



DIREZIONE MINERARIA
SERVIZIO GEOLOGICO

7

CENTRAL FILE

CLASTIC SEDIMENTS OF
PHILLIPS WELL 7/11-3, NORTH SEA (NORWAY)
INTERVAL 10086'-10424'-PALEOCENE AGE

IL RESPONSABILE DEL SERVIZIO

S. Donato Mil., 19 May, 1969

Dr. V. Fois

Grain size, sedimentary structures and petrography of the available samples were analysed. All these data are summarized on the sediment log (Encl. 1) with some porosity and permeability values.

Sandstones were subdivided into types according to their grain size, following the procedure indicated in the report "Graphic representation of grain size" (R. Passega, Sept. 28, 1967). Grain size analyses data are reported on files at the end of this report and on diagrams (Encl. 2).

Sedimentology

Three cores were examined: n.1, 10.086'-10.109'; no.2 10.147'-10.187'; no.3 10.368'-10.424'. Core no.1 lies 20' above the uppermost sandy level of the reservoir and is mostly clayey. Core no.2 is at the top and core no.3 is in the middle part of the Paleocene sandy section.

The reservoir is made of sandstone beds interbedded with thin clay layers. The upper part of the reservoir is less rich in clay layers than the lower one.

Sedimentary structures present in sandstone beds are: vertical graded bedding; presence of massive structure at the bottom of some layers while parallel or current laminations are common at the top; bioturbations in shaly or silty intervals; presence of clay fragments; slumping features.

Grain size analyses confirm the graded bedding. See for example six samples taken in the core no.3 between 10.390'. 9" and 10.393'.6" and five samples of the same core taken at 10.393'.10"

and 10.396'.9": they represent two sequences regularly graded. In the enclosure 1 we marked as graded only sequences macroscopically graded (see photos).

Core no.1 is made mostly of clays and siltstones; core no.2 is made of sandstone beds with a few small intervals of clay; sandstone grains range from coarse to fine; maximum diameter is about 2 mm. Core no.3 is like the no.2 but grains are coarser also if silt and clay layers are always present.

Medium and fine sands seem transported as graded suspension; grains coarser than 1 mm are transported by rolling. Lutite is present in a certain amount also in the coarser samples, this means that the winnowing is not in relation with the competence of the current.

Petrography

Quartz sandstones, light gray or tan, poorly sorted with some clay matrix and silica and carbonate cements. Silica and carbonate cements are more abundant than in wells 7/11-1, 7/11-2.

The main constituents of the detrital fraction are:

- quartz grains
- scarce feldspar grains sometimes weathered
- rare lithic fragments
- rare mica flakes
- very rare detrital glauconite grains

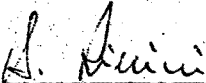
Glauconite is abundant in core no.1, both in clayey than in silty fractions.

Grain contacts are mostly tangential, but also the planar ones are frequent.

Porosity and permeability

Porosity and permeability analyses were carried out on a few samples of cores no.2 and n.3.

Porosity values range between 15 and 20%, the higher values were found in core no.2. Permeability is low (average about 10 md), because of the presence of matrix and cements. Silica and carbonate cements are slightly more abundant here than in other two wells of the field 7/11; the rising of silica cement is due to the higher percentages of planar contacts between quartz grains.


Dr. A. Rizzini


Dr. V. Motta

- Encl. 1: Sediment log
" 2: CM, FM, LM, AM diagrams
: Tables of grain size analyses
: Core photos

FIELD ... North sea ... 7-11. (Phillips) WELL ... 3... (Norvegia)..... S. DONATO May. 13. 1969.....

| DEPTH | C (Onepercentile) | M (Median) | A (% Finer than 3,9 microns) | F (% Finer than 31 microns) | T (% Finer than 125 microns) | > 16 mm | 16-8 mm | 8-4 mm | 4-2 mm | 2-1.41 mm | 1.41-1 mm | 1-0.71 mm | 0.71-0.50 mm | 0.50-0.35 mm | 0.35-0.25 mm | 0.25-0.177 mm | 0.177-0.125 mm | 0.125-0.088 mm | 0.088-0.062 mm | 0.062-0.031 mm | 0.031-0.0156 mm | 0.0156-0.0078 mm | 0.0078-0.0039 mm | < 0.0039 mm | % | | | | | | | | | | | | | | | | |
|--------|-------------------|------------|------------------------------|-----------------------------|------------------------------|---------|---------|--------|--------|-----------|-----------|-----------|--------------|--------------|--------------|---------------|----------------|----------------|----------------|----------------|-----------------|------------------|------------------|-------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10088' | 110 | 35 | 21.5 | 46.5 | 99.8 | | | | | | | | | | | | 0.2 | 5.8 | 17.2 | 30.3 | 12.3 | 6.2 | 6.5 | 21.5 | | | | | | | | | | | | | | | | | |
| 10089' | 130 | 43 | 13.8 | 35.0 | 98.7 | | | | | | | | | | | 0.1 | 1.2 | 4.0 | 22.8 | 36.9 | 11.9 | 5.8 | 3.5 | 13.8 | | | | | | | | | | | | | | | | | |
| 10091' | 105 | 29 | 17.7 | 51.7 | 99.9 | | | | | | | | | | | | 0.1 | 4.8 | 16.2 | 27.2 | 16.2 | 9.5 | 8.3 | 17.7 | | | | | | | | | | | | | | | | | |
| 10098' | 82 | 17 | 35.7 | 61.5 | 100 | | | | | | | | | | | | | 0.2 | 12.0 | 26.3 | 11.3 | 8.5 | 6.0 | 35.7 | | | | | | | | | | | | | | | | | |
| 10101' | 98 | 42 | 19.9 | 40.7 | 100 | | | | | | | | | | | | | 3.3 | 28.3 | 27.7 | 10.1 | 6.9 | 3.8 | 19.9 | | | | | | | | | | | | | | | | | |
| 10106' | 58 | 4.6 | 47.5 | 90.3 | 100 | | | | | | | | | | | | | 0.7 | 9.0 | 14.2 | 13.3 | 15.3 | 47.5 | | | | | | | | | | | | | | | | | | |
| 10108' | 68 | 6.2 | 41.5 | 91.1 | 100 | | | | | | | | | | | | | 0.2 | 1.3 | 7.4 | 16.7 | 19.2 | 13.7 | 41.5 | | | | | | | | | | | | | | | | | |
| 10109' | 40 | 3.3 | 54.2 | 95.2 | 100 | | | | | | | | | | | | | | 4.8 | 13.1 | 13.4 | 14.5 | 54.2 | | | | | | | | | | | | | | | | | | |
| 10148' | 230 | 85 | 6.3 | 14.1 | 74.3 | | | | | | | | | 0.2 | 0.3 | 4.9 | 20.3 | 20.3 | 20.1 | 19.8 | 5.1 | 1.7 | 1.0 | 6.3 | | | | | | | | | | | | | | | | | |
| 10149' | 480 | 125 | 3.7 | 9.9 | 49.4 | | | | | | | | 0.8 | 4.9 | 8.2 | 15.6 | 21.1 | 12.6 | 10.0 | 16.9 | 3.2 | 2.0 | 1.0 | 3.7 | | | | | | | | | | | | | | | | | |
| 10150' | 650 | 140 | 4.5 | 11.5 | 43.3 | | | | | 0.07 | 0.4 | 5.7 | 7.7 | 10.8 | 14.8 | 17.2 | 10.5 | 9.6 | 11.7 | 4.3 | 2.2 | 0.5 | 4.5 | | | | | | | | | | | | | | | | | | |
| 10151' | 460 | 125 | 4.9 | 13.3 | 50.2 | | | | | | | 0.5 | 4.1 | 9.7 | 15.2 | 20.3 | 12.7 | 8.6 | 15.6 | 4.8 | 2.5 | 1.1 | 4.9 | | | | | | | | | | | | | | | | | | |
| 10153' | 720 | 135 | 4.9 | 16.3 | 46.6 | | | | | 0.2 | 0.9 | 5.5 | 8.7 | 11.1 | 11.8 | 15.2 | 8.3 | 8.3 | 13.7 | 6.1 | 3.5 | 1.8 | 4.9 | | | | | | | | | | | | | | | | | | |
| 10154' | 280 | 28 | 12.4 | 52.7 | 86.3 | | | | | | | 0.2 | 1.3 | 4.3 | 7.9 | 6.8 | 6.8 | 20.0 | 19.7 | 13.4 | 7.2 | 12.4 | | | | | | | | | | | | | | | | | | | |
| 10155' | 350 | 32 | 10.7 | 48.1 | 85.3 | | | | | | | | 1.1 | 1.5 | 4.5 | 7.6 | 6.7 | 6.7 | 23.8 | 17.5 | 13.2 | 6.7 | 10.7 | | | | | | | | | | | | | | | | | | |
| 10156' | 640 | 155 | 3.3 | 8.7 | 38.8 | | | | | | 0.3 | 5.0 | 8.6 | 9.8 | 17.7 | 19.8 | 12.1 | 8.2 | 9.8 | 3.3 | 1.4 | 0.7 | 3.3 | | | | | | | | | | | | | | | | | | |
| 10157' | 1300 | 140 | 2.7 | 7.8 | 41.4 | | | | | 0.7 | 0.9 | 1.6 | 4.4 | 5.4 | 7.0 | 15.5 | 23.1 | 11.7 | 10.8 | 11.1 | 3.3 | 0.9 | 0.9 | 2.7 | | | | | | | | | | | | | | | | | |
| 10157' | 860 | 310 | 2.1 | 4.8 | 18.8 | | | | | 0.16 | 5.7 | 21.8 | 16.7 | 12.3 | 12.3 | 12.2 | 5.7 | 4.1 | 4.2 | 1.7 | 0.7 | 0.3 | 2.1 | | | | | | | | | | | | | | | | | | |
| 10158' | 1500 | 290 | 1.9 | 4.9 | 23.1 | | | | 0.07 | 1.3 | 3.4 | 8.5 | 17.1 | 12.0 | 11.5 | 11.5 | 11.5 | 7.4 | 4.9 | 5.9 | 1.7 | 1.0 | 0.3 | 1.9 | | | | | | | | | | | | | | | | | |
| 10158' | 520 | 190 | 1.7 | 4.2 | 25.5 | | | | | | | 1.4 | 14.1 | 16.9 | 21.9 | 20.2 | 9.6 | 6.2 | 5.5 | 1.1 | 1.1 | 0.3 | 1.7 | | | | | | | | | | | | | | | | | | |
| 10159' | 620 | 210 | 1.9 | 4.7 | 24.5 | | | | | | 0.17 | 7.6 | 12.5 | 18.6 | 20.6 | 16.0 | 9.4 | 5.2 | 5.2 | 1.6 | 0.9 | 0.3 | 1.9 | | | | | | | | | | | | | | | | | | |

FIELD North sea 7-11. (Phillips)

WELL 3. (Norvegia)

S. DONATO May 13, 1969

| DEPTH | C (Onepercentile) | M (Median) | A (% Finer than 3.9 microns) | Γ (% Finer than 31 microns) | Π (% Finer than 125 microns) | % | | | | | | | | | | | | | | | | | | |
|--------|-------------------|------------|------------------------------|-----------------------------|------------------------------|---------|-----------|----------|----------|-------------|-------------|-------------|----------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|-------------|
| | | | | | | > 16 mm | 16 - 8 mm | 8 - 4 mm | 4 - 2 mm | 2 - 1.41 mm | 1.41 - 1 mm | 1 - 0.71 mm | 0.71 - 0.50 mm | 0.50 - 0.35 mm | 0.35 - 0.25 mm | 0.25 - 0.177 mm | 0.177 - 0.125 mm | 0.125 - 0.088 mm | 0.088 - 0.062 mm | 0.062 - 0.031 mm | 0.031 - 0.0156 mm | 0.0156 - 0.0078 mm | 0.0078 - 0.0039 mm | < 0.0039 mm |
| 10179' | 1800 | 105 | 5.2 | 15.4 | 59.5 | | | | 0.7 | 1.1 | 0.5 | 0.3 | 1.1 | 3.7 | 4.4 | 14.0 | 14.7 | 17.8 | 10.3 | 16.0 | 5.2 | 3.1 | 1.9 | 5.2 |
| 10181' | 470 | 80 | 5.6 | 20.3 | 67.4 | | | | | | 0.1 | 0.6 | 2.4 | 3.5 | 10.2 | 15.8 | 13.1 | 12.6 | 21.4 | 8.1 | 4.0 | 2.6 | 5.6 | |
| 10182' | 450 | 60 | 6.7 | 27.5 | 77.8 | | | | | | | 0.5 | 2.0 | 2.1 | 7.8 | 9.8 | 14.2 | 12.1 | 24.0 | 12.5 | 5.5 | 2.8 | 6.7 | |
| 10182' | 350 | 110 | 3.5 | 10.7 | 56.1 | | | | | | | | 0.9 | 4.2 | 20.8 | 18.0 | 17.7 | 14.3 | 13.4 | 4.2 | 2.1 | 0.9 | 3.5 | |
| 10183' | 270 | 110 | 2.7 | 6.9 | 62.1 | | | | | | | 0.17 | 0.3 | 0.8 | 9.5 | 27.1 | 32.5 | 13.4 | 9.3 | 2.1 | 1.4 | 0.7 | 2.7 | |
| 10184' | 200 | 80 | 4.1 | 11.7 | 87.9 | | | | | | | | | 0.1 | 3.4 | 8.6 | 25.9 | 31.8 | 18.5 | 3.3 | 2.9 | 1.4 | 4.1 | |
| 10185' | 700 | 125 | 4.2 | 10.2 | 50.9 | | | | 0.1 | 1.0 | 5.5 | 5.8 | 6.0 | 13.7 | 17.0 | 18.7 | 10.3 | 11.7 | 3.1 | 1.5 | 1.4 | 4.2 | | |
| 10186' | 145 | 60 | 4.8 | 18.1 | 96.3 | | | | | | | | | 0.2 | 3.5 | 9.6 | 33.2 | 35.4 | 7.3 | 3.5 | 2.5 | 4.8 | | |
| 10186' | 330 | 130 | 2.2 | 6.4 | 45.6 | | | | | | | | 0.7 | 3.4 | 20.5 | 29.8 | 24.6 | 8.7 | 5.9 | 2.2 | 1.2 | 0.8 | 2.2 | |
| 10368' | 780 | 150 | 2.2 | 6.4 | 38.9 | | | | 0.2 | 1.4 | 7.2 | 9.4 | 9.7 | 16.9 | 16.3 | 15.8 | 9.2 | 7.5 | 2.0 | 1.4 | 0.8 | 2.2 | | |
| 10369' | 820 | 160 | 0.2 | 5.6 | 37.8 | | | | 0.3 | 1.8 | 7.7 | 8.1 | 9.7 | 16.9 | 17.7 | 16.1 | 7.2 | 8.9 | 1.8 | 1.0 | 0.8 | 0.2 | | |
| 10370' | 540 | 125 | 3.3 | 9.1 | 54.8 | | | | | 0.1 | 1.5 | 6.5 | 6.3 | 15.2 | 15.6 | 18.8 | 12.7 | 14.2 | 3.1 | 1.5 | 1.2 | 3.3 | | |
| 10371' | 620 | 130 | 2.8 | 7.7 | 46.9 | | | | | 0.3 | 3.2 | 5.4 | 9.5 | 15.6 | 19.1 | 17.3 | 9.2 | 12.7 | 2.4 | 1.7 | 0.8 | 2.8 | | |
| 10372' | 660 | 130 | 2.8 | 8.2 | 46.3 | | | | 0.1 | 0.6 | 4.5 | 7.7 | 8.5 | 13.3 | 19.0 | 14.2 | 10.8 | 13.1 | 3.0 | 1.2 | 1.2 | 2.8 | | |
| 10373' | 420 | 120 | 3.1 | 8.5 | 52.4 | | | | | | 0.2 | 3.5 | 7.9 | 18.2 | 17.8 | 17.8 | 12.8 | 13.3 | 2.7 | 1.7 | 1.0 | 3.1 | | |
| 10374' | 620 | 140 | 3.1 | 7.5 | 43.2 | | | | | 0.2 | 3.6 | 8.2 | 10.0 | 16.3 | 18.5 | 13.9 | 10.5 | 11.3 | 2.5 | 1.2 | 0.7 | 3.1 | | |
| 10375' | 660 | 145 | 2.6 | 6.5 | 41.5 | | | | | 0.5 | 5.0 | 8.2 | 9.8 | 16.5 | 18.5 | 14.7 | 10.0 | 10.3 | 2.2 | 1.2 | 0.7 | 2.6 | | |
| 10376' | 370 | 98 | 4.8 | 13.4 | 59.4 | | | | | | 0.1 | 1.7 | 4.3 | 14.2 | 20.3 | 14.1 | 13.0 | 18.9 | 4.7 | 2.2 | 1.7 | 4.8 | | |

FIELD ... North sea 7-11 (Phillips) WELL 3. (Norvegia) S. DONATO May 13, 1969

| DEPTH | C (Onepercentile) | M (Median) | A (% Finer than 3,9 microns) | Γ (% Finer than 31 microns) | T (% Finer than 125 microns) | > 16 mm | 16 - 8 mm | 8 - 4 mm | 4 - 2 mm | 2 - 1.41 mm | 1.41 - 1 mm | 1 - 0.71 mm | 0.71 - 0.50 mm | 0.50 - 0.35 mm | 0.35 - 0.25 mm | 0.25 - 0.177 mm | 0.177 - 0.125 mm | 0.125 - 0.088 mm | 0.088 - 0.062 mm | 0.062 - 0.031 mm | 0.031 - 0.0156 mm | 0.0156 - 0.0078 mm | 0.0078 - 0.0039 mm | < 0.0039 mm |
|--------|-------------------|------------|------------------------------|-----------------------------|------------------------------|---------|-----------|----------|----------|-------------|-------------|-------------|----------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|-------------|
| | | | | | | | | | | | | | | | | | | | | | | | | |
| 10377' | 710 | 130 | 2.9 | 7.5 | 48.7 | | | | | | | 1.0 | 4.9 | 6.1 | 9.5 | 14.7 | 15.1 | 17.4 | 12.8 | 11.0 | 2.4 | 1.2 | 1.0 | 2.9 |
| 10379' | 940 | 140 | 2.2 | 6.6 | 42.0 | | | | | 0.3 | 0.5 | 1.3 | 5.2 | 8.0 | 8.2 | 15.0 | 19.5 | 12.5 | 11.0 | 11.9 | 2.3 | 1.0 | 1.1 | 2.2 |
| 10380' | 580 | 115 | 3.0 | 8.1 | 52.5 | | | | | | | 0.1 | 2.8 | 7.9 | 10.9 | 12.3 | 13.5 | 17.3 | 13.0 | 14.1 | 2.7 | 1.5 | 0.9 | 3.0 |
| 10381' | 680 | 160 | 2.7 | 6.6 | 39.6 | | | | | | | 0.5 | 7.9 | 7.9 | 12.3 | 19.0 | 12.8 | 11.9 | 10.9 | 10.2 | 2.1 | 1.0 | 0.8 | 2.7 |
| 10382' | 600 | 110 | 2.9 | 8.3 | 55.3 | | | | | | | 0.2 | 2.4 | 6.3 | 8.0 | 13.7 | 14.1 | 21.2 | 11.5 | 14.3 | 2.5 | 1.7 | 1.2 | 2.9 |
| 10383' | 540 | 92 | 4.4 | 17.3 | 68.8 | | | | | | | 0.1 | 1.3 | 2.9 | 3.8 | 9.8 | 13.3 | 18.8 | 14.3 | 18.5 | 7.9 | 2.9 | 2.1 | 4.4 |
| 10384' | 360 | 110 | 3.1 | 7.8 | 58.1 | | | | | | | | 0.2 | 1.0 | 4.8 | 17.0 | 18.9 | 23.5 | 13.4 | 13.4 | 2.7 | 1.3 | 0.7 | 3.1 |
| 10385' | 430 | 145 | 2.4 | 6.0 | 41.6 | | | | | | | | 0.2 | 5.6 | 13.8 | 20.1 | 18.7 | 16.4 | 9.2 | 10.0 | 1.7 | 1.2 | 0.7 | 2.4 |
| 10386' | 640 | 150 | 2.6 | 6.0 | 40.6 | | | | | | | 0.2 | 5.8 | 10.7 | 11.9 | 16.7 | 14.1 | 14.1 | 11.4 | 9.1 | 2.1 | 1.0 | 0.3 | 2.6 |
| 10386' | 700 | 210 | 2.2 | 5.7 | 31.6 | | | | | | 0.1 | 0.8 | 15.8 | 15.3 | 12.7 | 12.7 | 11.0 | 10.8 | 7.3 | 7.8 | 2.0 | 0.8 | 0.7 | 2.2 |
| 10387' | 820 | 190 | 2.5 | 6.3 | 36.0 | | | | | | 0.2 | 2.5 | 10.8 | 12.0 | 12.7 | 13.1 | 12.7 | 12.5 | 9.0 | 8.2 | 2.0 | 1.3 | 0.5 | 2.5 |
| 10389' | 540 | 82 | 4.8 | 14.7 | 70.5 | | | | | | | 0.2 | 1.2 | 2.4 | 4.5 | 9.3 | 11.9 | 17.7 | 15.1 | 23.0 | 5.9 | 2.4 | 1.6 | 4.8 |
| 10390' | 370 | 130 | 3.1 | 7.3 | 45.8 | | | | | | | | | 1.4 | 7.0 | 22.8 | 23.0 | 17.5 | 11.6 | 9.4 | 2.5 | 1.0 | 0.7 | 3.1 |
| 10390' | 620 | 190 | 2.1 | 4.5 | 27.7 | | | | | | | 0.2 | 4.0 | 15.1 | 16.5 | 20.5 | 16.0 | 9.8 | 7.4 | 6.0 | 1.0 | 0.9 | 0.5 | 2.1 |
| 10391' | 680 | 190 | 2.5 | 6.0 | 29.4 | | | | | | | 0.3 | 11.2 | 14.1 | 14.1 | 14.3 | 16.6 | 8.8 | 7.6 | 7.0 | 1.9 | 0.9 | 0.7 | 2.5 |
| 10392' | 820 | 190 | 2.3 | 5.4 | 33.9 | | | | | | 0.2 | 2.9 | 8.6 | 10.5 | 15.2 | 14.9 | 13.8 | 13.5 | 7.9 | 7.1 | 1.7 | 0.7 | 0.7 | 2.3 |
| 10392' | 1500 | 200 | 2.3 | 5.9 | 29.3 | | | | 0.2 | 1.5 | 3.2 | 5.9 | 9.2 | 10.4 | 10.4 | 14.1 | 15.8 | 8.1 | 8.0 | 7.3 | 2.0 | 0.9 | 0.7 | 2.3 |
| 10393' | 3000 | 400 | 1.7 | 4.9 | 22.5 | | | | 6.2 | 8.8 | 9.3 | 9.5 | 11.0 | 9.3 | 7.8 | 7.8 | 7.8 | 7.6 | 4.8 | 5.2 | 1.7 | 0.8 | 0.7 | 1.7 |
| 10393' | 3200 | 350 | 2.2 | 5.8 | 24.1 | | | | 8.5 | 13.6 | 8.5 | 7.3 | 6.3 | 6.3 | 7.2 | 9.0 | 9.2 | 7.2 | 5.3 | 5.8 | 1.4 | 1.4 | 0.8 | 2.2 |
| 10393' | 620 | 190 | 2.0 | 5.7 | 31.8 | | | | | | | 0.2 | 5.7 | 16.1 | 15.8 | 15.8 | 14.6 | 11.9 | 7.4 | 6.8 | 1.8 | 1.2 | 0.7 | 2.0 |

FIELD... North sea. 7-11. (Phillips) WELL ... 3. (Norvegia) S. DONATO May 13, 1969

| DEPTH | C (Onepercentite) | M (Median) | A (% Finer than 3,9 microns) | Γ (% Finer than 31 microns) | Π (% Finer than 125 microns) | % | | | | | | | | | | | | | | | | | | |
|--------|-------------------|------------|------------------------------|-----------------------------|------------------------------|---------|-----------|----------|----------|-------------|-------------|-------------|----------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|-------------|
| | | | | | | > 16 mm | 16 - 8 mm | 8 - 4 mm | 4 - 2 mm | 2 - 1.41 mm | 1.41 - 1 mm | 1 - 0.71 mm | 0.71 - 0.50 mm | 0.50 - 0.35 mm | 0.35 - 0.25 mm | 0.25 - 0.177 mm | 0.177 - 0.125 mm | 0.125 - 0.088 mm | 0.088 - 0.062 mm | 0.062 - 0.031 mm | 0.031 - 0.0156 mm | 0.0156 - 0.0078 mm | 0.0078 - 0.0039 mm | < 0.0039 mm |
| 10394' | 980 | 260 | 1.9 | 5.1 | 27.2 | | | | | | 0.7 | 6.1 | 20.3 | 13.9 | 11.0 | 11.0 | 9.8 | 9.8 | 5.9 | 6.4 | 1.5 | 1.0 | 0.7 | 1.9 |
| 10395' | 1600 | 340 | 2.1 | 5.3 | 25.8 | | | | 0.2 | 1.5 | 6.8 | 12.8 | 17.1 | 10.4 | 8.5 | 8.5 | 8.4 | 8.2 | 6.1 | 6.2 | 1.7 | 1.0 | 0.5 | 2.1 |
| 10396' | 1650 | 440 | 2.0 | 5.3 | 20.9 | | | | 0.2 | 3.7 | 10.1 | 16.8 | 17.3 | 9.5 | 7.3 | 7.3 | 6.9 | 6.7 | 3.9 | 5.0 | 1.5 | 1.5 | 0.3 | 2.0 |
| 10396' | 3200 | 520 | 2.0 | 5.7 | 20.7 | | | | 8.5 | 8.6 | 12.2 | 11.7 | 11.5 | 8.5 | 6.8 | 6.1 | 5.4 | 5.4 | 4.6 | 5.0 | 1.7 | 1.3 | 0.7 | 2.0 |
| 10397' | 2800 | 140 | 3.1 | 9.6 | 44.6 | | | | 4.0 | 4.7 | 4.9 | 4.7 | 4.4 | 4.2 | 4.9 | 11.6 | 12.0 | 14.7 | 8.5 | 11.8 | 3.7 | 2.2 | 0.6 | 3.1 |
| 10397' | 450 | 135 | 2.6 | 7.3 | 44.4 | | | | | | | | 0.5 | 5.9 | 10.1 | 20.0 | 19.1 | 15.8 | 11.4 | 9.9 | 2.5 | 1.7 | 0.5 | 2.6 |
| 10399' | 680 | 130 | 3.7 | 8.6 | 46.4 | | | | | | | 0.8 | 3.7 | 5.7 | 7.1 | 16.2 | 20.1 | 14.7 | 12.4 | 10.7 | 2.7 | 1.7 | 0.5 | 3.7 |
| 10400' | 430 | 150 | 3.1 | 7.9 | 40.5 | | | | | | | | 0.2 | 5.8 | 14.7 | 20.9 | 17.9 | 15.0 | 8.8 | 8.8 | 2.3 | 1.8 | 0.7 | 3.1 |
| 10401' | 640 | 220 | 3.1 | 6.8 | 28.4 | | | | | | | 0.2 | 7.1 | 19.0 | 18.0 | 15.1 | 12.2 | 10.4 | 5.3 | 5.9 | 1.7 | 1.5 | 0.5 | 3.1 |
| 10401' | 850 | 300 | 2.5 | 5.7 | 19.1 | | | | | | 0.2 | 4.4 | 25.1 | 17.0 | 11.4 | 11.4 | 11.4 | 5.6 | 4.3 | 3.5 | 1.5 | 1.0 | 0.7 | 2.5 |
| 10402' | 950 | 360 | 2.6 | 5.1 | 16.5 | | | | | | 0.8 | 8.0 | 27.3 | 18.2 | 11.4 | 10.5 | 7.3 | 5.8 | 2.9 | 2.7 | 1.4 | 0.8 | 0.3 | 2.6 |
| 10402' | 900 | 320 | 3.1 | 7.0 | 21.8 | | | | | | 0.5 | 4.6 | 22.1 | 19.3 | 11.5 | 10.1 | 10.1 | 5.4 | 4.9 | 4.5 | 2.2 | 1.2 | 0.5 | 3.1 |
| 10402' | 1600 | 470 | 2.2 | 4.3 | 15.6 | | | | 0.2 | 1.8 | 6.5 | 16.6 | 23.8 | 13.4 | 8.7 | 7.9 | 5.5 | 4.9 | 3.3 | 3.1 | 1.3 | 0.5 | 0.3 | 2.2 |
| 10403' | 265 | 100 | 4.9 | 13.1 | 59.3 | | | | | | | | | 0.3 | 1.1 | 13.5 | 25.8 | 15.4 | 14.7 | 16.1 | 4.2 | 3.1 | 0.9 | 4.9 |
| 10404' | 460 | 130 | 3.4 | 9.8 | 45.3 | | | | | | | | 0.5 | 4.8 | 10.8 | 19.9 | 18.7 | 13.9 | 9.4 | 12.2 | 3.3 | 2.1 | 1.0 | 3.4 |
| 10405' | 850 | 260 | 2.9 | 6.1 | 25.7 | | | | | | 0.2 | 3.7 | 19.4 | 15.7 | 12.4 | 11.9 | 11.0 | 7.3 | 6.2 | 6.1 | 2.0 | 0.9 | 0.3 | 2.9 |
| 10405' | 2700 | 200 | 2.2 | 5.5 | 29.5 | | | | 3.7 | 6.2 | 3.3 | 4.0 | 7.7 | 9.2 | 10.3 | 14.1 | 12.0 | 11.3 | 7.2 | 5.5 | 2.2 | 0.8 | 0.3 | 2.2 |
| 10406' | 1500 | 170 | 3.1 | 7.5 | 36.3 | | | | 0.3 | 1.0 | 2.5 | 7.1 | 12.1 | 8.3 | 7.4 | 9.8 | 15.2 | 10.5 | 9.5 | 8.8 | 2.5 | 1.2 | 0.7 | 3.1 |
| 10406' | 720 | 130 | 3.2 | 8.5 | 47.3 | | | | | | 0.3 | 0.8 | 2.2 | 4.0 | 6.8 | 19.8 | 18.8 | 14.0 | 11.7 | 13.2 | 2.4 | 2.0 | 0.8 | 3.2 |

FIELD North sea 7-11 (Phillips)

WELL .3..(Norvegia).....

S. DONATO.... May. 13. 1969.....

| DEPTH | C (Onepercentile) | M (Median) | A (% Finer than 3,9 microns) | Γ (% Finer than 31 microns) | Π (% Finer than 125 microns) | % | | | | | | | | | | | | | | | | | | |
|--------|-------------------|------------|------------------------------|-----------------------------|------------------------------|---------|-----------|----------|----------|-------------|-------------|-------------|----------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|-------------|
| | | | | | | > 16 mm | 16 - 8 mm | 8 - 4 mm | 4 - 2 mm | 2 - 1.41 mm | 1.41 - 1 mm | 1 - 0.71 mm | 0.71 - 0.50 mm | 0.50 - 0.35 mm | 0.35 - 0.25 mm | 0.25 - 0.177 mm | 0.177 - 0.125 mm | 0.125 - 0.088 mm | 0.088 - 0.062 mm | 0.062 - 0.031 mm | 0.031 - 0.0156 mm | 0.0156 - 0.0078 mm | 0.0078 - 0.0039 mm | < 0.0039 mm |
| 10406' | 1150 | 210 | 2.8 | 6.4 | 30.1 | | | | | 0.3 | 1.7 | 6.4 | 11.1 | 12.1 | 12.1 | 12.9 | 13.3 | 9.1 | 7.1 | 7.5 | 2.0 | 1.3 | 0.3 | 2.8 |
| 10407' | 1050 | 170 | 2.7 | 6.2 | 35.8 | | | | | 0.3 | 1.0 | 2.5 | 8.7 | 10.7 | 12.0 | 14.3 | 14.7 | 14.5 | 8.2 | 6.9 | 2.4 | 0.8 | 0.3 | 2.7 |
| 10408' | 1100 | 200 | 2.3 | 5.1 | 28.7 | | | | | 0.2 | 1.4 | 5.8 | 10.8 | 11.4 | 12.0 | 13.5 | 16.2 | 10.0 | 7.3 | 6.3 | 1.5 | 0.8 | 0.5 | 2.3 |
| 10408' | 1800 | 220 | 2.5 | 7.1 | 32.8 | | | 0.3 | 3.7 | 5.2 | 7.3 | 10.8 | 10.8 | 10.3 | 10.0 | 10.0 | 9.6 | 9.6 | 9.1 | 7.0 | 2.4 | 1.5 | 0.7 | 2.5 |
| 10408' | 450 | 105 | 3.2 | 11.6 | 56.5 | | | | | | | 0.5 | 3.5 | 6.7 | 16.0 | 16.8 | 15.0 | 11.9 | 18.0 | 5.1 | 2.1 | 1.2 | 3.2 | |
| 10409' | 320 | 98 | 3.7 | 10.7 | 63.6 | | | | | | | | 0.5 | 3.6 | 15.2 | 17.1 | 21.4 | 13.7 | 17.8 | 4.3 | 1.5 | 1.2 | 3.7 | |
| 10410' | 680 | 150 | 2.9 | 8.4 | 39.4 | | | | | | 0.7 | 6.8 | 8.6 | 10.7 | 15.7 | 18.1 | 9.6 | 9.1 | 12.3 | 3.1 | 1.7 | 0.7 | 2.9 | |
| 10412' | 480 | 125 | 3.1 | 9.5 | 49.3 | | | | | | | 1.0 | 4.3 | 7.1 | 17.7 | 20.6 | 14.1 | 10.5 | 15.2 | 3.9 | 1.7 | 0.8 | 3.1 | |
| 10413' | 640 | 130 | 3.8 | 10.6 | 47.3 | | | | | | 0.3 | 3.8 | 6.7 | 10.4 | 15.7 | 15.8 | 14.7 | 11.5 | 10.5 | 3.3 | 2.7 | 0.8 | 3.8 | |
| 10413' | 1100 | 150 | 3.4 | 11.2 | 41.4 | | | | 0.2 | 1.2 | 4.2 | 7.6 | 8.1 | 8.8 | 15.1 | 13.4 | 11.4 | 8.8 | 10.0 | 4.7 | 2.4 | 0.7 | 3.4 | |
| 10414' | 500 | 140 | 3.4 | 8.5 | 42.7 | | | | | | 0.3 | 0.8 | 4.1 | 11.8 | 23.2 | 17.1 | 16.4 | 8.3 | 9.5 | 3.1 | 1.3 | 0.7 | 3.4 | |
| 10414' | 620 | 175 | 2.7 | 6.7 | 33.4 | | | | | | 0.2 | 6.0 | 11.2 | 14.1 | 17.9 | 17.2 | 11.5 | 7.5 | 7.7 | 1.8 | 1.5 | 0.7 | 2.7 | |
| 10415' | 1000 | 130 | 3.0 | 7.2 | 49.5 | | | | | 0.3 | 0.8 | 3.0 | 6.1 | 6.8 | 7.6 | 12.2 | 13.7 | 21.4 | 10.4 | 10.5 | 2.4 | 1.5 | 0.3 | 3.0 |
| 10415' | 1400 | 200 | 1.7 | 5.4 | 28.7 | | | | | 1.0 | 4.3 | 8.2 | 8.6 | 9.4 | 10.1 | 13.6 | 16.1 | 9.8 | 6.9 | 6.6 | 1.9 | 0.9 | 0.9 | 1.7 |
| 10415' | 1500 | 210 | 2.2 | 6.1 | 31.0 | | | | | 1.5 | 3.9 | 7.3 | 10.6 | 10.7 | 10.9 | 11.2 | 12.9 | 10.2 | 7.3 | 7.4 | 1.9 | 1.5 | 0.5 | 2.2 |
| 10416' | 1700 | 200 | 2.1 | 5.4 | 31.4 | | | 0.2 | 4.1 | 4.3 | 5.3 | 7.7 | 9.6 | 10.1 | 14.8 | 12.5 | 12.0 | 7.0 | 7.0 | 1.7 | 0.9 | 0.7 | 2.1 | |
| 10416' | 1000 | 180 | 1.9 | 6.0 | 34.5 | | | | 0.3 | 0.7 | 2.7 | 9.2 | 10.0 | 12.0 | 16.4 | 14.2 | 12.6 | 8.2 | 7.7 | 2.4 | 0.7 | 1.0 | 1.9 | |
| 10416' | 360 | 120 | 2.7 | 5.6 | 51.7 | | | | | | | | | 1.5 | 10.7 | 17.3 | 18.8 | 20.0 | 12.7 | 13.4 | 1.0 | 1.4 | 0.5 | 2.7 |
| 10416' | 2200 | 180 | 2.6 | 6.3 | 35.3 | | | 1.7 | 7.8 | 5.3 | 4.4 | 5.0 | 5.0 | 7.3 | 12.8 | 15.4 | 9.9 | 9.2 | 9.9 | 2.2 | 1.0 | 0.5 | 2.6 | |

FIELD...North sea 7-11. (Phillips)

WELL ...3. (Norvegia).....

S. DONATO May 13, 1969.....

| DEPTH | C (Onepercentile) | M (Median) | A (% Finer than 3,9 microns) | Γ (% Finer than 31 microns) | Π (% Finer than 125 microns) | % | | | | | | | | | | | | | | | | | |
|--------|----------------------|---------------|---------------------------------|--------------------------------|---------------------------------|---------|-----------|----------|----------|-------------|-------------|-------------|----------------|----------------|----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|
| | | | | | | > 16 mm | 16 - 8 mm | 8 - 4 mm | 4 - 2 mm | 2 - 1.41 mm | 1.41 - 1 mm | 1 - 0.71 mm | 0.71 - 0.50 mm | 0.50 - 0.35 mm | 0.35 - 0.25 mm | 0.25 - 0.177 mm | 0.177 - 0.125 mm | 0.125 - 0.088 mm | 0.088 - 0.062 mm | 0.062 - 0.031 mm | 0.031 - 0.0156 mm | 0.0156 - 0.0078 mm | 0.0078 - 0.0039 mm |
| 10417' | 430 | 155 | 2.6 | 6.7 | 40.4 | | | | | | | 0.2 | 3.9 | 16.5 | 21.8 | 17.2 | 15.5 | 9.5 | 8.7 | 1.9 | 1.5 | 0.7 | 2.6 |
| 10418' | 490 | 150 | 2.4 | 6.9 | 40.3 | | | | | | | 0.7 | 6.8 | 12.7 | 18.8 | 20.7 | 14.6 | 9.8 | 9.0 | 2.4 | 1.2 | 0.9 | 2.4 |
| 10419' | 800 | 180 | 2.2 | 6.0 | 35.7 | | | | | 0.2 | 1.8 | 10.6 | 12.1 | 12.8 | 13.4 | 13.4 | 13.2 | 7.7 | 8.8 | 1.8 | 1.5 | 0.5 | 2.2 |
| 10419' | 620 | 190 | 2.4 | 5.8 | 30.9 | | | | | 0.2 | 7.1 | 13.6 | 15.7 | 15.9 | 16.6 | 10.0 | 7.8 | 7.3 | 0.9 | 2.2 | 0.3 | 2.4 | |
| 10420' | 960 | 180 | 2.6 | 6.8 | 36.5 | | | 0.1 | 0.6 | 3.6 | 9.6 | 10.4 | 10.8 | 14.5 | 13.9 | 11.5 | 8.6 | 9.6 | 2.4 | 1.0 | 0.8 | 2.6 | |
| 10420' | 145 | 60 | 4.8 | 15.0 | 97.8 | | | | | | | | | 0.3 | 1.9 | 17.4 | 28.8 | 36.6 | 5.6 | 2.9 | 1.7 | 4.8 | |
| 10420' | 230 | 90 | 3.1 | 9.0 | 77.1 | | | | | | | | 0.5 | 8.5 | 13.9 | 29.3 | 22.2 | 16.6 | 2.7 | 2.0 | 1.2 | 3.1 | |
| 10421' | 315 | 130 | 2.7 | 7.0 | 46.8 | | | | | | | | 0.3 | 7.9 | 20.4 | 24.6 | 18.2 | 12.0 | 9.6 | 2.5 | 1.0 | 0.8 | 2.7 |
| 10421' | 850 | 210 | 2.7 | 8.3 | 33.4 | | | | 0.3 | 2.7 | 12.4 | 13.1 | 13.4 | 14.5 | 10.2 | 10.0 | 7.3 | 7.8 | 3.1 | 1.4 | 1.1 | 2.7 | |
| 10421' | 600 | 150 | 3.4 | 9.0 | 40.9 | | | | | 0.2 | 4.1 | 8.6 | 11.8 | 15.9 | 18.5 | 11.5 | 9.6 | 10.8 | 3.2 | 1.7 | 0.7 | 3.4 | |
| 10422' | 250 | 88 | 3.8 | 12.4 | 71.1 | | | | | | | | 1.0 | 11.5 | 16.4 | 18.8 | 17.9 | 22.0 | 4.5 | 2.7 | 1.4 | 3.8 | |
| 10423' | 420 | 115 | 3.4 | 10.0 | 55.1 | | | | | | 0.2 | 2.7 | 11.5 | 12.9 | 17.6 | 18.0 | 12.2 | 14.9 | 3.6 | 2.2 | 0.8 | 3.4 | |
| 10423' | 900 | 260 | 3.1 | 7.2 | 25.6 | | | | 0.5 | 3.2 | 17.0 | 15.8 | 15.3 | 12.6 | 10.0 | 7.3 | 6.6 | 4.5 | 2.6 | 0.8 | 0.7 | 3.1 | |
| 10424' | 1000 | 300 | 2.0 | 4.5 | 20.2 | | | 0.1 | 0.9 | 5.9 | 19.1 | 16.7 | 15.7 | 12.0 | 9.4 | 6.4 | 5.6 | 3.7 | 1.7 | 0.5 | 0.3 | 2.0 | |

Well 7/11-3 (PHILLIPS)

SEDIMENT LOG

- MINERALOGICAL CONSTITUENTS %**
- QUARTZ GRAINS
 - FELDSPAR GRAINS
 - MICA FLAKES
 - ROCK FRAGMENTS
 - BRECCIA ELEMENTS
 - CONGLOMERATE ELEMENTS
 - CLAY UNDIFFERENTIATED
 - CLAY WITH IRON OXIDES AND SULFIDES
 - CARBONATE CEMENT
 - SULFATES
 - SILICA CEMENT
 - ILLITE
 - CHLORITE
 - MONTMORILLONITE
 - KAOLINITE
 - MIXED LAYERS

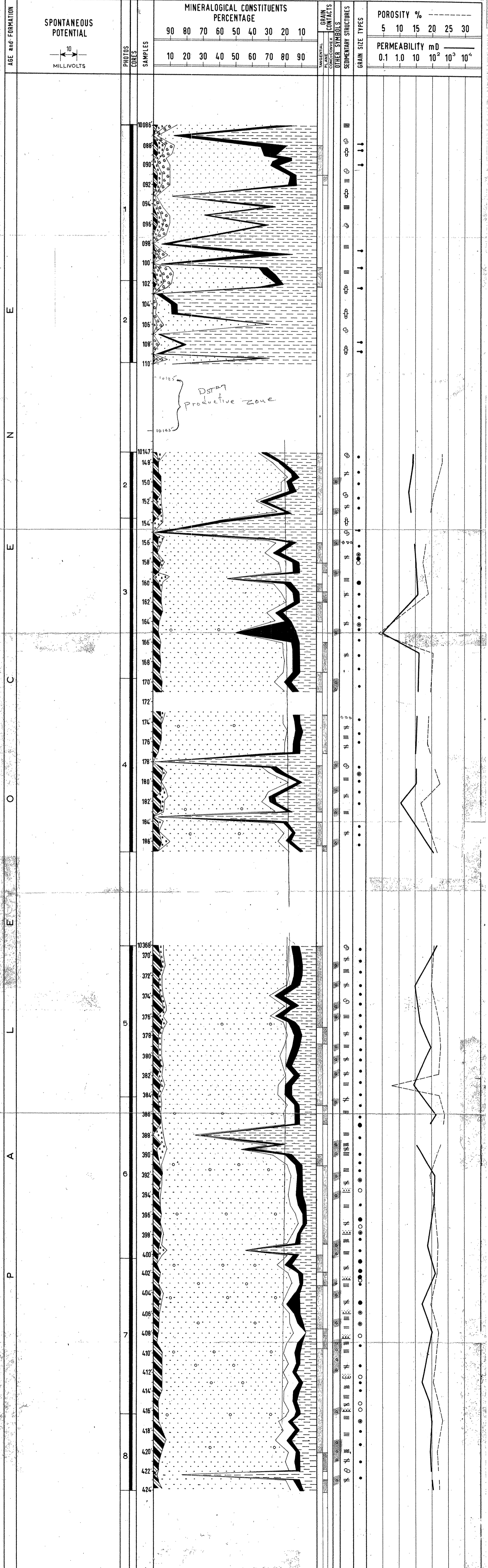
- OTHER ELEMENTS AND DIAGENESIS**
- GLAUCONITE
 - FOSSILS
 - PLANTS, PLANT DEBRIS
 - PYRITE (MAY BE OXIDIZED)
 - OOLITES
 - CARBONACEOUS FRAGMENTS
 - REPLACEMENT OF QUARTZ BY CARBONATES
 - PARTLY DISSOLVED QUARTZ
- SEDIMENTARY STRUCTURES**
- PARALLEL LAMINATION
 - CROSS BEDDING
 - GRADED BEDDING
 - SCOUR AND FILL
 - DISTURBED BED
 - MICRO CROSS LAMINATION
 - BURROW OR BIOTURBATION
 - CLAY FRAGMENTS
 - LENTICULAR BED
 - WAVY LAMINATION
 - MASSIVE BED

- GRAIN SIZE TYPES**
- C < 1000 μ
- M < 15 μ
- 15 μ < M < 100 μ
- 100 μ < M < 200 μ
- 200 μ < M
- PELAGIC
- UNIFORM
- GRADED
- GRADED
- SUSPENSION
- ROLLING
- SUSPENSION

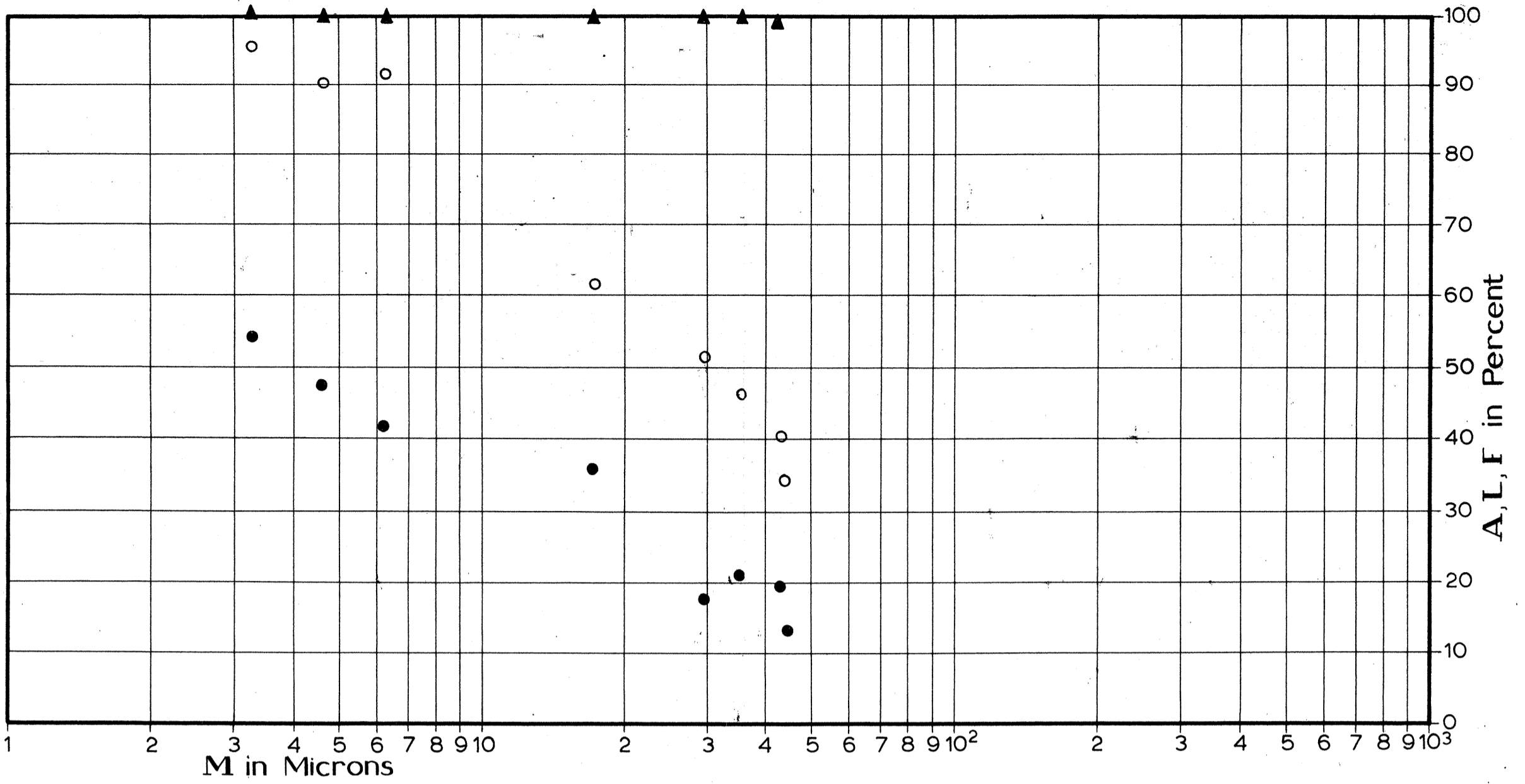
C = ONE PERCENTILE IN MICRONS
M = MEDIAN IN MICRONS

SCALE 1: 50

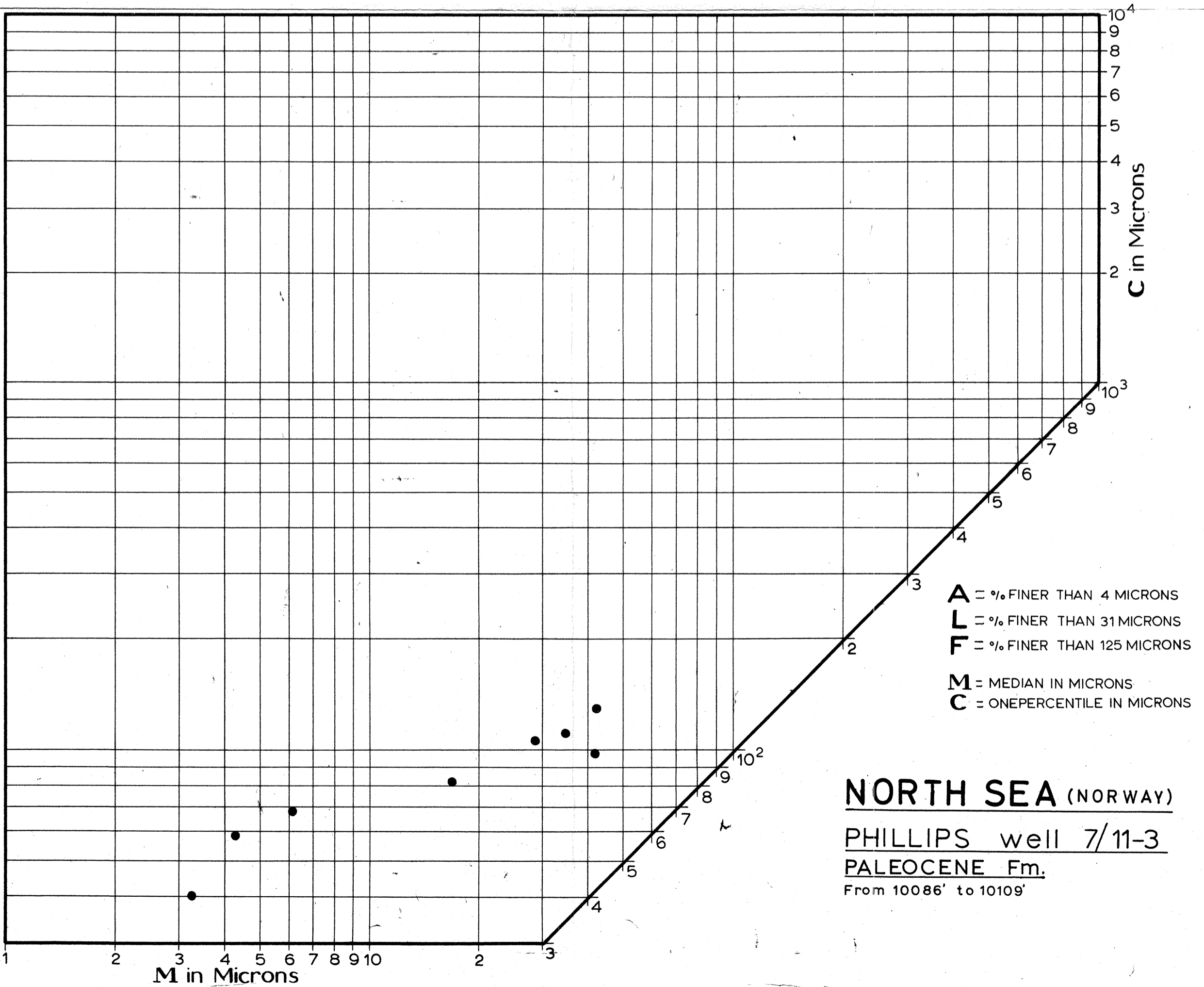
AUTHOR V. MOTTA ANN. to: CLASTIC SEDIMENTS OF PHILLIPS WELL 7/11-3 DATE 5-6-1968
DES. DES. No 863



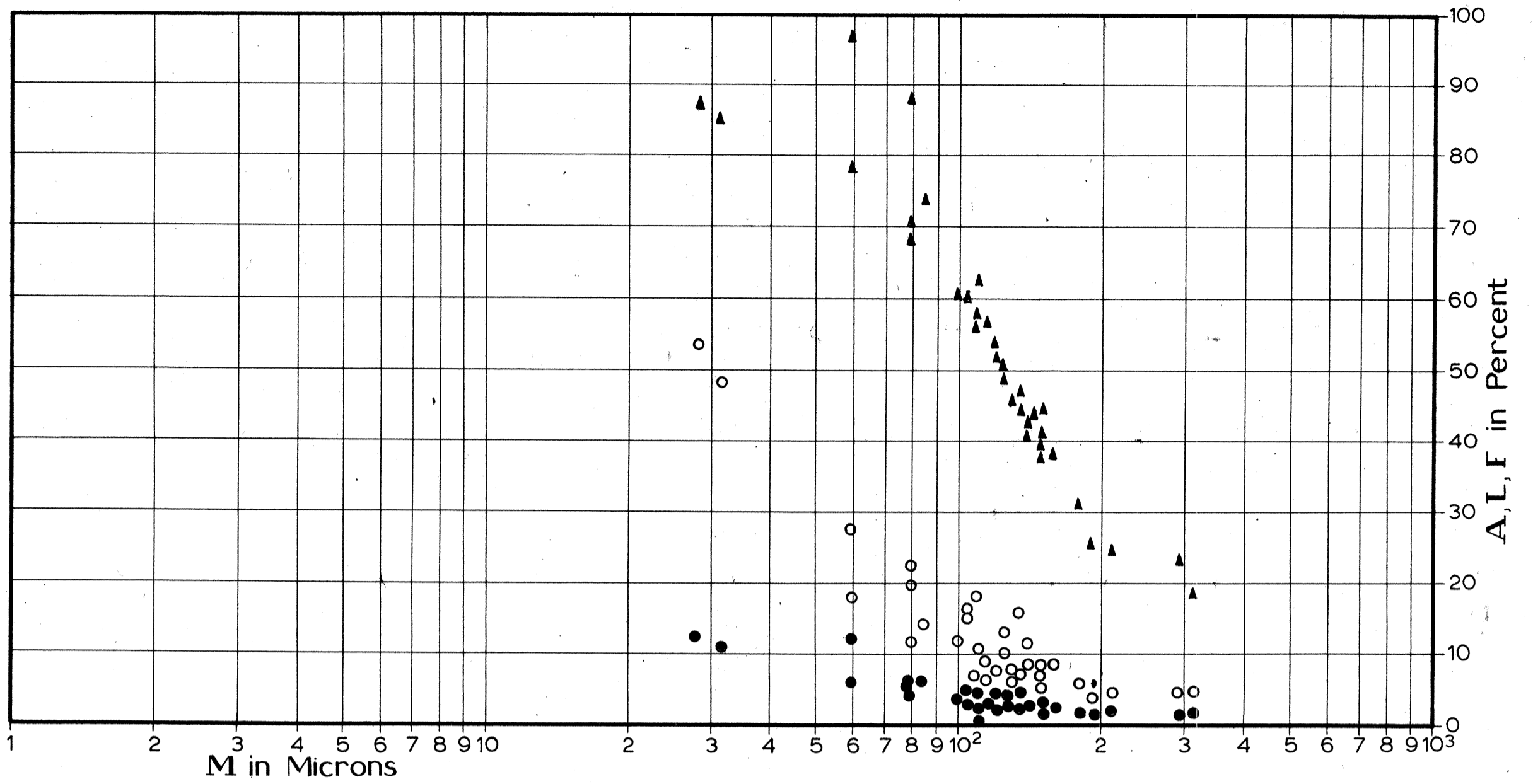
A-M(•), L-M(◦) and F-M(▲) DIAGRAM



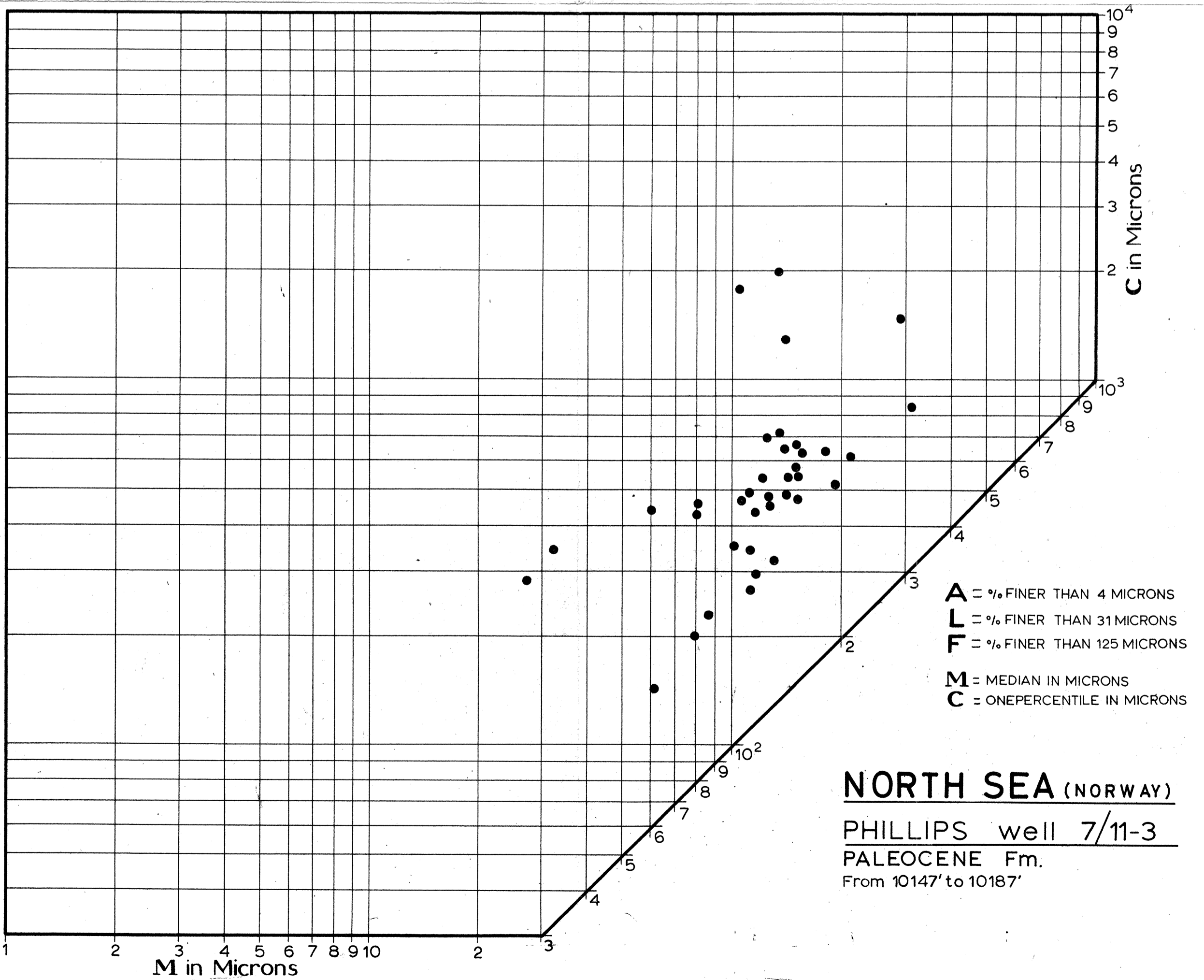
C-M DIAGRAM



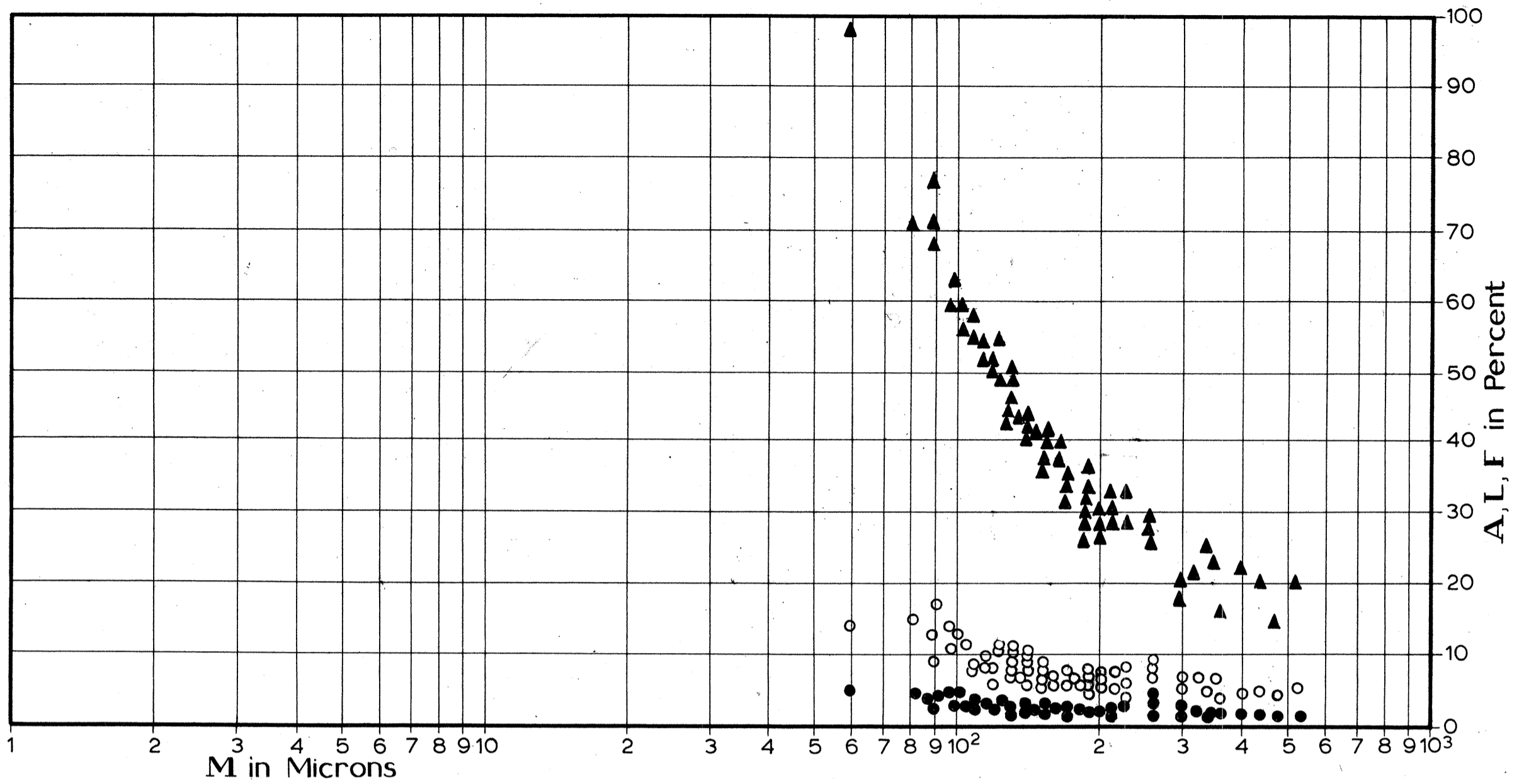
A-M(•), L-M(◦) and F-M(▲) DIAGRAM



C-M DIAGRAM



A-M(•), L-M(◦) and F-M(▲) DIAGRAM



C-M DIAGRAM

