N.45 WELLFILE

PETROPHYSICAL EVALUATION

OF WELL 15/9-1

PRO/PETROFYSIKK - STATOIL

SEPTEMBER/OCTOBER 1978

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NORWAY OFFSHORE
LICENSE 046
WILDCAT WELL 15/9-1

WELL DATA:

Well name	:	15/9-1
Location	:	58°28' 19.00" N
		01°45' 11.76" E
Classification	:	Wildcat
Drilling period	:	
Spudded	:	23. Feb. 1977
Completed drilling	:	27.May 1977
KB elevation	:	25m
Water depth	:	106m
Total actual depth	:	3734m
Objective	:	Jurassic sandstone
Operator	:	Statoil
Partners	:	Esso Exploration Norway
		Norsk Hydro A/S

ABSTRACTS

Well 15/9-1 is the first well drilled in block 15/9 (PL 046). Its objective was to evaluate and test the Dogger Sand (Jurassic) in which hydrocarbon accumulations have been found in wells 15/6-2 and 15/6-3.

Well 15/9-1 is located 4.4 km. south-east of well 15/6-3 in the Sleipner field.

This evaluation is replacing the "Petrophysical Evaluation of well 15/9-1", done by Petrophysical section in May 1977.

A complex lithology approach has been used in this study and a more detailed comparasion between log and core data has been done. The greatest difference between this interpretation and the earlier interpretation in May 1977 is the increase in net pay with approximately 10m.

1. SUMMARY

Well 15/9-1 reached top of the Jurassic sand at 3530m (RKB). Top of the reservoir is shaly with some clean sand stringers. The massive gas sand starts at 3585m.

Porosity is low to fair, an average log porosity of 17,1% is found over net pay intervals.

Base of the Jurassic is defined with a little uncertainty to be at 3700m (RKB).

The table of summary shows the results from this evaluation

TABLE OF SUMMARY

Depth interval : 3530m - 3700 m

Net pay	:65.75m
Net sand	:74.5m
Ønet pay	:17.1%
Ønet sand	:16.5%
Sw net pay	:28.3%
Sw net sand	:33.3%

The gas oil contact is located at 3653,25m and the oil water contact (heavy tar oil) is at 3685m.

2. LITHOLOGY

Top of the reservoir from 3530m down to 3585m consists of extremely complex lithology. Except from the clean sand stringers, minerals like siderite, ankerite, pyrite and mica has been observed from thin section analysis. The high density peaks seen on the FDC-log is caused by nodules of siderite and carbonates. The massive gas sand from 3585m to 3624m also contains in parts relative large amounts of these heavy minerals. Some parts are more shaly and tight over this interval as well.

The interval from 3624m to 3641m is a silty shale. No effective porosity can be seen from logs over this zone, though the core porosity is ranging from 0 to 10%.

From 3641m to 3650m the top is shaly, but the bottom part from 3645m to 3650m is clean in spite of the high gamma ray readings. This has also been verified through a SEM-study over that interval.

The interval from 3653.25m and down to 3672m is the heavy oil zone in the well. The middle part of this zone is shaly and tight.

The gas/oil contact in the well is estimated to be at 3653.25m which corresponds with what is found in well 15/9-2 (gas/water contact at 3653.75m).

The oil water contact is located at approximately 3685m. This lower sequence in the well (3676m-3700m) is very shaly and tight.

The conclusion for well 15/9-1 is that the lithology in the well is very complex. Figures 3 through 13 shows some MID-plots (Matrix Indentification plots) for some zones or intervals in well 15/9-1

3. INPUT PARAMETERS

The Jurassic sandstone was logged with the following tools:

-ISF/SONIC-GR
-FDC/CNL-GR
-DLL/MSFL
-HDT
-RFT (pressure and sampling)

The quality of the log data is good, all repeat sections are repeatable. Some scattering in pressure data from the RFT (Repeat Formation Tester) can be observed due to tight formation with slow build up of formation pressure.

A. Determination of Rw

The formation water resistivity has been determined from the SP-curve;

3525m - 3585m - Rw = 0,030 ohm.m ($220^{\circ}F$)
3585m - 3640m - Rw = 0,030 ohm.m ($225^{\circ}F$)
3640m - 3725m - Rw = 0,024 ohm.m ($225^{\circ}F$)

Rmf = 0,175 ohm.m @ $75^{\circ}F$

The formation water resistivities found from the SP-curve in this well are compatible with corresponding values found in other wells in the field by use of the SP-curve or by Magnolia plots.

B. Mud filtrate resistivity

The mud filtrate resistivity is taken from log heading and corrected for downhole temperature;

Rmf = 0,228 ohm-m @ $55^{\circ}F$
= 0,063 ohm-m @ $220^{\circ}F$

If plotting a Magnolia plot of Rxo in the water zone gives us a Rmf value of 0,060 ohm.m which is close to the log heading value.

C. Shale resistivity

The shale resistivity is taken from Deep Laterolog readings in clean shales in each zone. Table 1 at the back of the report summarizes the input parameters used in the interpretation.

D. FDC,CNL and SONIC shale properties

Figures 14 through 17 show FDC/CNL and FDC/BHC cross-plots for the three separate interpretation intervals for this well,

I: 3525m - 3585m
II: 3585m - 3640m
III: 3640m - 3725m

As seen on these plots, the gas/sandstone line have been shifted to compensate for hydrocarbon effect (gas effect). Further more, the heavy mineral point and the shale point used as input into a complex lithology model are also shown.

Log responses on shale are shown in table 1 behind.

E. Matrix parameters

The following matrix parameters were used as input into a complex lithology model;

Quartz:	2,65 gm/cc -	- 0,035 (frac.) CNL
Heavy minerals:	2,90 gm/cc -	- 0,100 (frac.) CNL

Fluid point parameters: 1,0 gm/cc - 1,00 (frac.) CNL

The heavy mineral point has been choosen after a calibration procedure used in the water well 15/6-5, where a good fit to core porosity data was obtained. From thin section studies it has been found that well 15/9-1 contains considerable amounts of mica, siderite and ankerite in many of the permeable zones. Some of the nodules which contain siderite and carbonates even have a higher grain density than 2.90 gm/cc.
A comparasion between log porosity and core porosity is done later in this study.

4. COMPUTATION OF FINAL ROCK PROPERTIES

The final rock properties found for this well are shown on the analog presentation on the Summary log sheet attached behind in this report.

A summary of average values are found in table 2.

A. Shale corrections

Shale corrections were applied on porosity using the shale properties found in table 2 behind. The shale indicators studied in this evaluation are shown on figures 17 through 19. For specific depth intervals, the following shale indicators were used:

3525m - 3585m : VSHGR,VSHSP,VSHDN
3585m - 3624m : VSHGR,VSHSP,VSHQ,VSHDN,VSHDS
3624m - 3646m : VSHGR,VSHSP,VSHDN
3646m - 3676.5m: VSHGR,VSHSP,VSHQ,VSHDN,VSHDS
3676.5m-3725m : VSHGR,VSHSP,VSHDN

A minimum value of the listed shale indicators were used over the specified intervals.

B. Porosity computation

The porosity was estimated from the FDC/CNL crossplot. Shale and hydrocarbon corrections were applied where necessary.

The porosity was corrected for residual hydrocarbons using the hydrocarbon densities as found from the pressure tests with the Repeat Formation Tester (RFT): (Figure 20).

3525m - 3640m : 0,137 psi/ft - ρh = 0,30 gm/cc
(3650m) - Gas down to coalbed (Se figure 26)
3650m - 3700m : 0,350 psi/ft - ρh = 0,76 gm/cc
3700m - 3725m : 0,457 psi/ft - SALT WATER GRADIENT

Porosity was corrected for residual hydrocarbons in invaded zone after the Schlumberger Coriband principle.

The apexes used for quartz matrix, heavy minerals and the fluid point were as mentioned in 3E.

C. Resistivity corrections on true resistivity,RT

The Dual Laterolog/Micro Spherical Focused log combination was used to compute true resistivity-RT. The computation of R_T is done after chart Rint 9 on page 57 in the Schlumberger Chart Book. Figure 20 shows the invasion diameter (Di,inches) in the permeable hydrocarbon zones in well 15/9-1. The invasion diameter (Di) is varying from 30 inches to 50 inches in most part of the sands.

The resistivity corrections are only done over intervals where R11D is greater then R11s:

3588 - 3615m
3645 - 3650m
3654 - 3663m

According to the Schlumberger theory for resistivity corrections no corrections for invasion should be applied in hydrocarbon zones when R11s equals R11d.

In the water zone from 3700m to 3725m the Deep Induction Log (Ild, 6FF40) has been used as Rt in water saturation computations.

Ref: Log Interpretation Charts, Schlumberger 1977 Edition, page 57.

D. Water saturation - Sw

The water saturation was calculated using the Nigeria equation with volume shale exponent equal to 1.6. (high resistivity shales). Irreducible water saturation seems to be in the range of 10-12% in clean hydrocarbon zones.

The values for cementation and saturation exponent, m,n, and lithology factor a is established from a lot of core measurements in well 15/6-5. All these measurements were done at standard conditions and the effect of overburden could alter this formation factor relationship.

$$F = {}^{1}/\phi^{2}$$

This formation factor relationship has been used in all wells interpreted in the Sleipner field.

5. TESTS IN WELL 15/9-1

The testing program performed in well 15/9-1 was two Drill-Stem-Tests and sampling and pressure measurements with the Repeat Formation Tester (RFT).

A. Drill-Stem-Tests

Two Drill-Stem-Tests were taken in the well;

DST 1: 3655m - 3660m (RKB)
4 shoots/ft.
Oil rate: 1330 STBOPD
Gas rate: 1.42×10^6 SCFD
G.O.R. : 1066 SCF/BBL
ρ Gas : 0,738 (rel.to air)
ρ oil : 26° API
Choke : 3/4"

The high gas-oil ratio during this test considering the heavy oil produced, is probably explained by simultaneous production of an oil zone and a gas zone. The gas/oil contact has therefore been set at bottom of coal bed at 3653,25m. More evidence that this test produced also from a gas zone will be discussed later.

DST 2: 3602m - 3607m (RKB)
4 shoots/ft
Oil rate: 812 STBOPD
Gas rate: $25,26 \times 10^6$ SCFD
G.O.R. : 32000 SCF/BBL
ρ Gas : 0,703 (rel. to air)
ρ Oil : $45,4^{\circ}$API
Choke : 1"

The gas-oil ratio testing this main gas zone is the same ratio as found in well 15/6-3 which was drilled earlier.

B. Repeat Formation Tester (RFT)

Figure 21 through 25 shows the results from formation fluid sampling and pressure measurements.

The pressures measured downhole with the RFT are all plotted versus depth on figure 26.

The top interval from 3525m to 3640m shows a gas gradient of 0,137 psi/ft (ρh=0,30 gm/cc). The interval above the first coal bed (3640m-3650m) also shows the same slope of the gradient line (gas gradient) except for one sampling pressure which is approximately 10psi higher than the two pressure measurements above the coalbed. It is believed also from the pressure measurements that the sand above the upper coal in well 15/9-1 is gas bearing. The lower part of this sand (below upper coal bed) shows an oil gradient of 0,350 psi/ft (ρh=0,76 gm/cc).

The water zone (3700m-3725m) shows a salt water gradient of 0,457 psi/ft. (See figure 26).

The pressure data from the RFT could also indicate two separate reservoirs.

6. CORING AND CORE ANALYSIS

9 (nine) cores with a total length of 154.5m were recovered in the well. The cores were corrected to FDC/CNL-GR log depth as listed below and as also shown on the Summary Log sheet. During a clean-up trip in the well after core 9 was taken, the drilling essembly was stuck down-hole. The well was plugged back to 3450m and side-tracked down again into the reservoir. Figure 27 summerizes the events before and after sidetracking. Therefore, CORES AND LOGS ARE NOT FROM THE SAME WELL. Some differences between logs and core data can be observed in this case. This will be discussed later on.

The following measurements were done by GECO Laboratory: Saturation and helium porosity, horizontal and vertical liquid and air permeability, residual oil and water saturation and grain density. Some special core analysis data will be covered later.

CORE 1: 3521m - 3539.3m (18,3m)
Recovery: 100%
Corrected to FDC/CNL-GR:
3525.25m - 3543.5m

CORE 2: 3539.3m - 3557.5m (18.2m)
Recovery:100%
Corrected to FDC/CNL-GR
3543.75m - 3562m

CORE 3: 3557.5m - 3567.7m (10.2m)
Recovery: 100%
Corrected to FDC/CNL-GR:
3562m - 3572.25m

CORE 4: 3567.7m - 3586m (18,3m)
Recovery: 100%
Corrected to FDC/CNL-GR:
3572.25m - 3590.5m

CORE 5: 3586m - 3603.1m (17.1m)
Recovery: 93,4%
Corrected to FDC/CNL-GR:
3590.5m - 3607.0m

CORE 6: 3603.1m - 3621.3m (18.2m)
Recovery: 100%
Corrected to FDC/CNL-GR:
3607m - 3618m and
3619m - 3626.25m

CORE 7: 3621.3m - 3639.1m (17.8m)
Recovery: 97,3m
Corrected to FDC/CNL-GR:
3626.25m - 3644m

CORE 8: 3639.1m - 3657.4m (18.3m)
Recovery: 100%
Corrected to FDC/CNL-GR:
3644m - 3662m

CORE 9: 3657.4m - 3675.5m (18,1m)
Recovery: 99%
Corrected to FDC/CNL-GR:
3662m - 3680m

A. Helium porosity

The core porosity is compared with the complex lithology porosity on figure 28. Figure 29 shows histogram plots of core porosity (PORHE) and complex lithology porosity (PHIF).

As can be seen on figure 28, the log porosity and the core porosity does not correspond with each other in tight shale or silty intervals. This can also be verified by looking at the Summary Log sheet. Very often, in thight intervals, the core plugs are picked selectively in small porous sand stringers which are difficult to se by the logging tools. The helium porosity might also be to optimistic in these intervals due to dehydration of clay particles during extraction of the core plugs.

When doing log/core correlation for this well, a discorrelation was found in the interval 3664m-3668m. The core porosity is considerably higher than the log porosity over this interval. The distance or length between the two coal beds is also longer in the cored well than in the logged (sidetracked) well. When comparing log and core data, it should also be remembered the fact that logs and cores are from two different wells, and it also proves to a certain degree the rapid variation in lithology laterally.

The histogram plots on figure 29 shows the log and core porosity. For porosities greater then 0,10 (fractions) the following relation was found;

Average log porosity: 0,171
Average core porosity: 0,174

Log porosity = 0,980 x core porosity.

Figure 30 shows the effect of net confining pressure on porosity for three core plugs done by Statoil Petrophysical Lab.

Net overburden in well 15/9-1 is estimated to be in the range of 3500-3700 psi.

To get a reduction in core porosity of about 0,3 - 0,5%, a correction factor of 0,28 must be applied on net overburden to agree with the results found here.

B. Grain density

The grain density measured on core plugs and the matrix density as a result from the log interpretation is presented on figures 28 and 31.

Core plugs : 2.67 gm/cc
Log evaluation : 2.70 gm/cc

Figure 28 shows the big differences in the tight shaly and silty intervals. The agreement between grain density from core plugs and matrix density from log interpretation is good in the clean sand intervals.

The matrix density from the log interpretation is found after shale and hydrocarbon corrections have been applied.

All core plug measurements are done at standard conditions (60°F, 14,7 psi).

C. Permeability

Figure 32 shows horizontal liquid permeability (KLH-md) plotted versus log porosity (PHIF). Disregarding the scattering of plotted data at low permeability and porosity, the following relationship between horizontal permeability and log porosity is found:

$$\log_{10}KLH = 55.04 \cdot \emptyset - 8.52$$

(Porosity in fractions)

Figure 33 shows vertical liquid permeability (KLV-md) plotted against log porosity in the same manner. The relationship between vertical liquid permeability and log porosity is as follows:

$$\log_{10}KLV = 57.52 \cdot \emptyset - 9.2$$

(porosity in fractions)

Figure 34 shows a plot of vertical liquid permeability versus horizontal liquid permeability. The vertical permeability is 2/3 of the horizontal permeability

$$KLV = 2/3\ KLH.$$

D. Residual oil and water saturation

The residual oil and water saturation in core plugs are all plotted on the Summary Log Sheet attached behind.

According to Core Lab. experience factors the following assumptions are valid:

Type of fluid to be produced	So	STW
Gas	< 2%	< 50%
Oil	> 10%	< 50%
Water	< 10%	>50%

So = Residual oil saturation (% pore space)
STW= Residual water saturation (% pore space)

If looking back on the residual saturation core data on the Summary Log sheet, it is found that gas conditions are present down to the coal bed at 3650m. Below the coal bed, the residual oil saturation is increasing up to 10% and should therefore indicate oil in the formation as already found from tests. Use of residual saturations are the third evidence of gas above the coal bed.

E. Cut-off

The following cut-off values have been used when studying this well and other wells in the Sleipner field:

$$\emptyset < 0{,}10 \text{ (fractions)}$$
$$VSH > 0{,}40 \text{ (fractions)}$$
$$SW > 0{,}60 \text{ (fractions)}$$

F. Special core measurements

Figure 35 shows some capillary pressure measurements done by Statoil Petrophysical Lab. From these measurements, the irreducible water saturation (Swirr) seems to be around 10% in the best reservoi sand.

7. DISCUSSION

The interpretation of well 15/9-1 shows a fair to good correlation with informations from core data. Some differences can be seen from analysis of log data compared with core data, but as already mentioned, logs and cores are not from the same well.

The gas/oil (heavy oil) contact is set as bottom of first coal bed in the well, 3653.25m. There are several indications which proves this;

- Drill-Stem-Test 1 (3655m-3660m) showed a high gas/oil ratio taken into consideration the heavy oil produced (26°API). It is therefore believed that this test produced an oil and gas zone simultaneously.

- The pressure measurements with the Repeat Formation Tester (RFT) may indicate a gas gradient line above the coal bed (see figure 26).

- The residual oil saturation from core plugs indicates gas in the formation above the coal bed.

If comparing well 15/9-1 with well 15/9-2 the interpretation of the gas water contact in well 15/9-2 is at 3653.75m which in fact is in good agreement with the gas/oil contact in well 15/9-1.

The oil/water contact is interprected to be located at 3685m in well 15/9-1.

8. SUMMARY OF INPUT PARAMETERS AND EVALUATION RESULTS.

The input parameters into the log interpretation is shown in table 1. The mineral model and its input parameters were mentioned under point 3D.

Table 2 shows the zonation of well 15/9-1 with average petrophysical parameters for each zone and total for the whole Jurassic studied here.

Results of Petrophysical evaluation:

Net pay	:65.75m
Net sand	:92.25m
ØNet pay	:17.1%
ØNet sand	:16.1%
SW Net pay	:28.3%
SW Net sand	:45.9%

TABLE 1 - INPUT PARAMETERS INTO EVALUATION -
WELL 15/9-1

15/9-1		DEPTH INTERVAL (M)	
Parameters	3525 - 3585	3585 - 3640	3640 - 3725
ρbsh (gm/cc)	2.52	2.53	2.55
CNLsh (fractions)	0.36	0.28	0.30
Δtsh (μsec/ft)	92	85	90
Rsh (ohm-m)	4.6	5.4	4.8
Rmf (ohm-m)	0.063	0.062	0.060
Rw (ohm-m)	0.030	0.030	0.024
Temp. (^{O}F)	220	225	225
ρh (gm/cc)	0.30	0.30	0.30/0.76
GRmax. (API)	90	92	90
GRmin. (API)	30	30	25
Lithology model	SS/H.MINERAL	SS/H.MINERAL	SS/H.MINERAL
C/Phinfl.	1.0	1,500	1,254
C/Phisfl.	1,0	1,183	1,281

C/Phinfl. and C/Phisfl. denotes a shift of the sandstone matrix line in the computer due to gas effects on FDC/CNL and FDC/BHC crossplots.

TABLE 2 - AVERAGE PETROPHYSICAL PARAMETERS - WELL 15/9-1

Zone (m)	Thickness (m)	Net sand (m)	Net pay (m)	ØN.sand (%)	ØN.pay (%)	SWN.sand (%)	SW N.pay (%)	VSHN.sand (%)	VSHN. pay (%)
3530-3585	55	17.75	11.25	15.1	17.0	52.5	42.6	15.1	10.9
3585-3616	31	29.75	28.50	17.2	17.4	26.6	24.0	6.6	6.1
3616-3620	4	1.25	0.75	12.6	13.1	57.7	55.2	10.3	17.1
3620-3650	30	10.25	9.75	16.4	16.6	33.4	31.7	10.5	9.8
3650-3653	3	Coal	-	-	-	-	-	-	-
3653-3672	19	15.5	15.5	17.2	17.2	22.2	22.2	2.6	2.6
3672-3676	4	Coal	-	-	-	-	-	-	-
3676-3700	24	0	0	-	-	-	-	-	-
3700-3725	25	17.75	0	14.7	-	98.6	-	4.9	-
TOTAL	195	92.25	65.75	16.1	17.1	45.9	28.3	7.7	6.8

The zones have been labelled from I to IX. Zone IX could possibly be of Triassic age.

Of net pay: 50,25m gas pay

15,50m oil pay

Cut-off values:

Ø < 10%
VSH >40%
SW >60%

Formation factor relationship: $F = {}^{1}/\phi^{2}$
Average grain density lab.: 2.67 gm/cc
Average grain density logs: 2.70 gm/cc

Log/core porosity relationship:

PHIF = 0,980 x PORHE

Horizontal liquid permeability relationship to log derived porosity:

$\log_{10}KLH = 55.04 \cdot \phi - 8.52$

Vertical liquid permeability relationship to log derived porosity:

$\log_{10}KLV = 57.52\phi - 9.2$

Horizontal liquid permeability to vertical liquid permeability:

KLV = 2/3 KLH

9. CONCLUSION

Well 15/9-1 discovered a heavy oil layer which has not been found in the other wells in the Sleipner field. This heavy oil showed to be producible, but at very low flow rates. Its viscosity is high, and production problems with recovery of this oil layer is certain. This heavy oil layer could also be of limited lateral extent.

The main gas zone in this well produced at flow characteristics as expected for the field.

One characteristics for this special well is the very complex lithology.

APPENDIX

The main differences between this evaluation and the study done earlier through the report "Petrophysical Evaluation of well 15/9-1",dated in May 1977 is the increase in net pay. This is mainly caused by increased net pay estimates in the interval 3545m - 3570m. This interpretation takes complex lithology into account, while the earlier study was done with a single shale indicator - GR.

FIGURES AND PLOTS

FIG. 1.

Location map
Well 15/9-1

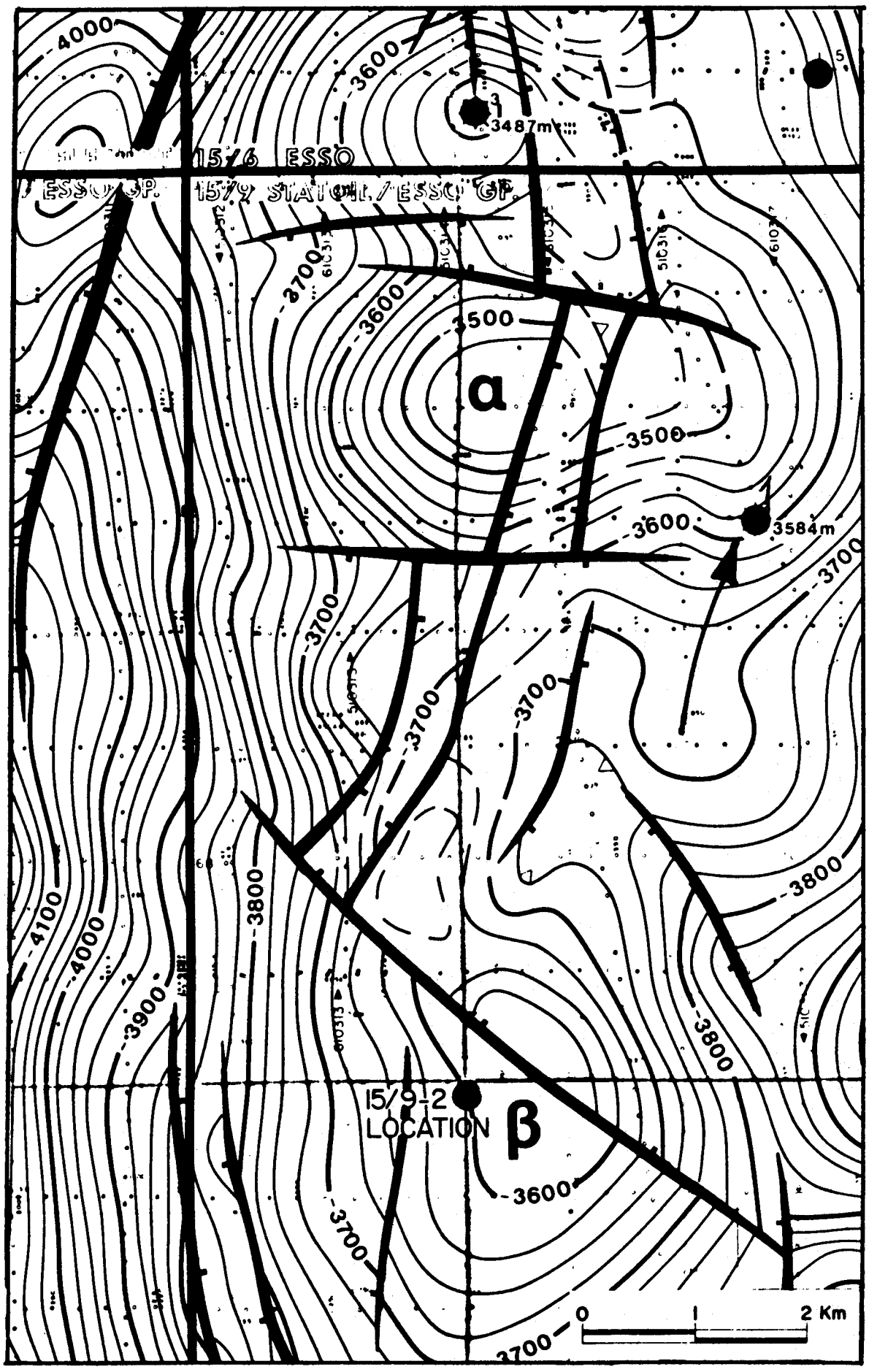


Figure 2.

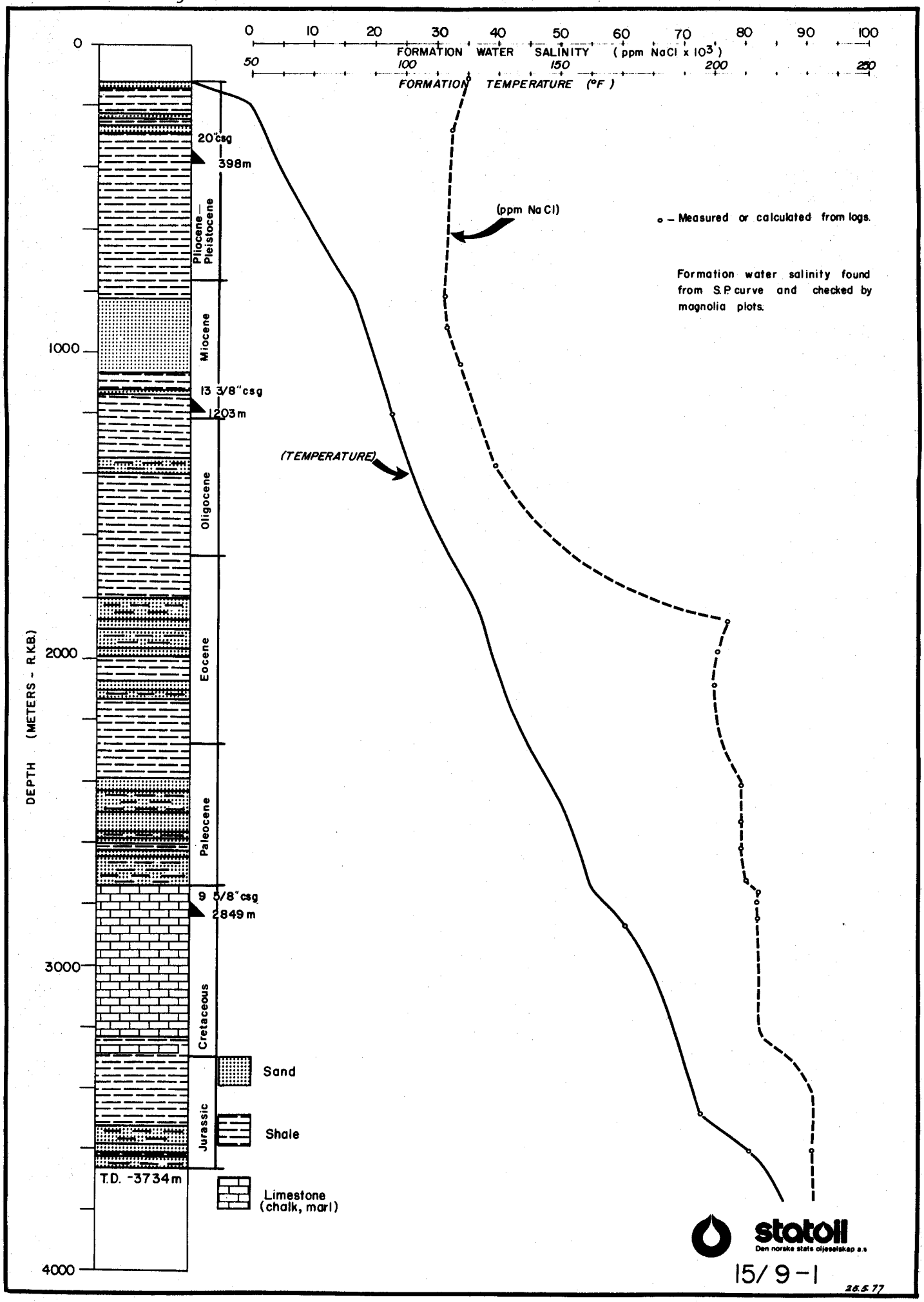

0 10 20 30 40 50 60 70 80 90 100
FORMATION WATER SALINITY (ppm NaCl x 10³)
50 100 150 200 250
FORMATION TEMPERATURE (°F)
0
1000
2000
3000
4000
DEPTH (METERS - R.K.B.)
20"csg
398m
13 3/8"csg
1203m
9 5/8"csg
2849m
T.D. -3734m
Pliocene — Pleistocene
Miocene
Oligocene
Eocene
Paleocene
Cretaceous
Jurassic
(ppm NaCl)
(TEMPERATURE)
o – Measured or calculated from logs.
Formation water salinity found from S.P. curve and checked by magnolia plots.
Sand
Shale
Limestone (chalk, marl)
statoil
Den norske stats oljeselskap a.s
15/9-1
28.5.77

Figure 3

MID Chart 7

THE MATRIX IDENTIFICATION (MID) PLOT

3542 – 3546m

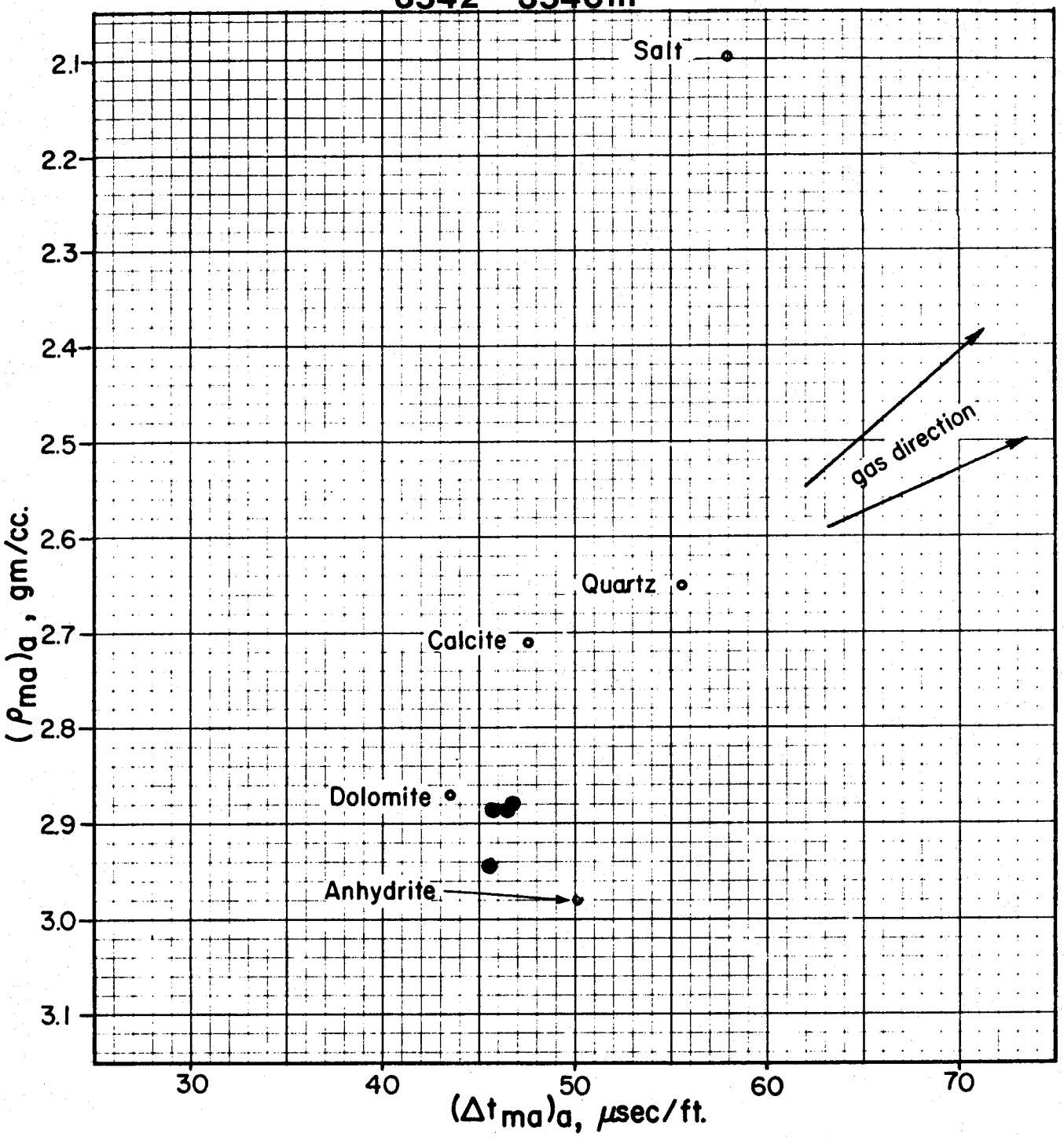


Figure 4

MID Chart 7

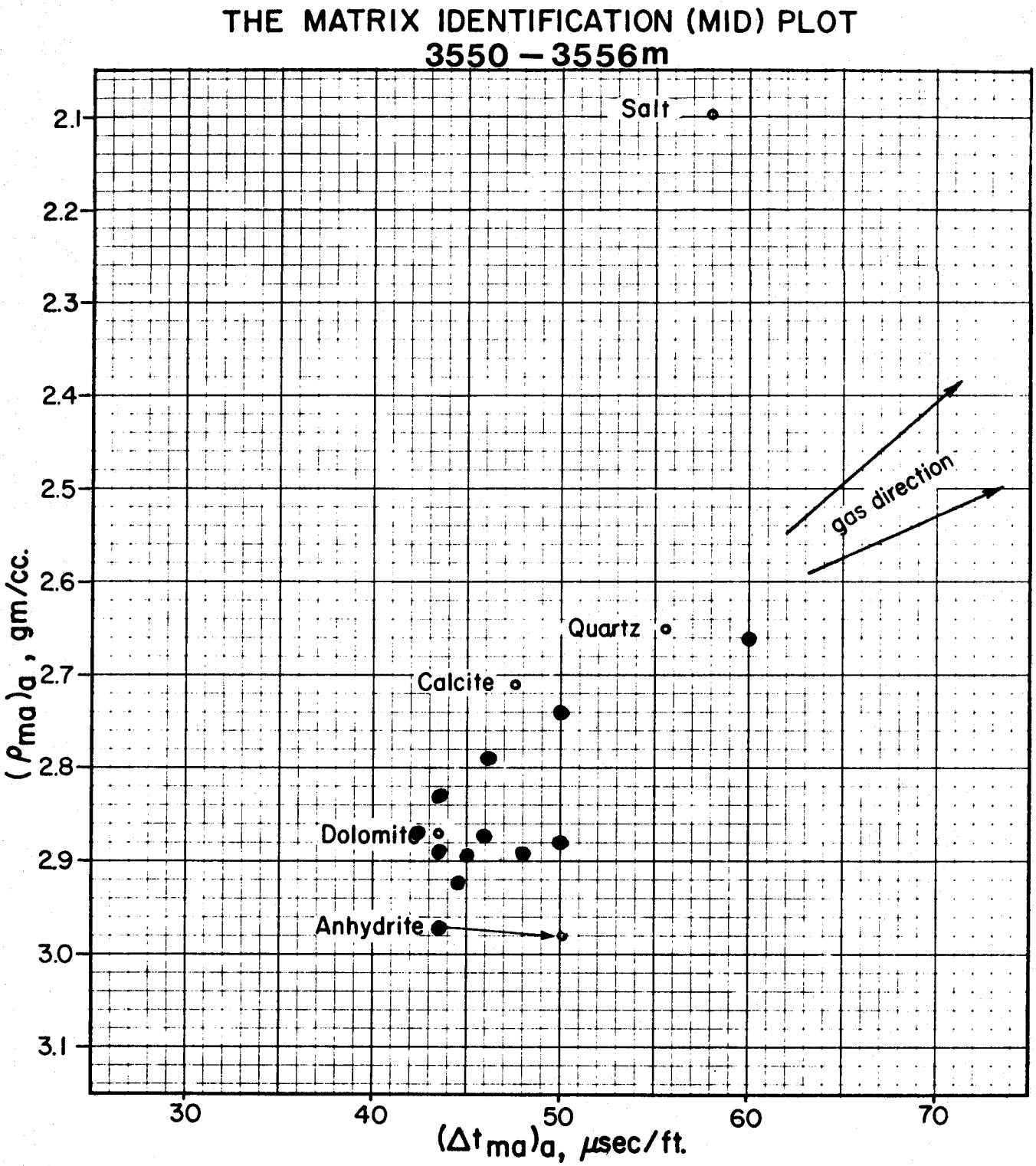


Figure 5

MID Chart 7

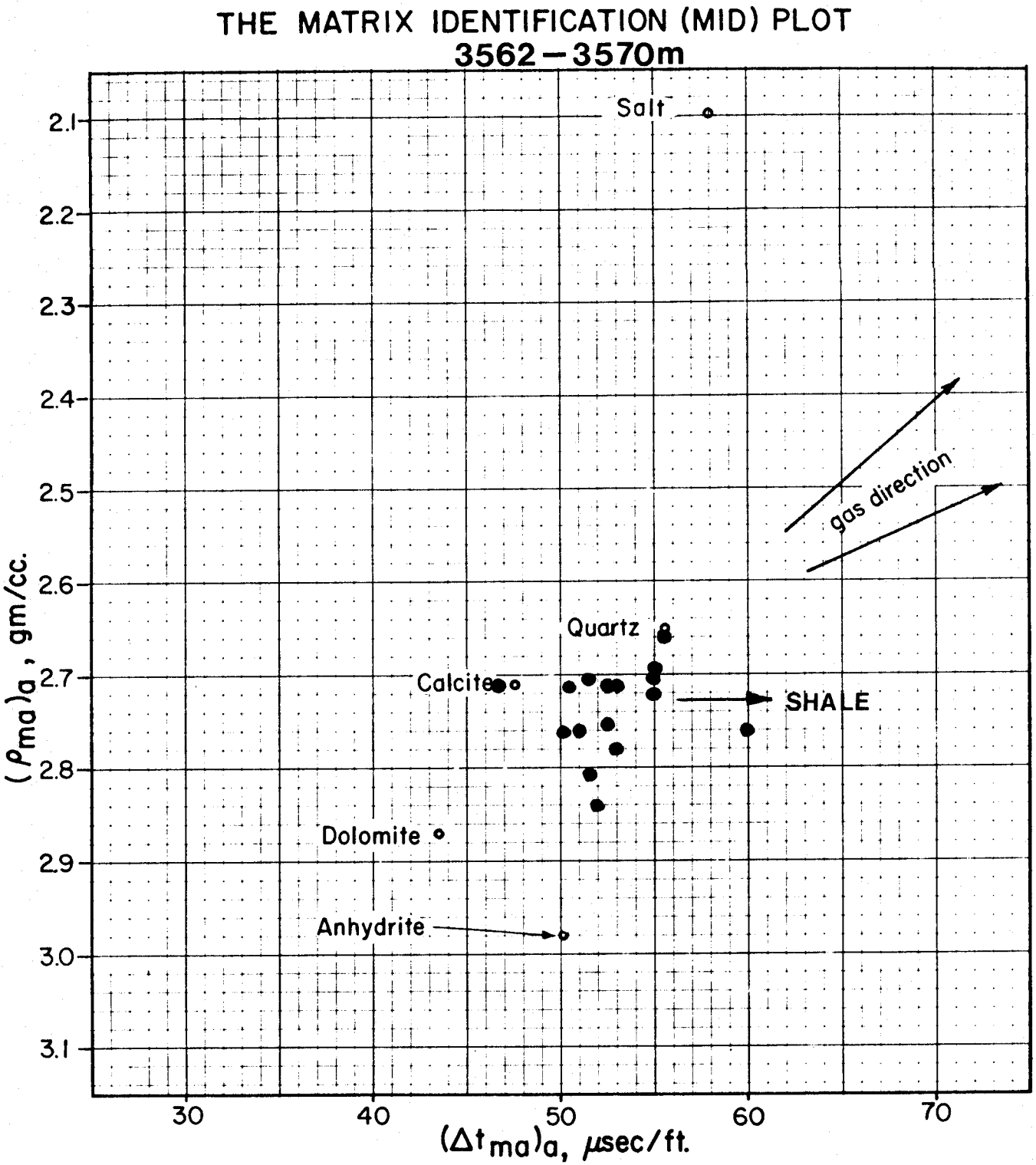


Figure 6

MID Chart 7

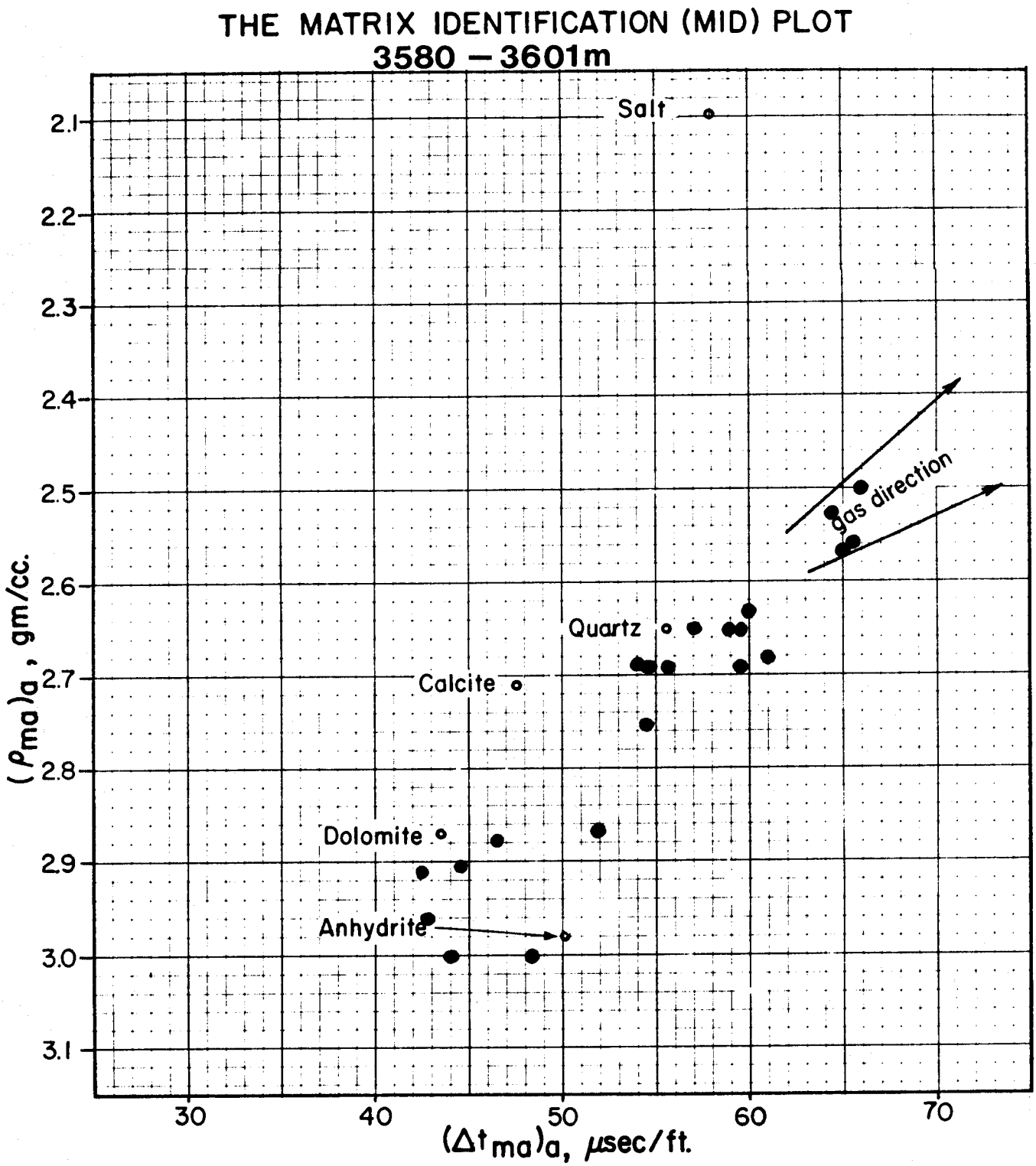


Figure 7

MID Chart 7

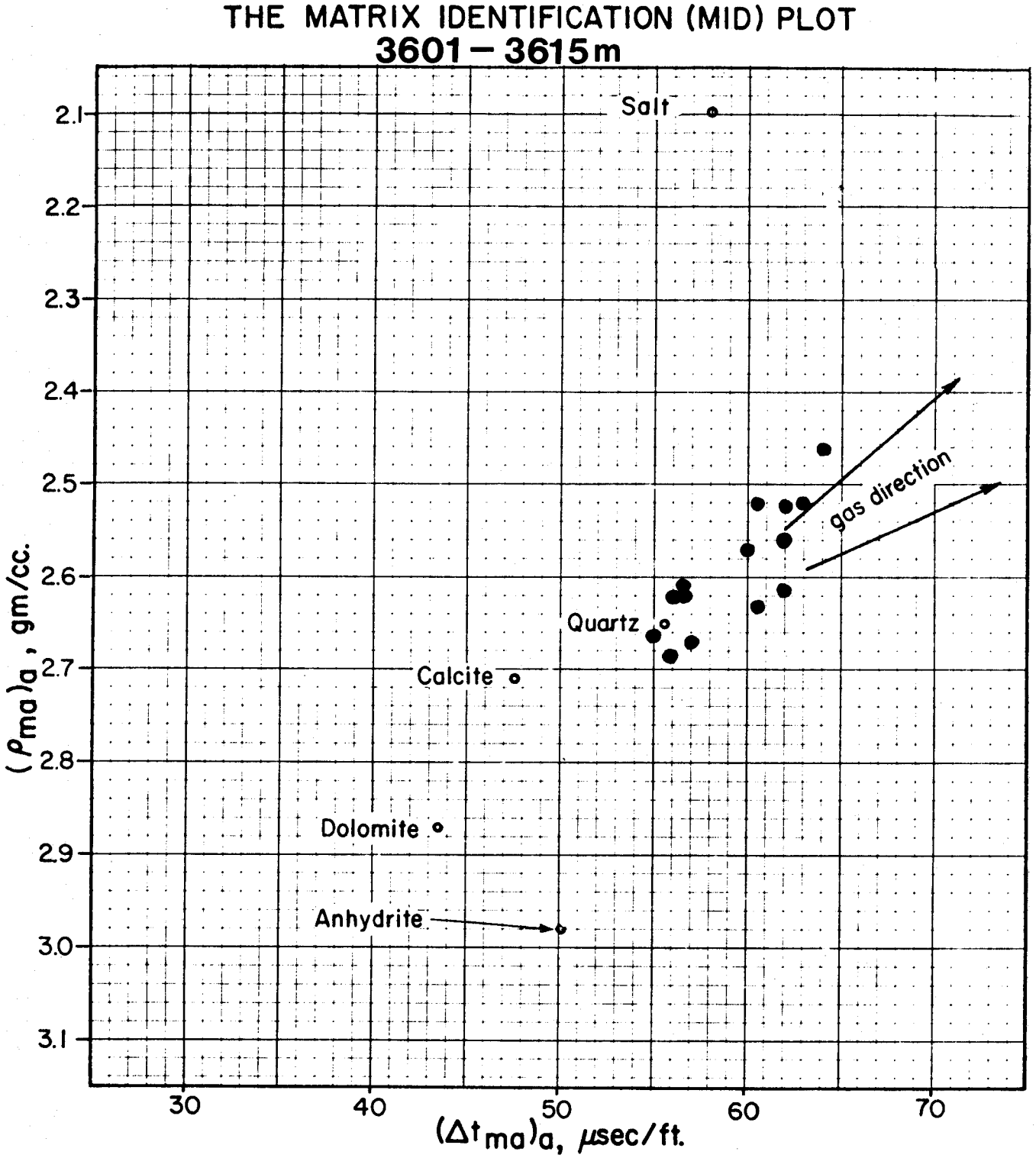


Figure 8

MID Chart 7

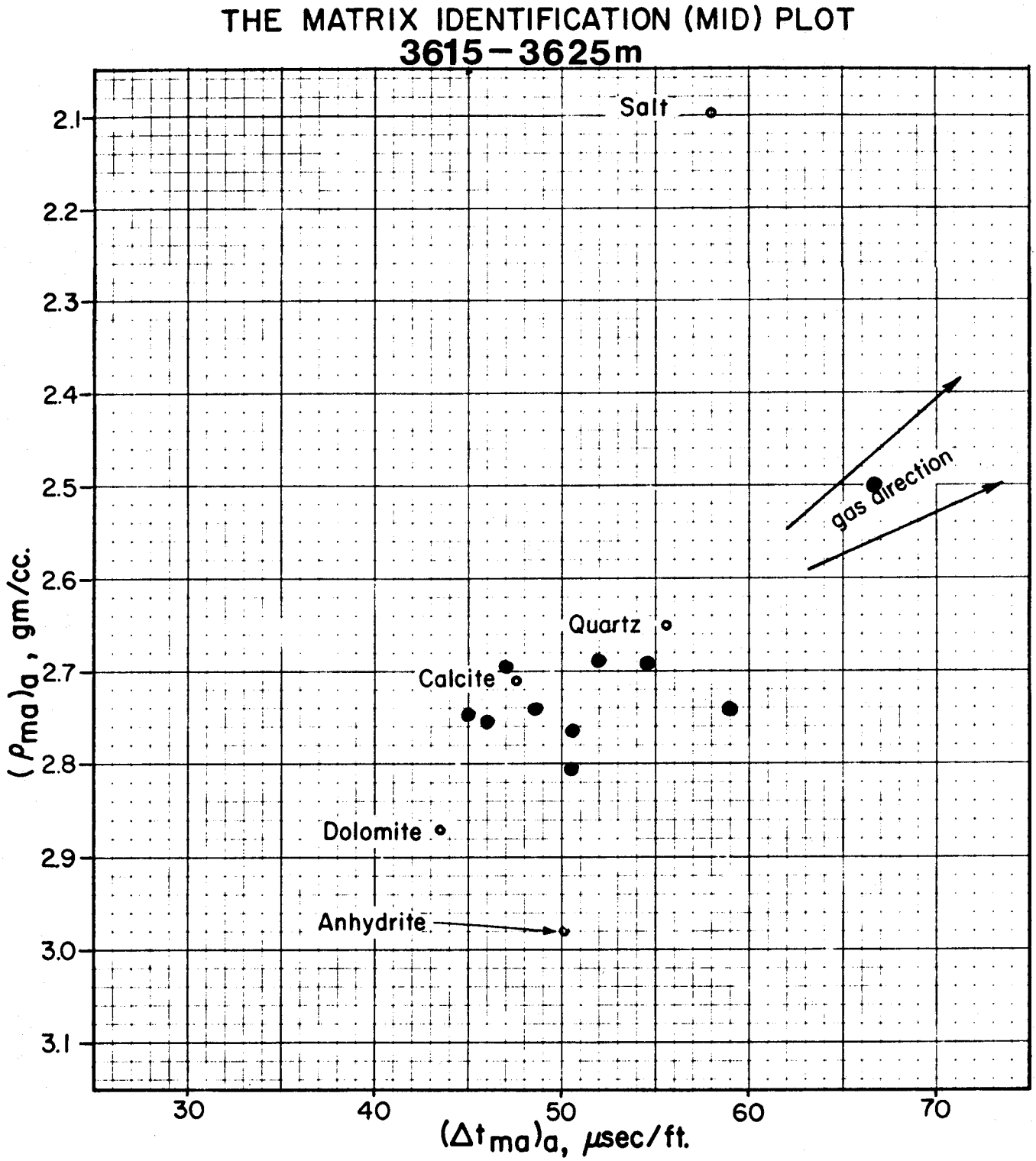


Figure 9

MID Chart 7

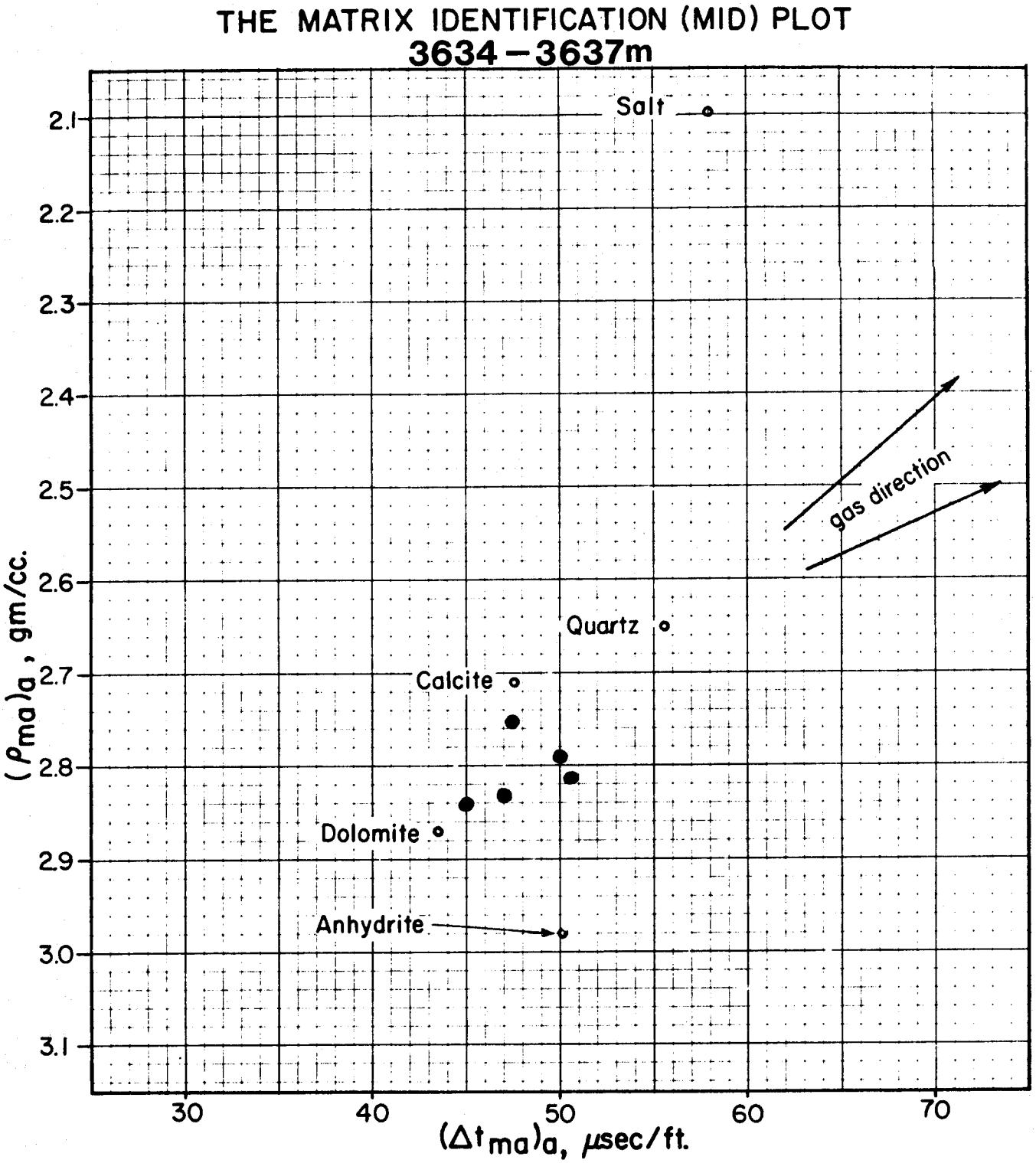


Figure 10

MID Chart 7

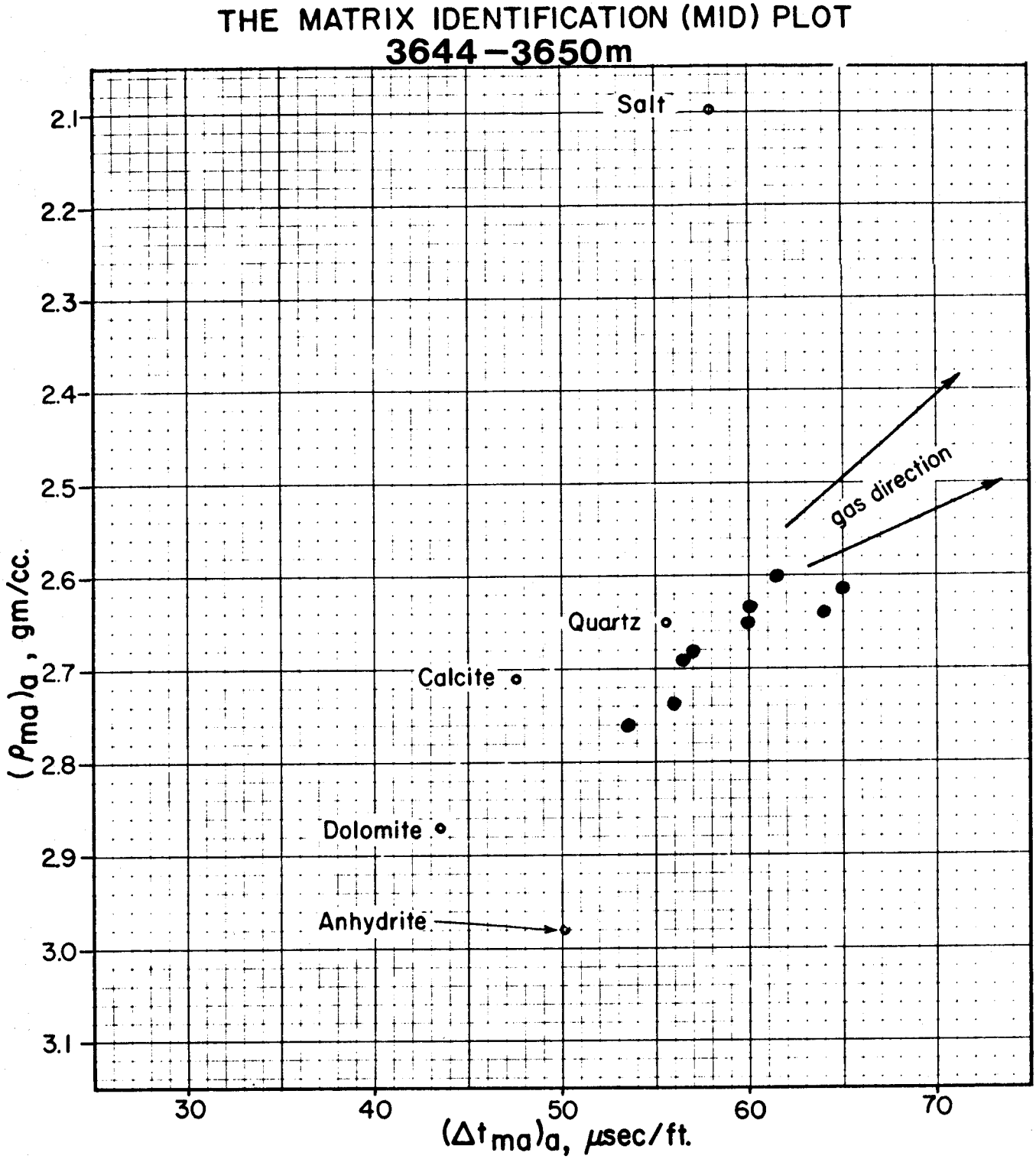


Figure 11

MID Chart 7

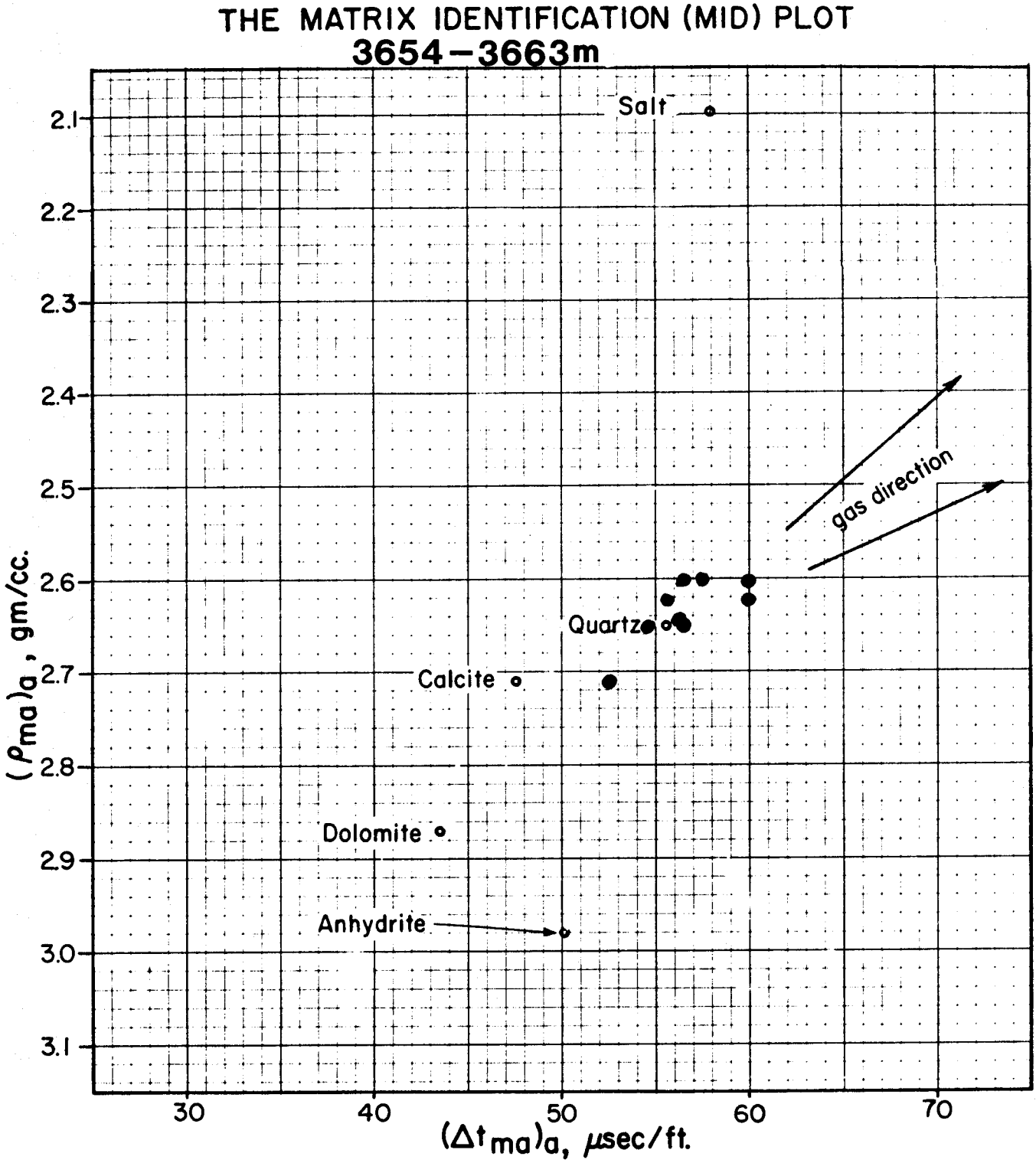


Figure 12

MID Chart 7

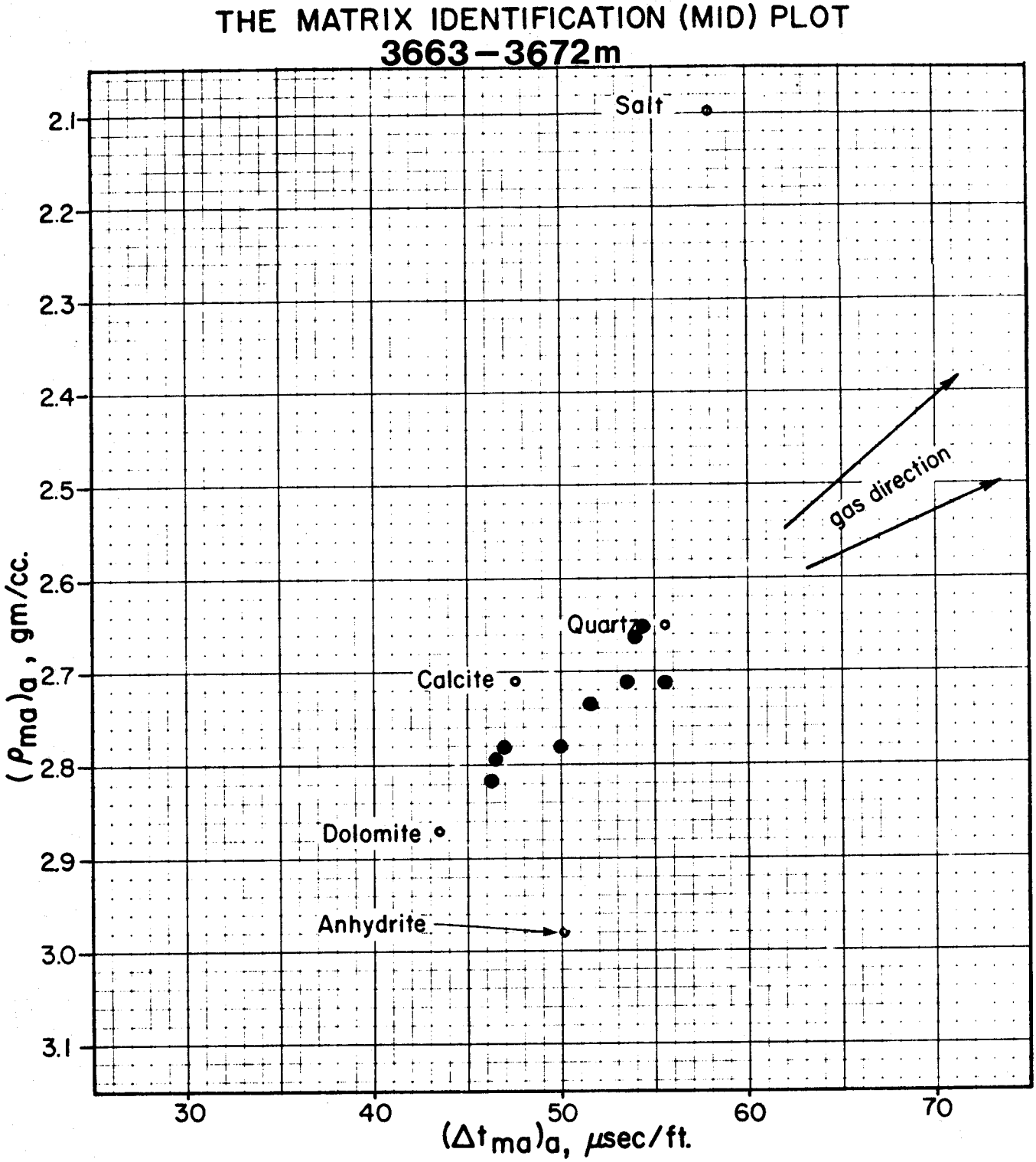
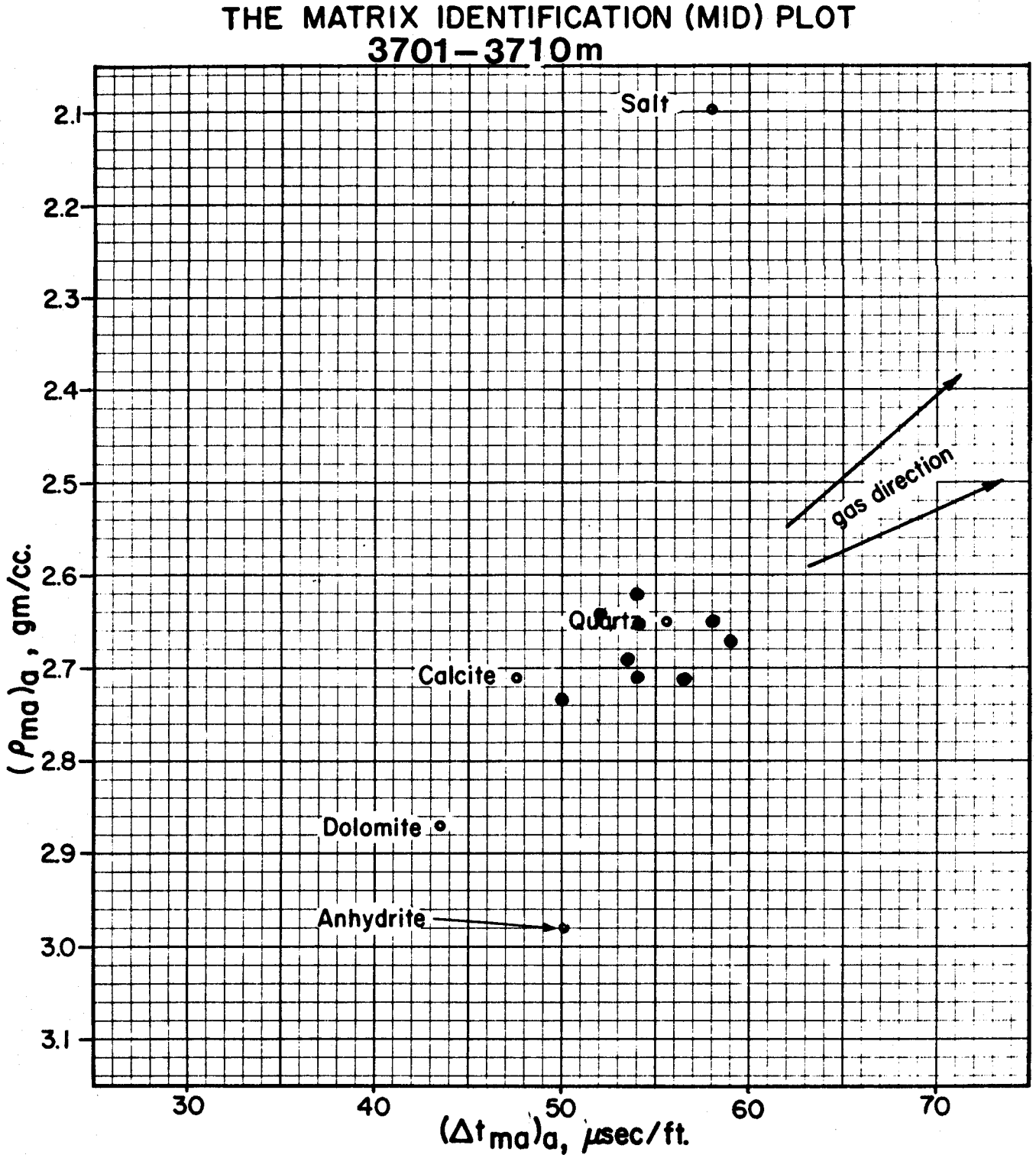
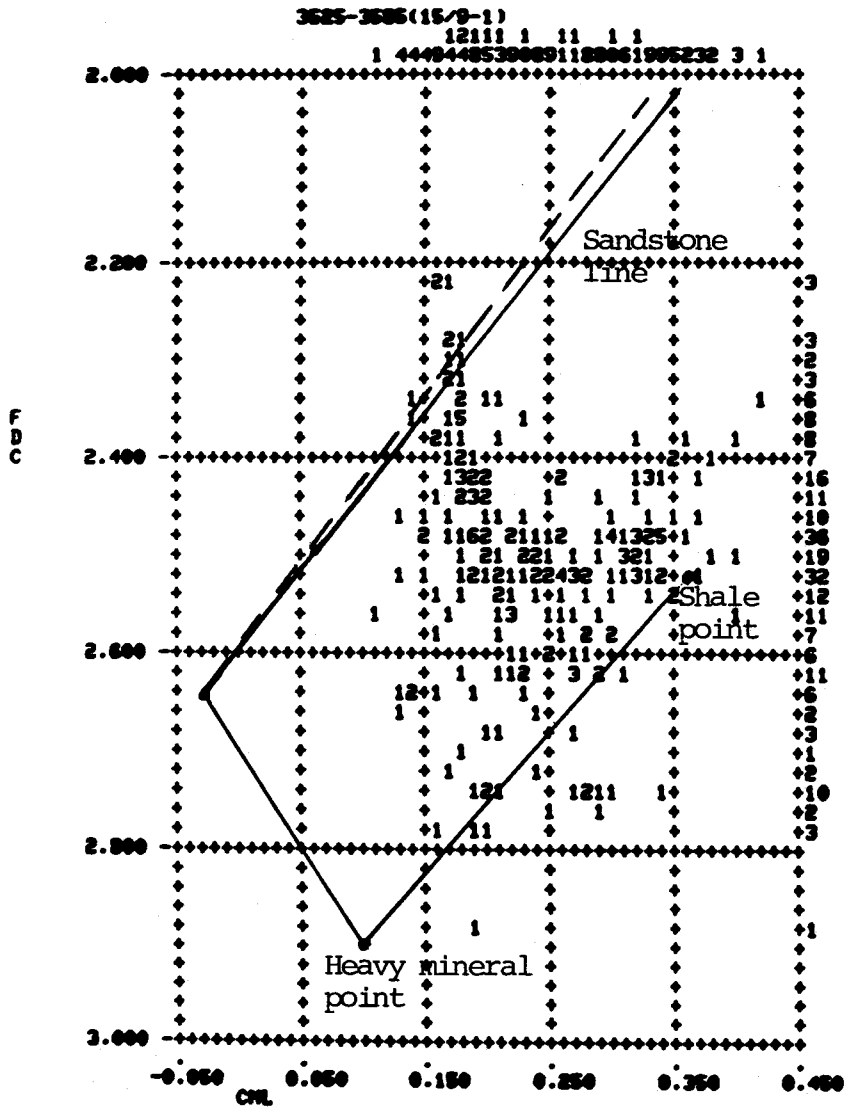


Figure 13

MID Chart 7




3625-3685(15/9-1)
Sandstone line
Shale point
Heavy mineral point
FDC
CNL
2.000
2.200
2.400
2.600
2.800
3.000
-0.060
0.050
0.150
0.250
0.350
0.450

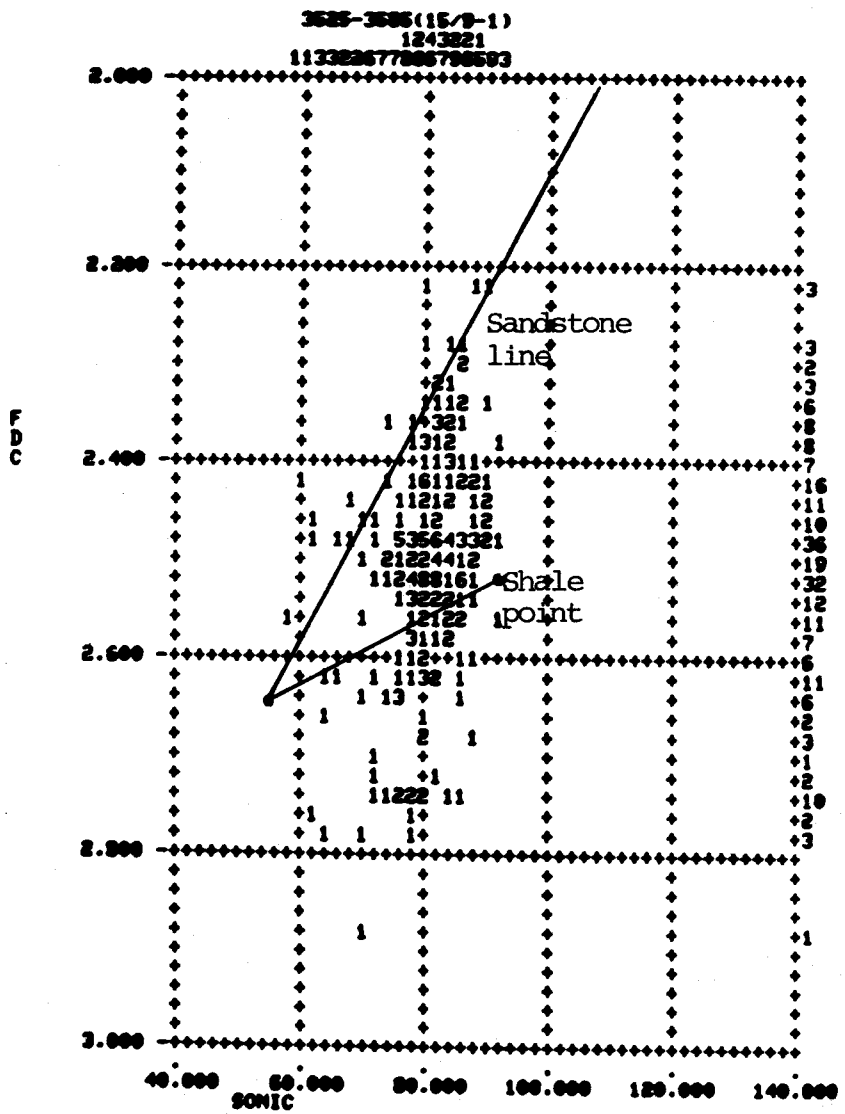
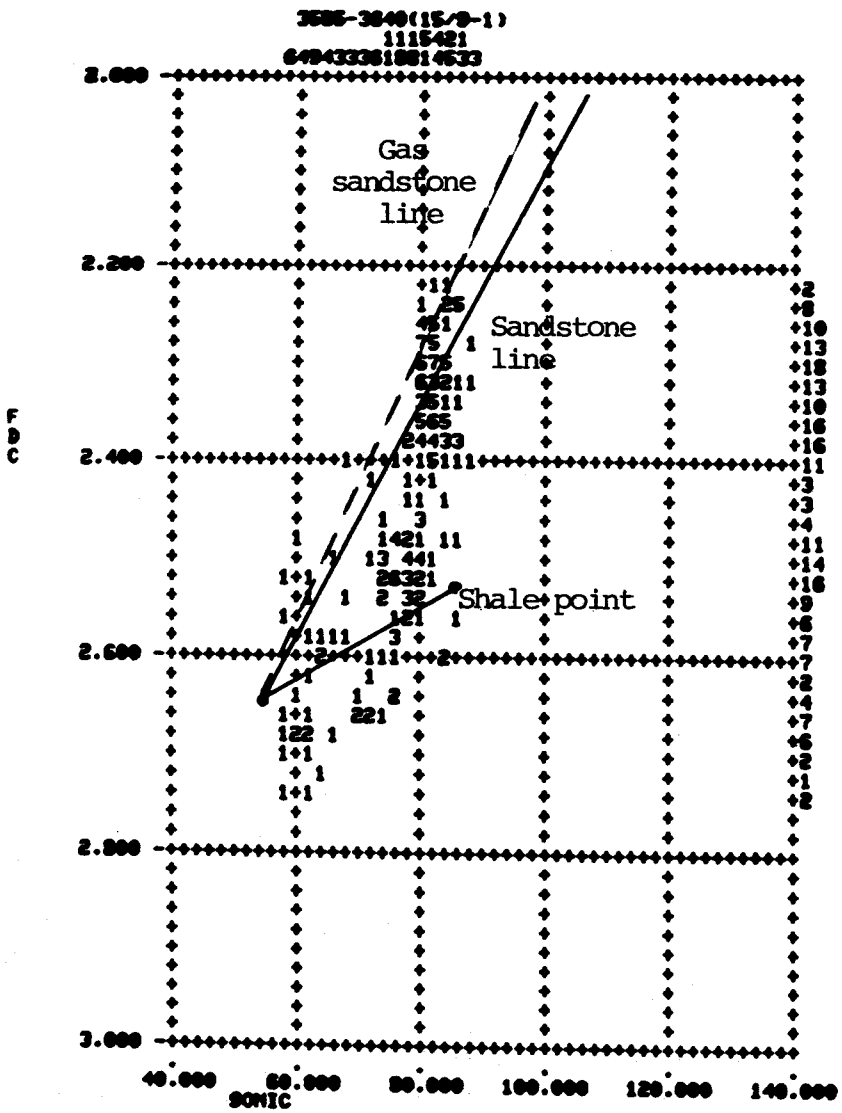

3625-3685(15/9-1)
Sandstone line
Shale point
FDC
SONIC
2.000
2.200
2.400
2.600
2.800
3.000
40.000
60.000
80.000
100.000
120.000
140.000

Figure 14


3585-3840(15/9-1)
FDC
2.000
2.200
2.400
2.600
2.800
3.000
Gas sandstone line
Sandstone line
Shale point
40.000
60.000
80.000
100.000
120.000
140.000
SONIC

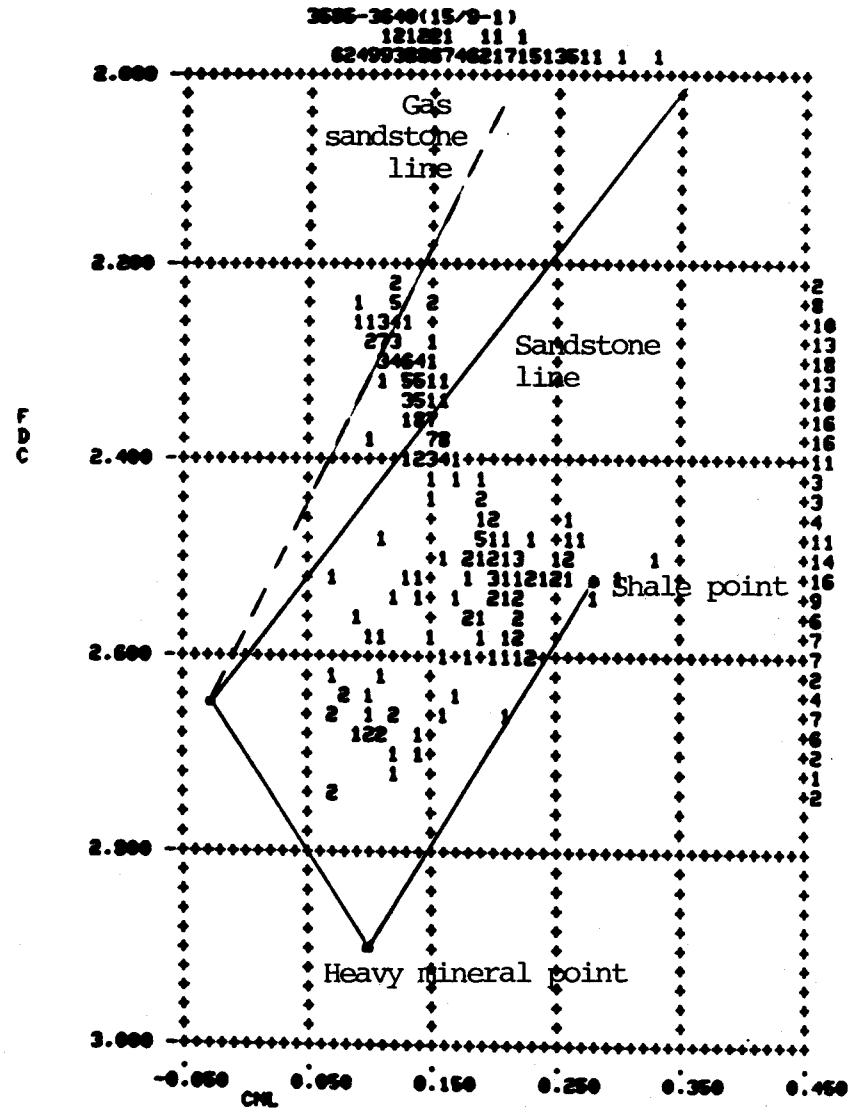
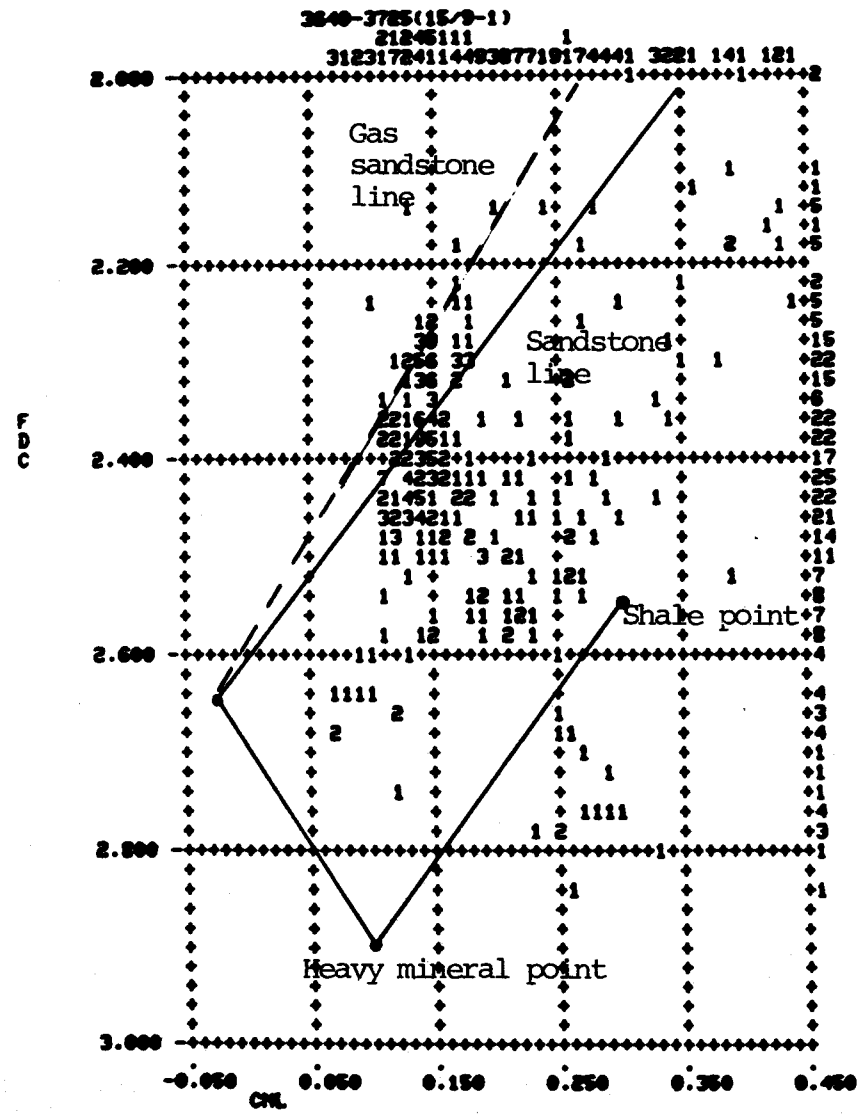

3585-3840(15/9-1)
FDC
2.000
2.200
2.400
2.600
2.800
3.000
Gas sandstone line
Sandstone line
Shale point
Heavy mineral point
-0.050
0.050
0.150
0.250
0.350
0.450
CNL

Figure 15


3840-3785(15/9-1)
Gas
sandstone
line
Sandstone
line
Shale point
Heavy mineral point
FDC
CNL
2.000
2.200
2.400
2.600
2.800
3.000
-0.060
0.050
0.150
0.250
0.350
0.450

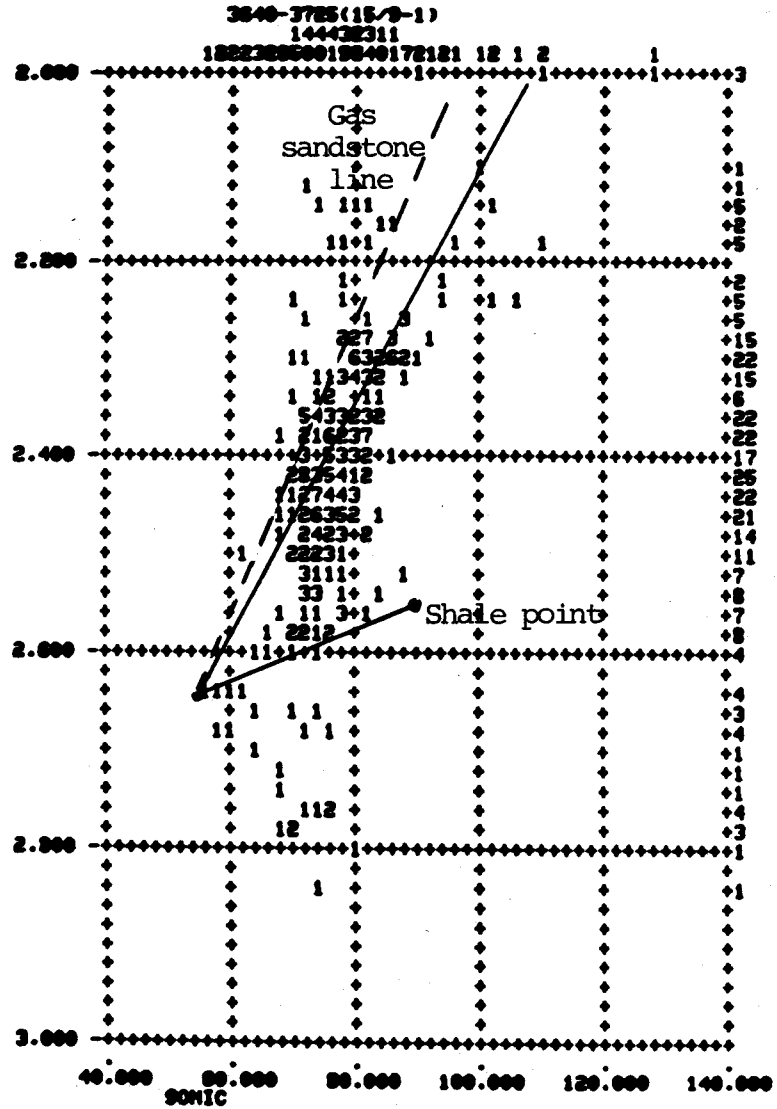

3840-3785(15/9-1)
Gas
sandstone
line
Shale point
FDC
SONIC
2.000
2.200
2.400
2.600
2.800
3.000
40.000
80.000
90.000
100.000
120.000
140.000

Figure 16

Figure 17

VOLUME SHALE INDICATORS

3525 m - 3610m

WELL. 15/9-1

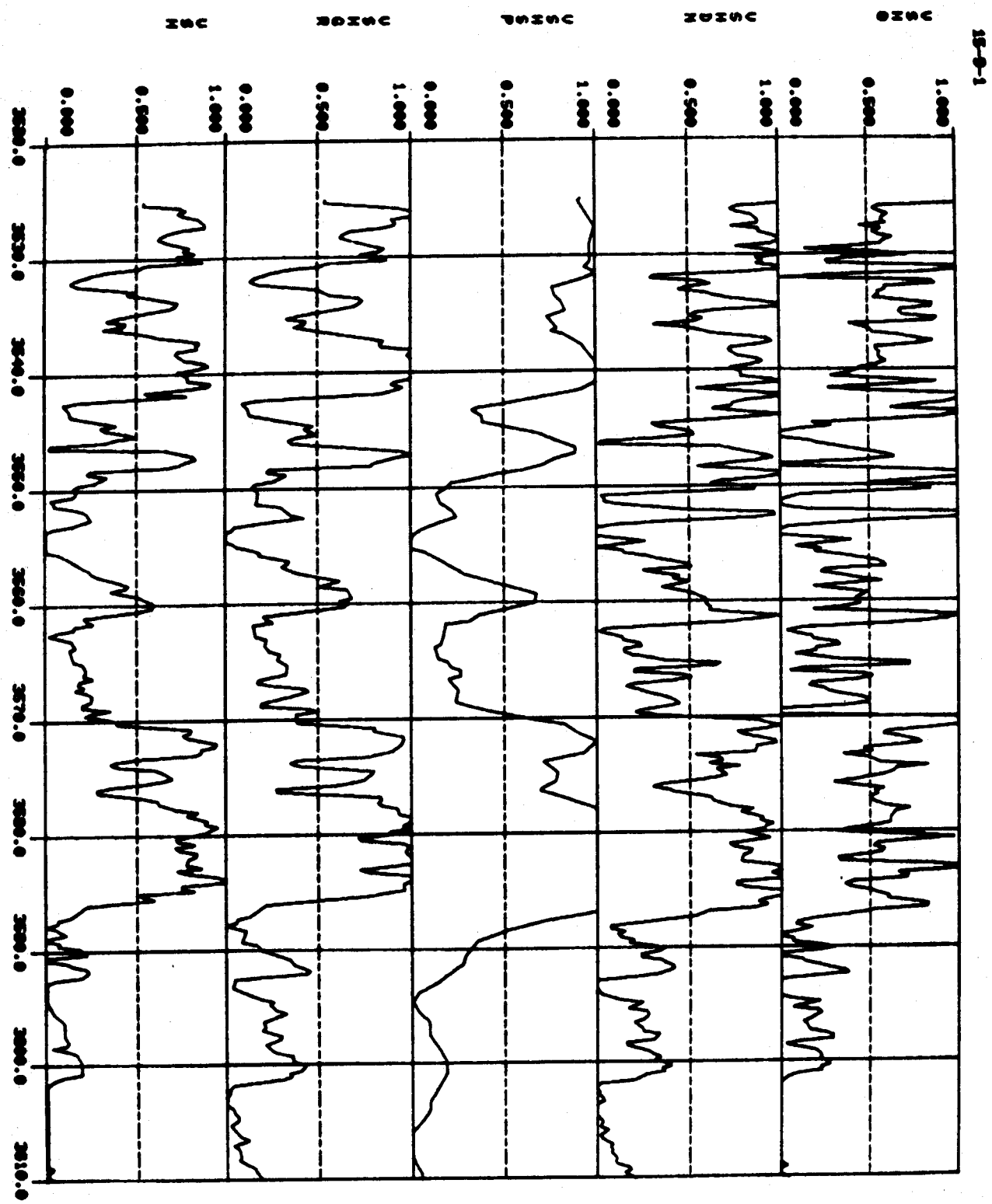


Figure 18

VOLUME SHALE INDICATORS
3610 m - 3700 m
WELL: 15/9-1

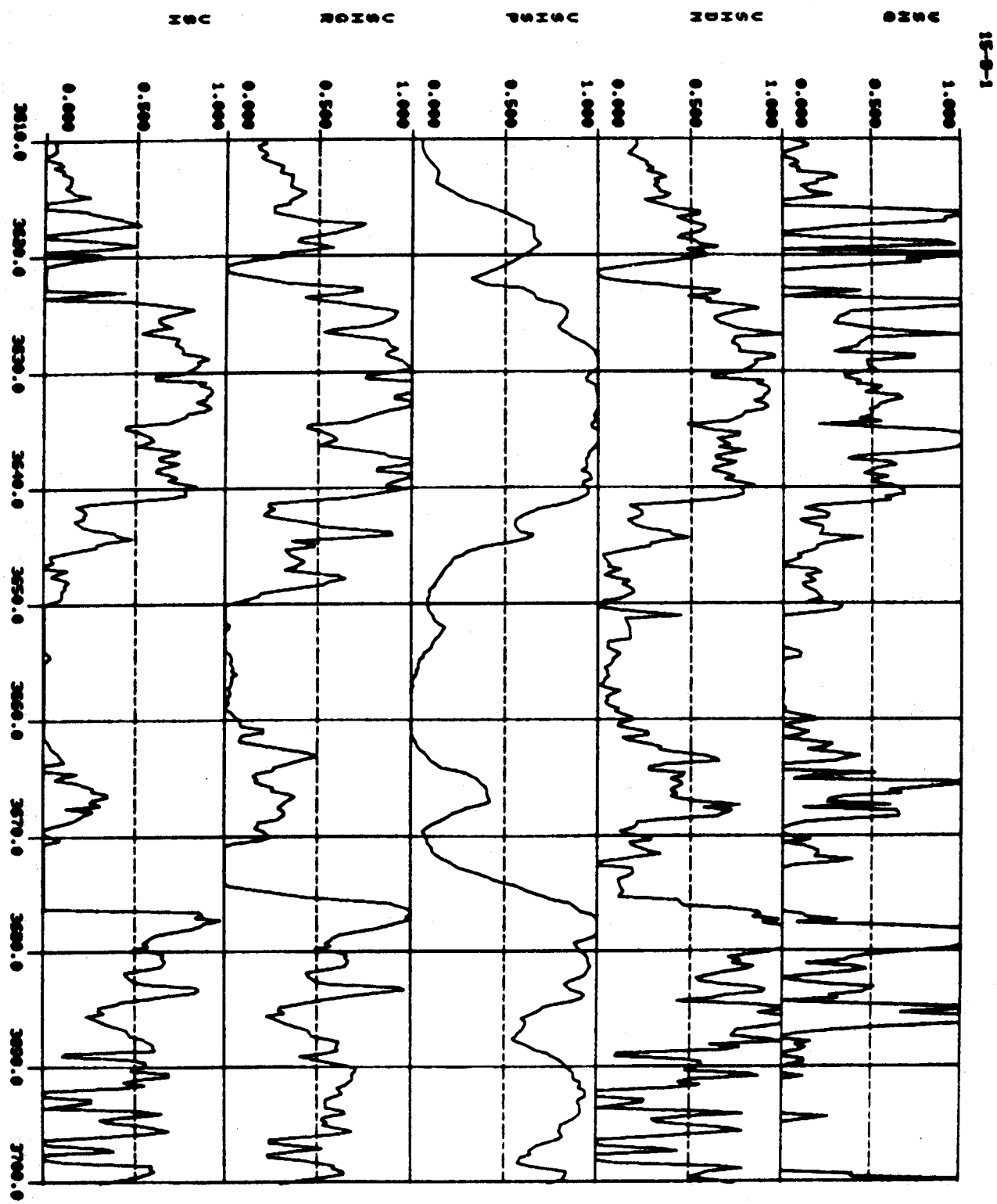


Figure 19

VOLUME SHALE INDICATORS
3700m - 3725 m
Well: 15/9-1

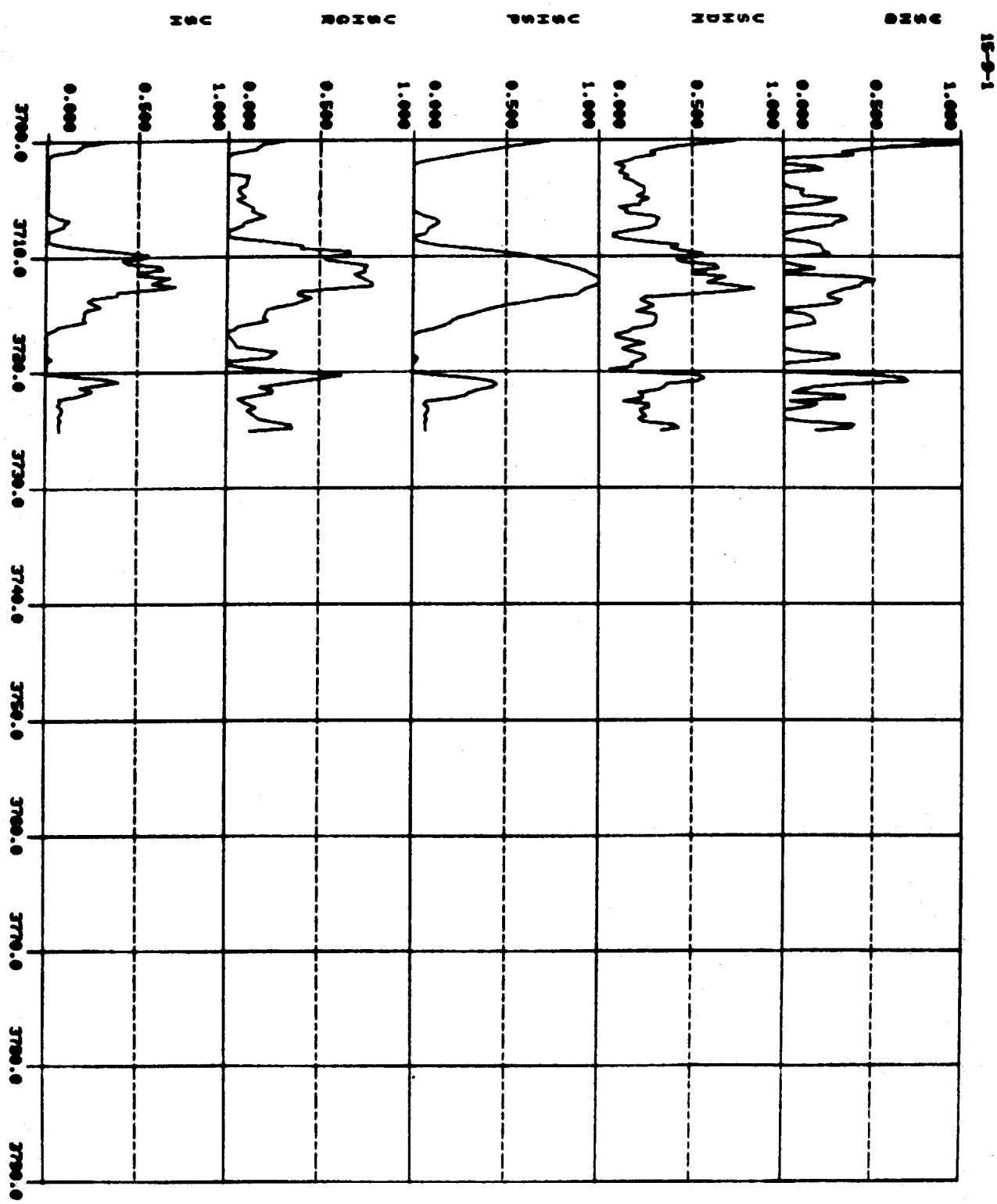
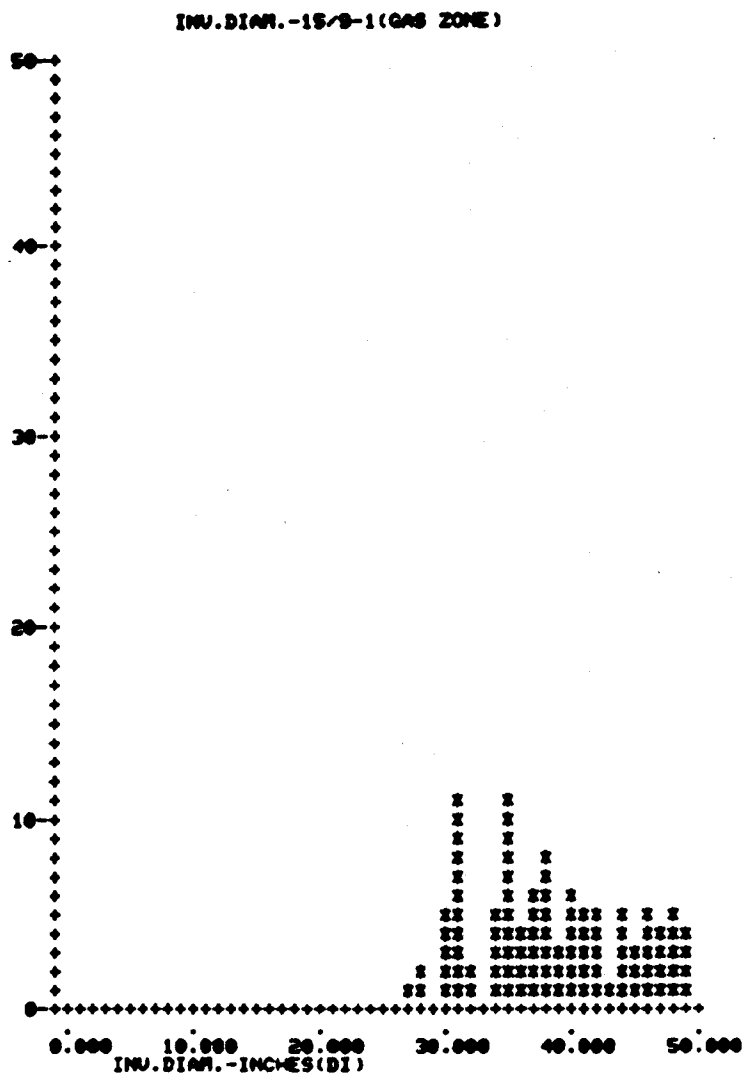


Figure 20

INVASION DIAMETER-Di
IN PERMEABLE HYDROCARBON
ZONES IN WELL 15/9-1



REPEAT FORMATION TESTER PRESSURE TEST SUMMARY							
Test No.	Depth	Pressure	Build-Up Time	Test No.	Depth	Pressure	Build-Up Time
1	3716.5	6485	4 min.	21	3562.5	6254	2.2
2	3708	6485	1.5	22	3563	6263	4.5
3	3703	6466	2.3	23	3553.8	6251	2.5
4	3669	6352	2.8	24	3550.5	6249	2.5
5	3660	6341	2.6	25	3543	-	6.1
6	3658	6338	2.6	26	3531.8	132	2.1
7	3646	6321	2.5	27	3532	-	1.4
8	3642	6320	3.4	28	3546	130	1.2
9	3621.5	6281	2.6	29	3703.3	126	1.5
10	3614	6283	5.0	29a	3703.5	-	-
11	3611.2	6277	2.9	30	3703.5	-	-
12	3607	6275	2.6	32	3703.2	-	-
13	3603	6272	2.6	34	2881.5	-	1.0
14	3598.5	6272	2.9	35	2881.2	-	1.0
15	3595	6269	2.8				
16	3593	6266	2.9				
17	3590	6264	2.6				
18	3588	150	2.3				
19	3589	6262	2.5				
20	3575.7	6259	3.0				

Figure 21

Figure 22

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 31, 33
TEST DEPTH 3703.2, 3702.9

RECOVERY DATA
Gas (Total) - cuft
Condensate - cc
Oil - cc
Water 10400 cc
Mud - cc
Sand - cc

FORMATION AND LOG DATA
Formation
Porosity %
Rt @ °F
Rw @ °F
Chart NaCl ppm
Titrated Cl ppm
Water Saturation %

PRESSURE DATA
Initial Shut in - psi
Shut In Time - mins
Sampling psi
Sampling Time 13, 18 mins
Final Shut In 6379, 6436 psi
Shut In Time - mins
Hydrostatic 7412/7399 psi
Surface Chamber - psi

RECOVERY ANALYSIS
Free Gas - cuft
Oil
API Gravity - °@ - °F
GOR -
Water
Rrf (filtered) 0.249 @ 16.5°C
Chart NaCl 34,000 ppm
Titrated Cl ppm
Formation Water %

MUD FILTRATE DATA
Rmf 0.226 @ 60 °F
Chart NaCl 25,000 ppm
Titrated Cl ppm

TOOL DATA
Sample Unit Size 2 3/4 Gall cc
Choke Size 4 x 0.020
Probe Filter COMBO
Restrictor ☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS First tried to fill 2 3/4 Gall. Chamber at 30703.2 for 13 mins.
Reset tool at 3702.9, and filled both chambers.

GAS ANALYSIS
Free Gas Cuft
Solution Gas Cuft
Total Gas Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 33
TEST DEPTH 3702.9

RECOVERY DATA
Gas (Total) - cuft
Condensate - cc
Oil - cc
Water 3600 cc
Mud - cc
Sand - cc

FORMATION AND LOG DATA
Formation
Porosity %
Rt @ °F
Rw @ °F
Chart NaCl ppm
Titrated Cl ppm
Water Saturation %

PRESSURE DATA
Initial Shut in - psi
Shut In Time - mins
Sampling - psi
Sampling Time 13 mins
Final Shut In 6436 psi
Shut In Time 2 mins
Hydrostatic 7399 psi
Surface Chamber - psi

RECOVERY ANALYSIS
Free Gas - cuft
Oil
API Gravity - °@ - °F
GOR
Water
Rrf (filtered) 0.231 @ 16.5°C
Chart NaCl 31,000 ppm
Titrated Cl ppm
Formation Water %

MUD FILTRATE DATA
Rmf 0.226 @ 60 °F
Chart NaCl 25,000 ppm
Titrated Cl ppm

TOOL DATA
Sample Unit Size 1 Gall cc
Choke Size 4 x 0.020
Probe Filter COMBO
Restrictor ☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS Segregated Sample

GAS ANALYSIS
Free Gas Cuft
Solution Gas Cuft
Total Gas Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 36
TEST DEPTH 3658

RECOVERY DATA
Gas (Total) 0.4 cuft
Condensate Trace cc
Oil " cc
Water 10,000 cc
Mud cc
Sand cc

FORMATION AND LOG DATA
Formation
Porosity %
Rt @ °F
Rw @ °F
Chart NaCl ppm
Titrated Cl ppm
Water Saturation %

PRESSURE DATA
Initial Shut in 6336 psi
Shut In Time 1 mins
Sampling 5599 psi
Sampling Time 7.5 mins
Final Shut In 6328 psi
Shut In Time 2.5 mins
Hydrostatic 7308 psi
Surface Chamber 400 psi

RECOVERY ANALYSIS
Free Gas 0.4 cuft
Oil
API Gravity °@ °F
GOR
Water
Rrf (filtered) 0.226 @ 19 °C
Chart NaCl 26,000 ppm
Titrated Cl ppm
Formation Water %

MUD FILTRATE DATA
Rmf 0.226 @ °F
Chart NaCl 25,000 ppm
Titrated Cl ppm

TOOL DATA
Sample Unit Size 2 3/4 cc
Choke Size 4 x 0.020
Probe Filter COMBO
Restrictor ☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS

GAS ANALYSIS
Free Gas Cuft
Solution Gas Cuft
Total Gas Cuft

Figure 23

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 37
TEST DEPTH 3646

RECOVERY DATA

Gas (Total)	10.5 cuft
Condensate	Trace cc
Oil	Trace cc
Water	2,500 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	@ °F
Rw	@ °F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut in	6320 psi
Shut In Time	0.5 mins
Sampling	5638 psi
Sampling Time	4 mins
Final Shut In	6316 psi
Shut In Time	4 mins
Hydrostatic	7289 psi
Surface Chamber	2600 psi

RECOVERY ANALYSIS

Free Gas	10.5 cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.295 @ 16 °C
Chart NaCl	24000 ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.226 @ 60 °F
Chart NaCl	25,000 ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	1 Gall cc
Choke Size	4 x 0.020
Probe Filter	COMBO
Restrictor	☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS _____

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 38
TEST DEPTH 3621.5

RECOVERY DATA

Gas (Total)	75.5 cuft
Condensate	500 cc
Oil	Trace cc
Water	2,000 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	@ °F
Rw	@ °F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut in	6277 psi
Shut In Time	0.5 mins
Sampling	5678 psi
Sampling Time	14 mins
Final Shut In	6272 psi
Shut In Time	0.5 mins
Hydrostatic	7233 psi
Surface Chamber	2400 psi

RECOVERY ANALYSIS

Free Gas	75.5 cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.313 @ 18 °C
Chart NaCl	23,000 ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.226 @ 0 °F
Chart NaCl	25,000 ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	2 3/4 cc
Choke Size	4 x 0.020
Probe Filter	COMBO
Restrictor	☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS _____

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 39
TEST DEPTH 3593

RECOVERY DATA

Gas (Total)	8.2 cuft
Condensate	Trace cc
Oil	Trace cc
Water	2,800 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	@ °F
Rw	@ °F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut in	6270 psi
Shut In Time	0.5 mins
Sampling	5860 psi
Sampling Time	6 mins
Final Shut In	6268 psi
Shut In Time	1.3 mins
Hydrostatic	7184 psi
Surface Chamber	2400 psi

RECOVERY ANALYSIS

Free Gas	cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.254 @ 17 °C
Chart NaCl	28,000 ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.226 @ 66 °F
Chart NaCl	25,000 ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	1 Gall cc
Choke Size	4 x 0.020
Probe Filter	COMBO
Restrictor	☐ Yes ☒ No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS _____

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

Figure 24

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 41
TEST DEPTH 3669

RECOVERY DATA*

Gas (Total)	0.2	cuft
Condensate	-	cc
Oil	-	cc
Water	10,000	cc
Mud	-	cc
Sand	-	cc

FORMATION AND LOG DATA

Formation		
Porosity		%
Rt	@	°F
Rw	@	°F
Chart NaCl		ppm
Titrated Cl		ppm
Water Saturation		%

PRESSURE DATA

Initial Shut in	6353	psi
Shut In Time	0.5	mins
Sampling	6330	psi
Sampling Time	14	mins
Final Shut In	6334	psi
Shut In Time	0.7	mins
Hydrostatic	See below	psi
Surface Chamber	400	psi

RECOVERY ANALYSIS

Free Gas	0.2	cuft
Oil		
API Gravity	°@	°F
GOR		
Water		
Rrf (filtered)	0.268 @ 17	°C
Chart NaCl	27,500	ppm
Titrated Cl		ppm
Formation Water		%

MUD FILTRATE DATA

Rmf	0.226 @ 60	°F
Chart NaCl	25,000	ppm
Titrated Cl		ppm

TOOL DATA

Sample Unit Size	2 3/4 C.	cc
Choke Size	4 x 0.020	
Probe Filter	COMBO	
Restrictor	[ ] Yes [X] No	

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS Initial Hydrostatic 7342
Final Hydrostatic 7329.

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 42
TEST DEPTH 35538

RECOVERY DATA

Gas (Total)	3.3	cuft
Condensate	-	cc
Oil	-	cc
Water	3,300	cc
Mud	-	cc
Sand	-	cc

FORMATION AND LOG DATA

Formation		
Porosity		%
Rt	@	°F
Rw	@	°F
Chart NaCl		ppm
Titrated Cl		ppm
Water Saturation		%

PRESSURE DATA

Initial Shut in	6263	psi
Shut In Time	0.5	mins
Sampling	6040	psi
Sampling Time	5	mins
Final Shut In	6261	psi
Shut In Time	2	mins
Hydrostatic	7115	psi
Surface Chamber	1600	psi

RECOVERY ANALYSIS

Free Gas	3.3	cuft
Oil		
API Gravity	°@	°F
GOR		
Water		
Rrf (filtered)	0.245 @ 14	°C
Chart NaCl	27,000	ppm
Titrated Cl		ppm
Formation Water		%

MUD FILTRATE DATA

Rmf	0.226 @ 60	°F
Chart NaCl	25,000	ppm
Titrated Cl		ppm

TOOL DATA

Sample Unit Size	1 Coil	cc
Choke Size	4x0.020	
Probe Filter	COMBO	
Restrictor	[ ] Yes [X] No	

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS _____

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 43
TEST DEPTH 3725.5

RECOVERY DATA

Gas (Total)	-	cuft
Condensate	-	cc
Oil	18,800	cc
Water	-	cc
Mud	-	cc
Sand		cc

FORMATION AND LOG DATA

Formation		
Porosity		%
Rt	@	°F
Rw	@	°F
Chart NaCl		ppm
Titrated Cl		ppm
Water Saturation		%

PRESSURE DATA

Initial Shut in	6499	psi
Shut In Time	0.5	mins
Sampling	1900	psi
Sampling Time	16	mins
Final Shut In	6452	psi
Shut In Time	2.5	mins
Hydrostatic	-	psi
Surface Chamber	200	psi

RECOVERY ANALYSIS

Free Gas	-	cuft
Oil		
API Gravity	°@	°F
GOR		
Water		
Rrf (filtered)	0.267 @ 59	°F
Chart NaCl		ppm
Titrated Cl		ppm
Formation Water		%

MUD FILTRATE DATA

Rmf	0.226 @ 60	°F
Chart NaCl	25,000	ppm
Titrated Cl		ppm

TOOL DATA

Sample Unit Size	5½ Coil	cc
Choke Size		
Probe Filter	COMBO	
Restrictor	[X] Yes [ ] No	

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH.

REMARKS See segregated sample below.

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

Figure 25

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 43 (Seg.)
TEST DEPTH 3725.5

RECOVERY DATA

Gas (Total)	- cuft
Condensate	- cc
Oil	- cc
Water	3,600 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	F
Rw	F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut In	- psi
Shut In Time	- mins
Sampling	1900 psi
Sampling Time	4 mins
Final Shut In	6462 psi
Shut In Time	0.5 mins
Hydrostatic	See below psi
Surface Chamber	0 psi

RECOVERY ANALYSIS

Free Gas	- cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.277 @ 59 °F
Chart NaCl	ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.226 @ 60 F
Chart NaCl	25,000 ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	1 Call cc
Choke Size	-
Probe Filter	COMBO
Restrictor	[x] Yes [ ] No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH

REMARKS Segregated sample.
Initial Hydrostatic 7457
Final Hydrostatic 7446

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 44
TEST DEPTH 3603

RECOVERY DATA

Gas (Total)	3 cuft
Condensate	Trace cc
Oil	Trace cc
Water	18,500 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	F
Rw	F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut in	6787 psi
Shut In Time	1 mins
Sampling	2500 psi
Sampling Time	5 mins
Final Shut In	6273 psi
Shut In Time	1.5 mins
Hydrostatic	See below psi
Surface Chamber	800 psi

RECOVERY ANALYSIS

Free Gas	3 cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.536 @ 18 °C
Chart NaCl	12,500 ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.226 @ 60 F
Chart NaCl	25,000 ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	5' Call cc
Choke Size	-
Probe Filter	COMBO
Restrictor	[x] Yes [ ] No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH

REMARKS Initial Hydrostatic 7208
Final Hydrostatic 7198.

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

REPEAT FORMATION TESTER RECOVERY AND INTERPRETATION DATA

FORMATION TEST NO. 45
TEST DEPTH 3550.5

RECOVERY DATA

Gas (Total)	2 cuft
Condensate	Trace cc
Oil	Trace cc
Water	3,200 cc
Mud	- cc
Sand	- cc

FORMATION AND LOG DATA

Formation	
Porosity	%
Rt	F
Rw	F
Chart NaCl	ppm
Titrated Cl	ppm
Water Saturation	%

PRESSURE DATA

Initial Shut in	6263 psi
Shut In Time	0.5 mins
Sampling	4970 psi
Sampling Time	4.5 mins
Final Shut In	6261 psi
Shut In Time	2 mins
Hydrostatic	7107 psi
Surface Chamber	1200 psi

RECOVERY ANALYSIS

Free Gas	2 cuft
Oil	
API Gravity	°@ °F
GOR	
Water	
Rrf (filtered)	0.251 @ 16 C
Chart NaCl	30,000 ppm
Titrated Cl	ppm
Formation Water	%

MUD FILTRATE DATA

Rmf	0.224 @ 60 F
Chart NaCl	ppm
Titrated Cl	ppm

TOOL DATA

Sample Unit Size	1 Call cc
Choke Size	-
Probe Filter	COMBO
Restrictor	[x] Yes [ ] No

RESULTS INDICATE THAT _____ MAY BE EXPECTED AT THIS DEPTH

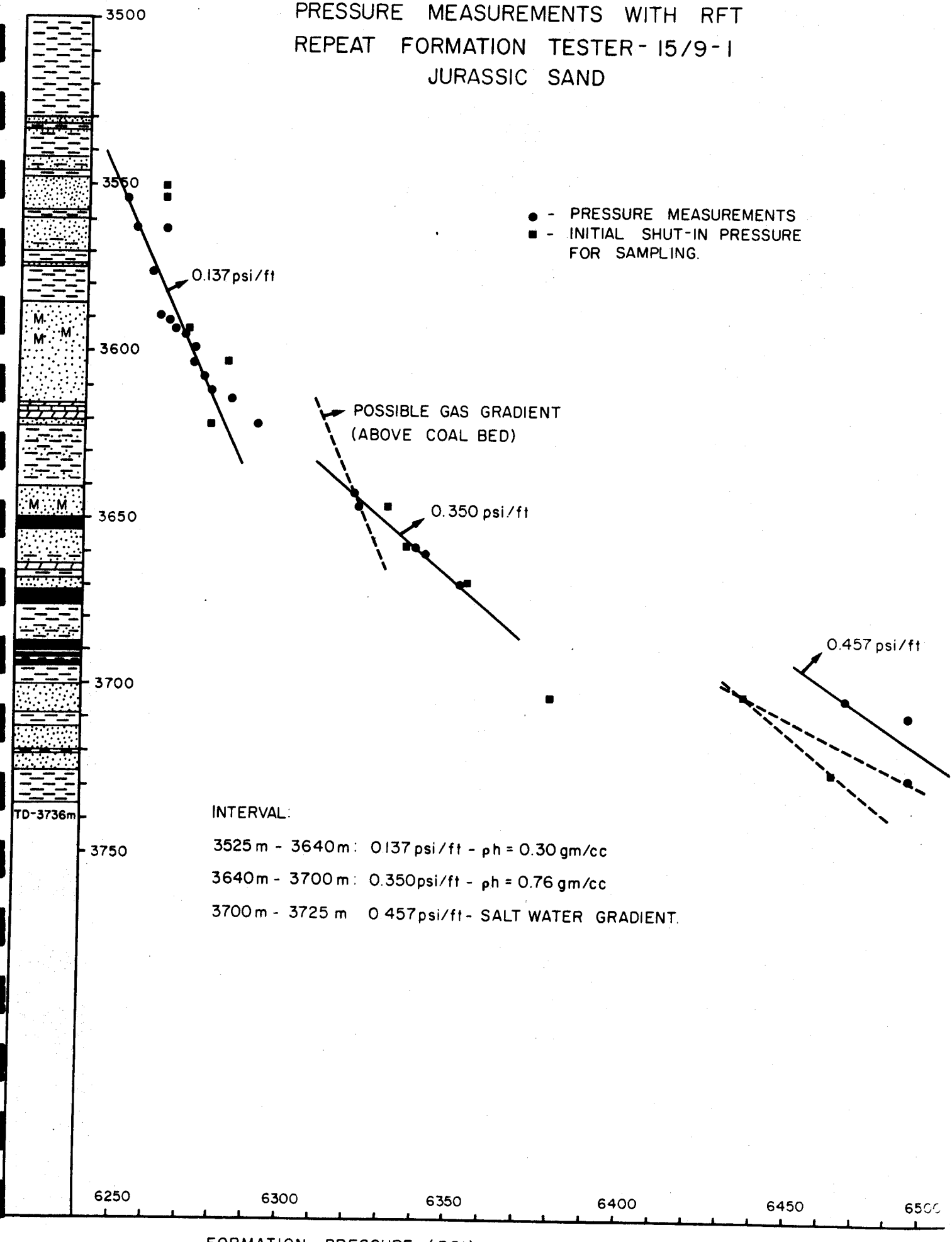
REMARKS _____

GAS ANALYSIS

Free Gas	Cuft
Solution Gas	Cuft
Total Gas	Cuft

FIGURE 26

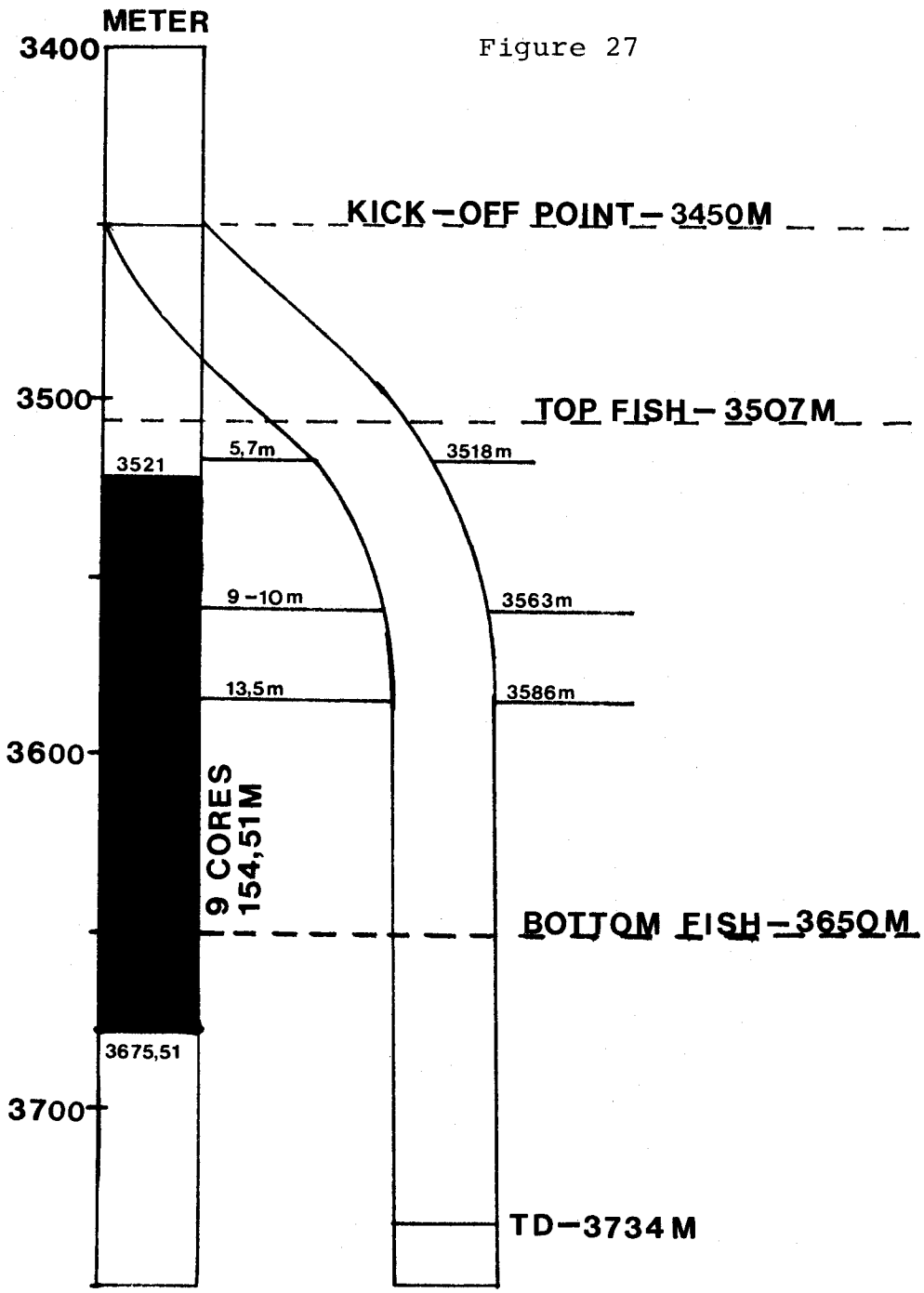
PRESSURE MEASUREMENTS WITH RFT REPEAT FORMATION TESTER - 15/9-1 JURASSIC SAND



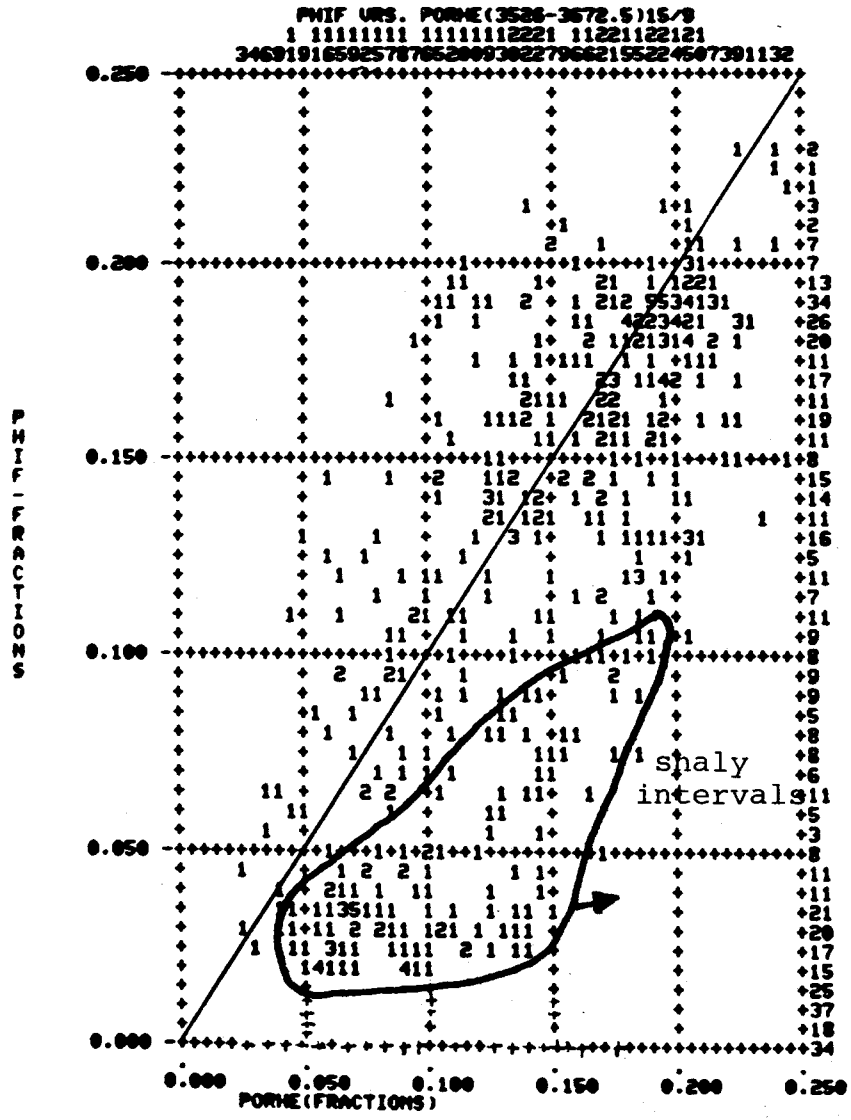
SIDETRACKING AFTER CORING

WELL 15/9–1

Figure 27



AVERAGE DRIFT ANGLE: 3-31/2°
IN THE NORTH–EAST DIRECTION.


PHIF VRS. PORHE(3526-3672.5)15/8
PHIF(FRACTIONS)
PORHE(FRACTIONS)
shaly
intervals
0.000
0.050
0.100
0.150
0.200
0.250

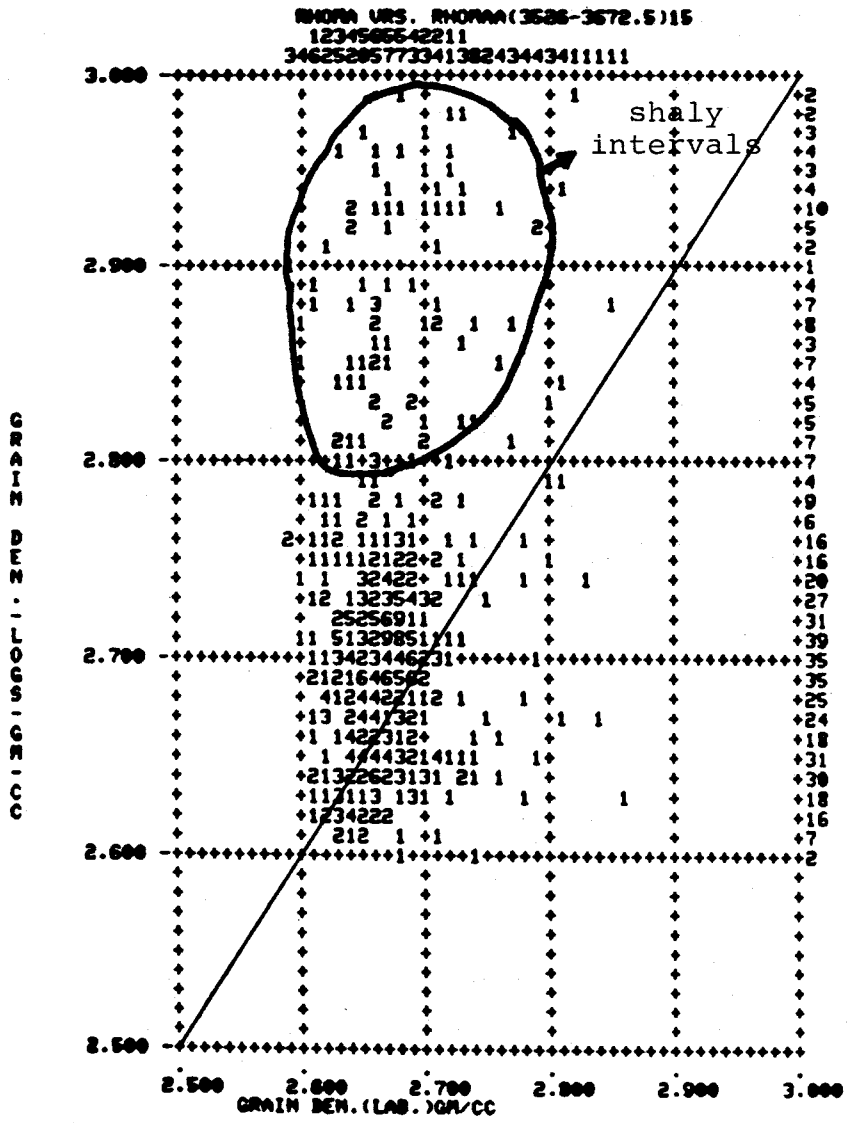
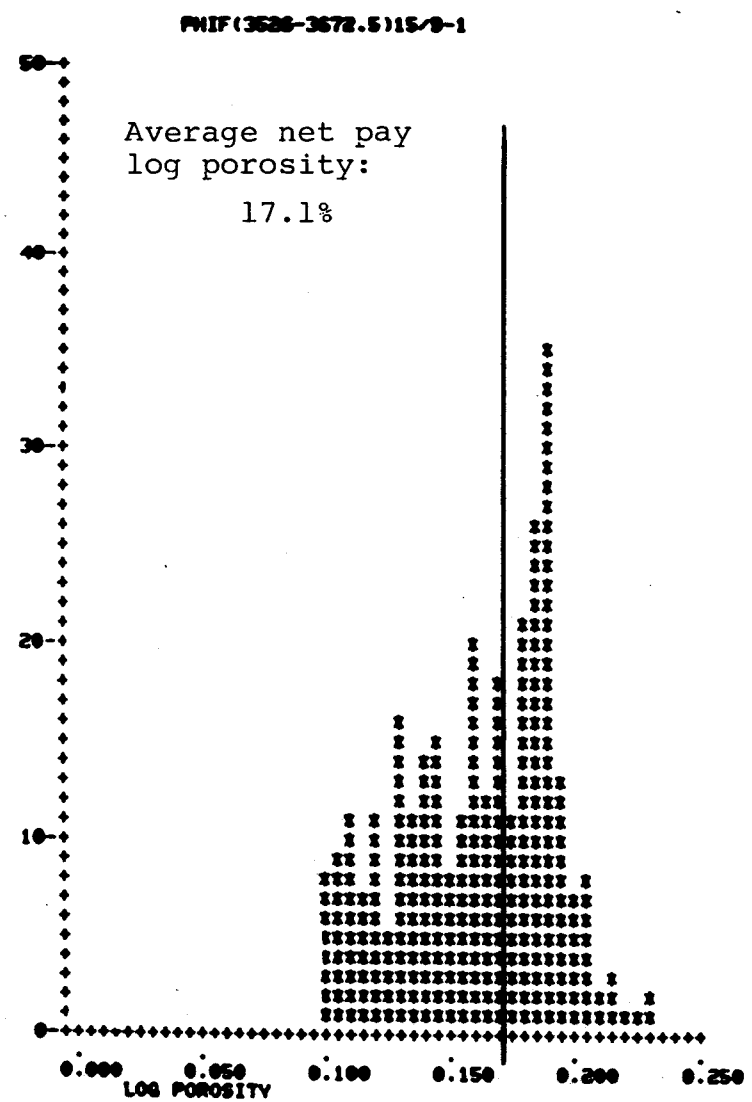

RHOMA VRS. RHOMAA(3526-3672.5)15
GRAIN DEN.-LOGS-GR-CC
GRAIN DEN.(LAB.)GM/CC
shaly
intervals
2.500
2.600
2.700
2.800
2.900
3.000

Figure 28


PHIF(3528-3672.5)15/9-1
Average net pay
log porosity:
17.1%
50
40
30
20
10
0
0.000
0.050
0.100
0.150
0.200
0.250
LOG POROSITY

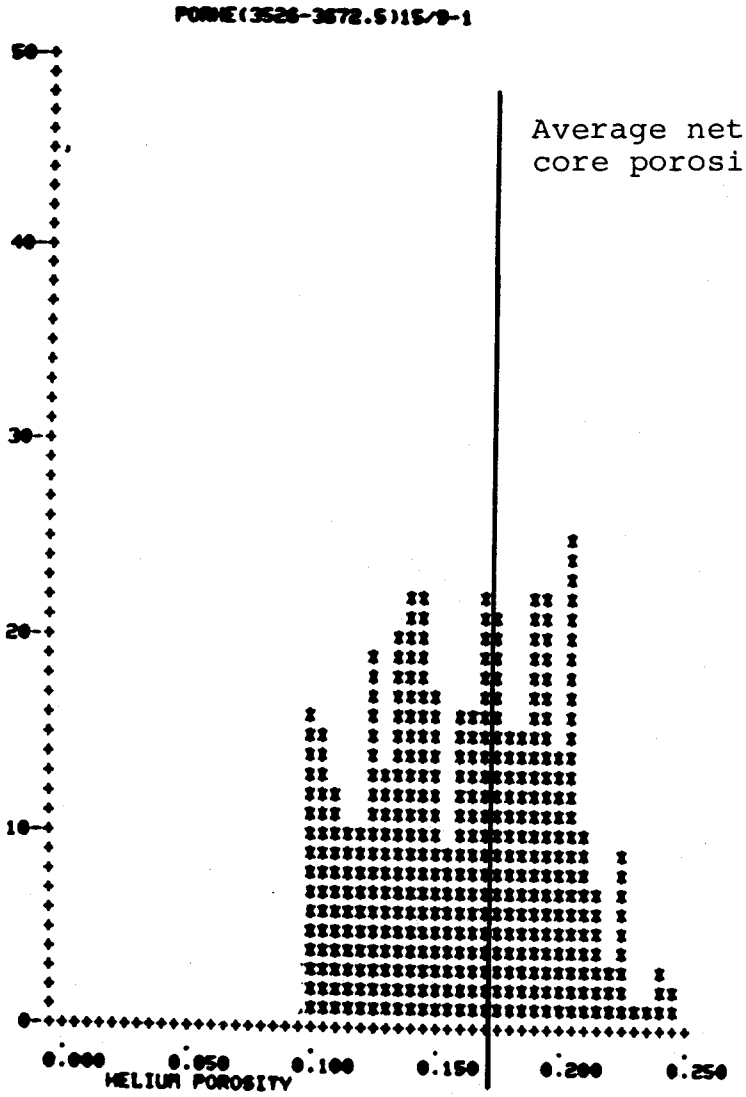
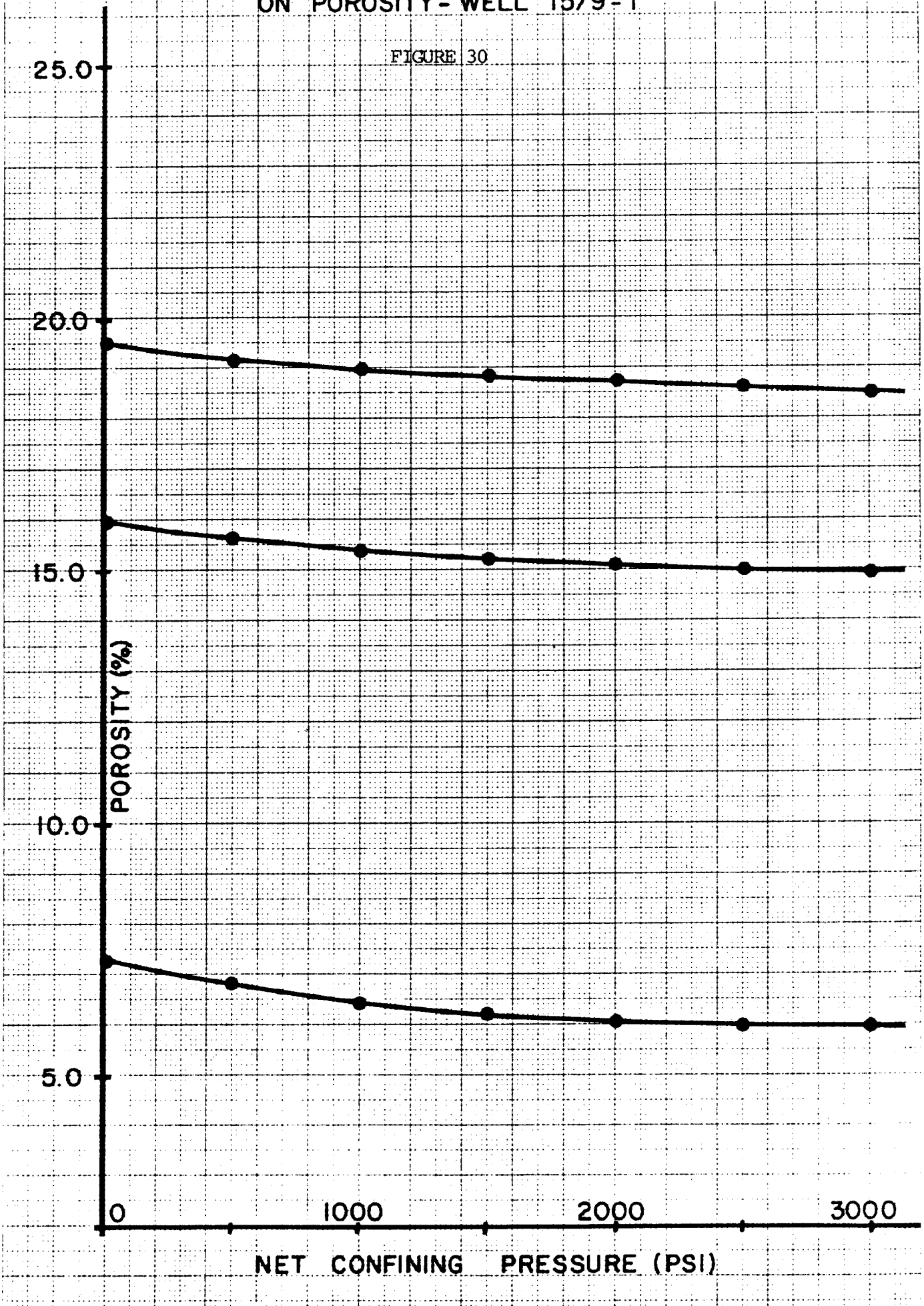
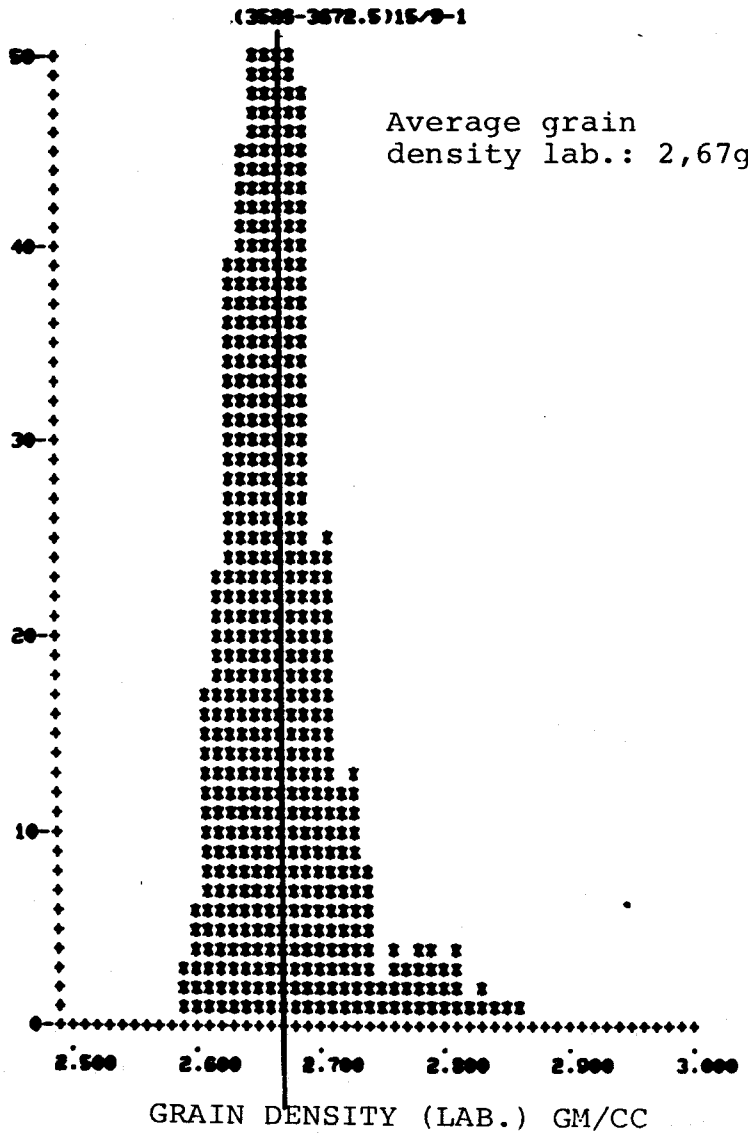

PORHE(3528-3672.5)15/9-1
Average net pay
core porosity:17.4%
50
40
30
20
10
0
0.000
0.050
0.100
0.150
0.200
0.250
HELIUM POROSITY

Figure 29

EFFECT OF NET CONFINING PRESSURE ON POROSITY - WELL 15/9-1

FIGURE 30




(3528-3672.5)15/9-1
50
40
30
20
10
0
2.500
2.600
2.700
2.800
2.900
3.000
Average grain
density lab.: 2,67gm/cc
GRAIN DENSITY (LAB.) GM/CC

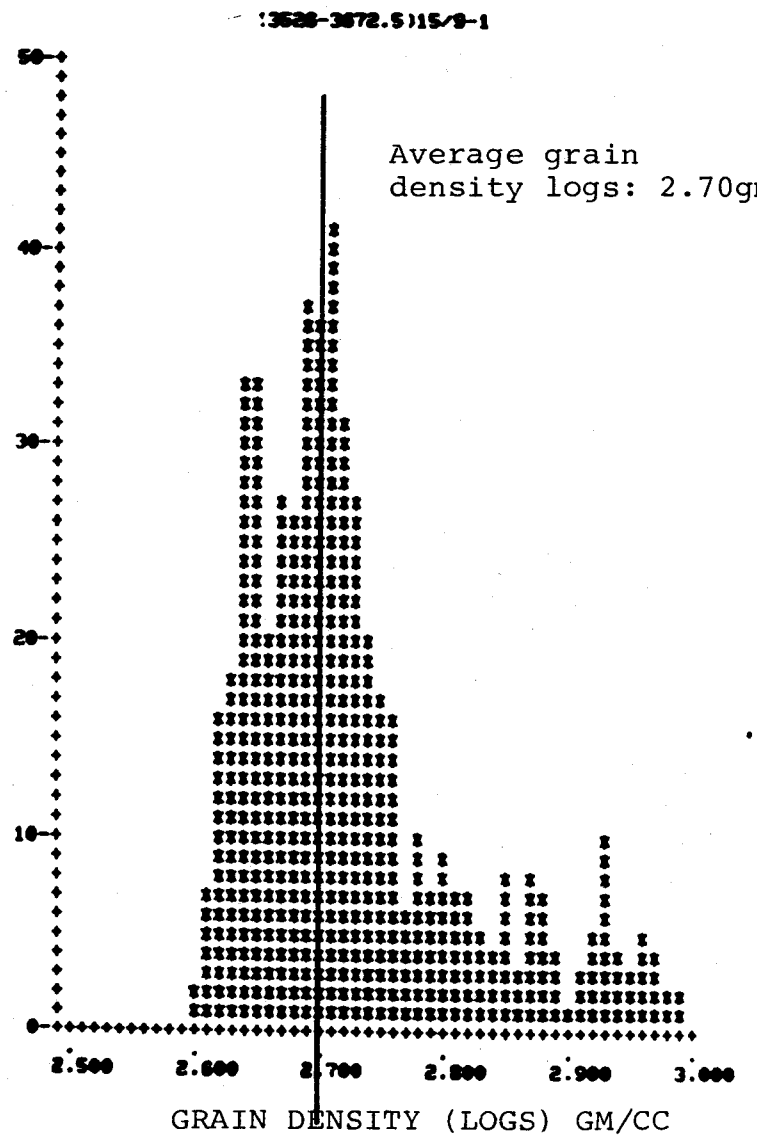

(3528-3672.5)15/9-1
50
40
30
20
10
0
2.500
2.600
2.700
2.800
2.900
3.000
Average grain
density logs: 2.70gm/cc
GRAIN DENSITY (LOGS) GM/CC

Figure 31

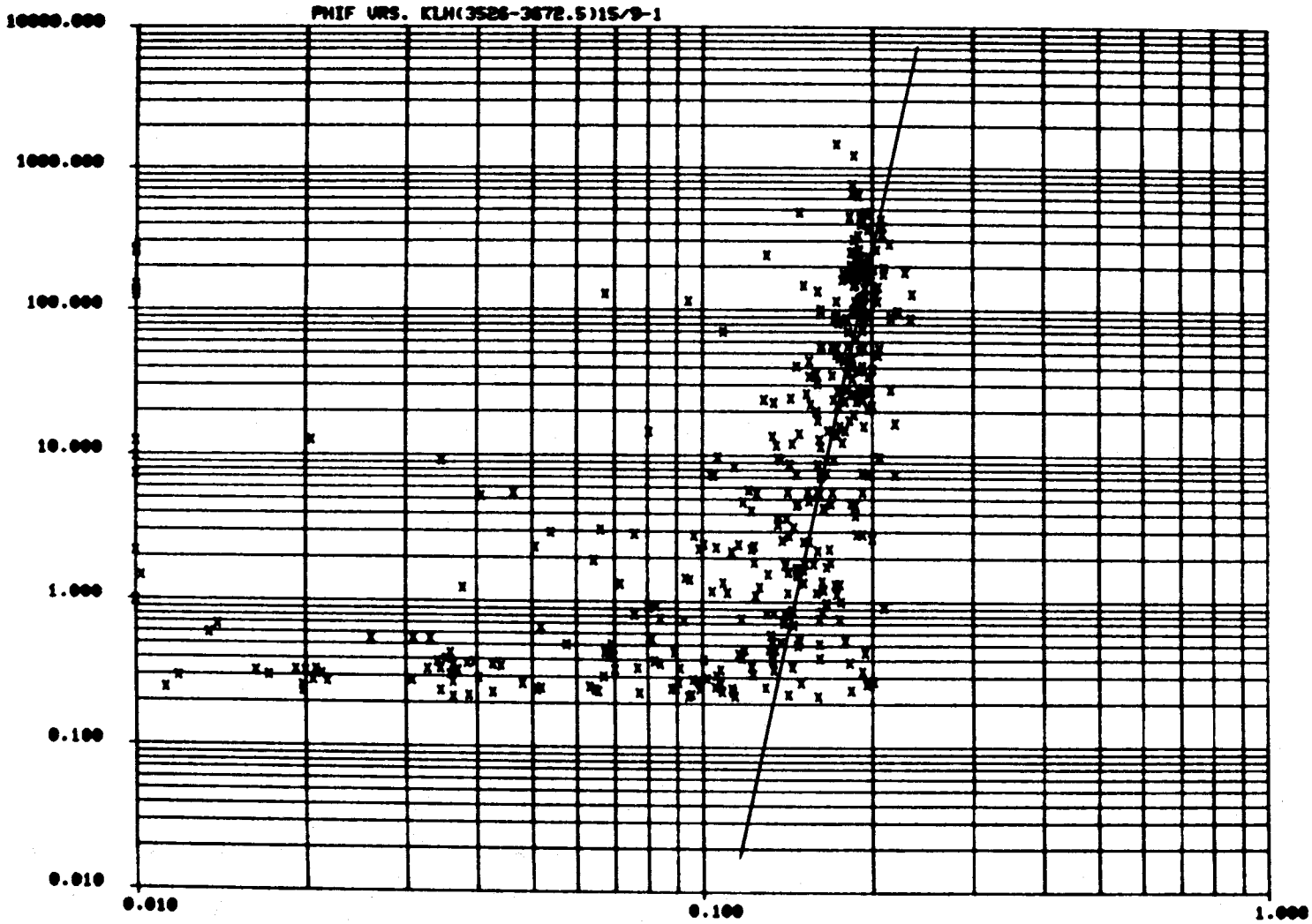

PHIF VRS. KLH(3526-3672.5)15/9-1
10000.000
1000.000
100.000
10.000
1.000
0.100
0.010
0.010
0.100
1.000
KLH
(md)
LOG POROSITY (FRACTIONS)

Figure 32

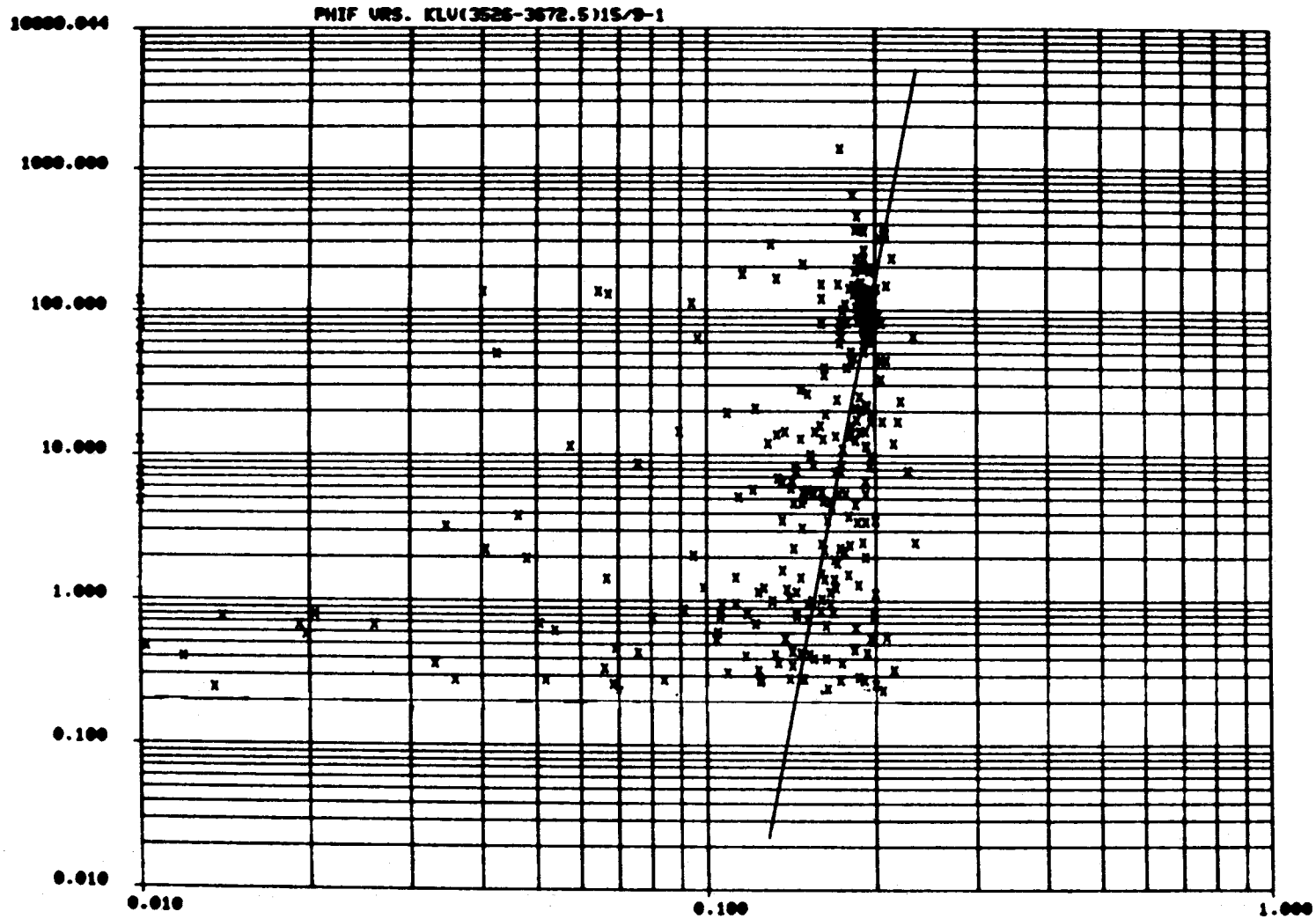

PHIF VRS. KLV(3526-3672.5)15/9-1
10000.044
1000.000
100.000
10.000
1.000
0.100
0.010
0.010
0.100
1.000
KLV
(md)
LOG POROSITY (FRACTIONS)

Figure 33

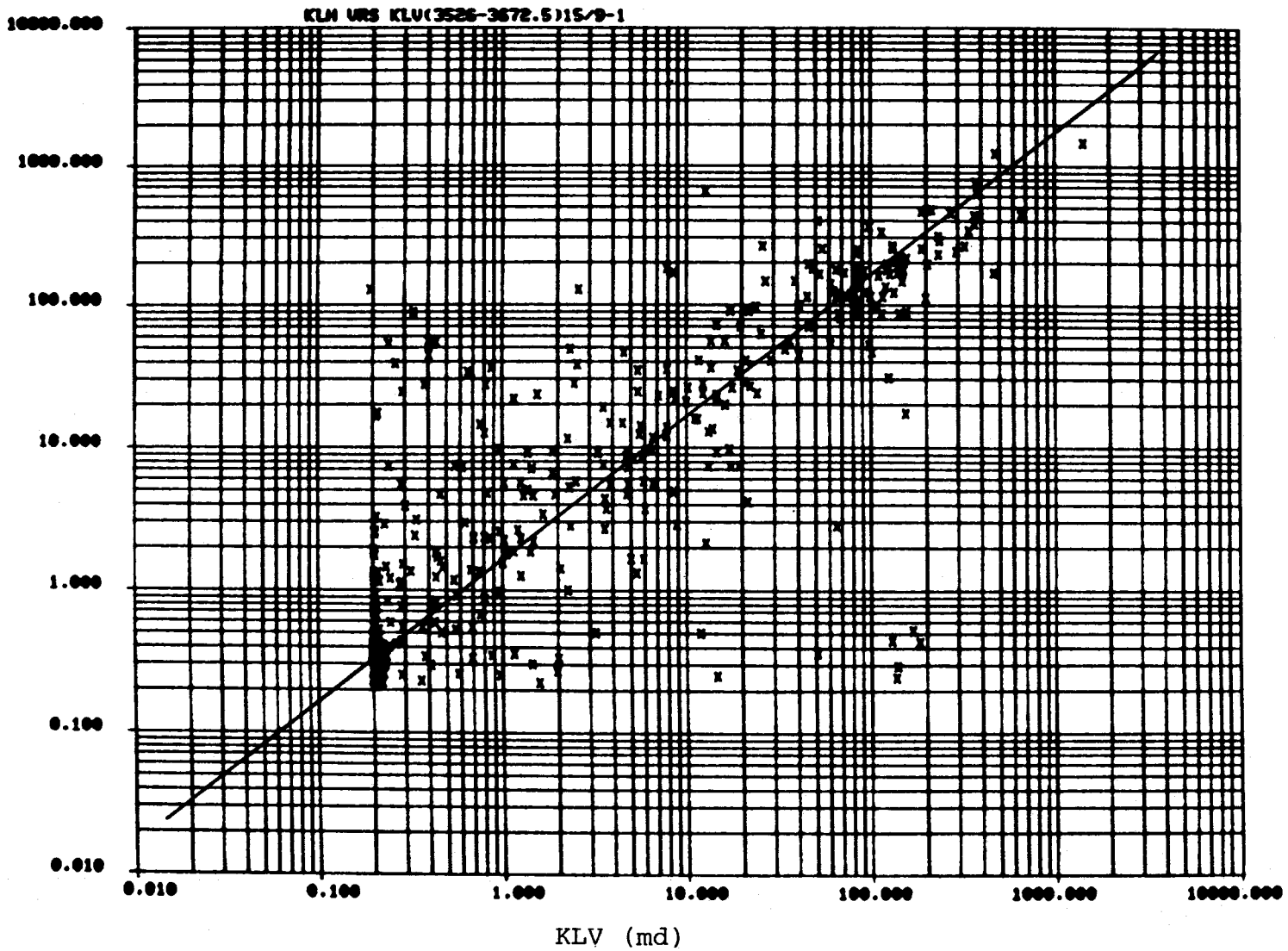
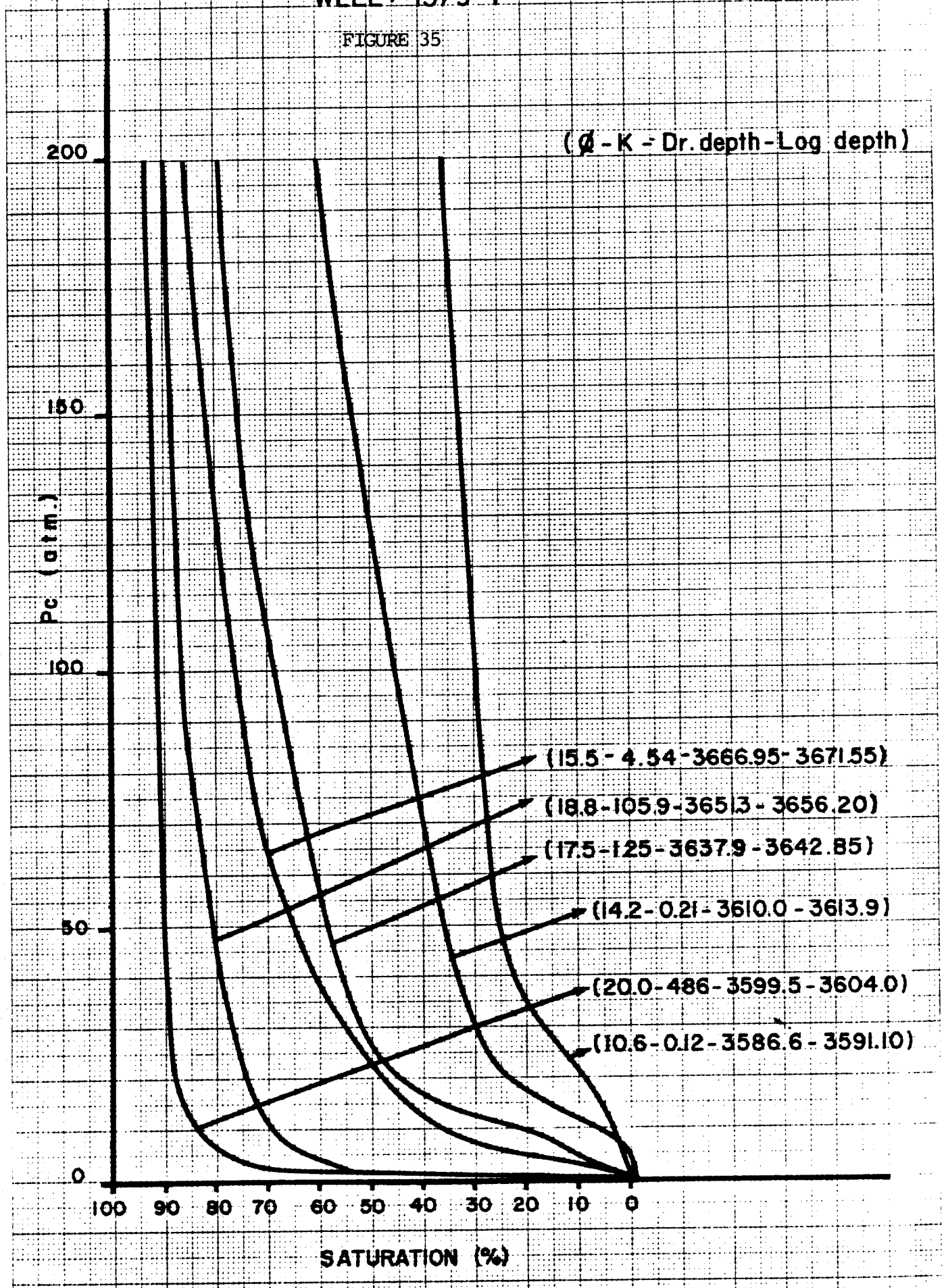

KLH VRS KLV(3526-3672.5)15/9-1
10000.000
1000.000
100.000
10.000
1.000
0.100
0.010
0.010
0.100
1.000
10.000
100.000
1000.000
10000.000
KLH (md)
KLV (md)

Figure 34

CAPILLARY PRESSURE CURVES

WELL: 15/9-1

FIGURE 35



LISTING

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3525.00	123.000	0.541	0.008	1.000	3.066
3525.25	123.000	0.538	0.009	1.000	3.065
3525.50	123.000	0.735	00000.000	1.000	3.156
3525.75	123.000	0.774	0.032	1.000	2.656
3526.00	123.000	0.731	0.051	0.971	2.662
3526.25	123.000	0.767	0.038	1.000	2.655
3526.50	123.000	0.845	0.019	1.000	2.657
3526.75	123.000	0.865	0.026	1.000	2.653
3527.00	123.000	0.885	0.033	0.985	2.688
3527.25	123.000	0.881	0.031	0.965	2.712
3527.50	123.000	0.738	0.081	0.661	2.785
3527.75	123.000	0.673	0.086	0.659	2.956
3528.00	100.000	0.634	0.105	0.597	2.979
3528.25	103.000	0.621	0.108	0.626	3.065
3528.50	123.000	0.667	0.089	0.744	3.136
3528.75	123.000	0.731	0.082	0.769	3.150
3529.00	123.000	0.795	0.070	0.779	3.048
3529.25	103.000	0.762	0.102	0.670	2.854
3529.50	100.000	0.826	0.130	0.587	3.381
3529.75	123.000	0.727	0.094	0.737	3.297
3530.00	123.000	0.816	0.049	0.927	3.491
3530.25	123.000	0.871	0.039	1.000	2.774
3530.50	123.000	0.543	0.088	0.750	3.121
3530.75	123.000	0.516	0.077	0.850	2.969
3531.00	23.000	0.339	0.041	1.000	3.144
3531.25	23.000	0.253	0.075	1.000	3.056
3531.50	23.000	0.204	0.099	0.908	2.898
3531.75	3.000	0.154	0.123	0.743	2.731
3532.00	3.000	0.135	0.118	0.677	2.754
3532.25	23.000	0.174	0.051	1.000	2.786
3532.50	23.000	0.336	0.021	1.000	2.765
3532.75	123.000	0.497	0.016	1.000	2.644
3533.00	123.000	0.448	0.017	1.000	2.642
3533.25	123.000	0.563	0.022	1.000	2.661
3533.50	123.000	0.645	0.020	1.000	2.644
3533.75	123.000	0.730	0.012	1.000	2.643
3534.00	123.000	0.722	0.008	1.000	2.801
3534.25	123.000	0.689	0.011	1.000	2.954
3534.50	123.000	0.593	0.036	1.000	2.962
3534.75	123.000	0.498	0.036	1.000	2.743
3535.00	123.000	0.406	0.033	1.000	2.713
3535.25	23.000	0.333	0.040	1.000	2.723
3535.50	123.000	0.439	0.038	1.000	2.874
3535.75	123.000	0.422	0.036	1.000	2.852
3536.00	23.000	0.314	0.044	1.000	2.648
3536.25	123.000	0.469	0.035	1.000	2.661
3536.50	123.000	0.564	0.021	1.000	2.644
3536.75	123.000	0.621	0.021	1.000	2.644
3537.00	123.000	0.758	0.031	1.000	2.979
3537.25	123.000	0.854	0.007	1.000	3.201

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3537.50	123.000	0.831	0.003	1.000	3.252
3537.75	123.000	0.841	0.009	1.000	3.155
3538.00	123.000	0.732	0.015	1.000	2.643
3538.25	123.000	0.718	0.018	1.000	2.648
3538.50	123.000	0.744	0.018	1.000	2.648
3538.75	123.000	0.769	0.018	1.000	2.651
3539.00	123.000	0.873	0.007	1.000	2.643
3539.25	123.000	0.904	0.017	1.000	3.025
3539.50	123.000	0.835	0.028	0.985	2.654
3539.75	123.000	0.728	0.071	0.714	2.649
3540.00	123.000	0.770	0.074	0.688	2.644
3540.25	123.000	0.789	0.078	0.680	2.640
3540.50	123.000	0.785	0.084	0.664	2.637
3540.75	123.000	0.915	0.014	1.000	2.823
3541.00	123.000	0.895	00000.000	1.000	3.444
3541.25	123.000	0.752	0.013	1.000	2.644
3541.50	123.000	0.545	0.091	0.740	2.653
3541.75	123.000	0.779	0.029	1.000	2.986
3542.00	123.000	0.505	00000.000	1.000	3.016
3542.25	23.000	0.177	0.038	1.000	2.949
3542.50	23.000	0.092	0.069	0.614	2.885
3542.75	20.000	0.108	0.092	0.481	2.878
3543.00	3.000	0.125	0.108	0.613	2.871
3543.25	23.000	0.128	0.091	0.790	2.826
3543.50	23.000	0.132	0.067	0.995	2.871
3543.75	23.000	0.217	0.048	1.000	2.940
3544.00	23.000	0.303	0.066	1.000	2.886
3544.25	23.000	0.384	0.080	1.000	2.737
3544.50	3.000	0.302	0.133	0.742	2.682
3544.75	3.000	0.333	0.106	0.859	2.655
3545.00	123.000	0.445	0.074	1.000	2.656
3545.25	123.000	0.495	0.060	1.000	2.671
3545.50	23.000	0.383	0.095	0.700	2.743
3545.75	00000.000	0.322	0.147	0.283	2.760
3546.00	00000.000	0.027	0.175	0.218	2.765
3546.25	00000.000	0.016	0.182	0.287	2.654
3546.50	100.000	0.667	0.101	0.501	2.645
3546.75	123.000	0.742	0.068	0.723	2.648
3547.00	123.000	0.818	0.036	0.929	2.653
3547.25	123.000	0.833	0.020	1.000	2.790
3547.50	123.000	0.775	0.034	0.942	2.910
3547.75	123.000	0.743	0.054	0.823	2.802
3548.00	123.000	0.660	0.076	0.719	2.687
3548.25	00000.000	0.239	0.161	0.468	2.874
3548.50	20.000	0.225	0.089	0.462	2.945
3548.75	23.000	0.331	0.001	1.000	2.996
3549.00	23.000	0.296	0.016	1.000	2.943
3549.25	23.000	0.262	0.058	1.000	2.899
3549.50	3.000	0.167	0.109	0.700	2.839
3549.75	00000.000	0.147	0.166	0.379	2.946

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3550.00	00000.000	0.163	0.124	0.523	2.974
3550.25	00000.000	0.161	0.125	0.542	2.911
3550.50	00000.000	0.137	0.155	0.491	2.779
3550.75	00000.000	0.024	0.208	0.358	2.735
3551.00	00000.000	0.045	0.199	0.360	2.723
3551.25	00000.000	0.041	0.199	0.363	2.727
3551.50	00000.000	0.137	0.160	0.467	2.697
3551.75	00000.000	0.201	0.133	0.572	2.712
3552.00	3.000	0.224	0.116	0.632	2.808
3552.25	23.000	0.233	0.043	1.000	2.927
3552.50	23.000	0.242	0.040	1.000	2.928
3552.75	23.000	0.193	0.065	0.868	2.889
3553.00	00000.000	0.144	0.144	0.452	2.773
3553.25	00000.000	0.043	0.196	0.329	2.753
3553.50	00000.000	00000.000	0.233	0.255	2.719
3553.75	00000.000	00000.000	0.234	0.247	2.713
3554.00	00000.000	00000.000	0.228	0.244	2.710
3554.25	00000.000	00000.000	0.221	0.230	2.742
3554.50	00000.000	00000.000	0.206	0.232	2.808
3554.75	00000.000	00000.000	0.182	0.285	2.835
3555.00	00000.000	00000.000	0.200	0.308	2.770
3555.25	00000.000	00000.000	0.215	0.325	2.733
3555.50	00000.000	0.069	0.169	0.428	2.724
3555.75	00000.000	0.097	0.159	0.464	2.708
3556.00	00000.000	0.125	0.132	0.545	2.724
3556.25	00000.000	0.154	0.135	0.530	2.752
3556.50	00000.000	0.181	0.124	0.587	2.769
3556.75	3.000	0.208	0.116	0.636	2.765
3557.00	3.000	0.236	0.100	0.761	2.766
3557.25	3.000	0.252	0.130	0.614	2.703
3557.50	00000.000	0.290	0.123	0.591	2.746
3557.75	23.000	0.345	0.093	0.749	2.704
3558.00	23.000	0.399	0.069	0.901	2.665
3558.25	123.000	0.454	0.043	1.000	2.676
3558.50	123.000	0.430	0.063	0.880	2.658
3558.75	23.000	0.353	0.096	0.714	2.676
3559.00	123.000	0.435	0.065	0.898	2.657
3559.25	123.000	0.517	0.031	1.000	2.648
3559.50	123.000	0.547	0.035	1.000	2.651
3559.75	123.000	0.589	0.041	0.949	2.658
3560.00	123.000	0.588	0.044	0.931	2.658
3560.25	123.000	0.587	0.047	0.924	2.657
3560.50	123.000	0.493	0.069	0.873	2.730
3560.75	3.000	0.348	0.114	0.702	2.791
3561.00	3.000	0.203	0.103	0.838	2.929
3561.25	23.000	0.221	0.067	1.000	2.982
3561.50	23.000	0.256	0.076	0.824	2.892
3561.75	00000.000	0.151	0.122	0.553	2.846
3562.00	00000.000	0.154	0.151	0.473	2.767
3562.25	00000.000	0.060	0.204	0.362	2.743

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3562.50	00000.000	0.018	0.218	0.334	2.751
3562.75	00000.000	0.079	0.191	0.374	2.747
3563.00	00000.000	0.140	0.163	0.436	2.739
3563.25	00000.000	0.144	0.162	0.455	2.712
3563.50	00000.000	0.159	0.145	0.525	2.719
3563.75	00000.000	0.127	0.152	0.515	2.736
3564.00	00000.000	0.132	0.166	0.476	2.704
3564.25	00000.000	0.136	0.166	0.498	2.698
3564.50	00000.000	0.141	0.161	0.526	2.718
3564.75	00000.000	0.146	0.148	0.572	2.730
3565.00	00000.000	0.197	0.144	0.556	2.777
3565.25	3.000	0.206	0.113	0.632	2.859
3565.50	3.000	0.215	0.105	0.786	2.818
3565.75	00000.000	0.213	0.166	0.582	2.672
3566.00	3.000	0.200	0.166	0.602	2.686
3566.25	3.000	0.254	0.116	0.769	2.741
3566.50	3.000	0.178	0.137	0.612	2.804
3566.75	3.000	0.172	0.134	0.603	2.766
3567.00	3.000	0.205	0.135	0.610	2.705
3567.25	00000.000	0.159	0.146	0.578	2.683
3567.50	3.000	0.220	0.124	0.650	2.673
3567.75	3.000	0.251	0.119	0.652	2.682
3568.00	3.000	0.247	0.113	0.658	2.716
3568.25	3.000	0.244	0.107	0.685	2.736
3568.50	3.000	0.199	0.118	0.640	2.765
3568.75	3.000	0.192	0.122	0.647	2.791
3569.00	23.000	0.352	0.072	0.977	2.665
3569.25	23.000	0.251	0.099	0.792	2.656
3569.50	23.000	0.209	0.095	0.796	2.657
3569.75	23.000	0.335	0.063	0.705	2.769
3570.00	23.000	0.387	0.031	0.760	2.884
3570.25	23.000	0.390	0.001	1.000	2.855
3570.50	123.000	0.598	00000.000	1.000	3.105
3570.75	123.000	0.806	00000.000	1.000	3.335
3571.00	123.000	0.799	0.011	1.000	3.147
3571.25	123.000	0.759	0.039	0.898	2.964
3571.50	123.000	0.788	0.037	0.885	2.976
3571.75	123.000	0.875	0.013	0.987	3.095
3572.00	123.000	0.951	00000.000	1.000	3.530
3572.25	123.000	0.941	00000.000	1.000	3.519
3572.50	123.000	0.860	0.023	0.874	3.037
3572.75	123.000	0.862	0.031	0.797	2.711
3573.00	123.000	0.826	0.030	0.842	2.730
3573.25	123.000	0.531	0.083	0.689	2.693
3573.50	23.000	0.398	0.095	0.872	2.791
3573.75	3.000	0.352	0.104	1.000	2.812
3574.00	23.000	0.394	0.077	1.000	2.761
3574.25	123.000	0.597	00000.000	1.000	2.758
3574.50	123.000	0.644	0.052	0.930	2.899
3574.75	123.000	0.671	0.012	1.000	2.642

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3575.00	123.000	0.698	0.020	1.000	2.648
3575.25	123.000	0.637	0.046	0.937	2.667
3575.50	123.000	0.529	0.067	0.826	2.675
3575.75	23.000	0.359	0.093	0.708	2.676
3576.00	23.000	0.274	0.080	0.804	2.669
3576.25	23.000	0.280	0.066	0.927	2.697
3576.50	123.000	0.428	0.052	0.983	2.656
3576.75	123.000	0.541	0.035	1.000	2.651
3577.00	123.000	0.615	0.036	1.000	2.656
3577.25	123.000	0.622	0.030	1.000	2.651
3577.50	123.000	0.674	0.022	1.000	2.648
3577.75	123.000	0.725	0.014	1.000	2.644
3578.00	123.000	0.843	0.017	1.000	3.057
3578.25	123.000	0.778	0.008	1.000	2.642
3578.50	123.000	0.838	0.007	1.000	2.643
3578.75	123.000	0.899	0.006	1.000	2.643
3579.00	123.000	0.884	0.011	1.000	2.666
3579.25	123.000	0.953	0.003	1.000	2.671
3579.50	123.000	0.914	0.020	0.891	2.702
3579.75	123.000	0.888	0.027	0.850	2.752
3580.00	123.000	0.796	0.034	0.864	2.687
3580.25	123.000	0.716	0.010	1.000	2.796
3580.50	123.000	0.730	0.010	1.000	3.151
3580.75	123.000	0.825	0.015	1.000	3.074
3581.00	123.000	0.714	0.034	1.000	2.657
3581.25	123.000	0.740	0.039	0.905	2.665
3581.50	123.000	0.838	0.015	1.000	2.656
3581.75	123.000	0.829	0.018	1.000	2.675
3582.00	123.000	0.790	0.034	0.874	2.694
3582.25	123.000	0.781	0.037	0.786	2.695
3582.50	123.000	0.777	0.027	0.863	2.674
3582.75	123.000	0.865	00000.000	1.000	3.292
3583.00	123.000	0.724	00000.000	1.000	3.039
3583.25	123.000	0.783	00000.000	1.000	3.213
3583.50	123.000	0.944	0.008	0.997	3.106
3583.75	123.000	0.994	00000.000	1.000	4.283
3584.00	123.000	0.994	00000.000	1.000	4.239
3584.25	120.000	0.754	0.074	0.544	2.804
3584.50	120.000	0.750	0.076	0.493	2.823
3584.75	123.000	0.822	0.046	0.618	2.785
3585.00	100.000	0.501	0.132	0.526	3.197
3585.25	103.000	0.542	0.104	0.750	2.995
3585.50	123.000	0.595	0.076	0.818	2.968
3585.75	103.000	0.406	0.104	0.980	2.861
3586.00	3.000	0.217	0.118	1.000	2.859
3586.25	3.000	0.195	0.109	1.000	2.883
3586.50	3.000	0.172	0.106	1.000	2.861
3586.75	3.000	0.150	0.138	0.707	2.762
3587.00	3.000	0.128	0.151	0.620	2.763
3587.25	00000.000	0.058	0.173	0.557	2.786

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3587.50	00000.000	0.058	0.173	0.566	2.734
3587.75	00000.000	00000.000	0.184	0.441	2.735
3588.00	00000.000	0.050	0.173	0.189	2.689
3588.25	00000.000	0.071	0.163	0.150	2.693
3588.50	00000.000	0.103	0.184	0.145	2.726
3588.75	00000.000	0.016	0.214	0.141	2.725
3589.00	00000.000	00000.000	0.219	0.146	2.735
3589.25	00000.000	0.070	0.186	0.179	2.716
3589.50	00000.000	0.061	0.187	0.193	2.710
3589.75	00000.000	0.183	0.158	0.240	2.699
3590.00	00000.000	0.199	0.142	0.270	2.715
3590.25	00000.000	0.216	0.139	0.272	2.696
3590.50	00000.000	0.011	0.194	0.216	2.750
3590.75	00000.000	00000.000	0.201	0.221	2.757
3591.00	00000.000	0.113	0.164	0.277	2.743
3591.25	00000.000	0.134	0.155	0.334	2.743
3591.50	00000.000	0.214	0.134	0.376	2.724
3591.75	00000.000	0.227	0.133	0.325	2.721
3592.00	00000.000	0.207	0.132	0.300	2.712
3592.25	00000.000	0.187	0.130	0.276	2.696
3592.50	00000.000	0.047	0.181	0.186	2.716
3592.75	00000.000	00000.000	0.204	0.131	2.680
3593.00	00000.000	00000.000	0.204	0.121	2.676
3593.25	00000.000	00000.000	0.209	0.114	2.666
3593.50	00000.000	00000.000	0.209	0.116	2.663
3593.75	00000.000	00000.000	0.194	0.137	2.671
3594.00	00000.000	00000.000	0.190	0.164	2.668
3594.25	00000.000	00000.000	0.191	0.180	2.702
3594.50	00000.000	0.003	0.192	0.184	2.719
3594.75	00000.000	0.012	0.179	0.207	2.747
3595.00	00000.000	0.021	0.186	0.199	2.737
3595.25	00000.000	0.030	0.193	0.193	2.726
3595.50	00000.000	0.039	0.178	0.207	2.748
3595.75	00000.000	0.056	0.170	0.218	2.742
3596.00	00000.000	0.073	0.166	0.226	2.731
3596.25	00000.000	0.091	0.160	0.237	2.716
3596.50	00000.000	0.092	0.162	0.232	2.703
3596.75	00000.000	0.092	0.161	0.225	2.711
3597.00	00000.000	0.093	0.160	0.231	2.716
3597.25	00000.000	0.094	0.161	0.243	2.715
3597.50	00000.000	0.094	0.163	0.243	2.745
3597.75	00000.000	0.105	0.159	0.235	2.735
3598.00	00000.000	0.116	0.155	0.241	2.726
3598.25	00000.000	0.103	0.167	0.228	2.683
3598.50	00000.000	0.028	0.189	0.217	2.720
3598.75	00000.000	0.101	0.170	0.238	2.711
3599.00	00000.000	0.157	0.154	0.298	2.690
3599.25	00000.000	0.166	0.152	0.297	2.697
3599.50	00000.000	0.175	0.147	0.305	2.707
3599.75	00000.000	0.184	0.142	0.325	2.691

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3600.00	00000.000	0.185	0.141	0.329	2.708
3600.25	00000.000	0.186	0.143	0.319	2.720
3600.50	00000.000	0.186	0.149	0.295	2.711
3600.75	00000.000	0.187	0.142	0.311	2.712
3601.00	00000.000	0.098	0.161	0.281	2.712
3601.25	00000.000	0.045	0.173	0.249	2.722
3601.50	00000.000	0.021	0.180	0.204	2.731
3601.75	00000.000	00000.000	0.180	0.204	2.680
3602.00	00000.000	00000.000	0.190	0.163	2.648
3602.25	00000.000	00000.000	0.189	0.137	2.664
3602.50	00000.000	00000.000	0.193	0.137	2.674
3602.75	00000.000	00000.000	0.196	0.133	2.676
3603.00	00000.000	00000.000	0.195	0.120	2.694
3603.25	00000.000	00000.000	0.185	0.116	2.687
3603.50	00000.000	00000.000	0.185	0.110	2.638
3603.75	00000.000	00000.000	0.189	0.117	2.637
3604.00	00000.000	00000.000	0.182	0.137	2.652
3604.25	00000.000	00000.000	0.185	0.143	2.659
3604.50	00000.000	00000.000	0.196	0.136	2.674
3604.75	00000.000	00000.000	0.192	0.138	2.679
3605.00	00000.000	00000.000	0.188	0.140	2.682
3605.25	00000.000	00000.000	0.189	0.142	2.680
3605.50	00000.000	00000.000	0.191	0.142	2.679
3605.75	00000.000	00000.000	0.184	0.154	2.687
3606.00	00000.000	00000.000	0.189	0.156	2.679
3606.25	00000.000	00000.000	0.195	0.158	2.671
3606.50	00000.000	00000.000	0.195	0.158	2.681
3606.75	00000.000	00000.000	0.190	0.163	2.687
3607.00	00000.000	00000.000	0.186	0.175	2.692
3607.25	00000.000	00000.000	0.190	0.176	2.691
3607.50	00000.000	00000.000	0.189	0.177	2.696
3607.75	00000.000	00000.000	0.193	0.181	2.697
3608.00	00000.000	00000.000	0.192	0.189	2.703
3608.25	00000.000	00000.000	0.190	0.202	2.706
3608.50	00000.000	00000.000	0.191	0.208	2.705
3608.75	00000.000	00000.000	0.192	0.219	2.707
3609.00	00000.000	0.029	0.178	0.236	2.708
3609.25	00000.000	0.004	0.184	0.242	2.720
3609.50	00000.000	00000.000	0.192	0.239	2.713
3609.75	00000.000	00000.000	0.186	0.256	2.716
3610.00	00000.000	0.043	0.171	0.276	2.704
3610.25	00000.000	0.050	0.169	0.276	2.704
3610.50	00000.000	0.050	0.168	0.251	2.711
3610.75	00000.000	0.051	0.174	0.232	2.709
3611.00	00000.000	0.034	0.183	0.220	2.714
3611.25	00000.000	00000.000	0.196	0.221	2.721
3611.50	00000.000	00000.000	0.192	0.236	2.727
3611.75	00000.000	0.069	0.173	0.273	2.704
3612.00	00000.000	0.089	0.164	0.306	2.699
3612.25	00000.000	0.040	0.175	0.304	2.712

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3612.50	00000.000	0.094	0.159	0.321	2.703
3612.75	00000.000	0.085	0.166	0.298	2.703
3613.00	00000.000	0.136	0.140	0.350	2.704
3613.25	00000.000	0.133	0.145	0.280	2.727
3613.50	00000.000	0.130	0.157	0.311	2.702
3613.75	00000.000	0.126	0.151	0.328	2.706
3614.00	00000.000	0.101	0.161	0.340	2.709
3614.25	00000.000	0.134	0.149	0.341	2.708
3614.50	00000.000	0.148	0.146	0.430	2.709
3614.75	00000.000	0.240	0.114	0.544	2.686
3615.00	00000.000	0.142	0.138	0.507	2.707
3615.25	00000.000	00000.000	0.161	0.456	2.725
3615.50	00000.000	00000.000	0.126	0.549	2.737
3615.75	20.000	00000.000	0.087	0.452	2.759
3616.00	23.000	0.210	0.004	1.000	2.707
3616.25	23.000	0.258	0.003	1.000	2.831
3616.50	23.000	0.335	0.001	1.000	2.846
3616.75	123.000	0.411	0.014	1.000	2.798
3617.00	123.000	0.465	0.015	1.000	2.818
3617.25	123.000	0.522	0.054	0.776	2.808
3617.50	00000.000	0.323	0.114	0.573	2.767
3617.75	00000.000	0.190	0.137	0.535	2.804
3618.00	00000.000	00000.000	0.142	0.547	2.818
3618.25	3.000	00000.000	0.122	0.605	2.790
3618.50	23.000	0.227	0.039	1.000	2.713
3618.75	23.000	0.386	0.028	0.724	2.829
3619.00	123.000	0.501	0.011	1.000	2.858
3619.25	23.000	0.341	0.047	1.000	2.760
3619.50	3.000	00000.000	0.114	0.625	2.781
3619.75	23.000	0.293	0.001	1.000	2.749
3620.00	23.000	0.317	0.001	1.000	2.751
3620.25	23.000	0.170	0.026	0.916	2.740
3620.50	20.000	0.071	0.049	0.513	2.744
3620.75	20.000	00000.000	0.094	0.212	2.742
3621.00	00000.000	0.005	0.149	0.197	2.720
3621.25	00000.000	00000.000	0.206	0.172	2.692
3621.50	00000.000	00000.000	0.208	0.185	2.678
3621.75	00000.000	00000.000	0.208	0.189	2.679
3622.00	00000.000	00000.000	0.203	0.209	2.686
3622.25	00000.000	00000.000	0.183	0.255	2.709
3622.50	00000.000	00000.000	0.173	0.294	2.771
3622.75	00000.000	00000.000	0.179	0.299	2.832
3623.00	123.000	0.437	0.064	0.677	2.754
3623.25	00000.000	0.172	0.109	0.578	2.803
3623.50	00000.000	00000.000	0.130	0.578	2.789
3623.75	123.000	0.451	0.016	1.000	2.874
3624.00	123.000	0.583	0.002	0.851	2.905
3624.25	123.000	0.728	00000.000	1.000	3.052
3624.50	123.000	0.822	0.011	1.000	3.023
3624.75	123.000	0.751	0.025	1.000	2.622

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3625.00	123.000	0.688	0.037	1.000	2.623
3625.25	123.000	0.625	0.049	0.953	2.631
3625.50	123.000	0.624	0.048	1.000	2.619
3625.75	123.000	0.654	0.045	1.000	2.609
3626.00	123.000	0.702	0.023	1.000	2.622
3626.25	123.000	0.586	0.037	1.000	2.741
3626.50	123.000	0.529	0.034	1.000	2.842
3626.75	123.000	0.642	00000.000	1.000	2.933
3627.00	123.000	0.738	0.012	1.000	2.631
3627.25	123.000	0.729	0.016	1.000	2.620
3627.50	123.000	0.720	0.022	1.000	2.623
3627.75	123.000	0.754	0.016	1.000	2.623
3628.00	123.000	0.765	0.023	1.000	2.622
3628.25	123.000	0.757	0.029	0.938	2.630
3628.50	123.000	0.861	0.003	1.000	3.161
3628.75	123.000	0.906	00000.000	0.971	3.257
3629.00	123.000	0.841	0.012	0.905	2.634
3629.25	123.000	0.856	0.009	0.939	2.632
3629.50	123.000	0.828	0.008	0.946	2.628
3629.75	123.000	0.800	0.008	0.989	2.627
3630.00	123.000	0.766	0.031	0.755	2.635
3630.25	123.000	0.611	0.059	0.697	2.640
3630.50	123.000	0.609	0.060	0.759	2.631
3630.75	123.000	0.891	0.029	0.799	2.605
3631.00	123.000	0.854	0.035	0.719	2.643
3631.25	123.000	0.912	0.012	0.816	2.639
3631.50	123.000	0.926	0.023	0.706	2.643
3631.75	123.000	0.921	0.017	0.842	2.631
3632.00	123.000	0.895	0.004	1.000	3.121
3632.25	123.000	0.891	0.004	1.000	3.105
3632.50	123.000	0.838	0.021	1.000	2.936
3632.75	123.000	0.902	0.011	1.000	2.618
3633.00	123.000	0.918	0.010	1.000	2.626
3633.25	123.000	0.881	0.013	1.000	2.618
3633.50	123.000	0.787	0.029	1.000	2.885
3633.75	123.000	0.773	0.020	1.000	2.939
3634.00	123.000	0.729	0.020	1.000	2.933
3634.25	123.000	0.684	0.019	1.000	2.924
3634.50	123.000	0.449	0.045	1.000	2.788
3634.75	123.000	0.442	0.035	1.000	2.822
3635.00	123.000	0.512	0.017	1.000	2.877
3635.25	123.000	0.548	0.010	1.000	2.958
3635.50	123.000	0.583	0.008	1.000	2.966
3635.75	123.000	0.602	0.002	1.000	2.935
3636.00	123.000	0.557	0.002	1.000	2.937
3636.25	123.000	0.513	0.004	1.000	2.939
3636.50	123.000	0.628	0.004	1.000	2.938
3636.75	123.000	0.742	0.007	1.000	3.022
3637.00	123.000	0.712	0.033	0.947	2.873
3637.25	123.000	0.630	0.043	1.000	2.616

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3637.50	123.000	0.632	0.043	1.000	2.616
3637.75	123.000	0.743	0.030	1.000	2.885
3638.00	123.000	0.685	0.037	1.000	2.856
3638.25	123.000	0.620	0.029	1.000	2.623
3638.50	123.000	0.612	0.034	1.000	2.625
3638.75	123.000	0.685	0.034	1.000	2.620
3639.00	123.000	0.731	0.039	1.000	2.844
3639.25	123.000	0.679	0.026	1.000	2.621
3639.50	123.000	0.753	0.023	1.000	2.623
3639.75	123.000	0.840	0.020	1.000	2.928
3640.00	123.000	0.767	0.006	1.000	2.734
3640.25	123.000	0.779	0.028	1.000	2.916
3640.50	123.000	0.781	0.024	1.000	2.937
3640.75	123.000	0.689	0.011	1.000	2.676
3641.00	123.000	0.464	0.054	1.000	2.724
3641.25	3.000	0.239	0.111	0.693	2.704
3641.50	00000.000	0.170	0.136	0.547	2.645
3641.75	00000.000	0.209	0.136	0.558	2.637
3642.00	00000.000	0.227	0.124	0.576	2.642
3642.25	00000.000	0.209	0.122	0.531	2.656
3642.50	00000.000	0.216	0.126	0.511	2.639
3642.75	00000.000	0.161	0.147	0.485	2.641
3643.00	00000.000	0.186	0.139	0.530	2.637
3643.25	00000.000	0.211	0.131	0.546	2.634
3643.50	3.000	0.273	0.114	0.638	2.641
3643.75	23.000	0.385	0.096	0.716	2.628
3644.00	23.000	0.395	0.096	0.670	2.621
3644.25	123.000	0.482	0.067	0.747	2.636
3644.50	20.000	0.362	0.096	0.557	2.657
3644.75	00000.000	0.284	0.114	0.488	2.652
3645.00	00000.000	0.281	0.129	0.420	2.648
3645.25	00000.000	0.178	0.147	0.347	2.654
3645.50	00000.000	0.104	0.174	0.252	2.659
3645.75	00000.000	0.029	0.200	0.196	2.670
3646.00	00000.000	0.035	0.197	0.190	2.667
3646.25	00000.000	0.049	0.193	0.197	2.663
3646.50	00000.000	00000.000	0.202	0.197	2.684
3646.75	00000.000	00000.000	0.175	0.223	2.678
3647.00	00000.000	0.126	0.133	0.276	2.646
3647.25	00000.000	0.069	0.145	0.235	2.656
3647.50	00000.000	0.036	0.174	0.190	2.666
3647.75	00000.000	0.099	0.173	0.216	2.660
3648.00	00000.000	0.135	0.177	0.239	2.673
3648.25	00000.000	0.106	0.196	0.226	2.669
3648.50	00000.000	0.114	0.188	0.258	2.677
3648.75	00000.000	0.094	0.185	0.260	2.697
3649.00	00000.000	0.094	0.184	0.253	2.698
3649.25	00000.000	0.095	0.187	0.194	2.695
3649.50	00000.000	0.085	0.192	0.136	2.697
3649.75	00000.000	0.029	0.215	0.129	2.689

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3650.00	23.000	00000.000	0.010	1.000	2.000
3650.25	23.000	00000.000	0.010	1.000	2.000
3650.50	23.000	00000.000	0.010	1.000	2.000
3650.75	23.000	00000.000	0.010	1.000	2.000
3651.00	23.000	00000.000	0.010	1.000	2.000
3651.25	23.000	00000.000	0.010	1.000	2.000
3651.50	23.000	00000.000	0.010	1.000	2.000
3651.75	23.000	00000.000	0.010	1.000	2.000
3652.00	23.000	00000.000	0.010	1.000	2.000
3652.25	23.000	00000.000	0.010	1.000	2.000
3652.50	23.000	00000.000	0.010	1.000	2.000
3652.75	23.000	00000.000	0.010	1.000	2.000
3653.00	23.000	00000.000	0.010	1.000	2.000
3653.25	00000.000	00000.000	0.184	0.051	2.729
3653.50	00000.000	00000.000	0.185	0.082	2.724
3653.75	00000.000	00000.000	0.192	0.157	2.713
3654.00	00000.000	00000.000	0.193	0.181	2.699
3654.25	00000.000	0.027	0.183	0.171	2.705
3654.50	00000.000	0.033	0.178	0.175	2.694
3654.75	00000.000	0.013	0.177	0.185	2.693
3655.00	00000.000	00000.000	0.186	0.180	2.700
3655.25	00000.000	00000.000	0.187	0.174	2.696
3655.50	00000.000	00000.000	0.185	0.166	2.686
3655.75	00000.000	00000.000	0.193	0.148	2.696
3656.00	00000.000	00000.000	0.193	0.146	2.696
3656.25	00000.000	00000.000	0.190	0.142	2.697
3656.50	00000.000	00000.000	0.194	0.140	2.688
3656.75	00000.000	00000.000	0.194	0.140	2.688
3657.00	00000.000	00000.000	0.196	0.135	2.682
3657.25	00000.000	00000.000	0.201	0.120	2.698
3657.50	00000.000	00000.000	0.188	0.122	2.714
3657.75	00000.000	00000.000	0.189	0.115	2.700
3658.00	00000.000	00000.000	0.190	0.113	2.687
3658.25	00000.000	00000.000	0.188	0.112	2.693
3658.50	00000.000	00000.000	0.191	0.109	2.693
3658.75	00000.000	00000.000	0.199	0.110	2.702
3659.00	00000.000	00000.000	0.188	0.123	2.713
3659.25	00000.000	00000.000	0.189	0.128	2.705
3659.50	00000.000	00000.000	0.180	0.134	2.716
3659.75	00000.000	00000.000	0.171	0.141	2.730
3660.00	00000.000	00000.000	0.172	0.142	2.731
3660.25	00000.000	00000.000	0.181	0.136	2.715
3660.50	00000.000	00000.000	0.181	0.148	2.710
3660.75	00000.000	00000.000	0.170	0.161	2.727
3661.00	00000.000	00000.000	0.162	0.176	2.750
3661.25	00000.000	00000.000	0.160	0.184	2.753
3661.50	00000.000	00000.000	0.153	0.197	2.708
3661.75	00000.000	0.021	0.144	0.211	2.712
3662.00	00000.000	0.028	0.134	0.216	2.739
3662.25	00000.000	0.034	0.142	0.178	2.766

COAL

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3662.50	00000.000	0.047	0.155	0.180	2.762
3662.75	00000.000	0.071	0.149	0.225	2.784
3663.00	00000.000	0.083	0.143	0.370	2.828
3663.25	00000.000	0.095	0.148	0.352	2.857
3663.50	00000.000	0.108	0.147	0.346	2.868
3663.75	00000.000	00000.000	0.162	0.328	2.788
3664.00	00000.000	00000.000	0.136	0.376	2.745
3664.25	00000.000	00000.000	0.121	0.407	2.739
3664.50	23.000	0.177	0.035	1.000	2.738
3664.75	23.000	0.097	0.047	0.823	2.750
3665.00	23.000	0.058	0.041	0.826	2.743
3665.25	23.000	0.165	0.005	1.000	2.730
3665.50	23.000	0.214	0.001	1.000	2.722
3665.75	23.000	0.263	0.001	1.000	2.694
3666.00	23.000	0.257	0.020	0.935	2.687
3666.25	23.000	0.343	0.010	1.000	2.670
3666.50	20.000	0.348	0.054	0.580	2.668
3666.75	20.000	0.264	0.093	0.484	2.736
3667.00	00000.000	0.248	0.111	0.487	2.779
3667.25	23.000	0.307	0.083	0.673	2.830
3667.50	00000.000	0.116	0.134	0.474	2.818
3667.75	23.000	0.265	0.084	0.685	2.819
3668.00	20.000	0.221	0.099	0.591	2.827
3668.25	00000.000	0.194	0.113	0.518	2.816
3668.50	00000.000	0.167	0.150	0.390	2.730
3668.75	00000.000	0.122	0.183	0.323	2.697
3669.00	00000.000	0.055	0.195	0.294	2.722
3669.25	00000.000	00000.000	0.195	0.291	2.728
3669.50	00000.000	00000.000	0.191	0.285	2.707
3669.75	00000.000	00000.000	0.172	0.300	2.713
3670.00	00000.000	0.057	0.156	0.326	2.726
3670.25	00000.000	0.084	0.136	0.385	2.728
3670.50	00000.000	00000.000	0.164	0.329	2.717
3670.75	00000.000	00000.000	0.161	0.330	2.722
3671.00	00000.000	00000.000	0.169	0.295	2.737
3671.25	00000.000	00000.000	0.176	0.257	2.757
3671.50	00000.000	00000.000	0.192	0.231	2.786
3671.75	00000.000	00000.000	0.206	0.236	2.753
3672.00	23.000	00000.000	0.010	1.000	2.000
3672.25	23.000	00000.000	0.010	1.000	2.000
3672.50	23.000	00000.000	0.010	1.000	2.000
3672.75	23.000	00000.000	0.010	1.000	2.000
3673.00	23.000	00000.000	0.010	1.000	2.000
3673.25	23.000	00000.000	0.010	1.000	2.000
3673.50	23.000	00000.000	0.010	1.000	2.000
3673.75	23.000	00000.000	0.010	1.000	2.000
3674.00	23.000	00000.000	0.010	1.000	2.000
3674.25	23.000	00000.000	0.010	1.000	2.000
3674.50	23.000	00000.000	0.010	1.000	2.000
3674.75	23.000	00000.000	0.010	1.000	2.000

COAL

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3675.00	23.000	00000.000	0.010	1.000	2.000
3675.25	23.000	00000.000	0.010	1.000	2.000
3675.50	23.000	00000.000	0.010	1.000	2.000
3675.75	23.000	00000.000	0.010	1.000	2.000
3676.00	23.000	00000.000	0.010	1.000	2.000
3676.25	23.000	00000.000	0.010	1.000	2.000
3676.50	100.000	0.859	0.107	0.297	3.413
3676.75	123.000	0.878	0.049	0.654	2.590
3677.00	123.000	0.834	0.059	0.707	2.537
3677.25	123.000	0.979	0.023	0.818	-15.470
3677.50	100.000	0.888	0.148	0.336	2.211
3677.75	120.000	0.865	0.078	0.507	4.651
3678.00	123.000	0.804	00000.000	1.000	3.769
3678.25	123.000	0.713	00000.000	1.000	3.243
3678.50	123.000	0.622	0.011	1.000	3.201
3678.75	123.000	0.586	0.023	1.000	3.209
3679.00	123.000	0.571	0.026	1.000	3.197
3679.25	123.000	0.544	0.035	1.000	3.119
3679.50	123.000	0.575	0.029	1.000	3.045
3679.75	123.000	0.490	0.045	1.000	2.952
3680.00	123.000	0.611	0.039	0.912	2.873
3680.25	123.000	0.660	0.047	0.738	2.793
3680.50	123.000	0.648	0.069	0.606	2.686
3680.75	120.000	0.667	0.080	0.579	2.737
3681.00	120.000	0.661	0.095	0.529	2.712
3681.25	123.000	0.643	0.077	0.609	2.839
3681.50	120.000	0.543	0.091	0.564	2.833
3681.75	100.000	0.443	0.123	0.450	2.805
3682.00	100.000	0.449	0.142	0.391	2.769
3682.25	100.000	0.471	0.149	0.375	2.731
3682.50	100.000	0.492	0.112	0.481	2.689
3682.75	123.000	0.572	0.075	0.651	2.696
3683.00	123.000	0.842	0.009	1.000	2.636
3683.25	123.000	0.857	0.019	0.947	2.728
3683.50	123.000	0.828	0.025	0.858	2.739
3683.75	120.000	0.684	0.069	0.583	2.634
3684.00	120.000	0.573	0.084	0.538	2.667
3684.25	100.000	0.427	0.127	0.436	2.636
3684.50	23.000	0.391	0.081	0.908	2.835
3684.75	23.000	0.300	0.054	1.000	3.035
3685.00	23.000	0.294	0.080	0.907	2.976
3685.25	23.000	0.328	0.088	0.692	2.904
3685.50	23.000	0.228	0.057	1.000	3.002
3685.75	23.000	0.268	0.061	1.000	3.033
3686.00	23.000	0.309	0.040	1.000	3.089
3686.25	23.000	0.350	0.073	0.935	3.009
3686.50	103.000	0.402	0.106	0.624	2.910
3686.75	123.000	0.454	0.010	1.000	2.000
3687.00	123.000	0.463	0.010	1.000	2.000
3687.25	123.000	0.473	0.010	1.000	2.000

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	PHOMAA
3687.50	123.000	0.544	0.010	1.000	2.000
3687.75	123.000	0.567	0.010	1.000	2.000
3688.00	123.000	0.604	0.010	1.000	2.000
3688.25	123.000	0.601	0.010	1.000	2.000
3688.50	123.000	0.614	0.010	1.000	2.000
3688.75	23.000	0.112	0.010	1.000	2.000
3689.00	23.000	0.099	0.010	1.000	2.000
3689.25	123.000	0.459	0.010	1.000	2.000
3689.50	123.000	0.558	0.010	1.000	2.000
3689.75	123.000	COAL	0.010	1.000	2.000
3690.00	123.000	0.517	0.010	1.000	2.000
3690.25	123.000	0.474	0.010	1.000	2.000
3690.50	123.000	0.688	0.010	1.000	2.000
3690.75	123.000	0.689	0.010	1.000	2.000
3691.00	123.000	0.516	0.010	1.000	2.000
3691.25	123.000	0.435	0.010	1.000	2.000
3691.50	123.000	0.555	0.010	1.000	2.000
3691.75	123.000	0.401	0.010	1.000	2.000
3692.00	23.000	00000.000	0.010	1.000	2.000
3692.25	23.000	00000.000	0.010	1.000	2.000
3692.50	23.000	00000.000	0.010	1.000	2.000
3692.75	23.000	0.259	0.010	1.000	2.000
3693.00	23.000	0.251	0.010	1.000	2.000
3693.25	23.000	0.110	0.010	1.000	2.000
3693.50	23.000	00000.000	0.010	1.000	2.000
3693.75	123.000	0.516	0.010	1.000	2.000
3694.00	123.000	0.649	0.023	1.000	2.737
3694.25	123.000	0.451	0.020	1.000	2.635
3694.50	23.000	0.298	0.038	1.000	2.619
3694.75	23.000	0.338	0.051	1.000	2.650
3695.00	123.000	0.513	0.049	1.000	2.563
3695.25	123.000	0.608	0.043	1.000	2.646
3695.50	123.000	0.687	0.045	1.000	2.632
3695.75	123.000	0.538	0.061	1.000	2.511
3696.00	23.000	0.292	0.084	0.864	2.537
3696.25	23.000	00000.000	0.091	0.821	2.576
3696.50	23.000	00000.000	0.063	1.000	2.609
3696.75	23.000	0.022	0.061	1.000	2.632
3697.00	23.000	0.322	0.075	1.000	2.613
3697.25	23.000	0.382	0.062	1.000	2.715
3697.50	23.000	00000.000	0.054	1.000	2.653
3697.75	23.000	00000.000	0.062	1.000	2.600
3698.00	23.000	00000.000	0.076	1.000	2.560
3698.25	23.000	0.112	0.090	1.000	2.587
3698.50	123.000	0.593	0.068	1.000	2.659
3698.75	123.000	0.581	0.060	1.000	2.803
3699.00	123.000	0.607	0.035	1.000	2.579
3699.25	123.000	0.562	0.044	1.000	2.831
3699.50	123.000	0.503	0.042	0.963	2.812
3699.75	123.000	0.418	0.001	1.000	2.738

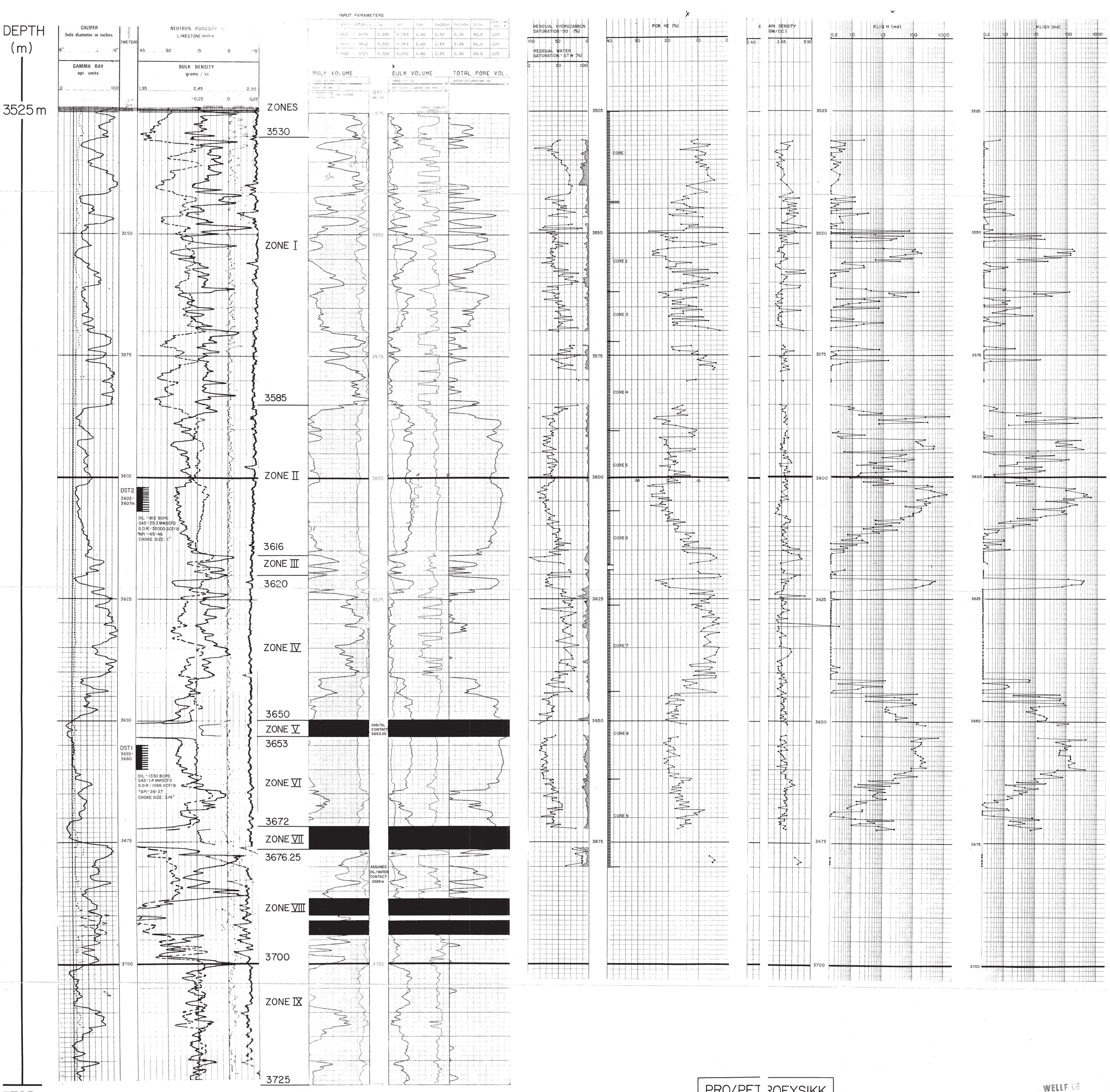
WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3700.00	23.000	0.306	0.001	1.000	2.819
3700.25	23.000	0.193	0.037	1.000	2.785
3700.50	23.000	0.169	0.061	1.000	2.726
3700.75	23.000	0.145	0.082	1.000	2.702
3701.00	3.000	0.027	0.126	1.000	2.714
3701.25	3.000	00000.000	0.134	1.000	2.730
3701.50	3.000	00000.000	0.171	1.000	2.713
3701.75	3.000	00000.000	0.174	1.000	2.686
3702.00	3.000	00000.000	0.174	1.000	2.643
3702.25	3.000	00000.000	0.149	1.000	2.668
3702.50	3.000	00000.000	0.147	1.000	2.664
3702.75	3.000	00000.000	0.189	1.000	2.697
3703.00	3.000	00000.000	0.190	1.000	2.689
3703.25	3.000	00000.000	0.180	1.000	2.657
3703.50	3.000	00000.000	0.159	1.000	2.678
3703.75	3.000	00000.000	0.158	1.000	2.685
3704.00	3.000	00000.000	0.158	1.000	2.715
3704.25	3.000	00000.000	0.152	1.000	2.712
3704.50	3.000	00000.000	0.151	1.000	2.709
3704.75	3.000	00000.000	0.157	1.000	2.685
3705.00	3.000	00000.000	0.157	1.000	2.705
3705.25	3.000	00000.000	0.173	0.967	2.705
3705.50	3.000	00000.000	0.177	0.884	2.719
3705.75	3.000	00000.000	0.169	0.886	2.674
3706.00	3.000	00000.000	0.149	0.981	2.671
3706.25	3.000	0.022	0.142	1.000	2.663
3706.50	3.000	0.057	0.117	1.000	2.706
3706.75	3.000	0.115	0.108	1.000	2.703
3707.00	3.000	0.090	0.124	1.000	2.701
3707.25	3.000	0.085	0.133	1.000	2.701
3707.50	3.000	0.039	0.156	1.000	2.703
3707.75	3.000	00000.000	0.169	1.000	2.694
3708.00	3.000	0.006	0.173	1.000	2.670
3708.25	3.000	00000.000	0.171	1.000	2.649
3708.50	3.000	00000.000	0.148	1.000	2.672
3708.75	3.000	0.045	0.127	1.000	2.700
3709.00	3.000	0.137	0.123	1.000	2.729
3709.25	23.000	0.292	0.087	1.000	2.671
3709.50	123.000	0.440	0.073	1.000	2.633
3709.75	123.000	0.556	0.058	1.000	2.630
3710.00	123.000	0.525	0.095	1.000	2.638
3710.25	123.000	0.416	0.094	1.000	2.620
3710.50	123.000	0.450	0.096	1.000	2.616
3710.75	123.000	0.625	0.061	1.000	2.620
3711.00	123.000	0.641	0.047	1.000	2.629
3711.25	123.000	0.508	0.080	1.000	2.619
3711.50	123.000	0.502	0.098	1.000	2.608
3711.75	123.000	0.679	0.021	1.000	2.634
3712.00	123.000	0.625	0.047	1.000	2.839
3712.25	123.000	0.577	0.023	1.000	2.631

WELL: 15-9-1 (3525 - 3725) DATE: 29AUG78/JKS

DEPTH	CUTOFF	VSH	PHIF	SW	RHOMAA
3712.50	123.000	0.712	0.019	1.000	2.634
3712.75	123.000	0.586	0.070	1.000	2.809
3713.00	23.000	0.388	0.100	1.000	2.791
3713.25	23.000	0.382	0.084	1.000	2.679
3713.50	23.000	0.250	0.094	1.000	2.631
3713.75	23.000	0.222	0.089	1.000	2.634
3714.00	23.000	0.259	0.089	1.000	2.633
3714.25	23.000	0.292	0.098	1.000	2.627
3714.50	3.000	0.222	0.116	1.000	2.644
3714.75	3.000	0.199	0.129	1.000	2.620
3715.00	3.000	0.208	0.110	1.000	2.663
3715.25	3.000	0.196	0.113	1.000	2.670
3715.50	3.000	0.215	0.107	1.000	2.663
3715.75	3.000	0.141	0.119	1.000	2.699
3716.00	3.000	0.063	0.149	1.000	2.723
3716.25	3.000	0.039	0.160	1.000	2.698
3716.50	3.000	00000.000	0.159	1.000	2.698
3716.75	3.000	00000.000	0.158	1.000	2.678
3717.00	3.000	00000.000	0.154	0.993	2.675
3717.25	3.000	00000.000	0.159	0.930	2.699
3717.50	3.000	00000.000	0.152	0.932	2.717
3717.75	3.000	00000.000	0.146	0.966	2.693
3718.00	3.000	00000.000	0.145	1.000	2.680
3718.25	3.000	00000.000	0.138	1.000	2.695
3718.50	3.000	0.002	0.131	1.000	2.702
3718.75	3.000	0.027	0.143	1.000	2.705
3719.00	3.000	00000.000	0.155	1.000	2.714
3719.25	3.000	00000.000	0.166	1.000	2.703
3719.50	3.000	00000.000	0.170	1.000	2.703
3719.75	3.000	00000.000	0.167	0.986	2.644
3720.00	3.000	00000.000	0.139	0.967	2.687
3720.25	23.000	0.132	0.091	1.000	2.774
3720.50	23.000	0.324	0.051	1.000	2.738
3720.75	23.000	0.397	0.039	1.000	2.697
3721.00	23.000	0.287	0.088	1.000	2.674
3721.25	3.000	0.177	0.118	1.000	2.706
3721.50	3.000	0.250	0.117	1.000	2.659
3721.75	3.000	0.212	0.125	1.000	2.621
3722.00	3.000	0.154	0.103	1.000	2.662
3722.25	3.000	0.063	0.120	1.000	2.685
3722.50	3.000	0.073	0.142	1.000	2.650
3722.75	3.000	0.057	0.144	1.000	2.692
3723.00	3.000	0.081	0.157	0.977	2.682
3723.25	3.000	0.082	0.166	0.907	2.669
3723.50	3.000	0.072	0.167	0.868	2.694
3723.75	3.000	0.063	0.170	0.856	2.718
3724.00	3.000	0.075	0.164	0.907	2.681
3724.25	3.000	0.065	0.137	1.000	2.682
3724.50	3.000	0.066	0.124	1.000	2.738
3724.75	3.000	0.068	0.130	1.000	2.752

SUMMARY LOG
WELL 15/9-1



LOCATION: 58° 28' 19.05" N
01° 45' 11.90" E

EL. RKB: 25 M
WATER DEPTH: 106 M

SPUDDED: 23 FEB. 1977
PLUGGED: 27 MAY 1977

PRO/PET ROFYSIKK
OCTOBEI 1978
J.K. SMIS AD

WELLF LE
N.45

statoil
Den norske stats oljeselskap a.s