

Photo for Seabed Level Survey I  
(Including Record of Ech Sounding)

Surveyed on : 13th and 14th May 1989



Position at finished time was shifted  
Eastward about 10m from Start Time.

LOWLAND 19 RJ

13.44

Course

Co. 4300

(st. J)

FINISHED

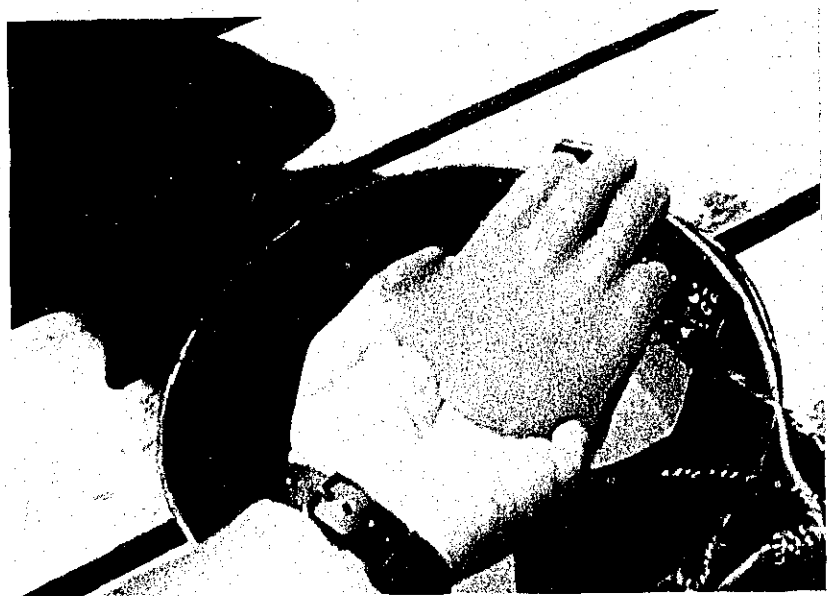
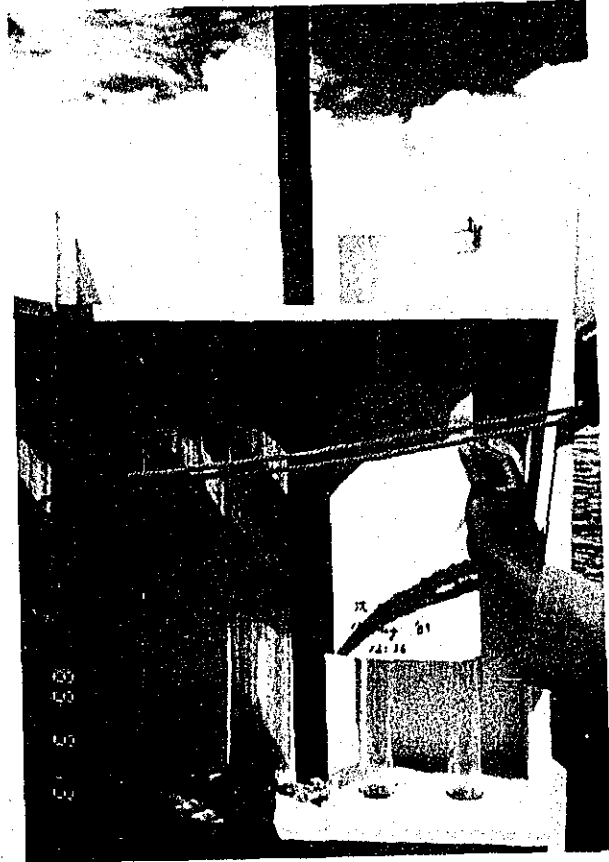
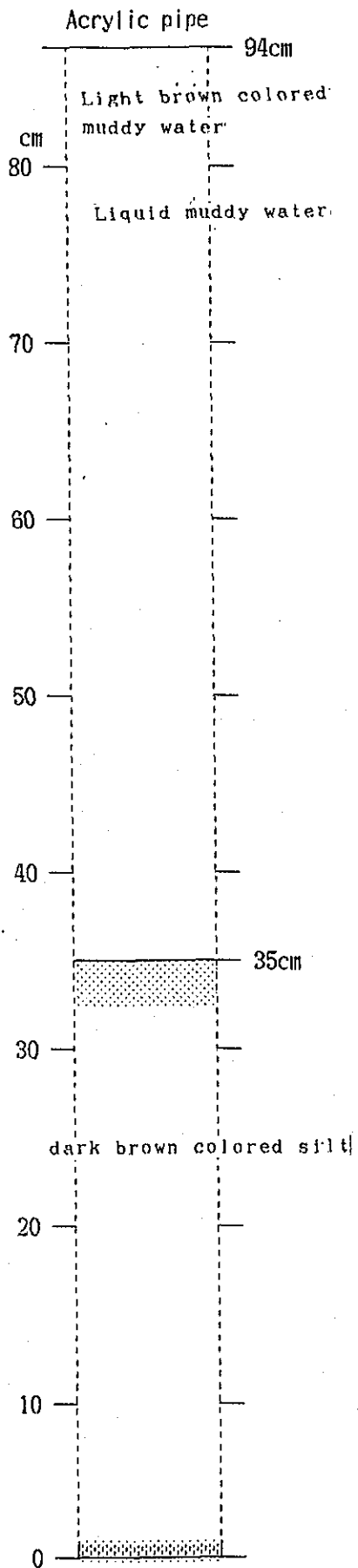
Seabed obtained by 33kHz (to be considered)

210kHz 6.0m

Seabed obtained by

Lead (Depth: 8.3m)

(8.3m)



Seabed obtained by 210kHz (Depth: 6.0m)

250191124

Seabed obtained by lead (Depth: 7.0m)

129

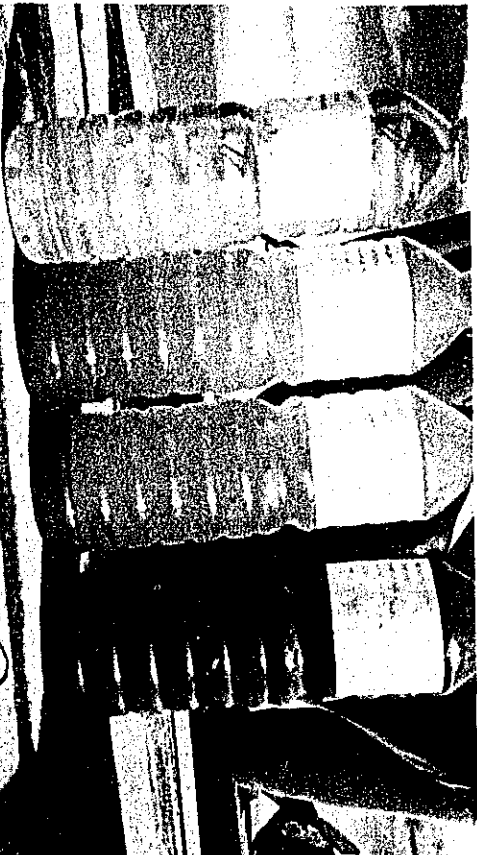
- ① Water sampling layer - 5.5m
- ② Water sampling layer - 6.0m
- ③ Water sampling layer - 6.5m
- ④ Water sampling layer - 7.0m

3KC

Water Sample

Co 4329

12.5m < bed depth 7m



- ① - 5.5m
  - ② - 6.0m
  - ③ - 6.5m
  - ④ - 7.0m
- Sample in bottle every layer

Chart Speed 125 Cm

129

201

13th May 1989

13 May 1989

Seibel level

Ed. soundly clast

GA 500 level

GA 5

4200

(Co. 4200)

(Peak 2-1-1)

St. 51.4300

D-20

X

1

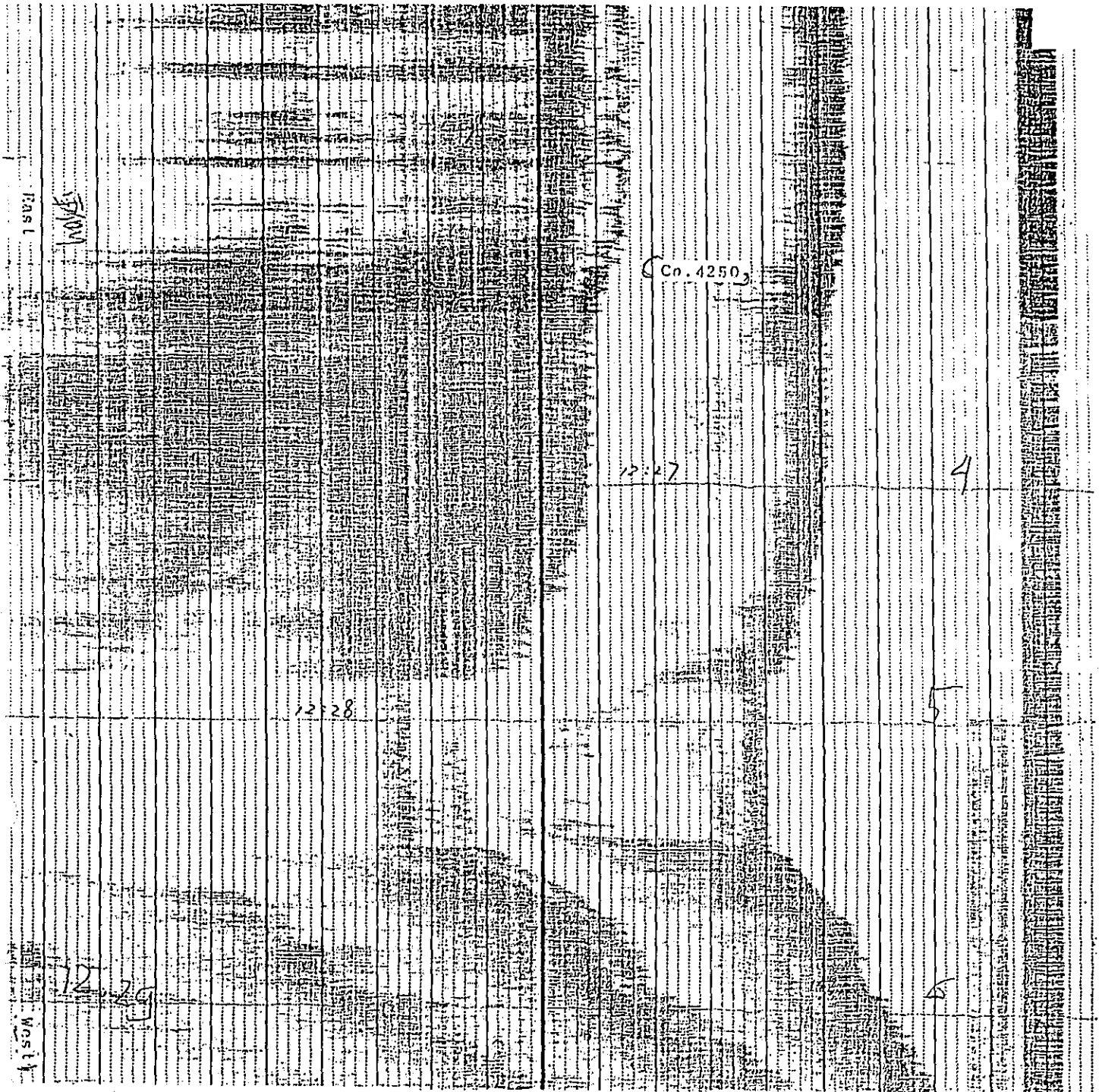
X

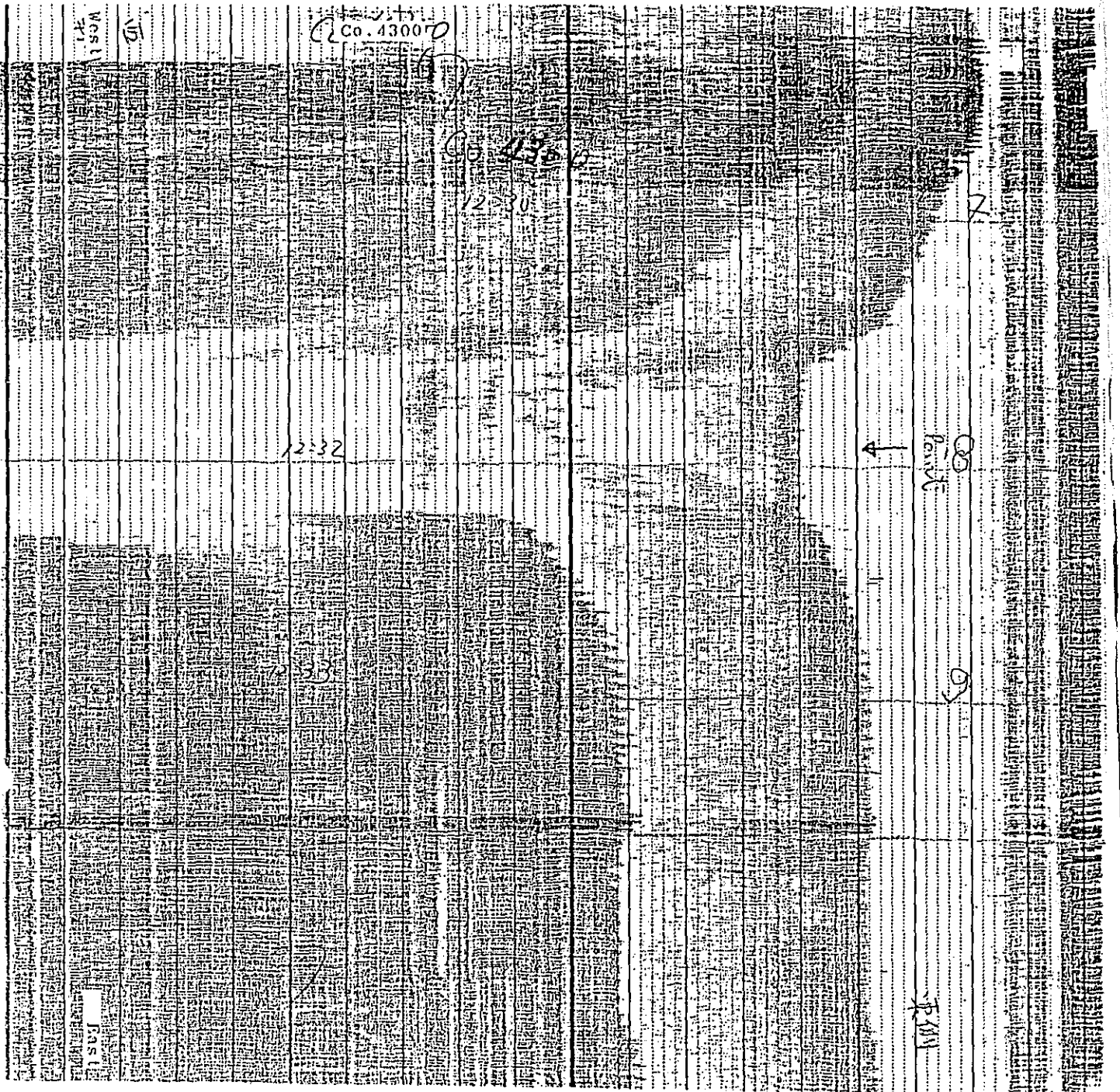
12-26

X

12-27

12-28





127

127

St.7000 (In Access Channel)



STA 8

Course 7000

24

7000 Co

Co. 7000

14-10

14-14

7050 Co

24

13th May 1989 SSI 7000

POST

C Co. 7050

14-14

14-15

14-17

SB.1-17

Co. 7100

Co. 7100

14-19

14-20

EOL 7100

14-20

Chart Speed 500 (100)

Point B



Seabed obtained by 210kHz (Depth: 5.8m)

St. B

SB 0181A7763

(1. Sampling Layer: -5.5m

2. Sampling Layer: -6.0m

3. Sampling Layer: -6.5m

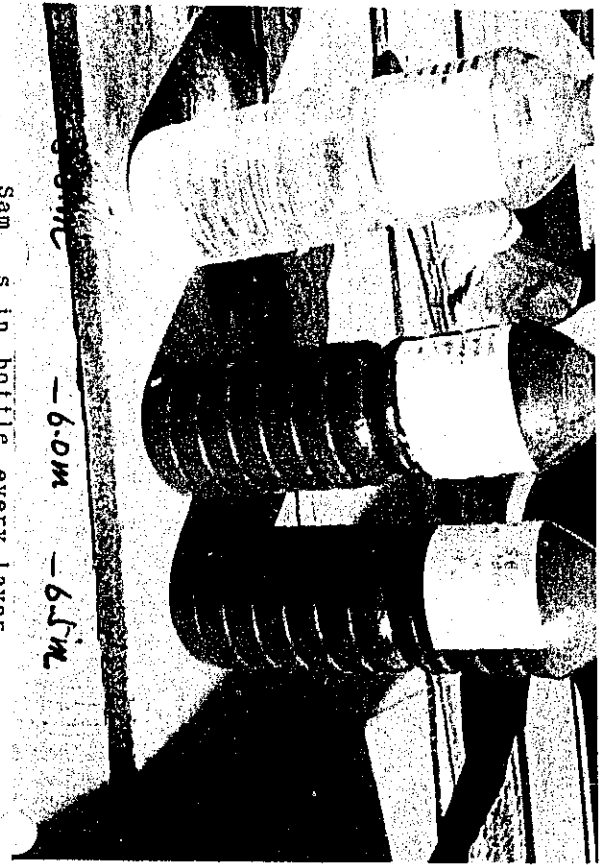
Seabed obtained by lead (depth: 9.5m)

Seabed obtained by 33kHz

Co. Co. 7085

Handwritten notes and symbols, including '14.32' and '14.32'.

14.32



Sam. s in bottle every layer

6.0m 6.5m

SB.1-19

132

132

15.08

Co. 7000  
STA 7000 < B

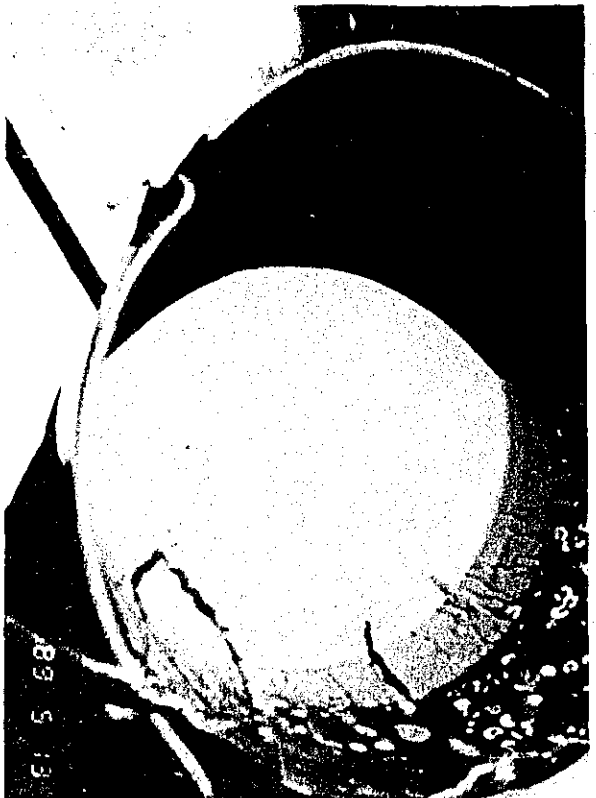
Seabed obtained by 33KHz (Depth: 8.3m)

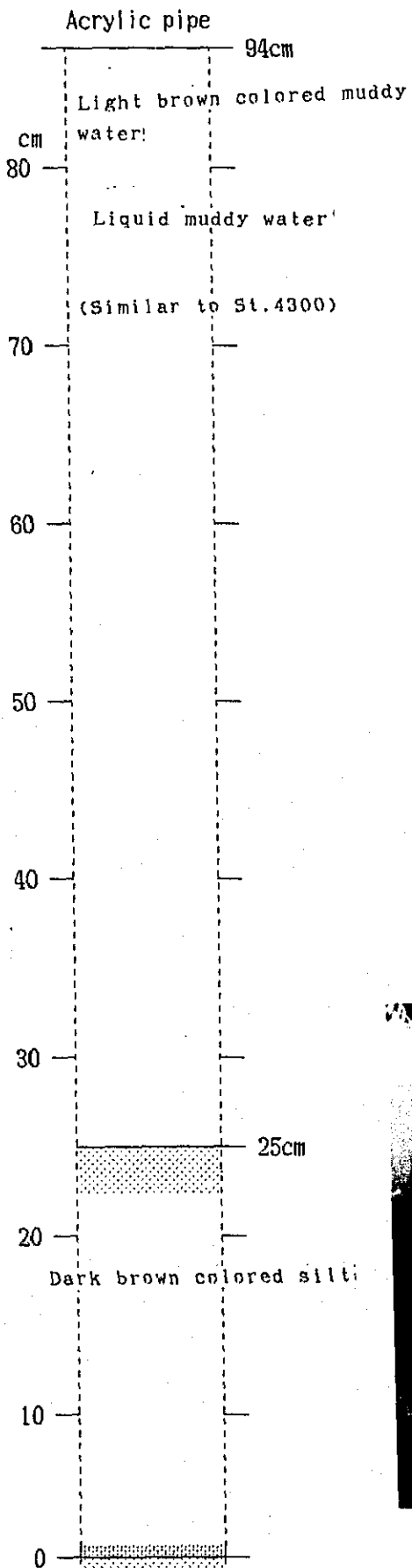
Seabed obtained by 210KHz (Depth: 5.7m)

POSTED

SB.1-20

fluid mud in container





St.10000(In Access Channel)

13 MAY 1989

13th MAY 1989

STA 10000 (I)

Co. 10.050

Co. 10000

Sgt. 10000

15-31

15-32

15-33

Co. 9950

Co. 9950

15-35

15-36

15-36

Point 1



East

CO

Co. 9900

15-90

75-72

15-63

West

SB. 1-25

Leak line depth < 8.2 m >  
SP I < 10.000 > SP A

15:54 Co. 9966

Seabed obtained by lead (Depth: 8.2m)

SB. 1-26

Point 1

15-0187612H2

Seabed obtained by 210kHz (Depth: 6.2m)

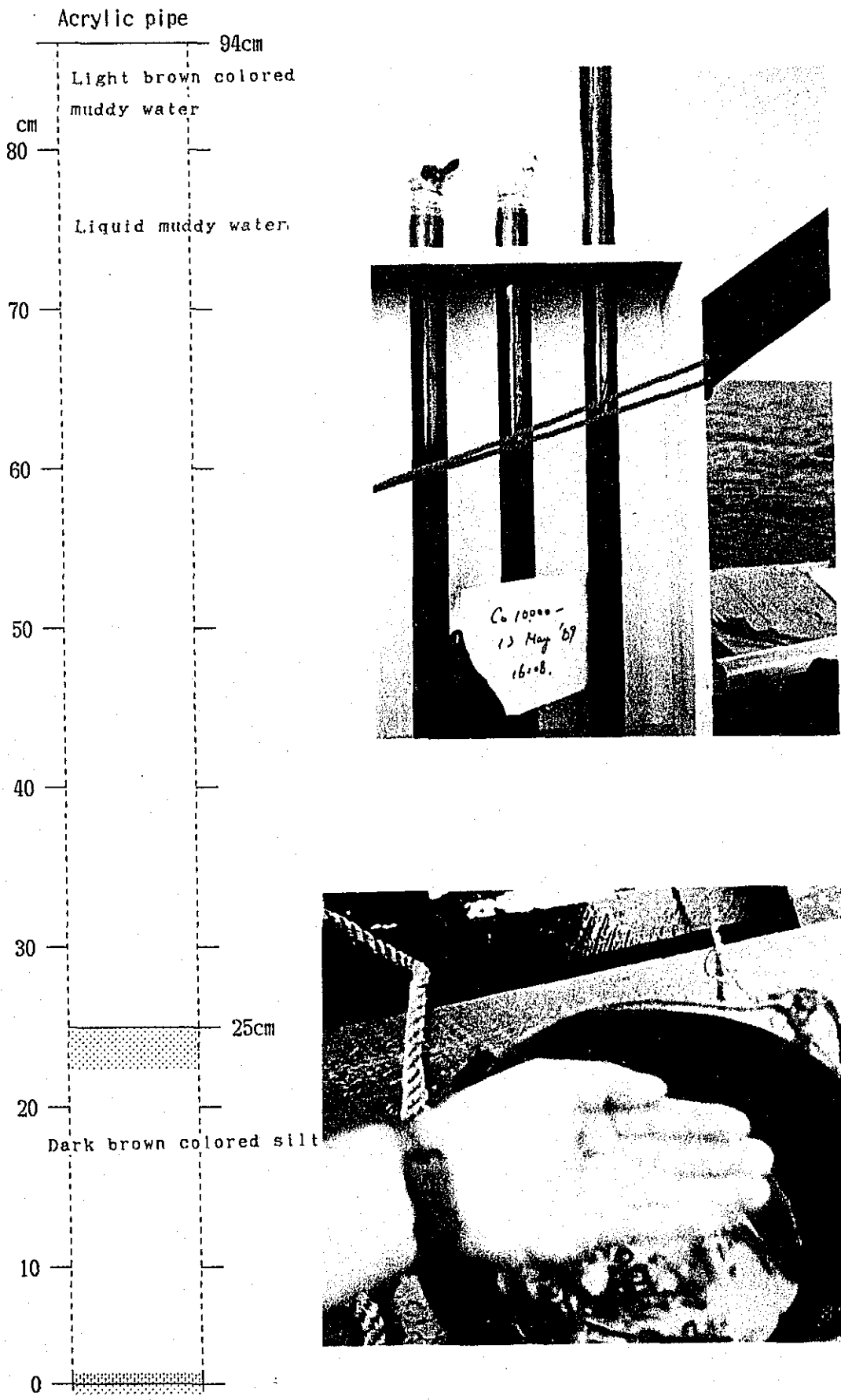
Seabed obtained by lead (Depth: 8.2m)

(2.2m)

Seabed obtained by 210KHz (Depth: 6.0m)

16 17  
St. 10000 Finished

STA 10 000 FINISHED



St.J3000 (In Access Channel)

2100/5

Co. Co. 12995

STARTED  
10:57

REF 0 10 11 12 13  
A point A

(9.5m)

Seabed obtained by lead (Depth: 7.5m)

Seabed obtained by 210kHz (Depth: 7.1m)

West

Co. 13000

10:01

10:02

10:03

West

Co. 13050

Co. 13050

10:05

10:06

10:06

West

West

St. 13000

14th May 1989

1

2

3

4

5

6

SB: 1-32

West

Co. 13100

10-09

10-09

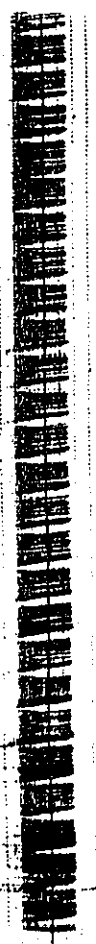
10-10

From spot 1507  
Cherry spot 1507

2.1 mi/h

SB: 1-33

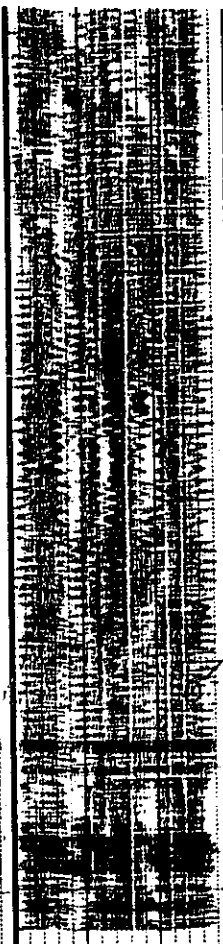




Seabed obtained by 210KHz (Depth: 7.2m)

Sampling layer: -6.0m Seabed obtained by Lead (depth: 7.5m)

Sampling layer: -6.5m  
Sampling layer: -7.0m

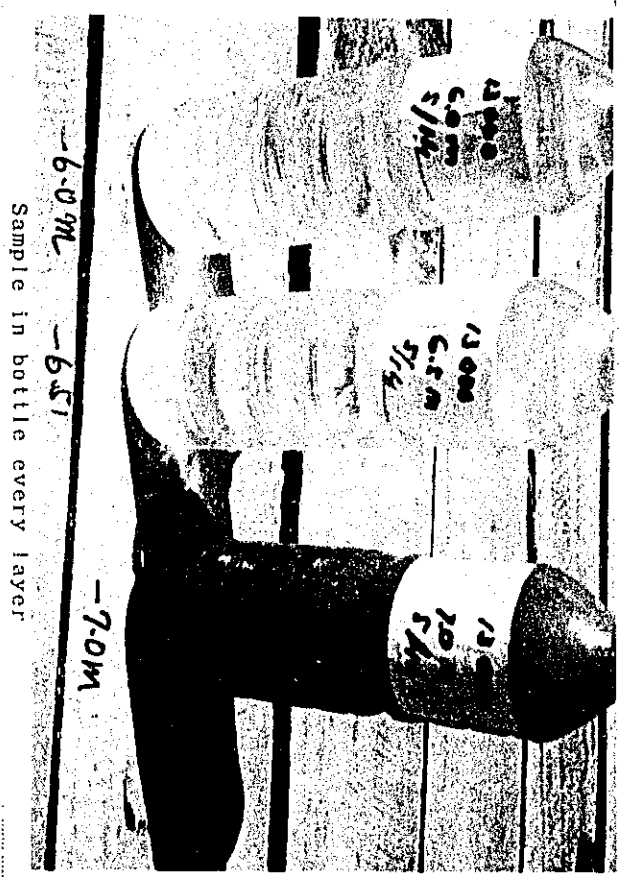


10. (E)

10:47

F. (VLS) (E)

STA A  
Co. 13000  
1300

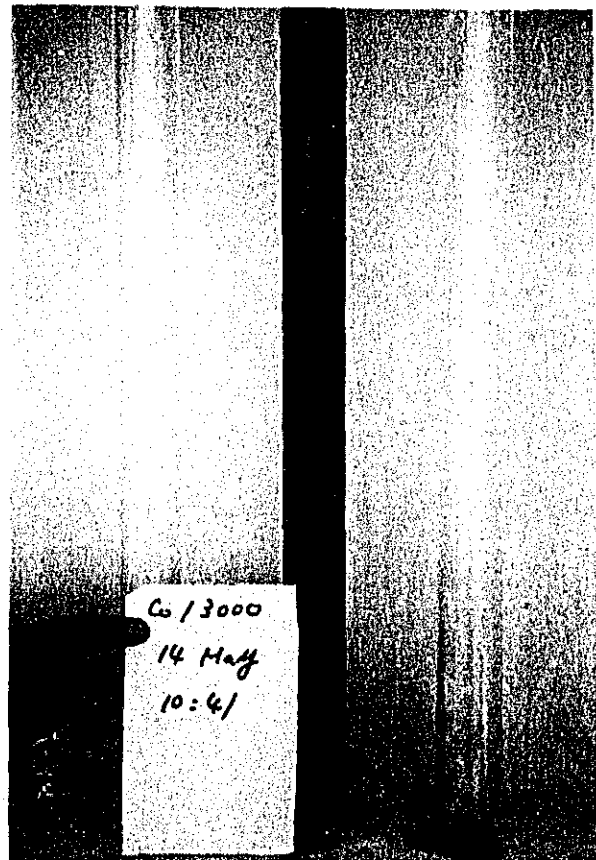
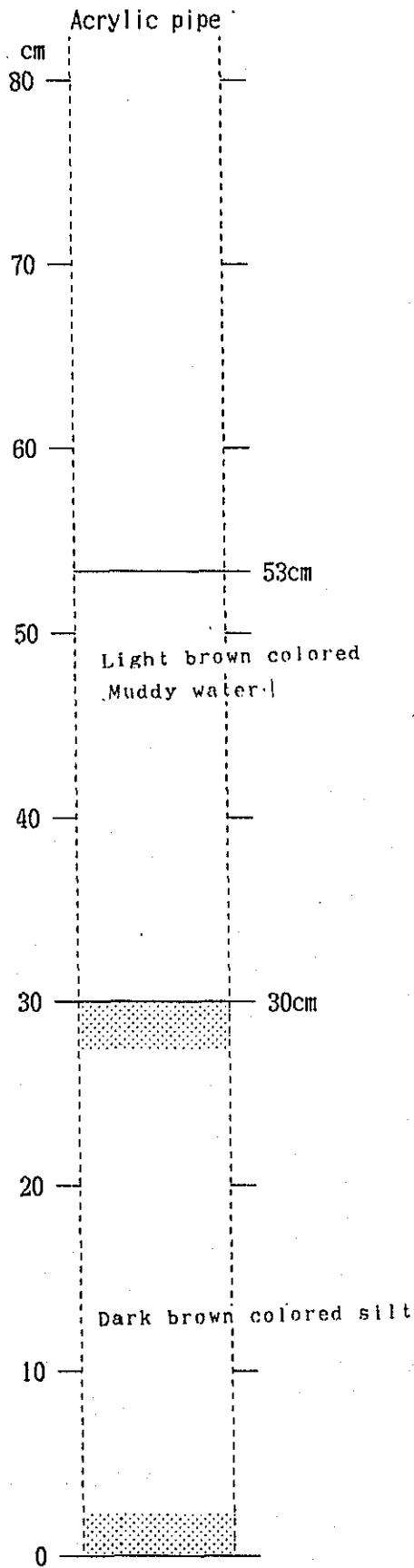


St.13000

(near St.A)

Date : 14th May 1989,

Sampling time : 10:42



St.14800(In Access Channel)

14th May 1989

Co. 14800  
St. 14800  
St. 14800

11-09

11-09

11-10

14800

WCSL

WCSL

West

4 PSD

Co. 14850

Co. 14850

11-18

11-19

11-20

East

4 PSD

Co. 14900

Co. 14900

11-21

11-22

149

SB-1-39

Co. 14900

Co. 14900

11-21 Co. 14900

11-22

11-23

Part of ...

Co. 14800

Co. 14800

150

SB. 1-40

150

Co 14800 -

Co 14850 Start

11-31

Co. 14800

14800-14850

Seabed obtained by 210KHz (Depth: 9.2m)

(9.2m)

Seabed obtained by 210KHz (Depth: 9.0m)

(9.0m)

Sampling layer: -8.0m

Sampling layer: -8.5m

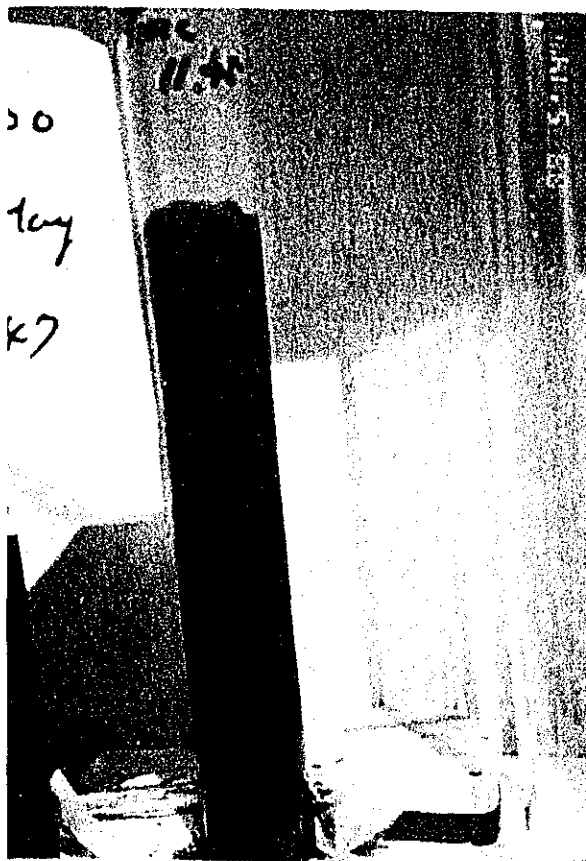
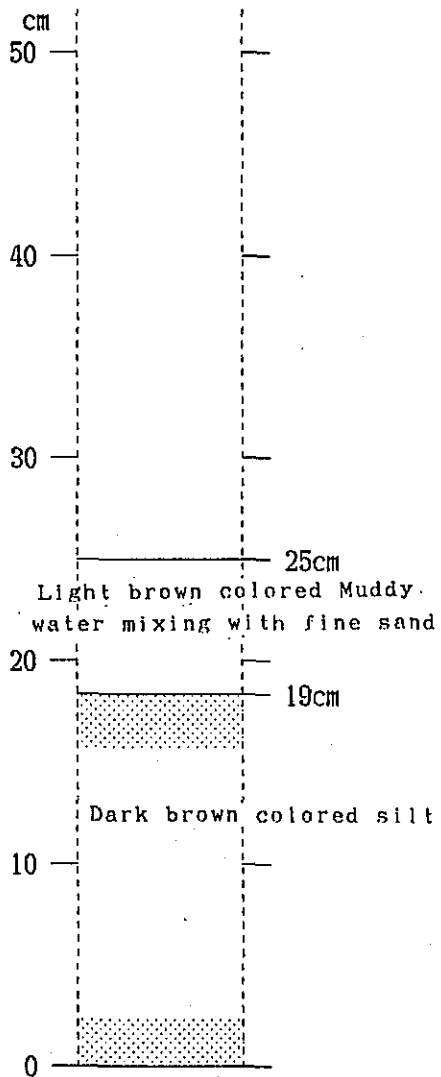
Sampling layer: -9.0m



Co 14850

FINISHED

Acrylic pipe



Sample in tube



St.1 (West side of Access Channel)

15-11

ST 1170.1

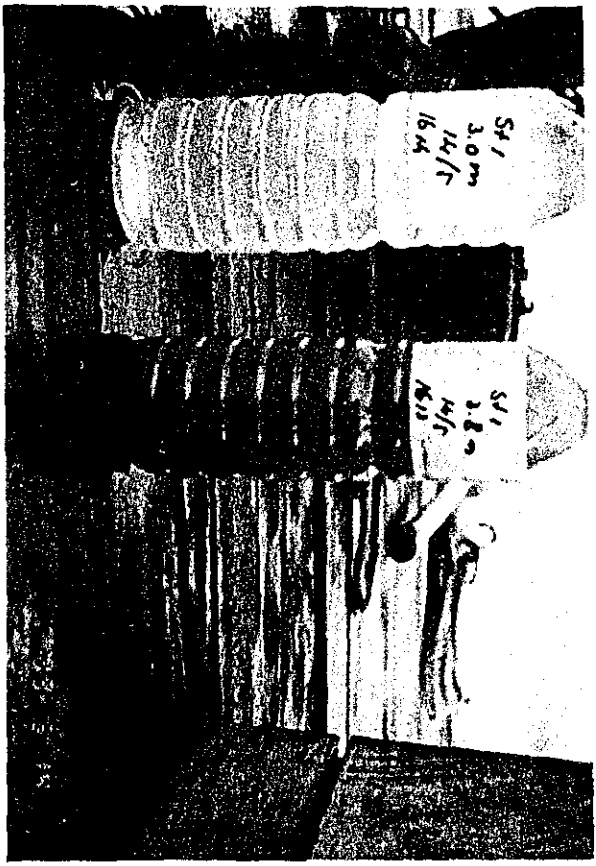
AK 10

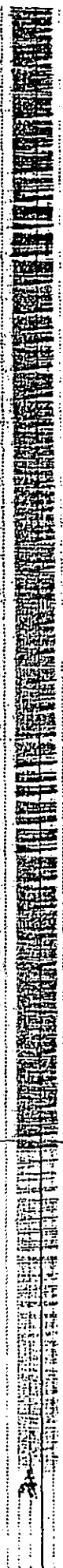
ST 1

Seabed obtained by 210KHz (Depth: 3.7m)  
Seabed obtained by lead (Depth: 3.8m)

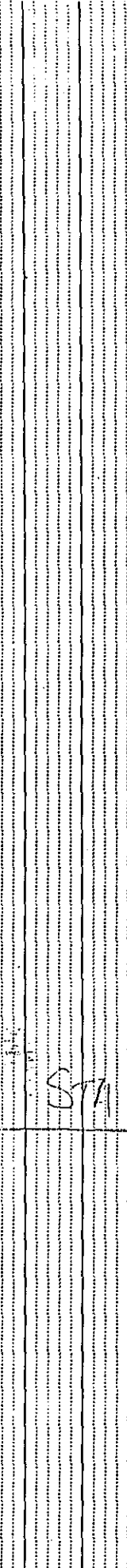
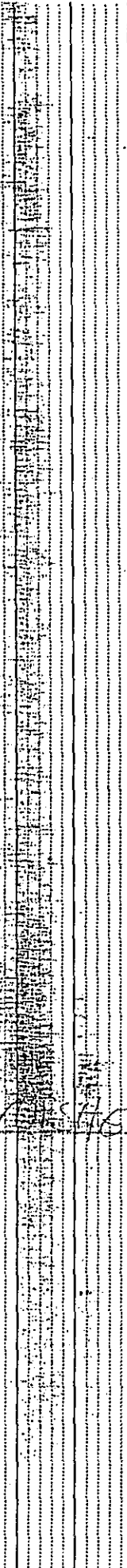
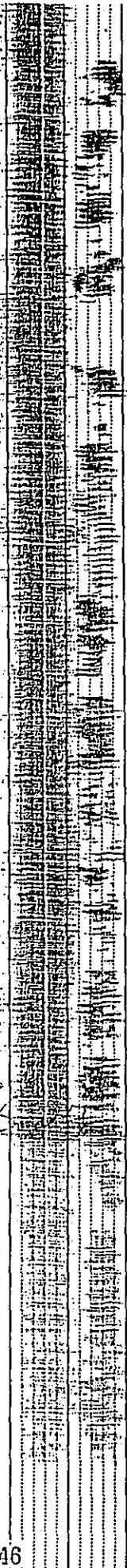
St. 1 14th May 1989

Sampling layer: 3.0m  
Sampling layer: -3.8m





Seabed obtained by 210KHz (Depth: 3.7m)  
Seabed obtained by Lead (Depth: 3.8m)

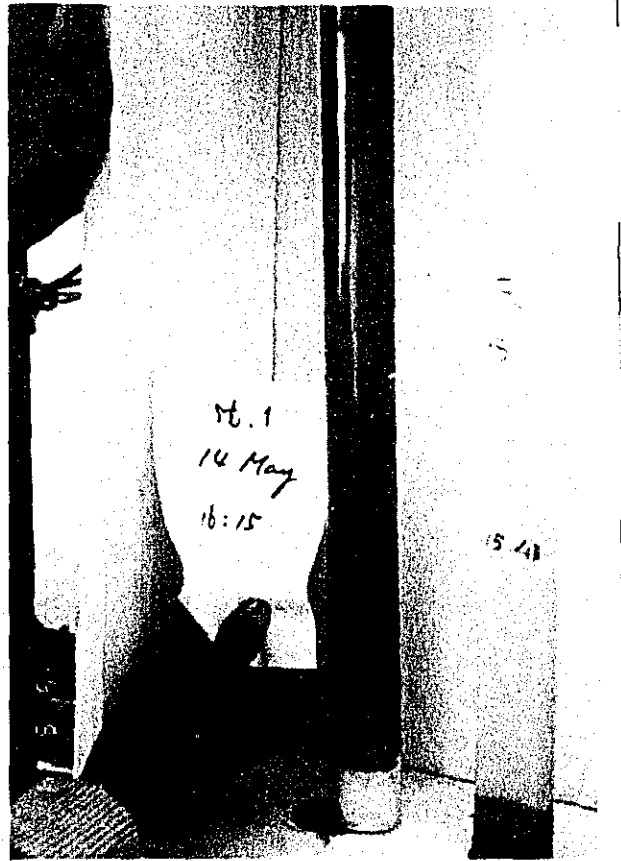
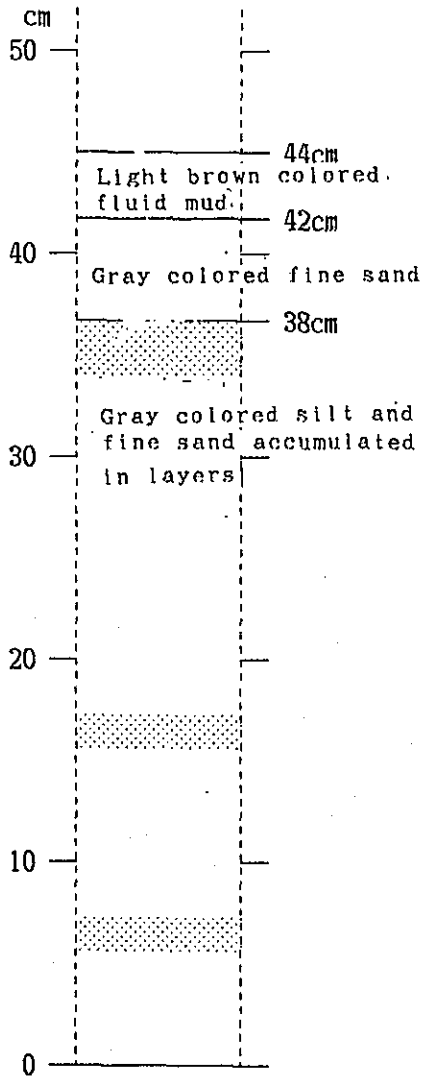


STN 1 F117562

St.1

Date : 14th May 1989 Sampling time : 16:15

Acrylic pipe



St.3(West side of Access Channel)

15-35

ST. 3 FINISHED

ST. 3

Seabed obtained by lead (Depth: 2.5m)

Seabed obtained by 210KHz (Depth: 2.5m)

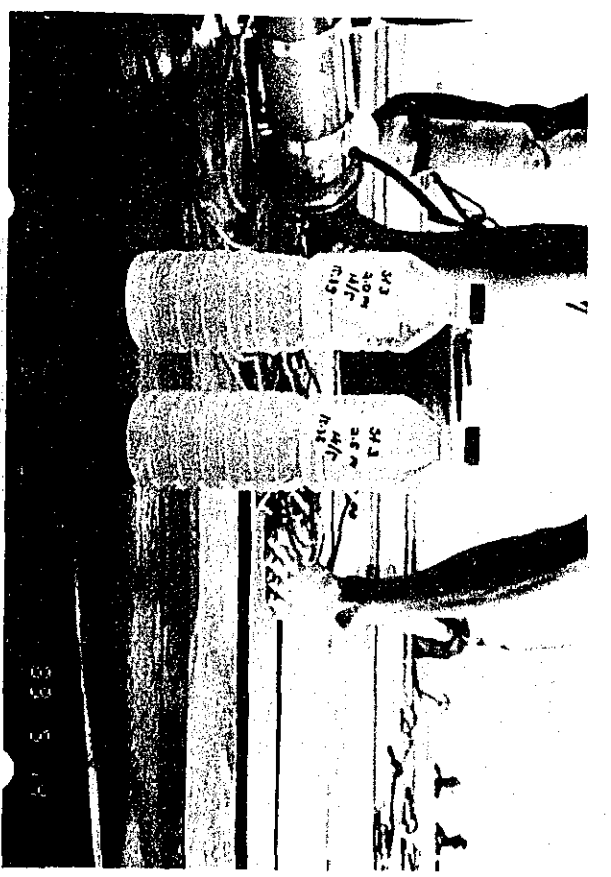
Seabed obtained by lead (Depth: 2.5m)

Seabed obtained by 210KHz (Depth: 2.5m)

St. 3

Sampling Layer: -2.0m  
Sampling Layer: -2.5m

4. May 1987



Sample in bottle

15-5

ST. 3 FINISHED

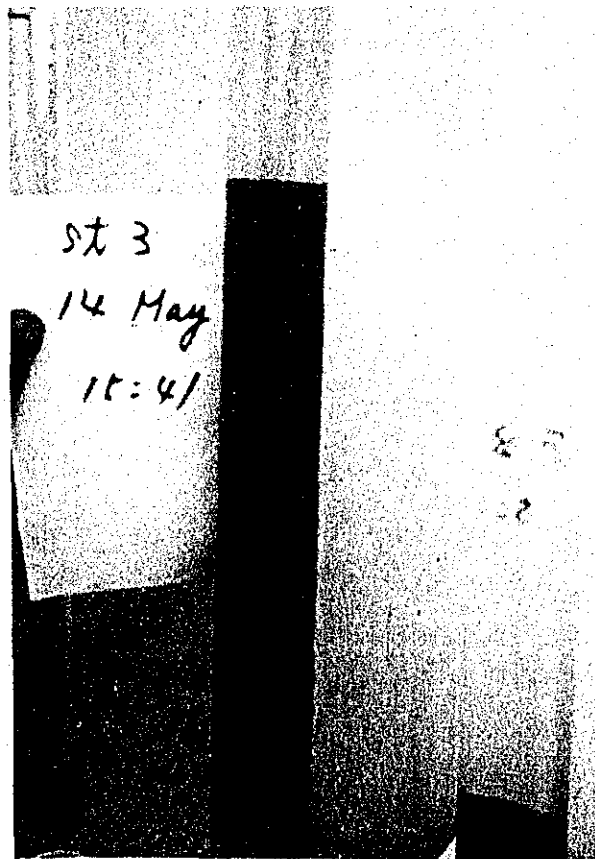
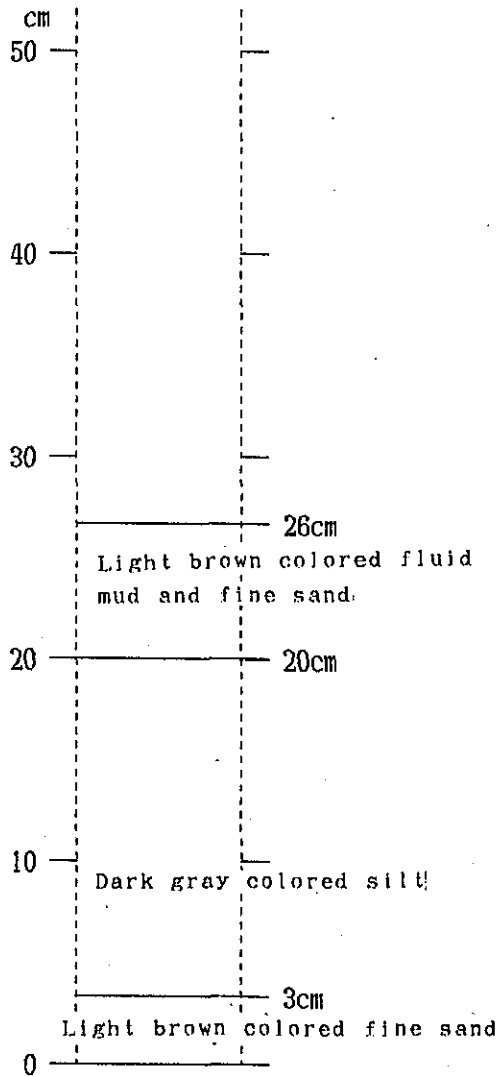
ST. 1

MR. SB. 1-49

St.3

Date : 14th May 1989 Sampling time : 15:41

Acrylic pipe



St.5 (West side of Access Channel)



1503

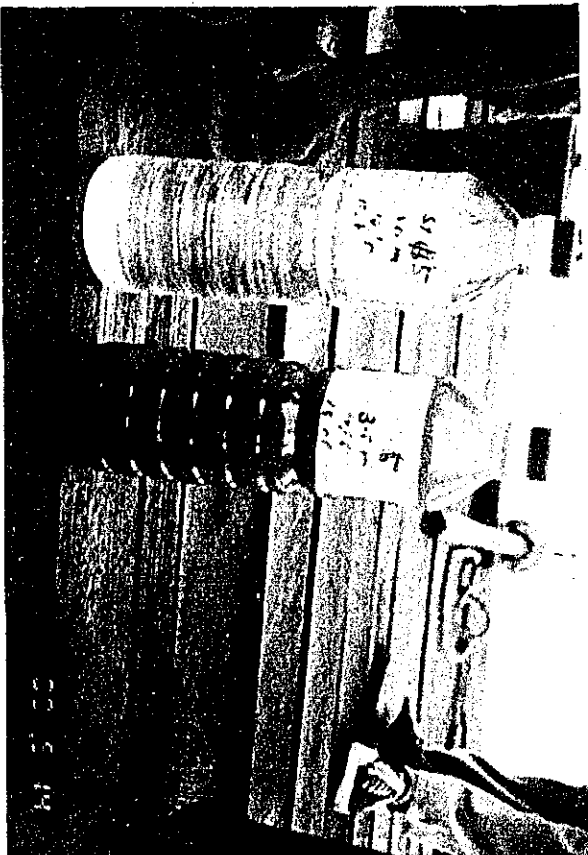
ST.5  
ST.5 S. 5.10.1989

St.5 14th May 1989

St.5

Seabed obtained by 210KHz(Depth:3.8m)  
Seabed obtained by lead(Depth:3.5m)

Seabed obtained by 210KHz(Depth:3.2m)  
Sampling layer:-3.0m Seabed obtained by lead(Depth:3.3m)  
Sampling layer:-3.5m (3.3m)



Sample in bottle

1514

ST.5 S. 5.10.1989

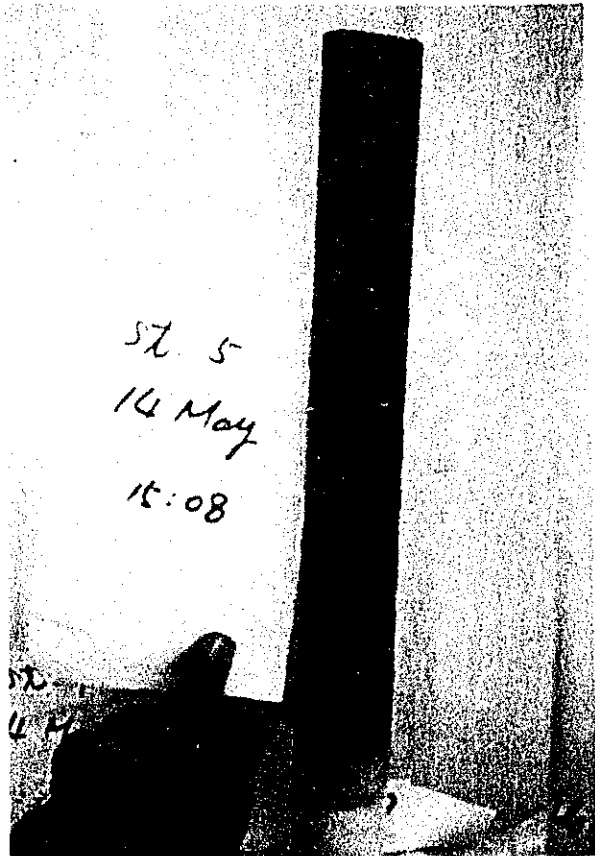
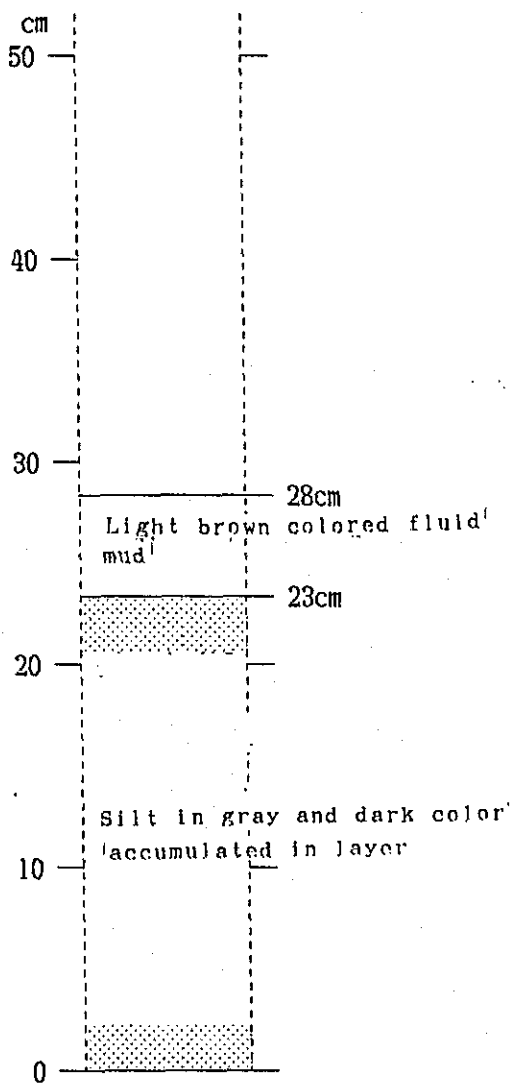
161

SB.1-52

St.5

Date : 14th May 1989 Sampling time : 15:03

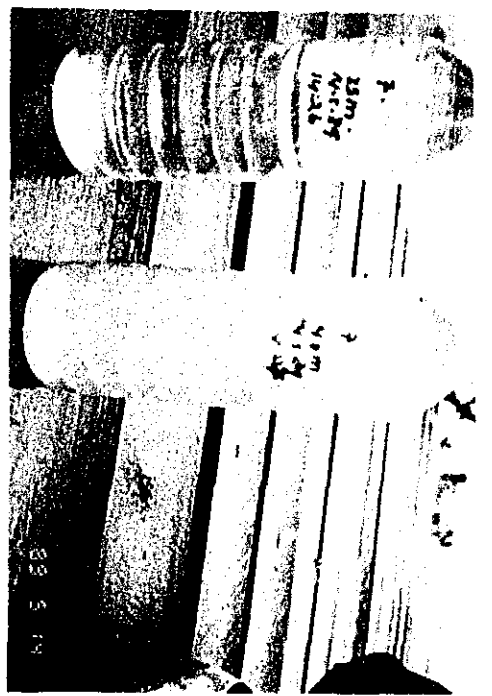
Acrylic pipe



Sample in tube

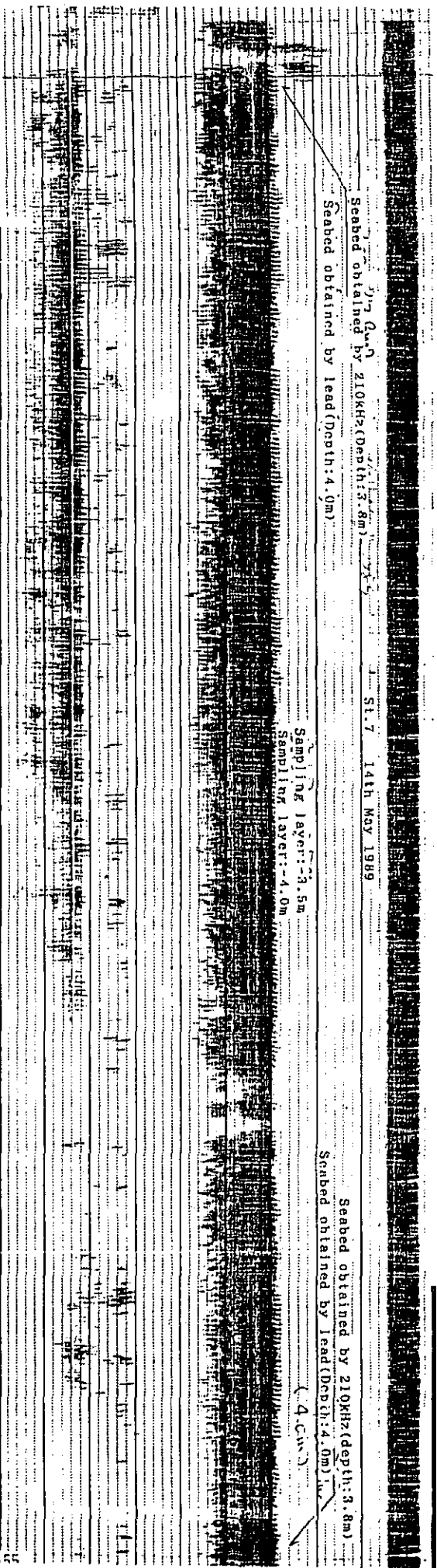
St.7 (West side of Access Channel)

14523  
 167



Sample in bottle

164



Seabed obtained by 210KHz (Depth: 3.8m)  
 Seabed obtained by lead (Depth: 4.9m)

SI. 7 14th MAY 1969

Sampling layer: 3.5m  
 Sampling layer: 4.0m

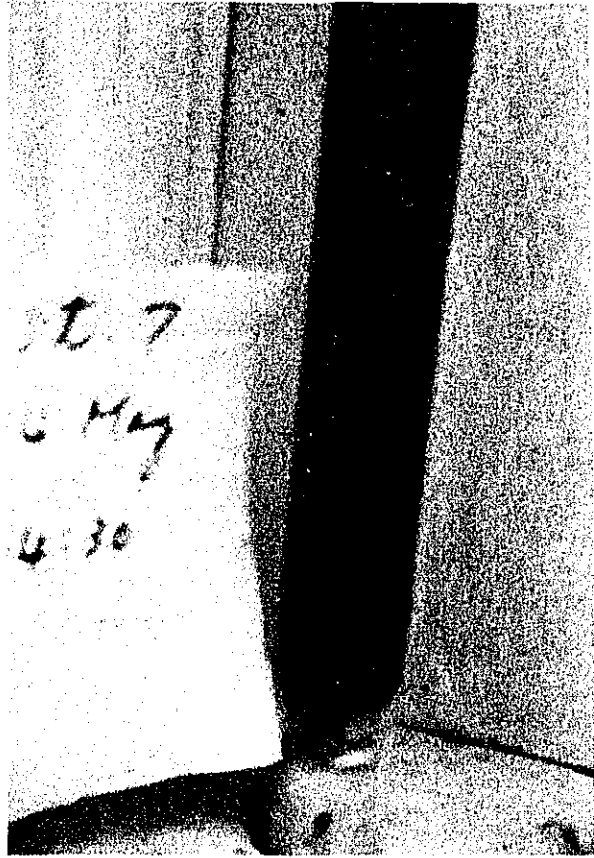
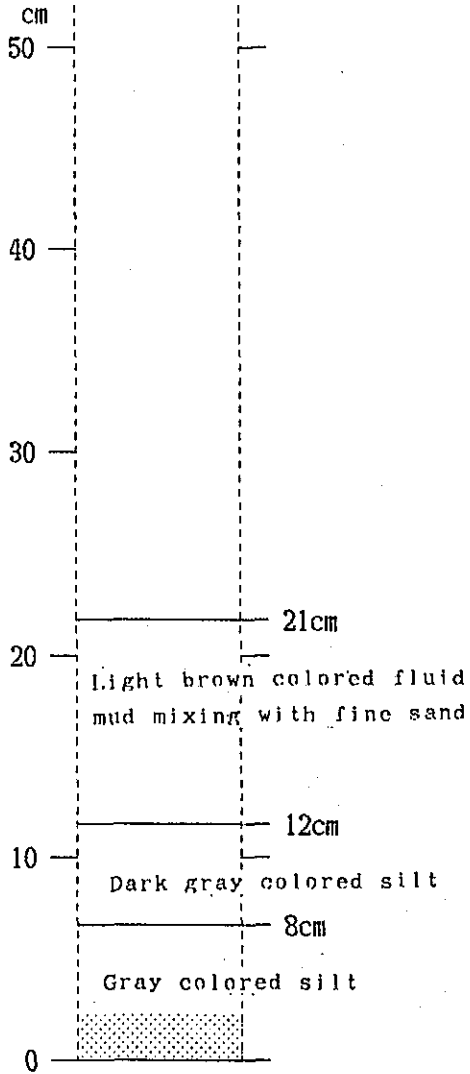
Seabed obtained by 210KHz (depth: 3.8m)  
 Seabed obtained by lead (Depth: 4.0m)

(4.0m)

St.7

Date : 14th May 1989 Sampling time : 14:30

Acrylic pipe



Sample in tube

St.9 (west side of Access Channel)

241  
Start 12-13  
St. 9

St. 9 14th May 1988

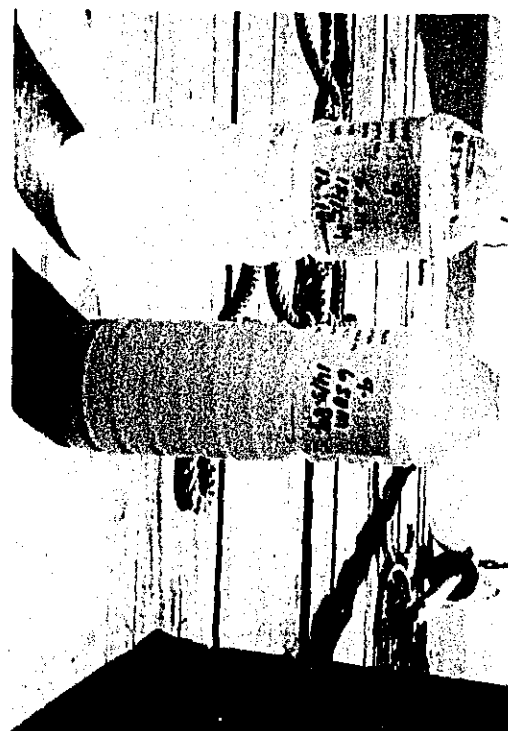
Seabed obtained by 210KHz (Depth: 6.4m)

Seabed obtained by lead (Depth: 6.5m)

6.5m

Seabed obtained by 210KHz (Depth: 6.4m)

Seabed obtained by lead (Depth: 6.5m)  
(6.5m)



STAG FINISHED

167/12-48

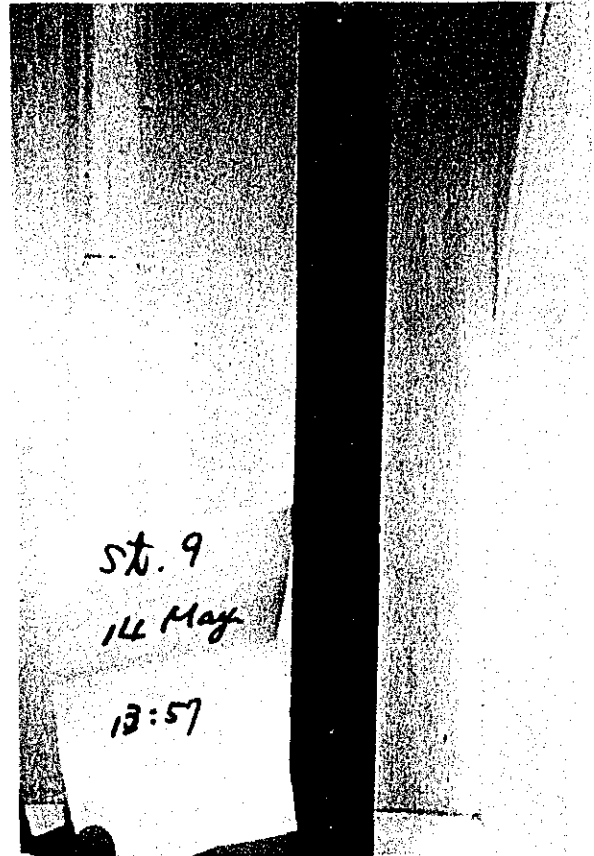
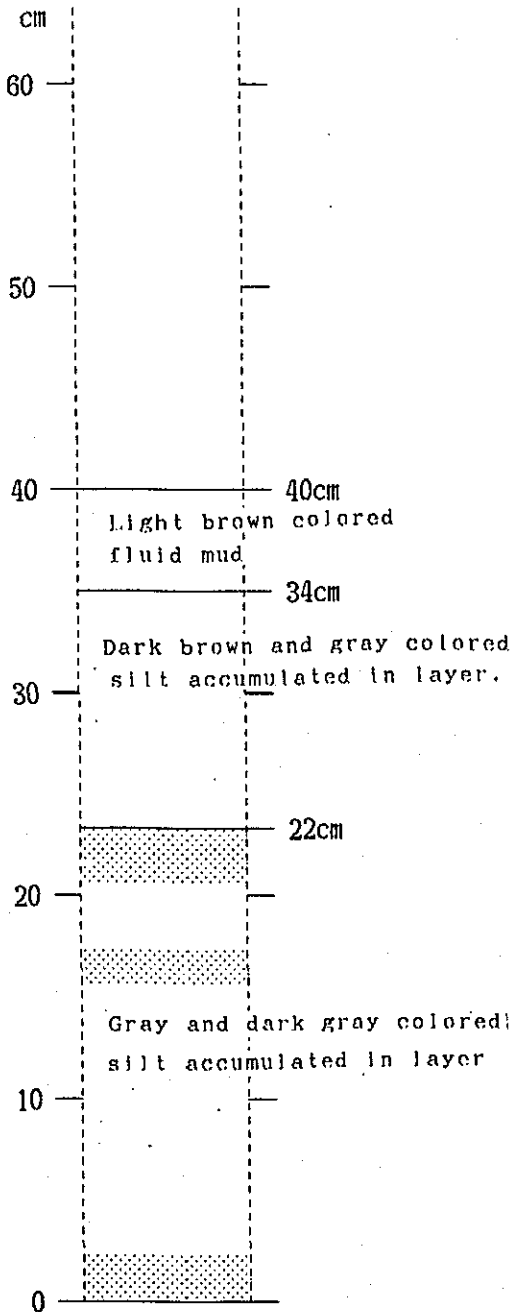
12-22

167

St.9

Date : 14th May 1989 Sampling time : 13:57

Acrylic pipe





14th May 1989

Longitudinal Profile of Access Channel  
by Echo Sounding in Seabed Level Survey

14 May

1746

1747

1748

1748

1749

Chart 1749

1

1750

1751

Access Channel

2

1752

1753

1754

3

1755

1756

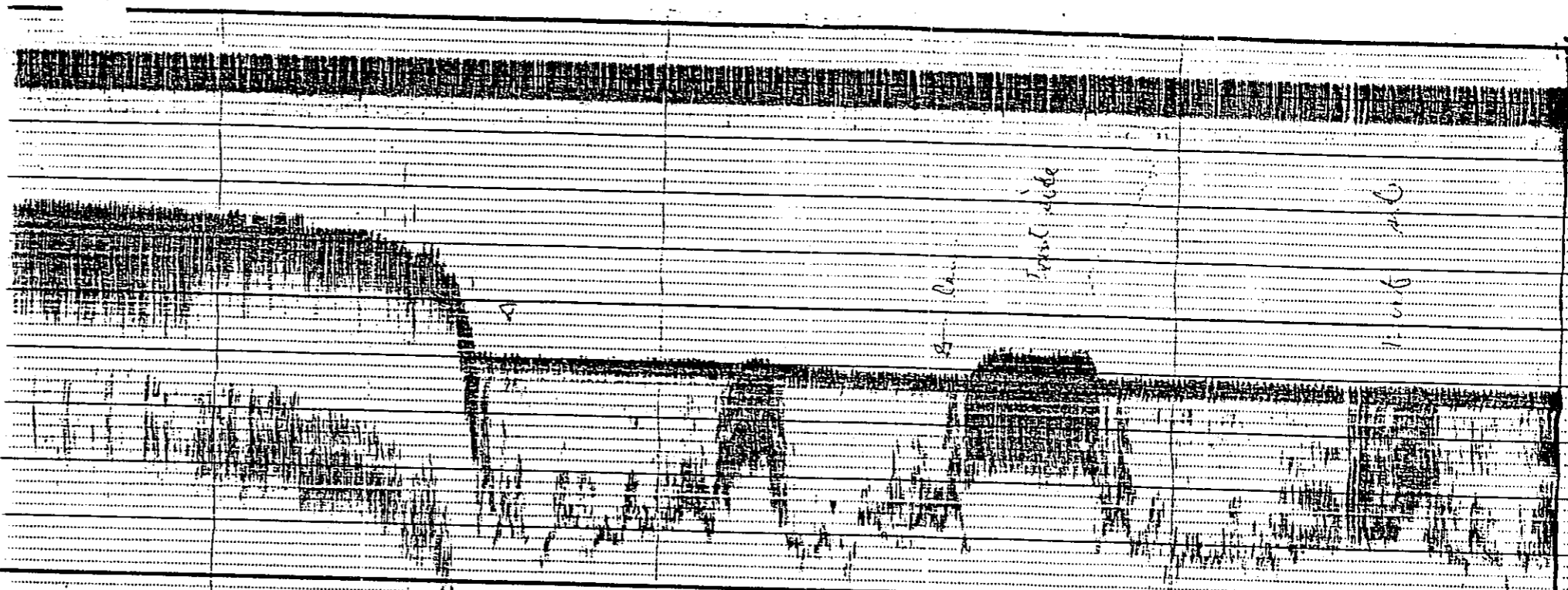
1757

4

1758

1759

5



11702	9.31	12742	9.31
4			
11703	9.31	12749	9.31
5			

12906	13712	9.38	
4			
13063	14106	9.41	
7			
13581	14529	9.40	
8			
14224	15009	9.47	
9			
14508	15277	9.48	

Phot for Seabed Level Survey II  
(Including Record of Echo Sounding)

Surveyed on :1st and 2nd June 1989

①

10-3-12

Line 121 (3825m 10-12-2F)

Line 121

②

10-5-12

③

10-5-12

④

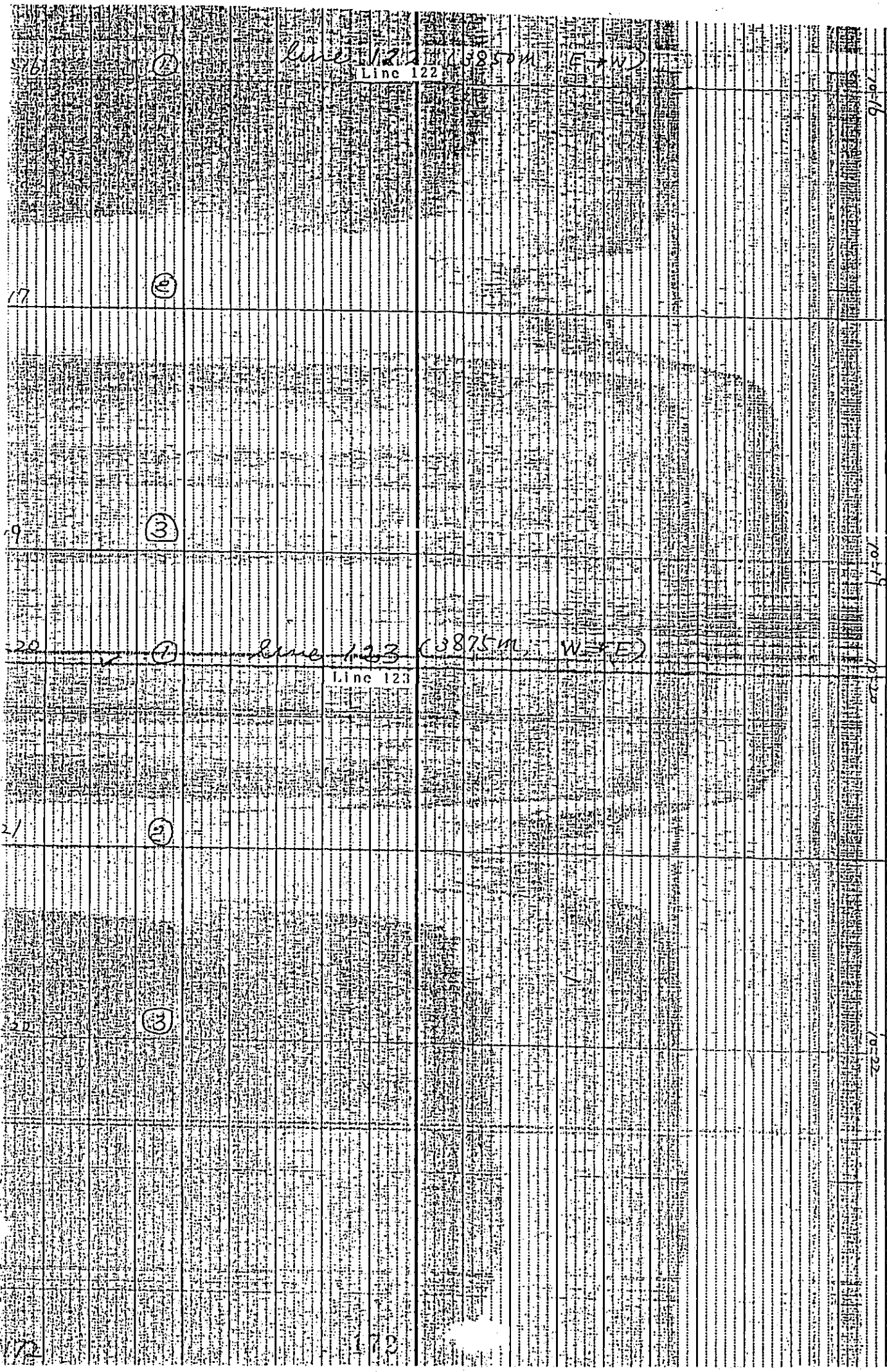
10-5-12

Line 121  
10-12-2F

10-12

10-12

10-12



70-16  
 70-17  
 70-18  
 70-19  
 70-20  
 70-21  
 70-22  
 ALIAS ELEKTRONIK BREMEN  
 442 6009  
 G4394

Line 122 (3850m E-W)

Line 123 (3875m W-E)

①

②

③

④

⑤

③

16

17

19

20

21

22

72

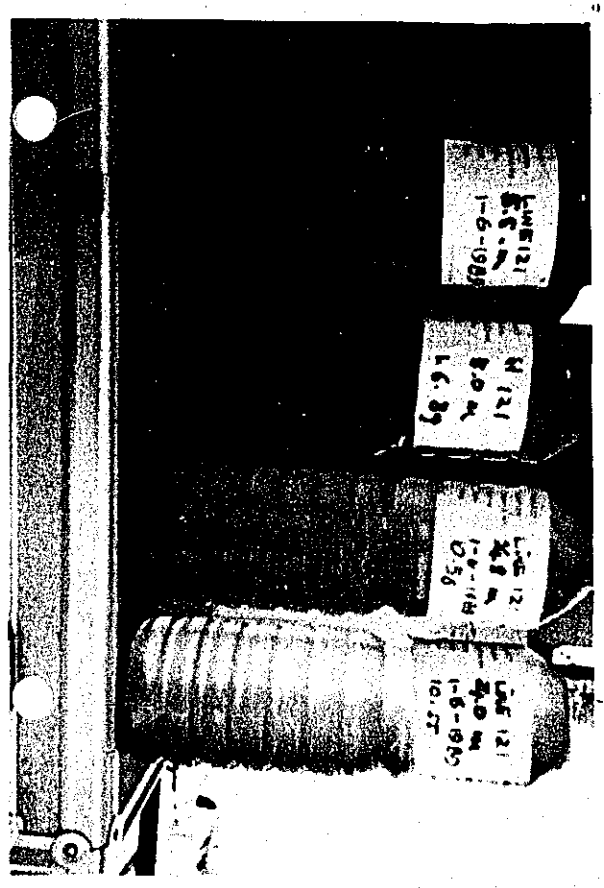
72

10-49  
 ST. 121 - Core sampling and observation started.  
 ST. 121 定深 7.1m

Seabed obtained by 210kHz  
 定水深 (定深 7.1m)  
 Seabed obtained by 210kHz (Depth: 4.8m)  
 Seabed obtained by 33kHz  
 Seabed obtained by lead (Depth: 7.1m)

Boundary surface was disturbed due to a tug boat passing just before observation started.  
 観測開始直前 7.1m 付近に通過した船の波による干渉によるものと思われる  
 記録が下へずらした

Lead 4.7m  
 10-46



1177

SI 121

Seabed obtained by 210kliz (Depth: 4.7m)

Sampling layer: 6.0m

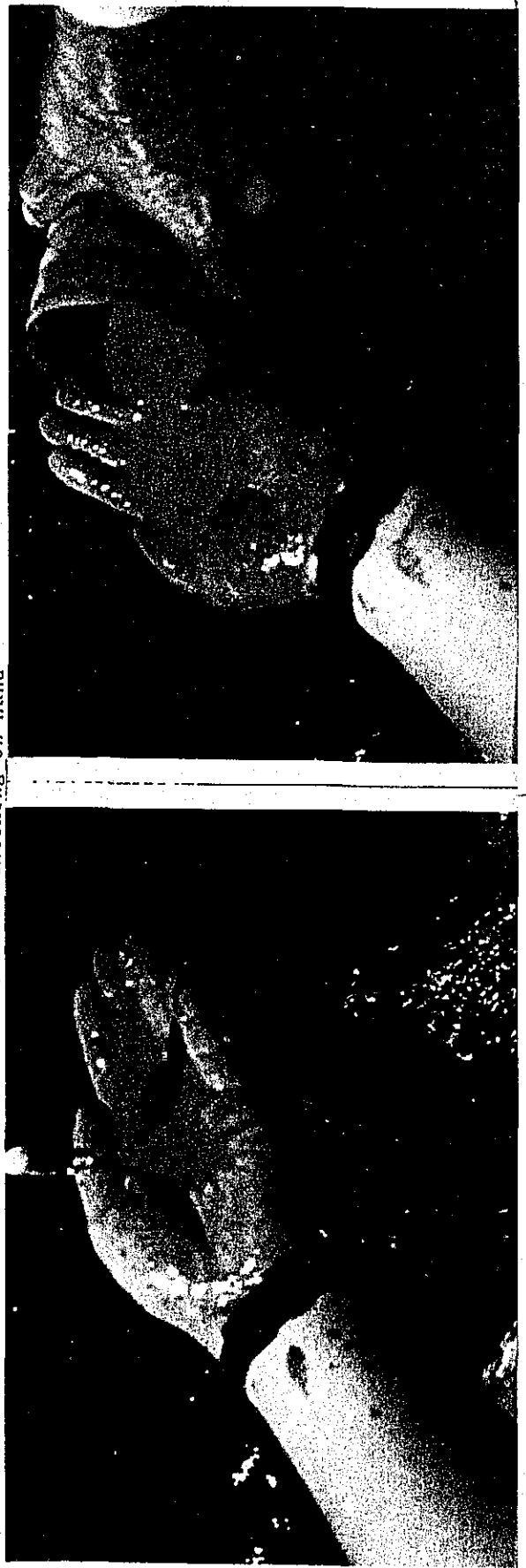


Seabed obtained by 33kliz

Seabed obtained by lead (Depth: 7.4m) 7.4m

Handwritten note: 11-17 11-17

Muddy water checking on hand

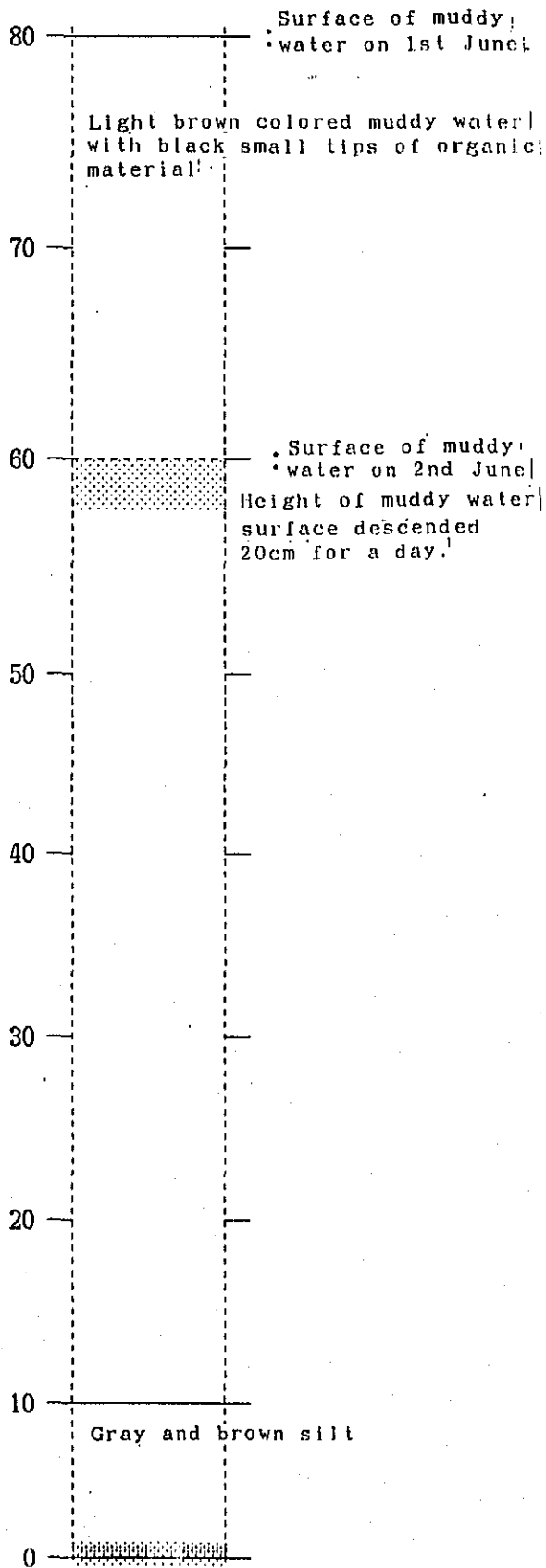


St.121

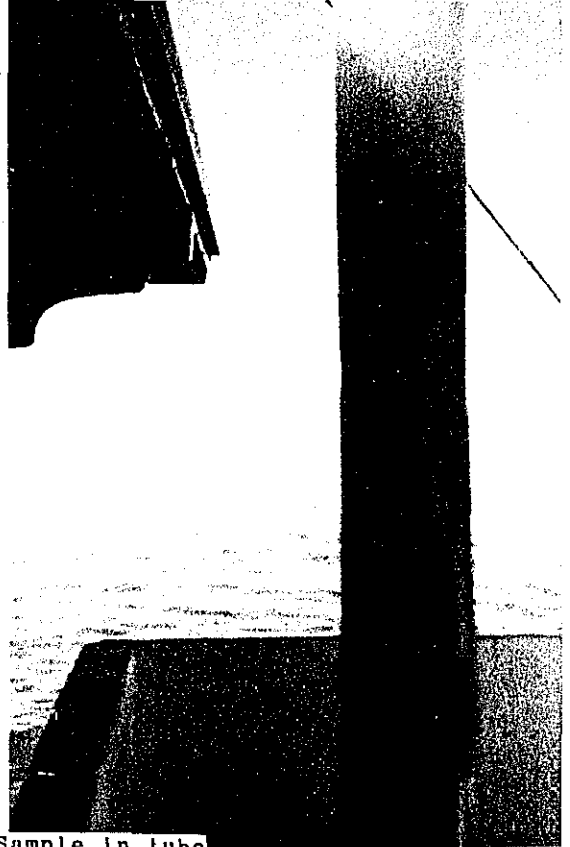
Date : 1th JUNE 1989

Sampling time : 11:20-11:28 (Depth : 7.1m)

Acrylic pipe



\* Condition during observation  
Sounding record taken by 210kHz was rather no clear due to a tug boat passed just before observation started.



Sample in tube

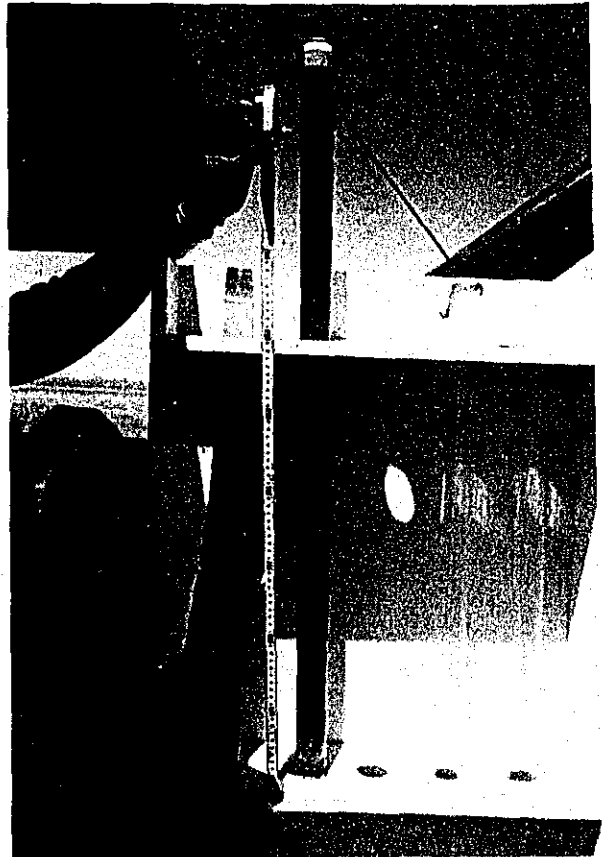
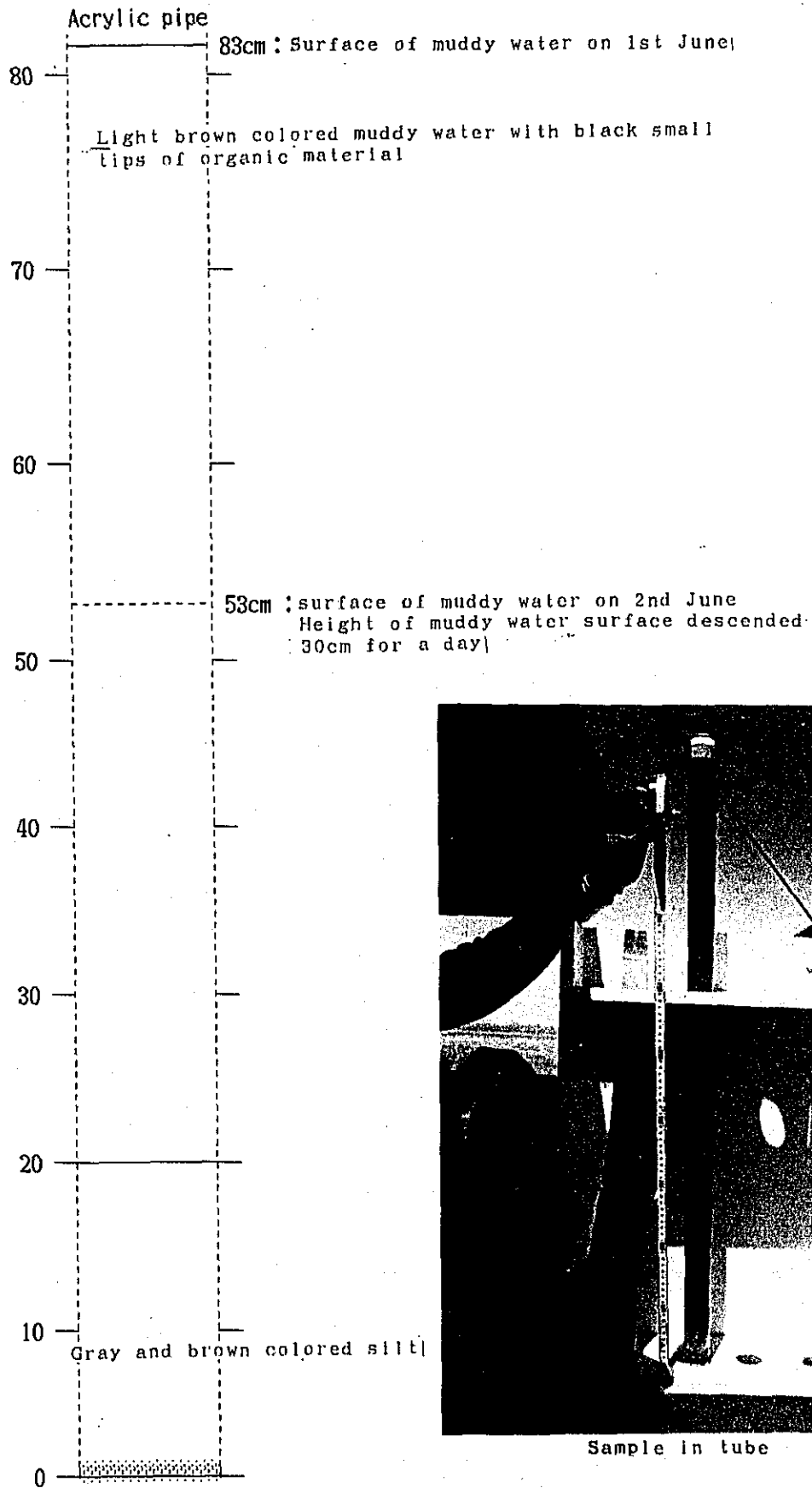




St.171

Date : 1th JUNE 1989

Sampling time : 12:54-13:02 (Depth : 7.5m)



Sample in tube

Line 169 (5025m, W to E)

LINE 169 (5025m W to E)

①

②

③

①

LINE 170 (5050m, E to W)

Line 170 (5050m, E to W)

②

177

177

SB. 2-15

1-38

1-39

1-40

1-42

1-44

①

LINE 170 (5050m, E to W)

②

③

④

LINE 171 (5075m, W to E)

Line 171 (5075m, W to E)

②

178

SC-171

177  
176  
175  
174  
173  
172  
171  
170  
169  
168

Line 171 (5075m, W to E)

Core sampling and observation point

St. 171-171

APR 27 1961

7:30 PM

①

②

③

1147

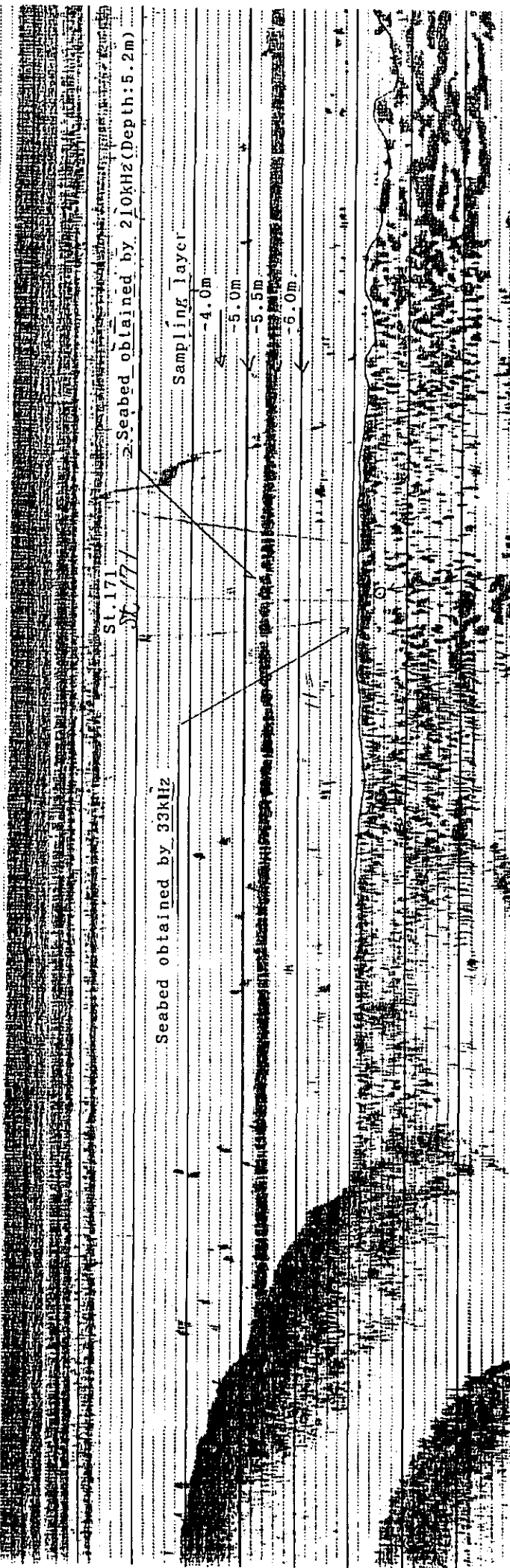
1148

1149

179

170 SB.2-17

12 337



180

181



Condition of fluid mud sampled at 6.5 m under seasurface

FB5M/RD

121-64

Seabed obtained by 210KHz (Depth: 5.2m)

St. 1717

Seabed obtained by 33KHz

Seabed obtained by lead (depth: 8.6m)

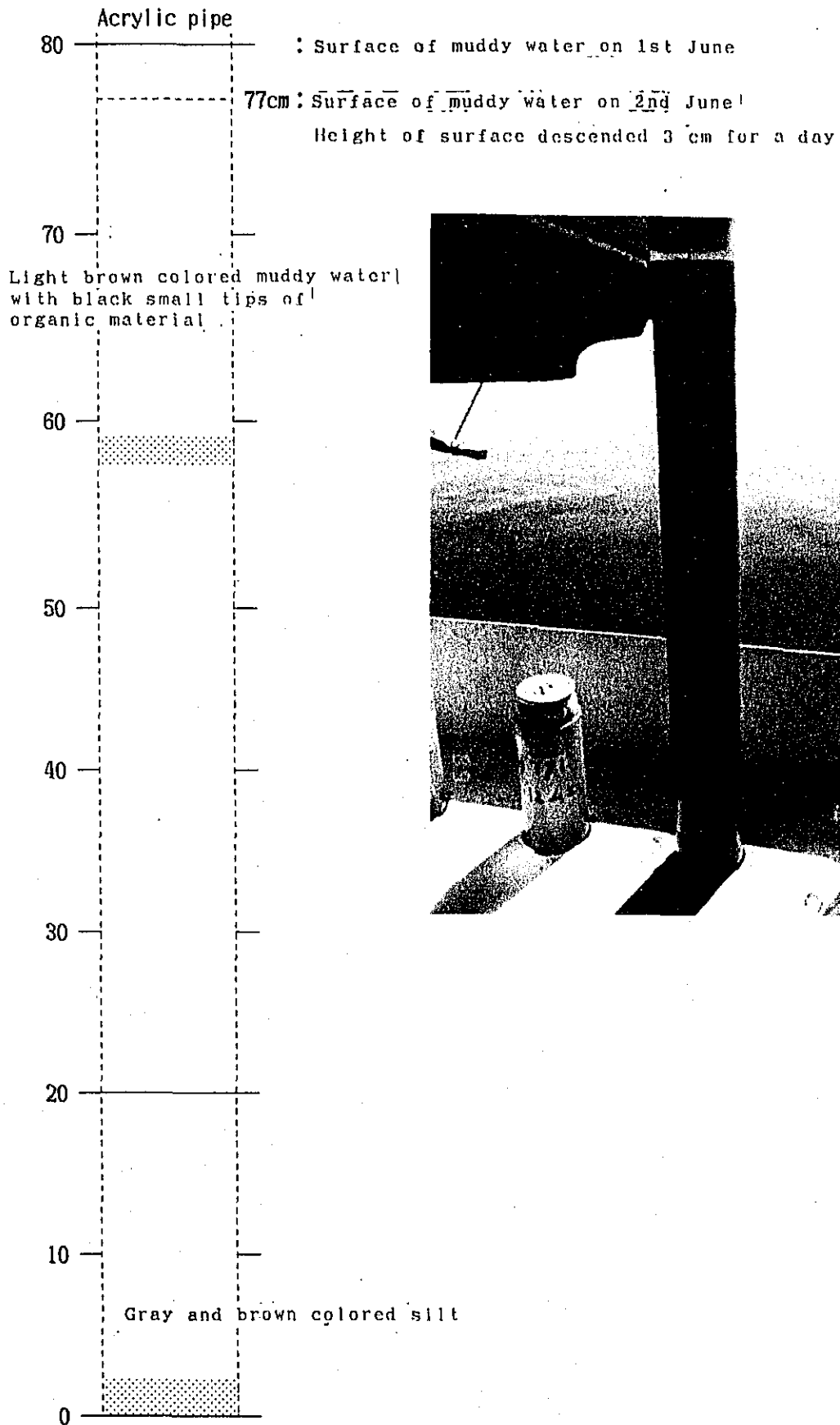
海面下6.5mの底況



St.220

Date : 1th JUNE 1989

Sampling time : 13:53-13:55 (Depth : 8.5m)





Line 219 (6275m, W to E)

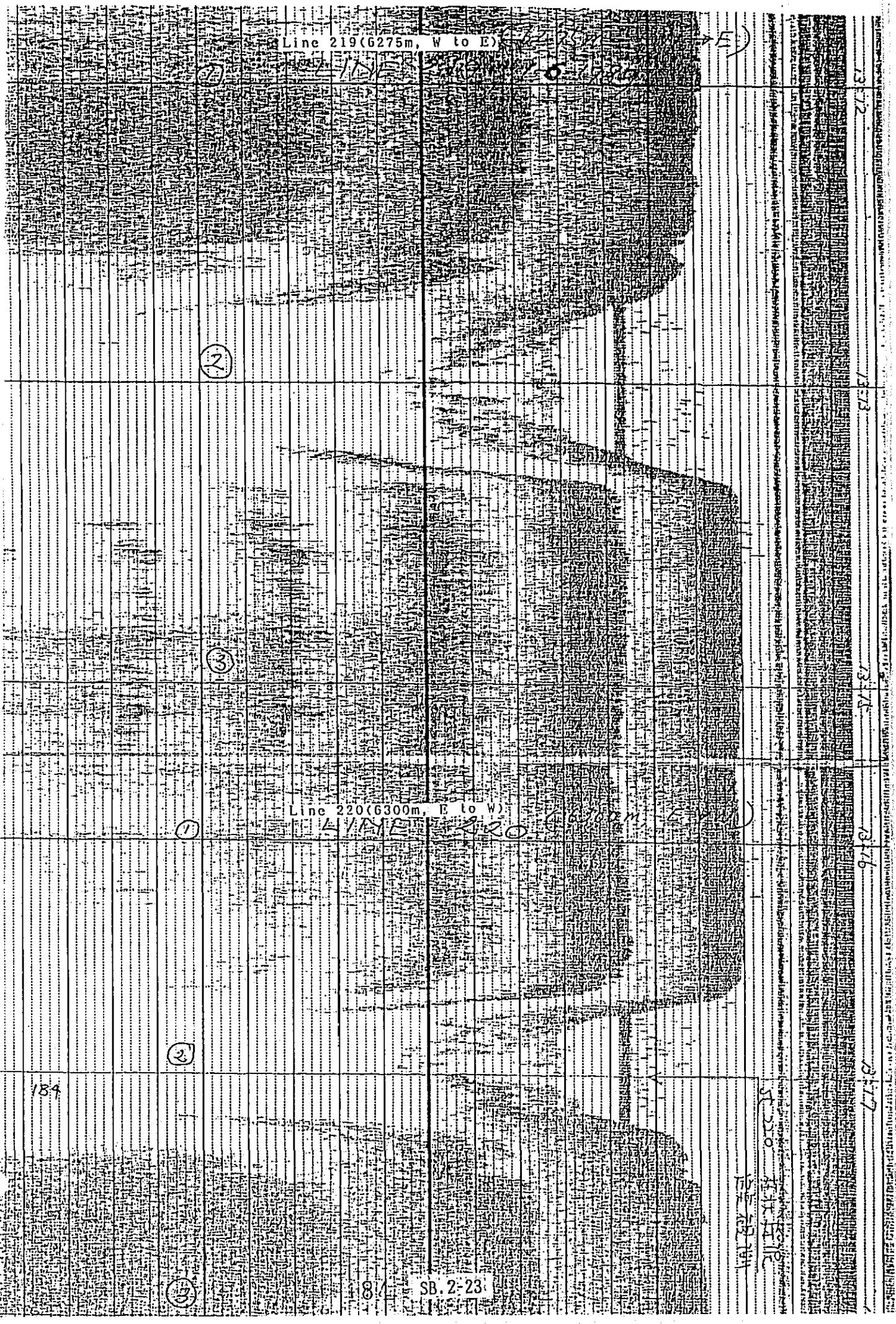
Line 220 (6300m, E to W)

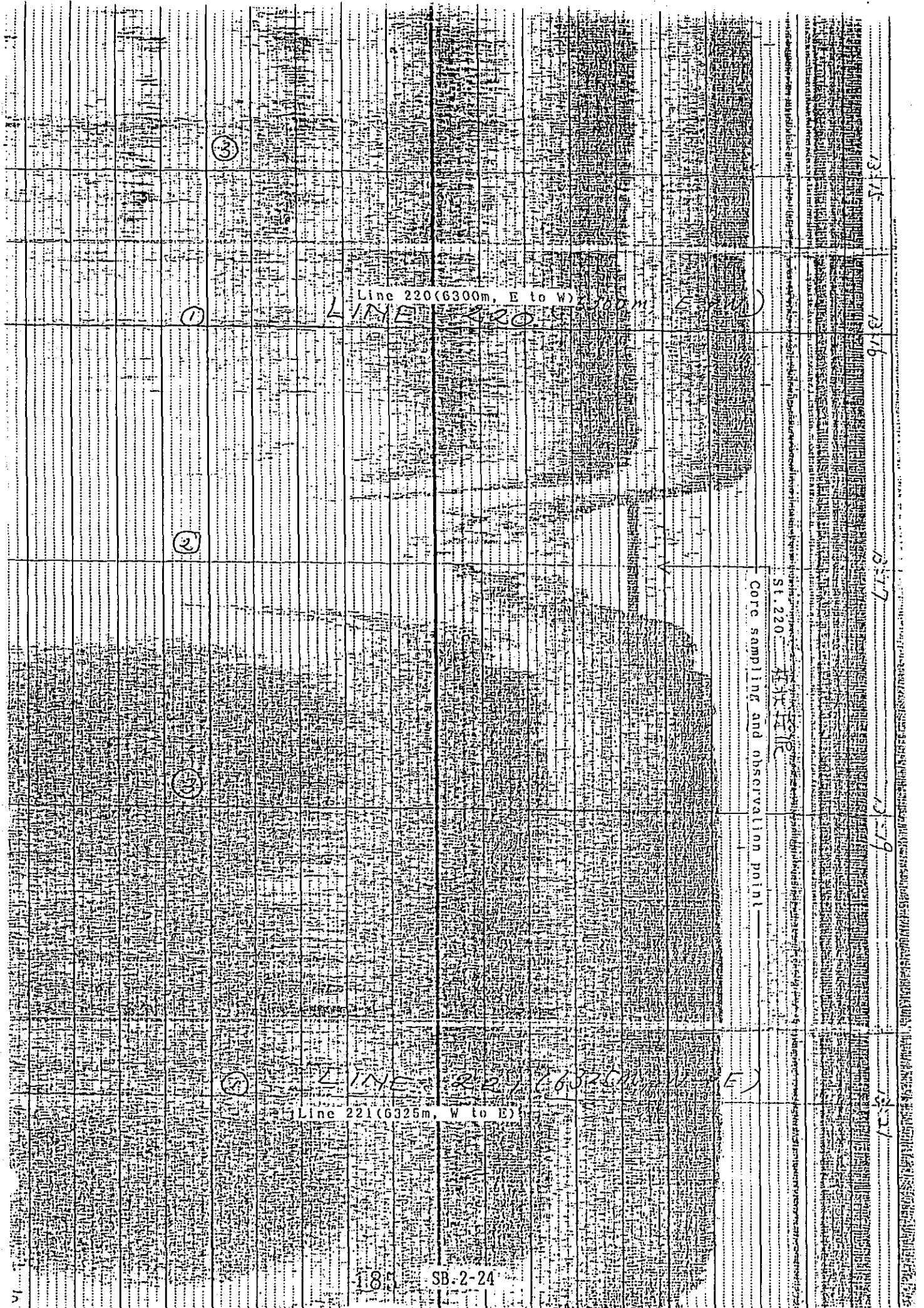
13-72  
13-73  
13-74  
13-76  
13-77

189

187 SB. 2-23

ST 210  
13-72-191  
13-72-192





Line 220 (6300m, E to W)

LINE 220 (6300m, E to W)

LINE 221 (6325m, W to E)

Line 221 (6325m, W to E)

Core sampling and observation point

St. 220

3-15  
3-16  
3-17  
3-19  
3-21

221 (6325m, W to E)

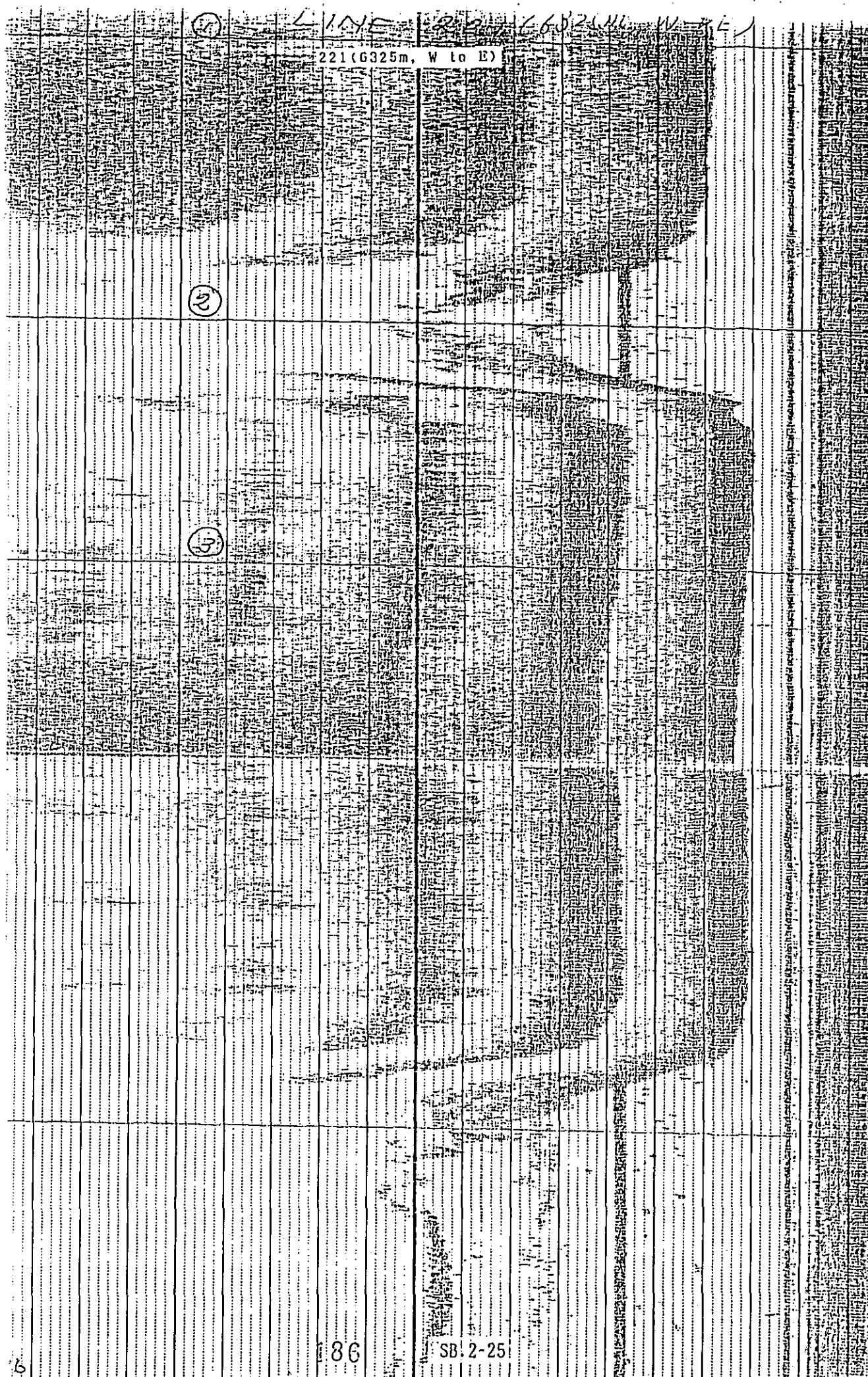
LINE 21 (6325m, W to E)

73-27

73-23

73-23

Copyright: Fried Krupp GmbH, Krupp



13-29

St. 220

Seabed obtained by 210KHz (Depth: 5.5m)

Sampling layer

Seabed obtained by 33KHz

-5.0m  
-5.5m  
-6.0m  
-6.5m

Seabed obtained by lead (Depth: 8.5m)

(水深 8.5m 内)

SB-2-28

Jan. 13 29



St. No. on label was wrong (Corrected St. 220)

187

187

7310

St. 220

Seabed obtained by 210 Kiliz (Depth: 5.5m)

Seabed obtained by 33 Kiliz

Seabed obtained by lead (Depth: 8.0m)

下に示す字の海床は海図に7.0mの深さ



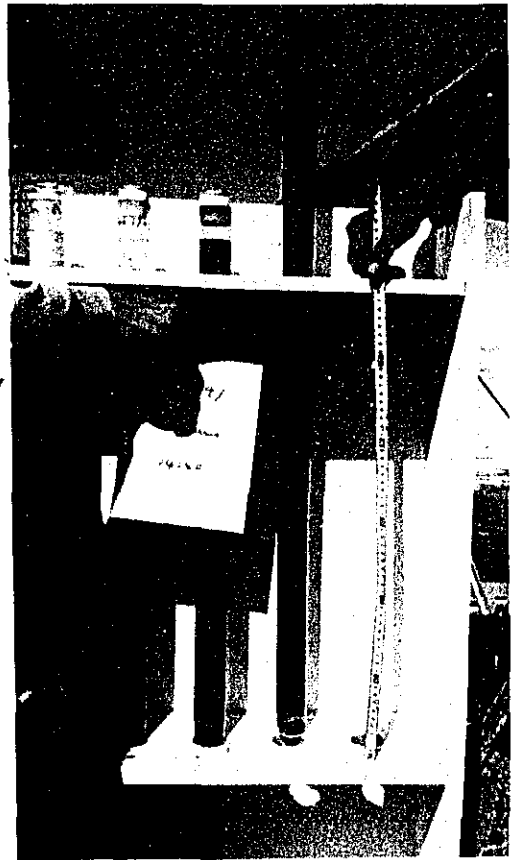
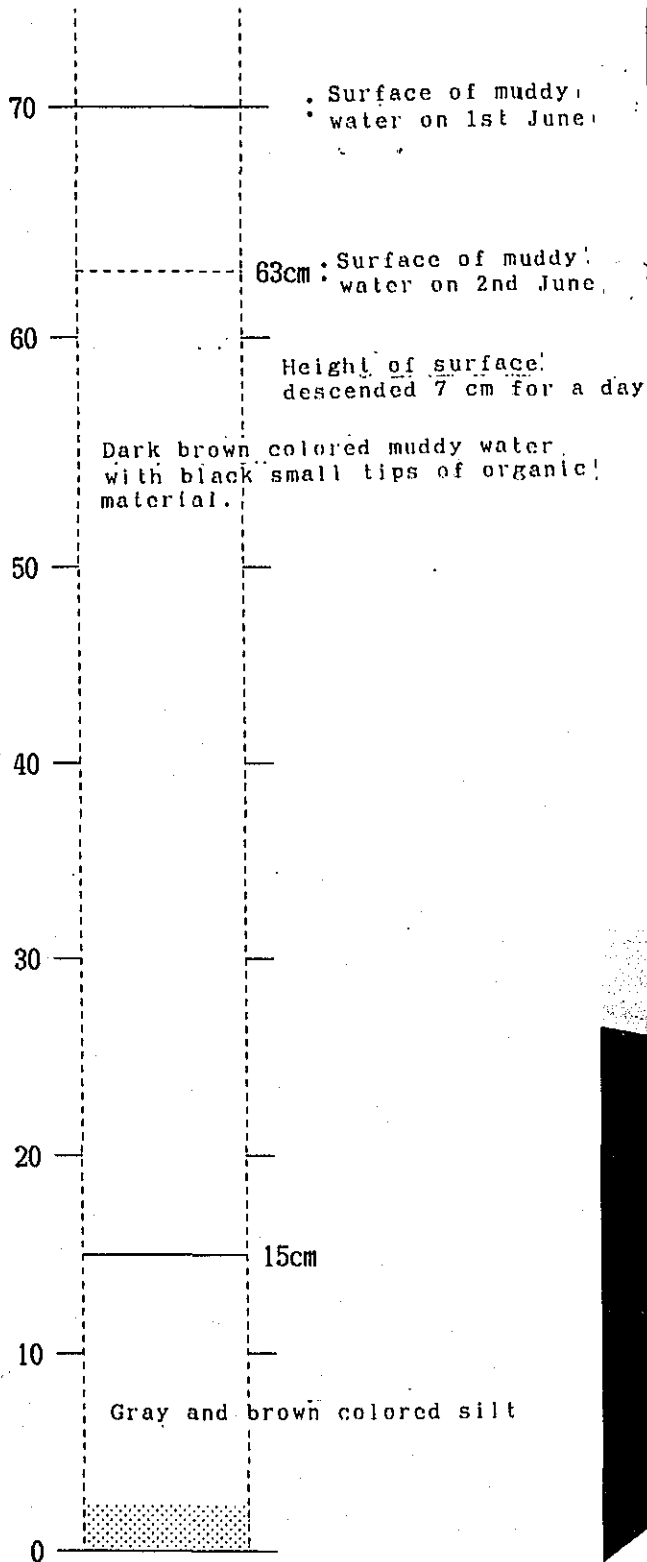
St.291

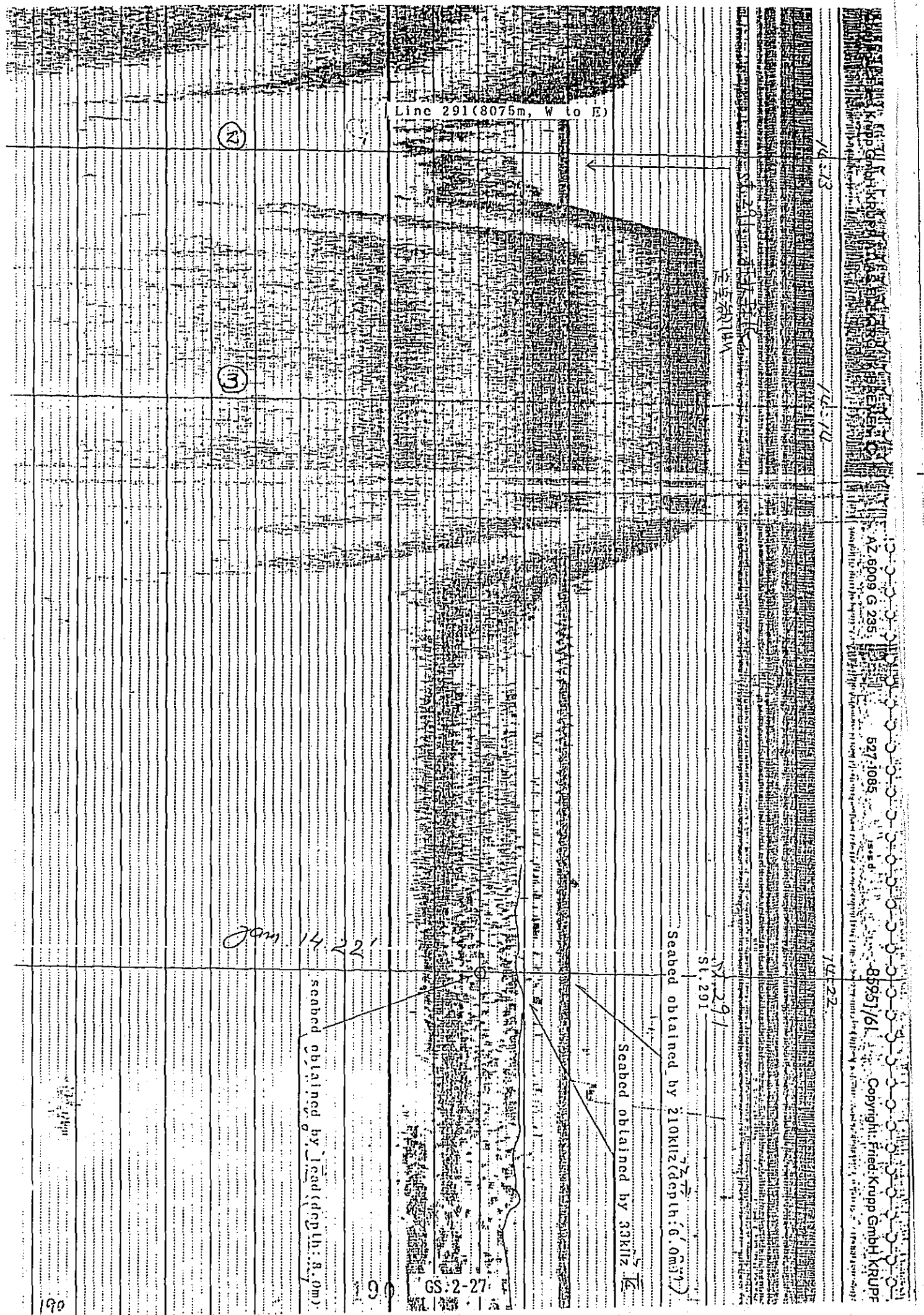
Date : 1th JUNE 1989

Sampling time : 14:40-14:44

(Depth : 8.0m)

Acrylic pipe





Line 291 (8075m, W to E)

2

3

Jan 14 22

Seabed obtained by Lead (depth: 8.0m)

Seabed obtained by 33kHZ

Seabed obtained by 210kHZ (depth: 6.0m)

St. 291

GS-2-27

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 527-1085  
 AZ 6009 G 285  
 85951/61  
 74-23  
 74-72  
 74-22

14-22

St. 291

Seabed obtained by 210kHz (Depth: 6.0m)

Seabed obtained by 33kHz

Handwritten notes: 5.5m, 6.0m, 6.5m, 7.0m

Jan. 14. 22'

Seabed obtained by lead (Depth: 8.0m)





85951/61

Copyright: Fried. Krupp GmbH, KRUPP ATLAS-ELEKTRON REMEN C

AZ 6009 G.235

1029

Dist. 291

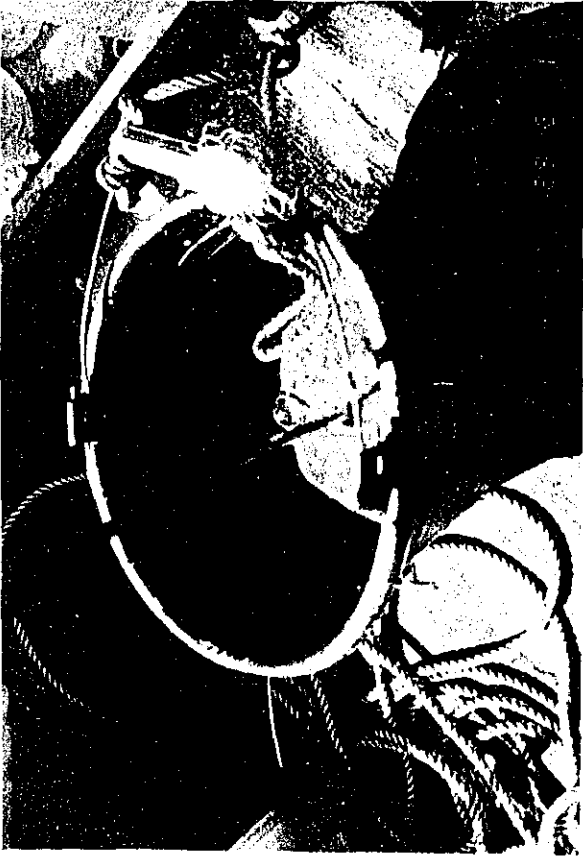
Seabed obtained by 210kHz (Depth: 5.9m)

Seabed obtained by 33kHz

Seabed obtained by lead (Depth: 7.5m)

1029

写真の浮球は  
海面下7.5m



Fluid mud shown in photo was sampled at 7.5m under searface.



GS. 2-29

LINE 289 (8025m, W to E) 80.25m (W → E)

①

②

③

7-6-1989

LINE 290 (8050m, E to W) 80.50m (E → W)

①

②

③

LINE 291 (8075m, W to E) 80.75m (W → E)

①

193

193 Line 291 (8075m, W to E)

50.71

90.71

60.71

60.71

01.71

11.71

21.71

St.341

Date : 1th JUNE 1989

Sampling time : 14:52-15:50 (Depth: 6.5m)

Acrylic pipe

\* Condition during observation

Boundary surface of muddy water obtained by 210kHz disappeared due to disturbance by Dredger "JAWA" under dredging work.

80  
Turbid sea water

70

60

50

: Height of muddy water on 1st June

45cm : Height of muddy water on 2nd June,  
Height of surface descended 5 cm for a day.

40

Dark brown colored muddy water with black small tips of organic material

30

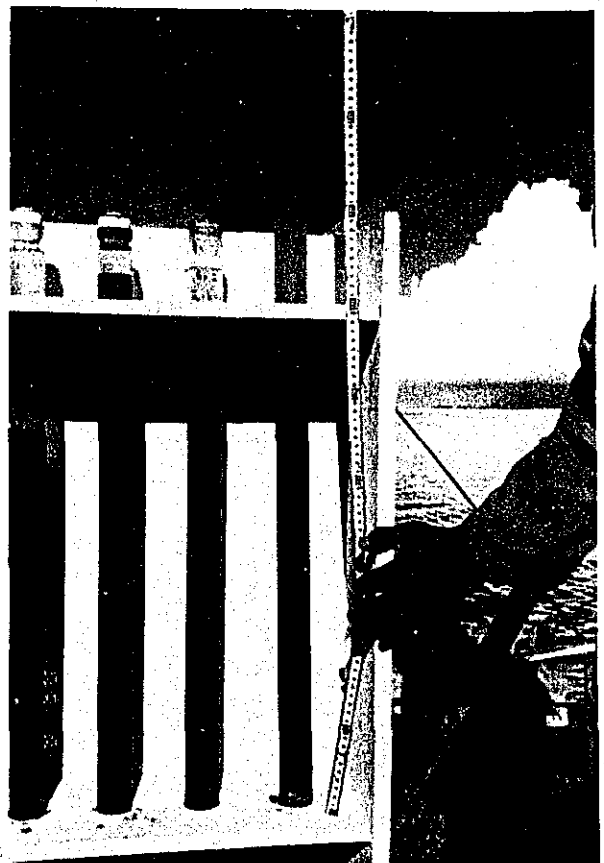
20

15

10

Gray colored silt

0



Sample in tube

① LINE 339 (9275m, W to E)

②

③

① LINE 340 (9300m, E to W)  
Line 340 (9300m, E to W)

②

④

① LINE 341 (9325m, W to E)  
Line 341 (9325m, W to E)

74-52  
74-53  
74-54  
74-56  
74-57  
74-58  
74-59

195

195

①

LINE 340 (9300m, E to W)

Line 340 (9300m, E to W)

②

④

①

LINE 341 (9325m, W to E)

Line 341 (9325m, W to E)

②

③

Core sampling and observation point

St. 341

14:56

14:57

14:58

15:00

15:07

15:02

25-35

SI. 341

Seabed obtained by 210KHz (Depth: 6.2m)

33KHz 0.1612

Seabed obtained by 33KHz

sampling layer

-5.5m

-6.0m

-6.5m

-6.8m

Water sampler did not reach deeper than Depth -6.8m layer.

Seabed obtained by lead (Depth: 6.5m)

Boundary surface disappeared due to Dredger "JAWA" passed.

"JAWA" 通過したため

210KHz の境界線が消失

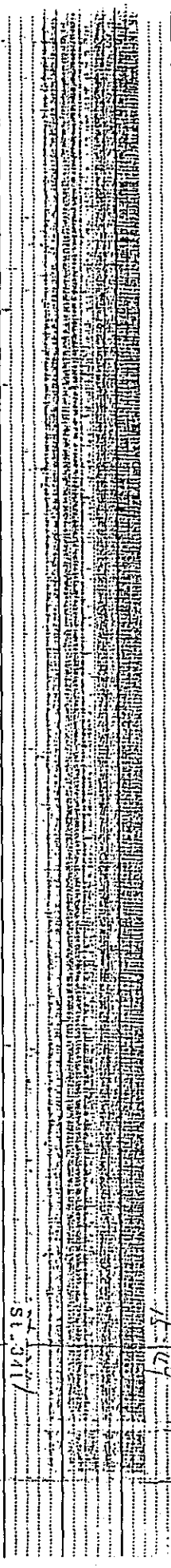
JAN 15 31



Sample in the every layer

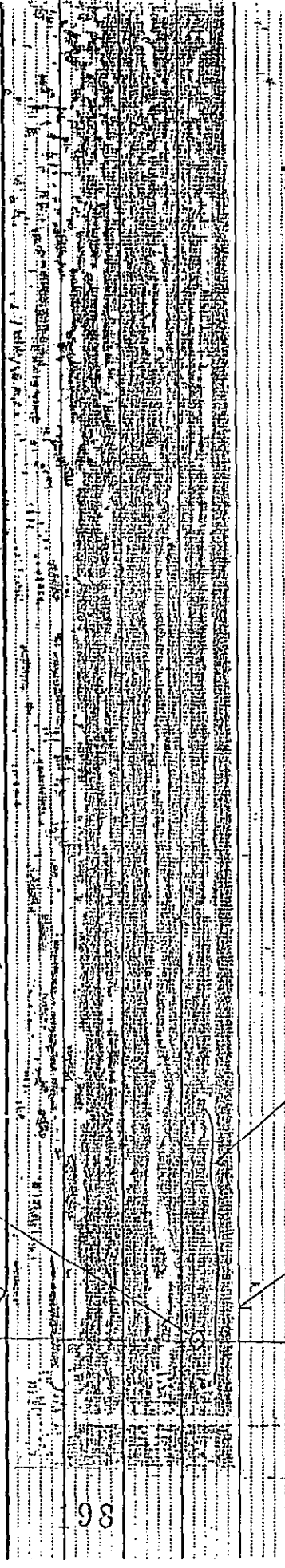
水深 6.0m 付近

197



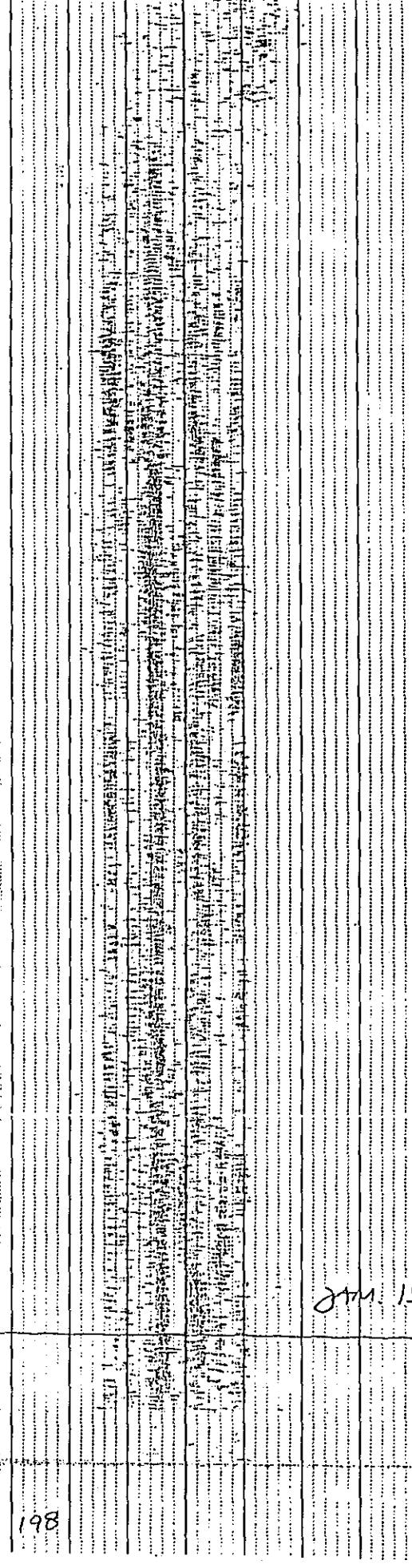
Seabed obtained by 210kHz (Depth: 6.1m)

Seabed obtained by 33kHz



Seabed obtained by Lead (Depth: 6.7m)

67.51 WLR

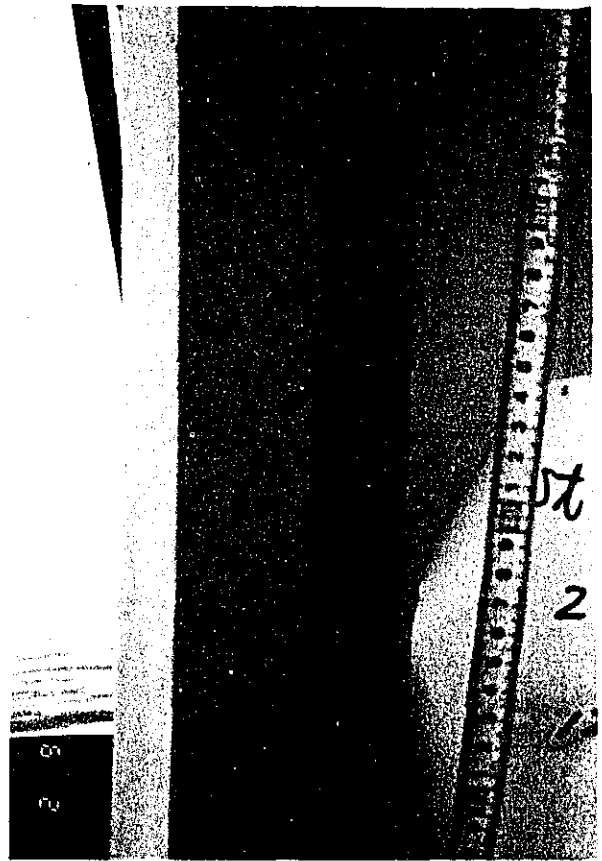
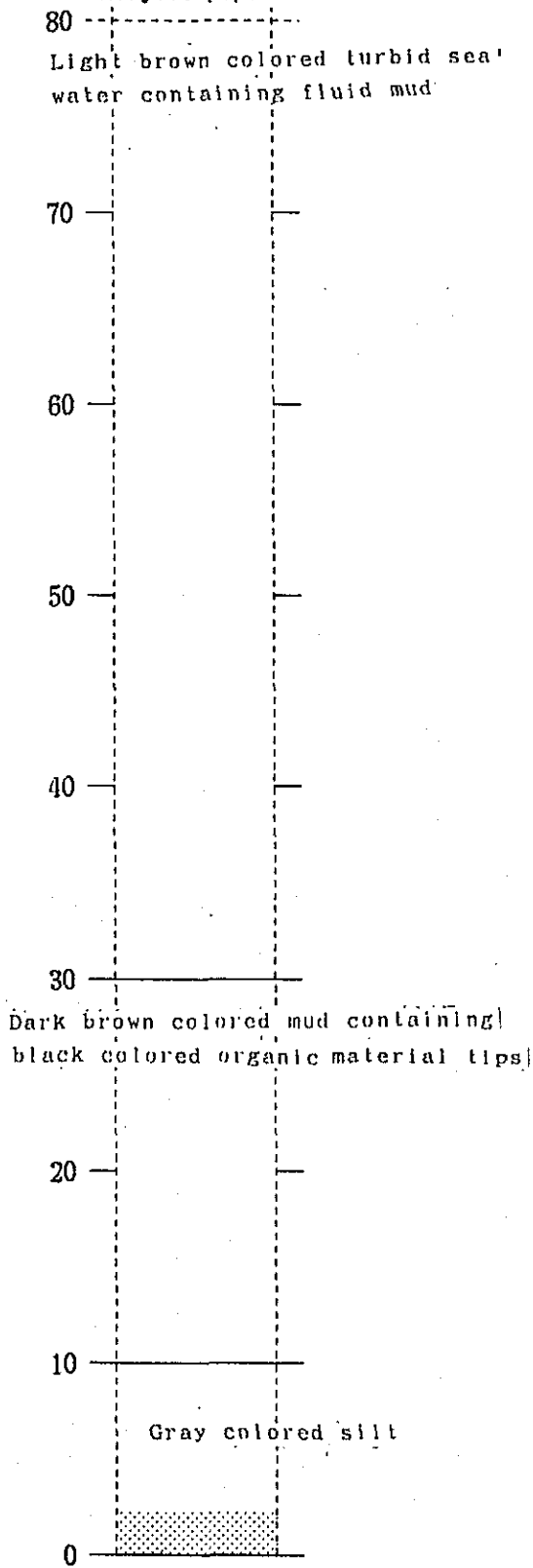


St.401

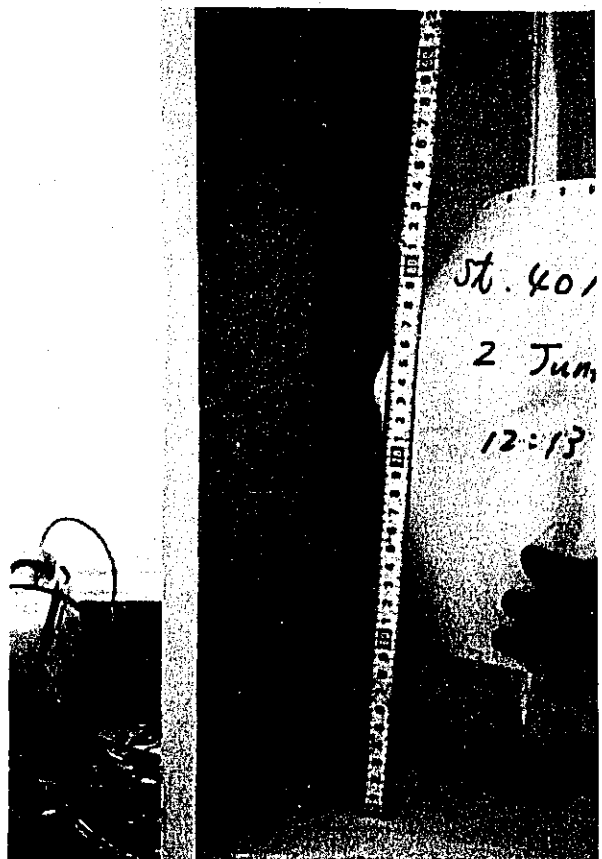
Date : 2th JUNE 1989

Sampling time : 10:18-12:15 (Depth : 8.3m)

Acrylic pipe



Sample in tube





LINE 339 (10775m, W to E)

Line 339 (10775m, W to E)

1

2

3

LINE 400 (10800m, E to W)

Line 400 (10800m, E to W)

1

2

3

LINE 401 (10825m, W to E)

Line 401 (10825m, W to E)

1

500

200 SB.2-38

10118

10119

10120

10122

10123

10124

10125

1

LINE 401 (10825m, W to E)

Line 401 (10825m, W to E)

W

W

W

10-26

10-27

10-28



St. 401

Seabed obtained by 210KHz (Depth: 8.0m)

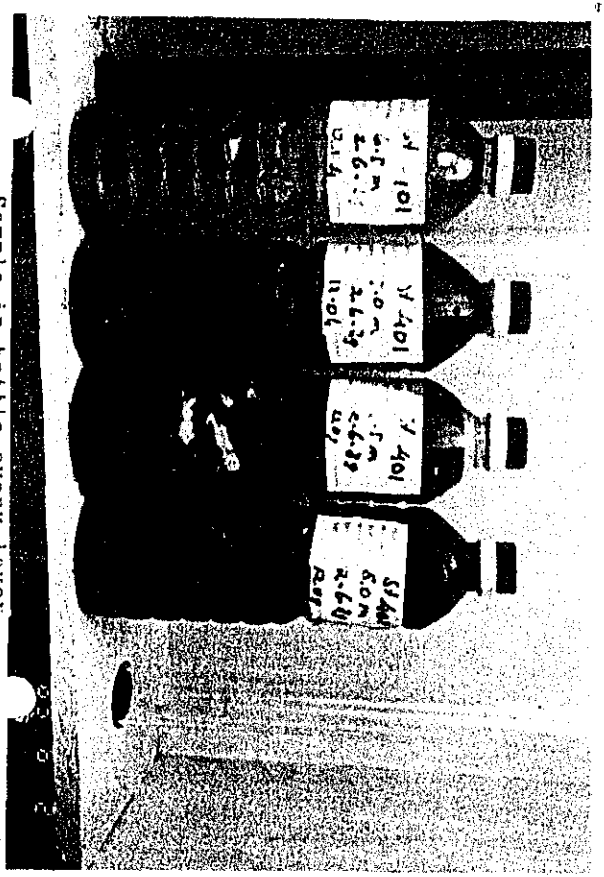
Sampling layer

- 6.5m
- 7.0m
- 7.5m
- 8.0m

Seabed obtained by 33KHz (depth: 8.3m)

Seabed obtained by lead (Depth: 8.3m)

Jan 11/2004



Sample in bottle every layer.

SB.2-40 202 202

B-17

SI 401

SI 401

Scanned obtained by 210kVz(depth:7.4m)

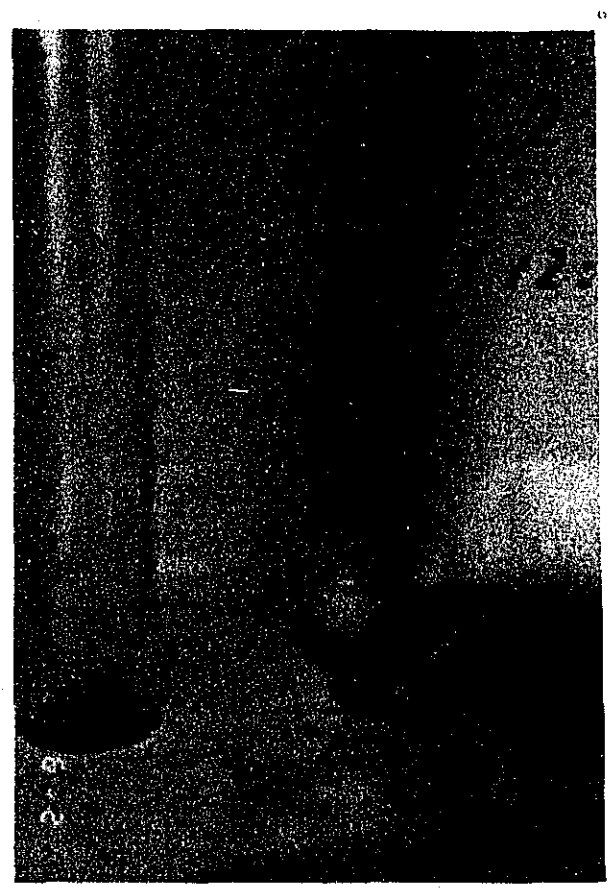
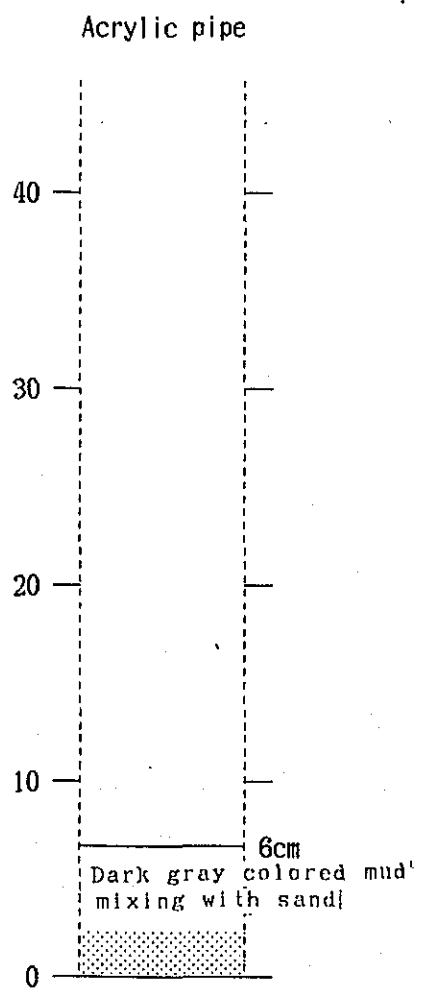
33kVz

Scanned obtained by 33kVz

Scanned obtained by lead(8.9m)

33kVz

Apr 12 11 20



Sample in tube!



Sample in bottle every layer!

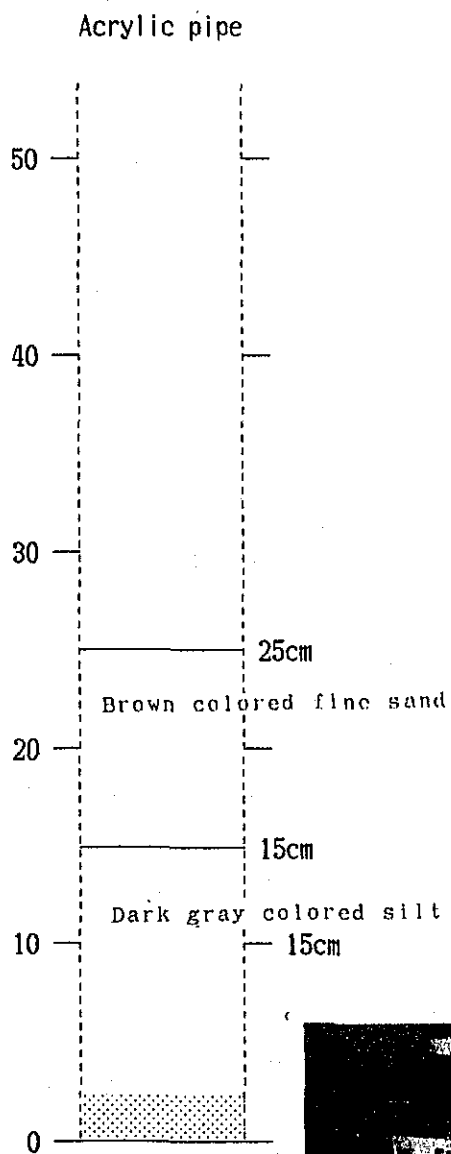
209

204 SB.2-42

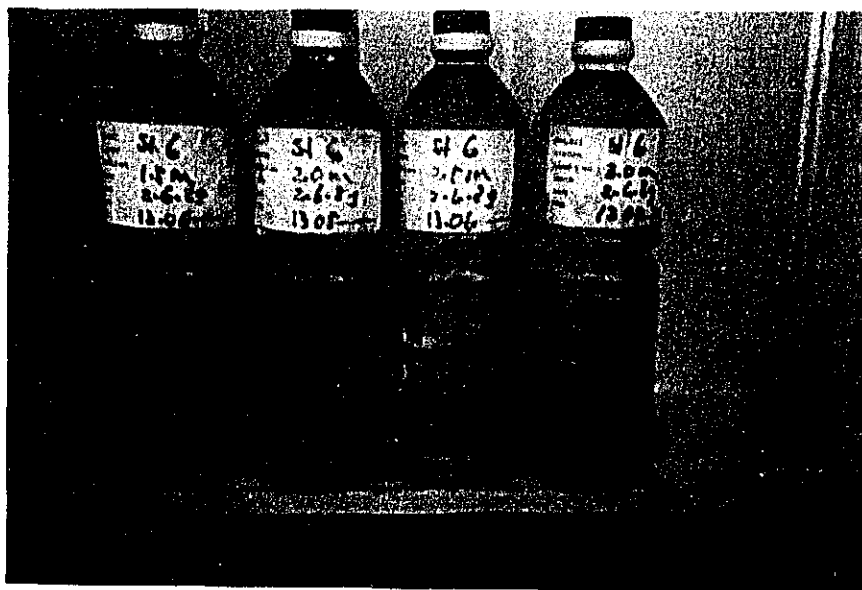
St.6

Date : 2th JUNE 1989

Sampling time : 13:03-13:19 (Depth : 3.2m)



Sample in tube



Sample in bottle every layer

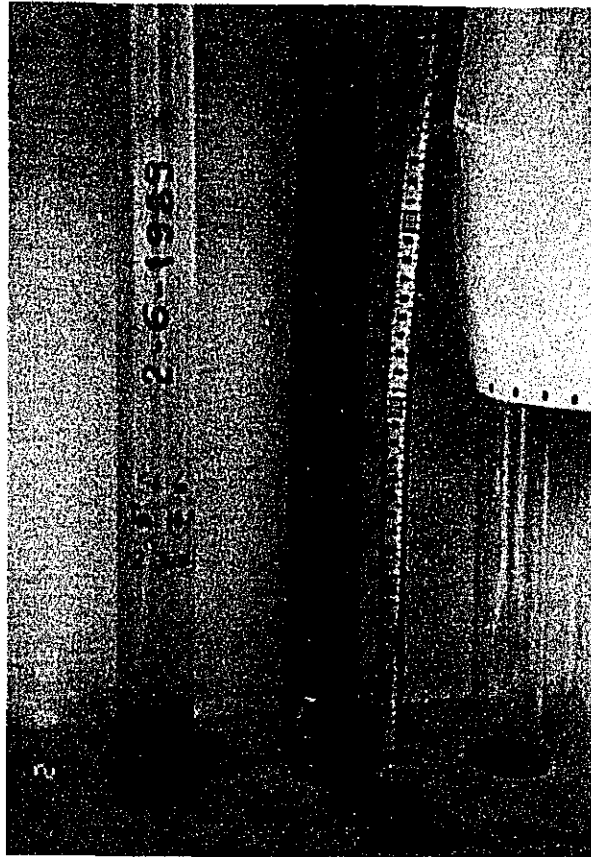
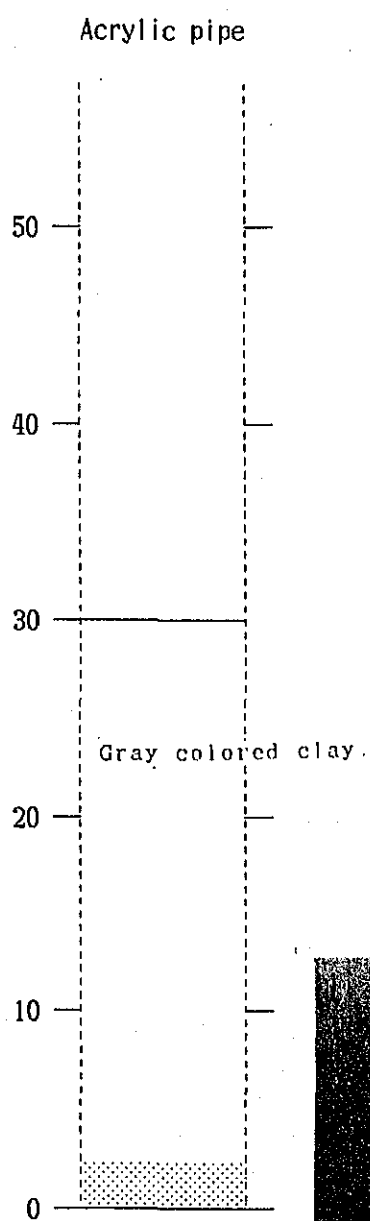
205 SB.2-43

205

St.4

Date : 2th JUNE 1989

Sampling time : 13:26-13:52 (Depth : 4.6m)

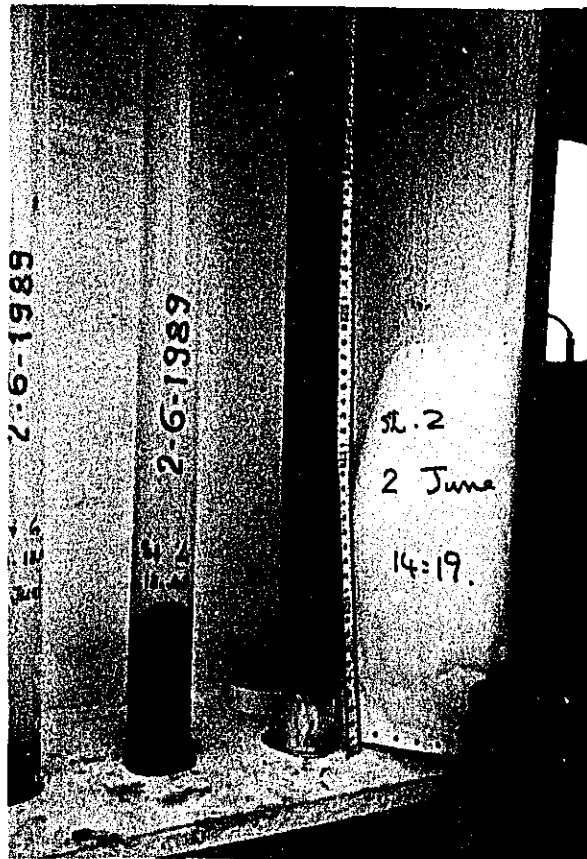
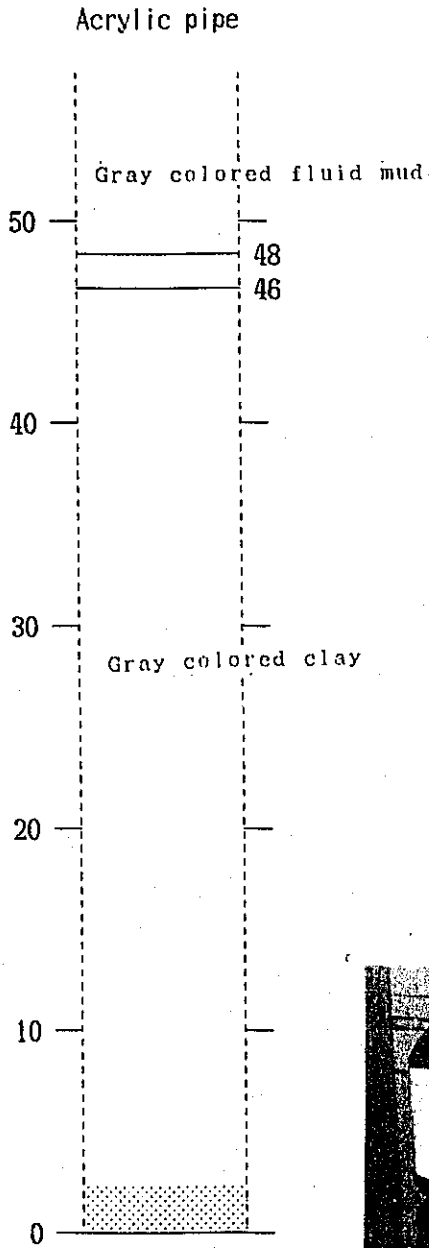


Sample in tube

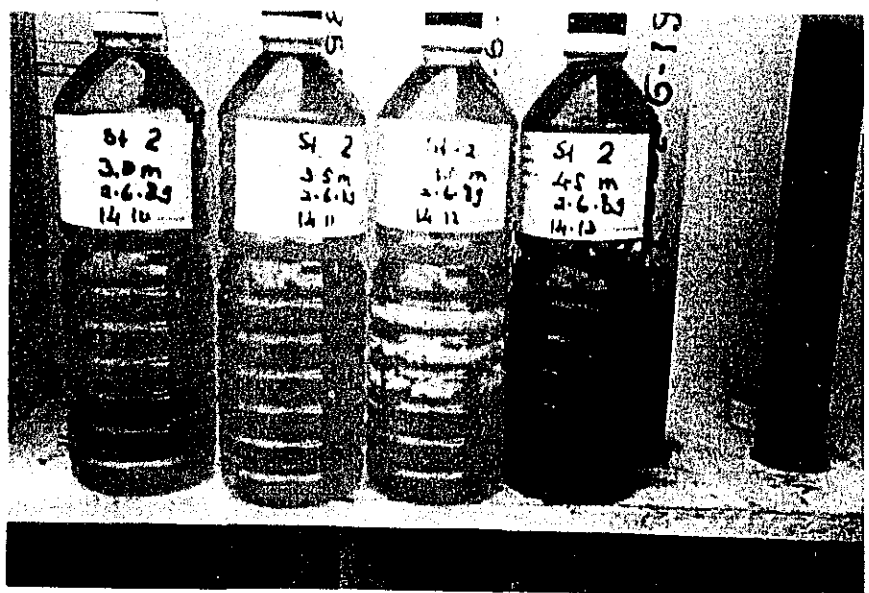


Sample in bottle every layer

St.2      Date : 2th JUNE 1989      Sampling time : 14:09-14:23 (Depth : 4.7m)



Sample in tube



SB.2-45 , sample in bottle every layer!