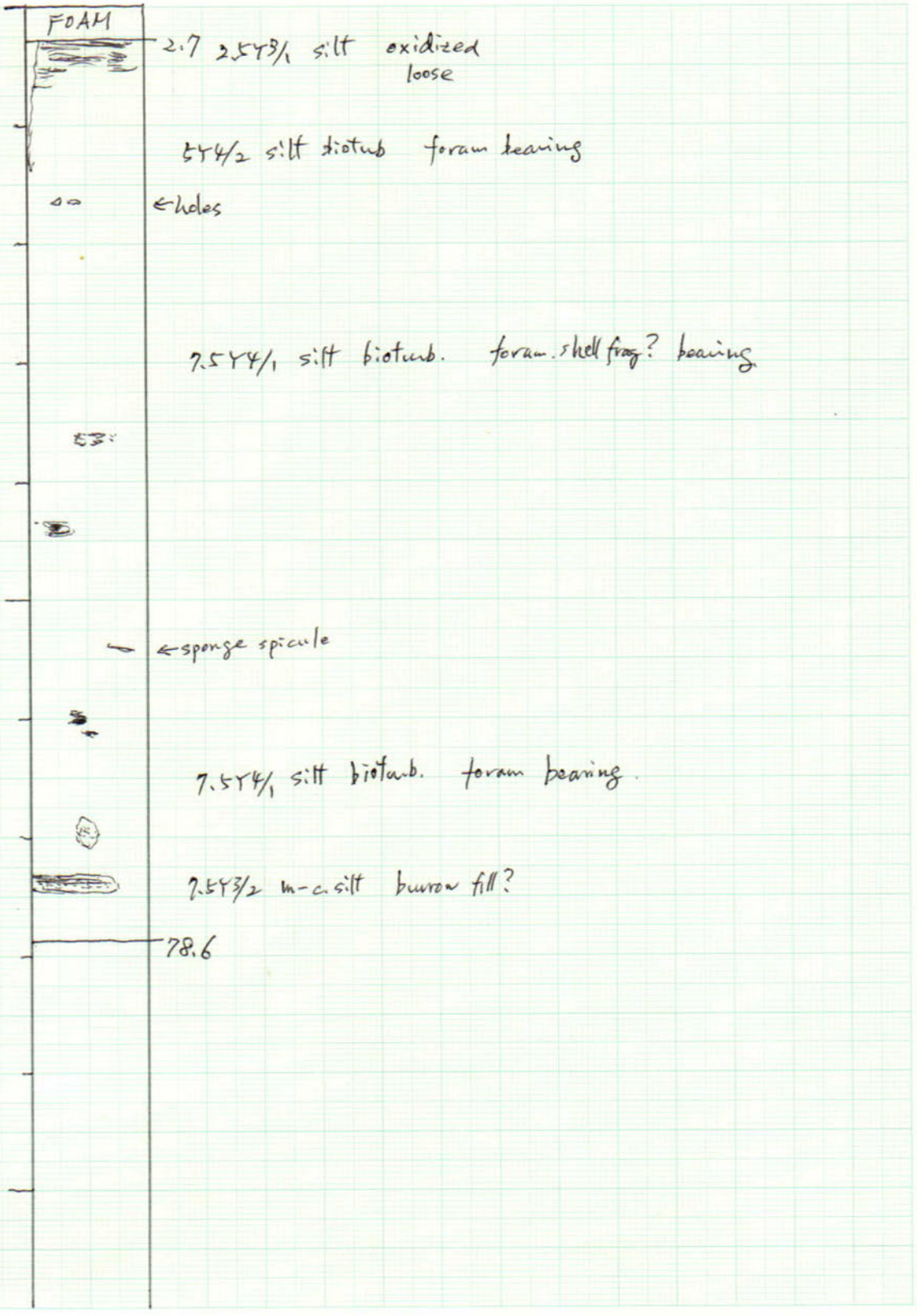
0-43 (273.6 - 316.6)

KR 18-12C PC07 sec. 6 W

4-44.8 (316.6 - 357.4)

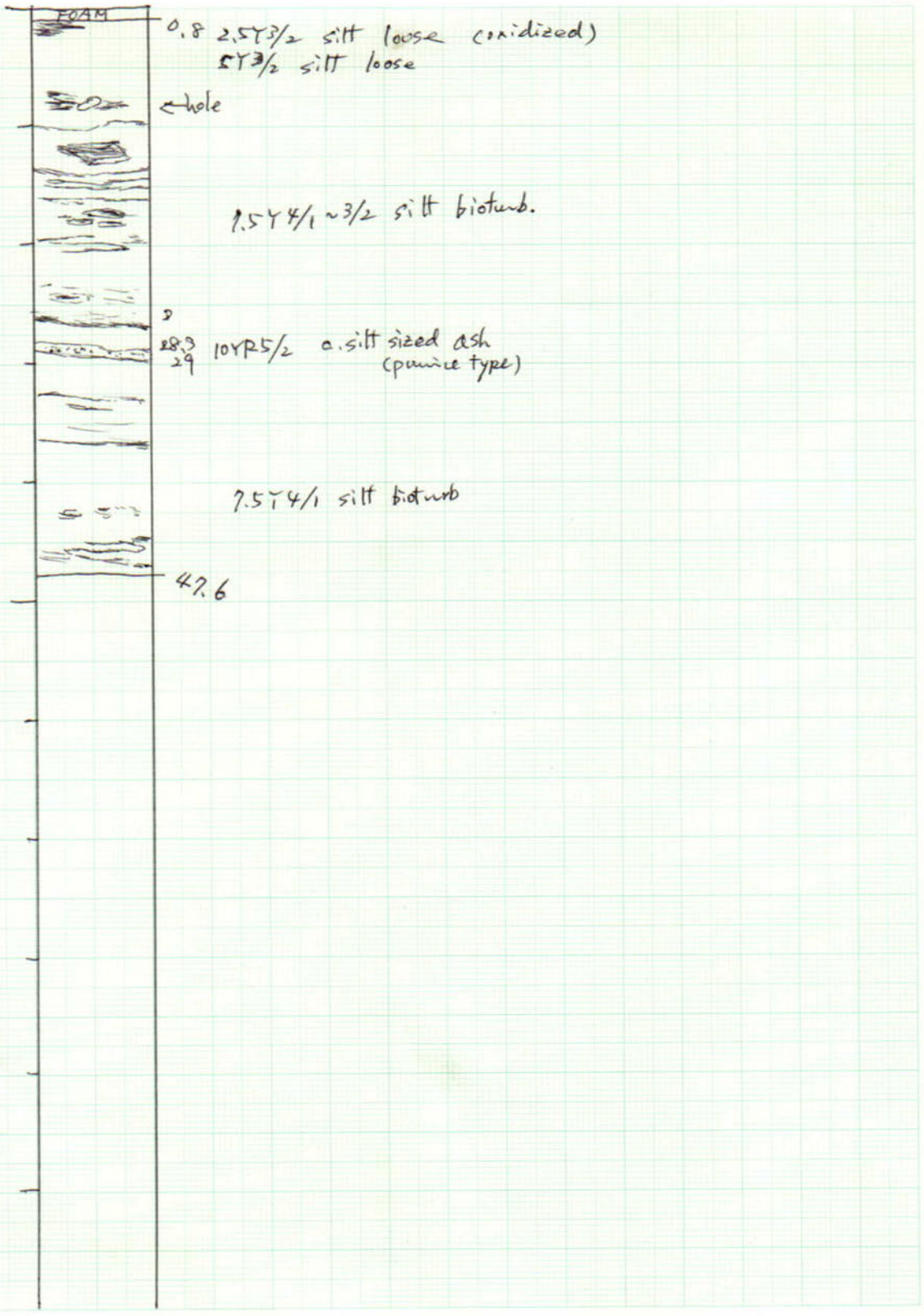
40.8

KR18-12C PL07 sec. 1 W



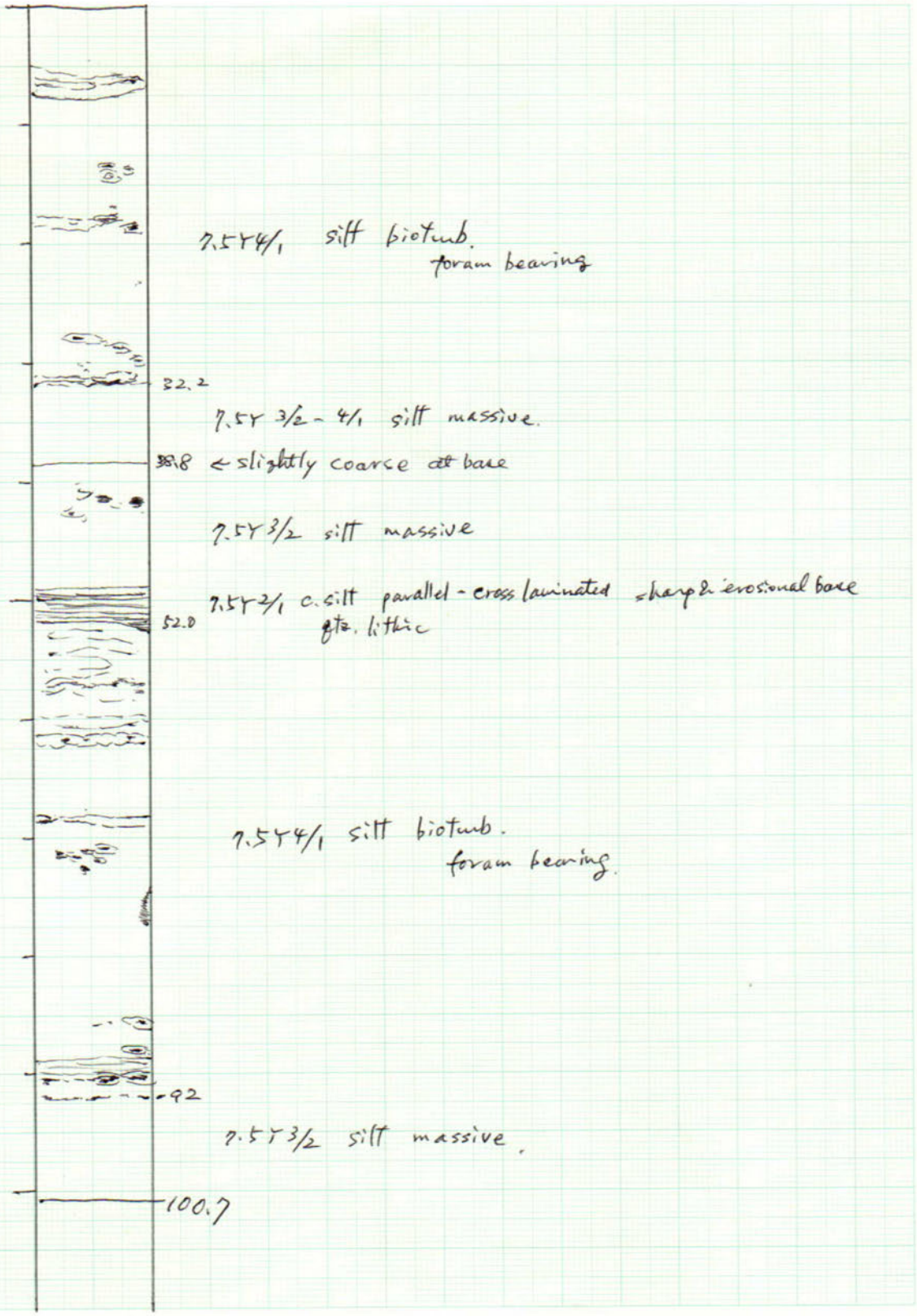
2.7 - 78.6 (Q-75.9).

KR18-12C PC08 sec. 2 W



0.8-47.6 (0-46.8)

KR18-12C PC08 sec.3 W



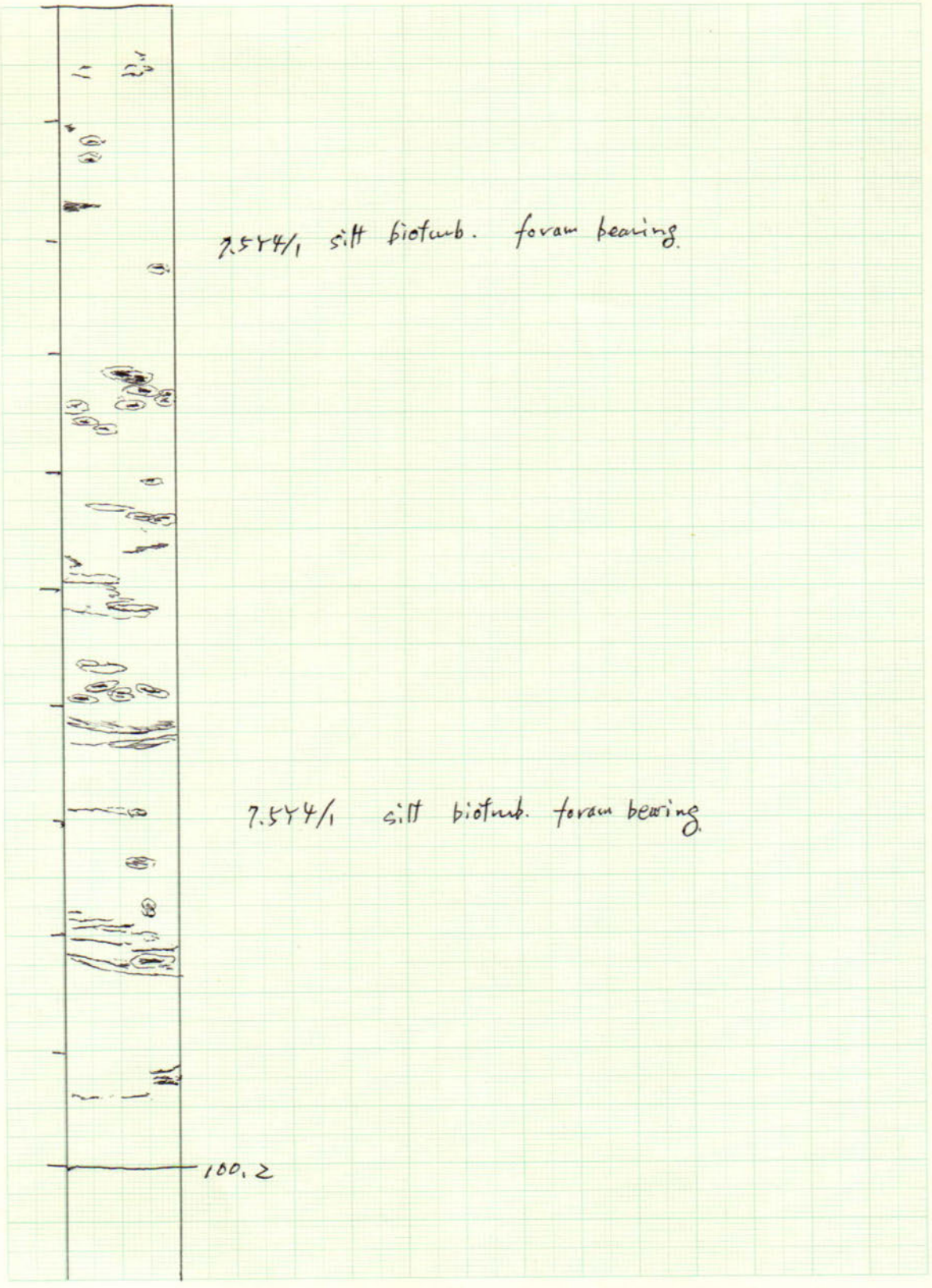
0 - 100.7 (46.8 - 147.5)

KR18-12C PC08 Sec. 4 W

2.5Y 3/2 m. silt massive
-2.2 2.5Y 2/1 c. silt cross-laminated sharp & erosional base
gtz, lithic, pF?
2.5Y 4/1 silt bioturb
foram bearing
2.5Y 3/2 silt bioturb.
2.5Y 4/1 silt bioturb.
2.5Y 3/1 m. silt burrow fill?
2.5Y 3/2
72.5 indistinct boundary.
2.5Y 3/2 silt massive
81 82 2.5Y 2/1 m-c. silt cross-laminated sharp base
gtz, lithic,
2.5Y 4/1 silt bioturb.
foram bearing.
99.6

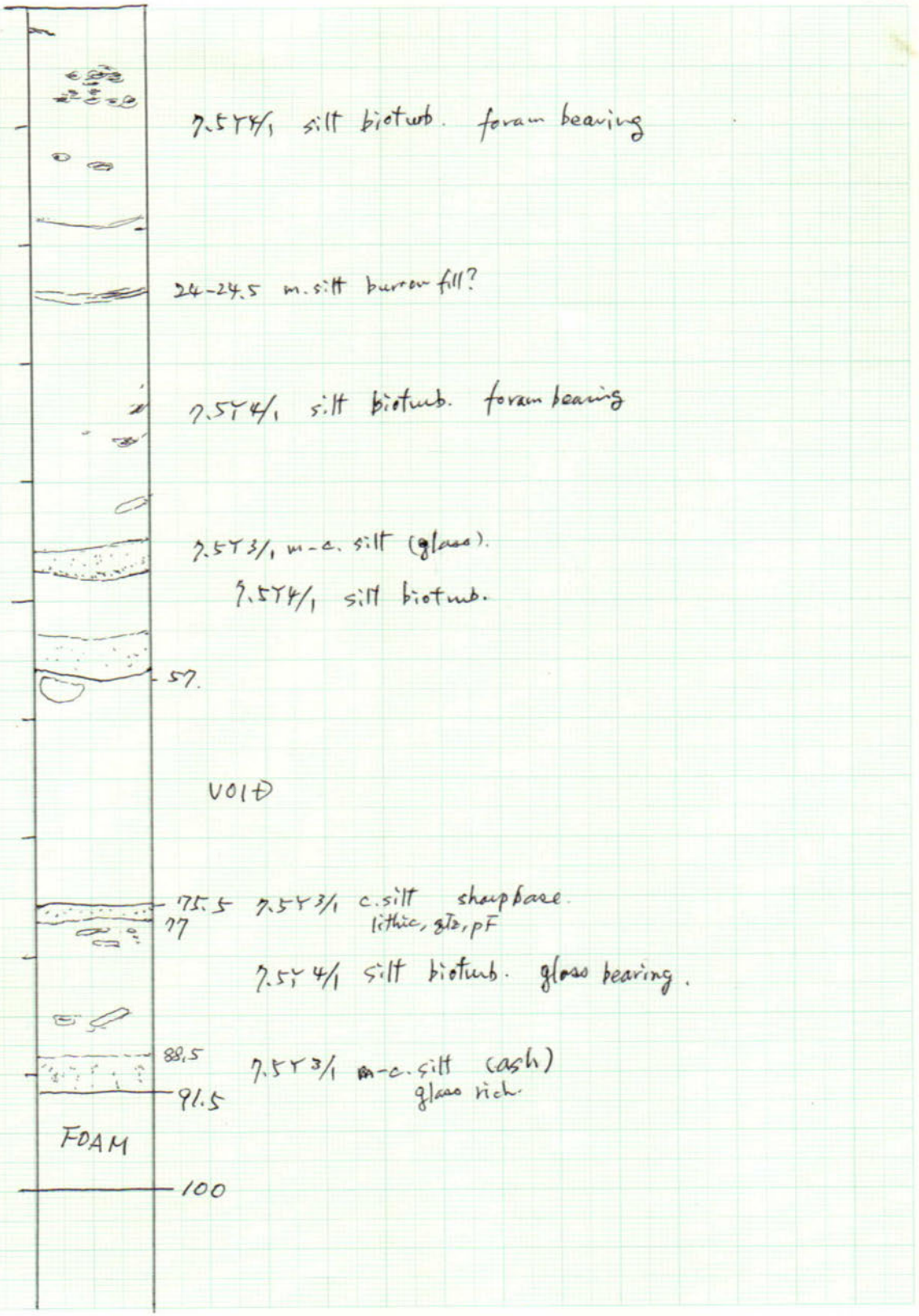
0-99.6 (147.5-247.1)

KR18-12C PC08 sec. 5 W



0-100.2 (247.1-347.3)

KR18-12C PC08 sec. 6 W



0-91.5 (347.3 - 420.3)

18.5 cm VOID 73.0 cm

KR18-12C PC08 CC W

10YR3/2 c.silt v.fs sized ash bubble wall incl. & HM

7.5Y4/1 silt bioturb.

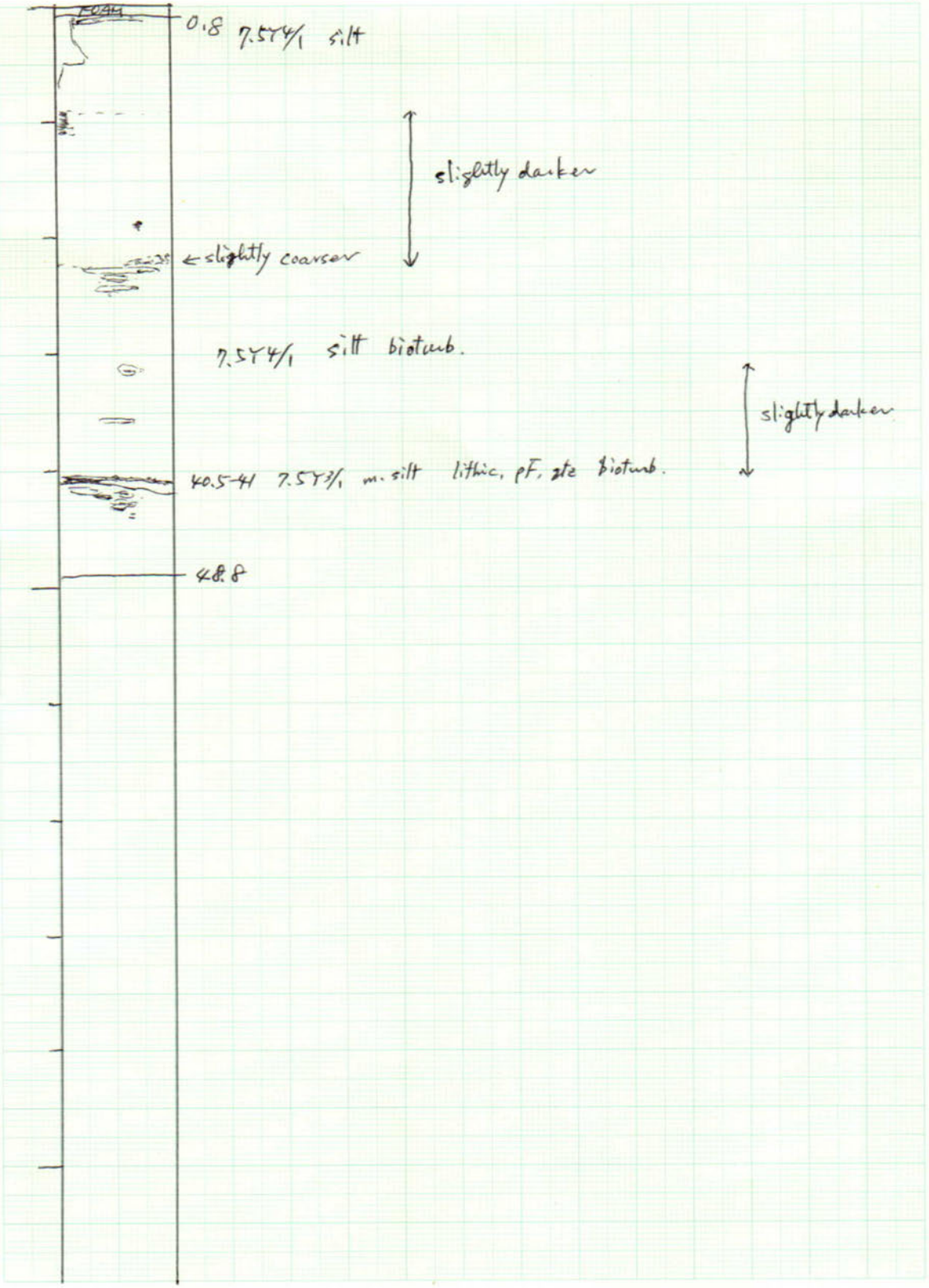
7-16.6 (420.3-429.9)

9.6

KR18-12C PL08 sec. 1 W

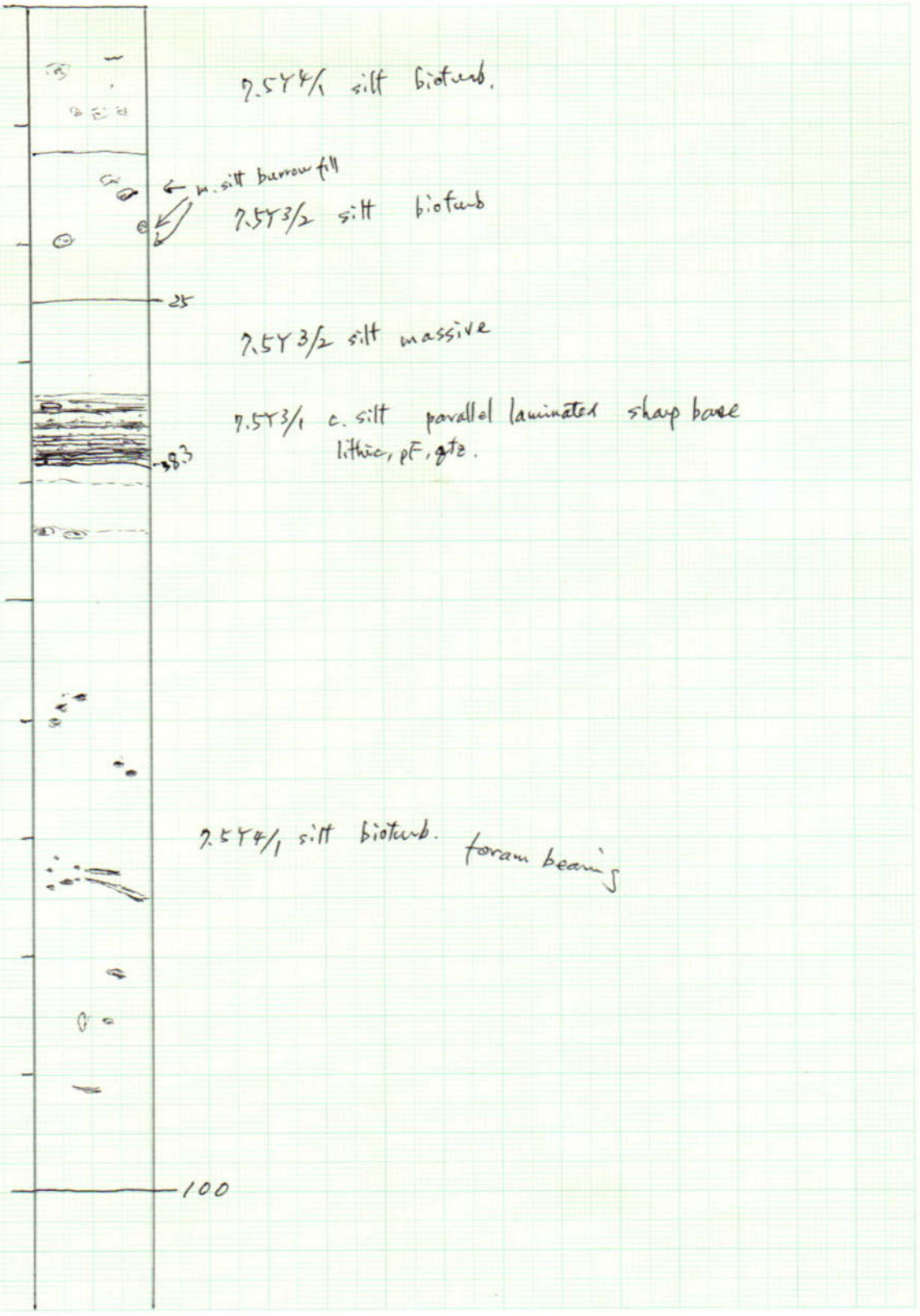
0-65.4 (0-65.4)

KR18-12C PC09 sec.1 W



0.8 - 48.8 (0 - 48.0)

KR18-12C PC09 sec. 2 W



0-100 (48.0-148.0)

KR18-12C PC09 sec. 3 W

7.5Y4/1 silt bioturb. foram bearing

7.5Y4/1 silt bioturb foram bearing

71

7.5Y3/2 silt bioturb but originally massive?

graded

7.5Y3/2 v.f.s - c. silt sharp base.

80.5 glass, lithic

m. silt burrow fill.

7.5Y4/1 silt bioturb. foram bearing.

90.7

91.2 7.5Y3/2 m-c. silt glass rich

94.5 7.5Y4/1 silt bioturb. glass rich

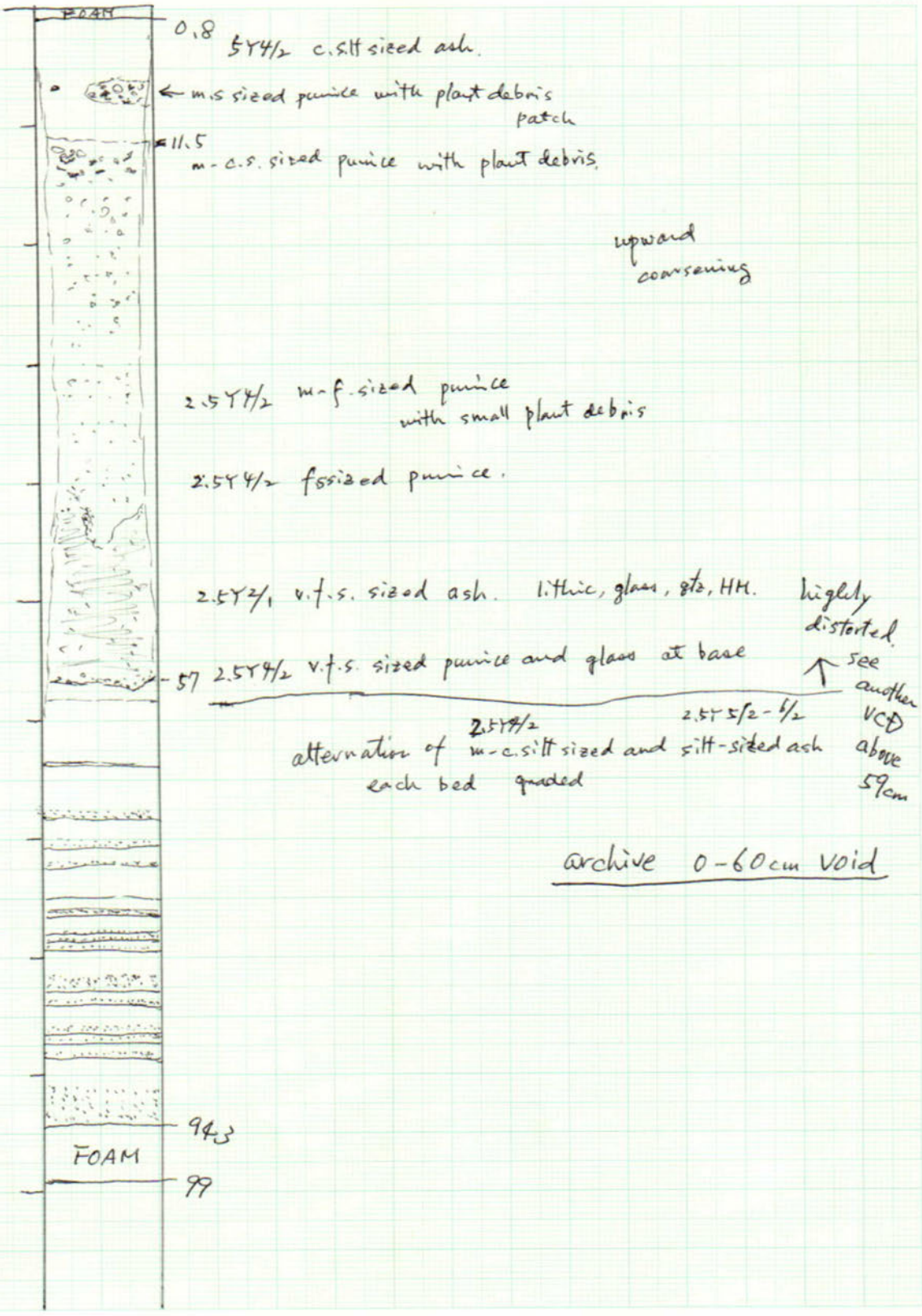
2.5Y4/2 silt-sized ash.

101.1

JIS B5 160×220%

0 - 101.1 (148.0 - 249.1)

KR18-12C PC09 sec. 4 W



0.8 - 94.3 (249.1 - 342.6)
93.5

KR18-12C PC09 sec.4 W (2)

0.8 5Y3/2 silt sized ash

6

2.5Y4/2 f-m.s. sized pumice.

2.5Y2/1 c.silt-vf.s. ~~sized~~ pumice, lithic?, HM, glass

pumice 3.5cm ϕ

2.5Y4/2 c.s. sized pumice 40-42.5

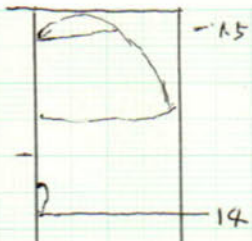
2.5Y2/1 c.silt ~~sized~~ lithic qtz. pF, pumice, HM

56

2.5Y4/2 f-m.s. sized pumice with plant debris

59

KR18-12C PC09 sec. CC W



-15 2.5Y3/2 c. silt sized ash

2.5Y4/2 silt sized ash

2.5Y4/1 silt bioturb. foram bearing.

-14

0-14 (342.6 - 358.6)

KR18-12C PL09 sec. 1 W

0.8 2.5Y3/2 silt loose ~5mm
5Y3/2 silt loose.

7.5Y4/1 silt bioturb. foram. bearing.

7.5Y3/1 m. silt burrow fill?

7.5Y4/1 silt bioturb. foram bearing

7.5Y $\frac{3}{2}$/1 m-c. silt burrow fill?
lithic?

84.5

85.7

0.8 - 84.5 (0 - 83.7)

Operation Inventory

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	山口
Date (UTC) Y/M/D	2018. 9. ~~9~~ 10	Recorded by	宗
Core Number	PC01	Transponder	海洋電子製 ガラス球TP (SI2-B10)
Area	九州東方沖	Inclinometer	—
Sampling Site	PC01	others	—

<Corer info.>

Corer type	(Inner) / Outer — (Piston) / Gravity	Pilot type	75 コアラー
Weight	592 kg	Pilot Weight	112 kg
Pipe Length AL / (SUS)	6 m	Pilot Pipe Length	0.70(1.20) m
Main wire	φ 10、12.8 m	Pilot Wire	12.6 m
Free Fall	~~3.6~~ 3.4 m		

<Condition>

Weather	晴	Wave height	1.5 m
Wind direction	356 deg.	Current direction	46.9 deg.
Wind speed	9.7 m/s	Current speed	2.2 ~~m/s~~ knt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/10 2:37:~~28~~ ~~4:10:17~~			
Hit the bottom	9/10 4:01:34	(TP) 31-40.1078N	132-27.3951E	2374 ~~2449~~ m
		(Ship) 31-40.0719N	132-27.3228E	2449 m
Finish operation	9/10 5:07:~~19~~			

MEMO

線長、線速、張力計不調のため一旦揚収.
・SOJ、SOQ. イベント OFF (1:53)
・本船移動.
・再作業再開.
・安全ピンが抜けにくい
外3→外4へ.
・TP. ON (3:02) OFF (4:46)

Cruise Name: KR18-12C　Core Name: PC 01　y m d: 2018/ 9/10　Page: 1/2
Recorded by 泉

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
2:37	2445	—	—	—	—	作業開始
2:38	2443	—	—	—	—	PC吊り上げ
2:39	2441	—	—	—	—	注水完了
2:41	2443	—	—	—	—	PC直立
2:47	2446	—	4.3	—	—	PL取り上げ、着水
2:50	2451	—	5.0	—	—	PL取り付け完了
2:56	2450	—	4.7	—	—	PL取り付け位置変更
3:00	2450	—	4.6	—	—	安全ピン解放
3:01	2448	0	3.9	—	—	PC着水、ゼロ調
3:04	2446	50	4.0	—	—	WO. 50m 一旦停止
3:07	2454	50	4.1	—	—	TP取り付け完了
3:08	2450	50	4.2	~30	↓	巻き出し開始
3:11	2451	100	4.5	~40	↓	WO. 100m　TP:44m
3:21	2448	500	6.6	~60	↓	WO:500m
3:29	2452	1000	10.0	~60	↓	WO:1000m
3:37	2449	1500	14.0	~60	↓	WO:1500m
3:46	2450	2000	16.0	~60	↓	WO:2000m　TP 1902
3:54	2456	2400	22.0	~0	—	WO:2400m、一旦停止、3分間
3:58	2447	2400	20.1	~20	↓	巻き出し
~~4:01:34~~ 4:02	2449	2460	MIN 9.9~~X~~	20	↓	着水
4:01	2449	~~2460~~ ~~2449~~	10	—	—	停止、巻き戻し
4:02:11	2451	2451	MAX 43.6~~X~~	20	↑	歯車充確認、増速
4:10	2452	2000	19.7	60	↑	WO:2000m
4:18	2450	1500	16.3	60	↑	WO:1500m
4:26	2450	1000	12.0	60	↑	WO:1000m
4:34	2455	500	7.4	60	↑	WO. 500m
4:44	2457	50	4.8	—	—	TP水面
4:45	2454	50	4.2	—	—	TP取り外し完了

※1t ≒ 9.8kN

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C
Core Name: PC 01
y m d: 2018 / 9 / 10
Page: 2 / 2
Recorded by: 泉

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (I / T)	Remarks
4:48	2451	0	4.4	—	—	天秤水面
4:51	2452	—	3.3	—	—	PL取り外し
4:52	2453	—	3.1	—	—	PL揚収完了
4:59	2454	—	—	—	—	天秤取り外し
5:02	2455	—	—	—	—	PC水面
5:07	2455	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KK18-12 C	Operator	富山
Date (UTC) Y/M/D	2018. 9. ~~11~~ 11~12	Recorded by	芳味
Core Number	PC 02	Transponder	海洋電子製トランスポンダ (SI2-B10)
Area	九十九東方沖	Inclinometer	—
Sampling Site	PC02	others	—

<Corer info.>

Corer type	Inner / Outer	Piston / Gravity	Pilot type	インライン
Weight	592 kg		Pilot Weight	112 kg
Pipe Length AL / SUS	6 m		Pilot Pipe Length	0.70 (1.20) m
Main wire	φ 10. 12.8 m		Pilot Wire	12.6 m
Free Fall	~~3.6~~ 3.4 m			

<Condition>

Weather	雨	Wave height	1.0 m
Wind direction	110 deg.	Current direction	52.9 deg.
Wind speed	6.9 m/s	Current speed	2.5 ~~m/s~~ kn

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/11 23:08:~~38~~			
Hit the bottom	9/12 00:56:01	(TP) 31_48.2212N	132_33_4193E	2348 ~~2349.9~~ m
		(Ship) 31-48.1731N	132-33.3264E	2425 m
Finish operation	9/12 02:09:~~08~~			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC 02　y m d: 2018 / 9 / 11~12　Page: 1 / 2
Recorded by 多米

	Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
9/11	23:08	2257	—	—	—	—	作業開始.
	23:15	2305	—	—	—	—	天秤取付け完了.
	23:20	2297	—	—	—	—	PC 吊上げ
	23:22	2340	—	—	—	—	注水完了.
	23:26	2387	—	9.08	—	—	PC 正立.
	23:29	2419	—	5.96	—	—	PL 吊上げ
	23:30	2416	—	5.8	—	—	PL 着水
	23:32	2422	—	5.7	—	—	PL 取付け完了
	23:34	2702	—	6.6	—	—	安全ピン 解放.
	23:35	2424	0	5.3	—	—	PC 着dk. 天吊調
	23:36	2429	0	5.0	—	—	TP オン.
	23:38	2424	50	5.4	—	—	WO = 50m. 一旦停止.
	23:41	3087	50	5.4	—	—	TP 取付け完了
	23:42	2431	50	5.2	—	—	TP 着水
	23:47	2421	50	5.7	~30	↓	巻き出し開始
	23:55	2423	300	7.6	~~40~~ 60	↓	WO: 300m.
9/12	00:04	2429	1000	11.8	~60	↓	WO=1000m. 一旦停止 = 本船位調整
	00:24	2429	1000	11.8	~60	↓	巻き出し開始
	00:33	2426	1300	15.0	~60	↓	
	00:42	2430	2000	18.2	~60	↓	
	00:48	2426	2350	22.3	~~60~~ 50	↓	一旦停止. 3分間停止.
	00:51	2428	2350	21.8	~20	↓	巻き出し開始.
0:56:01	~~00:56:03~~	2425	2436	Min ~~22.0~~ 11	>0	↓	着底
	00:56:03	2425	2436	11~49	—	—	停止、巻上げ.
	00:56:50	2425	2420	Max 49.83	20	↑	離底確認.
	01:04	2428	2000	20.3	~60	↑	
	01:13	2424	1300	17.7	~60	↑	
	01:20	2428	1000	13.3	~60	↑	

※1t ≒ 9.8kN

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　　Core Name: PC 02　　y m d: 2018 / 9 / 12(11~12)　　Page: 2 / 2

Recorded by 多米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
01:26	2420	800	10.7	~60	↑	一旦停止。本船位を調整
01:28	2466	800	11.3	~60	↑	巻上げ開始
01:34	2422	500	8.0	~60	↑	
01:42	2411	56	5.5	~60	↑	TP 水面
01:45	2395	56	5.6	~60	↑	TP 取外し完了.
01:48	2396	+0.	5.3	—	—	走行 水面
01:49	—	—	—	—	—	TP オフ.
01:57	2378	—	3.7	—	—	PL 揚収完了. PL 取外し完了
01:59	2379	—	—	—	—	天秤取外し完了.
02:02	2372	—	—	—	—	PC 水面
02:09	2366	—	—	—	—	PC 揚収完了.

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	山P
Date (UTC) Y/M/D	2018. 9. 12.	Recorded by	多米
Core Number	PC 03	Transponder	~~海洋電子製 トランスポンダ TP (512-B10)~~
Area	九州東方沖	Inclinometer	− 「かいれい」用 OKI
Sampling Site	PC 03	others	−

<Corer info.>

Corer type	(Inner) / Outer (Piston) / Gravity	Pilot type	アシュラ―
Weight	592 kg	Pilot Weight	112 kg
Pipe Length AL / (SUS)	6 m	Pilot Pipe Length	0.70 (1.20) m
Main wire	φ 16, 12.8 m	Pilot Wire	12.6 m
Free Fall	~~3.6~~ 3.4 m		

<Condition>

Weather	くもり / 雨	Wave height	1.5 m
Wind direction	105 deg.	Current direction	38.8 deg.
Wind speed	8.0 m/s	Current speed	2.2 ~~m/s~~ knt

<Operation>

	Time		Latitude	Longitude	Depth
Start operation	9/12 05:27:~~XX~~				
Hit the bottom	9/12 07:12:51	(TP)	31-42.6024N	132-28.9377E	2378 ~~2470~~ m
		(Ship)	31-42.5054N	132-28.9189E	2457 m
Finish operation	9/12 08:24:~~XX~~				

MEMO

「かいれい」用 OKI … Rx 13.0kHz, Tx 13.5kHz
↳ 海洋電子製 トランスポンダ (512-B10) に 不具合 が あったため 「かいれい」用 OKI を 使用した。

Ver.3.00(20140909)
Marine Works Japan LTD.

Cruise Name: KR18-12C　Core Name: PC 03　y m d: 2018 / 9 / 12　Page: 1 / 2

Recorded by 多米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
05:29	2464	—	—	—	—	作業開始.
05:34	2463	—	—	—	—	天秤取付け完了
05:40	2461	—	—	—	—	PL 吊上げ
05:42	2461	—	—	—	—	注水完了
05:45	2462	—	5.3	—	—	PC 直立
05:48	2462	—	5.1	—	—	PL 吊上げ
05:49	2461	—	3.6	—	—	PL 着水
05:52	2461	—	5.1	—	—	PL 取付け完了
05:54	2462	—	5.5	—	—	安全ピン 解放
05:54	2462	—	5.5	—	—	PC 着水
05:55	2462	0	4.6	—	—	ゼロ調
05:57	2460	50	3.5	—	—	W0=50m. 一旦停止.
06:03	2461	50	5.7	—	—	TP 取付け完了
06:03	2466	60	5.0	—	—	TP 着水
06:05	2462	60	4.8	~30	↓	巻出し開始
06:07	2460	100.	5.2	~30	↓	W0: 100m.
06:17	2460	500	7.6	~30.	↓	〃
06:23	2461	800	9.9	~30.	↓	一旦停止 = 本船位置調整
06:37	2457	800	10.7	~60	↓	
06:42	2459	1000	11.9	~60	↓	
06:50	2456	1500	15.0	~60	↓	ペンレコのペン・チャンネル変更
06:58	2453	2000	18.4	~60	↓	
07:05	2456	2390	22.3	~60	↓	一旦停止. 3分間待機.
07:08	2454	~~2390~~	21.6	~20	↓	巻出し開始
07:12:31	2457	2470.	~~MIN 11.0~~ ~~22.0~~	20	↓	着底
07:12:54	2457	2470.	MAX 11.41	—	—	停止・巻上げ
07:13:34	2457	2459	MAX 41.86	20	↑	離底確認.
7:23:30	2457	~~2000~~ 1900	19.5	~60	↑	

※1t ≒ 9.8kN

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC03　y m d: 2018 / 9 / 12　Page: 2 / 2
Recorded by 多米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
07:30	2458	~~1700~~ 2800	17.2	~60.	↑	
07:37	2460	1000	13.3	~60	↑	
07:41	2460	800	10.9	~60.	↑	一旦停止 ＆ 本船位置調整
07:44	2461	800	11.5	~60	↑	巻上げ開始
07:49	2458	500	8.1	~60	↑	
07:57	2440	55	5.4	~60	↑	TP水面
08:01	2440	55	5.1	—	—	TP取外し完了
08:04	2436	0	5.1	—	—	天秤水面
08:05	—	—	—	—	—	TP オフ
08:11	2430	—	3.7	—	—	PL揚収完了 ＝ PL取外し完了
08:14	2427	—	—	—	—	天秤取外し完了
08:17	2424	—	—	—	—	PC水面
08:24	2422	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	宮嶋
Date (UTC) Y/M/D	2018. 9. 14	Recorded by	京
Core Number	PC04	Transponder	オキトラポン (船側)
Area	九州東方沖	Inclinometer	—
Sampling Site	PC04	others	—

<Corer info.>

Corer type	(Inner) / Outer	(Piston) / Gravity	
Weight	592 kg	Pilot type	75コアラー
Pipe Length AL / (SUS)	4 m	Pilot Weight	11.2 kg
Main wire	φ 10 10.8 m	Pilot Pipe Length	0.7 (A20) m
Free Fall	~~3.6~~ 3.4 m	Pilot Wire	10.6 m

<Condition>

Weather	晴	Wave height	1.0 m
Wind direction	173 deg.	Current direction	368 deg.
Wind speed	3.0 m/s	Current speed	2.1 ~~m/s~~ kn

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/14 0:06			
Hit the bottom	9/14 1:51:28 ~~2:45~~	(TP) 31-38.5079N	132-24.4124E	~~2375~~ ~~2374.8~~ m
		(Ship) 31-38.4240N	132-24.3277E	245/~~0~~ m
Finish operation	9/14 2:58			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

Cruise Name: KR18-12C　Core Name: PC 04　y m d: 2018 / 9 / 14　Page: 1 / 12
Recorded by 宗

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
0:06	2409	—	—	—	—	作業開始
0:19	2424	—	—	—	—	PC吊り上げ
0:20	2441	—	—	—	—	注水完了
0:25	2452	—	5.4	—	—	PC直立.
0:28	2453	—	3.8	—	—	PL吊り上げ
0:30	2452	—	5.1	—	—	PL取付完了
0:35	2456	—	4.4	—	—	PC着水
0:35	2457	0	4.3	~30	↓	ゼロ調
0:38	2455	50	5.0	—	—	WD:50m 一旦停止、TP取付
0:42	2454	50	5.1	—	—	TP取付完了、巻き出し
0:52	2461	300	6.1	~40	↓	ウインチ 増速
0:54	2457	400	6.8	~30	↓	ウインチ 増速.
0:56	2457	450	7.6	~30	↓	TP 応答確認
0:56	2455	500	8.1	~30	↓	ウインチ 増速.
1:02	2456	800	10.6	~~60~~ 0	↓	一旦停止. 本船位置調整
1:16	2455	800	10.4	~60	↓	巻出し開始.
1:20	2458	1000	11.8	~60	↓	
1:28	2459	1500	15.2	~60	↓	
1:36	2457	2000	18.0	~60	↓	
1:43	2453	2380	22.1	0	↓	一旦停止. 3分間保持.
1:46	2453	2380	22.3	~20	↓	巻出し開始
1:51:28	2451	2473	MIN 11.2	0	—	着底
1:51:30	2451	2473	—	~20	↑	停止、巻上げ
1:51:59	2454	2465	MAX 46.50	~20	↑	離底確認、増速
1:59	2456	2000	19.8	~60	↑	
2:08	2451	1500	17.5	~60	↑	
2:16	2455	1000	13.1	60	↑	
2:24	2457	500	8.9	60	↑	

※1t ≒ 9.8kN

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC04　y m d: 2018/9/14　Page: 2/2
Recorded by 宗

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
02:32	2448	50	5.5	—	—	WO 50m TP水面.
02:36	2446	50	5.2	—	—	TP取外し完了
02:40	2448	0	5.0	—	—	天秤水面
02:45	2448	—	3.4	—	—	PL揚収完了
02:50	2449	—	—	—	—	天秤取り外し完了
02:53	2451	—	—	—	—	PC水面
02:58	2446	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	山口
Date (UTC) Y/M/D	2018, 9, 15	Recorded by	鳥
Core Number	PC05	Transponder	オキ1-TP (船舶)
Area	北西隠岐沖	Inclinometer	—
Sampling Site	PC05	others	—

<Corer info.>

Corer type	(Inner) / Outer	Piston / Gravity	
Weight	592 kg	Pilot type	75コラー
Pipe Length (AL) / SUS	6 m	Pilot Weight	112 kg
Main wire	φ 10 12.8 m	Pilot Pipe Length	0.7 (1.2m) m
Free Fall	3.4 m	Pilot Wire	12.6 m

<Condition>

Weather	晴	Wave height	1.0 m
Wind direction	197 deg.	Current direction	51.0 deg.
Wind speed	6.0 m/s	Current speed	2.6 ~~m/s~~ kt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/15 0:05			
Hit the bottom	9/15 1:26:02	(TP) 31-43.6985N	132-15.2708E	1938 ~~1938~~ m
		(Ship) 31-43.6394N	132-15.2073E	2014 ~~20~~ m
Finish operation	9/15 2:28			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC 05　y m d: 2018 / 9 / 15　Page: 1 / 1
Recorded by 泉

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
0:05	1966	—	—	—	—	作業開始
0:07	2016	—	—	—	—	PC吊りエげ
0:19	2015	—	—	—	—	注水完了
0:23	2017	—	5.2	—	—	PC直立
0:26	2014	—	4.2	—	—	PL吊りエげ
0:30	2015	—	5.5	—	—	PL取付完了
0:30	2015	—	5.3	—	—	安全ピン解放
0:33	2018	0	4.9	~30	↓	ゼロ調、巻き出し
0:35	2017	50	5.1	—	—	TP取り付け完了 W0.50
0:39	2014	50	5.6	~30	↓	TP取り付け完了、巻き出し
0:58	2013	500	8.1	60	↓	
1:02	2017	1000	11.7	60	↓	
1:10	2017	1500	15.4	60	↓	
1:18	2014	1930	17.1	—	—	一旦停止、3分間保持
1:21	2014	1930	17.1	~20	↓	巻き出し
1:26:02	2014	2021	MIN 9.14	20~0	↓	着底、一旦停止、巻きエげ
1:26:35	2014	2012	MAX 33.55	0~20	↑	離座確認、増速
1:35	2015	1500	17.6	60	↑	
1:43	2013	1000	13.5	60	↑	
1:51	2016	500	8.3	60	↑	
1:59	2017	50	5.8	—	—	TP水面、一旦停止
2:03	2015	50	5.0	—	—	TP取り外し完了
2:06	2016	0	4.8	—	—	天秤、水面
2:09	2018	0	3.5	—	—	~~天秤~~ PL 取り外し
2:12	2017	0	3.5	—	—	PL揚収完了
2:18	2018	—	—	—	—	天秤取り外し完了
2:22	2017	—	—	—	—	PC水面
2:28	2017	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	宝地
Date (UTC) Y/M/D	2018. 9. 16	Recorded by	阿米
Core Number	PC06	Transponder	"Hadal" 用 0K2-TP
Area	九州東方沖	Inclinometer	—
Sampling Site	PC06	others	—

<Corer info.>

Corer type	Inner / Outer	Piston / Gravity	Pilot type	ワラフラー
Weight	592 kg		Pilot Weight	12 kg
Pipe Length AL / SUS	6 m		Pilot Pipe Length	0.70 (1.20) m
Main wire	φ 10, 12.8 m		Pilot Wire	12.6 m
Free Fall	3.4 m			

<Condition>

Weather	晴	Wave height	1.0 m
Wind direction	254 deg.	Current direction	33.7 deg.
Wind speed	5.4 m/s	Current speed	3.0 ~~m/s~~ kt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/16 0:05:~~56~~			
Hit the bottom	9/16 1:28:43	(TP) 31. 53. 2951N	132. 14. 0010E	1867 m
		(Ship) 31- 53. 2916N	132- 13. 9599E	1943 m
Finish operation	9/16 2:27:~~30~~			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C
Core Name: PC 06
y m d: 2018 / 9 / 16
Page: 2 / 2
Recorded by 多米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min.)	Wire out / in (↓/↑)	Remarks
1:45	1942	1000	13.3	~60	↑	
1:53	1944	500	9.8	~60	↑	
2:00	1946	50	5.6	~60	↑	TP水面
2:04	1947	50	5.6	0	↑	TP 取外し完了
2:07	1953	0	5.0	—	—	支行水面
2:10	1950	—	4.1	—	—	PL 取外し完了
2:11	1936	—	3.8	—	—	PL 水面
2:15	1934	—	3.8	—	—	PL 揚収完了
2:17	1952	—	—	—	—	支持取外し完了
2:20	1949	—	—	—	—	PC 水面
2:29	1953	—	—	—	—	PC 揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC 06　y m d: 2018 / 9 / 16　Page: 1 / 2
Recorded by 多米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (KN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
0:05	1908	–	–	–	–	作業開始
0:11	1902	–	–	–	–	天秤取付け完了
0:15	1902	–	–	–	–	PC 吊上げ
0:15	1891	–	–	–	–	注水完了
0:20	1837	–	3.7	–	–	PC 直立.
0:21	1818	–	3.9	–	–	PL 吊上げ
0:22	1814	–	3.9	–	–	PL 着水
0:25	1836	–	3.2	–	–	PL 取付け完了
0:25	1847	–	3.3	–	–	安全ピン開放
0:27	1871	–	4.7	–	–	PC 着水
0:27	1892	0	4.4	–	–	ゼロ調
0:28	1902	0	4.5	~30	↓	巻出し開始
0:29	1924	30	4.9	0	↓	一旦停止
0:33	1927	30	3.1	0	–	TP 取付け完了
0:35	1927	30	3.0	~30	↓	TP 着水
0:36	1928	30	3.1	~30	↓	巻出し開始
0:37	1929	100	3.4	~30	↓	
0:48	1943	300	7.7	~30	↓	増速.
0:53	1941	800	10.3	0~30	–	一旦停止 : 本船位置調整
1:02	1942	800	10.2	~60	↓	巻出し開始
1:06	1945	1000	12.0	~60	↓	
1:15	1942	1500	13.2	~60	↓	
1:21	1943	1860	17.3	0	–	一旦停止. 3分間保持.
1:24	1943	1860	16.4	~20	↓	巻出し開始
1:28:43	1943	1947	MIN 8.43	20	↓	着底
1:28:47	1943	1947	–	–	–	停止・巻上
1:29:22	1942	1937	MAX 39.39	20	↑	離底確認. 増速.
1:36	1943	1500	18.2	60	↑	

※1t ≒ 9.8kN

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	山口
Date (UTC) Y/M/D	2018, 9, 18	Recorded by	岩
Core Number	PC07	Transponder	OKI (船底)
Area	九州東方沖	Inclinometer	—
Sampling Site	PC07	others	—

<Corer info.>

Corer type	Inner / Outer, Piston / Gravity	Pilot type	75コアラー
Weight	592 kg	Pilot Weight	112 kg
Pipe Length AL / SUS	6.0 m	Pilot Pipe Length	0.7 (1.2) m
Main wire	φ 10 12.8 m	Pilot Wire	φ8 12.6 m
Free Fall	3.4 m		

<Condition>

Weather	晴	Wave height	1.0 m
Wind direction	307 deg.	Current direction	42.4 deg.
Wind speed	2.0 m/s	Current speed	3.1 ~~m/s~~ kt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/17 0:01			
		(TP) 31-47.8784N	132-15.1536E	1930 m
Hit the bottom	1:15:01			
		(Ship) 31-47.8281N	132-15.1033E	2012 m
Finish operation	02:13			

MEMO

TP 23:52 ON

着底時のTP位置は、SOJデータ(1:14:57)を記入.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC 07　y m d: 2018 / 9 / 17　Page: 1 / 12
Recorded by 宗

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
00:01	2016	—	—	—	—	作業開始
0:09	2014	—	—	—	—	PC吊りエヴ
0:10	2017	—	—	—	—	注水完了
0:13	2015	—	—	—	—	PC直立
0:17	2018	—	—	—	—	PL吊りエヴ
0:20	2018	—	5.1	—	—	PL取付け完了
0:21	2017	—	5.1	—	—	安全ピン解放、巻き出し
0:23	2017	0	4.4	~	—	ゼロ調
0:25	2016	50	5.0	—	—	TP取り付け、一旦停止
0:28	2015	50	5.2	—	—	TP取り付け完了、巻き出し
0:43	2012	500	7.9	60	↓	
0:52	2012	1000	11.8	60	↓	
1:01	2012	1500	15.0	60	↓	
1:08	2012	1940	17.0	—	—	WO:1940 一旦停止 (3分間保持)
1:11	2013	1940	17.0 MIN	~20	↓	巻き出し再開
1:15:01	2012	2018	9.07	~20	↓	着底、一旦停止、巻き上げ
1:15:42	2012	2006	MAX 37.1	20	↑	離底確認
1:24	2011	1500	17.4	60	↑	
1:32	2011	1000	13.2	60	↑	
1:40	2008	500	7.8	60	↑	
1:47	2006	50	5.9	—	—	TP水面
1:51	2004	50	5.1	—	—	TP取り外し完了
1:54	2000	0	4.8	—	—	天秤水面
1:57	1996	0	3.6	—	—	PL取り外し完了
1:59	1994	0	2.6	—	—	PL水面
2:03	1994	0	3.6	—	—	天秤取り外し完了
2:05	1990	—	—	—	—	PL揚収完了
2:08	1983	—	—	—	—	PC水面

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C
Core Name: PC 07
y m d: 2018 / 9 / 17
Page: 2/2
Recorded by: 栄

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
2:13	1978	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	宮嶋
Date (UTC) Y/M/D	2018. 9. 18	Recorded by	羽米
Core Number	PC08	Transponder	「かいれい」用 ORI-TP
Area	九州-パラオ海嶺	Inclinometer	—
Sampling Site	PC08	others	—

<Corer info.>

Corer type	Inner / (Outer)	Pilot type	ラムコア
Weight	392 kg	Pilot Weight	112 kg
Pipe Length AL / (SUS)	6 m	Pilot Pipe Length	0.70 (1.20) m
Main wire φ	10. 12.8 m	Pilot Wire	12.6 m
Free Fall	3.4 m		

<Condition>

Weather	くもり	Wave height	1.5 m
Wind direction	356 deg.	Current direction	50.6 deg.
Wind speed	7.3 m/s	Current speed	3.0 ~~m/s~~ kt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/18 0:04 ~~4:46~~			
Hit the bottom	9/18 1:28:14	(TP) 32-09.0025N	132.18.9986E	1825 m
		(Ship) 32-08.9938N	132-18.9473E	1905 m
Finish operation	9/18 24 2:~~29:55~~			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　　Core Name: PC 08　　y m d: 2018 / 9 / 18　　Page: 1 / 2

Recorded by: 的米

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (KN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
0:04	1878	–	–	–	–	作業開始
0:10	1878	–	–	–	–	无線取付け完了
0:14	1884	–	–	–	–	PC 吊上げ
0:15	1887	–	–	–	–	注水完了
0:17	1897	–	3.9	–	–	PC 直立
0:20	1909	–	3.8	–	–	PL 吊上げ
0:21	1906	–	3.8	–	–	PL 着水
0:23	1905	–	4.6	–	–	PL 取付け完了
0:25	1906	–	4.6	–	–	自生ピン解放.
0:26	1905	0	3.8	–	–	PC 着水
0:26	1909	0	3.8	–	–	ゼロ調
0:28	1906	50	4.2	0	↓	一旦停止
0:33	1906	50	4.3	0	–	TP 取付け完了
0:33	1905	50	4.3	~30	↓	差出し開始
0:36	1905	100	4.5	~30	↓	巻延.
0:47	1901	500	7.6	~60	↓	
0:52	1902	800	10.0	0	↓	一旦停止 ; 本船位置調整
1:03	1902	800	10.1	~60	↓	差出し開始
1:07	1902	1000	11.8	~60	↓	
1:15	1903	1500	15.2	~60	↓	
1:21	1903	1820	15.7	0	↓	一旦停止　3分間停止.
1:24	1903	1820	15.8	~20	↓	差出し開始
1:28:14	1905	1900	MAX 6.55	20	↓	着底
1:28:16	1905	1900	–	0	–	停止、差上げ
1:29:02	1905	1887	MAX 25.81	20	↑	離底確認
1:35	1903	1500	16.7	60	↑	
1:43	1904	1000	12.9	60	↑	
1:51	1902	500	9.4	60	↑	

※1t ≒ 9.8kN

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C
Core Name: PC 08
y m d: 2018 / 9 / 18
Page: 2 / 2
Recorded by: 坂井

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
1:59	1902	50	5.3	–	–	TP水面
2:03	1901	–	5.2	–	–	TP取外し完了
2:06	1901	–	4.9	–	–	天秤水面
2:09	1899	–	4.0	–	–	PL取外し
2:15	1898	–	3.8	–	–	PL揚収完了
2:19	1898	–	–	–	–	天秤取外し完了
2:20	1895	–	–	–	–	PC水面
2:24	1891	–	–	–	–	PC揚収完了

※1t ≒ 9.8kN

Ver.2.30(20140909)
Marine Works Japan LTD.

Coring Inventory

PRC-SG1-030 別紙12
PC インベントリシート

< Observation info.>

Cruise name	KR18-12C	Operator	多米
Date (UTC) Y/M/D	2018, 9, 19	Recorded by	宗
Core Number	PC09	Transponder	オキ-TP (船後1)
Area	九州東方沖	Inclinometer	←
Sampling Site	PC09	others	-

<Corer info.>

Corer type	(Inner) / Outer — (Piston) / Gravity	Pilot type	75ファラー
Weight	592 kg	Pilot Weight	112 kg
Pipe Length AL / (SUS)	4 m	Pilot Pipe Length	0.7 (1.2) m
Main wire	φ 10 10.8 m	Pilot Wire	10.6 m
Free Fall	3.4 m		

<Condition>

Weather	くもり	Wave height	1.0 m
Wind direction	9 deg.	Current direction	40.5 deg.
Wind speed	5.2 m/s	Current speed	2.7 ~~m/s~~ kt

<Operation>

	Time	Latitude	Longitude	Depth
Start operation	9/19 0:03			
Hit the bottom	1:11:49	(TP) 31-53.3109N	132-14.0081E	1867 m
		(Ship) 31-53.2634N	132-13.9537E	1944 m
Finish operation	2:05			

MEMO

Ver.3.00(20140909)
Marine Works Japan LTD.

PRC-SG1-030 別紙13
PCログシート

Cruise Name: KR18-12C　Core Name: PC 09　y m d: 2018 / 9 / 19　Page: 1/1
Recorded by:

Time (UTC)	Water depth (m)	Wire out length (m)	Tension (kN)	Wire speed (m/min)	Wire out / in (↓/↑)	Remarks
0:03	1929	—	—	—	—	作業開始
0:10	1926	—	—	—	—	PC吊りエイ
0:11	1928	—	—	—	—	注水完了
0:14	1930	—	3.6	—	—	PC直立
0:16	1934	—	3.4	—	—	PL吊りエイ
0:19	1935	—	4.2	—	—	PL取付け完了
0:21	1935	—	4.2	—	—	安全ピン解放
0:22	1936	0	3.9	—	—	ゼロ調
0:25	1940	50	4.1	—	—	WO50 TP取り付け
0:28	1938	50	4.5	~30	~↓	TP取り付け完了、巻き出し
0:41	1943	500	7.4	~60	↓	
0:50	1940	1000	11.6	60	↓	
0:59	1942	1500	14.8	60	↓	
1:04	1943	1870	15.9	—	—	一旦停止、3分間保持
1:07	1944	1870	15.8	20	↓	巻き出し
1:11:49	1944	1947	Min 7.88	20	↓—	着底、一旦停止、巻上げ
1:12:27	1943	1936	Max 29.95	20	↑	離座確認
1:19	1942	1500	16.7	60	↑	
1:28	1944	1000	12.8	60	↑	
1:41	1943	200	6.3	60	↑	
1:44	1950	50	5.5	—	—	TP水面
1:46	1948	50	5.1	—	—	TP取り外し
1:49	1947	0	4.8	—	—	天秤水面
1:51	1947	0	3.9	—	—	PL取外し
1:57	1951	—	3.9	—	—	PL揚収完了
1:59	1952	—	—	—	—	天秤取り外し完了
2:01	1949	—	—	—	—	PC水面
2:05	1950	—	—	—	—	PC揚収完了

※1t ≒ 9.8kN

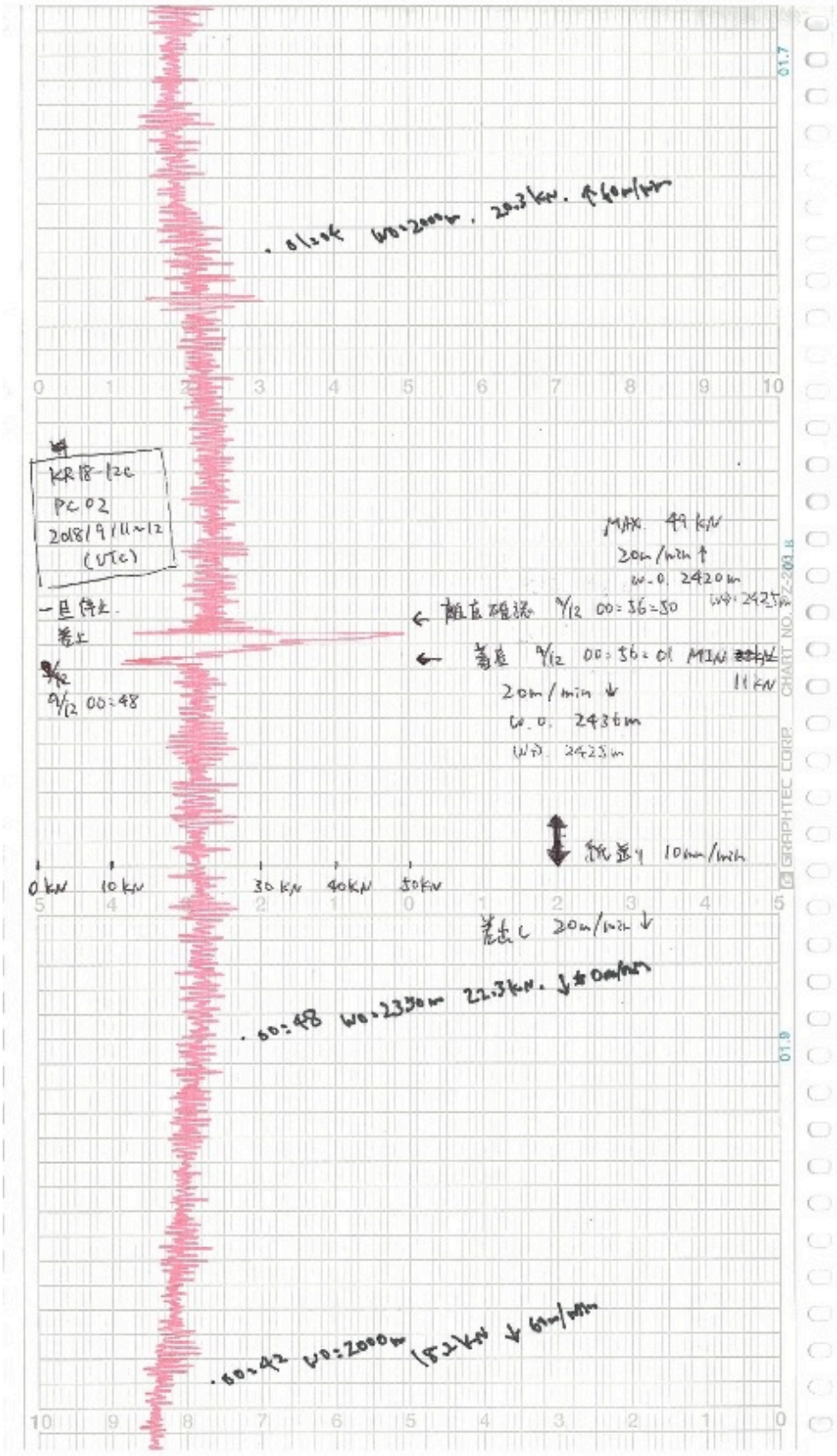
Winch Cable Tension record

Vertical axis: tension (kN)

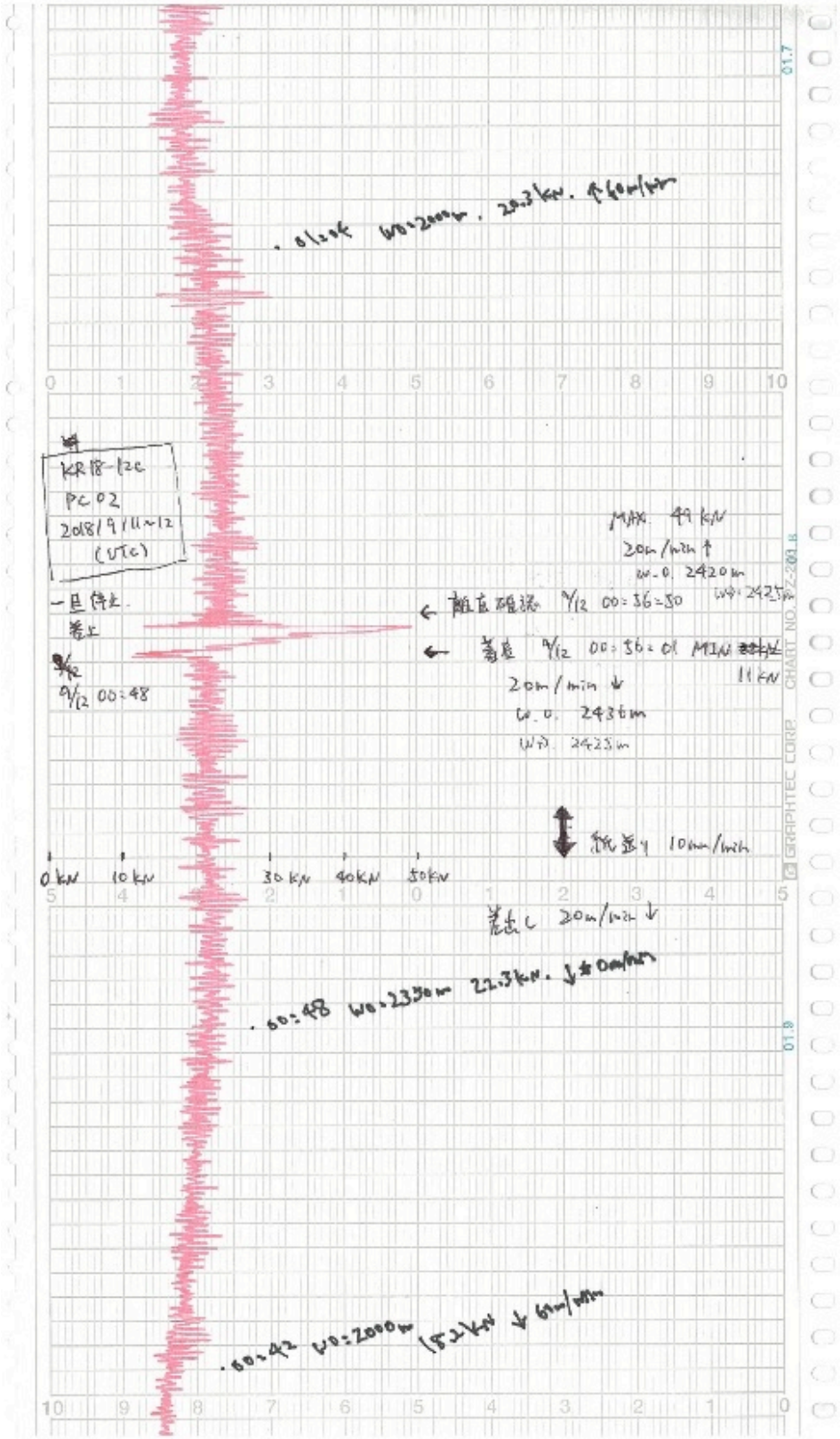
Horizontal axis: time

Annotation: Events

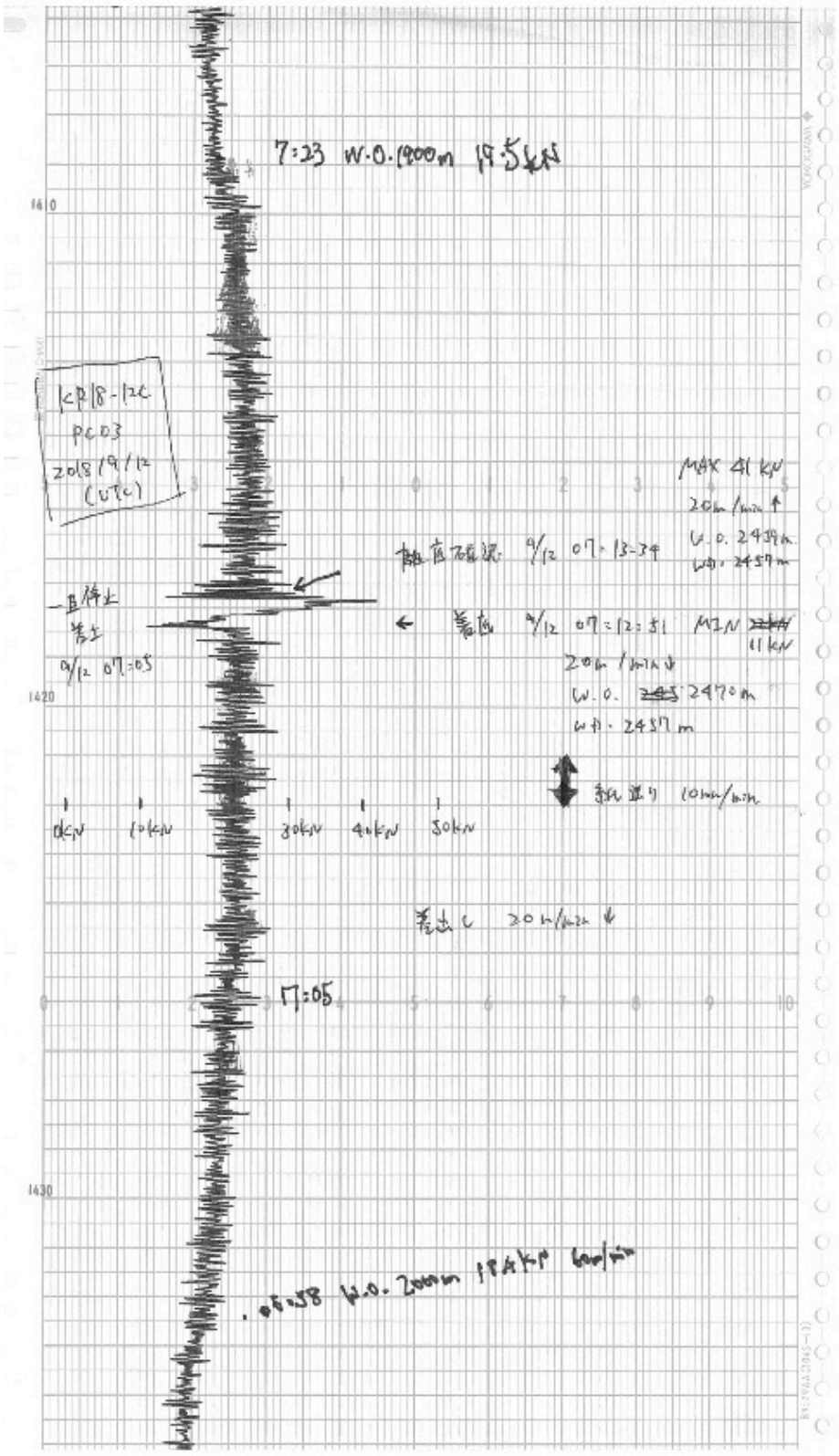
KR18-12C PC01 Cable Tension Record



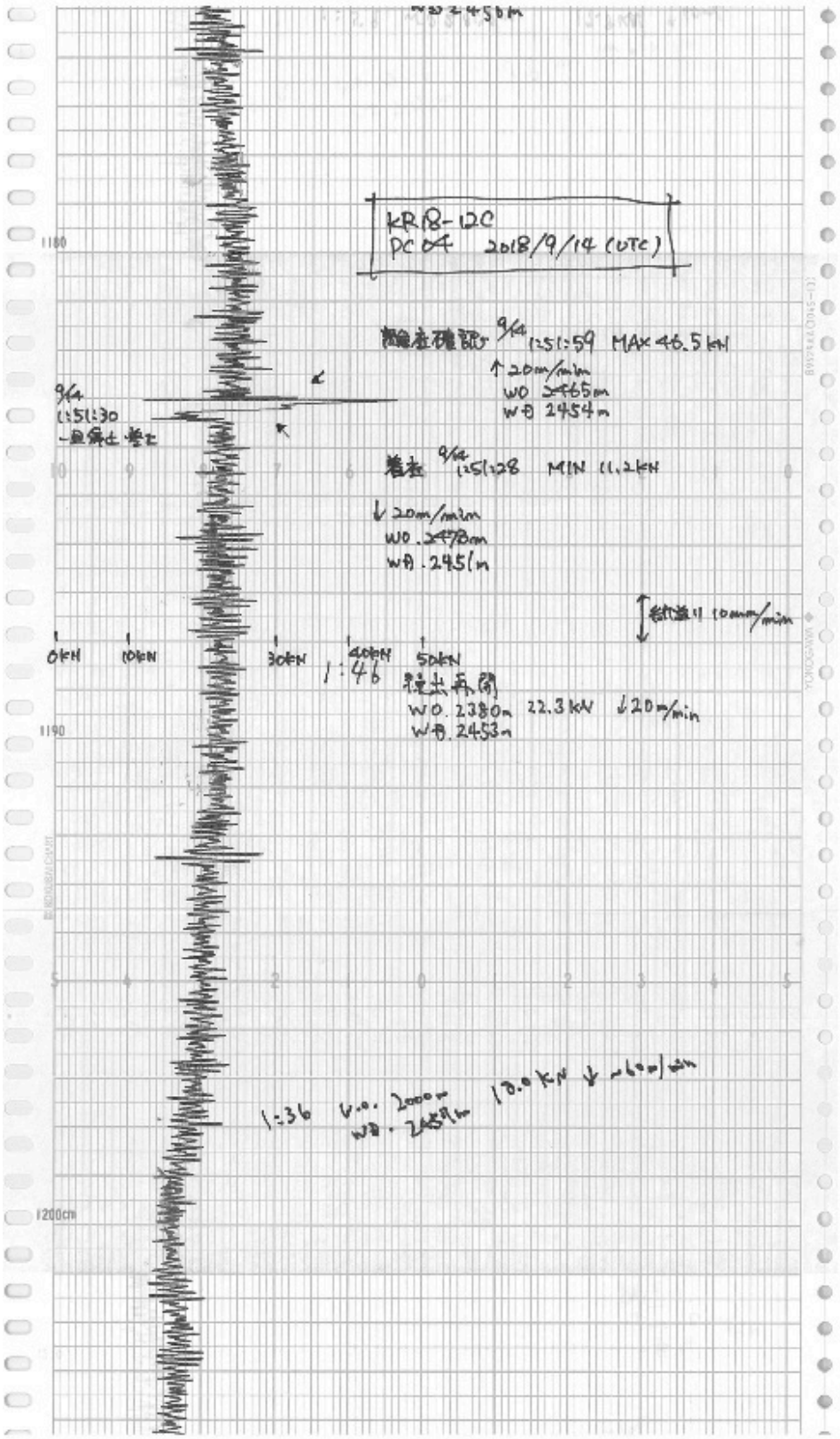
KR18-12C PC02 Cable Tension Record



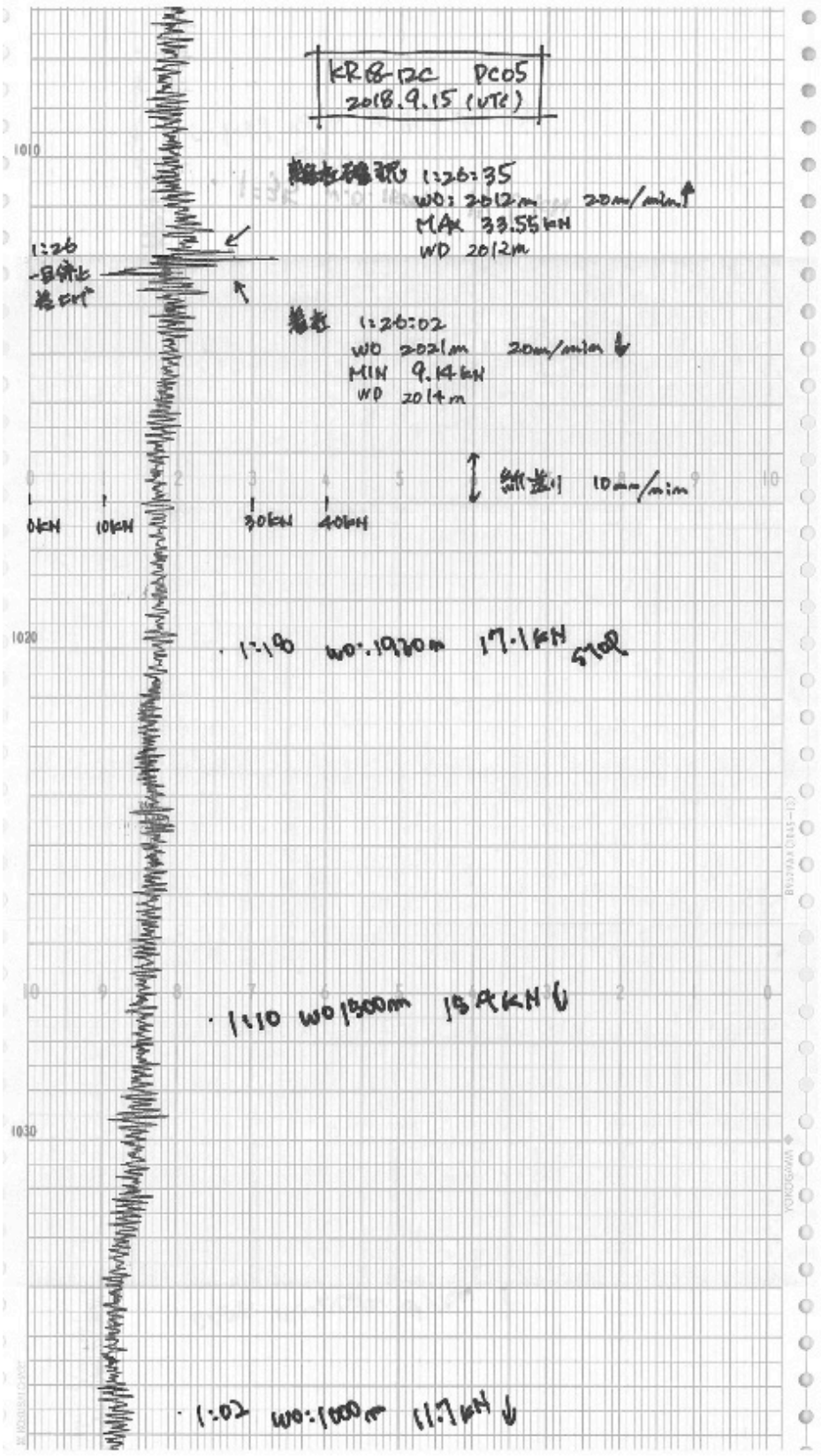
KR18-12C PC03 Cable Tension Record



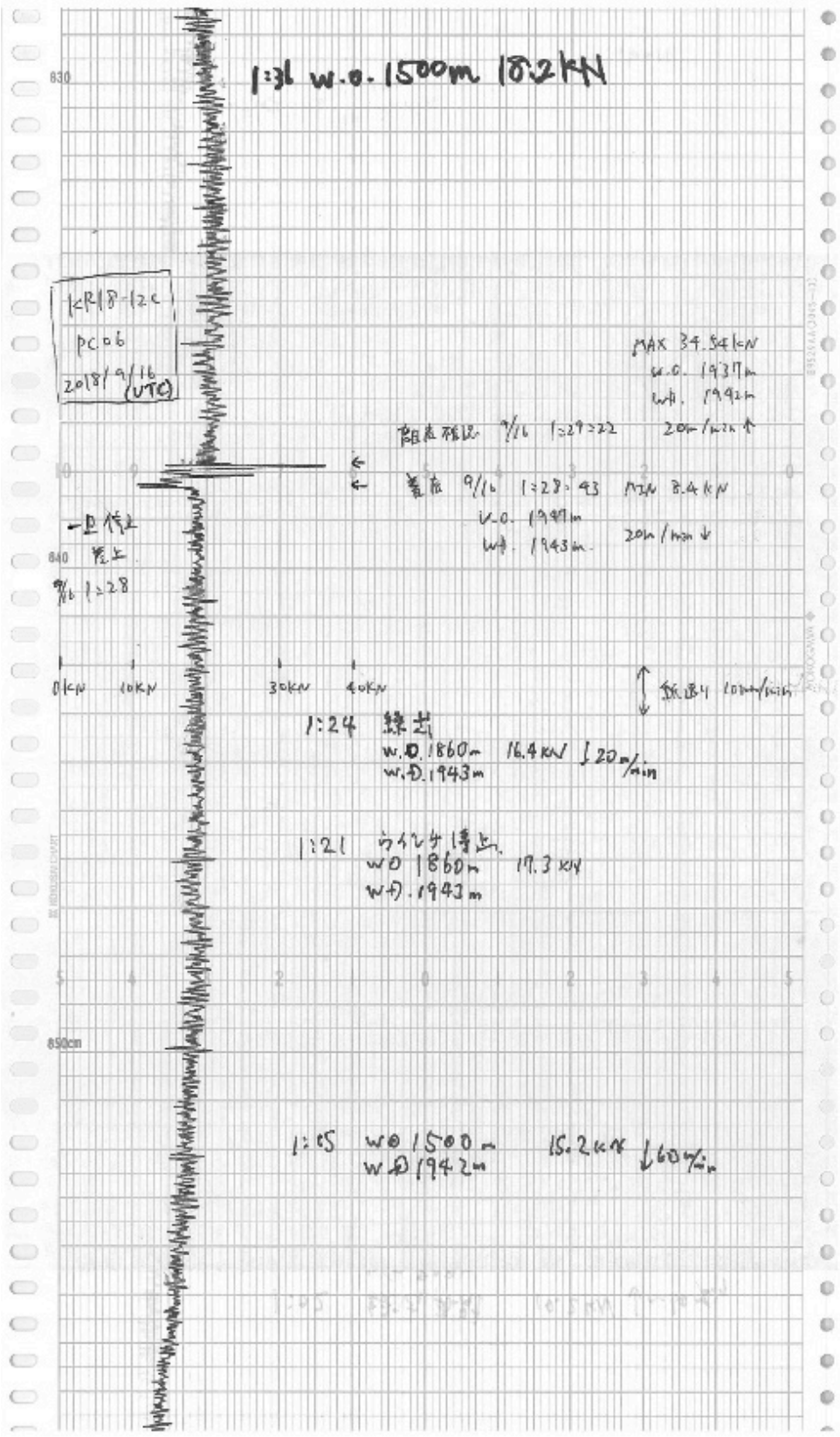
KR18-12C PC04 Cable Tension Record



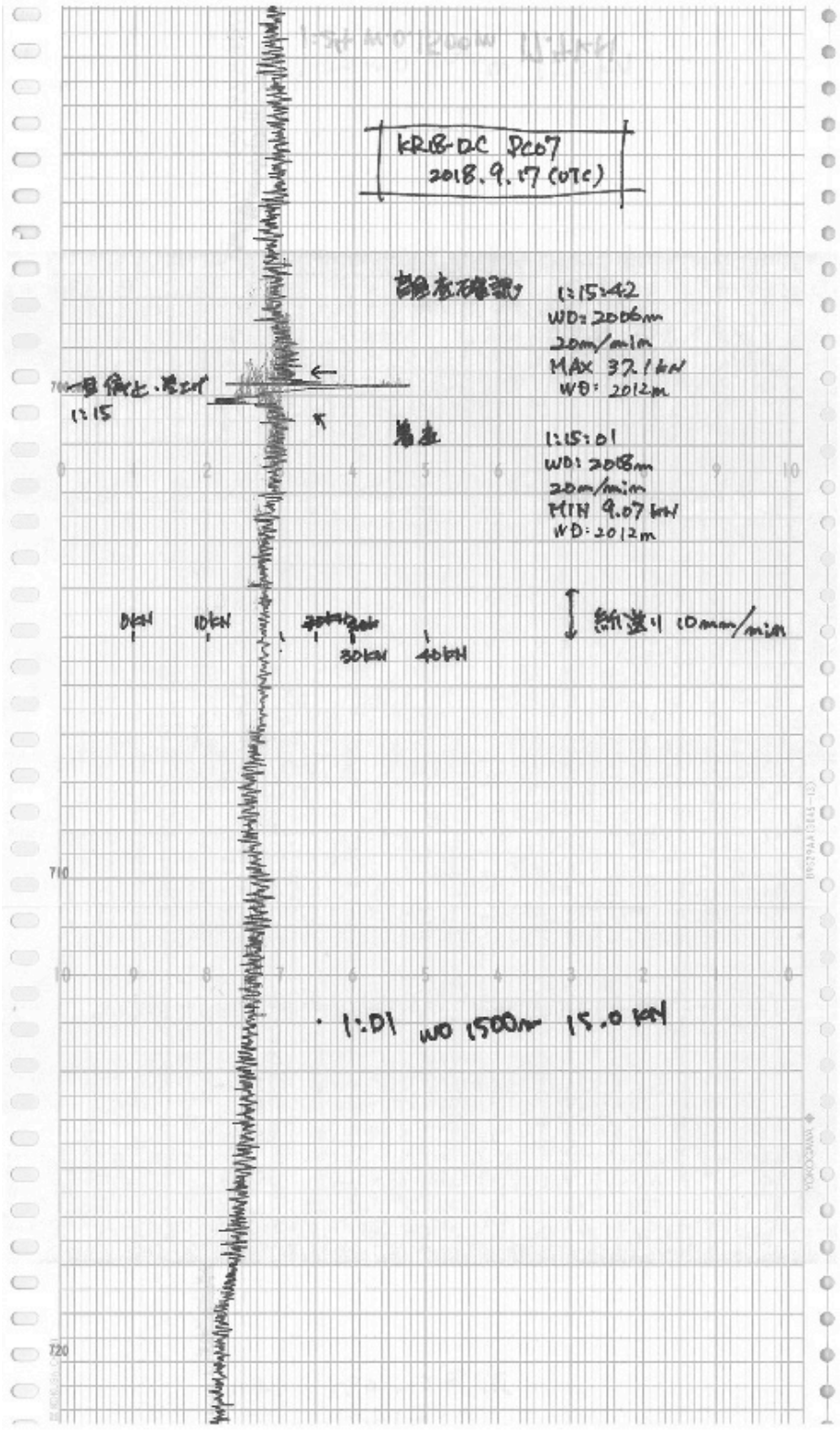
KR18-12C PC05 Cable Tension Record



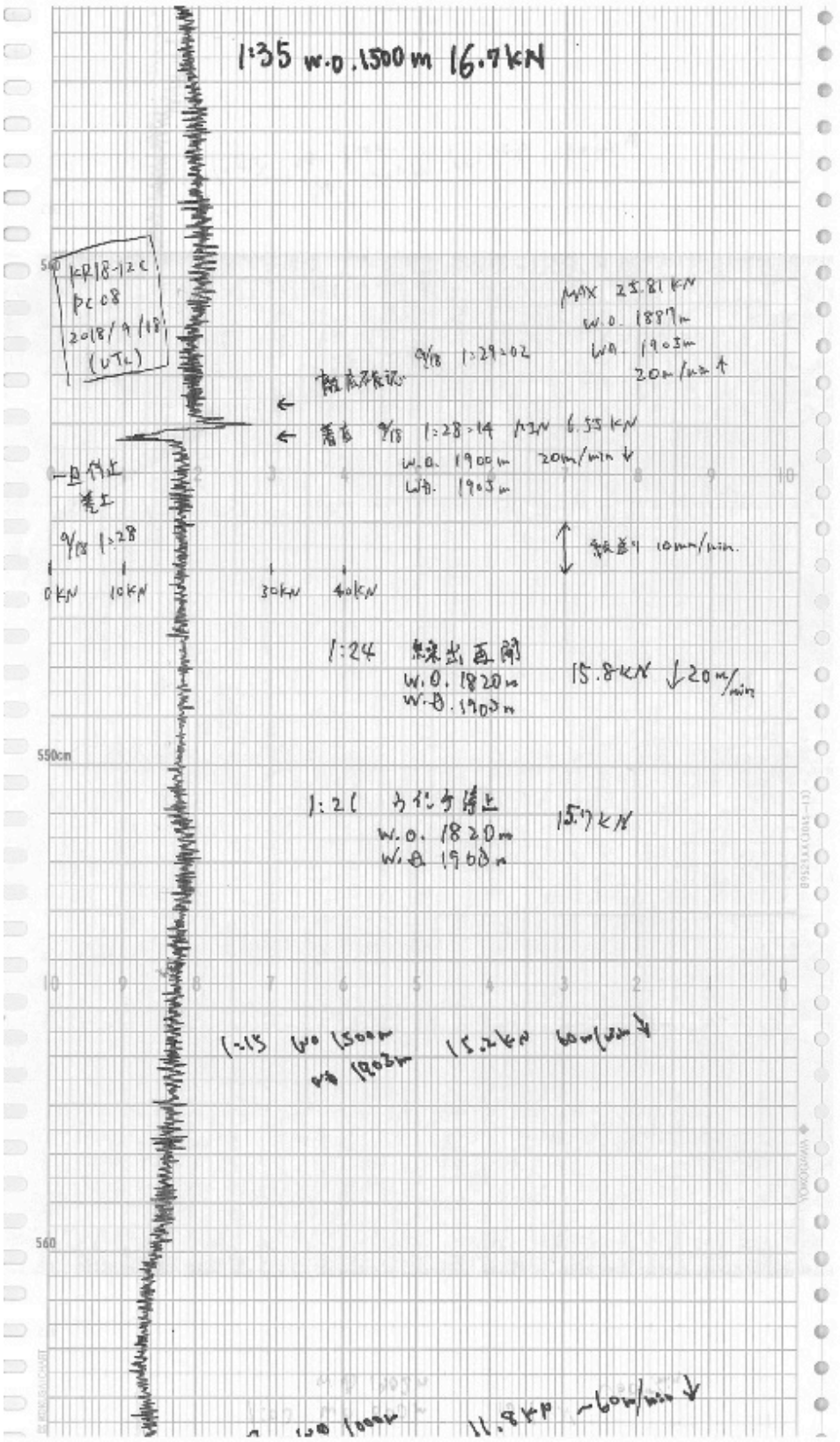
KR18-12C PC06 Cable Tension Record



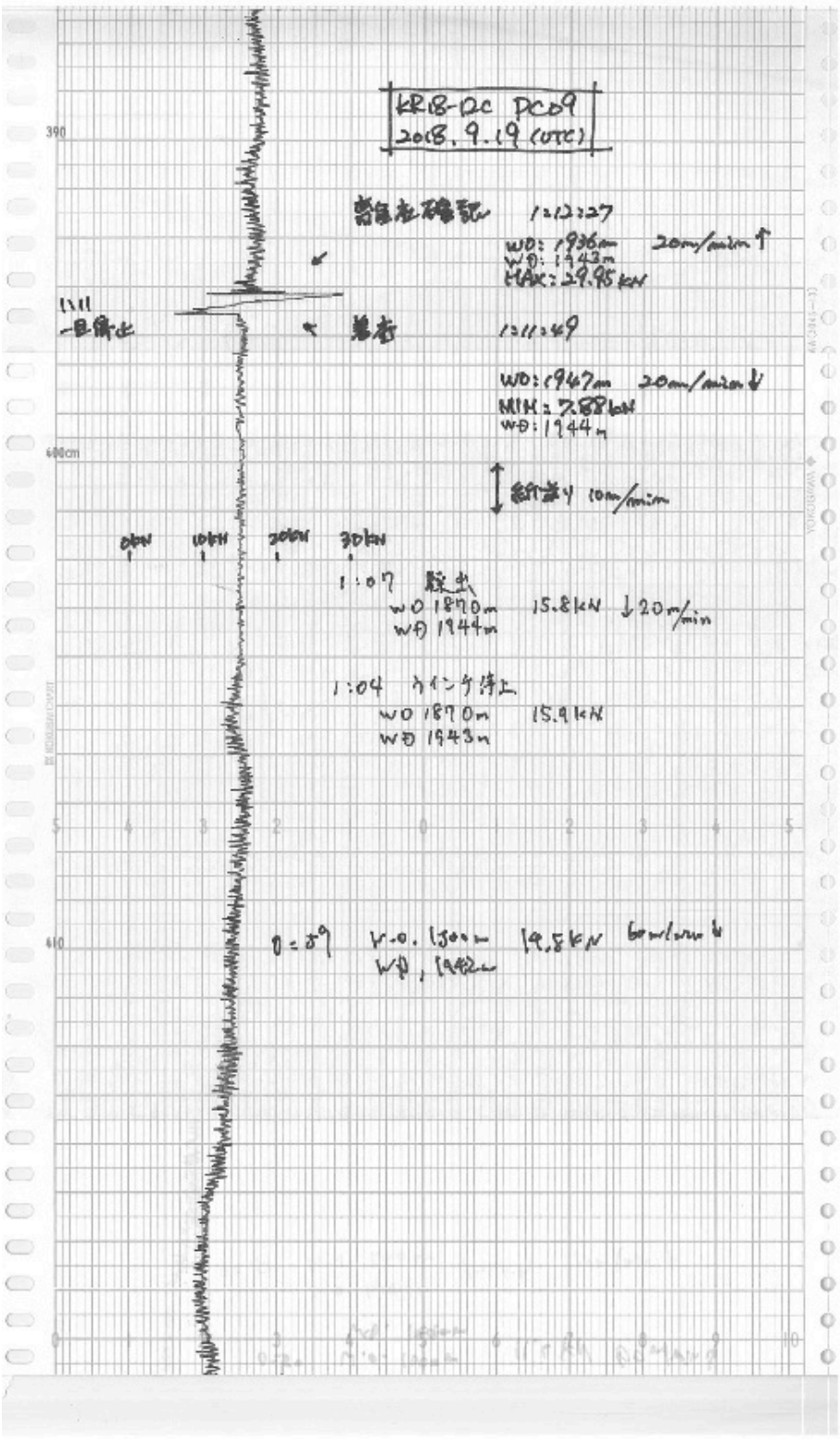
KR18-12C PC07 Cable Tension Record



KR18-12C PC08 Cable Tension Record

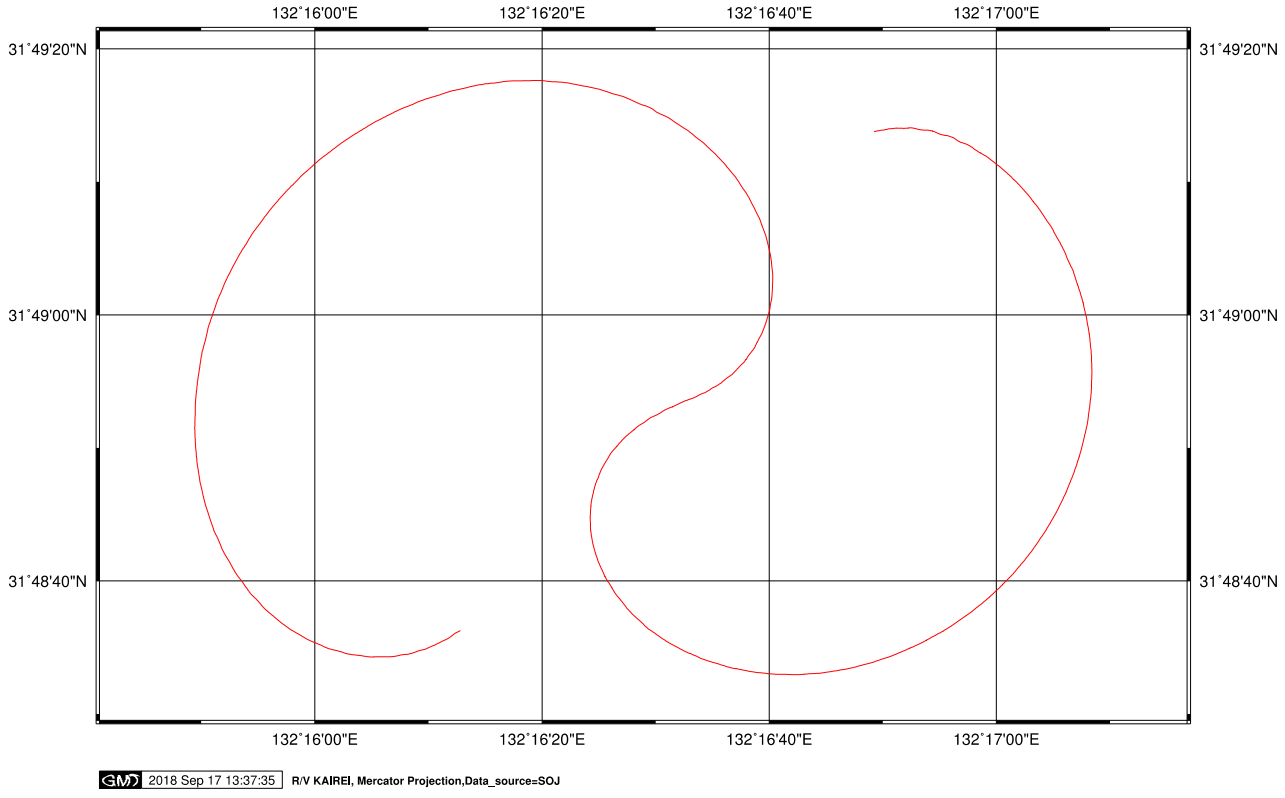


KR18-12C PC09 Cable Tension Record



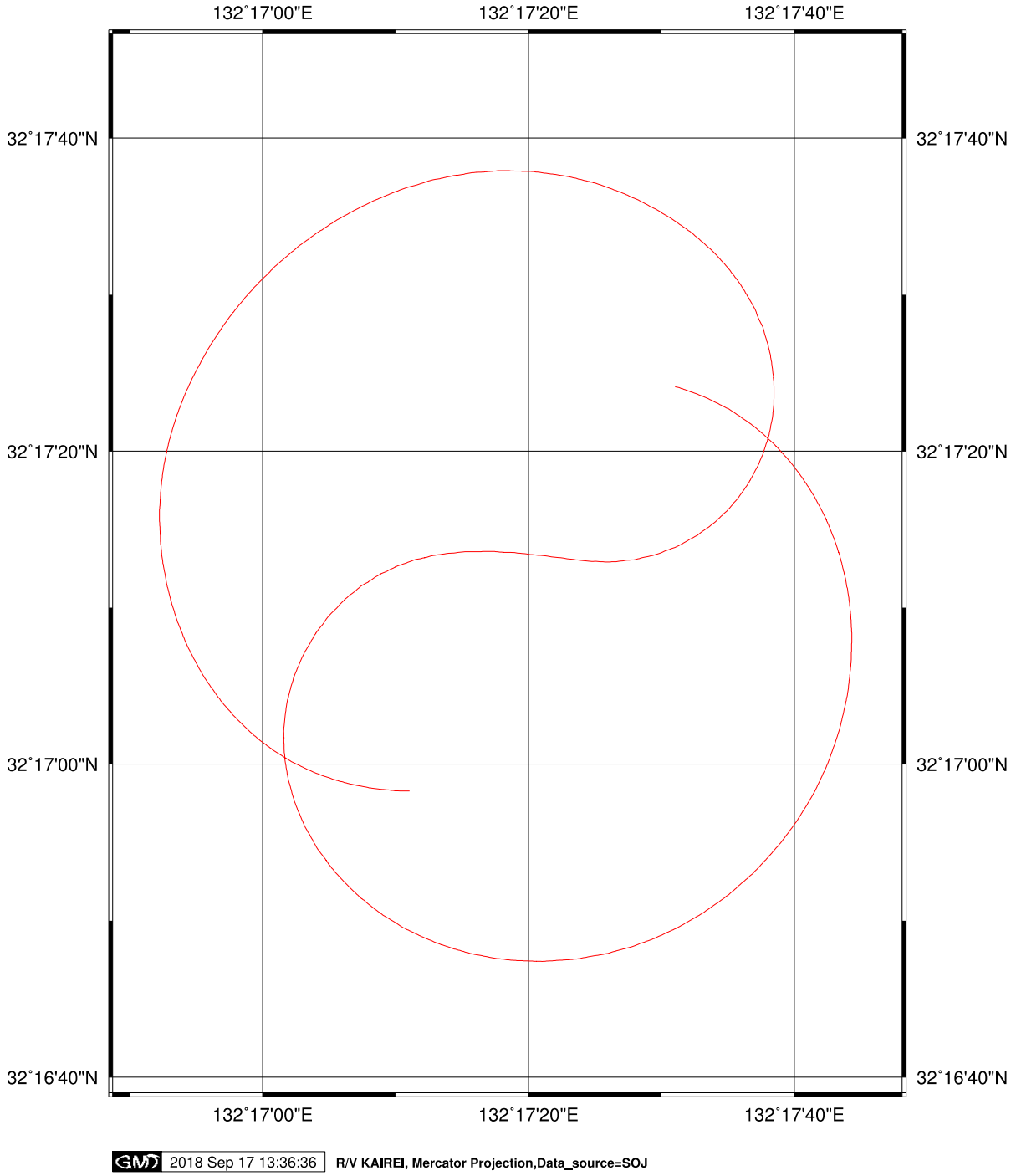
Track of figure 8 turns

20180917_0232–0253UTC



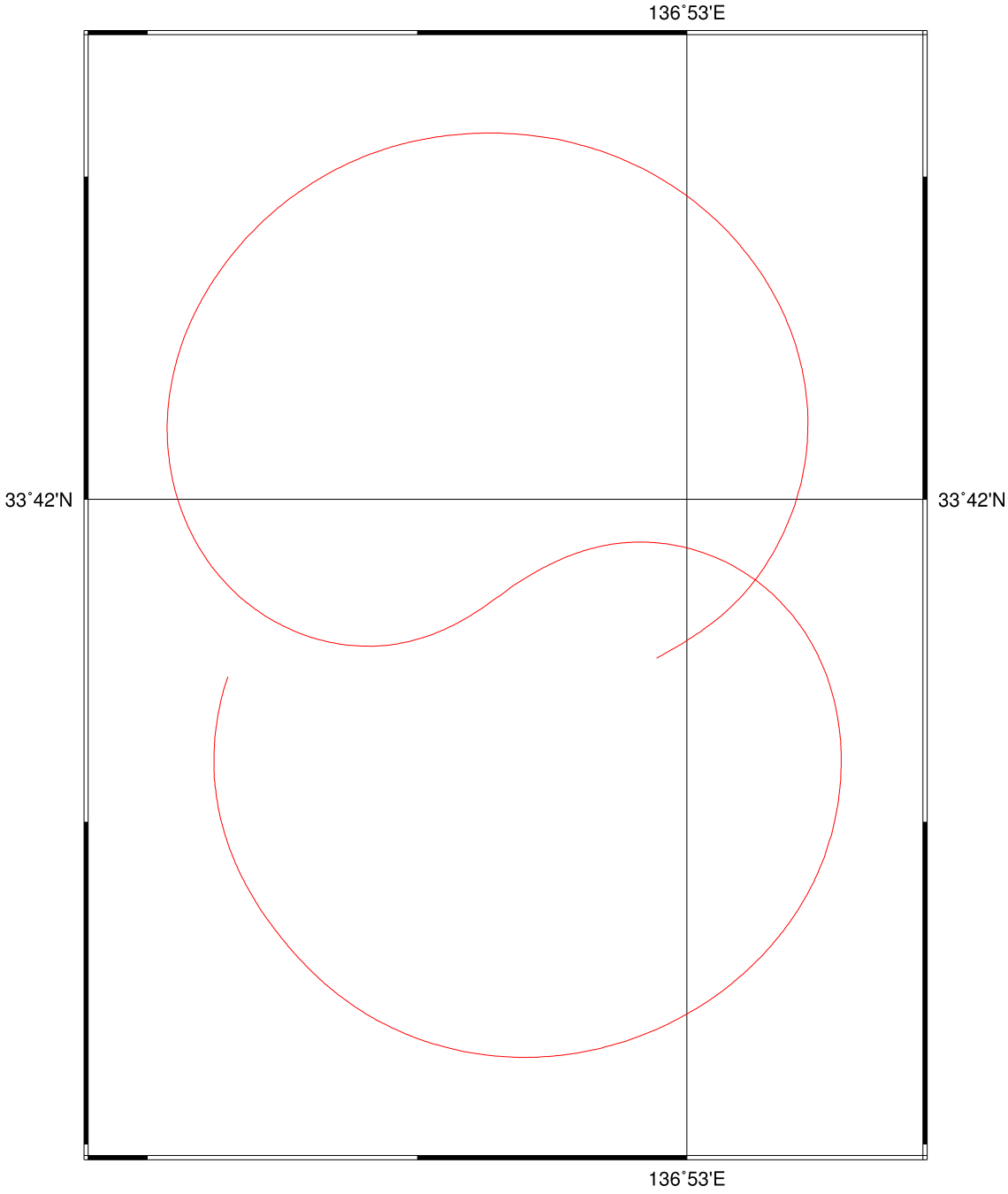
GMT 2018 Sep 17 13:37:35 R/V KAIREI, Mercator Projection,Data_source=SOJ

20180917_0934–0955UTC



GMT 2018 Sep 17 13:36:36 **R/V KAIREI, Mercator Projection,Data_source=SOJ**

201800919_1723–1743UTC



2018 Sep 20 00:11:41 **R/V KAIREI, Mercator Projection,Data_source=SOJ**