CONFIDENTIAL 19-190

SCHLUMBERGER

POTECLINOMETER

CONTINUOUS DIPMETER

COMPUTED

COUNTY GRAYS HARBOR
FIELD or LOCATION OCEAN CITY AREA
WELL GRAYS HARBOR LHA 1-15(STRAT TEST2)
COMPANY SHELL OIL CO

COMPANY SHELL OIL COMPANY

WELL GRAYS HARBOR LHA 1-15 (STRAT TEST 21)

FIELD OCEAN CITY AREA

COUNTY GRAYS HARBOR STATE WASHINGTON

LOCATION SE/4

Sec. 15 Twp. 19N Rge. 12W

Other Services:

Permanent Datum: GL, Elev. 32.8
Log Measured From KB, 12 Ft. Above Perm. Datum
Drilling Measured From KB

Elev.: K.B. 44.8
D.F.
G.L. 32.8

Date	6-16-70			
Run No.	ONE			
Depth—Driller	2034			
Depth—Logger	2027			
Btm. Log Interval	2026			
Top Log Interval	515			
Casing—Driller	514 @	@	@	@
Casing—Logger	515			
Bit Size	8¾			
Type Fluid in Hole	FRESH LIGNO			
Dens. | Visc.	83 51			
pH | Fluid Loss	10.4 | 7.6ml	ml	ml	ml
Source of Sample	-			
R_m @ Meas. Temp.	2.42 @64 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	- @ °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	- @ °F	@ °F	@ °F	@ °F
Source: R_{mf} R_{mc}	- |	|	|	|
R_m @ BHT	@ 85 °F	@ °F	@ °F	@ °F
Time Since Circ.	-			
Max. Rec. Temp.	85 °F	°F	°F	°F
Equip. | Location	3716 | SAC	|	|	|
Recorded By	ANDERSEN			
Witnessed By	HASTINGS			

FOLD HERE

The well name, location and borehole reference data were furnished by the customer.

Changes in Mud Type or Additional Samples				
Date | Sample No.				
Depth—Driller				
Type Fluid in Hole				
Dens. | Visc.				
ph | Fluid Loss		ml		
Source of Sample				
R_m @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
Source: R_{mf} | R_{mc}	|	|	|	|
R_m @ BHT	@ °F	@ °F	@ °F	@ °F
R_{mf} @ BHT	@ °F	@ °F	@ °F	@ °F
R_{mc} @ BHT	@ °F	@ °F	@ °F	@ °F

	1	2	3	4
Run No.				
Tool Type	4ARMHDT			
DCM No.	HDM-D-729E			
Magnetic Declination	22°E			
Analog Panel No.				
Digital Panel No.	DDR-C-715			
Correlated By	UNIVI1108			
Computed By	UNIVI1108			
Plotted By	CALCOMP			
Correlation Interval ↓ Step Length ↓ Search Angle	60°			

Digital Computation No. LA06180

Remarks: QUALITY INDICATIONS ARE AS FOLLOWS:
CIRCLE-EXCELLENT SQUARE-GOOD DIAMOND-FAIR

"Any directional computations made from the dipmeter log must be regarded as approximate only. This is because the dipmeter log indicates the orientation of the instrument itself, rather than the direction and amount of the wall drift. Therefore, we do not and cannot guarantee the accuracy of such directional computations, and we shall not, except in the case of willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained that may result from any such computations."

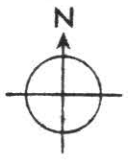
TABLE OF VERTICAL DISPLACEMENT IN FEET CORRESPONDING TO VARIOUS HORIZONTAL DISTANCES AND ANGLES OF DIP

DIP ANGLES (degrees)	VERTICAL DISPLACEMENT FOR HORIZONTAL DISTANCES OF 100′	1000′	1 mile (5280′)
1	1.75	17.5	92.2
2	3.5	35.	184.
3	5.2	52.	277.
4	7.0	70.	369.
5	8.8	88.	462.
6	10.5	105.	555.
7	12.3	123.	648.
8	14.1	141.	742.
9	15.8	158.	836.
10	17.6	176.	931.
11	19.4	194.	1026.
12	21.3	213.	1122.
13	23.1	231.	1219.
14	24.9	249.	1316.
15	26.8	268.	1415.
16	28.7	287.	1514.
17	30.6	306.	1614.
18	32.5	325.	1716.

DIP ANGLES (degrees)	VERTICAL DISPLACEMENT FOR HORIZONTAL DISTANCES OF 100′	1000′	1 mile (5280′)
19	34.4	344.	1818.
20	36.4	364.	1922.
21	38.4	384.	2027.
22	40.4	404.	2133.
23	42.5	425.	2241.
24	44.5	445.	2351.
25	46.6	466.	2462.
30	57.7	577.	3048.
35	70.0	700.	3697.
40	83.9	839.	4430.
45	100.0	1000.	5280.
50	119.2	1192.	6293.
55	142.8	1428.	7540.
60	173.2	1732.	9145.
65	214.4	2144.	11323.
70	274.8	2748.	14507.
75	373.2	3732.	19705.
80	567.1	5671.	29945.

To obtain vertical displacements corresponding to multiples of hundreds feet, thousands of feet or miles, multiply the number found in the table by the number of hundreds, thousands or miles.

Example: The formation dip is 16 degrees. The vertical displacement occurring at a spot 660 feet away from the well is desired. The table shows 28.7 feet per 100 feet for 16° dip. Therefore 28.7 x 6.60 = 189.42, or 189. feet.



GRAPHIC PRESENTATION

700

600

500

4

1

0

2

4

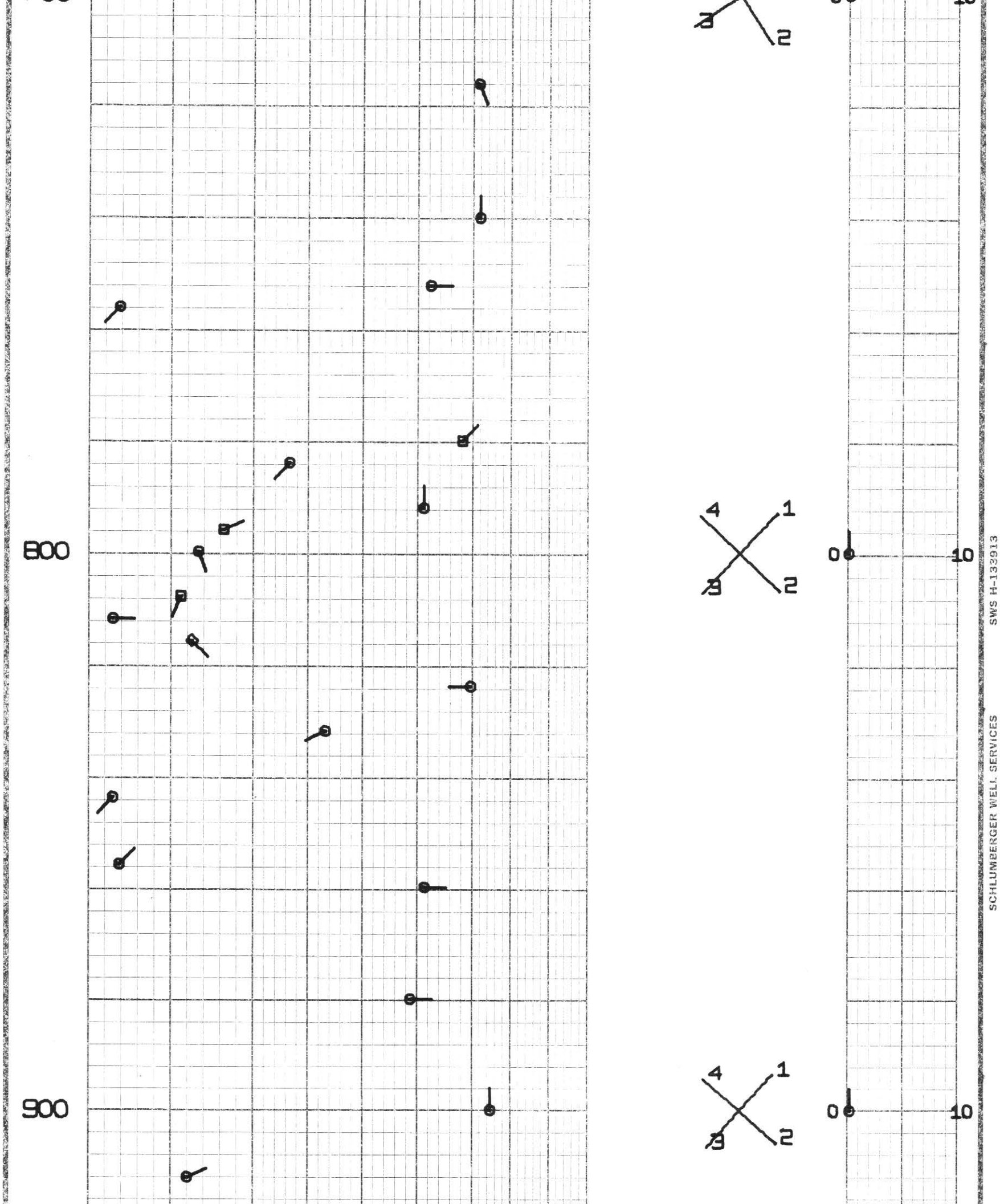
2

1

0

10

SCHLUMBERGER WELL SERVICES SWS H-133913



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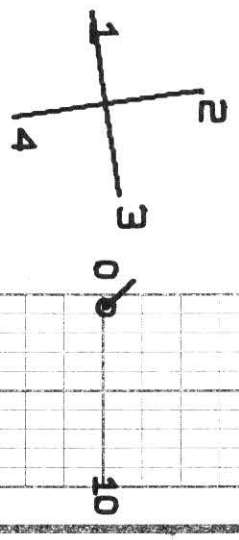
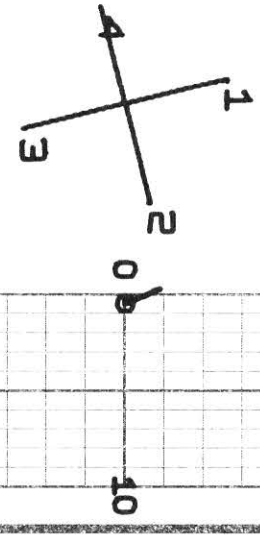
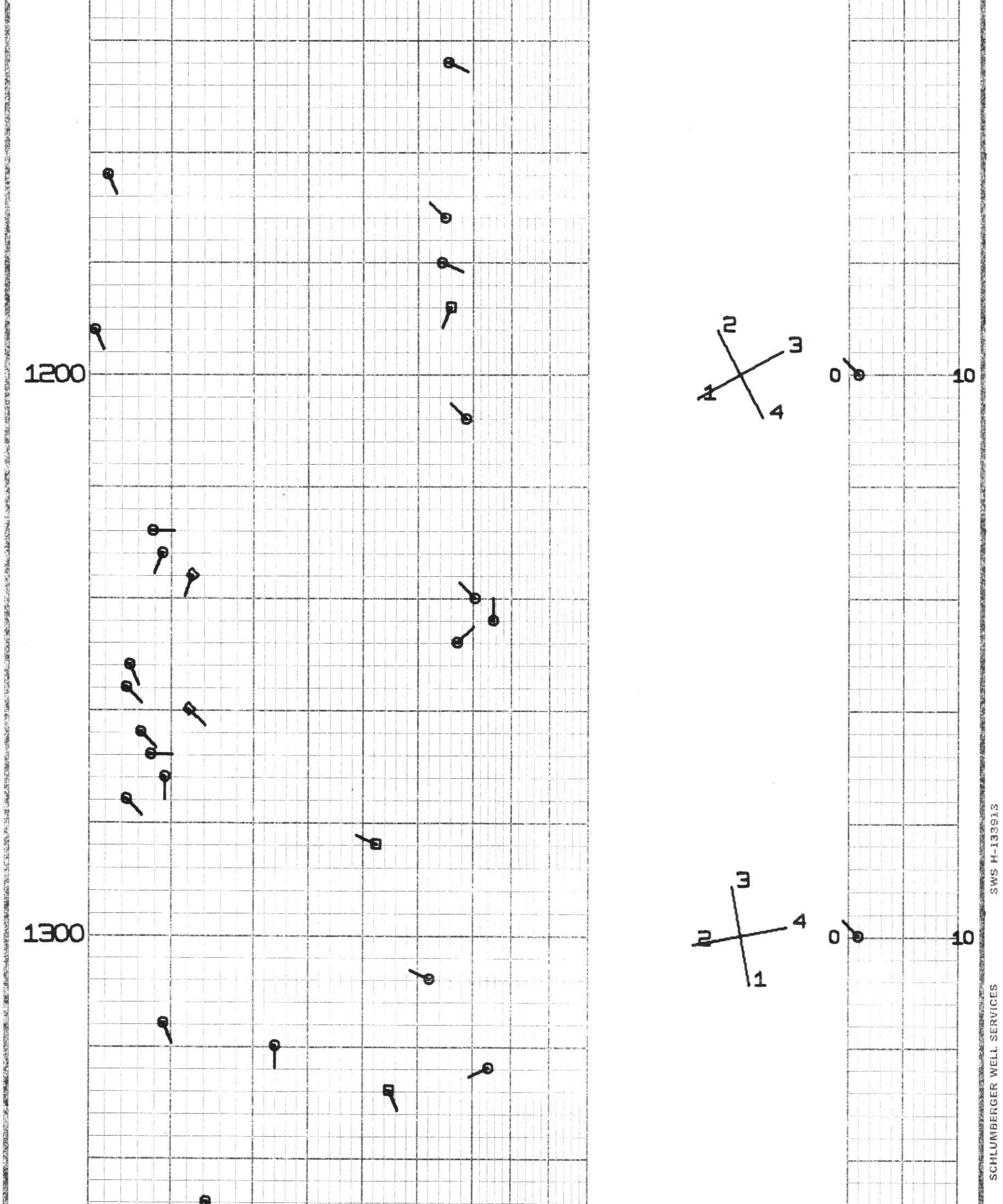
1100

1000







SCHLUMBERGER WELL SERVICES

SWS H-133913

1500

1400

3

2

4

1

0

10

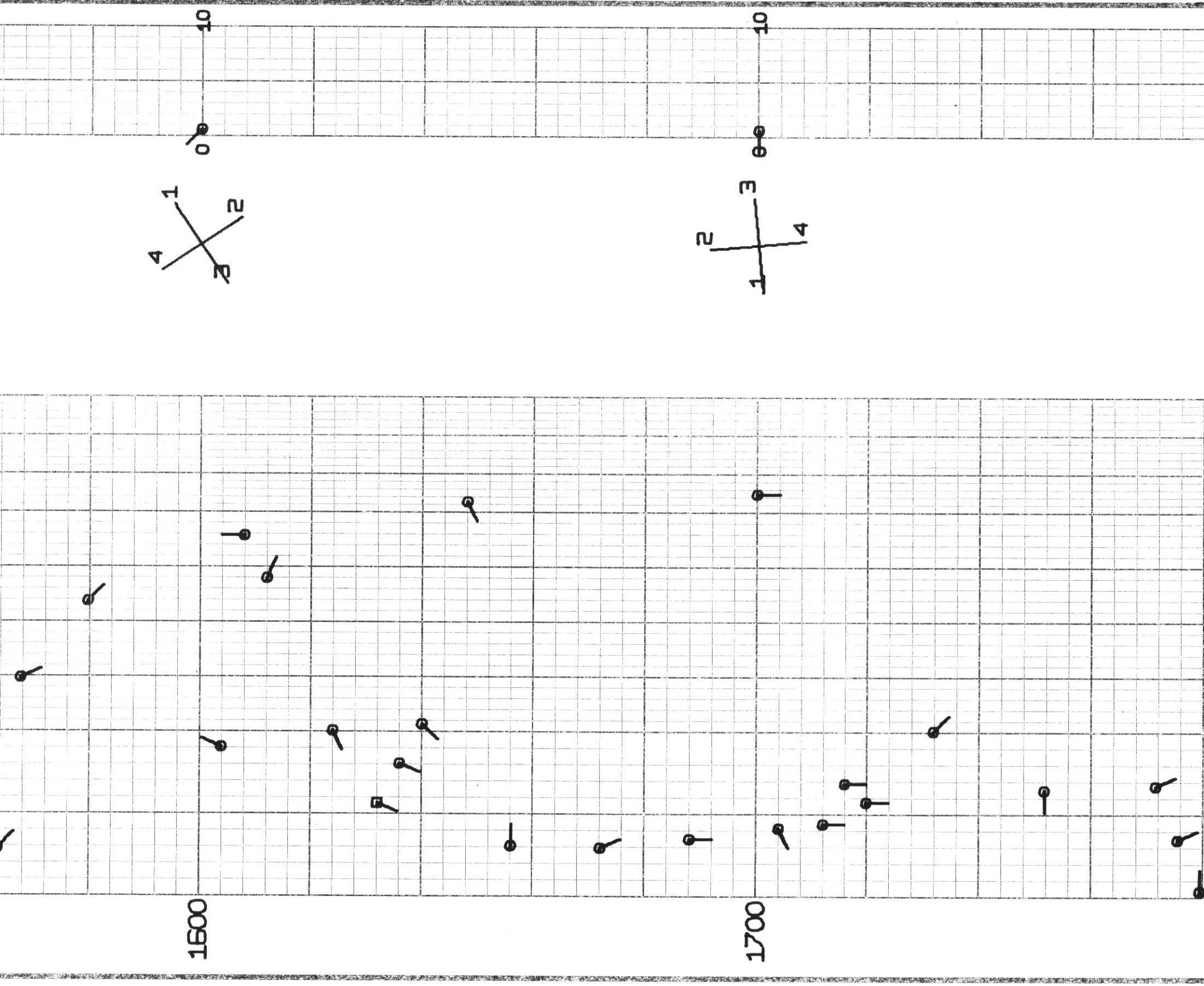
0

10

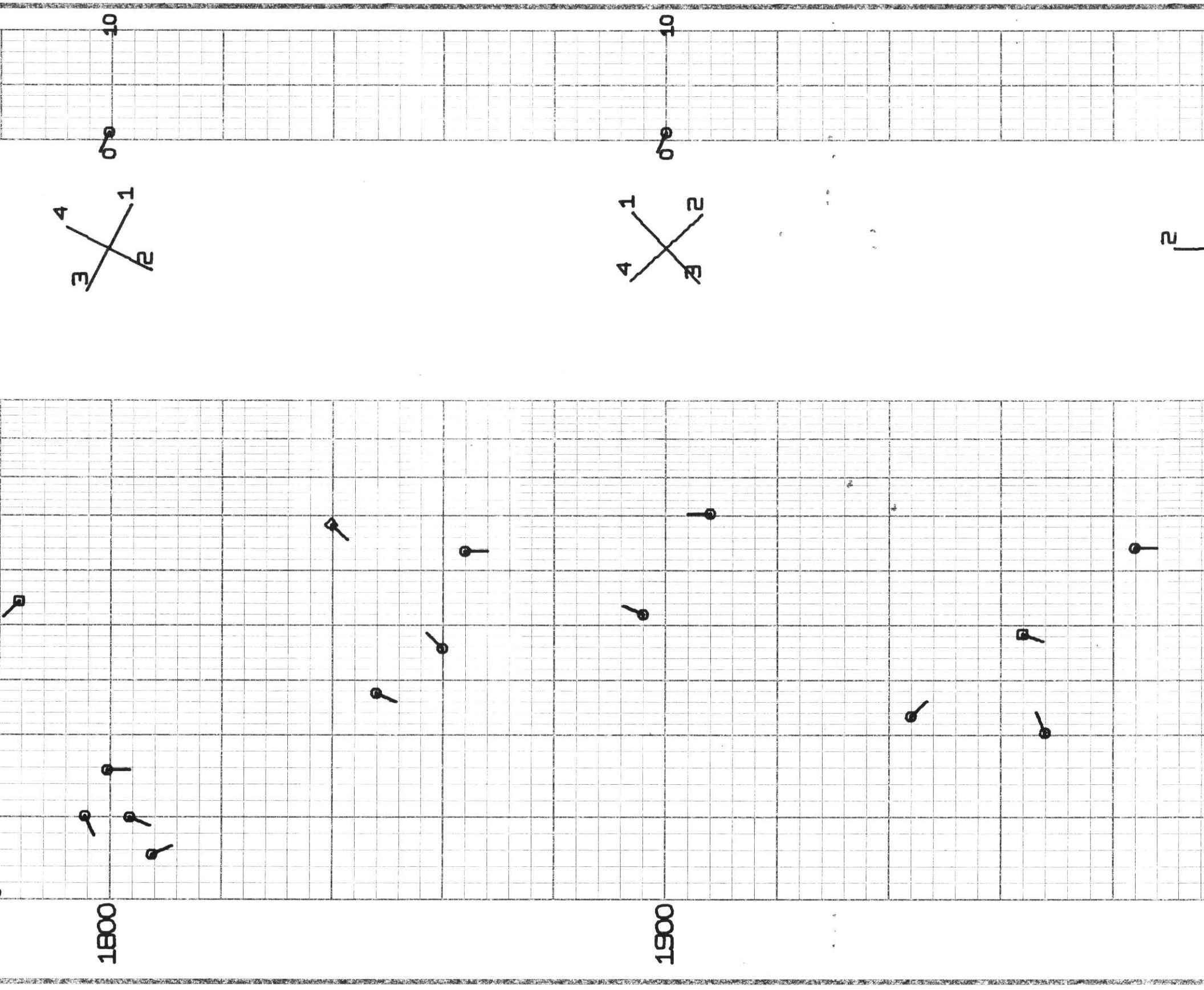
ELL SERVICES SWS H-133913

SCHLUMBERGER W

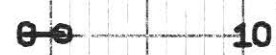
SWS H-13391



SCHLUMBERGER WELL SERVICES



2000



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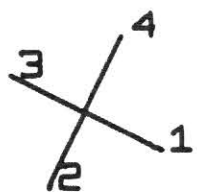
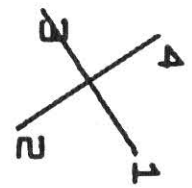
SWS H-13391

REPEAT SECTION

1800



1900



0

10

SCHLUMBERGER WELL SERVICES SWS H-133913

DEPTHS	TRUE DIP ANGLE	DEPTH INTERVAL	TRUE DIP & TRUE DIP DIRECTION	TRUE DRIFT DIRECTION OF SONDE

COMPANY SHELL OIL COMPANY

WELL GRAYS HARBOR LHA 1-15(STRAT TEST 21)

FIELD OCEAN CITY AREA

COUNTY GRAYS HARBOR STATE WASHINGTON

SCHL. FR 2026
SCHL. TD 2027
DRLR TD 2034
Elev:
KB 44.8
DF
GL 32.8