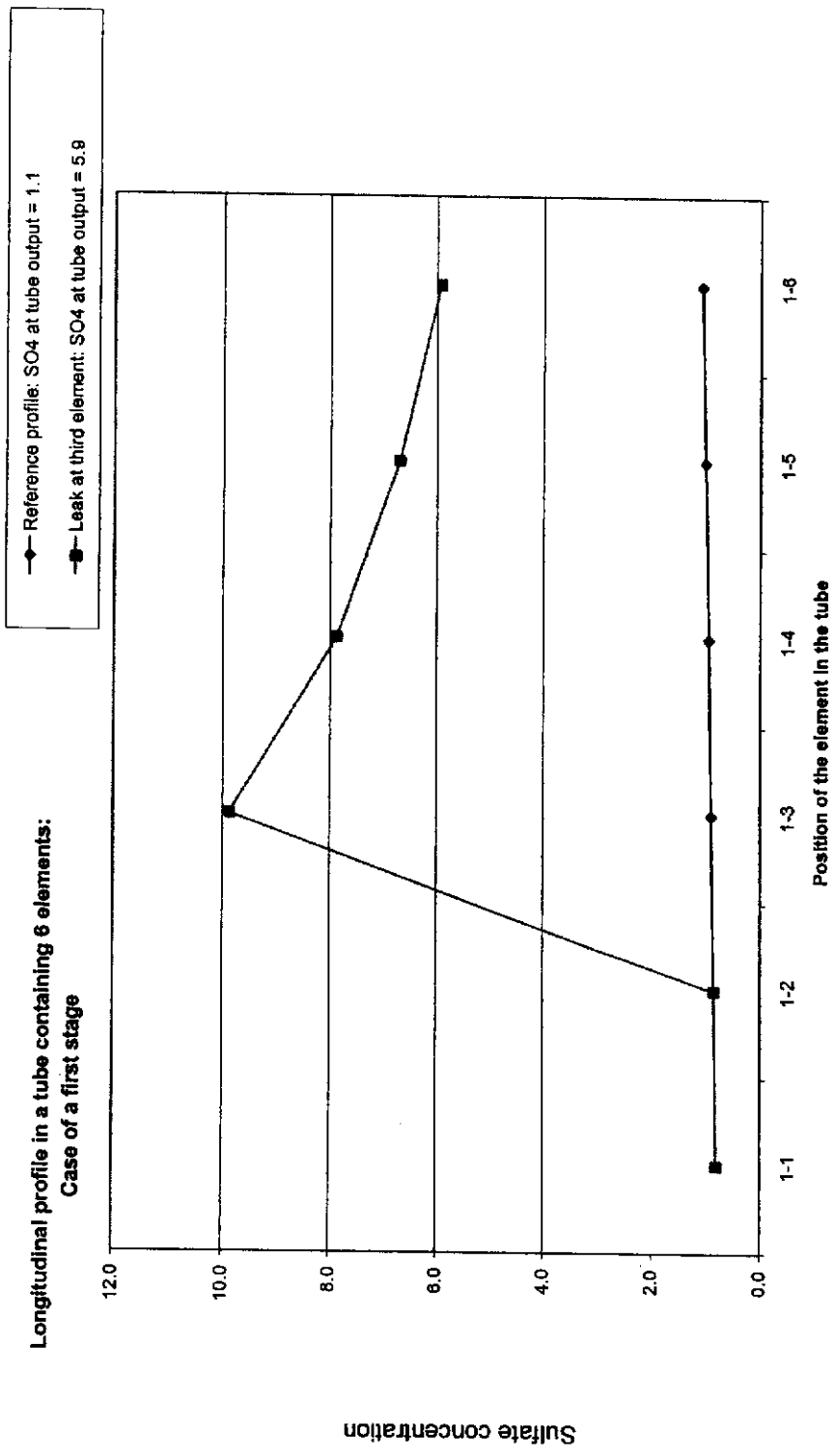
Reference profile: SO4 at tube output = 1.1
Leak at third element: SO4 at tube output = 5.9
Longitudinal profile in a tube containing 6 elements:
Case of a first stage
Sulfate concentration
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1-1
1-2
1-3
1-4
1-5
1-6
Position of the element in the tube

Fig 1a

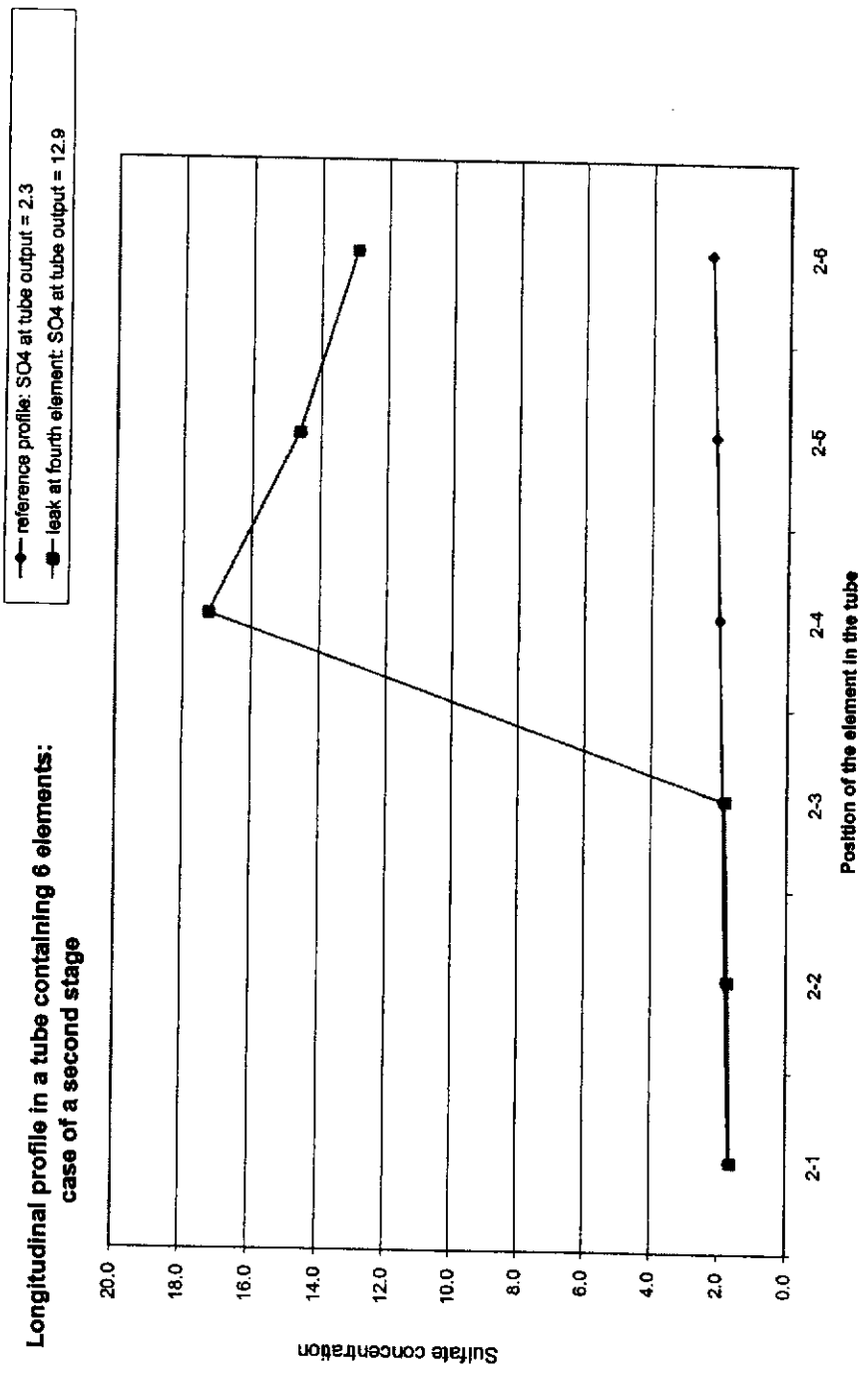
Longitudinal profile in a tube containing 6 elements: case of a second stage
reference profile: SO4 at tube output = 2.3
leak at fourth element: SO4 at tube output = 12.9
Sulfate concentration
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2-1
2-2
2-3
2-4
2-5
2-6
Position of the element in the tube

Fig 1b

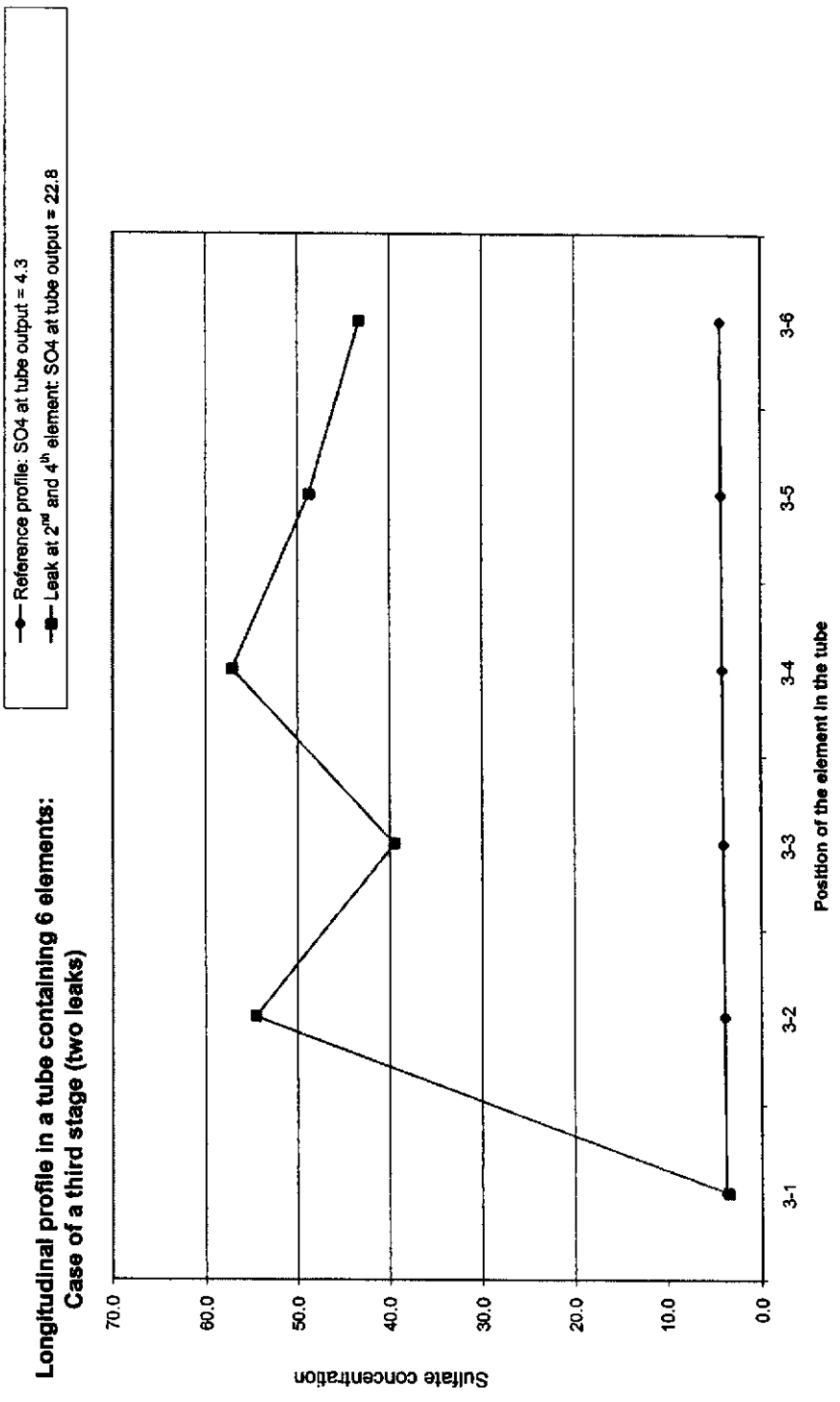
Longitudinal profile in a tube containing 6 elements:
Case of a third stage (two leaks)
Reference profile: SO4 at tube output = 4.3
Leak at 2nd and 4th element: SO4 at tube output = 22.8
Sulfate concentration
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
3-1
3-2
3-3
3-4
3-5
3-6
Position of the element in the tube

Fig 1c

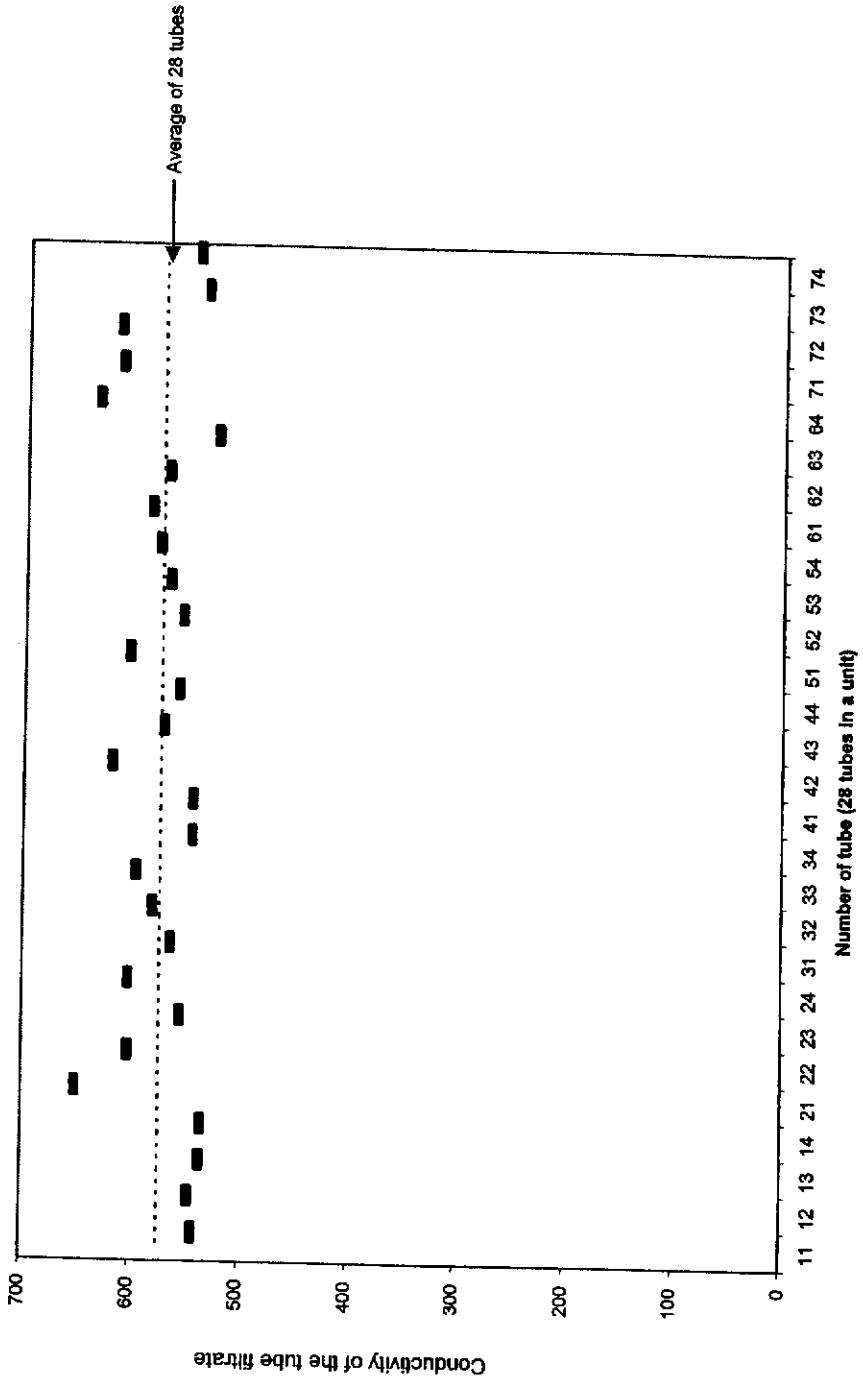
Average of 28 tubes
Conductivity of the tube filtrate
700
600
500
400
300
200
100
0
Number of tube (28 tubes in a unit)
11 12 13 14 21 22 23 24 31 32 33 34 41 42 43 44 51 52 53 54 61 62 63 64 71 72 73 74

Fig 2a

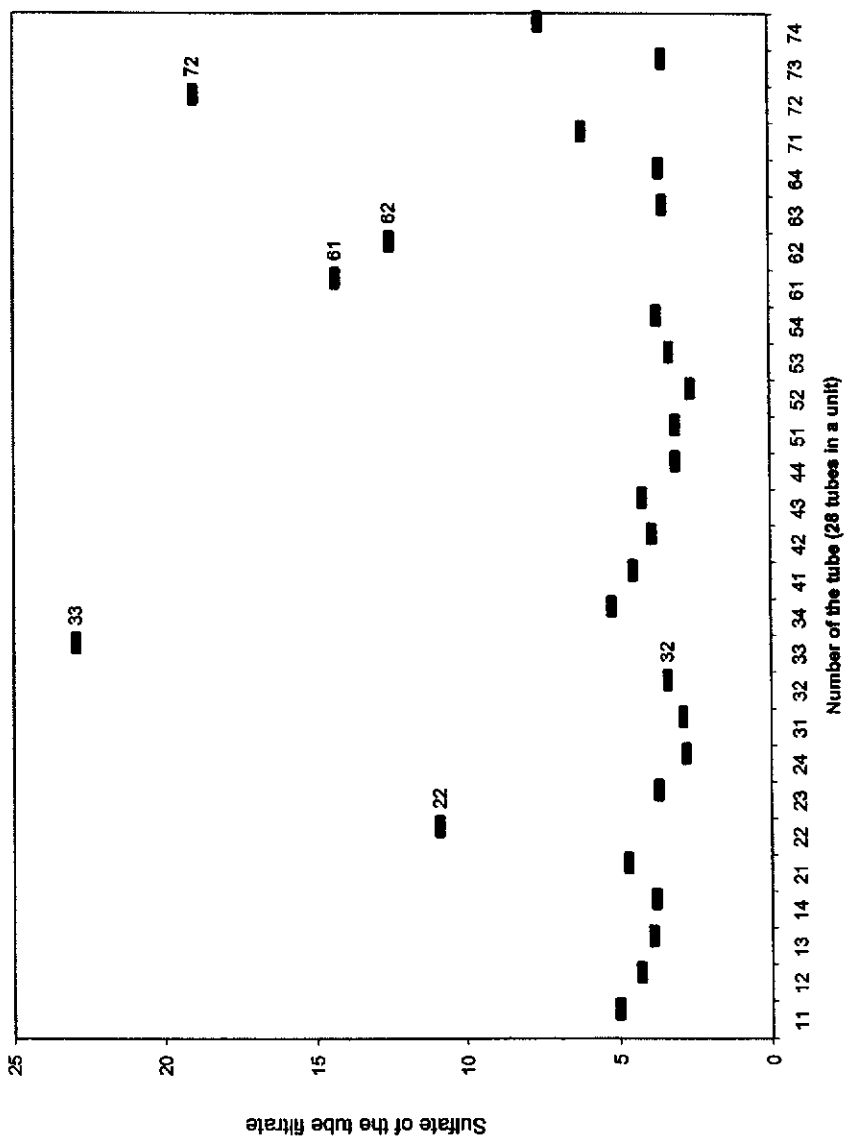
Sulfate of the tube filtrate
25
20
15
10
5
0
Number of the tube (28 tubes in a unit)
11 12 13 14 21 22 23 24 31 32 33 34 41 42 43 44 51 52 53 54 61 62 63 64 71 72 73 74
72
61
62
33
32
22

Fig 2b

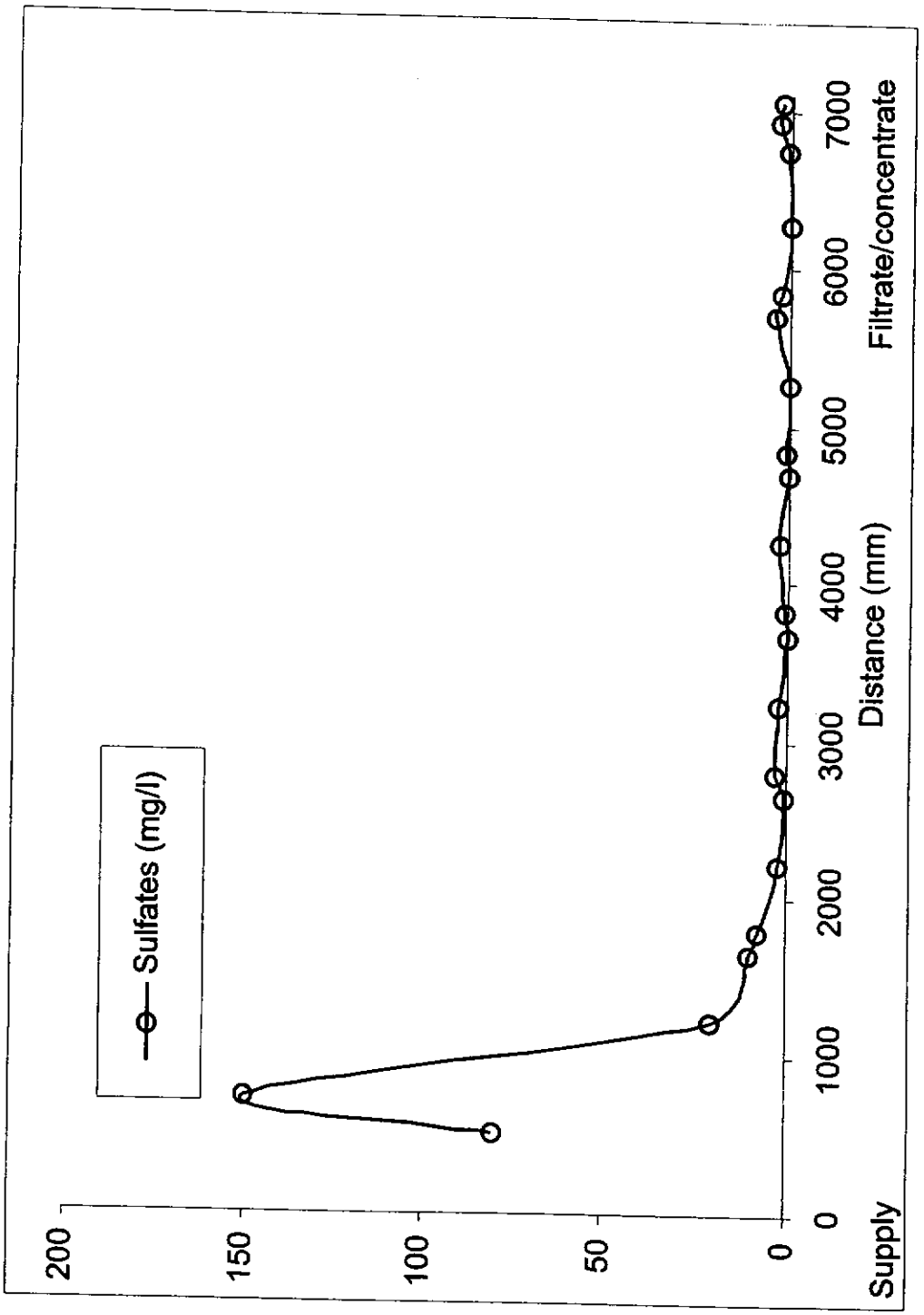
Sulfates (mg/l)
200
150
100
50
0
0
1000
2000
3000
4000
5000
6000
7000
Distance (mm)
Supply
Filtrate/concentrate

Fig 3

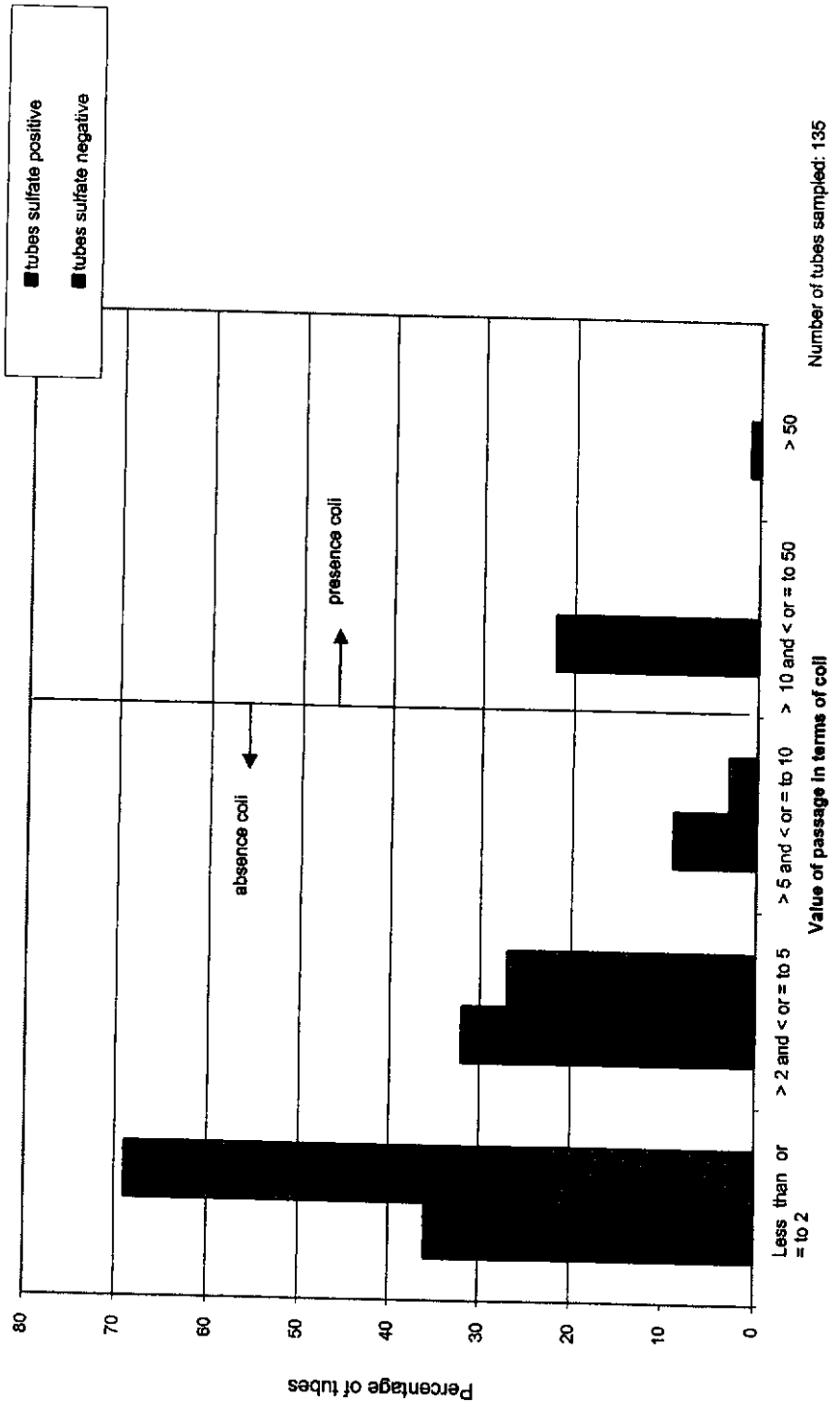
tubes sulfate positive
tubes sulfate negative
presence coli
absence coli
Less than or = to 2
> 2 and < or = to 5
> 5 and < or = to 10
> 10 and < or = to 50
> 50
Value of passage in terms of coli
Number of tubes sampled: 135
Percentage of tubes
0
10
20
30
40
50
60
70
80

Fig 4

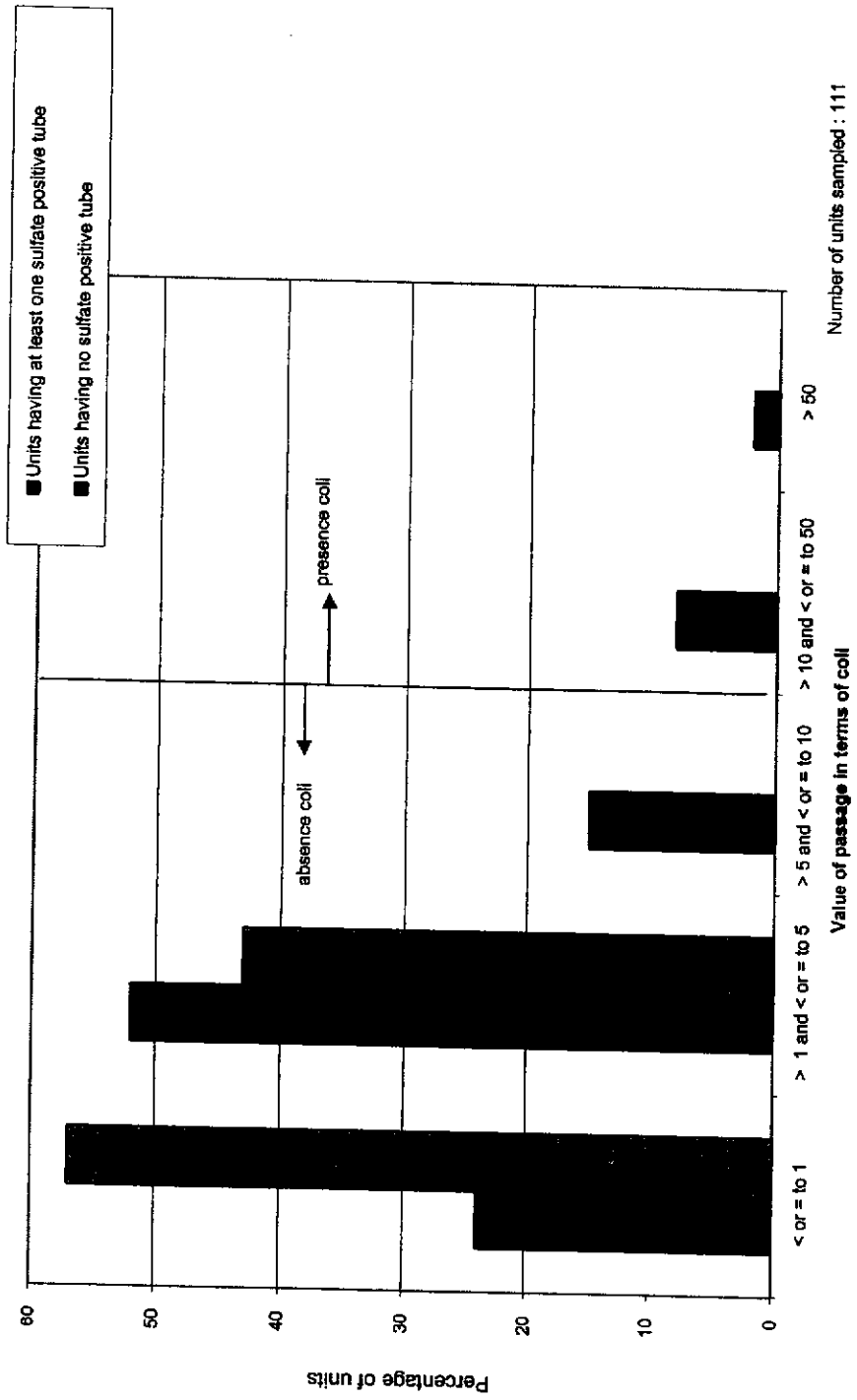
Units having at least one sulfate positive tube
Units having no sulfate positive tube
presence coli
absence coli
Number of units sampled : 111
Value of passage in terms of coli
< or = to 1
> 1 and < or = to 5
> 5 and < or = to 10
> 10 and < or = to 50
> 50
Percentage of units
0
10
20
30
40
50
60

Fig 5