

APPENDIX F

**HYDROCARBON SATURATION DATA AND HYDROCARBON LOGS
FROM MW-20 AND NAPL SCREENING INVESTIGATIONS**

**HYDROCARBON SATURATION DATA
DEL AMO SUPERFUND SITE**

NAPL Area	Boring	Depth (ft. bgs)	Hydrocarbon Saturation (% PV)
MW-20 NAPL Area (Source Area 2)	OWL007A	66.50	4.5
	OWL0010	81.50	2.2
	SBL0085	62.75	<0.1
		64.45	<0.1
		67.80	<0.1
		69.70	<0.1
		78.45	<0.1
		78.55	<0.1
		80.70	<0.1
		81.85	<0.1
	SBL0086	61.65	<0.1
		62.40	2.22
		64.52	<0.1
		64.75	<0.1
		65.25	<0.1
		67.10	<0.1
		72.70	<0.1
		74.40	<0.1
	76.40	<0.1	
	SBL0087	59.50	<0.1
		60.70	<0.1
		62.80	<0.1
		67.50	<0.1
		69.5	<0.1
		69.70	<0.1
		72.80	<0.1
		73.55	1.47
		74.10	2.93
		74.38	<0.1
	76.40	<0.1	
	80.96	<0.1	
	SBL0088	59.90	<0.1
		60.60	0.49
		63.50	<0.1
		63.85	<0.1
		65.65	<0.1
		67.80	0.75
		69.55	1.69
		71.18	7.28
		71.50	1.16
		72.50	4.8
		73.35	3.01
73.70		0.24	
74.30		3.51	
74.50		1.94	
74.70	1.38		
75.15	<0.1		
75.80	<0.1		
76.55	<0.1		

**HYDROCARBON SATURATION DATA
DEL AMO SUPERFUND SITE**

NAPL Area	Boring	Depth (ft. bgs)	Hydrocarbon Saturation (% PV)
MW-20 NAPL Area (Source Area 2)	SBL0089	59.70	<0.1
		62.60	<0.1
		63.40	8.28
		64.60	<0.1
		67.50	<0.1
		68.45	3.22
		68.70	<0.1
		71.40	<0.1
		71.77	0.83
		72.35	0.72
		73.35	6.65
		73.70	<0.1
		73.85	1.62
		74.65	1.33
		75.30	<0.1
		76.85	<0.1
		SBL0090	58.92
	59.90		<0.1
	63.30		<0.1
	65.35		0.71
	70.45		9.59
	70.70		30
	71.32		<0.1
	72.50		4.35
	72.63		<0.1
	73.80		<0.1
	74.25		<0.1
	74.40		<0.1
	74.60		5.52
	75.20		<0.1
	75.75		<0.1
	76.45	<0.1	
	76.70	0.15	
	SBL0091	83.60	<0.1
		58.80	<0.1
		59.75	<0.1
		60.32	<0.1
		64.30	<0.1
		64.45	12.3
		67.40	7.53
		67.65	18.4
		71.60	<0.1
		72.45	1.29
72.60	7.63		
SBL0092	76.15	<0.1	
	60.15	<0.1	
	64.40	<0.1	
	66.30	26.1	
	66.75	<0.1	
	73.35	<0.1	
78.65	<0.1		

**HYDROCARBON SATURATION DATA
DEL AMO SUPERFUND SITE**

NAPL Area	Boring	Depth (ft. bgs)	Hydrocarbon Saturation (% PV)
MW-20 NAPL Area (Source Area 2)	SBL0093	73.65	<0.1
		74.35	<0.1
		75.90	<0.1
		76.70	<0.1
		77.80	<0.1
		78.65	<0.1
		80.90	<0.1
		83.70	<0.1
		89.20	<0.1
		89.45	<0.1
	SBL0094	71.30	<0.1
		73.75	<0.1
		74.30	7.81
		75.40	3.11
		78.30	<0.1
		79.45	<0.1
		79.76	1.45
		80.75	9.27
		81.50	13.34
		81.70	0.67
		82.00	<0.1
		84.35	1.67
		87.65	<0.1
		88.60	0.56
	89.80	<0.1	
	SBL0110	62.50	0.3
		62.80	0.5
		60.40	0.7
		62.50	0.3
		62.80	0.5
		65.40	15.6
		66.50	14
		67.65	1.1
		70.40	4.9
		72.50	8.9
	76.25	1.1	
	79.40	0.3	
	SBL0111	64.40	8.4
		66.50	5.3
		70.70	11.7
SBL0112	63.50	20.1	
	70.70	13.6	
SBL0113	72.60	2.7	
	66.70	3.5	
SBL0114	66.30	4.6	
	65.30	1.3	

**HYDROCARBON SATURATION DATA
DEL AMO SUPERFUND SITE**

NAPL Area	Boring	Depth (ft. bgs)	Hydrocarbon Saturation (% PV)
Source Area 6	SBL0125	11.5-11.7	0.13
		12.2-12.4	2.07
		13.0-13.2	2.24
		25.6-25.8	<0.1
		32.0-32.2	<0.1
		32.4-32.6	<0.1
	SBL0125	41.1-41.2	<0.1
		44.2-44.4	<0.1
		47.9-48.1	<0.1
		51.0-51.2	<0.1
		52.5-52.7	0.93
		56.28-	1.26
		57.5-57.7	<0.1
		60.6-60.8	<0.1
		67.4-67.6	0.62
		69.4-69.6	<0.1
		75.0-75.2	0.62
		82.4-82.6	<0.1
87.2-87.4	<0.1		
Source Area 11	SBL0124	8.5-8.7	<0.1
		12.2-12.4	<0.1
		15.2-15.4	<0.1
		16.2-16.6	0.35
		17.0-17.2	<0.1
		28.0-28.2	<0.1
		36.0-36.2	<0.1
		41.5-41.7	<0.1
		44.4-44.6	<0.1
		51.4-51.6	8.95
		52.2-52.4	6.58
		54.4-54.6	<0.1
		56.8-57.0	<0.1
		59.0-59.2	<0.1
66.6-66.8	<0.1		
68.0-68.2	<0.1		
74.0-74.2	0.48		
75.3-75.5	<0.1		
88.4-88.6	<0.1		
Source Area 12	SBL0123	8.8-9.0	3.15
		11.7-11.9	8.8
		13.2-13.4	9.69
		20.7-20.9	11.08
		25.2-25.4	3.45
		28.0-28.2	13.69
		32.0-32.3	2.99
		36.2-36.4	11
		37.0-37.2	7.07
		41.0-41.2	3.33
		42.0-42.2	0.92
		46.1-46.3	<0.1
59.0-59.2	<0.1		
61.6-61.8	<0.1		
63.8-64.0	<0.1		

**HYDROCARBON SATURATION DATA
DEL AMO SUPERFUND SITE**

NAPL Area	Boring	Depth (ft. bgs)	Hydrocarbon Saturation (% PV)
Source Area 12	SBL0123	69.0-69.2	<0.1
		75.2-75.4	<0.1
		83.4-83.6	<0.1
		89.0-89.2	<0.1

NOTES: _____

Hydrocarbon saturations based on hydrocarbon densities of 0.879 gm/cc at source areas 2 and 11 (benzene); 0.867 gm/cc at source area 6 (ethylbenzene); and an estimated density of 0.700 gm/cc at source area 12 (complex of multiple hydrocarbons)

HYDROCARBON LOGS

SOIL BORINGS SBL0123, SBL0124 AND SBL0125

HYDROCARBON LOG

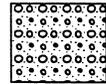
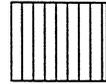
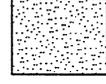
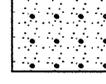
EXPLANATION

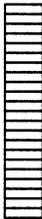
HYDROCARBON LOG SYMBOLS

LITHOLOGIC LOG SYMBOLS

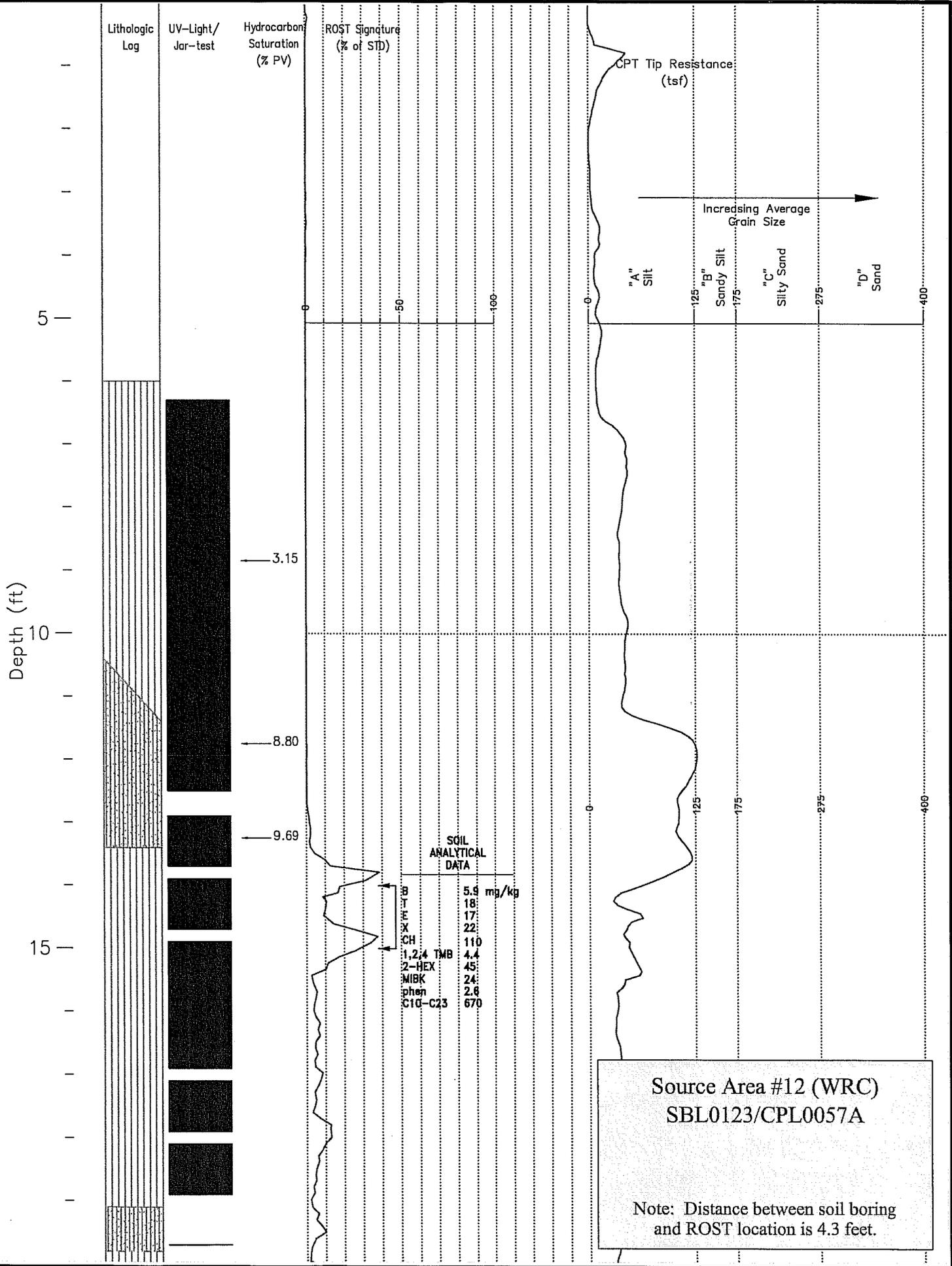
Increasing certainty of hydrocarbon

- No symbol Soil core not recovered
-  No evidence of separate phase hydrocarbon in core
-  UV-light induced fluorescence observed in soil core
-  Transient hydrocarbon trace observed during jar testing of soil core
-  UV-Fluorescence and hydrocarbon trace observed
-  Hydrocarbon skin observed during jar testing of soil core
-  UV-Fluorescence and hydrocarbon skin observed

-  GW Gravel/Sandy Gravel
-  ML Silt/Clayey Silt
-  SM Silty Sand
-  SP Sand
-  SW Gravelly Sand/Sand

-  Temporary well point screened interval

- B Benzene
- T Toluene
- E Ethylbenzene
- X Xylenes
- S Styrene
- CH Cyclohexane
- NAPH Naphthalene
- 1,2,4 TMB 1,2,4-trimethylbenzene
- 2-Hex 2-hexanone
- MIBK Methylisobutylketone
- Phen Phenanthrene
- sec BB sec-butylbenzene
- DMP Dimethylphthalate
- DBT Dibutylphthalate



Depth (ft)

25

35

11.08

3.45

13.69

2.99

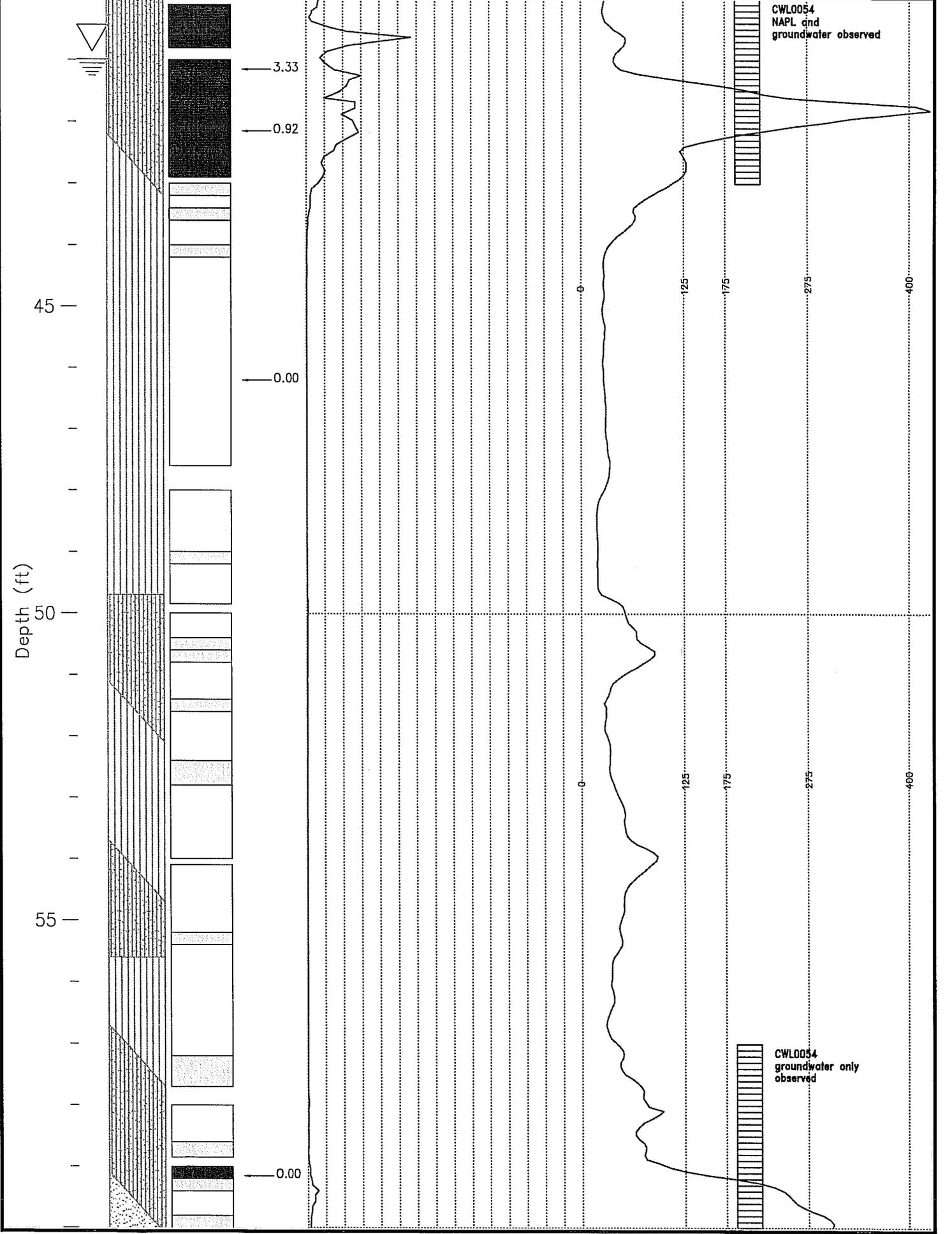
11.00

7.07

SOIL ANALYTICAL DATA

B	39: mg/kg
T	68:
F	14:
F	32:
S	11:
S	Naph 3.3
	1,2,4 TMB 3.3
	DMP 10:
	phen 19:
	pyrene 3.5
	C10-C23 3720

CWL0054
No NAPL or
groundwater observed



Depth (ft)

65

70

75

0.00

0.00

0.00

0.00

0

125

175

275

400

0

125

175

275

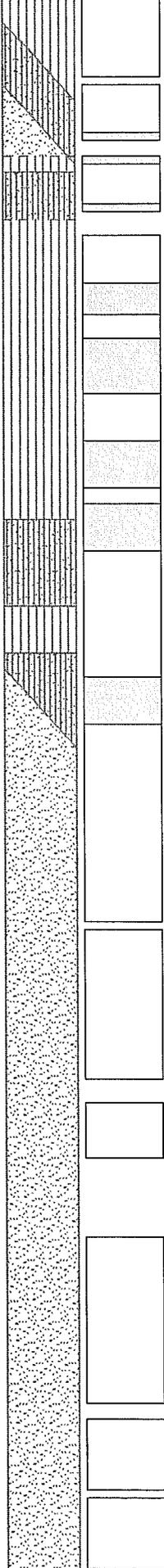
400

Depth (ft)

85

90

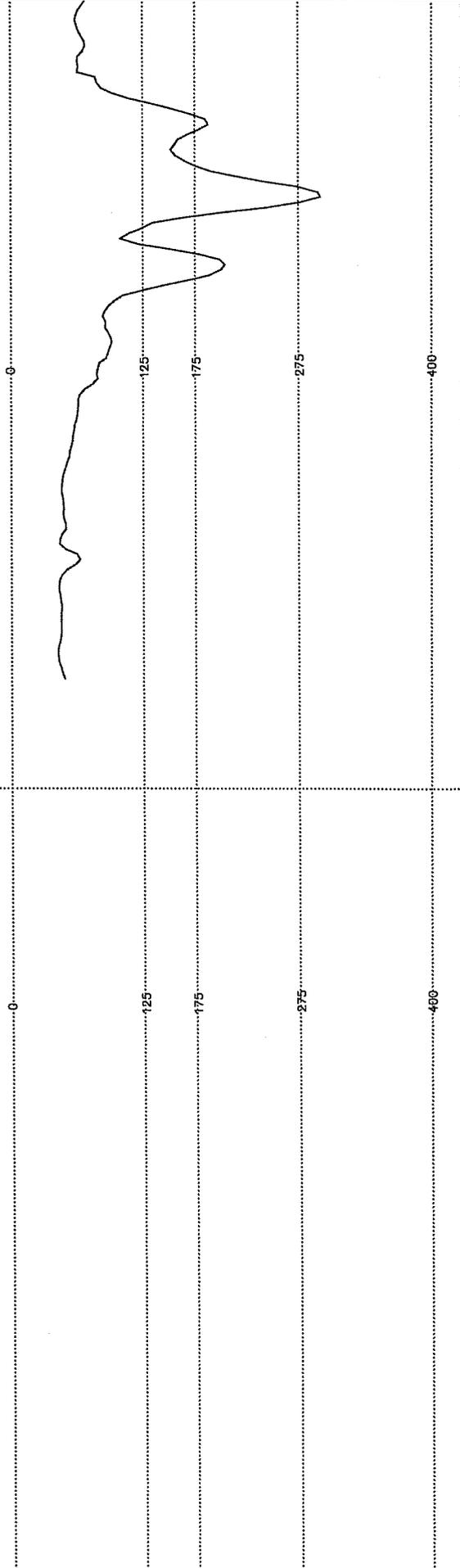
95

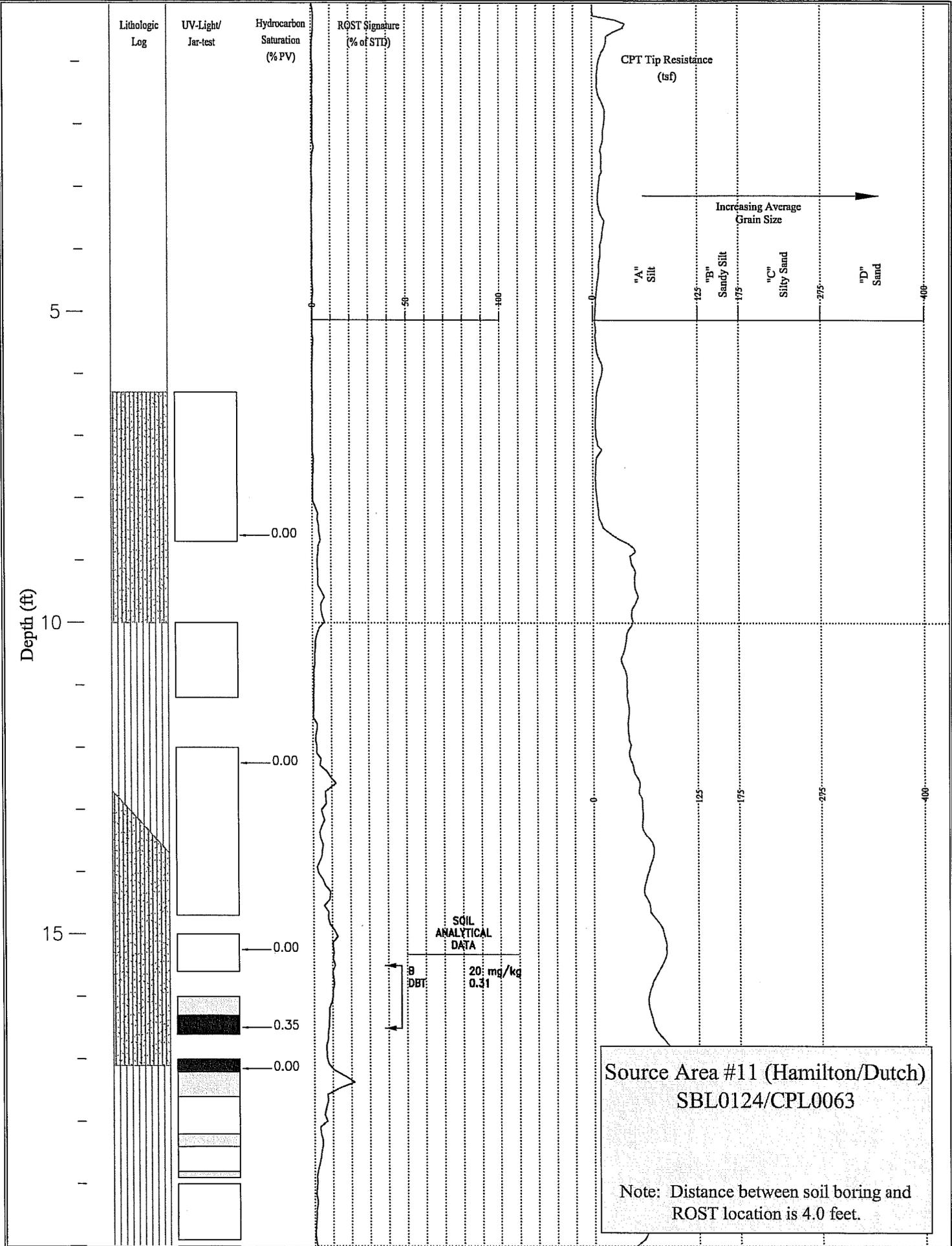


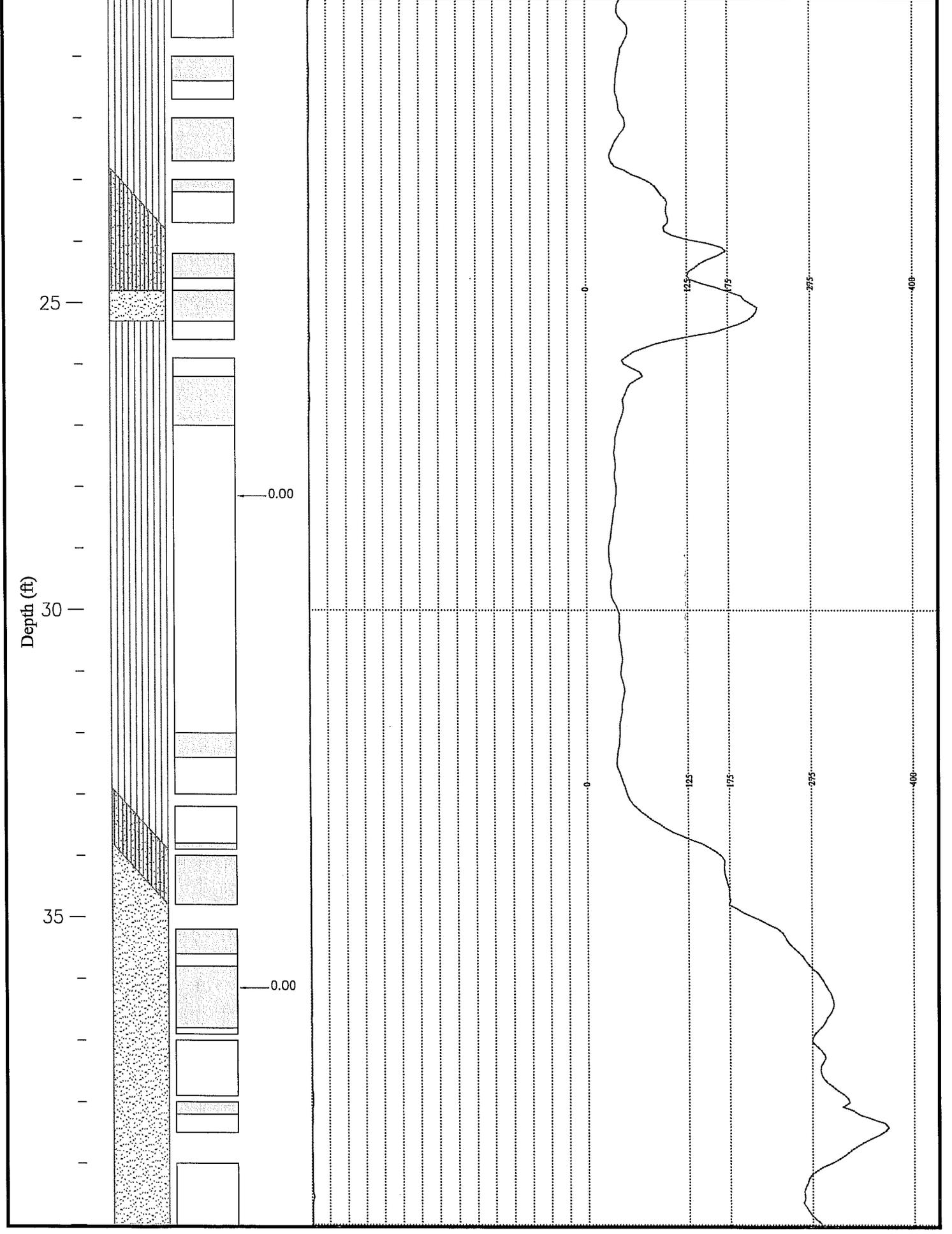
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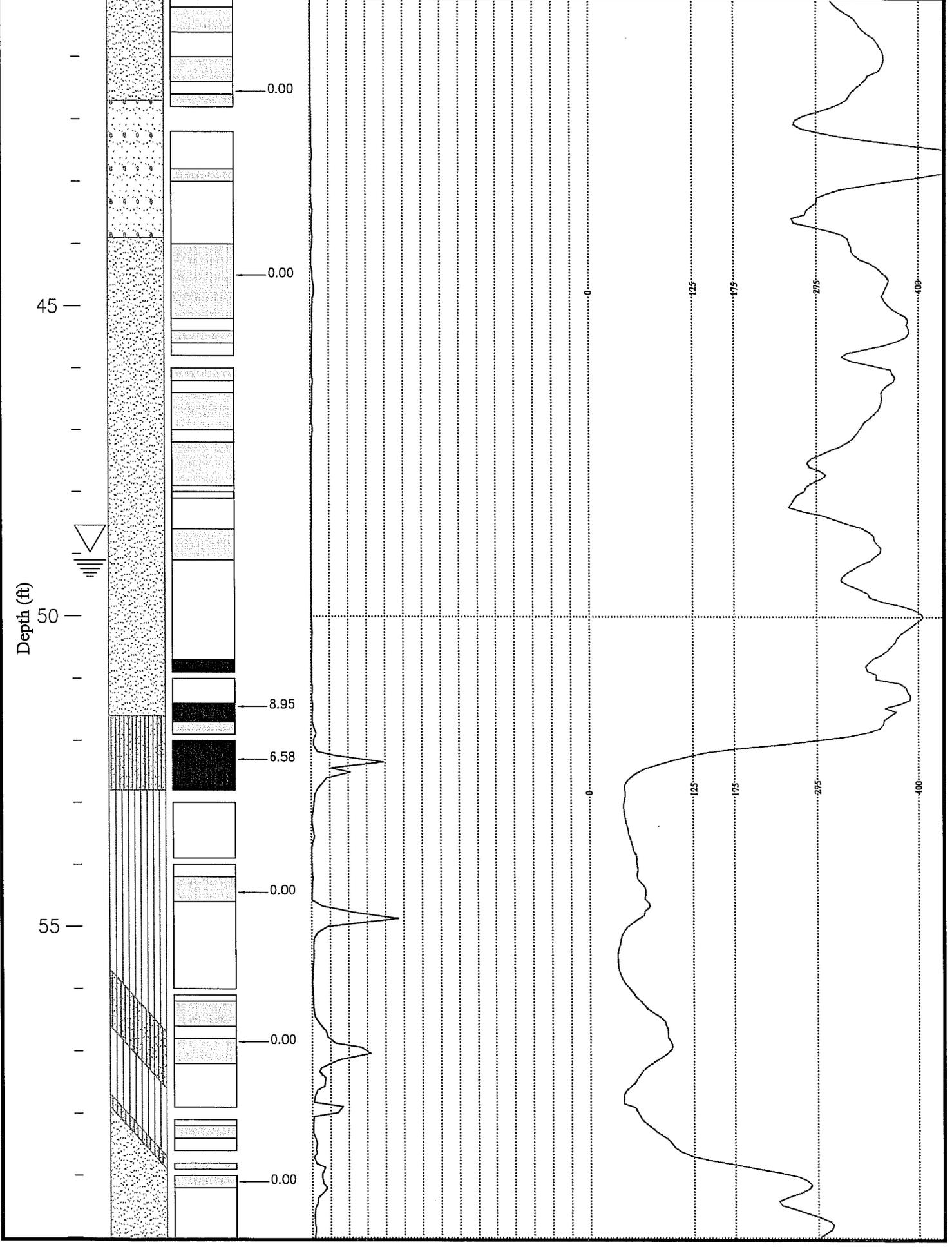
0.00

ROST Terminated







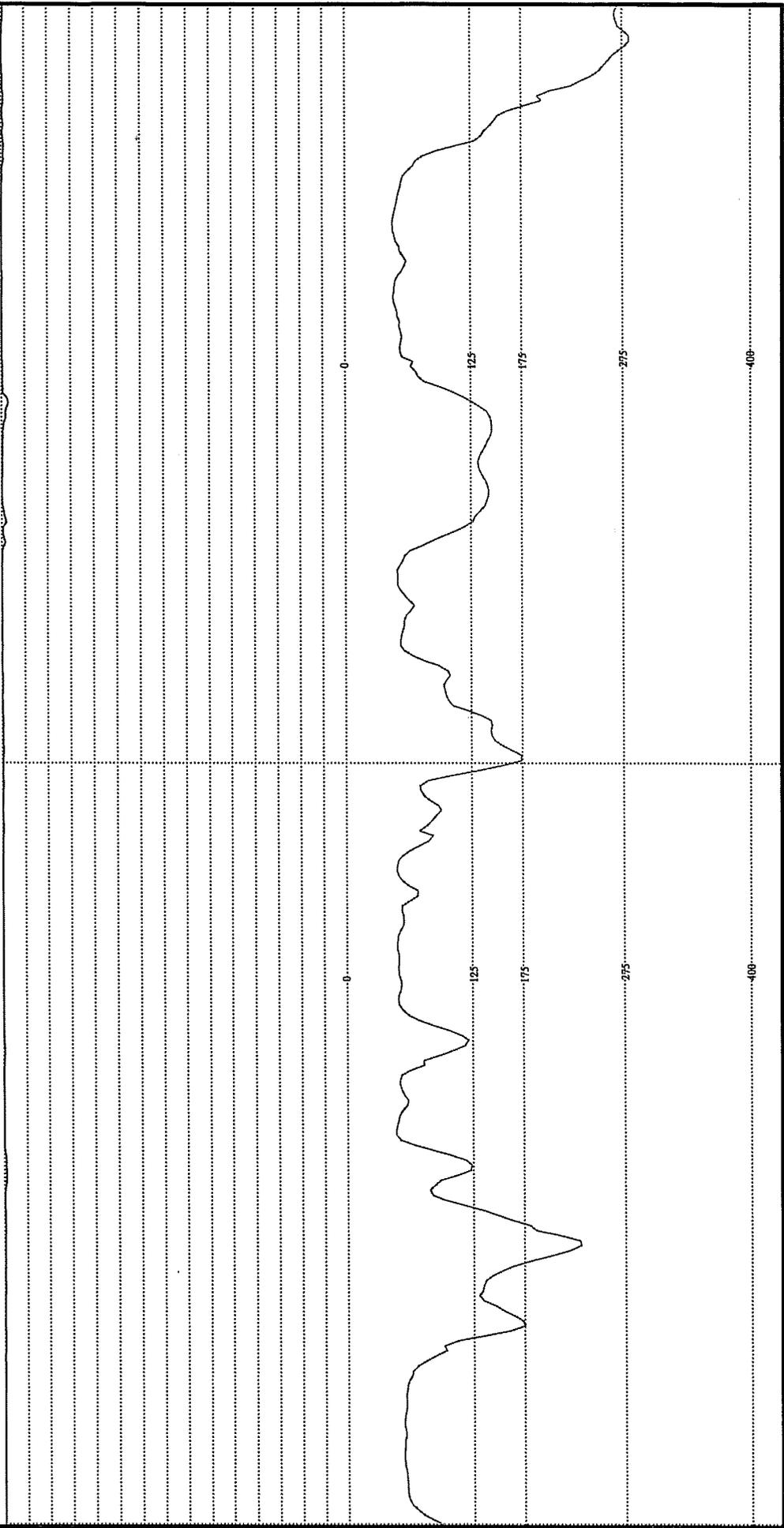
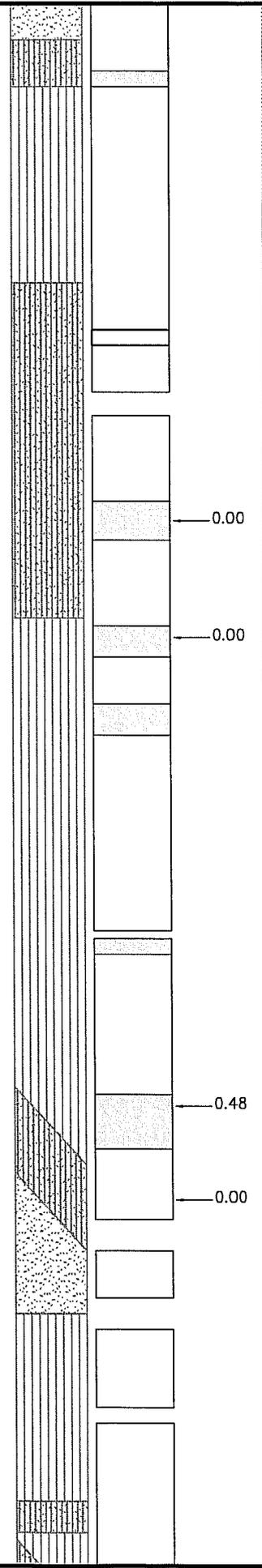


Depth (ft)

65

70

75

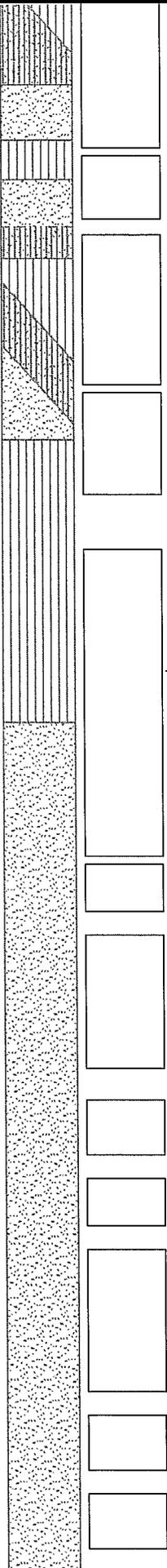


Depth (ft)

85

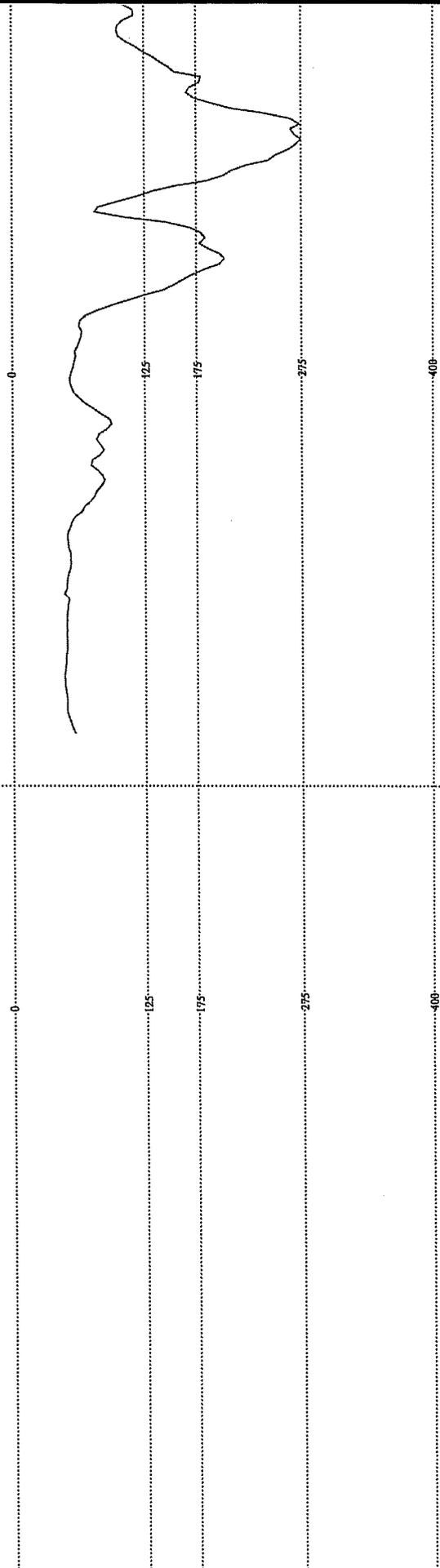
90

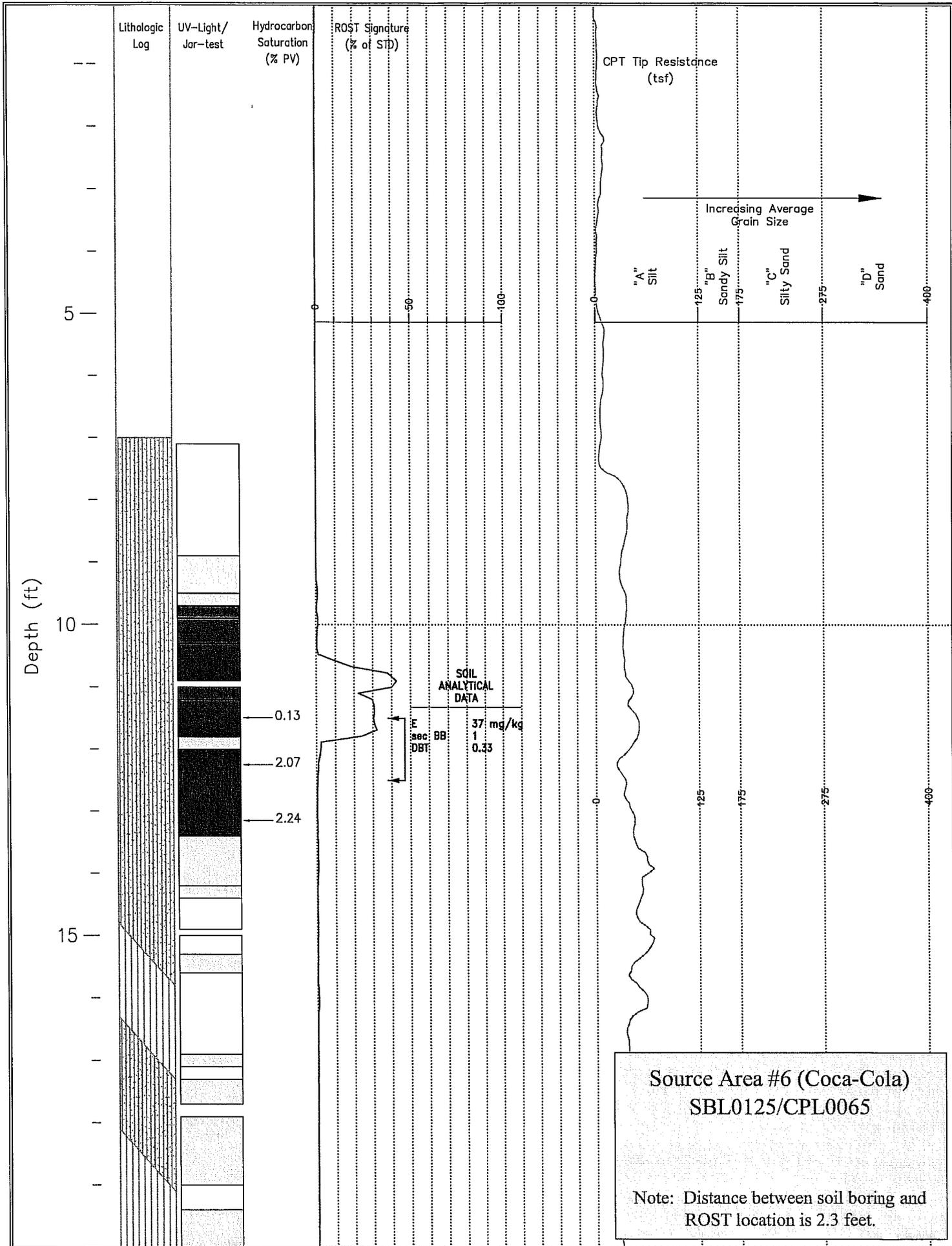
95



0.00

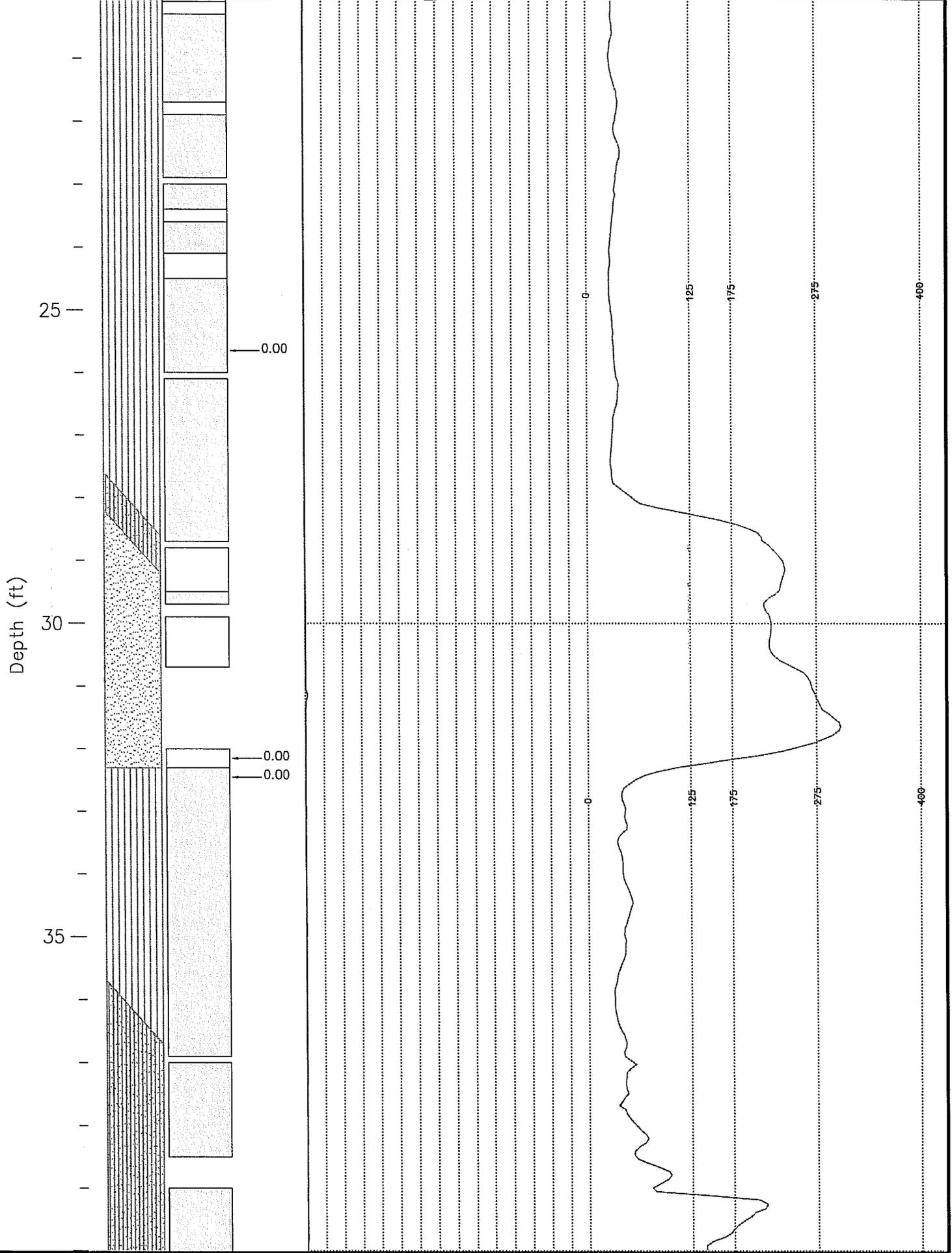
ROST Terminated

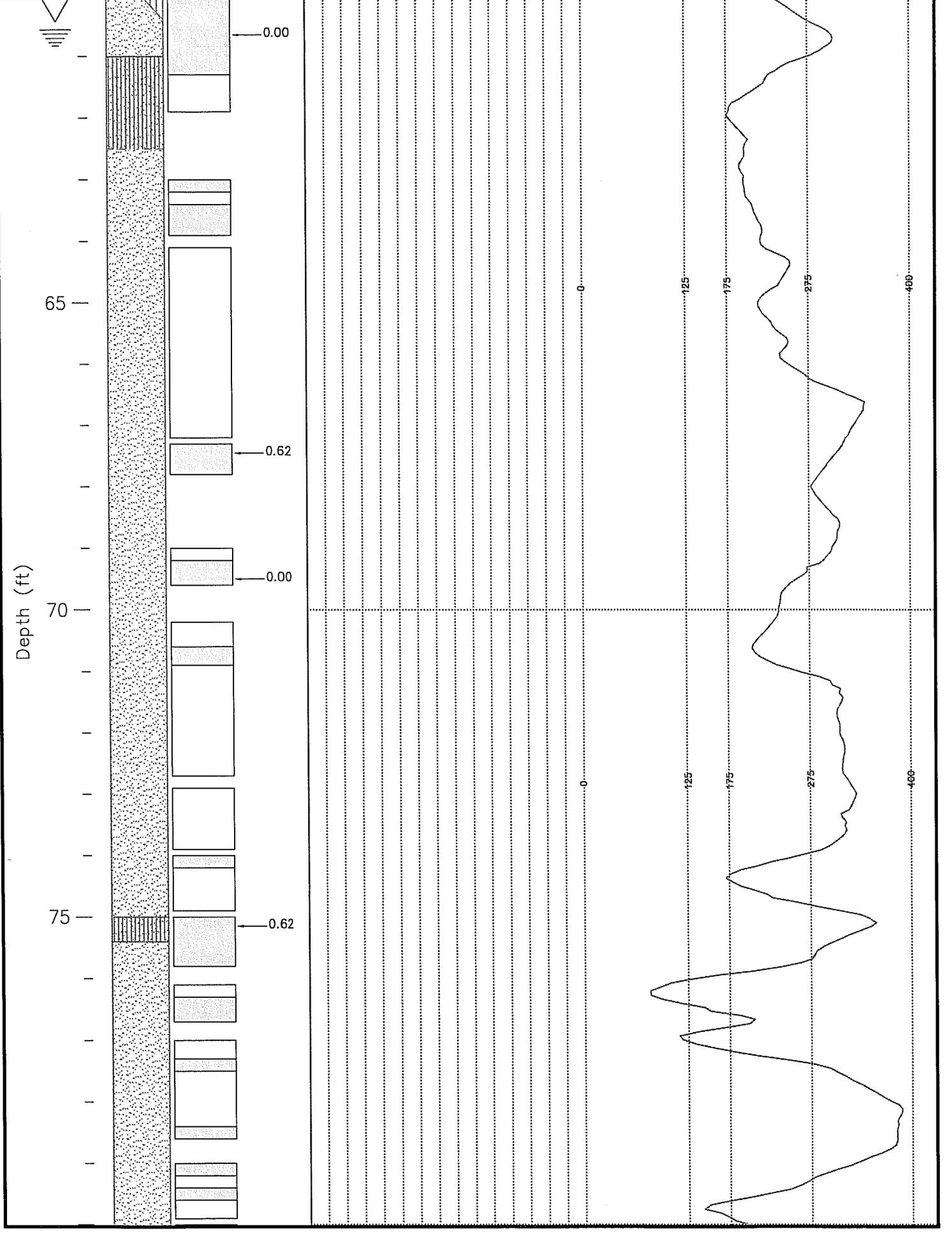




Source Area #6 (Coca-Cola)
SBL0125/CPL0065

Note: Distance between soil boring and ROST location is 2.3 feet.





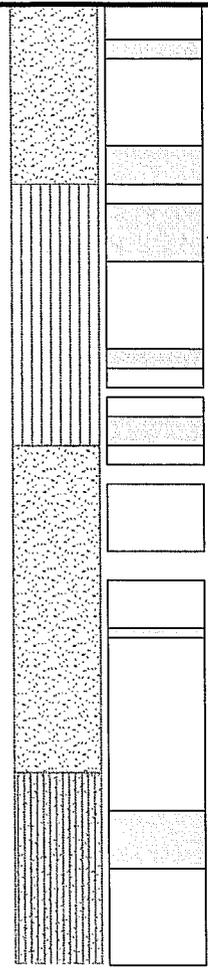
Depth (ft)

85

90

95

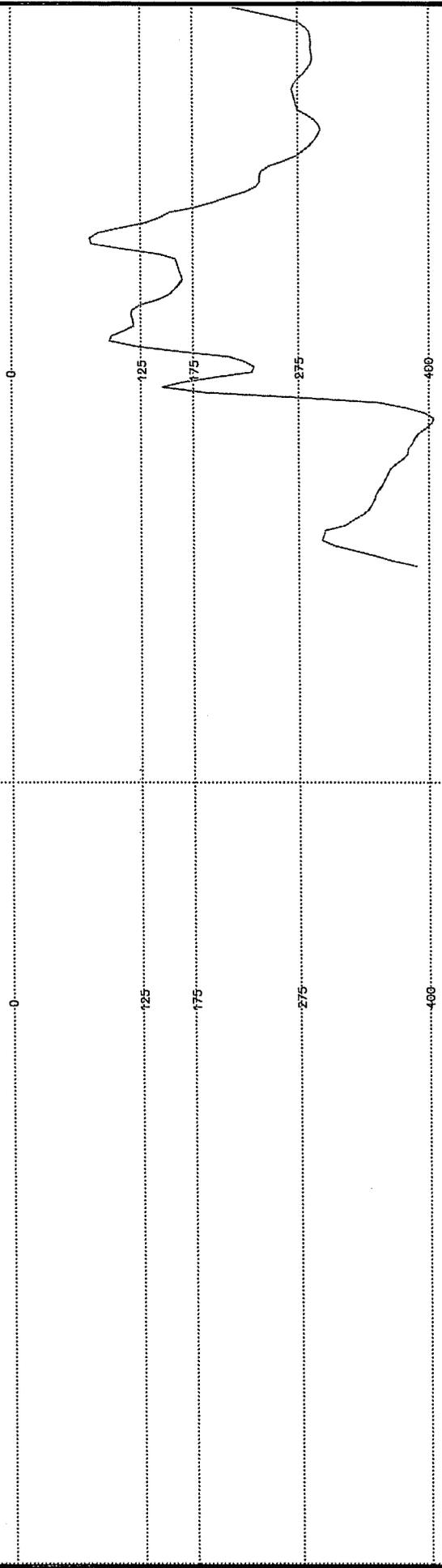
100



0.00

0.00

ROST Terminated



0

125

175

275

400

0

125

175

275

400

MW-20 AREA HYDROCARBON LOG SHEETS

EXPLANATION
MW-20 NAPL AREA HYDROCARBON LOG SHEETS

Soil core from selected borings at the MW-20 NAPL area was preserved (frozen) in the field for subsequent laboratory evaluation of the potential presence of NAPL. The presence of NAPL was evaluated using three methods:

- (1) Observation of fluorescence under a high-intensity ultraviolet light;
- (2) Laboratory testing of hydrocarbon saturation using the Dean-Stark extraction; and;
- (3) Application of a hydrocarbon-specific dye (Sudan Red) to samples that are disaggregated in a jar with a small volume of water (“Sudan Red jar testing”).

Subsequent to completion of the MW-20 hydrocarbon logs, it was determined that with careful observation, completion of jar testing without the Sudan Red dye resulted in a significantly more sensitive observational analysis than for those where the dye or fluorescence methods were used. When the powdered dye was used, but only very small volumes of NAPL were present, no visible reaction with the dye was apparent, and the presence of the powder would obscure observation of the NAPL. The more sensitive (non-Sudan Red) jar testing technique was therefore applied to all other areas where NAPL screening investigations were completed.

The MW_20 Pilot Program Summary Report (URS, 2003a) presented both “corrected” and uncorrected hydrocarbon saturation data for a portion of the samples that were tested using the Dean-Stark method. The “corrected” hydrocarbon saturation values were upward revisions of the originally reported values based on the degree of undersaturation (less than 100% combined water and NAPL saturation) evident from laboratory measurements. The “corrected” values were only slightly higher than the uncorrected values, and did not result in any changes in the report conclusions. For these reasons, and for consistency with the data from other NAPL areas where “Corrected values” are not possible due to the lack of water saturation data, only the original, uncorrected values are presented herein.

The MW-20 investigations differ additionally from the NAPL Screening Investigations completed at other areas in that Rapid Optical Screening Tool (ROST) data are not available. Due to these differences and the different period of time in which the investigations were completed, the format of the hydrocarbon logs for the MW-20 area NAPL is different than for the NAPL Screening Investigation areas.

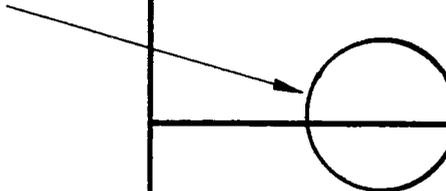
LOCATION: SBL0085

DATE: 6/21/94

TOP

DEPTH: 62.0'

$S_{HC} = ND$

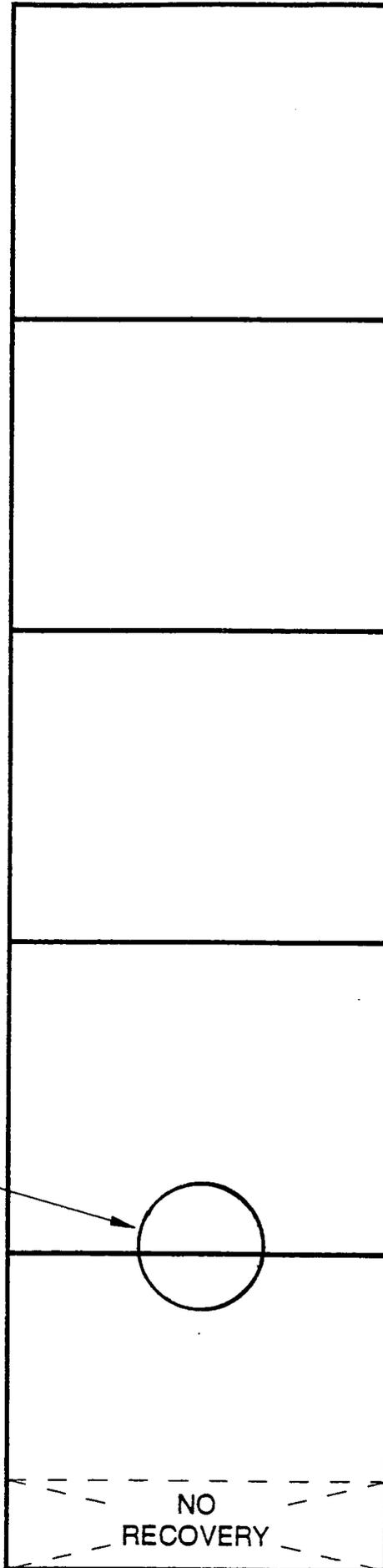


• Results of Sudan Red Jar Test negative

NO
RECOVERY

BOTTOM

DEPTH: 62.95'



LOCATION: SBL0085

DATE: 6/21/94

TOP

DEPTH: 64.0'

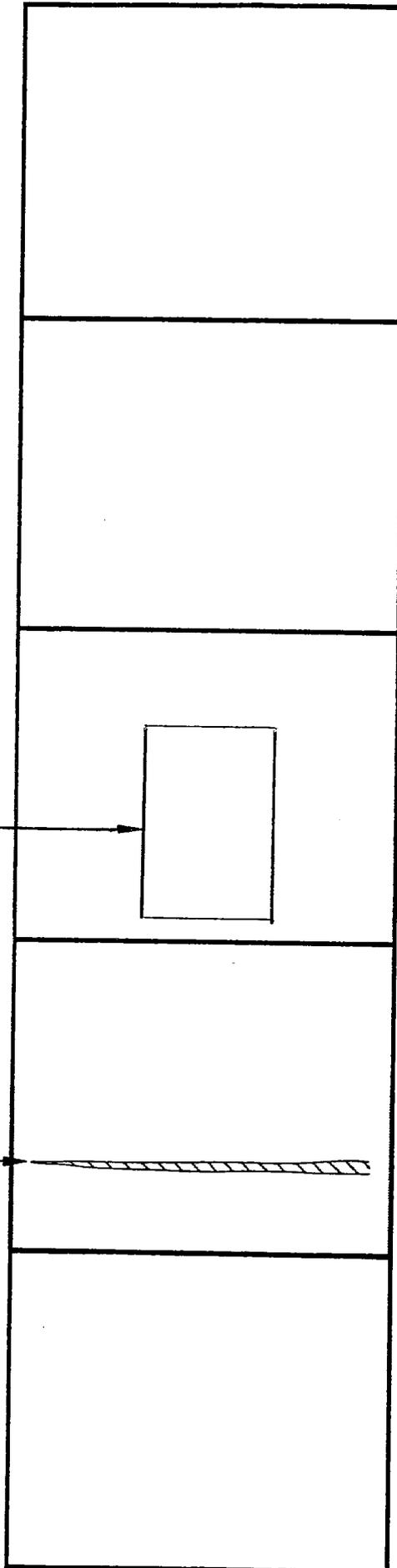
$S_{HC} = ND$

FLUORESCENCE

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 65.0'



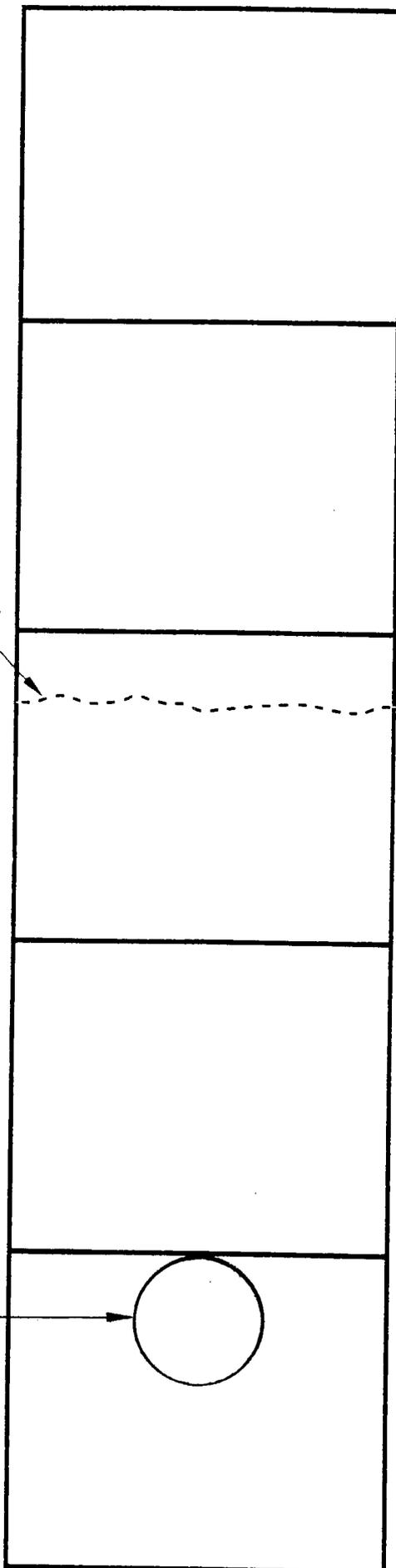
LOCATION: SBL0085

DATE: 6/21/94

TOP

DEPTH: 67.0'

POSSIBLE
FLUORESCENCE
IN A DOTTED-LIKE LINE



$S_{HC} = ND$

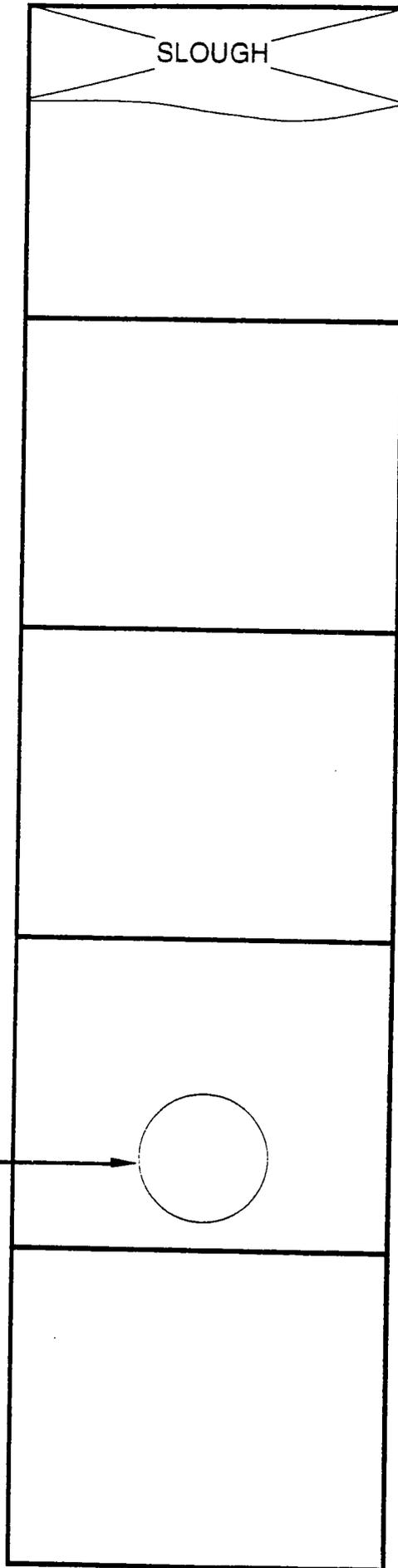
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 68.0'

LOCATION: SBL0085

DATE: 6/22/94



TOP

DEPTH: 69.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

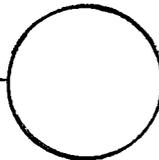
DEPTH: 70.0'

LOCATION: SBL0085

DATE: 6/22/94

TOP
DEPTH: 78.0'

$S_{HC} = ND$



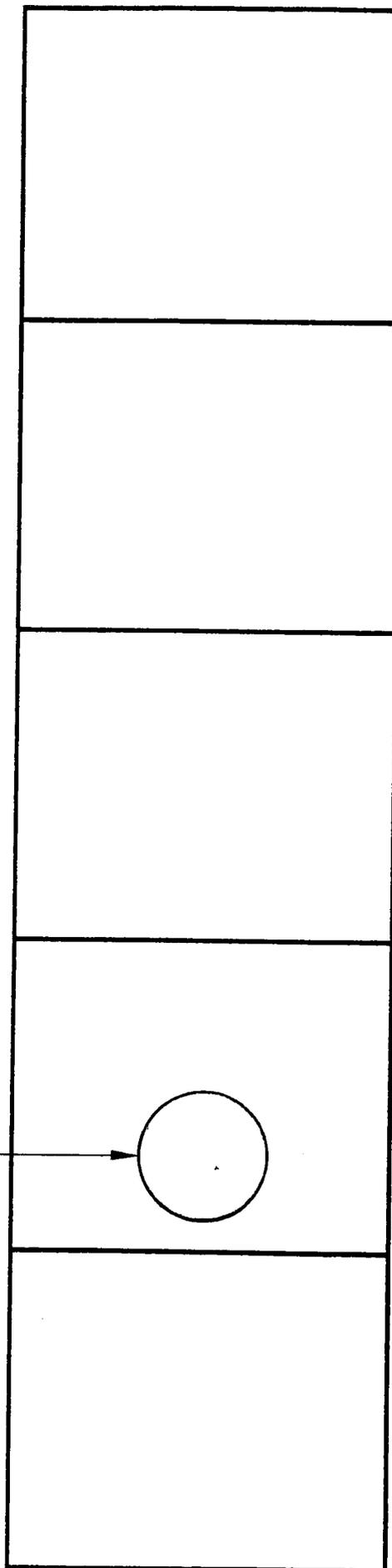
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 79.0'

LOCATION: SBL0085

DATE: 6/22/94

TOP
DEPTH: 80.0'



S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 81.0'

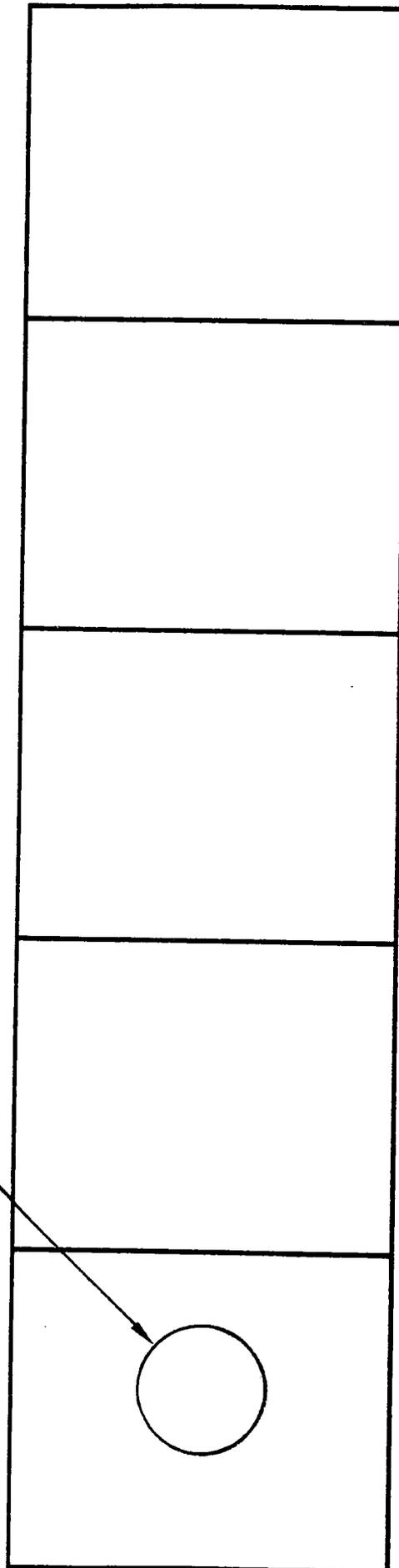
LOCATION: SBL0085

DATE: 6/22/94

TOP

DEPTH: 81.0'

$S_{HC} = ND$



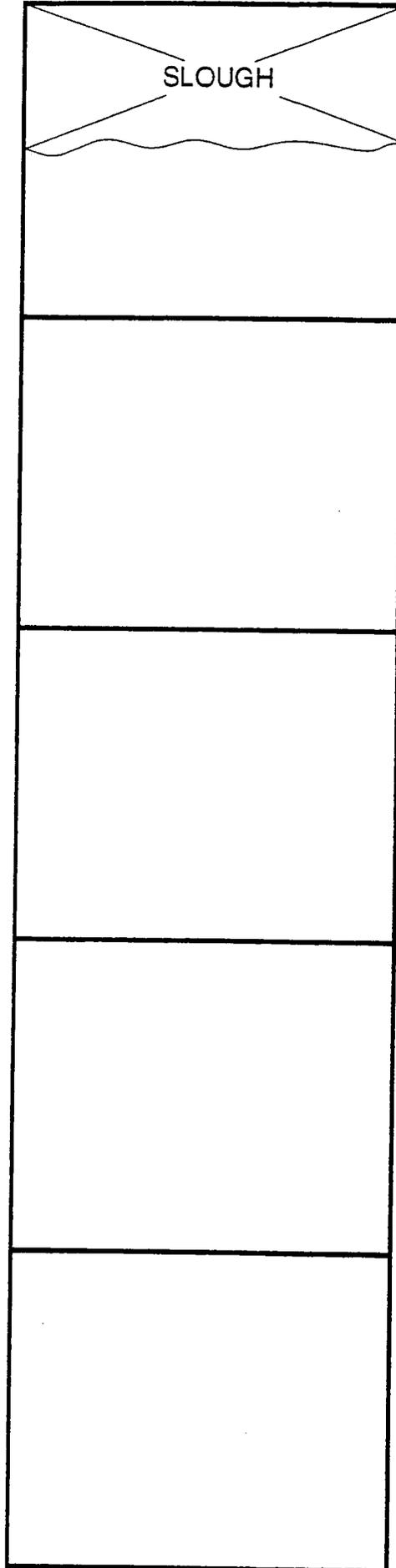
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 82.0'

LOCATION: SBL0086

DATE: 6/23/94



TOP
DEPTH: 60.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 61.0'

LOCATION: SBL0086

DATE: 6/23/94

TOP

DEPTH: 62.0'

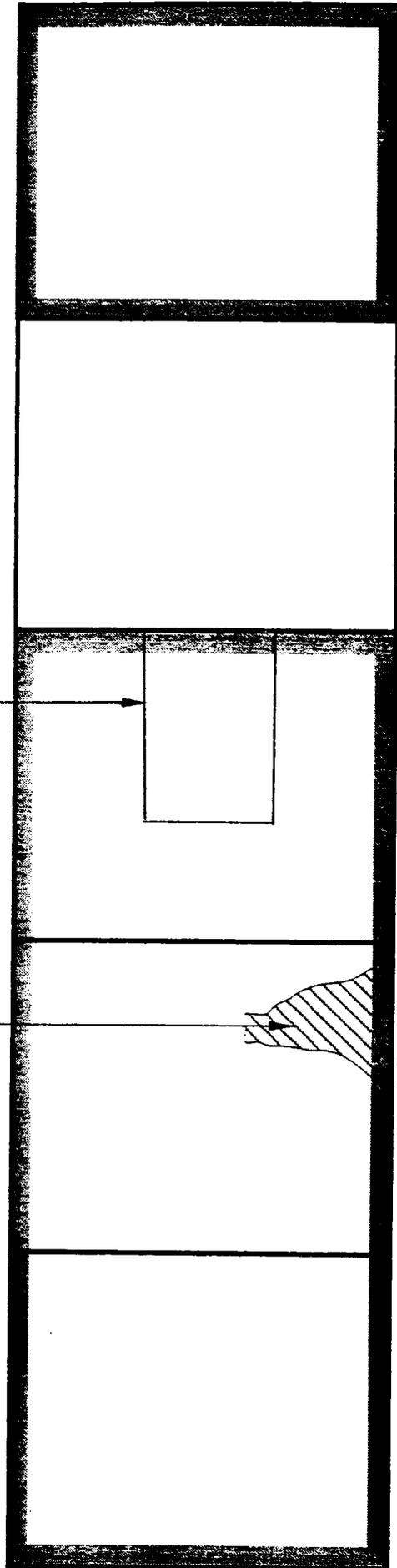
$S_{HC} = 2.22\%$

FLUORESCENCE

• Results of Sudan Red Jar Test positive
where specifically noted by 

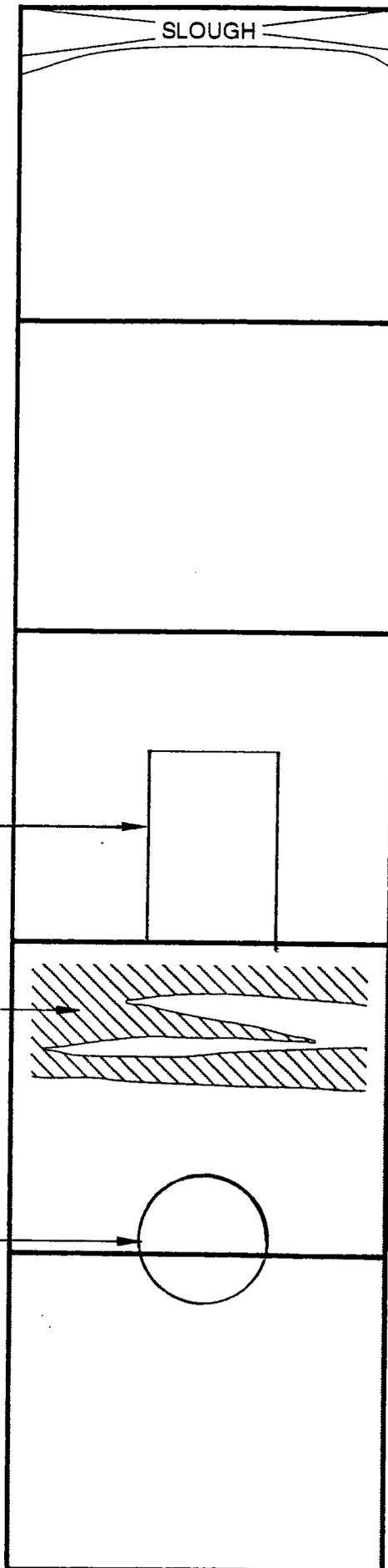
BOTTOM

DEPTH: 63.0'



LOCATION: SBL0086

DATE: 6/23/94



TOP
DEPTH: 64.0'

$S_{HC} = ND$

FLUORESCENCE

$S_{HC} = ND$

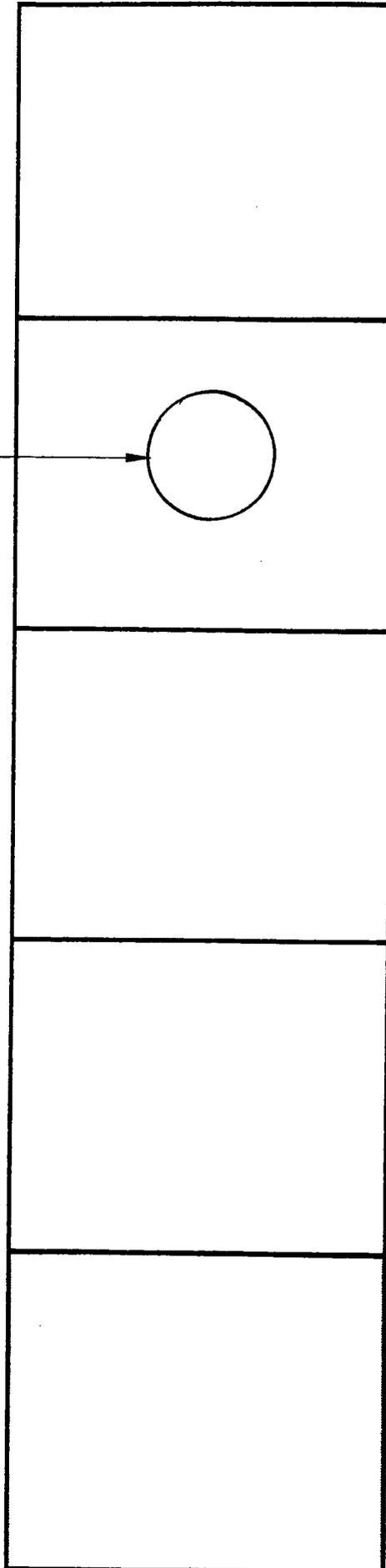
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 65.0'

LOCATION: SBL0086

DATE: 6/23/94

$S_{HC} = ND$



TOP

DEPTH: 65.0'

BOTTOM

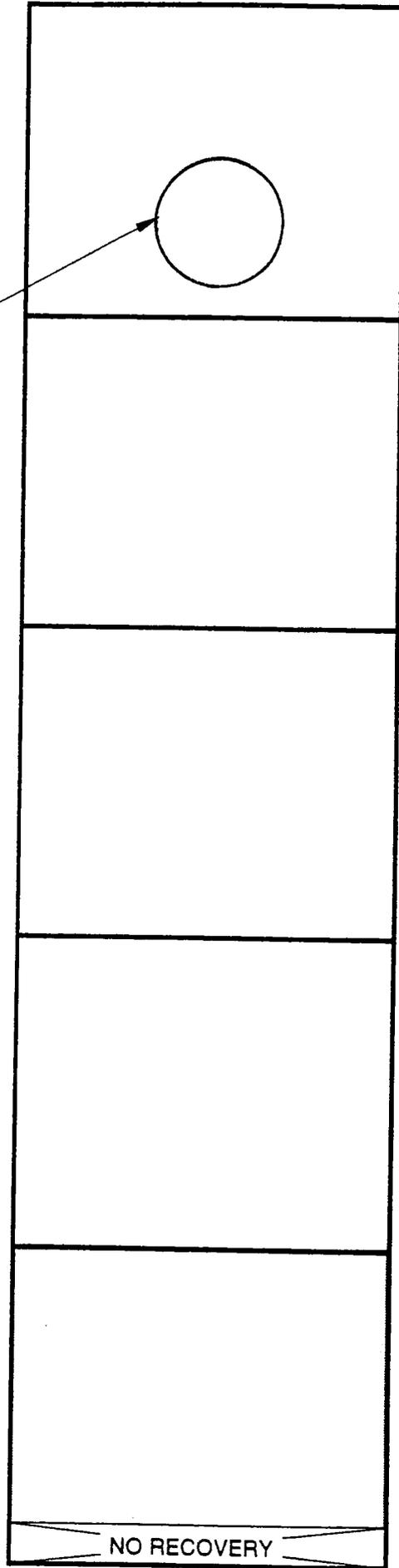
DEPTH: 66.0'

• Results of Sudan Red Jar Test negative

LOCATION: SBL0086

DATE: 6/23/94

S_{HC} = ND



TOP

DEPTH: 67.0'

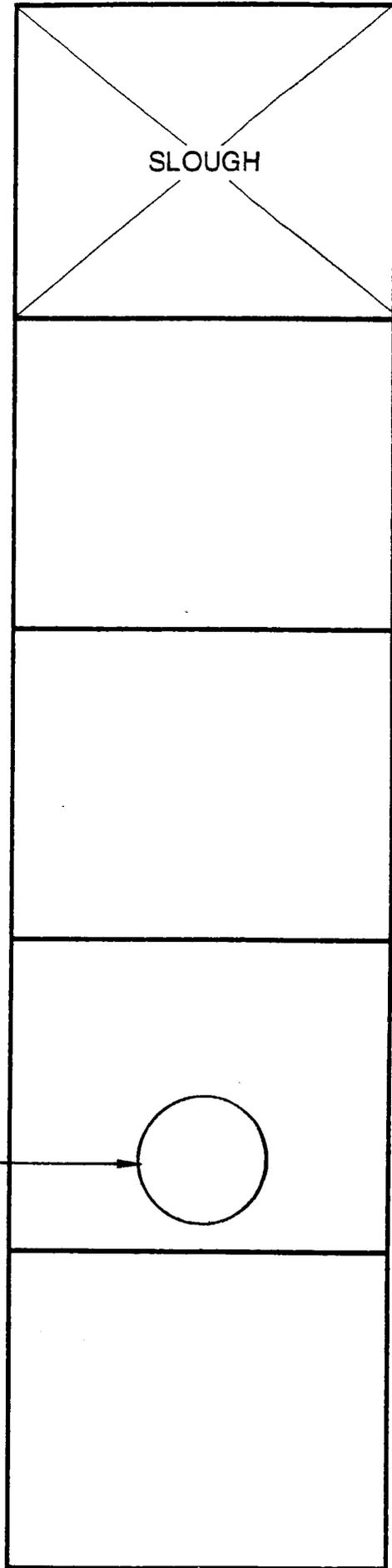
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 67.98'

LOCATION: SBL0086

DATE: 6/23/94



TOP
DEPTH: 72.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 73.0'

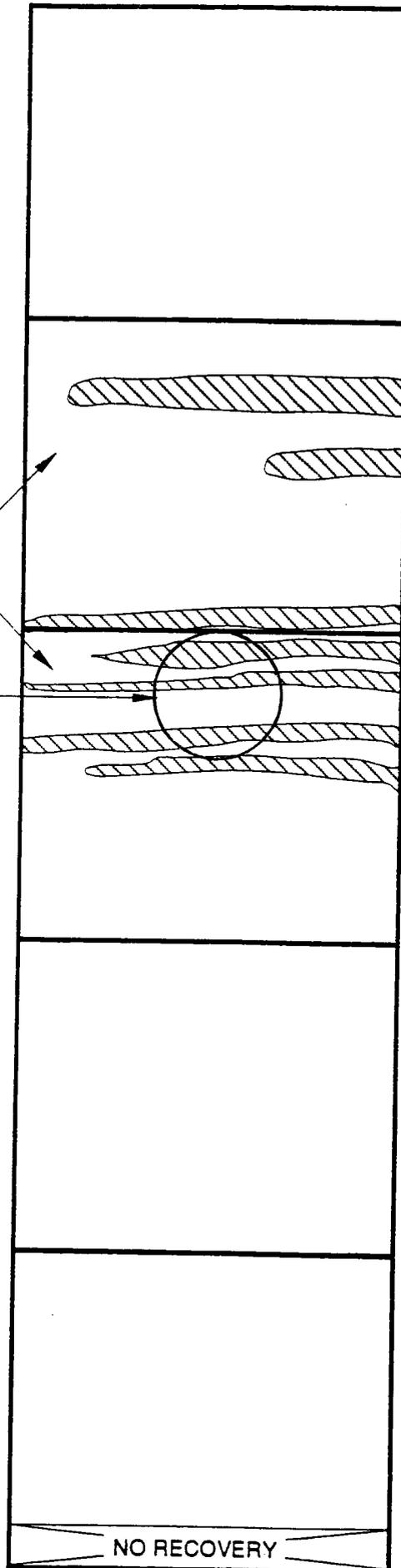
LOCATION: SBL0086

DATE: 6/24/94

TOP
DEPTH: 74.0'

FLUORESCENCE

$S_{HC} = ND$



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 74.98'

LOCATION: SBL0086

DATE: 6/24/94

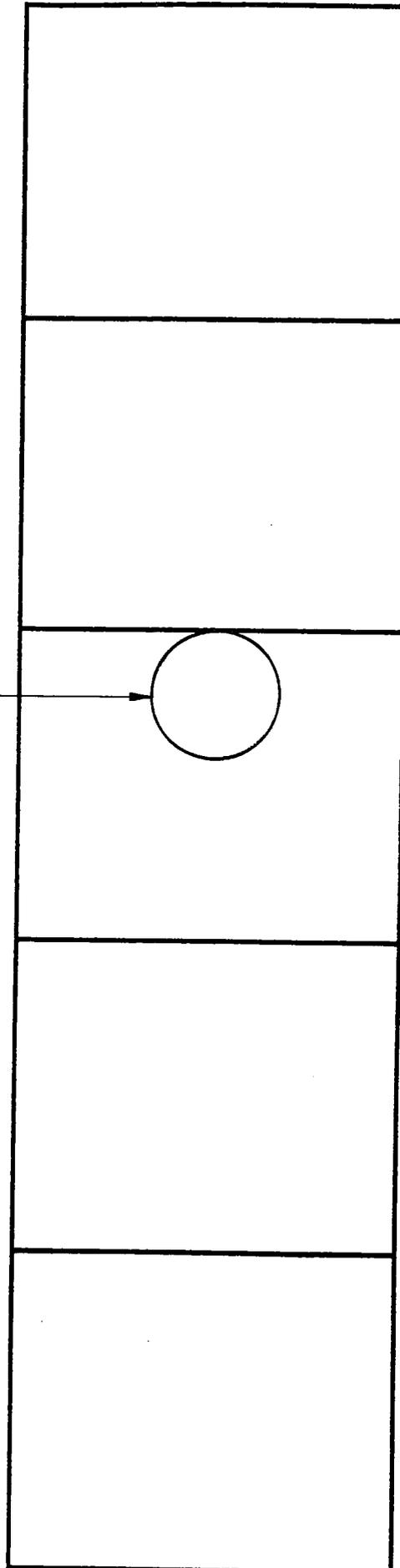
TOP
DEPTH: 76.0'

$S_{HC} = ND$

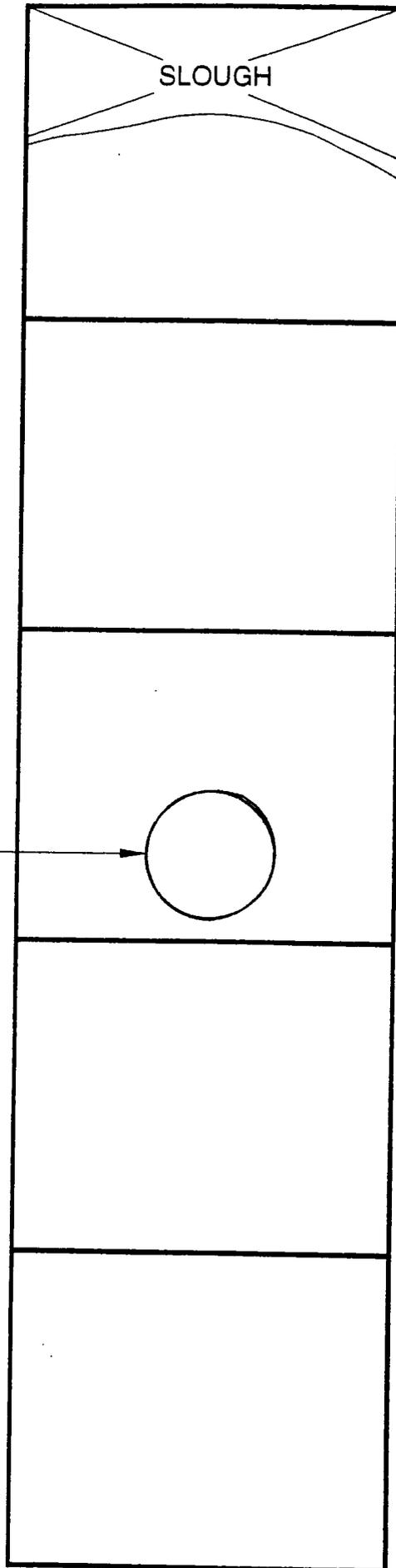


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 77.0'



LOCATION: SBL0087
DATE: 6/27/94



TOP
DEPTH: 59.0'

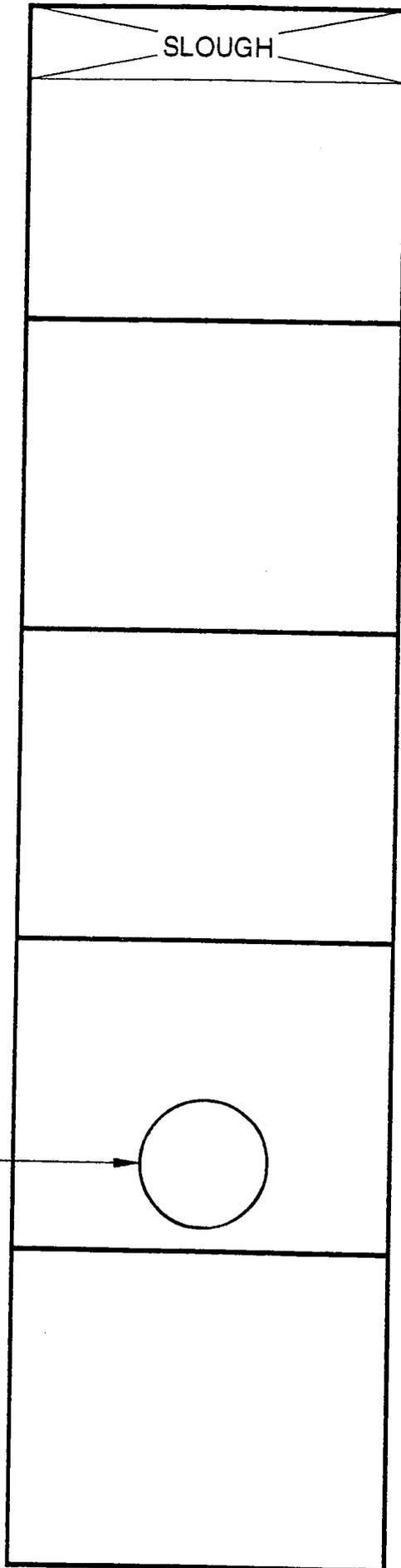
$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 60.0'

LOCATION: SBL0087

DATE: 6/27/94



TOP
DEPTH: 60.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

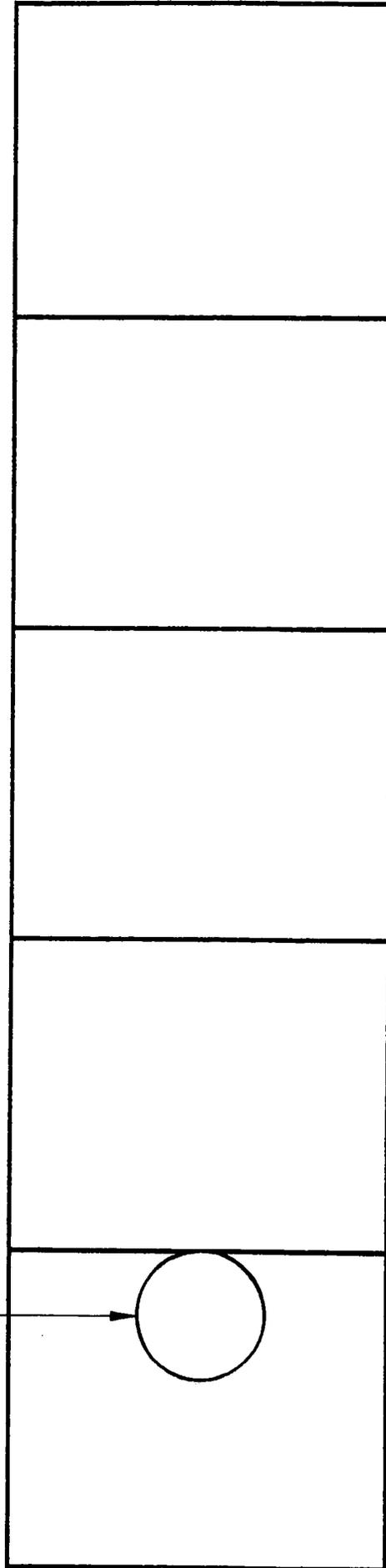
BOTTOM
DEPTH: 61.0'

LOCATION: SBL0087

DATE: 6/27/94

TOP

DEPTH: 62.0'



$S_{HC} = ND$

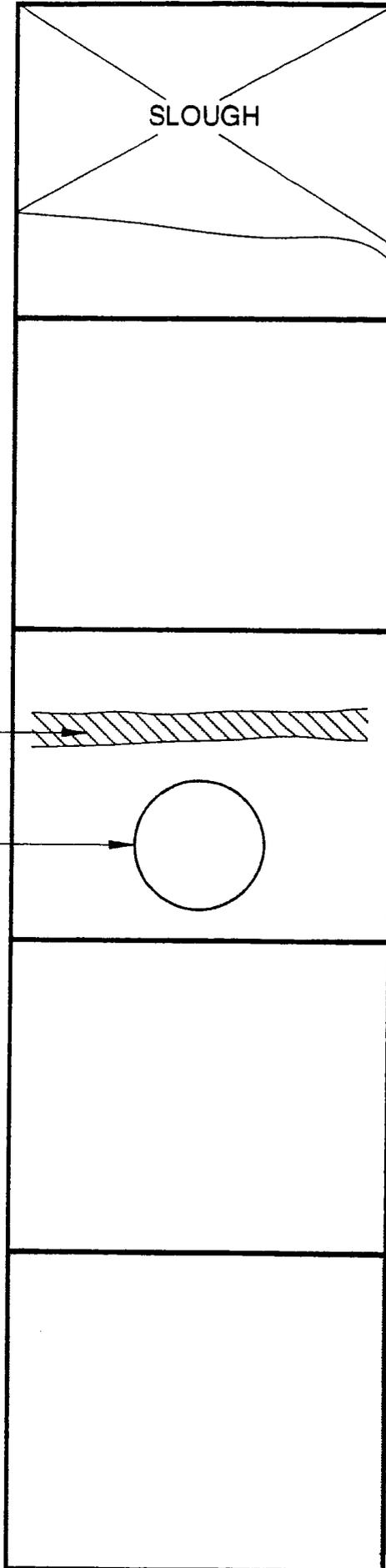
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 63.0'

LOCATION: SBL0087

DATE: 6/27/94



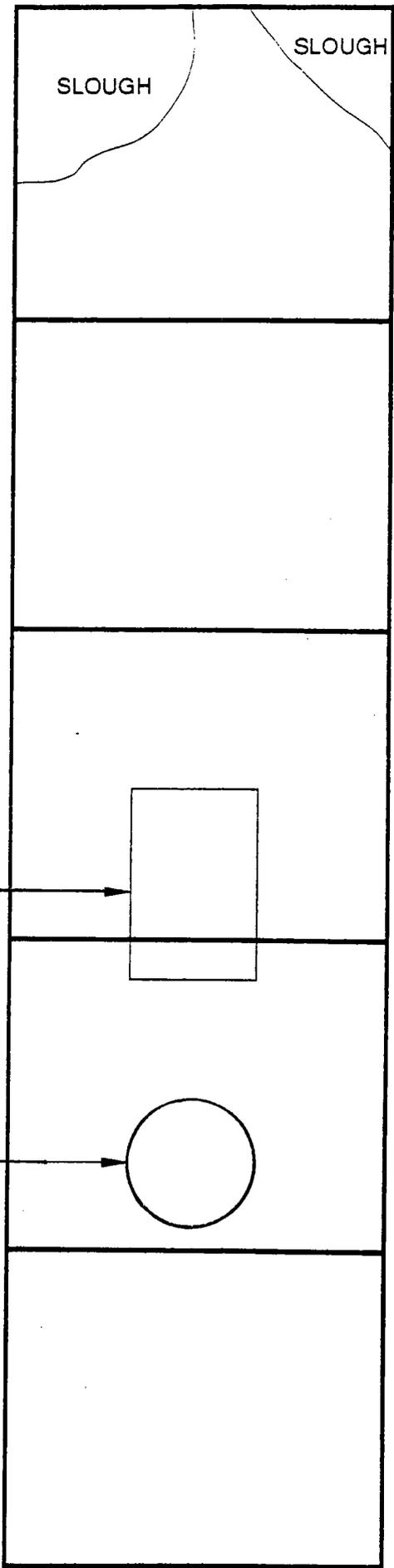
TOP
DEPTH: 67.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 68.0'

LOCATION: SBL0087

DATE: 6/27/94



TOP
DEPTH: 69.0'

$S_{HC} = ND$

$S_{HC} = ND$

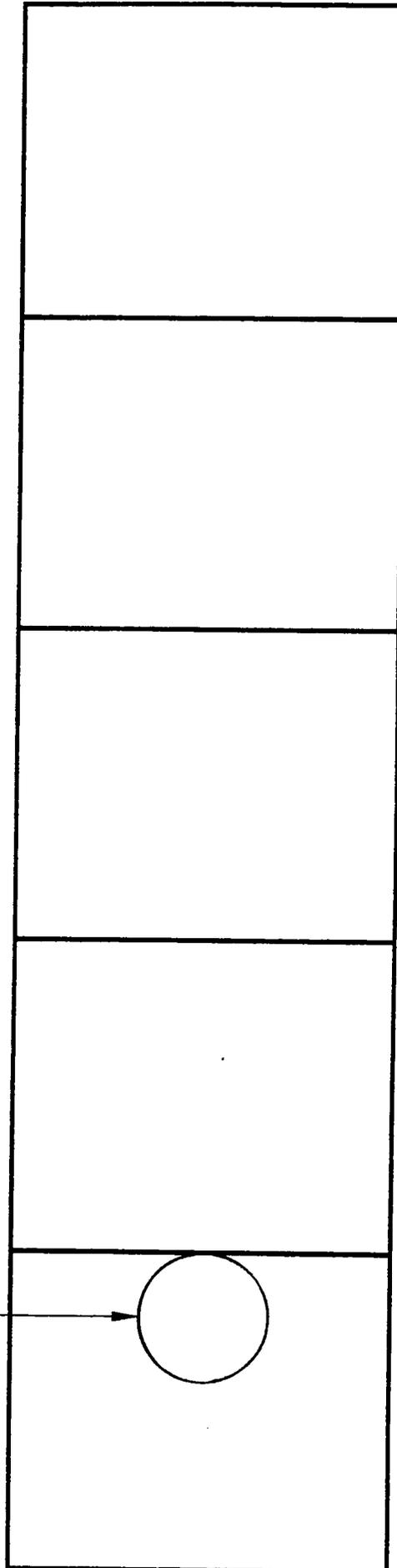
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 70.0'

LOCATION: SBL0087

DATE: 6/27/94

TOP
DEPTH: 72.0'



S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 73.0'

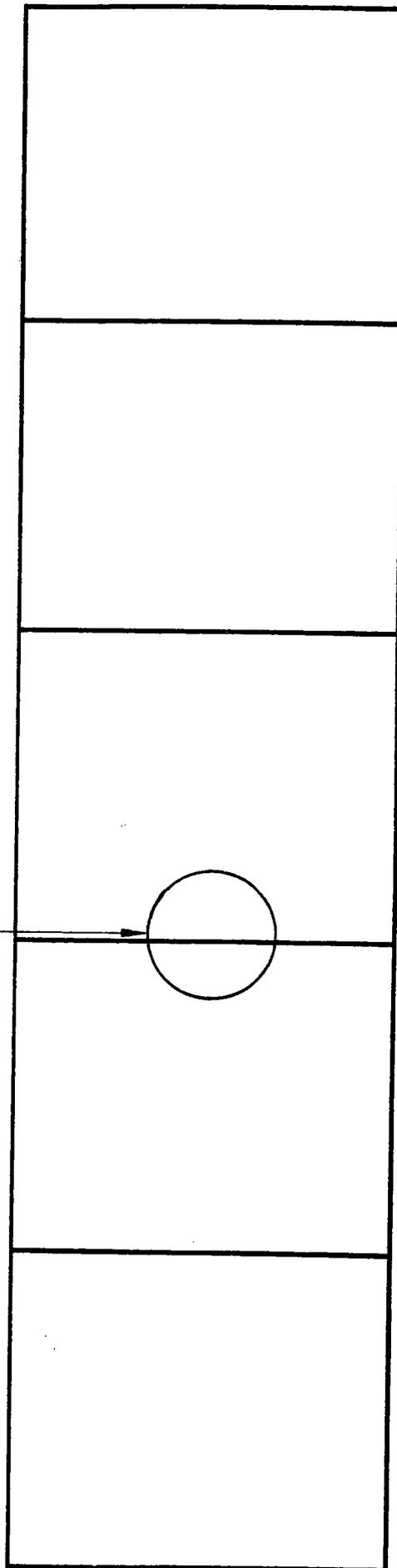
LOCATION: SBL0087

DATE: 6/27/94

TOP

DEPTH: 73.0'

$S_{HC} = 1.47\%$



• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 74.0'

LOCATION: SBL0087

DATE: 6/27/94

FLUORESCENCE

TOP

DEPTH: 74.0'

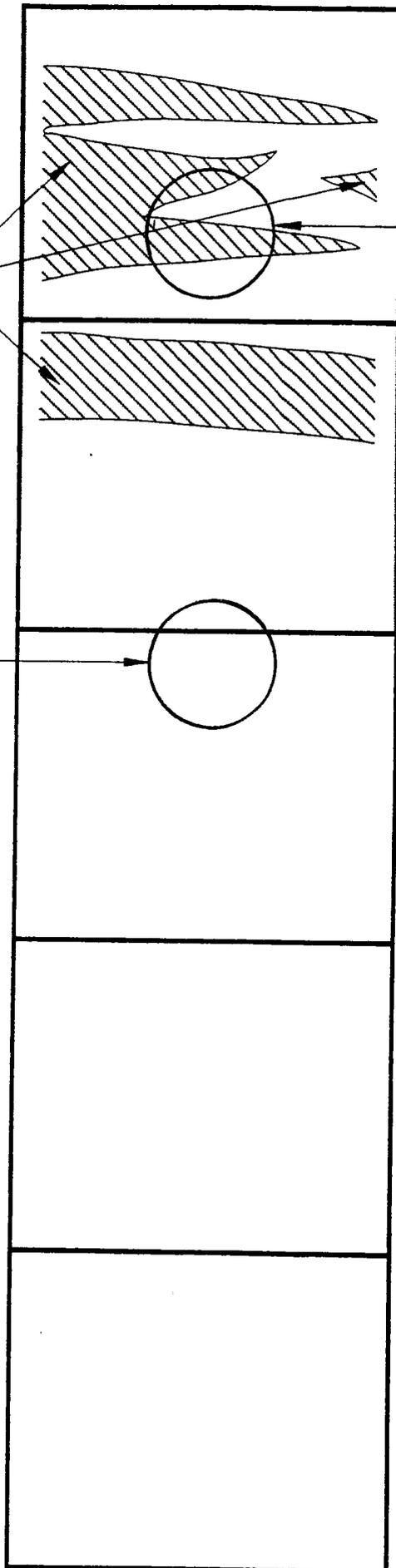
$S_{HC} = 2.93\%$

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 75.0'



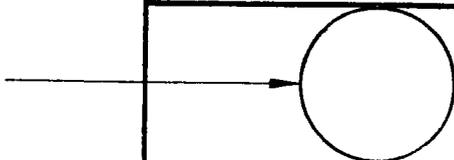
LOCATION: SBL0087

DATE: 6/27/94

TOP

DEPTH: 76.0'

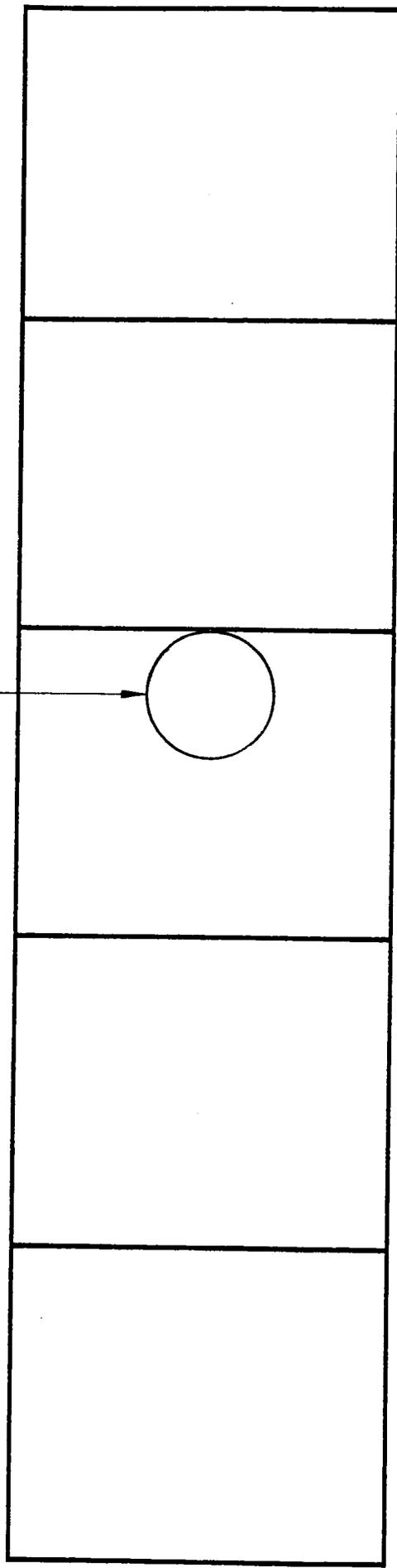
S_{HC} = ND



• Results of Sudan Red Jar Test negative

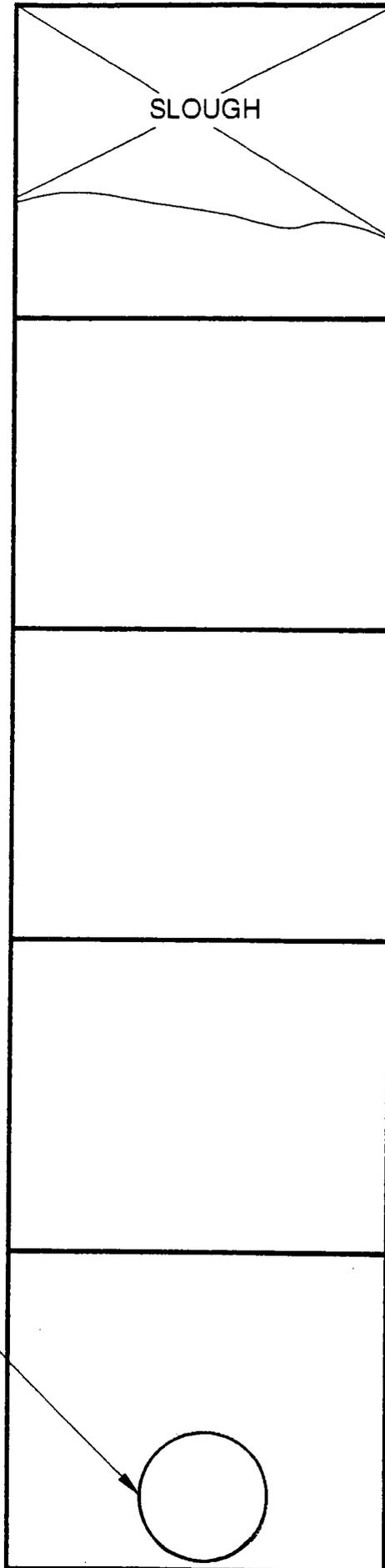
BOTTOM

DEPTH: 77.0'



LOCATION: SBL0087

DATE: 6/27/94



TOP
DEPTH: 80.0'

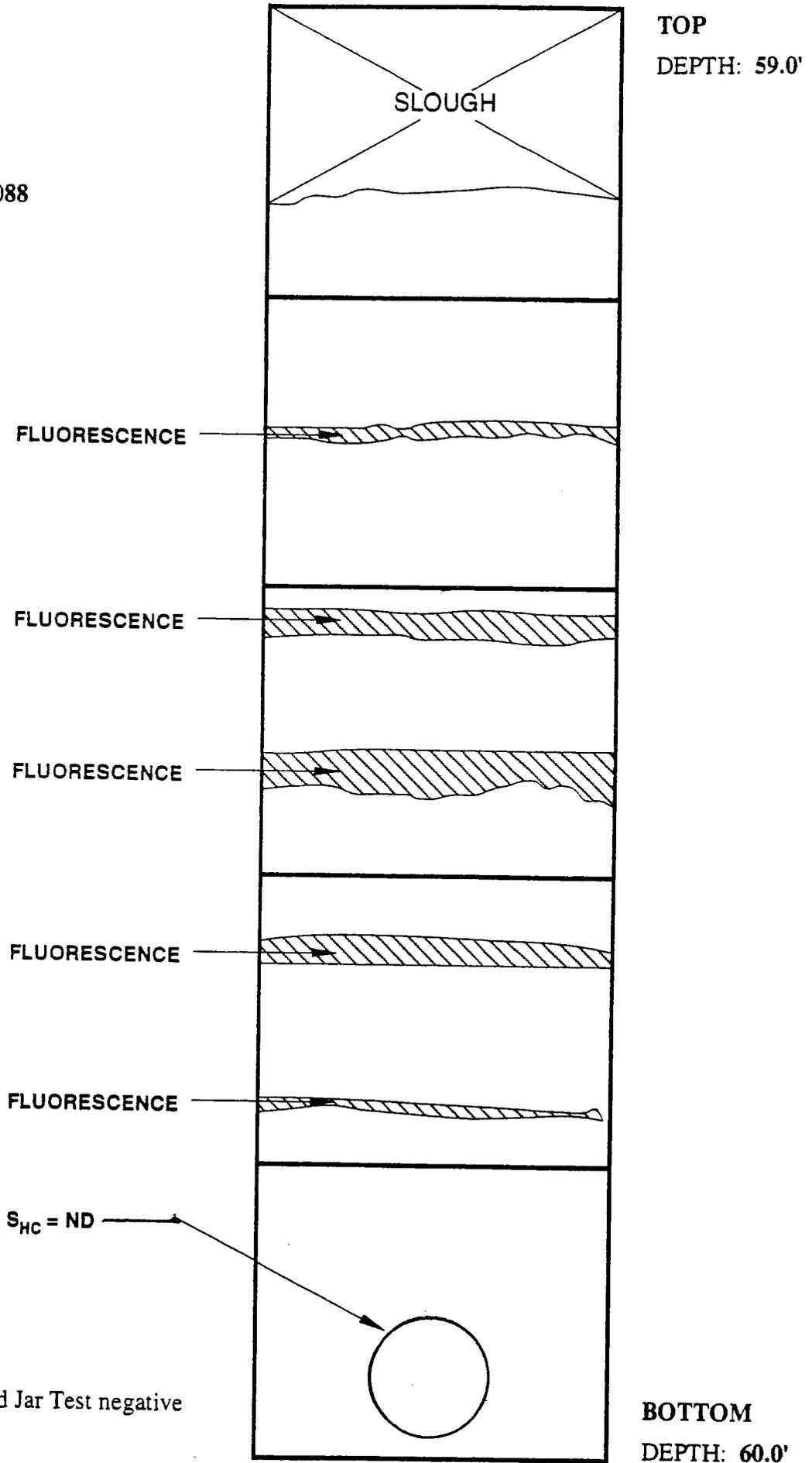
$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 81.0'

LOCATION: SBL0088

DATE: 6/28/94



• Results of Sudan Red Jar Test negative

LOCATION: SBL0088

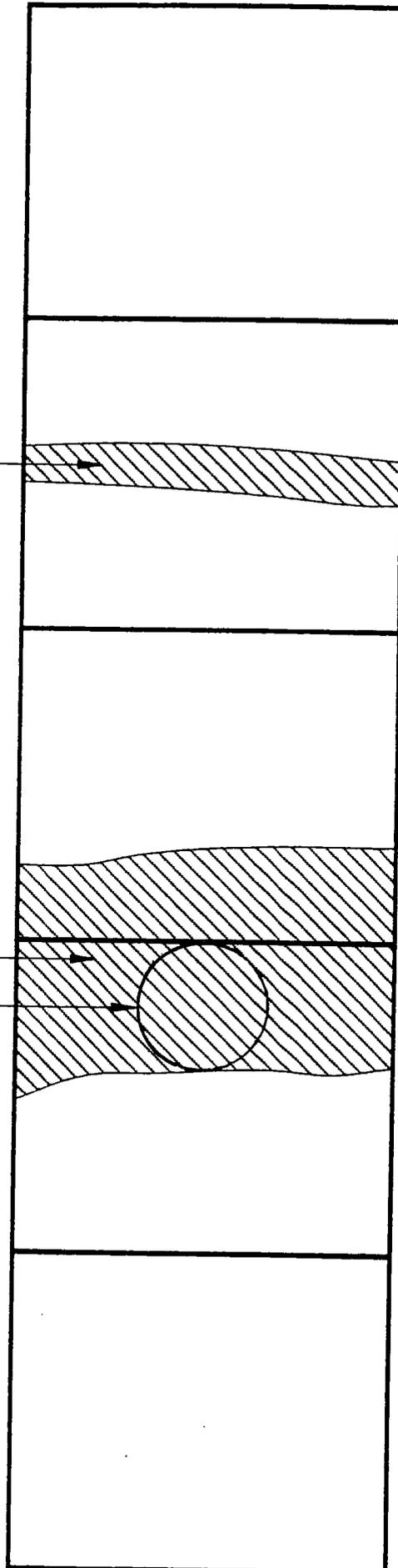
DATE: 6/28/94

TOP
DEPTH: 60.0'

FLUORESCENCE

FLUORESCENCE

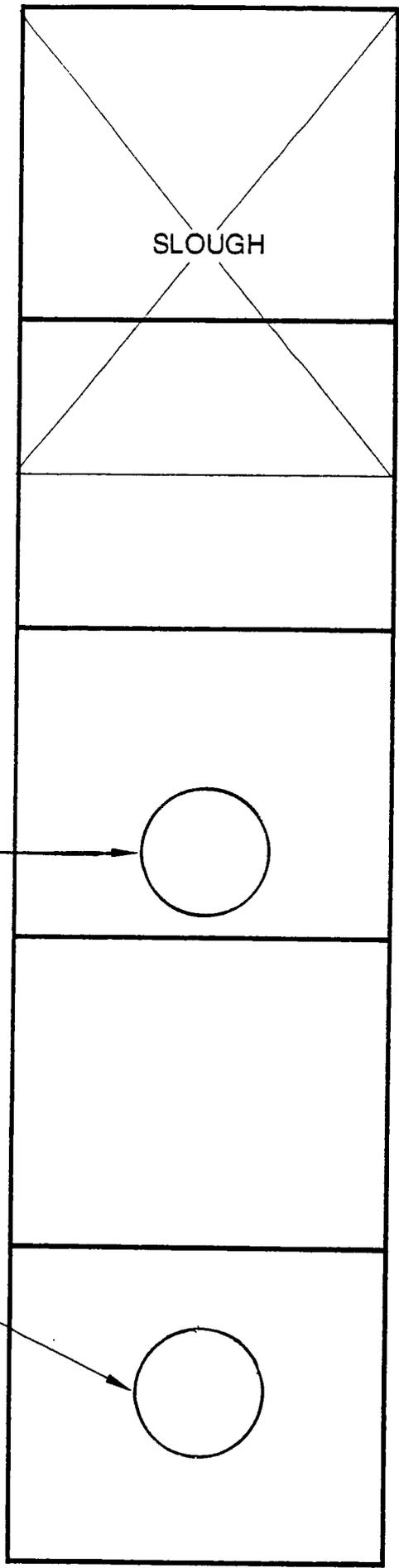
$S_{HC} = 0.49\%$



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 61.0'

LOCATION: SBL0088
DATE: 6/28/94



TOP
DEPTH: 63.0'

$S_{HC} = ND$

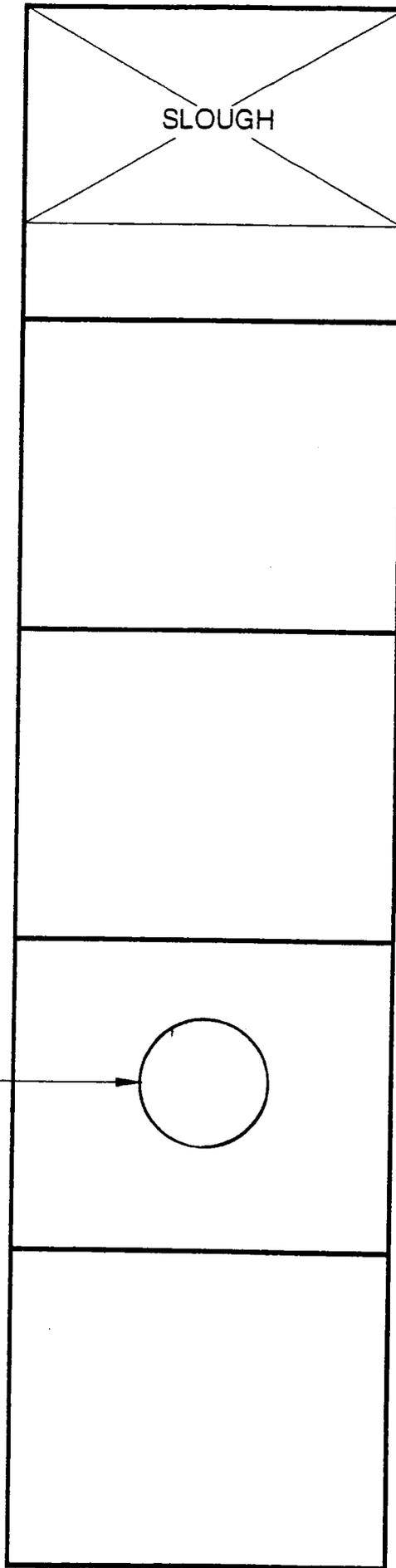
$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 64.0'

LOCATION: SBL0088

DATE: 6/28/94



TOP

DEPTH: 65.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 66.0'

LOCATION: SBL0088

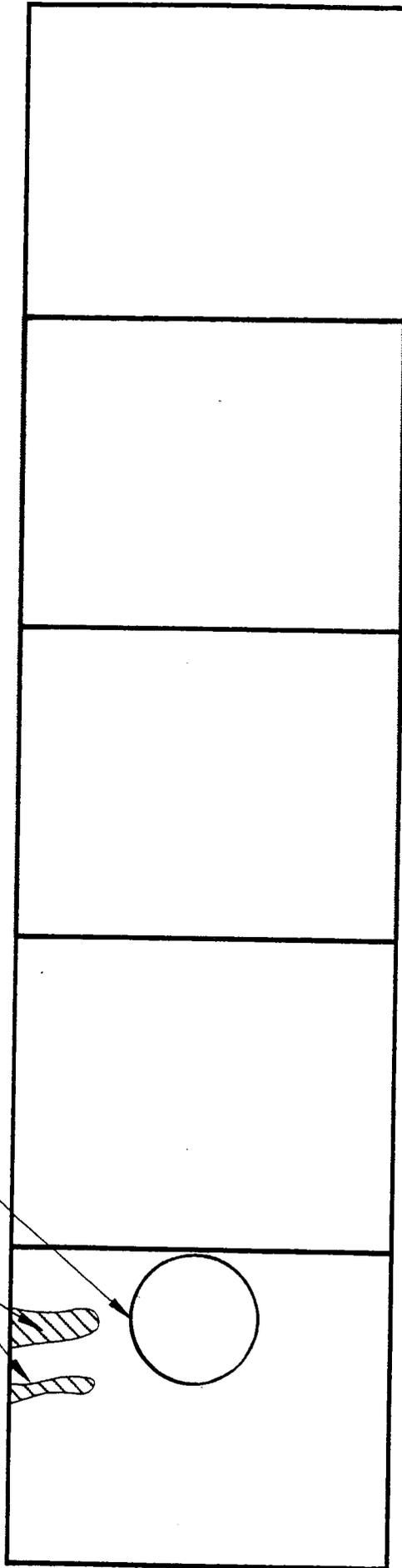
DATE: 6/28/94

TOP

DEPTH: 67.0'

$S_{HC} = 0.75\%$

FLUORESCENCE



• Results of Sudan Red Jar Test negative

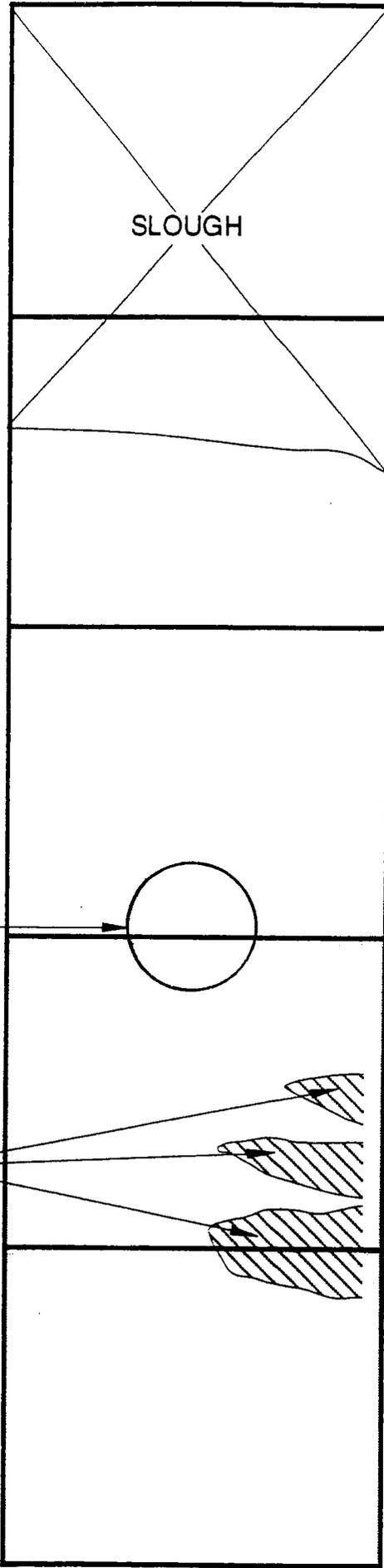
BOTTOM

DEPTH: 68.0'

LOCATION: SBL0088

DATE: 6/28/94

TOP
DEPTH: 69.0'



$S_{HC} = 1.69\%$

FLUORESCENCE

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 70.0'

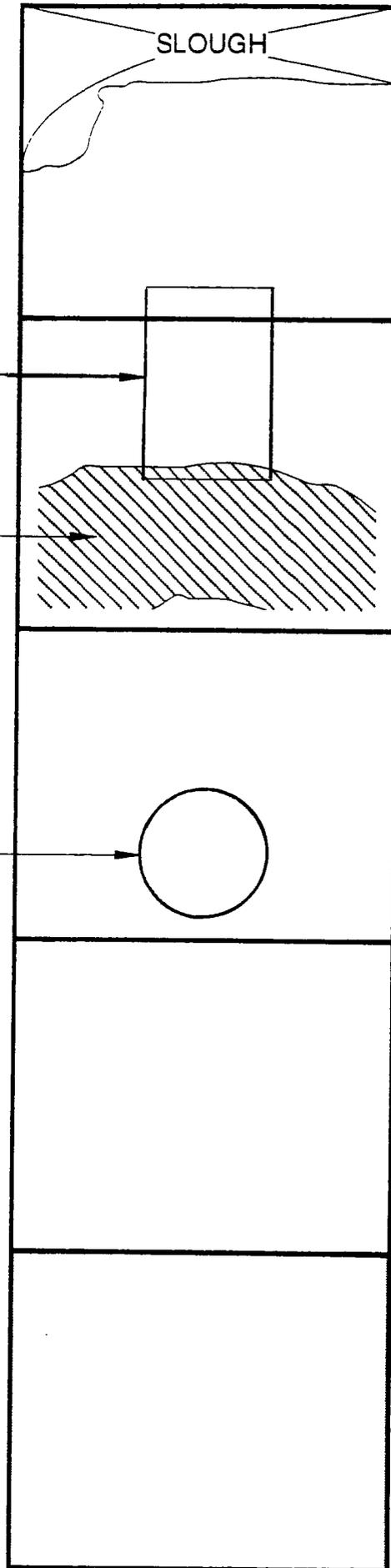
LOCATION: SBL0088

DATE: 6/28/94

$S_{HC} = 7.28\%$

FLUORESCENCE

$S_{HC} = 1.16\%$



TOP

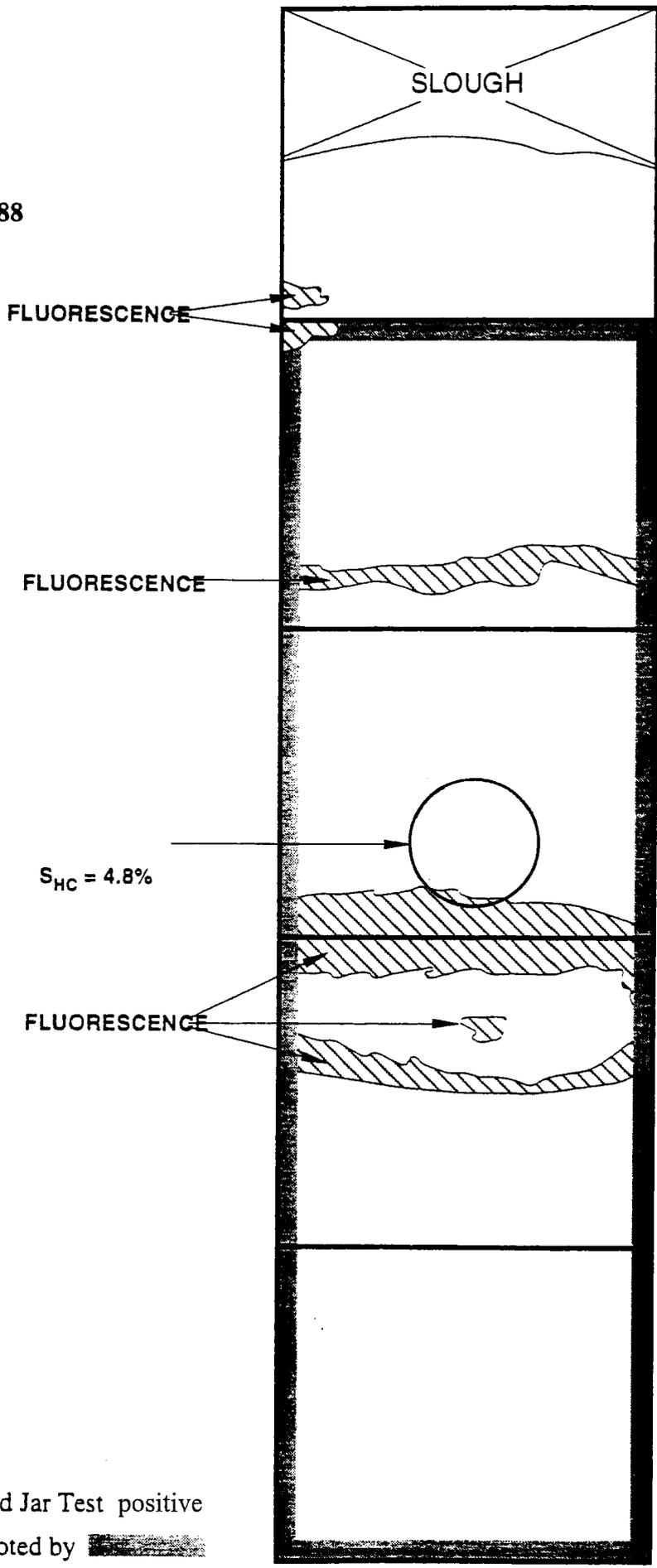
DEPTH: 71.0'

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 72.0'

LOCATION: SBL0088
DATE: 6/28/94



TOP
DEPTH: 72.0'

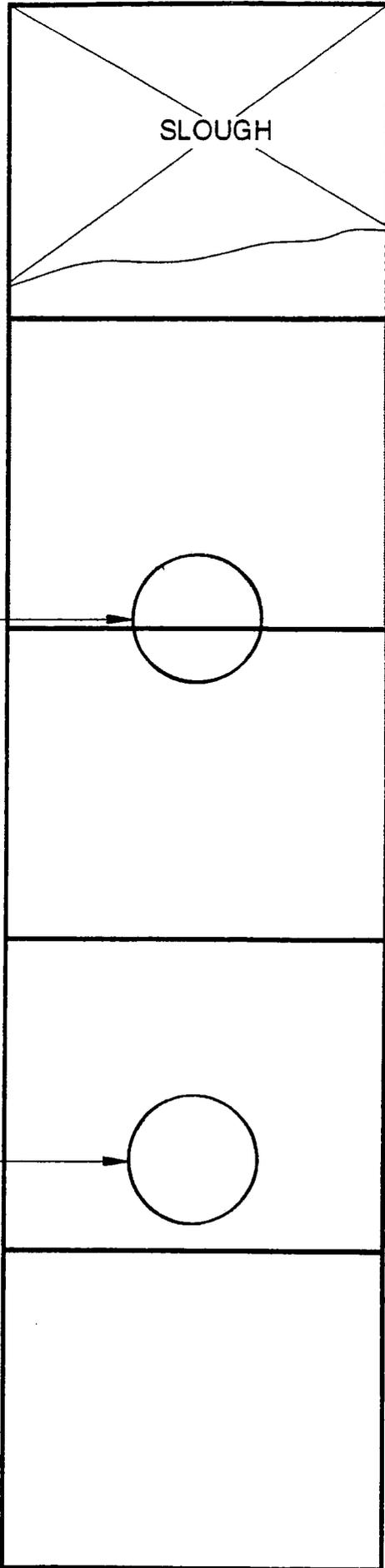
BOTTOM
DEPTH: 73.0'

• Results of Sudan Red Jar Test positive where specifically noted by 

LOCATION: SBL0088

DATE: 6/28/94

TOP
DEPTH: 73.0'



$S_{HC} = 3.01\%$

$S_{HC} = 0.24\%$

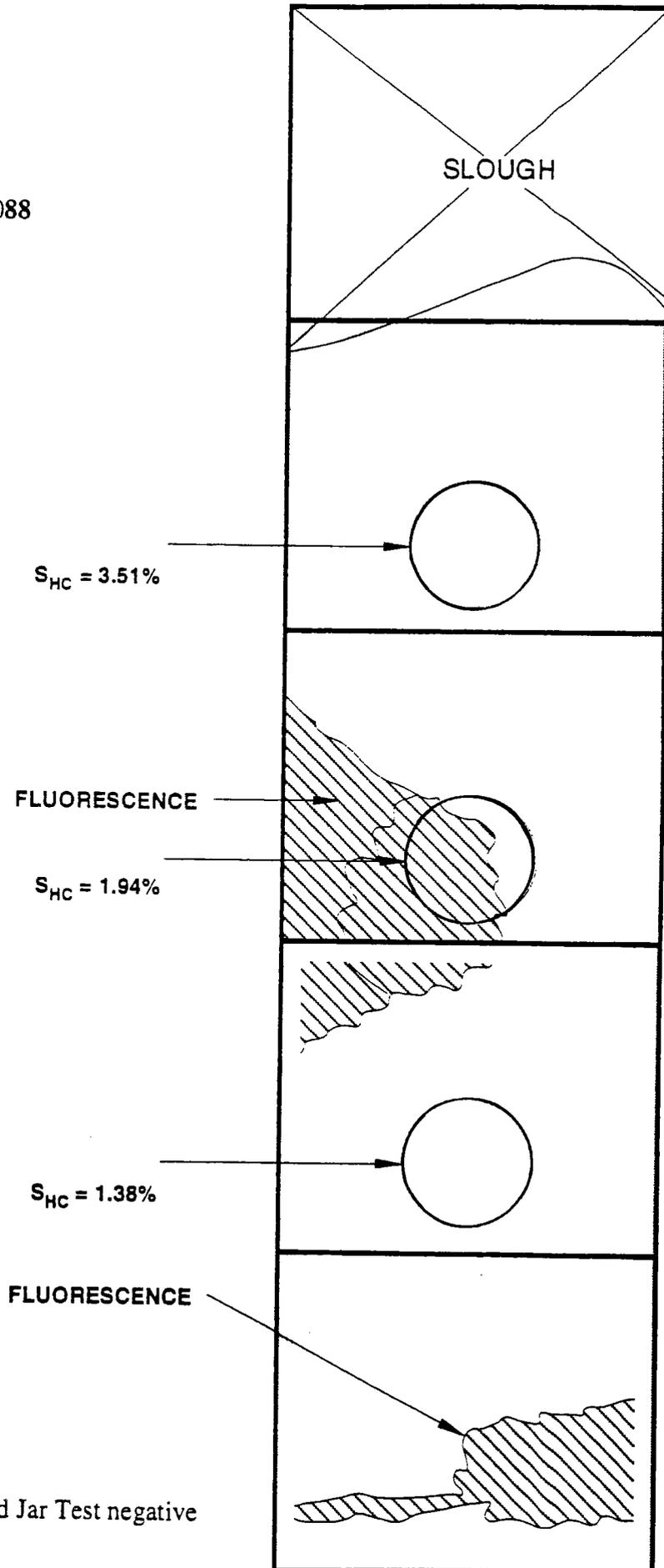
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 74.0'

LOCATION: SBL0088

DATE: 6/28/94

TOP
DEPTH: 74.0'



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 75.0'

LOCATION: SBL0088

DATE: 6/28/94

TOP

DEPTH: 75.0'

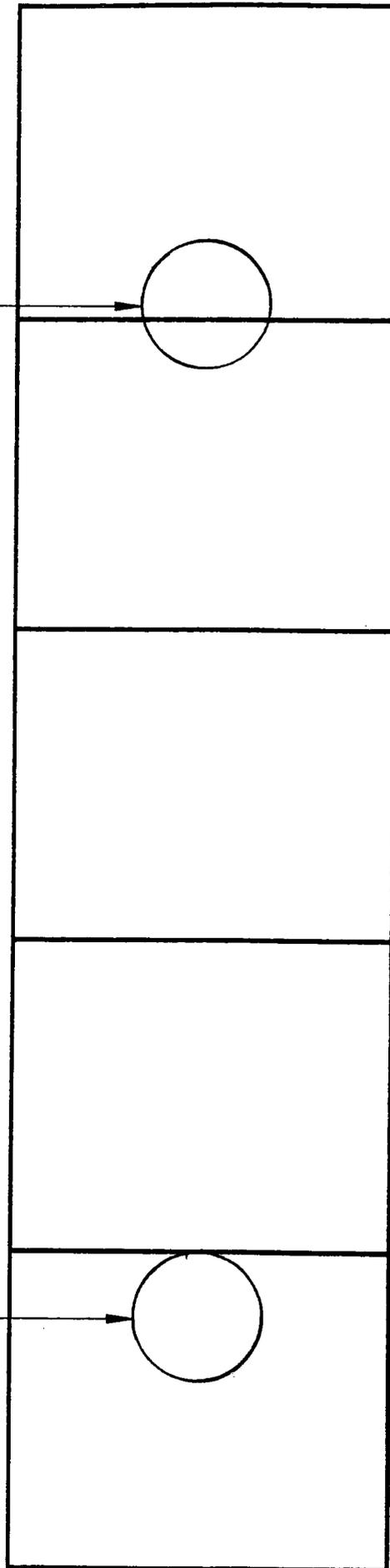
$S_{HC} = ND$

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

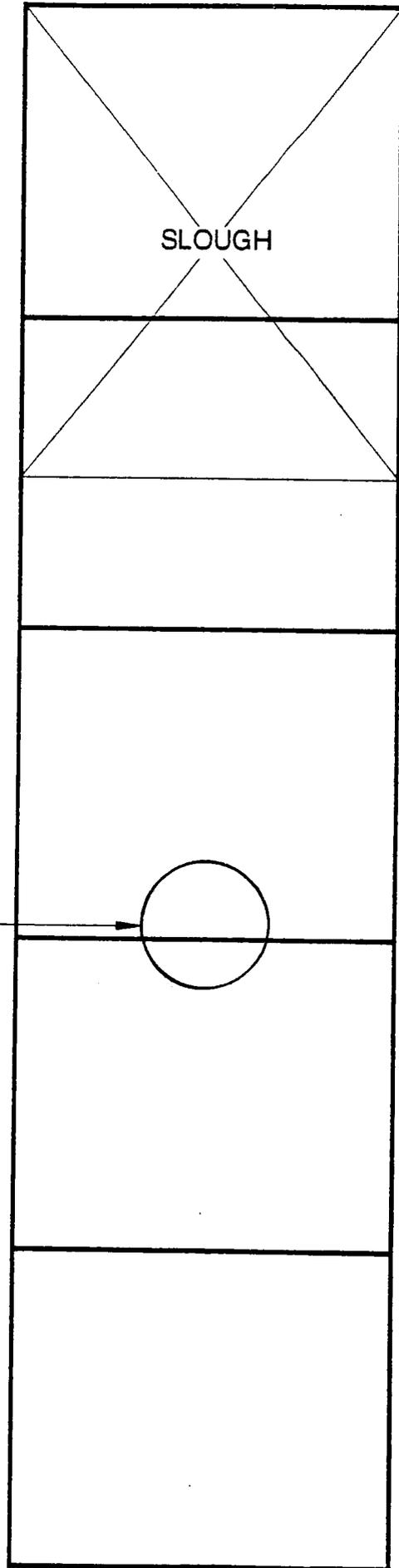
BOTTOM

DEPTH: 76.0'



LOCATION: SBL0088

DATE: 6/28/94



TOP

DEPTH: 76.0'

S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM

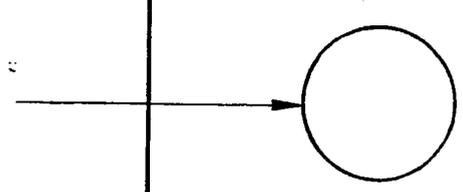
DEPTH: 77.0'

LOCATION: SBL0089

DATE: 6/29/94

TOP
DEPTH: 59.0'

S_{HC} = ND

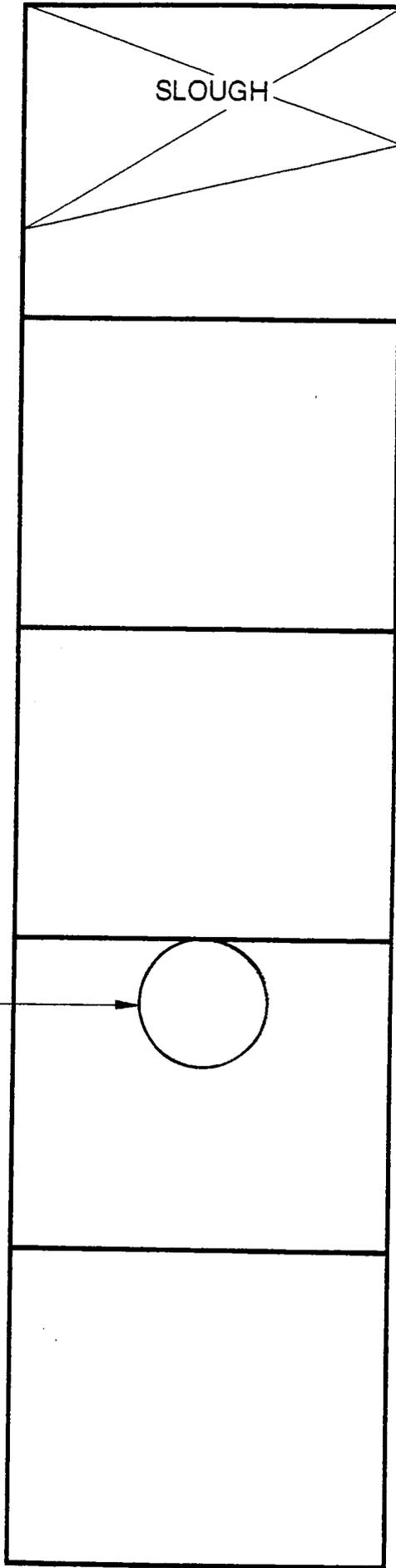


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 60.0'

LOCATION: SBL0089

DATE: 6/29/94



TOP

DEPTH: 62.0'

S_{HC} = ND

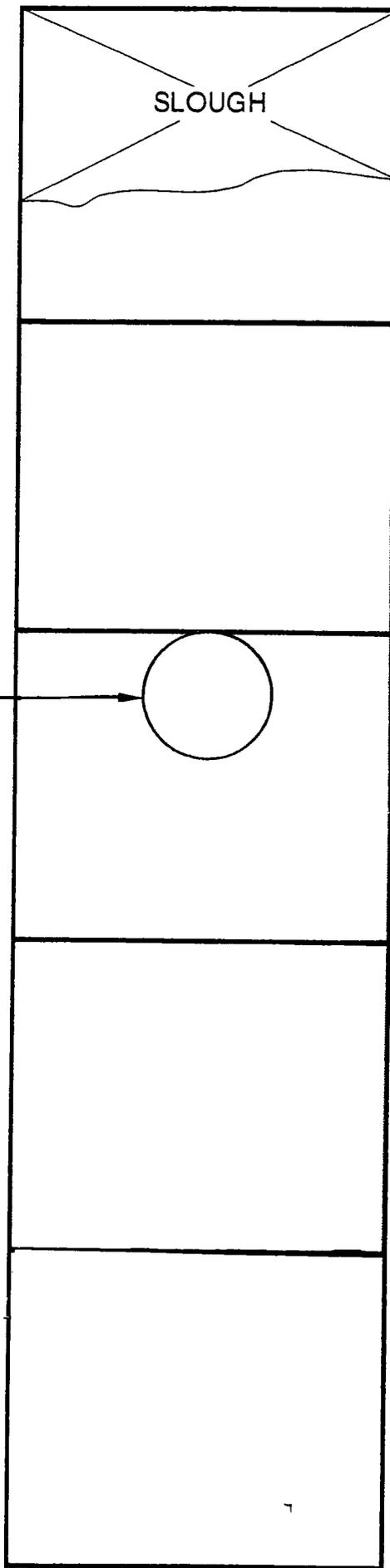
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 63.0'

LOCATION: SBL0089

DATE: 6/29/94



TOP
DEPTH: 63.0'

$S_{HC} = 8.28\%$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 64.0'

LOCATION: SBL0089

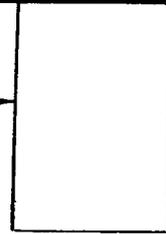
DATE: 6/29/94

TOP
DEPTH: 64.0'

FLUORESCENCE

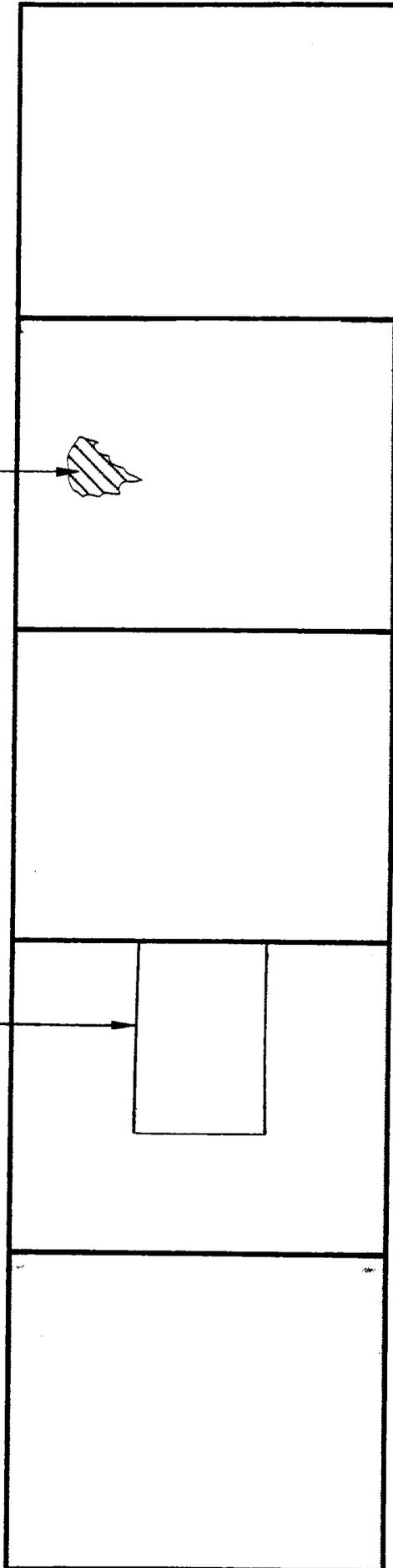


S_{HC} = ND



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 65.0'



LOCATION: SBL0089

DATE: 6/29/94

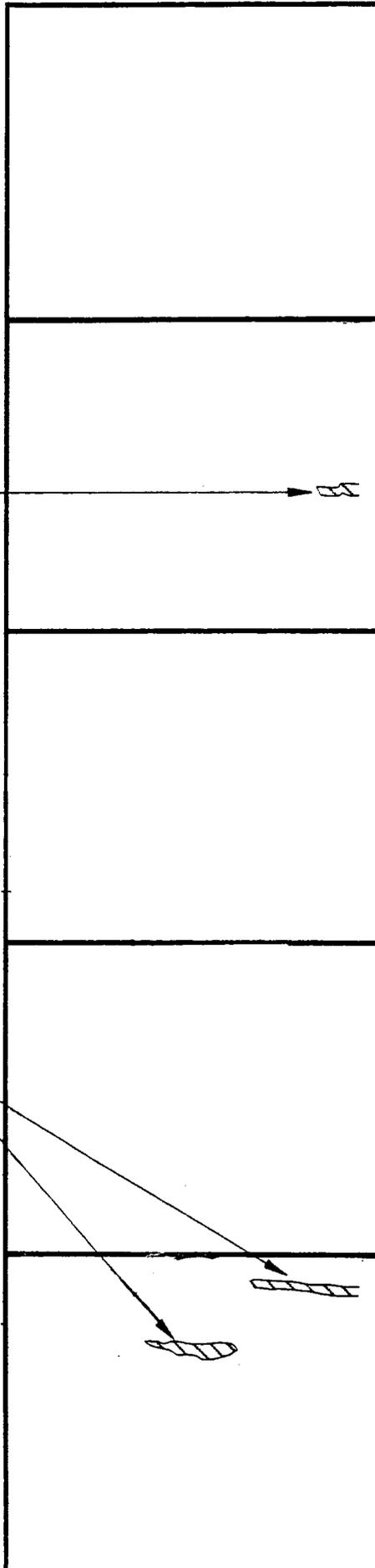
TOP
DEPTH: 65.0'

FLUORESCENCE → 

FLUORESCENCE → 
→ 

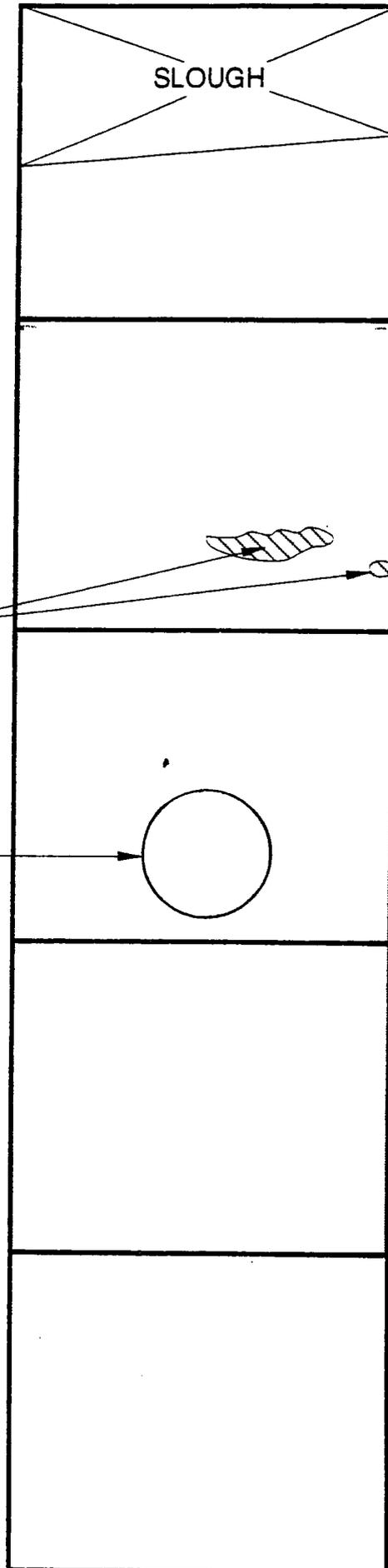
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 66.0'



LOCATION: SBL0089

DATE: 6/29/94



TOP
DEPTH: 67.0'

FLUORESCENCE

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 68.0'

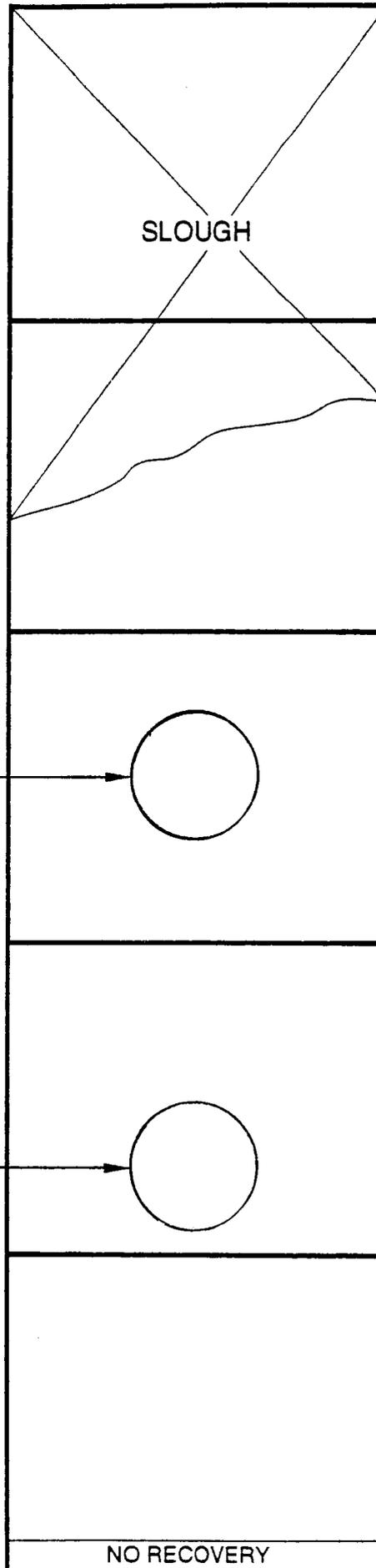
LOCATION: SBL0089

DATE: 6/29/94

$S_{HC} = 3.22\%$

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative



TOP

DEPTH: 68.0'

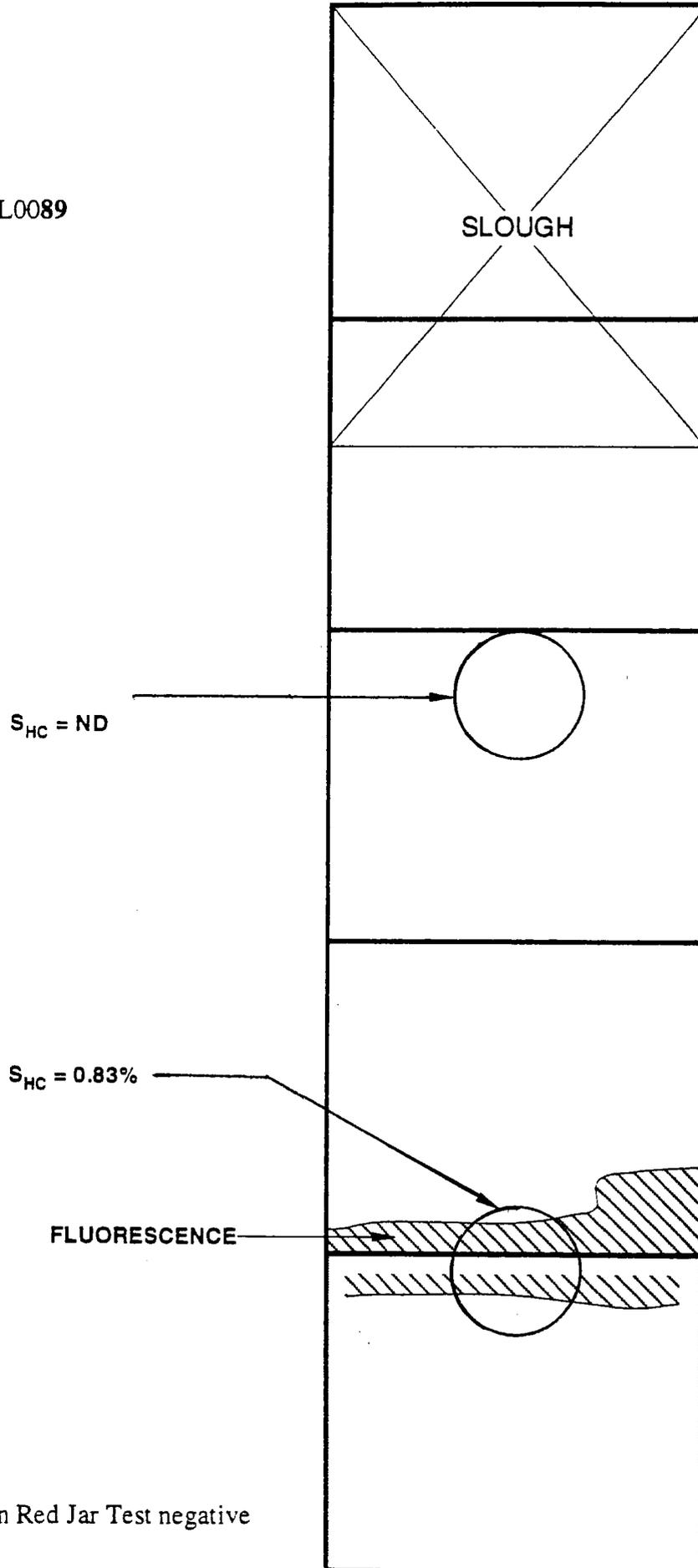
BOTTOM

DEPTH: 68.97'

LOCATION: SBL0089

DATE: 6/29/94

TOP
DEPTH: 71.0'



• Results of Sudan Red Jar Test negative

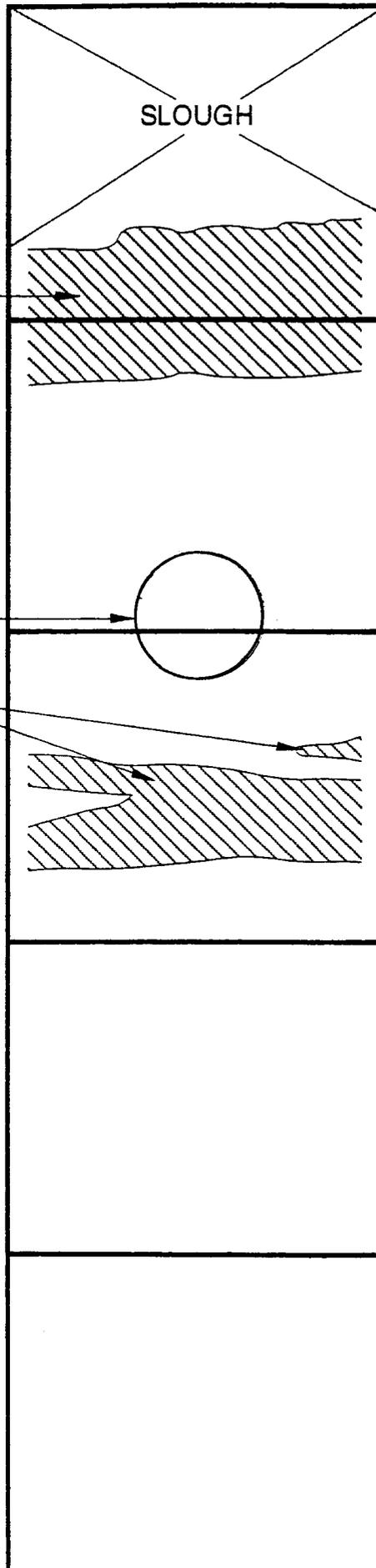
BOTTOM
DEPTH: 72.0'

LOCATION: SBL0089
DATE: 6/29/94

FLUORESCENCE

$S_{HC} = 0.72\%$

FLUORESCENCE



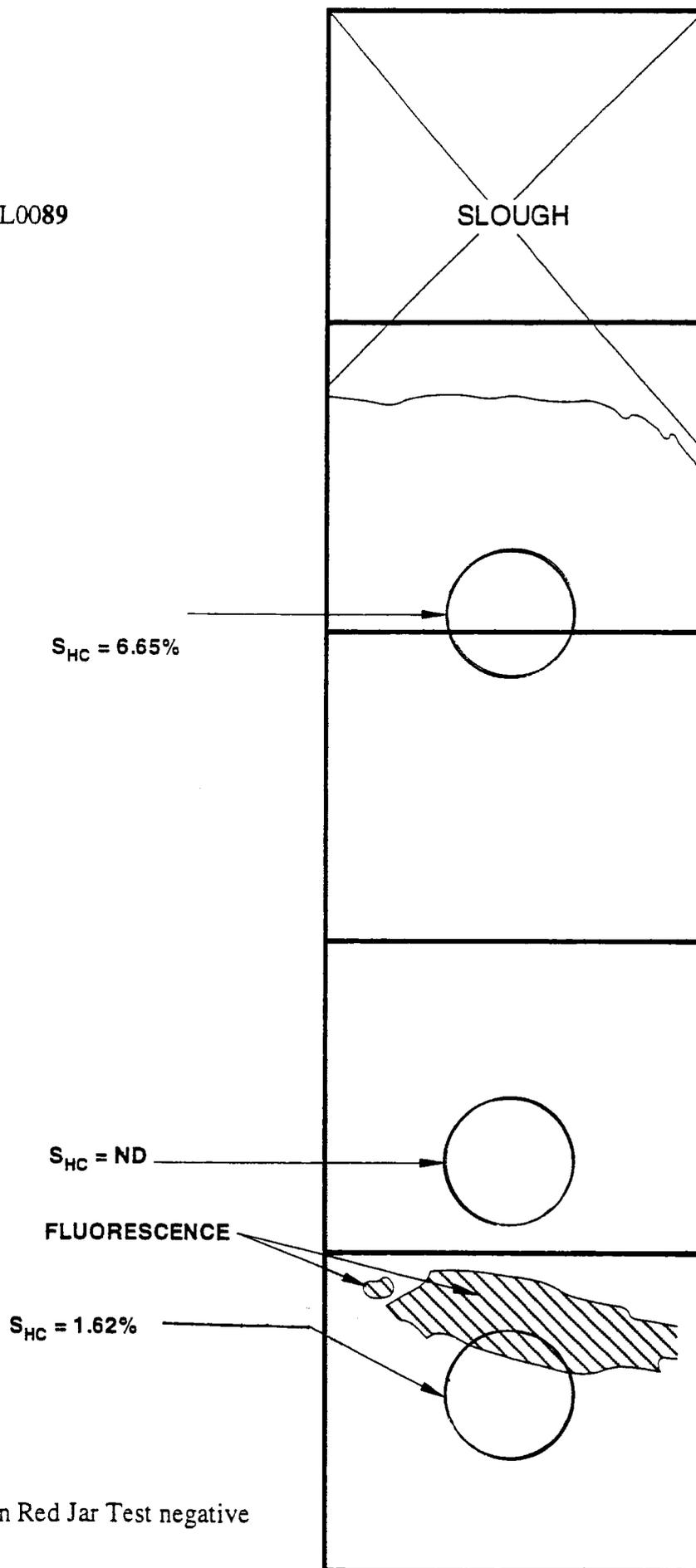
TOP
DEPTH: 72.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 73.0'

LOCATION: SBL0089
DATE: 6/29/94

TOP
DEPTH: 73.0'

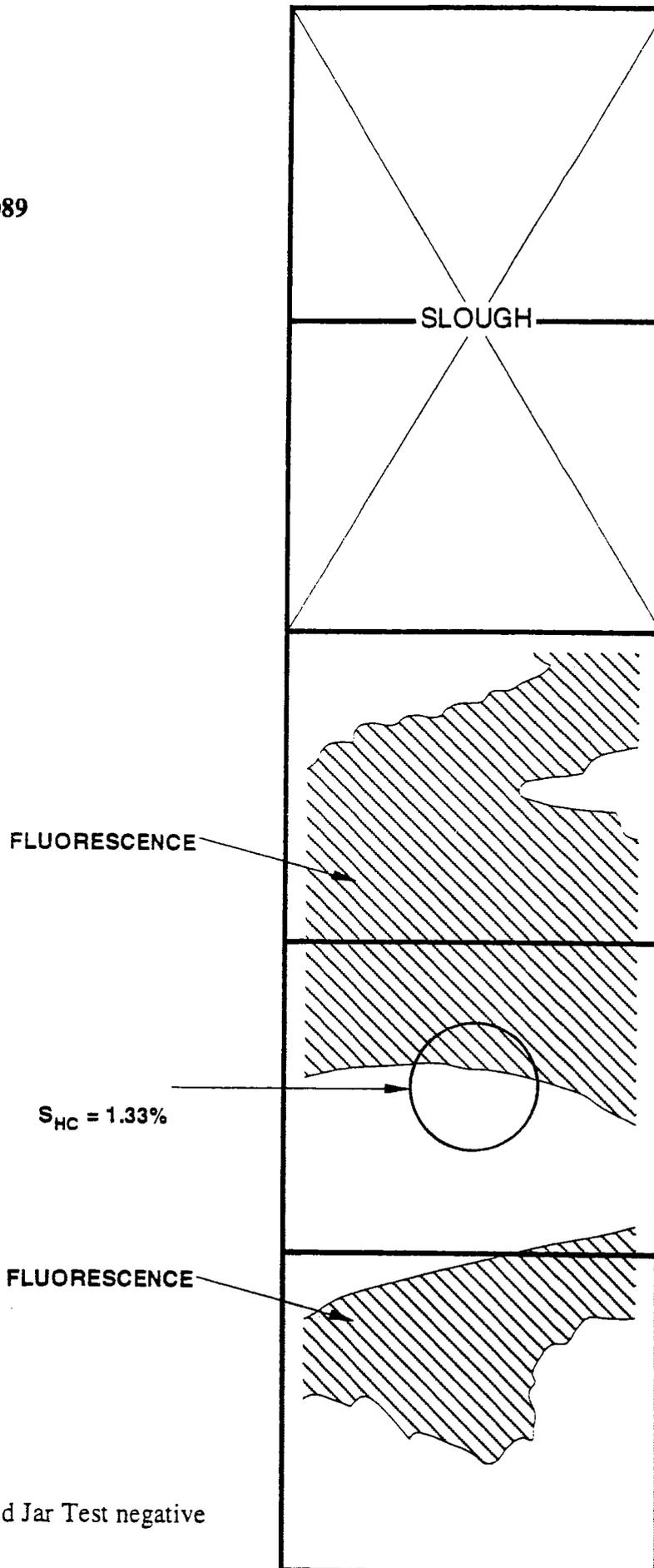


• Results of Sudan Red Jar Test negative

LOCATION: SBL0089

DATE: 6/29/94

TOP
DEPTH: 74.0'



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 75.0'

LOCATION: SBL0089

DATE: 6/29/94

TOP

DEPTH: 75.0'

$S_{HC} = ND$

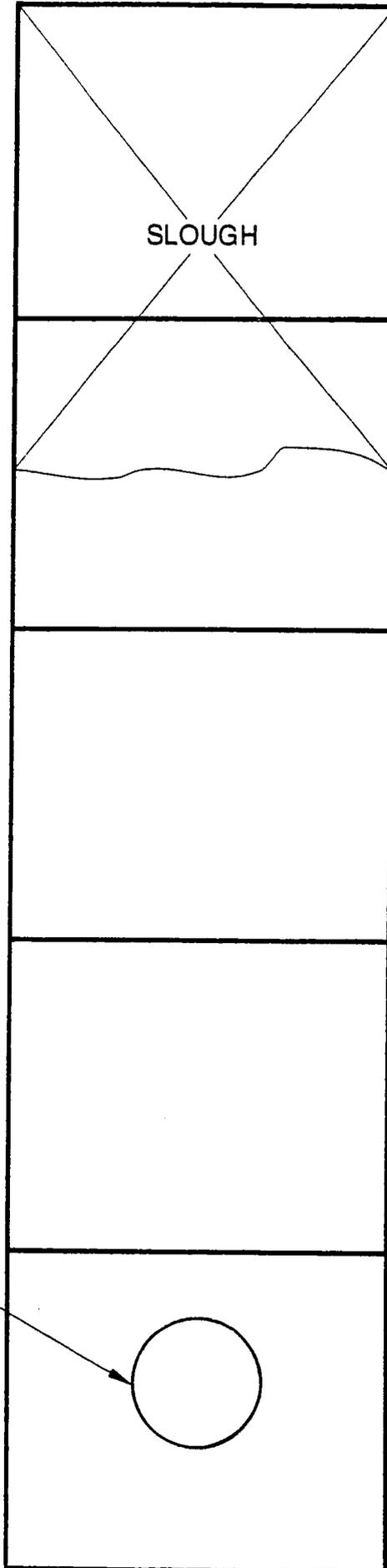


• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 76.0'

LOCATION: SBL0089
DATE: 6/29/94



TOP
DEPTH: 76.0'

S_{HC} = ND

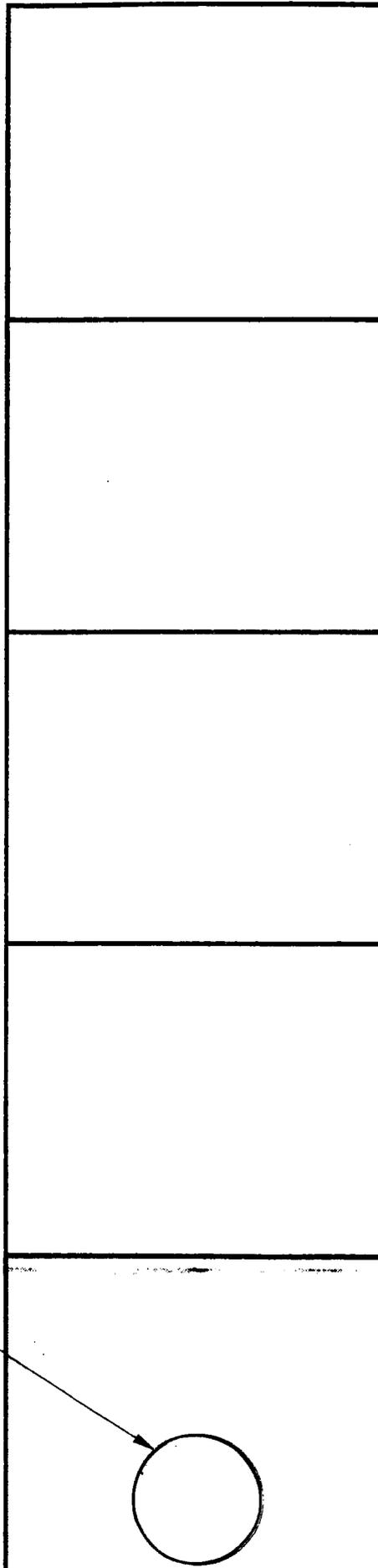
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 77.0'

LOCATION: SBL0090

DATE: 6/30/94

TOP
DEPTH: 58.0'



$S_{HC} = ND$

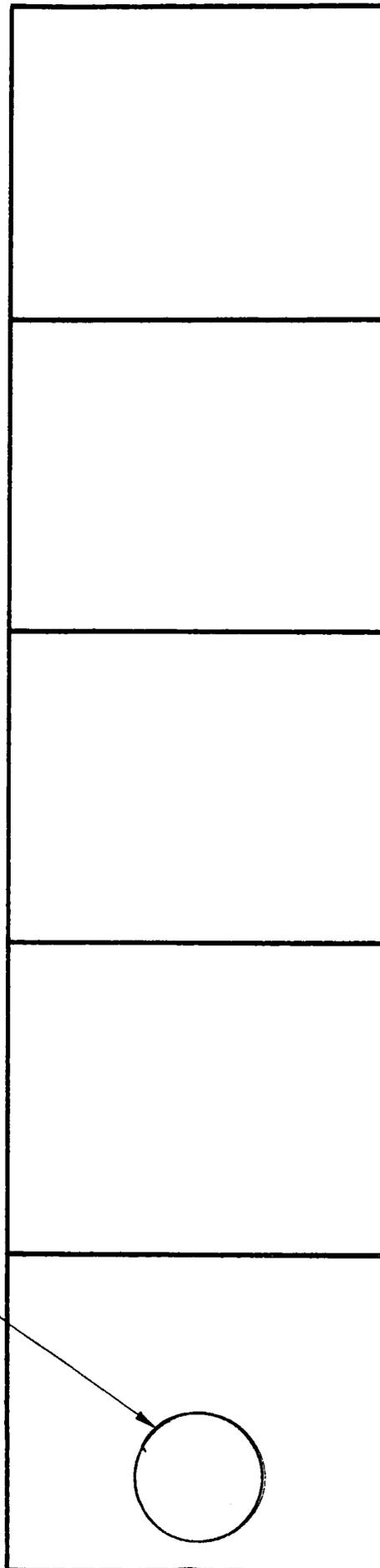
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 59.0'

LOCATION: SBL0090

DATE: 6/30/94

TOP
DEPTH: 59.0'

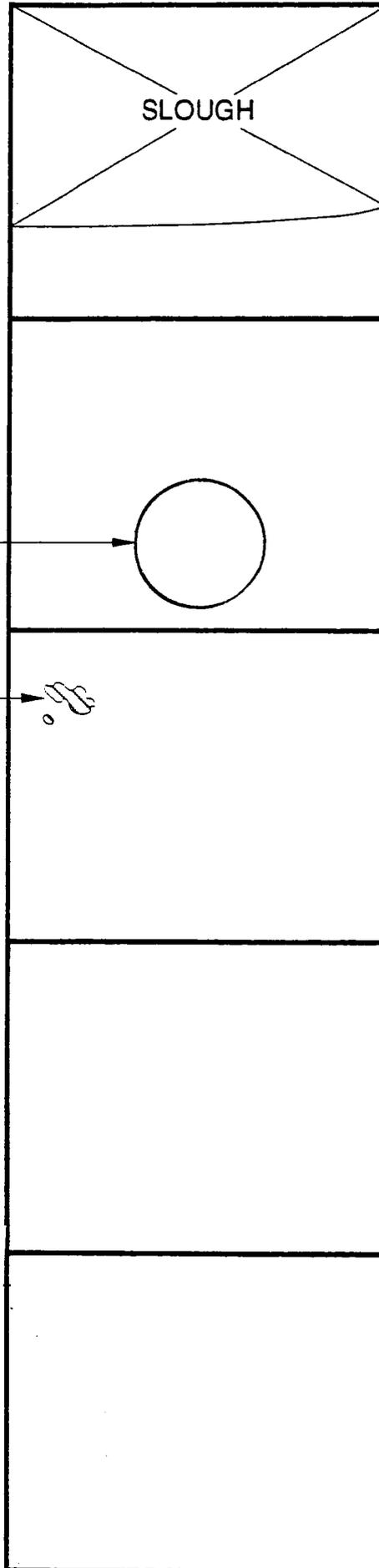


$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 60.0'

LOCATION: SBL0090
DATE: 6/30/94



TOP
DEPTH: 63.0'

• Results of Sudan Red Jar Test negative

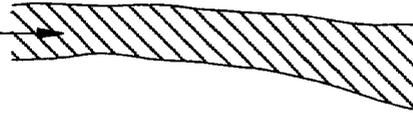
BOTTOM
DEPTH: 64.0'

LOCATION: SBL0090

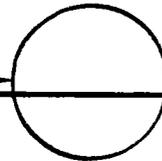
DATE: 6/30/94

TOP
DEPTH: 65.0'

FLUORESCENCE IN
SAND ON TOP OF MUD



$S_{HC} = 0.71\%$

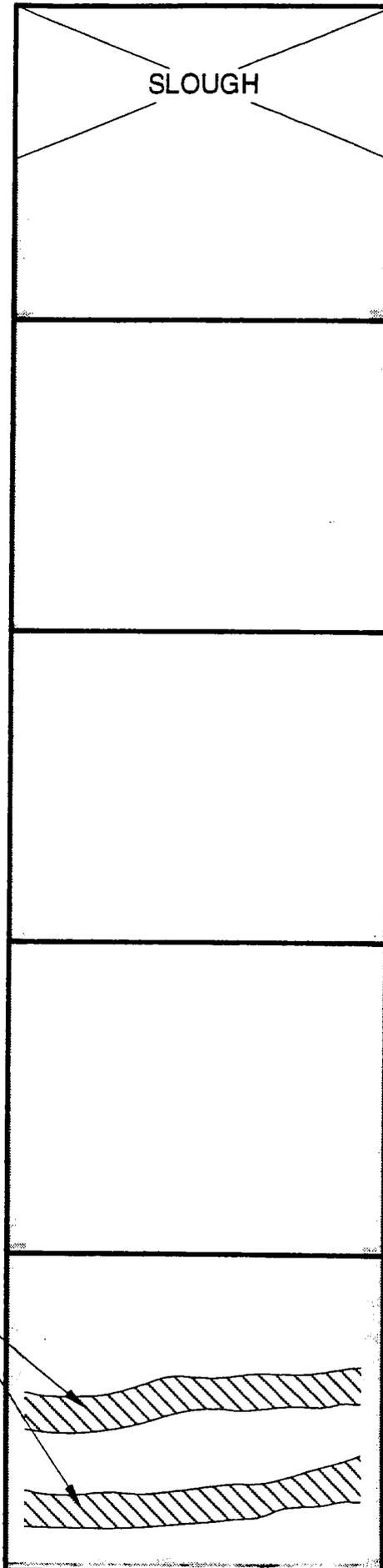


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 66.0'

LOCATION: SBL0090

DATE: 6/30/94



TOP
DEPTH: 66.0'

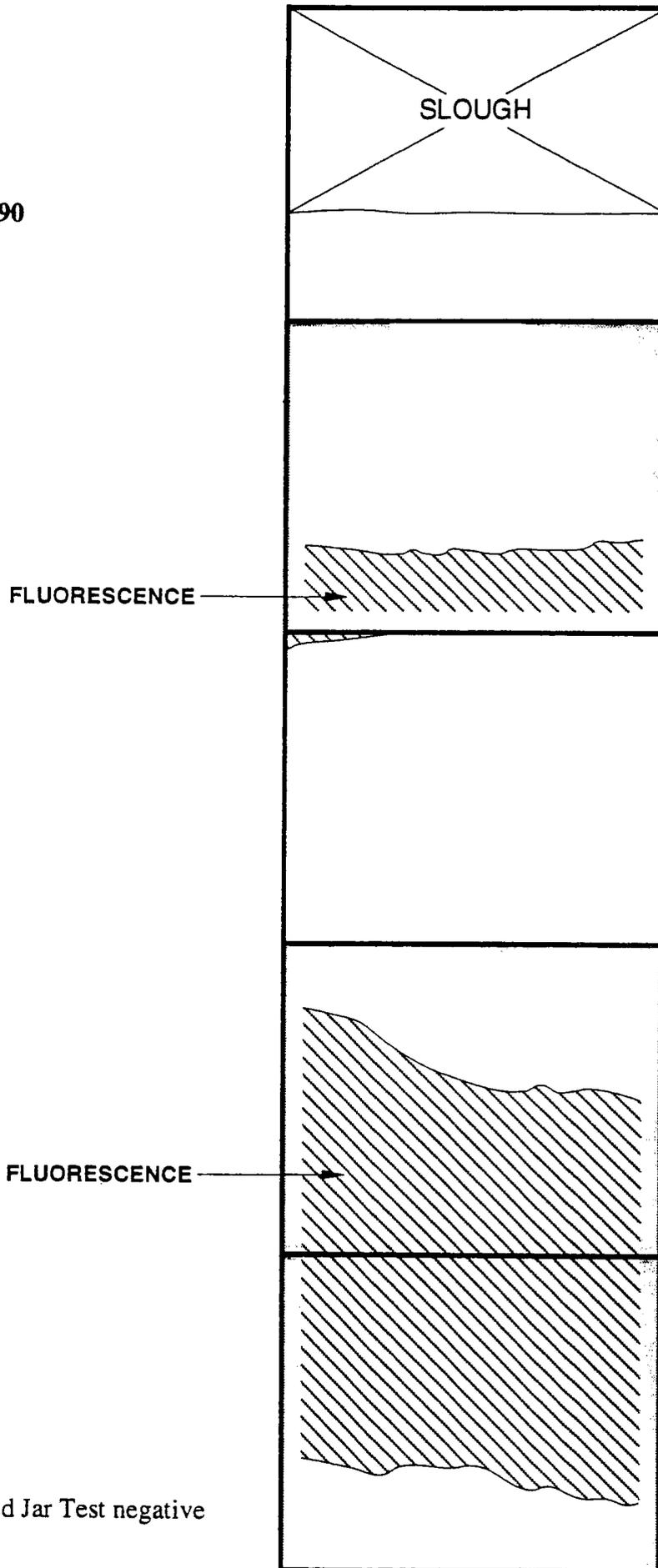
FLUORESCENCE IN
SAND STRINGERS

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 67.0'

TOP
DEPTH: 67.0'

LOCATION: SBL0090
DATE: 6/30/94



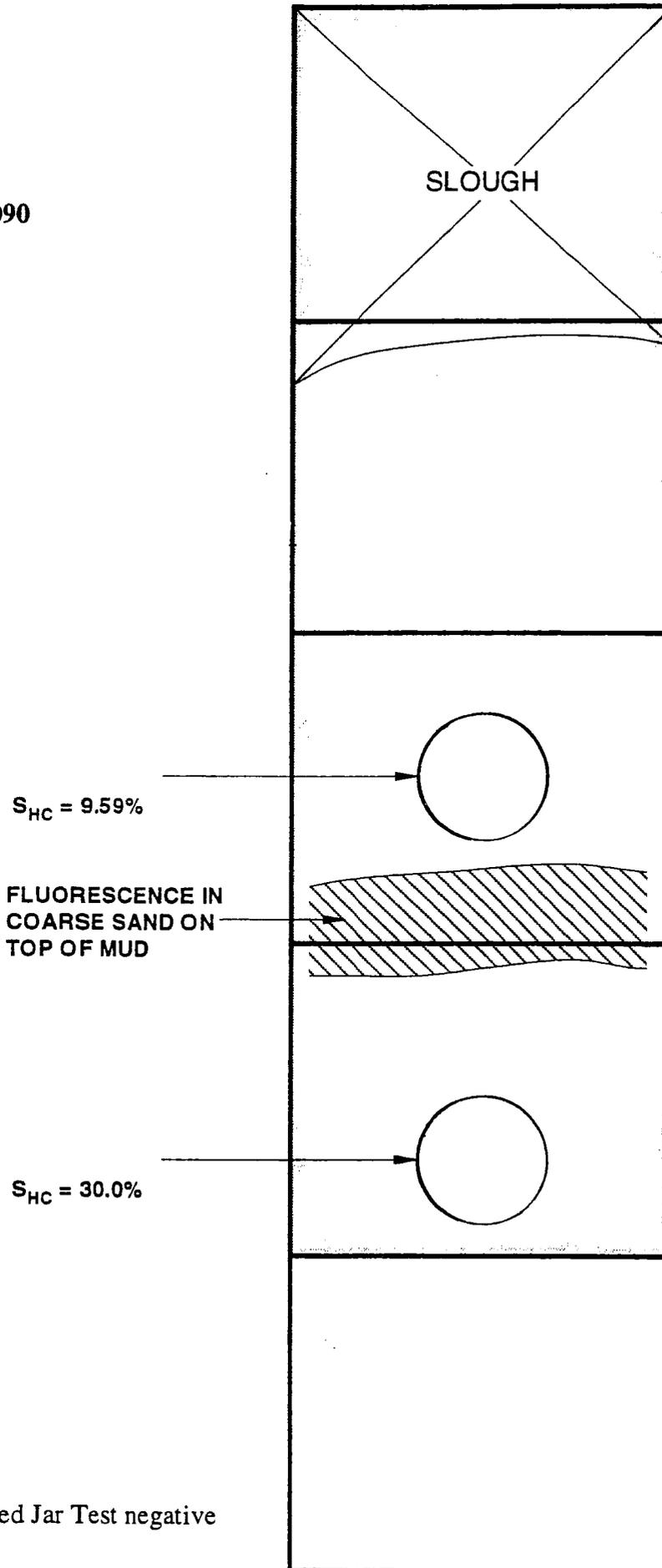
BOTTOM
DEPTH: 68.0'

• Results of Sudan Red Jar Test negative

LOCATION: SBL0090

DATE: 6/30/94

TOP
DEPTH: 70.0'



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 71.0'

LOCATION: SBL0090

DATE: 6/30/94

TOP

DEPTH: 71.0'

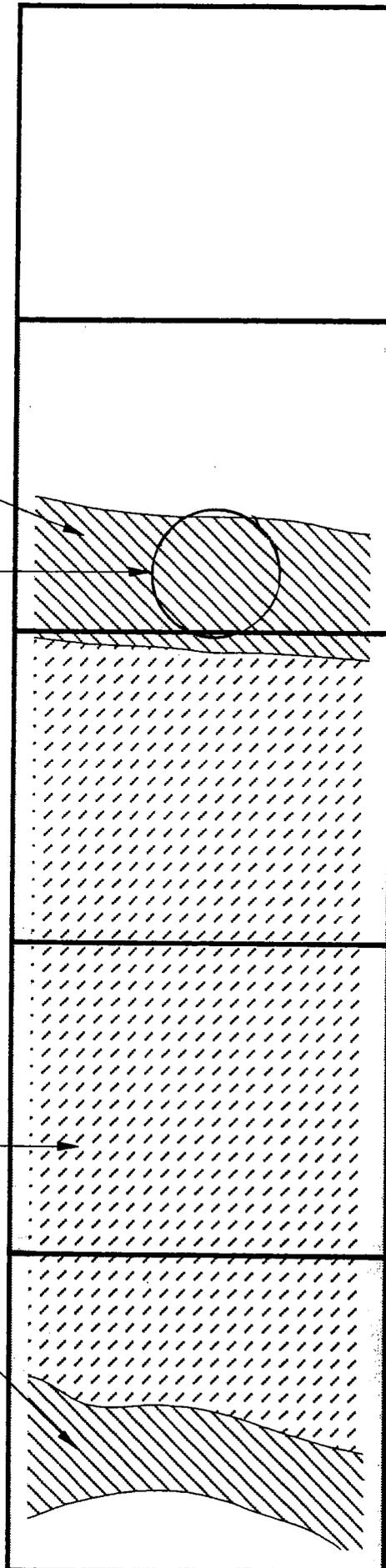
FLUORESCENCE
IN COARSE SAND

$S_{HC} = ND$

DULL FLUORESCENCE
IN FINE SAND
BETWEEN MUD
DRAPES

FLUORESCENCE
IN MEDIUM SAND

• Results of Sudan Red Jar Test negative



BOTTOM

DEPTH: 72.0'

LOCATION: SBL0090

DATE: 6/30/94

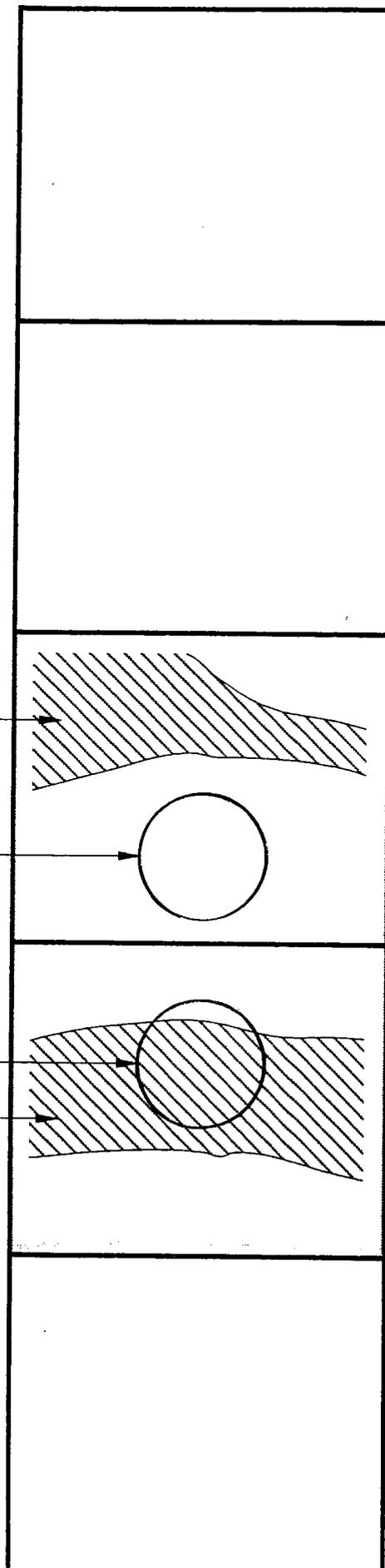
TOP
DEPTH: 72.0'

FLUORESCENCE
IN MEDIUM SANDS

$S_{HC} = 4.35\%$

$S_{HC} = ND$

FLUORESCENCE
IN MEDIUM SANDS



• Results of Sudan Red Jar Test negative

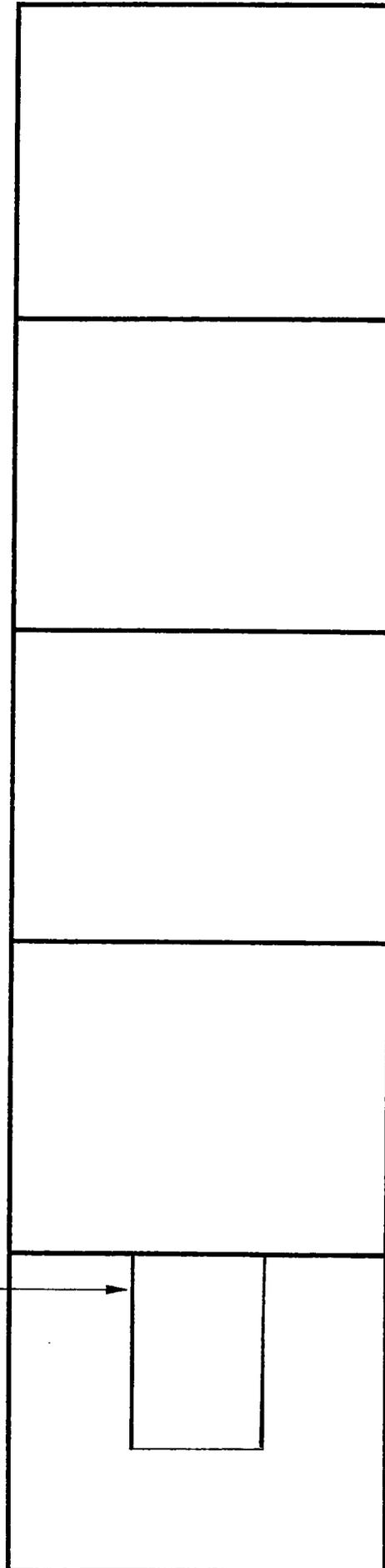
BOTTOM
DEPTH: 73.0'

LOCATION: SBL0090

DATE: 6/30/94

TOP

DEPTH: 73.0'



$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

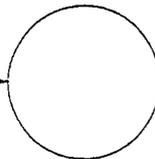
DEPTH: 74.0'

LOCATION: SBL0090

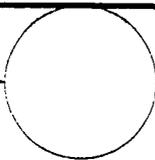
DATE: 6/30/94

TOP
DEPTH: 74.0'

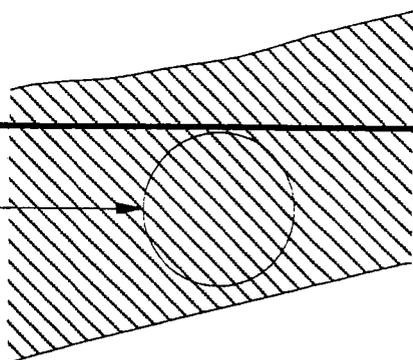
$S_{HC} = ND$



$S_{HC} = ND$



$S_{HC} = 5.52\%$



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 75.0'

LOCATION: SBL0090

DATE: 6/30/94

TOP

DEPTH: 75.0'

$S_{HC} = ND$

FLUORESCENCE IN
SAND ON TOP OF MUD

SAND FILLED
BURROWS

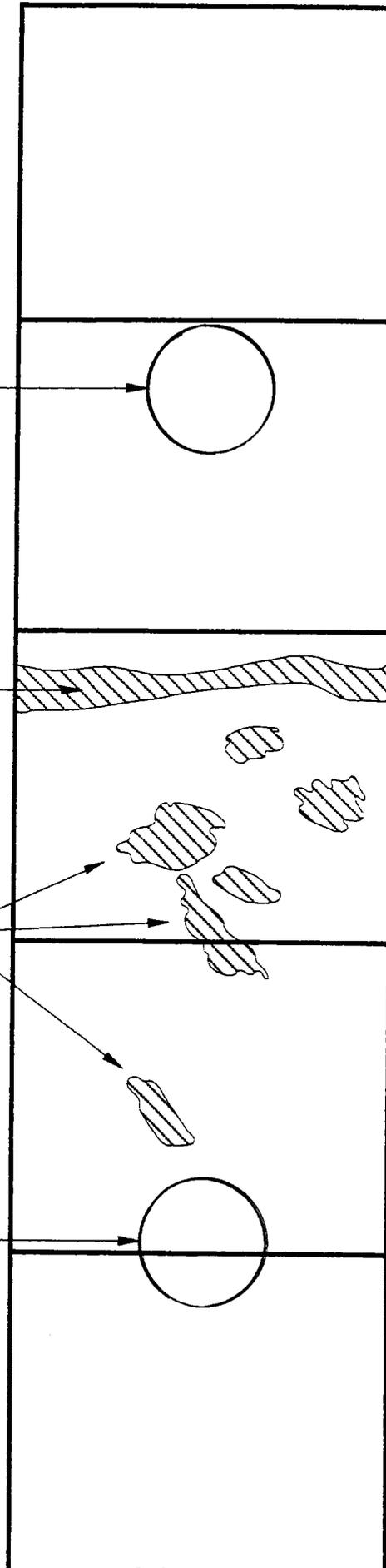
FLUORESCENCE IN
SAND FILLED BURROWS
COULD BE MINERAL

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 76.0'



LOCATION: SBL0090

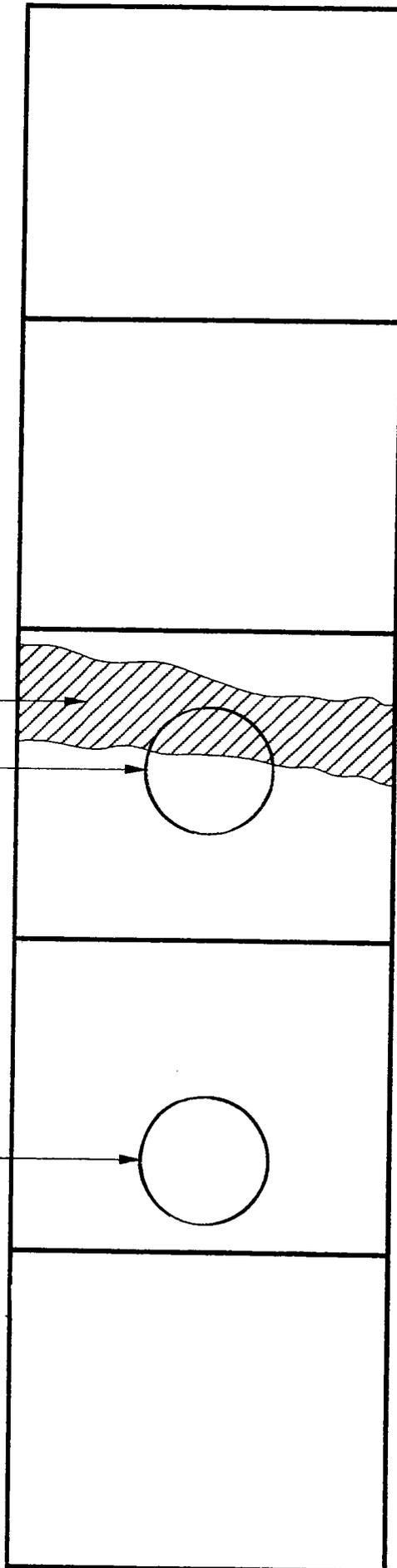
DATE: 6/30/94

TOP
DEPTH: 76.0'

FLUORESCENCE IN
SAND ON TOP OF MUD

$S_{HC} = ND$

$S_{HC} = ND$

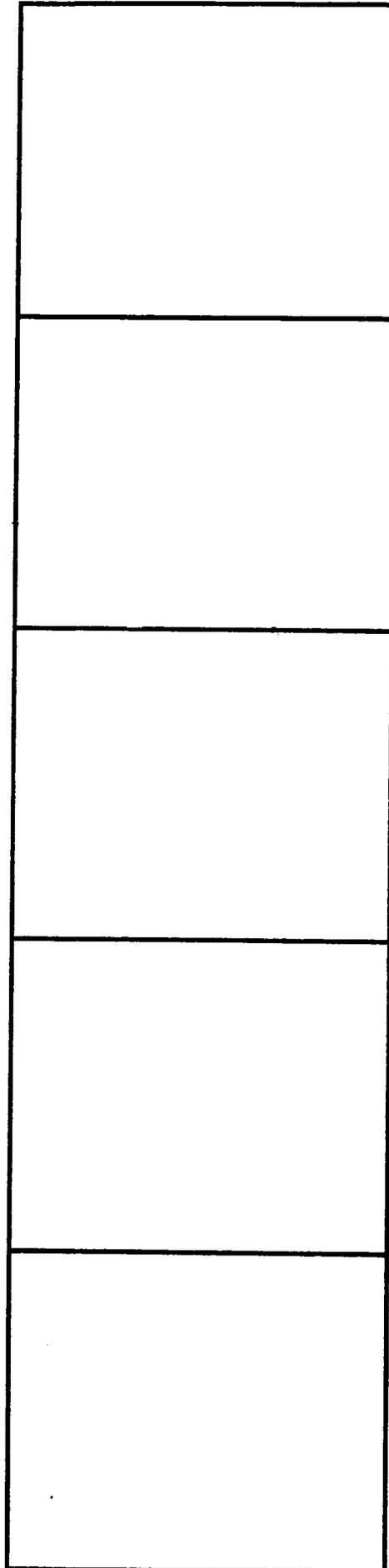


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 77.0'

LOCATION: SBL0090

DATE: 6/30/94



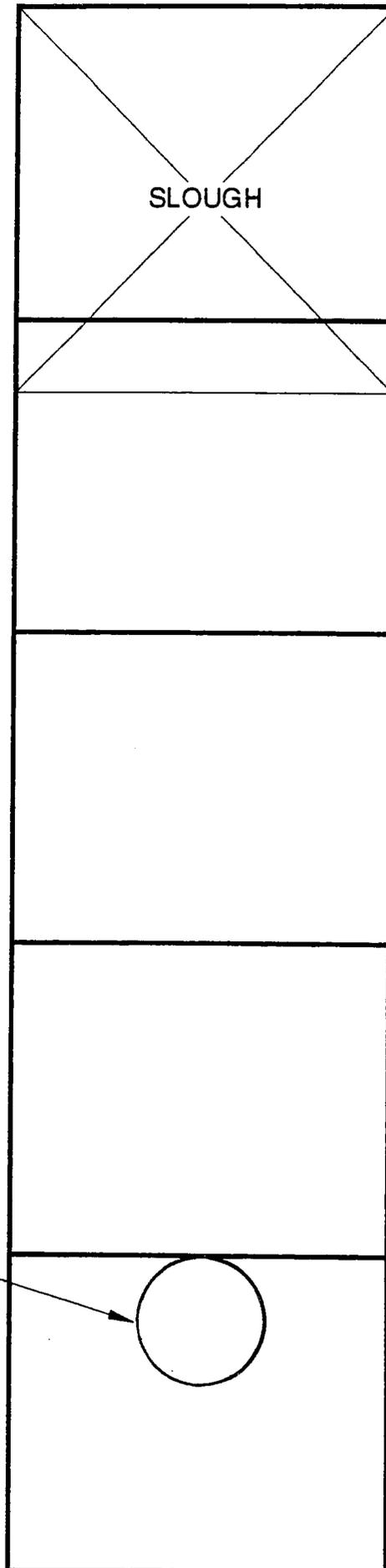
TOP
DEPTH: 77.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 78.0'

LOCATION: SBL0091

DATE: 7/5/94



TOP
DEPTH: 58.0'

$S_{HC} = ND$

BOTTOM
DEPTH: 59.0'

• Results of Sudan Red Jar Test negative

LOCATION: SBL0091

DATE: 7/5/94

TOP
DEPTH: 59.0'

FLUORESCENCE
IN QUARTZ

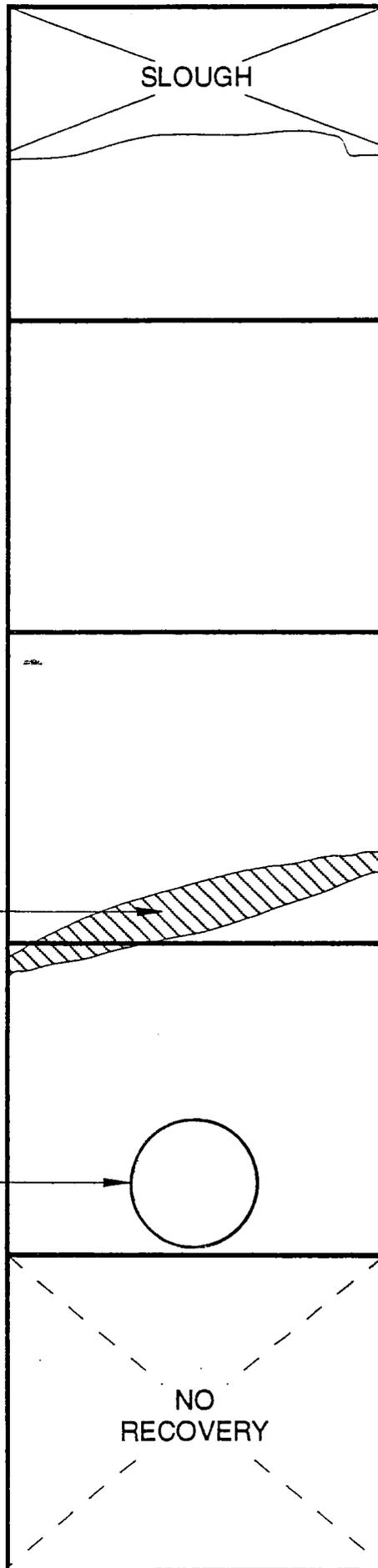
$S_{HC} = ND$

SLOUGH

NO
RECOVERY

BOTTOM
DEPTH: 59.8'

• Results of Sudan Red Jar Test negative



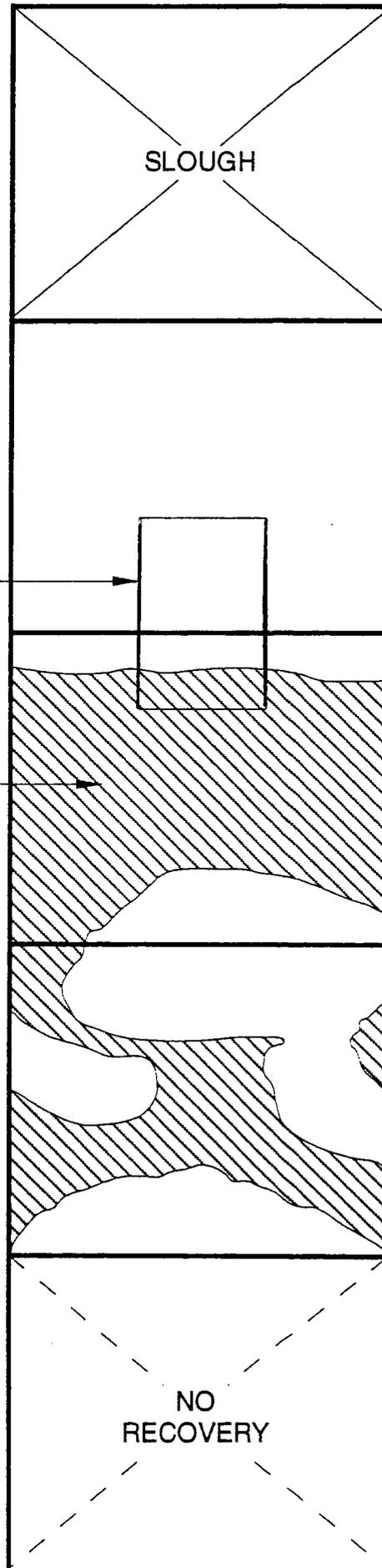
LOCATION: SBL0091

DATE: 7/5/94

TOP
DEPTH: 60.0'

$S_{HC} = ND$

FLUORESCENCE IN
SAND SURROUNDING
MUD RIP-UPS

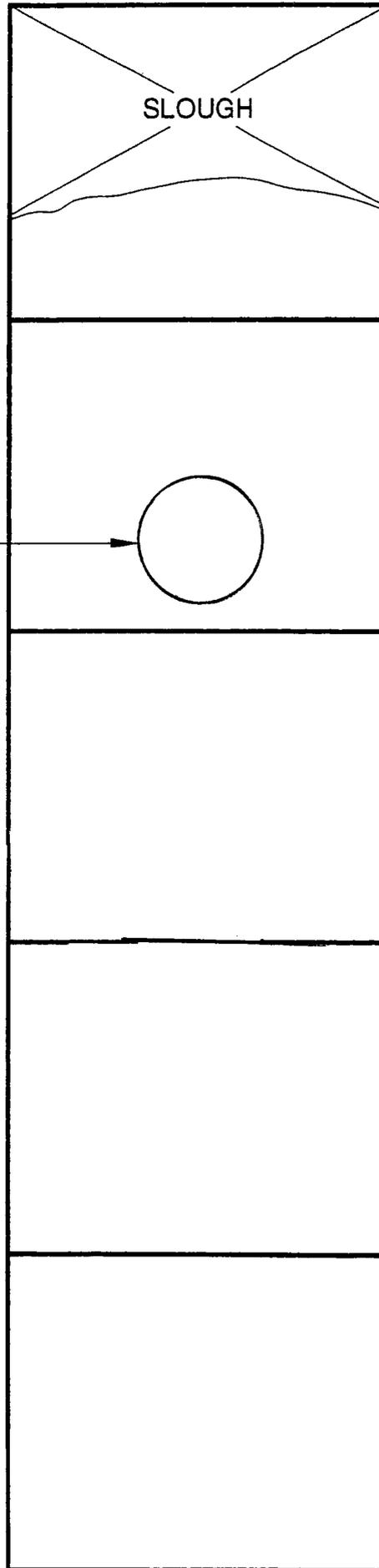


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 60.8'

LOCATION: SBL0091

DATE: 7/5/94



TOP
DEPTH: 64.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 65.0'

LOCATION: SBL0091

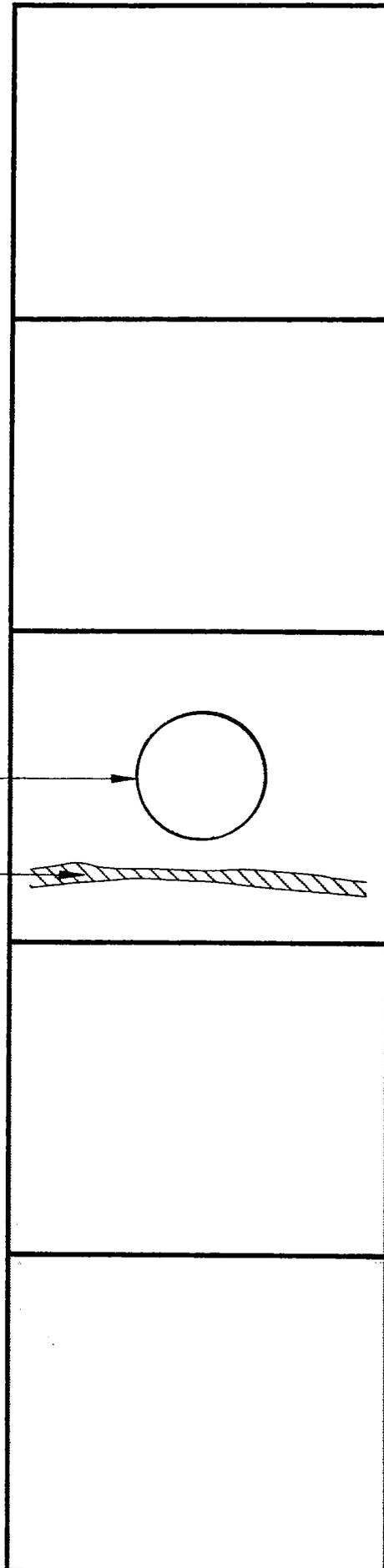
DATE: 7/5/94

TOP

DEPTH: 65.0'

$S_{HC} = 12.3\%$

FLUORESCENCE IN
SAND ON TOP OF MUD



• Results of Sudan Red Jar Test negative

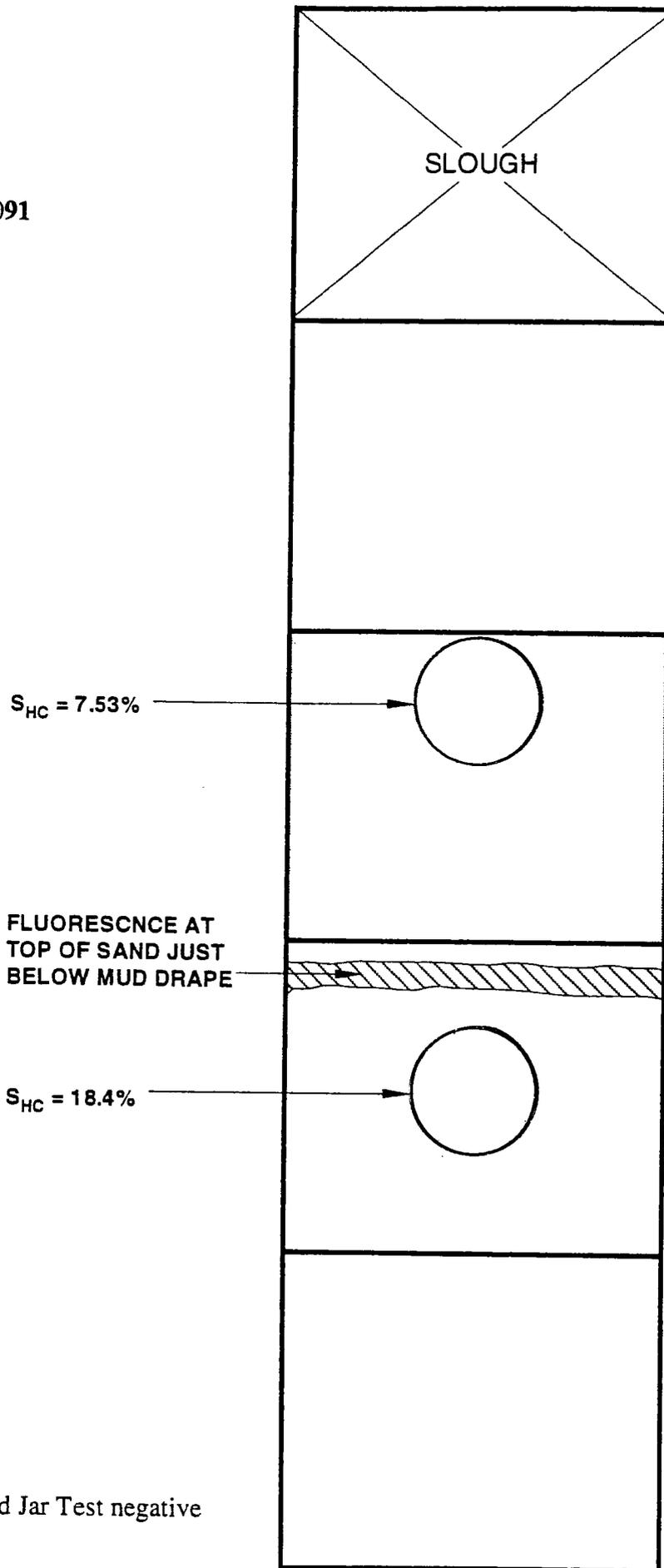
BOTTOM

DEPTH: 66.0'

LOCATION: SBL0091

DATE: 7/6/94

TOP
DEPTH: 67.0'



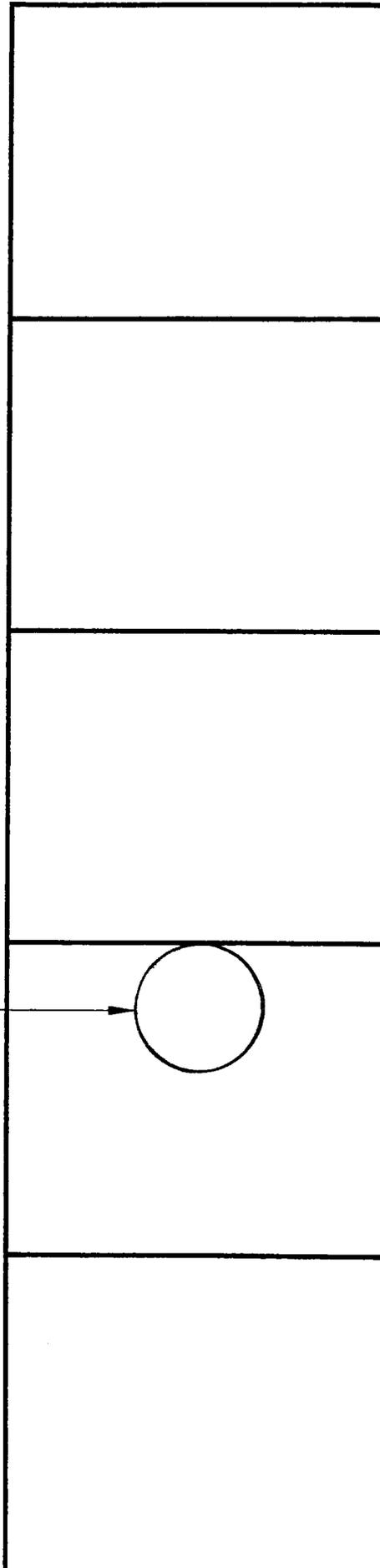
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 68.0'

LOCATION: SBL0091

DATE: 7/6/94

TOP
DEPTH: 71.0'



$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 72.0'

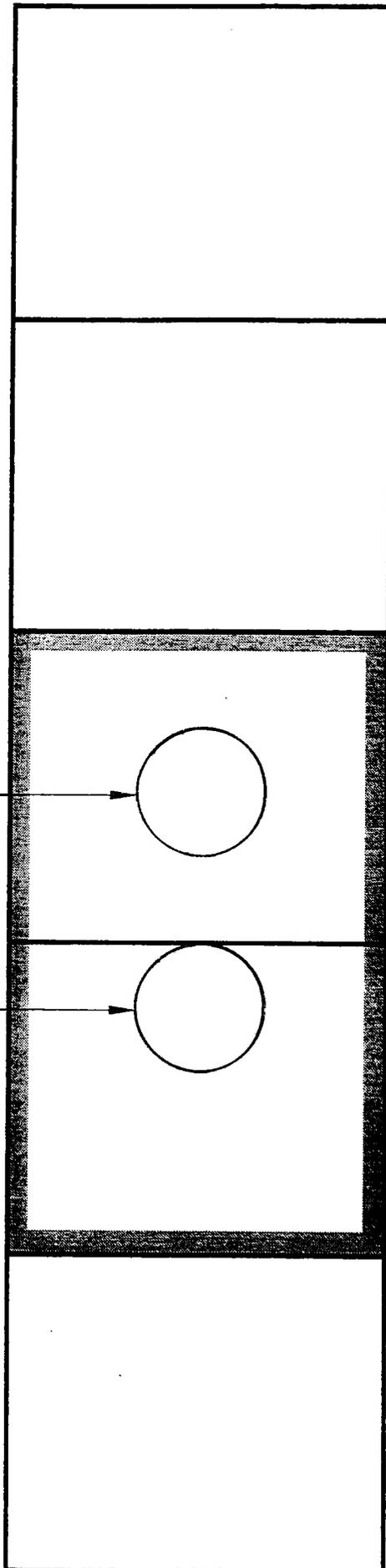
LOCATION: SBL0091

DATE: 7/6/94

TOP
DEPTH: 72.0'

$S_{HC} = 1.29\%$

$S_{HC} = 7.63\%$



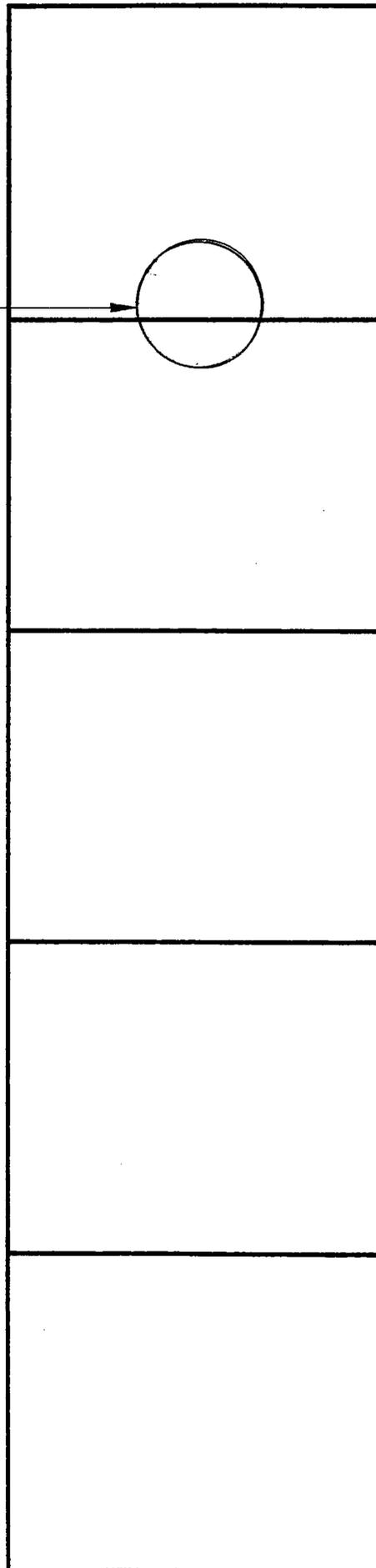
• Results of Sudan Red Jar Test positive
where specifically noted by 

BOTTOM
DEPTH: 73.0'

LOCATION: SBL0091

DATE: 7/6/94

$S_{HC} = ND$



TOP
DEPTH: 76.0'

• Results of Sudan Red Jar Test negative

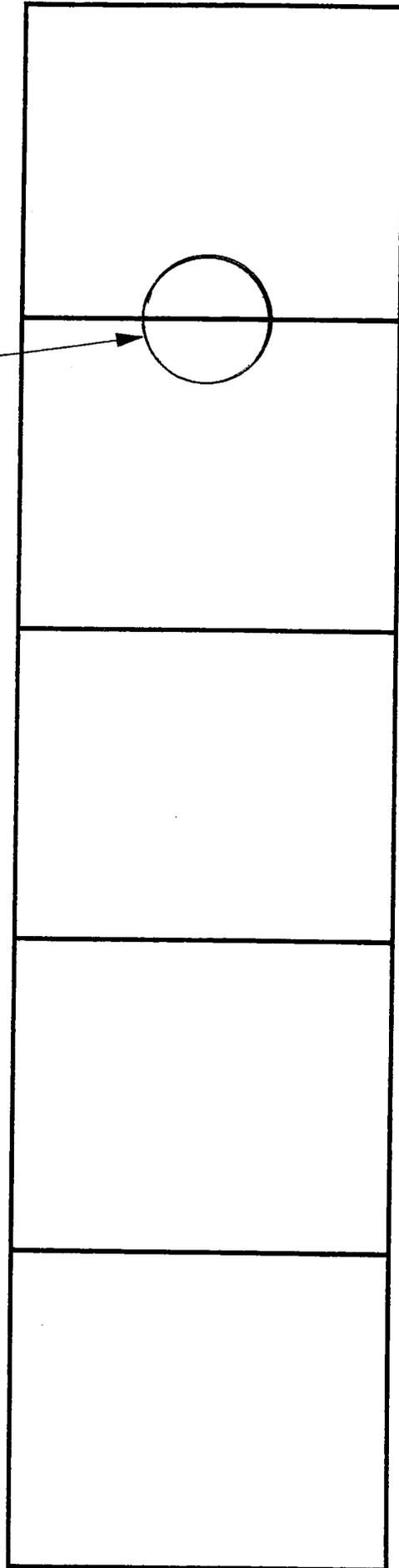
BOTTOM
DEPTH: 77.0'

LOCATION: SBL0092

DATE: 7/6/94

TOP
DEPTH: 60.0'

$S_{HC} = ND$



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 61.0'

LOCATION: SBL0092

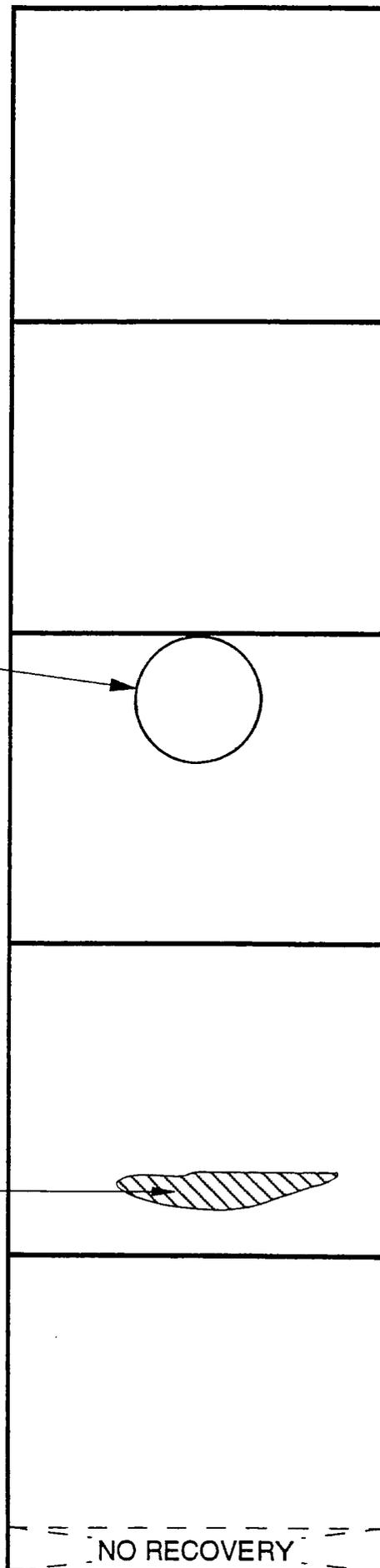
DATE: 7/6/94

TOP
DEPTH: 64.0'

S_{HC} = ND

FLUORESCENCE

• Results of Sudan Red Jar Test negative



BOTTOM
DEPTH: 64.98'

LOCATION: SBL0092

DATE: 7/6/94

TOP

DEPTH: 66.0'

$S_{HC} = 26.1\%$

FLUORESCENCE IN FINE
SAND LENSES WITHIN SILT

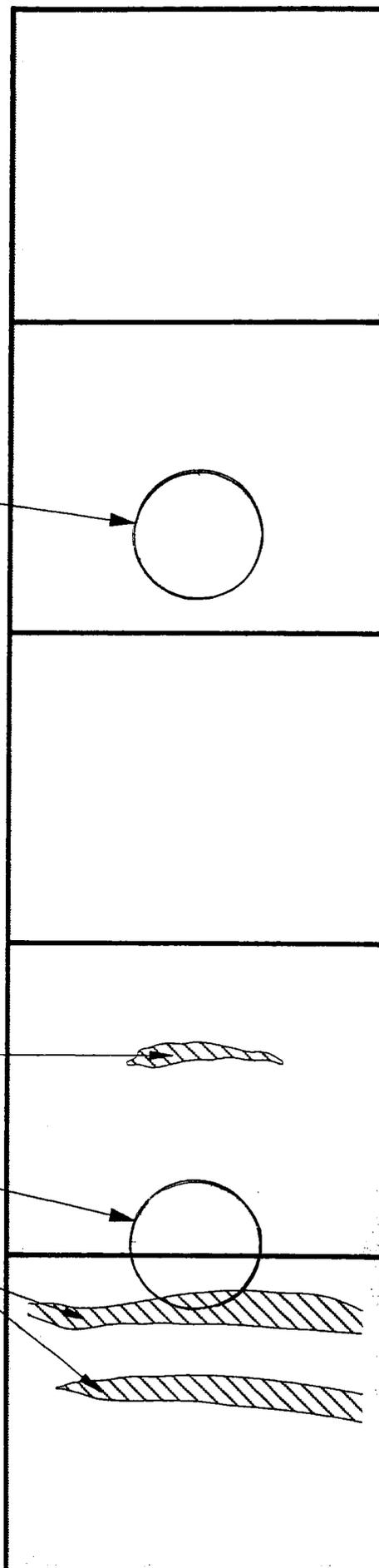
$S_{HC} = ND$

FLUORESCENCE IN FINE
SAND LENSES WITHIN SILT

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 67.0'



LOCATION: SBL0092

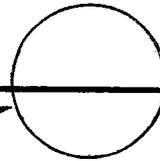
DATE: 7/6/94

TOP
DEPTH: 73.0'

FLUORESCENCE



S_{HC} = ND



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 74.0'

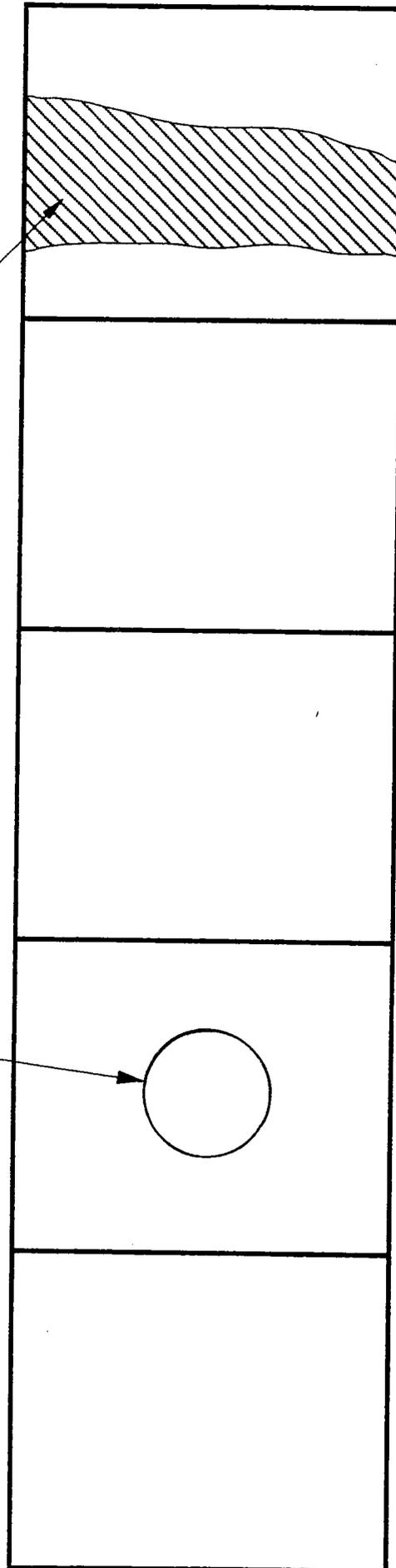
LOCATION: SBL0092

DATE: 7/7/94

POSSIBLE FLUORESCENCE
JUST BELOW A MUD DRAPE
IN MEDIUM SAND

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

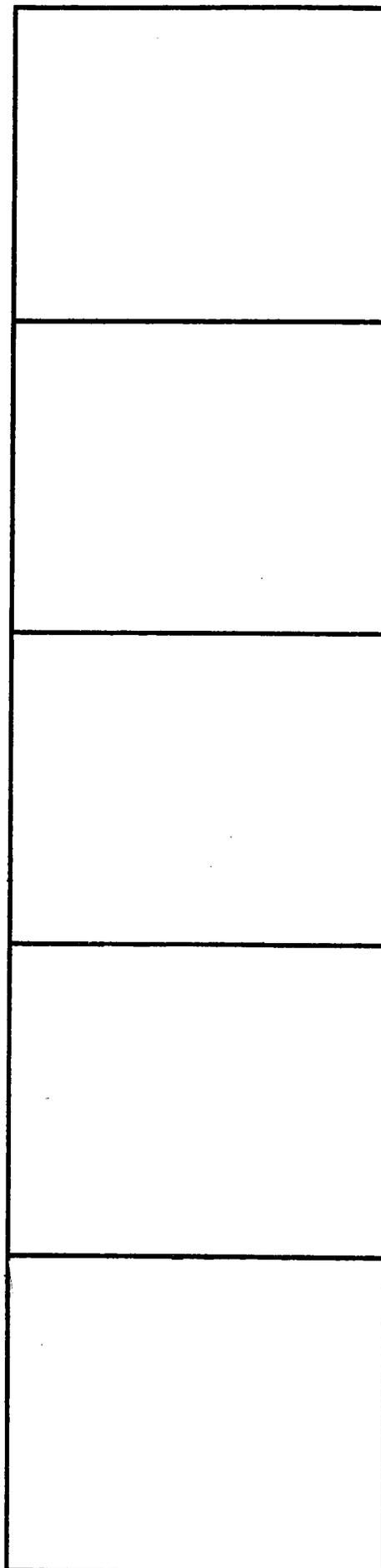


TOP
DEPTH: 78.0'

BOTTOM
DEPTH: 79.0'

LOCATION: SBL0092

DATE: 7/7/94



TOP
DEPTH: 80.0'

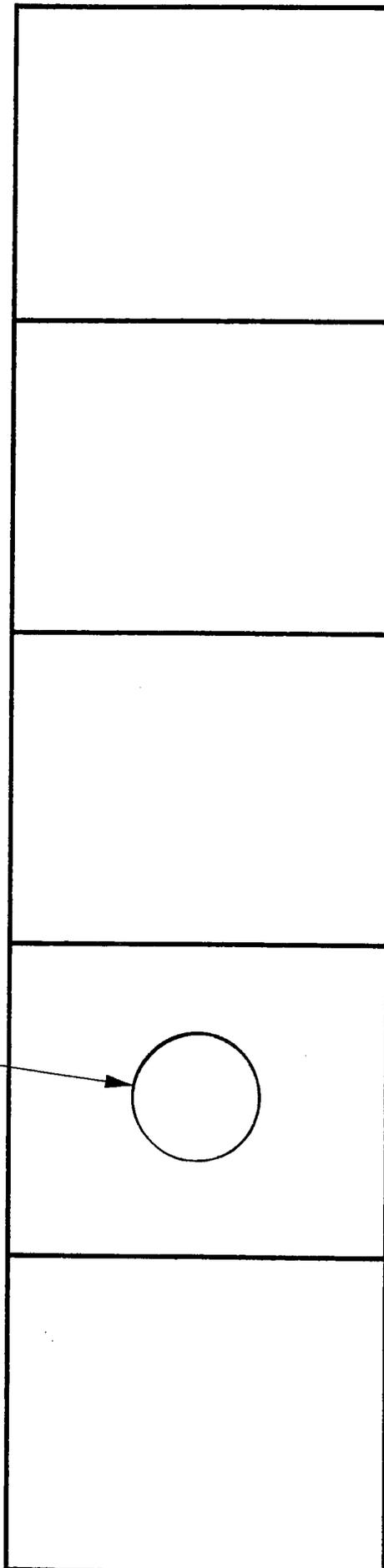
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 81.0'

LOCATION: SBL0093

DATE: 7/7/94

TOP
DEPTH: 73.0'



$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 74.0'

LOCATION: SBL0093

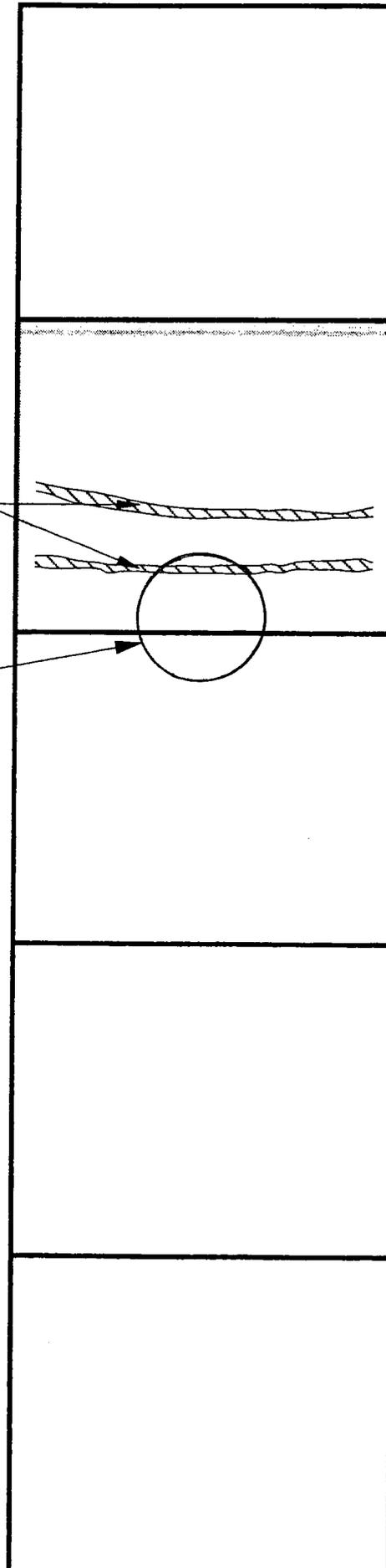
DATE: 7/8/94

TOP

DEPTH: 74.0'

FLUORESCENCE IN
QUARTZ RICH LAMINAE

$S_{HC} = ND$



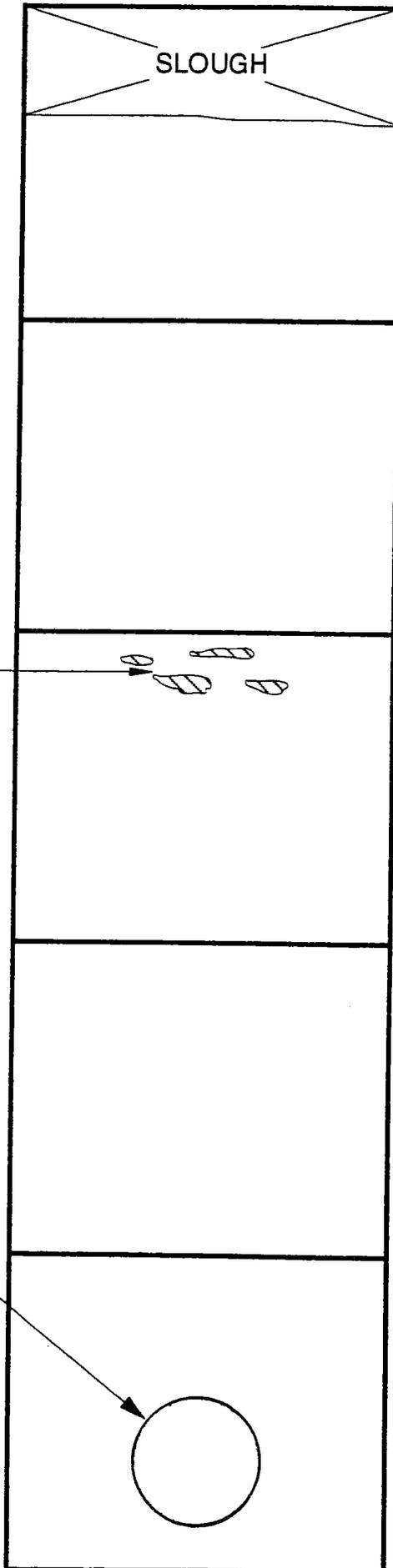
• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 75.0'

LOCATION: SBL0093

DATE: 7/8/94



TOP
DEPTH: 75.0'

FLUORESCENCE IN SAND
JUST UNDER MUD

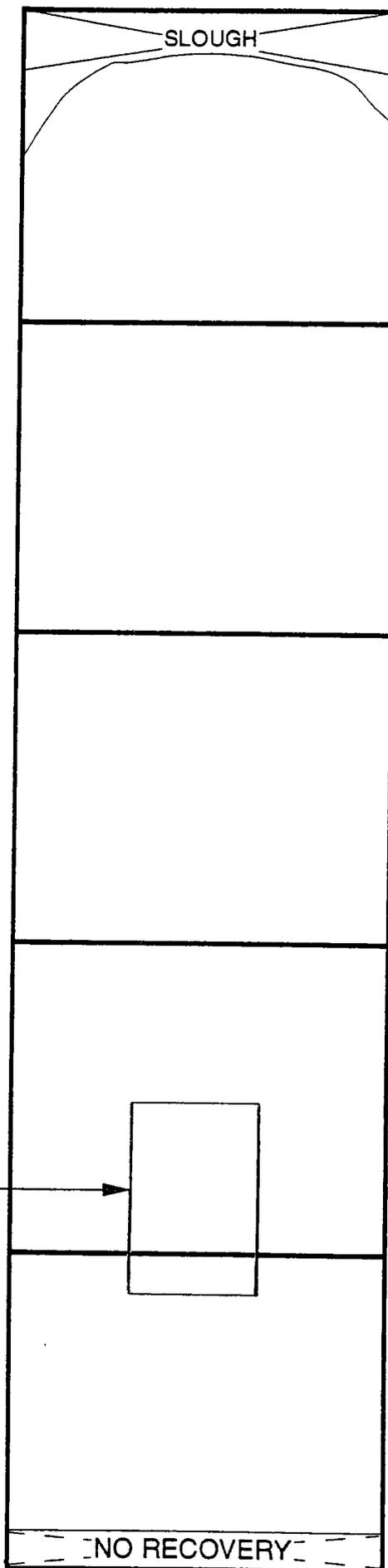
$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 76.0'

LOCATION: SBL0093

DATE: 7/8/94



TOP

DEPTH: 76.0'

$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 76.98'

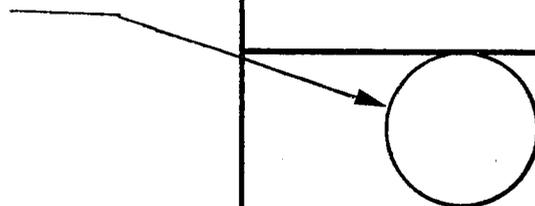
LOCATION: SBL0093

DATE: 7/8/94

TOP

DEPTH: 77.0'

S_{HC} = ND



• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 78.0'

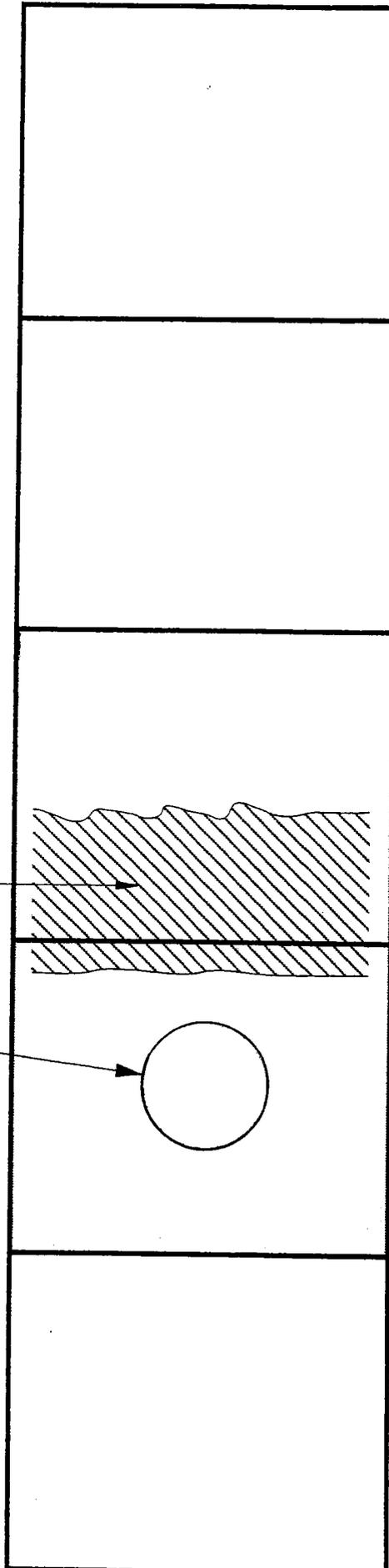
LOCATION: SBL0093

DATE: 7/8/94

TOP
DEPTH: 78.0'

FLUORESCENCE
AT BASE OF SAND

$S_{HC} = ND$

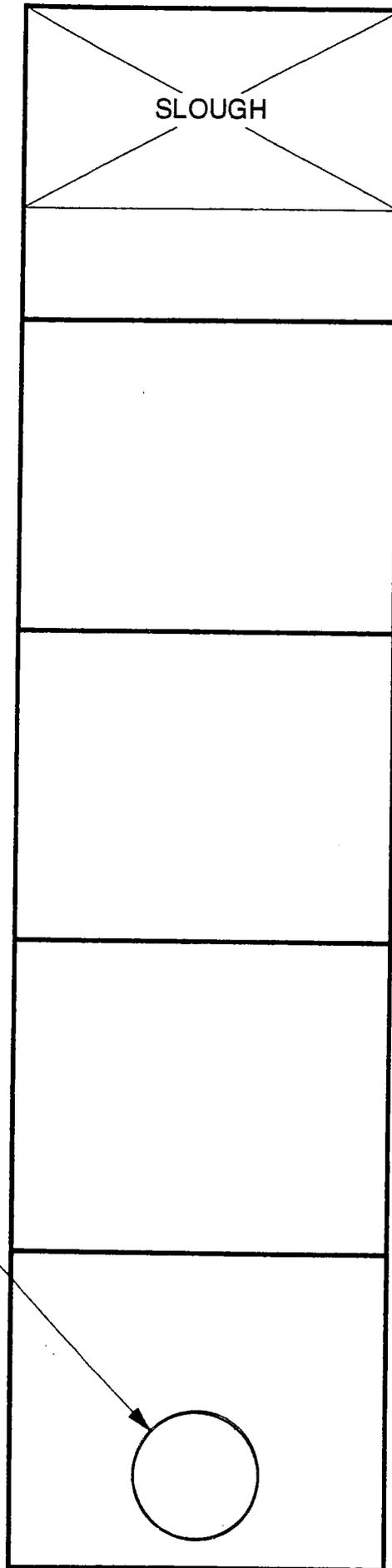


• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 79.0'

LOCATION: SBL0093

DATE: 7/8/94



TOP
DEPTH: 80.0'

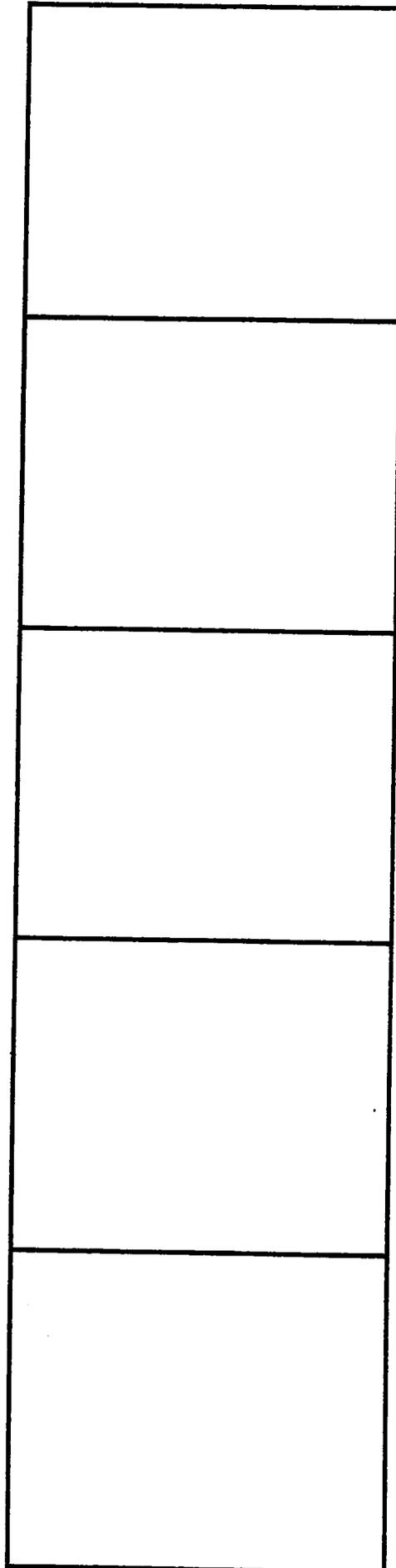
S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 81.0'

LOCATION: SBL0093

DATE: 7/8/94



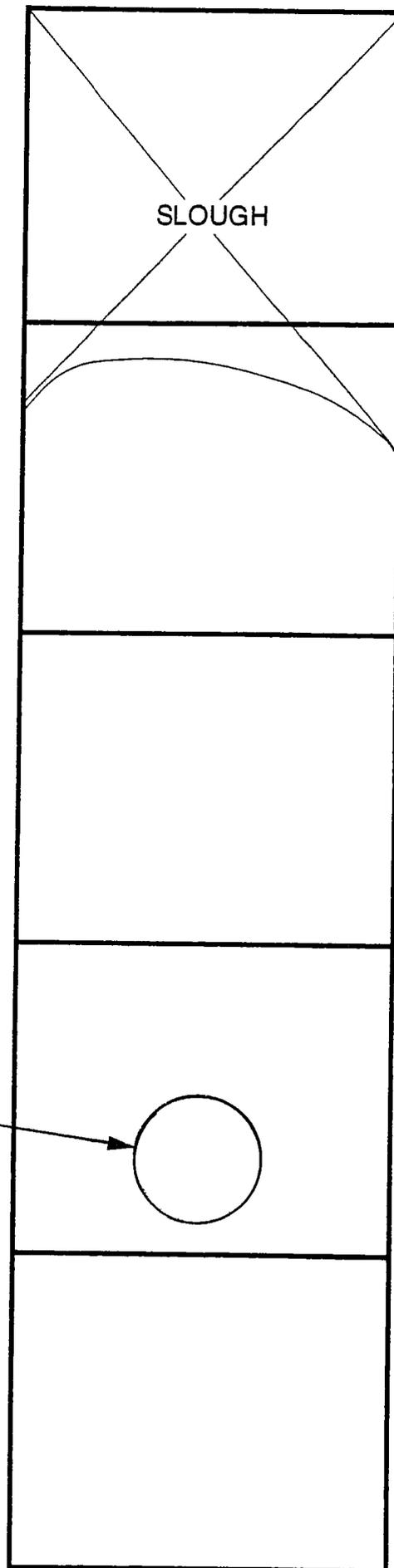
TOP
DEPTH: 81.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 82.0'

LOCATION: SBL0093

DATE: 7/8/94



TOP
DEPTH: 83.0'

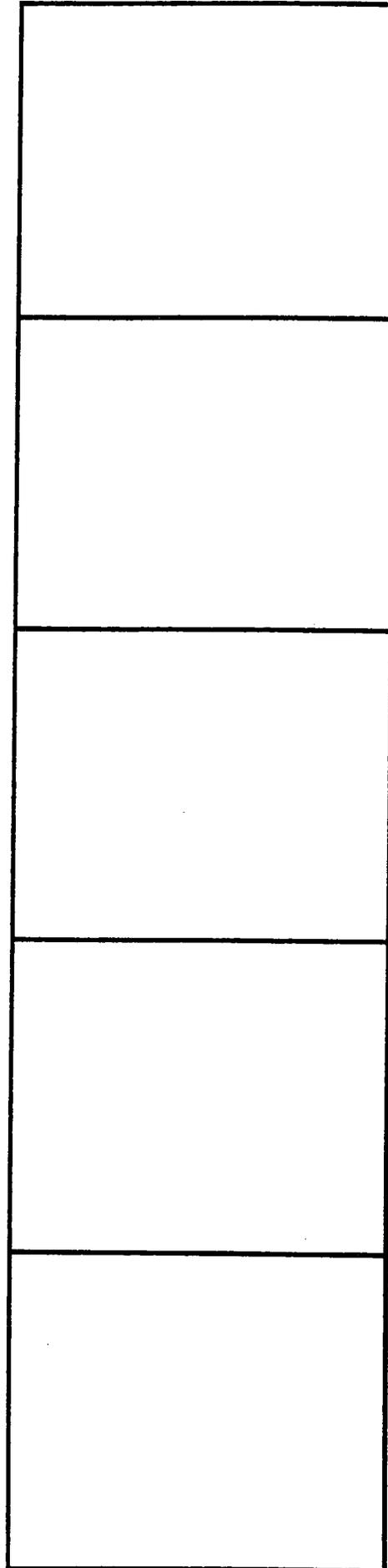
S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 84.0'

LOCATION: SBL0093

DATE: 7/8/94



TOP
DEPTH: 88.0'

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 89.0'

LOCATION: SBL0093

DATE: 7/8/94

TOP

DEPTH: 89.0'

$S_{HC} = ND$



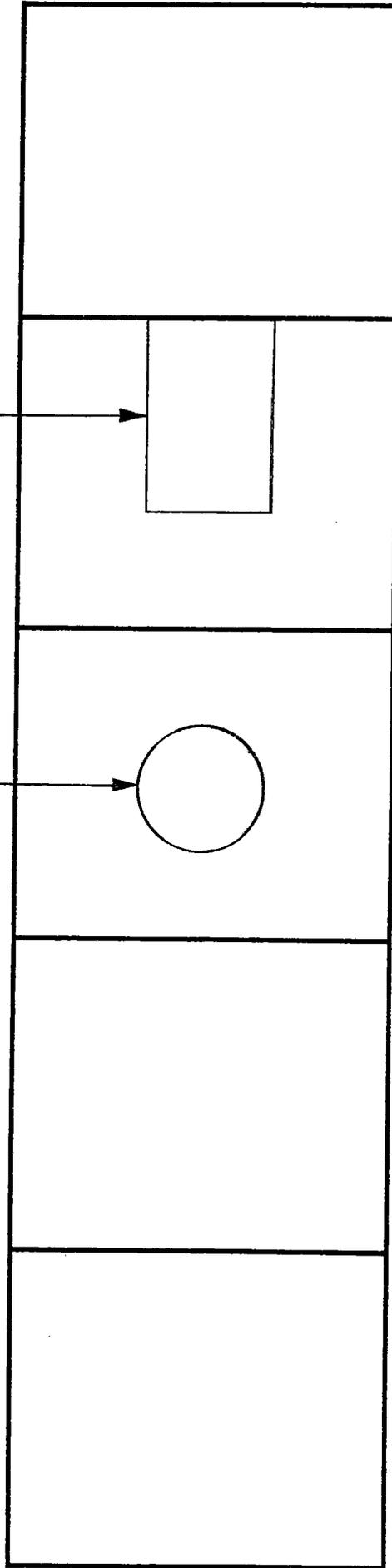
$S_{HC} = ND$



• Results of Sudan Red Jar Test negative

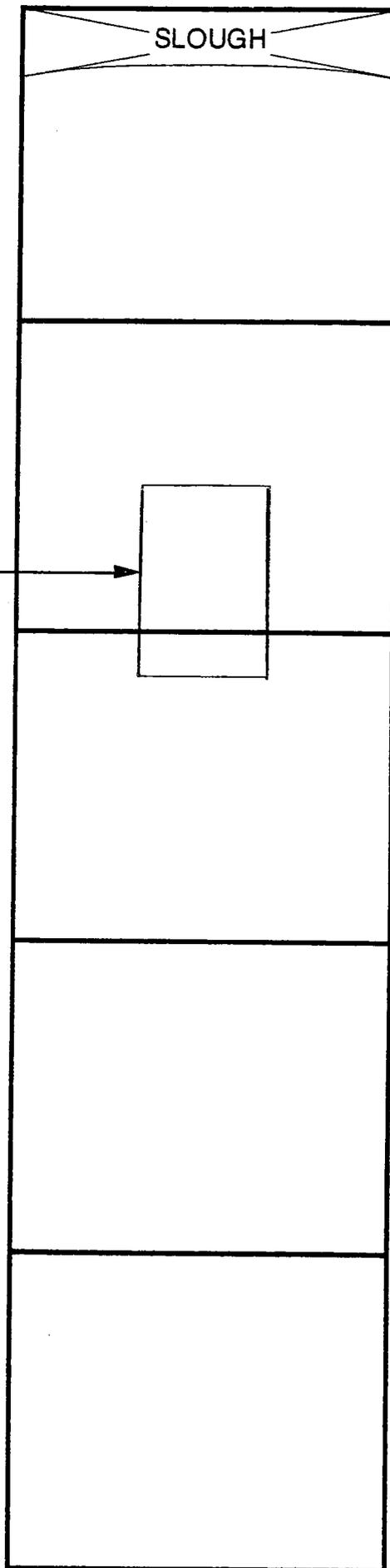
BOTTOM

DEPTH: 90.0'



LOCATION: SBL0094

DATE: 7/8/94



TOP
DEPTH: 71.0'

$S_{HC} = ND$

BOTTOM
DEPTH: 72.0'

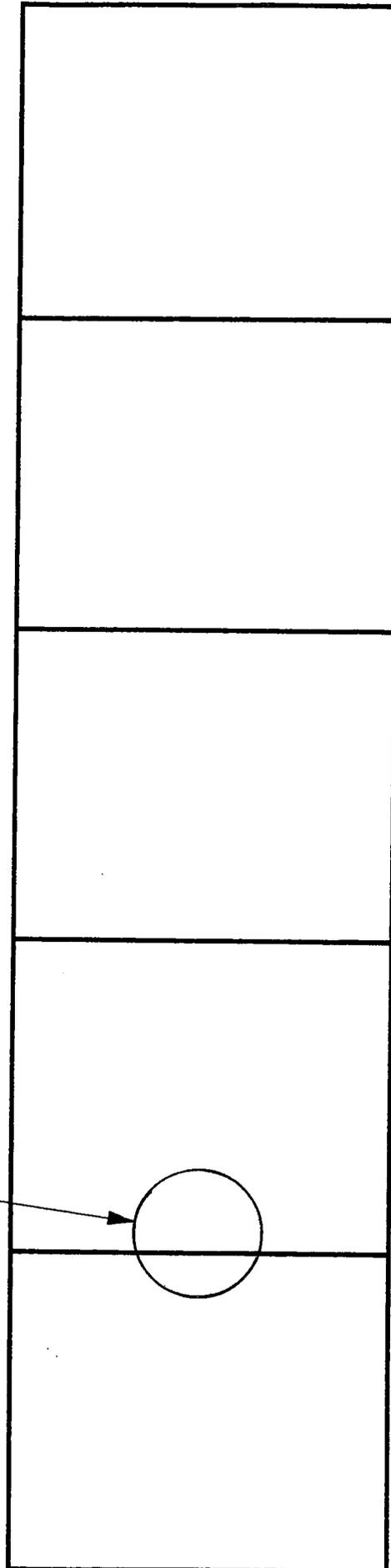
• Results of Sudan Red Jar Test negative

LOCATION: SBL0094

DATE: 7/8/94

TOP

DEPTH: 73.0'



$S_{HC} = ND$

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 74.0'

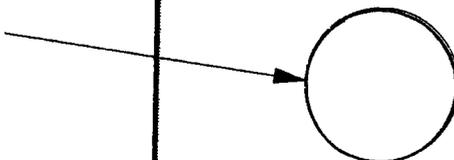
LOCATION: SBL0094

DATE: 7/8/94

TOP

DEPTH: 74.0'

$S_{HC} = 7.81\%$



• Results of Sudan Red Jar Test negative

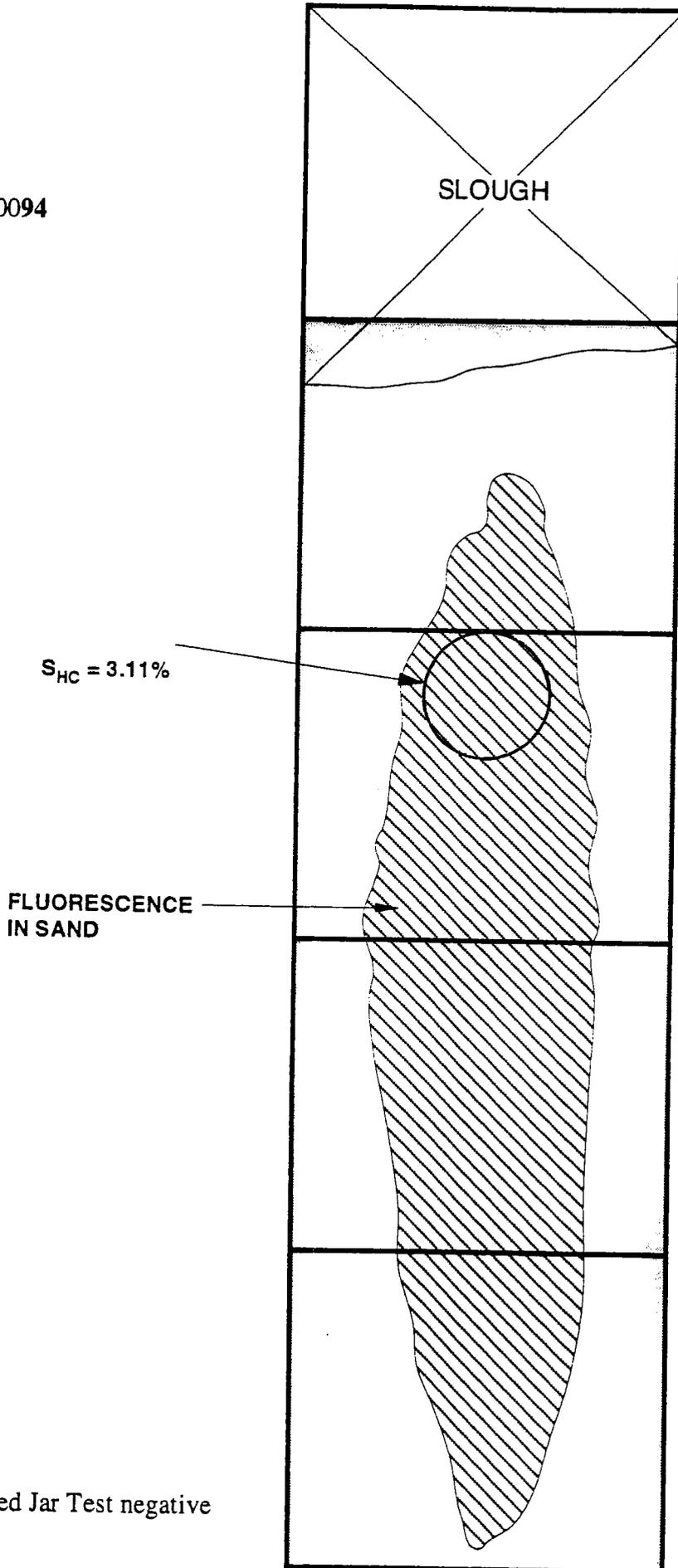
BOTTOM

DEPTH: 75.0'

LOCATION: SBL0094

DATE: 7/8/94

TOP
DEPTH: 75.0'



• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 76.0'

LOCATION: SBL0094
DATE: 7/8/94

TOP
DEPTH: 78.0'

$S_{HC} = ND$

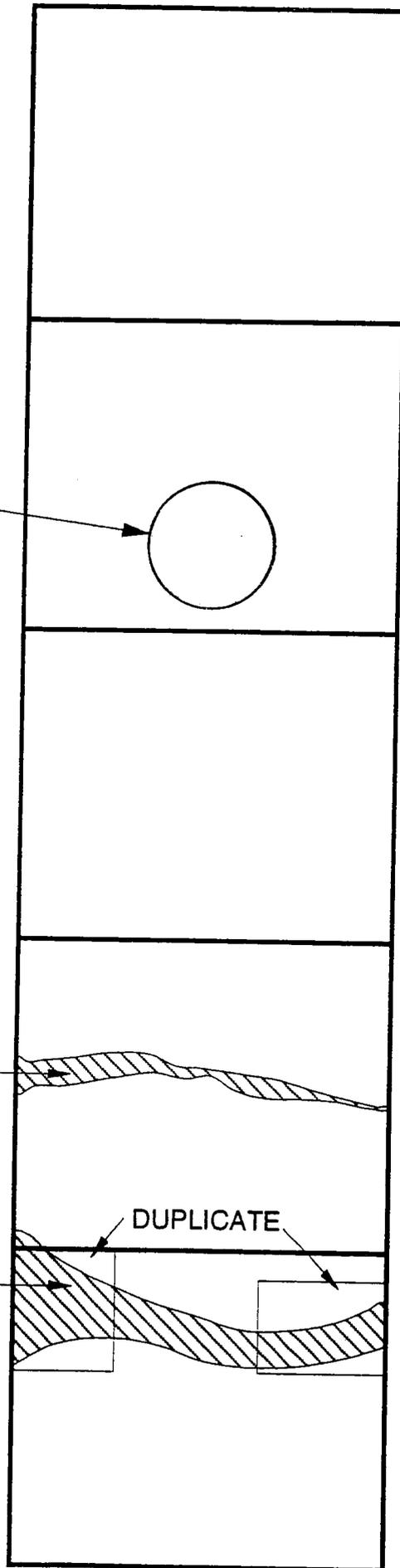
FLUORESCENCE IN SAND
STRINGERS IN MUD

FLUORESCENCE IN SAND
STRINGERS IN MUD

DUPLICATE

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 79.0'



LOCATION: SBL0094

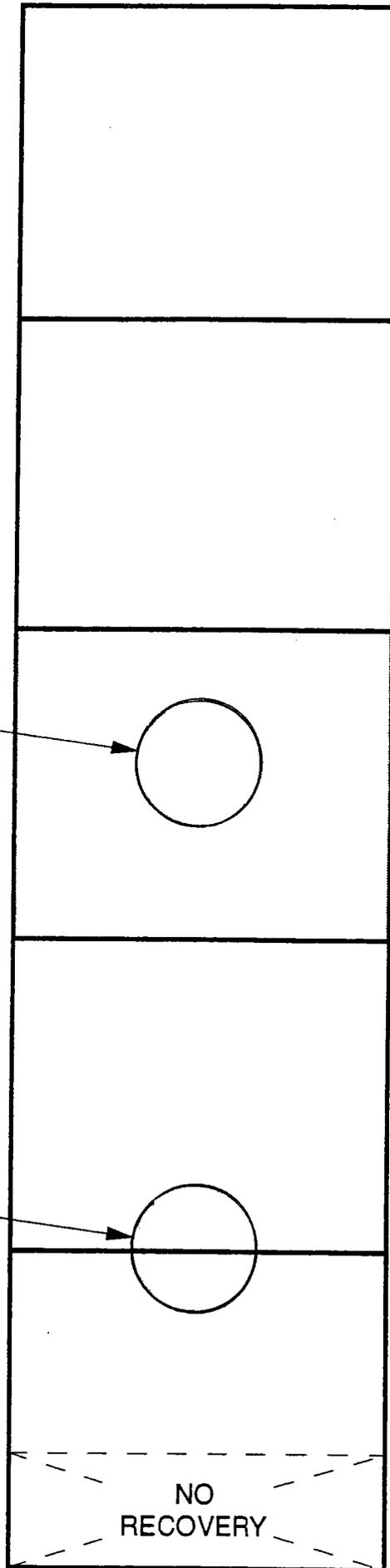
DATE: 7/8/94

TOP
DEPTH: 79.0'

$S_{HC} = ND$

$S_{HC} = 1.45\%$

• Results of Sudan Red Jar Test negative

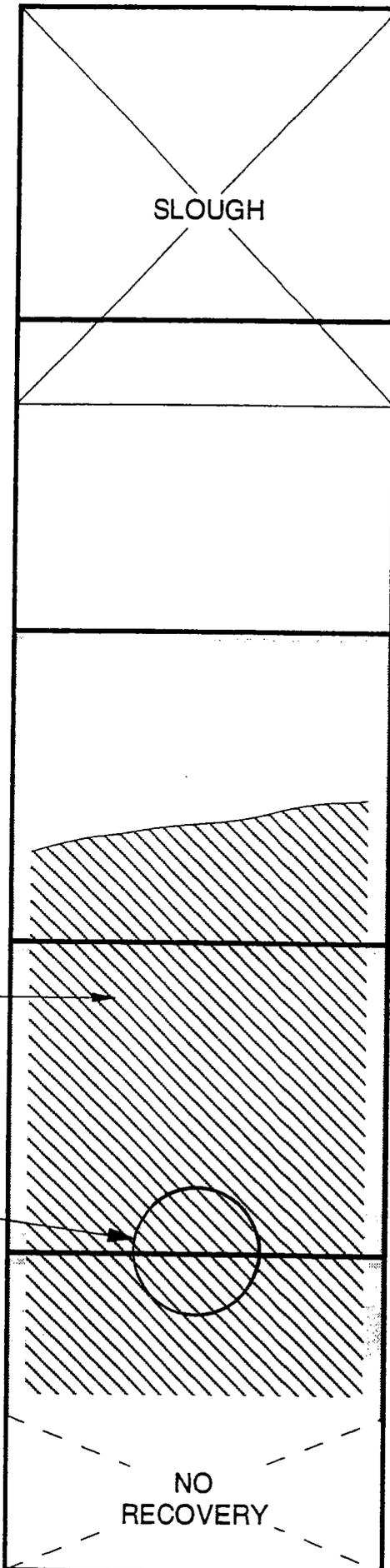


BOTTOM
DEPTH: 79.93'

LOCATION: SBL0094

DATE: 7/11/94

TOP
DEPTH: 80.0'



FLUORESCENCE
ROUGHLY CONFORMS TO
CROSS-STRATIFIED INTERVAL

$S_{HC} = 9.27\%$

NO
RECOVERY

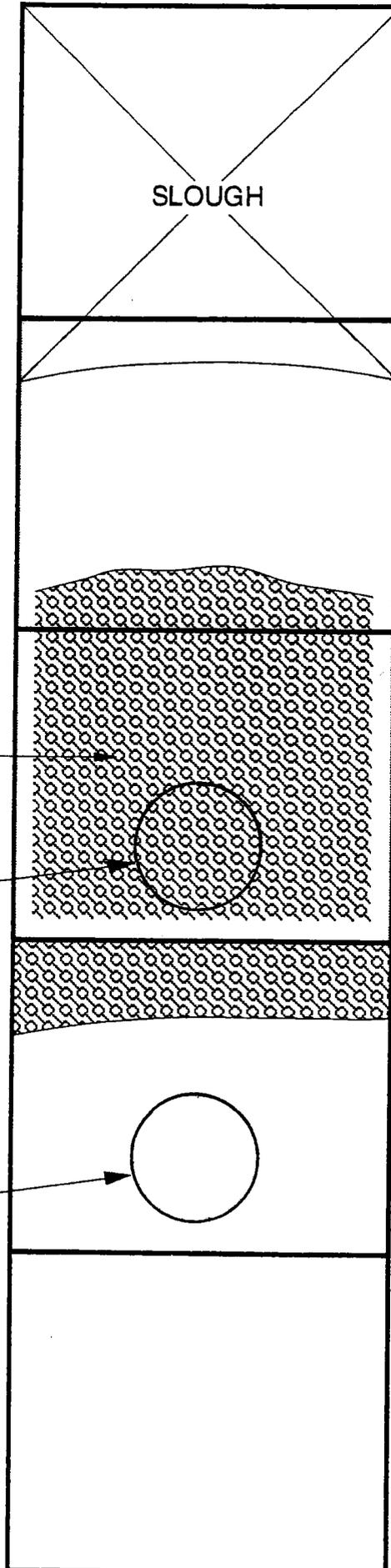
• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 80.9'

LOCATION: SBL0094

DATE: 7/11/94

TOP
DEPTH: 81.0'

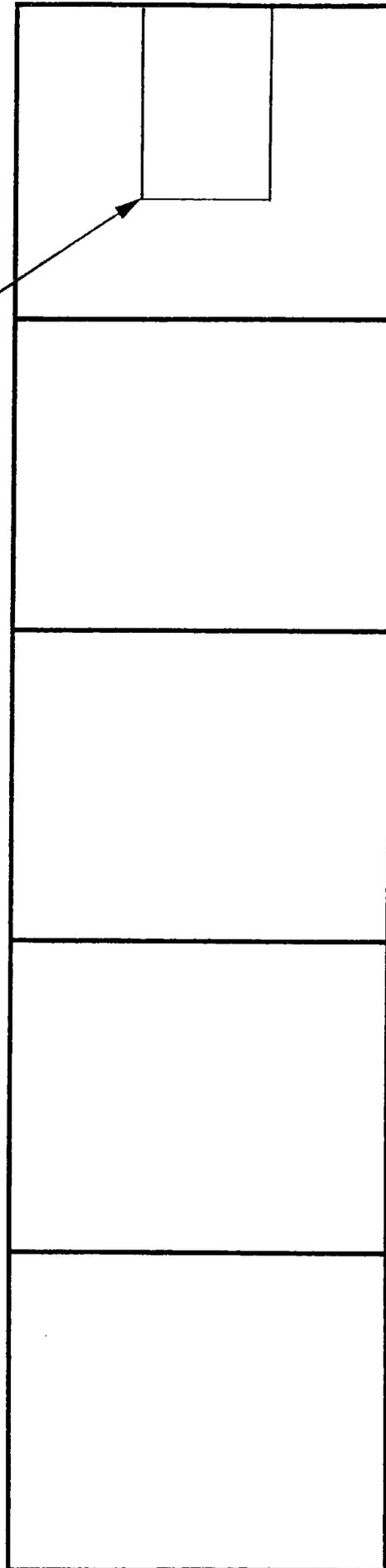


• Results of Sudan Red Jar Test negative

LOCATION: SBL0094

DATE: 7/11/94

S_{HC} = ND



TOP

DEPTH: 82.0'

• Results of Sudan Red Jar Test negative

BOTTOM

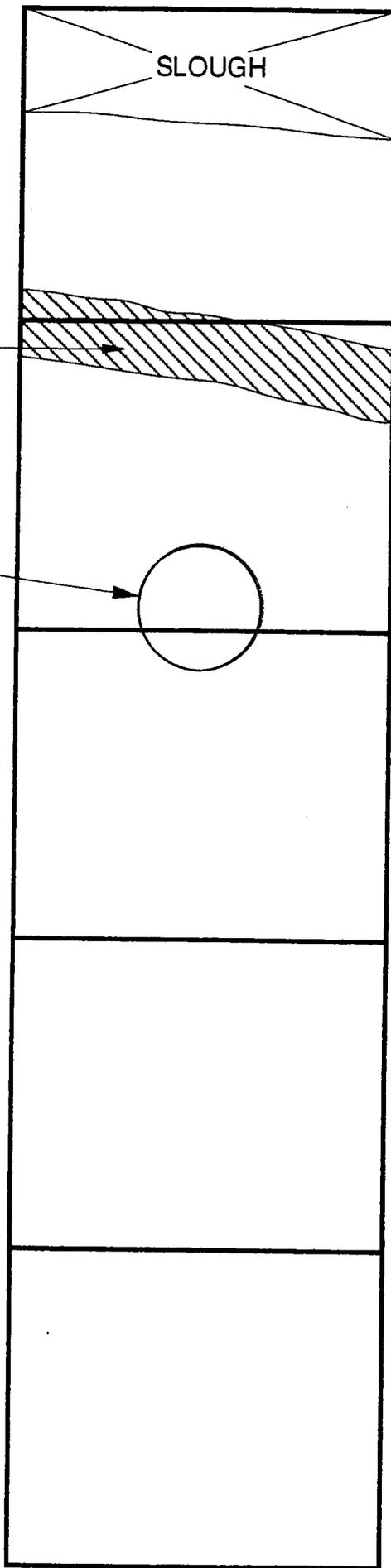
DEPTH: 83.0'

LOCATION: SBL0094

DATE: 7/11/94

FLUORESCENCE IN FINE TO
MEDIUM SAND LAYER ON TOP
OF SILTY SAND AND BELOW A
SILTY SAND LENSE

$S_{HC} = 1.67\%$



TOP

DEPTH: 84.0'

• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 85.0'

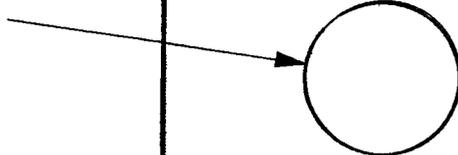
LOCATION: SBL0094

DATE: 7/11/94

TOP

DEPTH: 87.0'

$S_{HC} = ND$



• Results of Sudan Red Jar Test negative

BOTTOM

DEPTH: 88.0'

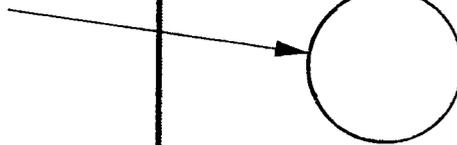
LOCATION: SBL0094

DATE: 7/11/94

TOP

DEPTH: 88.0'

$S_{HC} = 0.56\%$



• Results of Sudan Red Jar Test negative

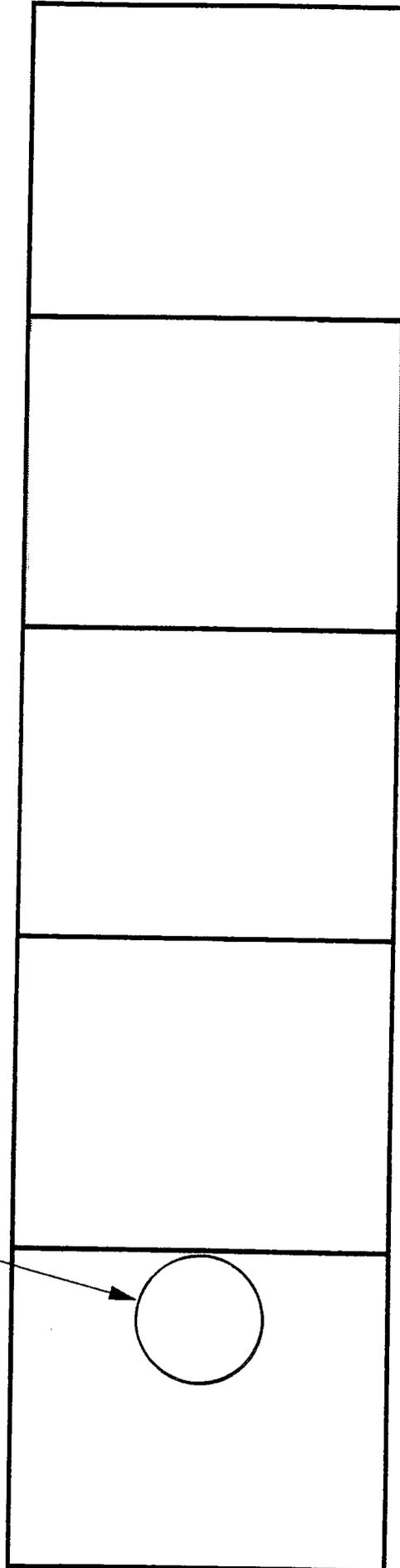
BOTTOM

DEPTH: 89.0'

LOCATION: SBL0094

DATE: 7/11/94

TOP
DEPTH: 89.0'



S_{HC} = ND

• Results of Sudan Red Jar Test negative

BOTTOM
DEPTH: 90.0'