CASINO 2

LOG ANALYSIS

CASINO 2 - LOG ANALYSIS

Casino 2 wireline logs were analysed over the Waarre Sandstone (1746m-2101m) interval. Conventional gas pay was identified in the Waarre C and Waarre A units of the Waarre Formation. Casino 2 was cased and suspended as a potential future gas producer.

A 445mm surface hole was drilled to 700metres and 340mm casing set at 690.6metres. A 311mm hole was then drilled with KCl/PHPA mud to 2112metres (D). Wireline logging was carried out by Schlumberger (as described below).

Unless otherwise specified, all depths mentioned below are loggers depths referenced to the drill floor.

Logs Acquired

Run 1	NGT	1642m-Surface
	TNPH	1647m-Surface
	RXOZ	1647m-Surface
	RHOZ	1647m-Surface
	HCAL	1645m-Surface
	HALS	1666m-Surface
	DSI	1655m-Surface
	SP	1628m-Surface

Run 2   GR-MDT (32 Tests, 13 god, 14 tight, 3 lost seals, 2 unstable, 3 samples)

Run 3   GR-CST (Recovered 26 of 30 cut)

Mud Parameters

Mud Type	KCl/PHPA
Mud Density	10.3LB/G
KCl	6.0%
Rm	0.153 ohmm @ 20.0^{o}C
Rmf	0.124 ohmm @ 20.0^{o}C
Rmc	0.199 ohmm @ 19.0^{o}C
MRT	80°C from Run 1 at 2072m

Remarks

- Two 2" standoffs on the HALS.
- PEX run in high resolution mode.

Log Processing

- A Pickett plot was used to derive the R_w used for this analysis.
- A BHT of 80.0°C was used for the analysis (Gradient of 26.5°C/km).

Interpretation Procedures and Parameters

An interpretation over the Waarre Sandstone interval was conducted using Multimin. Water saturations were computed using the Dual-water Equation (Parameters used for the interpretation are detailed in Table 1). The parameters used in the Multimin model for this evaluation can be found in the report at the end of this document.

- The NGT from Run 1 was corrected for environmental effects such as mud-weight, KCl and borehole size using measurements made from the MCFL caliper.

- Borehole corrections for the HALS, HLLS and HLLD curves were applied. These are ratios used to emulate the algorithms illustrated in the Schlumberger chartbook.

- The invasion corrected R_T was derived using the Schlumberger laterolog invasion correction supplied with in Geolog.

Conclusions

1. 10.7m of gas pay was identified in the Waarre Cb unit of the Waarre Formation.
2. 11.0m of gas pay was identified in the Waarre Ca unit of the Waarre Formation.
3. 4.6m of gas pay was identified in the Waarre A unit of the Waarre Formation.
4. Casino 2 was cased and suspended.

Attached is the well evaluation summary (WES) plot for Casino 2 (03.044)
data/wes_ot/casino2_03044.wes

TABLE 1
Log Analysis Parameters

PARAMETERS	WAARRE Cb UNIT	WAARRE Ca UNIT	WAARRE A UNIT
R_w (ohmm) @ 80°C	0.6	0.6	0.6
a	1	1	1
m	1.65	1.65	1.65
n	2	2	2

TABLE 2
Conventional Pay Summary

FORMATION	SAND	SAND INTERVAL	GROSS SAND (m)	NET SAND (m)	AVG PHIs (%)	Kh_s (MD)	NET PAY (m)	AVG PHIp (%)	WT.AVG SW (%)
WAARRE CB	WAARR	1752-1772	11.7	11.1	17.5	12251	10.7	17.7	7
WAARRE CA	WAARR	1773-1788	11.1	11	16.3	4623.5	11	16.3	8
WAARRE A	WAARR	1831-1981	58.9	15.3	11.1	71	4.6	11.4	33

Cutoffs: Gross Sand < 45% VSH, Net Sand > 8% PHIE, Net Pay > 8% PHIE & <50% Sw

CASINO_2
WAARRE Cb

PHIT Cutoff	SWT Cutoff	AVG PHIE V/V	AVG SWT V/V	Phie*H	HCPV Sg*Phie*H	NET (ft)	NHCPV
0	0.5	0.162	0.248	2.1	1.578	13	1.00
0.02	0.5	0.162	0.248	2.1	1.578	13	1.00
0.04	0.5	0.162	0.248	2.1	1.578	13	1.00
0.06	0.5	0.162	0.248	2.1	1.578	13	1.00
0.08	0.5	0.166	0.243	2.05	1.552	12.3	0.98
0.1	0.5	0.175	0.234	1.939	1.484	11.1	0.94
0.12	0.5	0.185	0.218	1.77	1.384	9.58	0.88
0.14	0.5	0.199	0.192	1.515	1.225	7.62	0.78
0.16	0.5	0.211	0.167	1.288	1.073	6.1	0.68
0.18	0.5	0.217	0.151	1.173	0.996	5.41	0.63
0.2	0.5	0.222	0.137	1.003	0.866	4.52	0.55
0.22	0.5	0.228	0.113	0.637	0.565	2.79	0.36
0.24	0.5	0.242	0.067	0.068	0.063	0.28	0.0399
0.26	0.5	0	0	0	0	0	0
0.28	0.5	0	0	0	0	0	0
0.3	0.5	0	0	0	0	0	0
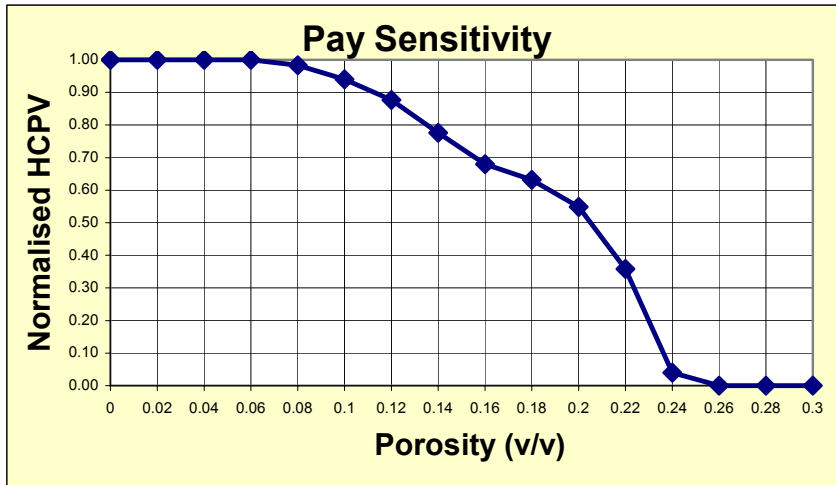
CASINO_2
WAARRE Ca

PHIT Cutoff	SWT Cutoff	AVG PHIE V/V	AVG SWT V/V	Phie*H	HCPV Sg*Phie*H	NET (ft)	NHCPV
0	0.5	0.158	0.29	1.834	1.303	11.608	1.00
0.02	0.5	0.158	0.29	1.834	1.303	11.608	1.00
0.04	0.5	0.158	0.29	1.834	1.303	11.608	1.00
0.06	0.5	0.158	0.29	1.834	1.303	11.608	1.00
0.08	0.5	0.16	0.288	1.817	1.294	11.379	0.99
0.1	0.5	0.163	0.284	1.773	1.269	10.897	0.97
0.12	0.5	0.172	0.273	1.592	1.158	9.246	0.89
0.14	0.5	0.184	0.259	1.321	0.979	7.188	0.75
0.16	0.5	0.193	0.246	1.081	0.816	5.588	0.63
0.18	0.5	0.203	0.237	0.799	0.61	3.937	0.47
0.2	0.5	0.221	0.223	0.349	0.271	1.575	0.21
0.22	0.5	0.231	0.226	0.211	0.163	0.914	0.1251
0.24	0.5	0.248	0.3	0.038	0.026	0.152	0.02
0.26	0.5	0	0	0	0	0	0
0.28	0.5	0	0	0	0	0	0
0.3	0.5	0	0	0	0	0	0

Pay Sensitivity — Normalised HCPV vs Porosity (v/v) (WAARRE Cb)

Pay Sensitivity — Normalised HCPV vs Porosity (v/v) (WAARRE Ca)
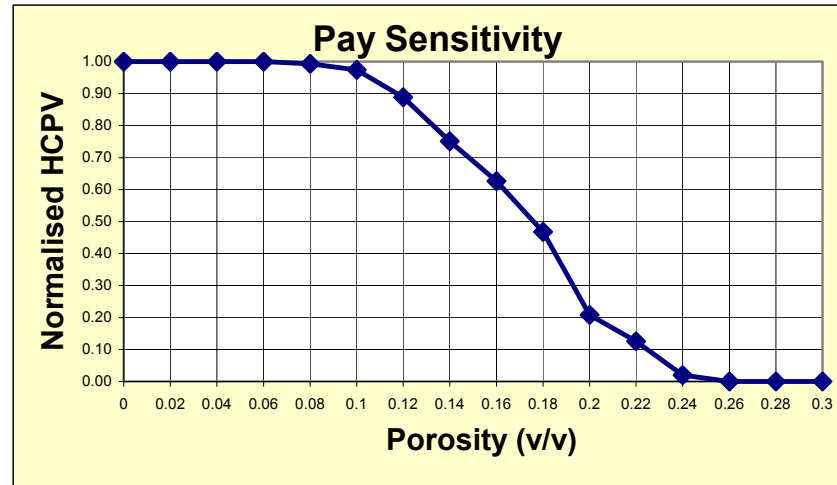
CASINO_2
WAARRE A

PHIT Cutoff	SWT Cutoff	AVG PHIE V/V	AVG SWT V/V	Phie*H	HCPV Sg*Phie*H	NET (ft)	NHCPV
0	0.5	0.122	0.446	0.087	0.048	0.71	1.00
0.02	0.5	0.122	0.446	0.087	0.048	0.71	1.00
0.04	0.5	0.122	0.446	0.087	0.048	0.71	1.00
0.06	0.5	0.125	0.445	0.085	0.047	0.69	0.98
0.08	0.5	0.148	0.445	0.072	0.04	0.48	0.83
0.1	0.5	0.148	0.445	0.072	0.04	0.48	0.83
0.12	0.5	0.148	0.445	0.072	0.04	0.48	0.83
0.14	0.5	0.157	0.448	0.052	0.029	0.33	0.60
0.16	0.5	0.173	0.479	0.022	0.011	0.13	0.23
0.18	0.5	0.18	0.489	0.005	0.002	0.03	0.04
0.2	0.5	0	0	0	0	0	0.00
0.22	0.5	0	0	0	0	0	0.00
0.24	0.5	0	0	0	0	0	0
0.26	0.5	0	0	0	0	0	0
0.28	0.5	0	0	0	0	0	0
0.3	0.5	0	0	0	0	0	0

Pay Sensitivity
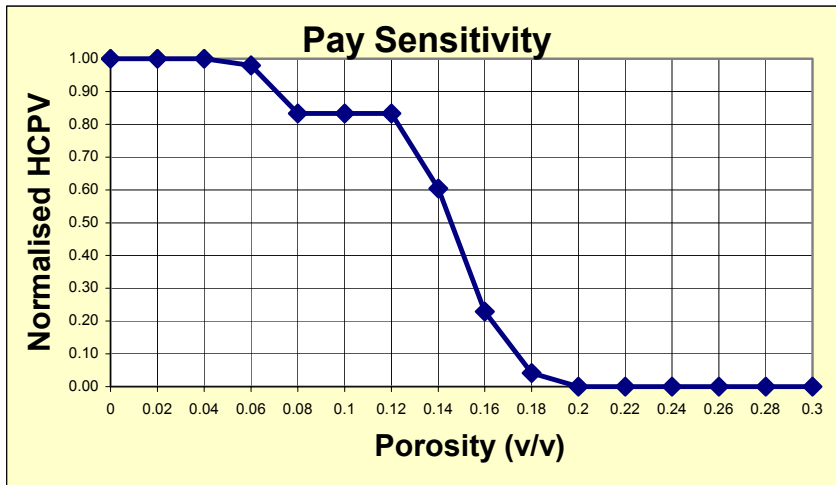
```
*************************************
*                                   *
*           MULTIMIN REPORT         *
*                                   *
*     Project : PETRO_TXDM          *
*     User id : exptxd              *
*     Date    : 17-Apr-2003 12:26:08 *
*                                   *
*************************************
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE FORMATION (1746.02 - 1751.99 metres)   Project PETRO_TXDM
        Reported by exptxd   on 17-Apr-2003 at 12:26
        Analysed by exptxd   on 21-Mar-2003 at 10:07

 MODELS:
        Type   Name   Cond# Cutoff Expression

        Primary   CASINO2_KILL   6.015 10.0

 FORMATION FLUID PARAMETERS:
        Fluid properties option = DEPTH
        Oil Gravity Degrees API = 30.00 dapi   Gas specific gravity = 0.650
        Rws = 0.6000 @ 80.00 degC   Cwbs = - @ - degC   Rmfs = 0.1239 @ 19.70 degC

 BOREHOLE PARAMETERS:
        Mud base = WATER   Mud density = 1234.212 k/m3   KCl concentration of mud = 0.00 %
        SHT = -   BHT = 80.00 degC
        Rms = 0.1534 @ 20.10 degC   Rmcs = 0.199 @ 19.50 degC   Total depth = 2108.00 metres

        Average temperature of 70.63 degC by TLI/BLI method.
        Average pressure of 21169.22 kpa by MUD_DENS method.

MULTIMIN REPORT for well CASINO_2 interval WAARRE FORMATION (1746.02 - 1751.99 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL:
    Cementation factor m = 1.650   Saturation exponent n = 2.000   Linear dual-water w = 2.00
    Expansion of clay bound water is enabled.

Component	QUARTZ	ORTHOCL	PYRITE	SIDER	ILLITE	KAOLIN	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Error of prediction	0.0957	0.3116	0.5564	0.8973	0.7736	0.8058	0.0266	0.1021	0.1105	0.0080	0.3076

EQUATION RESPONSES:

Log	Method	Uncertainty											
Formation density [G/C3]		0.0264	2.645	2.541	4.987	3.911	2.776	2.620	0.024	1.025	1.025	4.084	0.000
RHO8	Linear												
Neutron [V/V]		0.0140	-0.050	-0.050	-0.019	0.129	0.300	0.451	0.355	0.960	0.960	-0.002	0.000
NPOR	Linear												
Sonic transit time [US/F]		1.0000	55.5	53.5	37.6	43.8	105.0	100.0	210.0	189.0	189.0	189.0	0.0
DTCO	Linear												
Photoelectric absorption [B/C3]		3.0000	4.78	7.29	82.22	56.22	11.73	5.38	0.02	0.66	0.66	1065.00	0.00
U	Linear												
Total gamma [GAPI]		5.0000	40.0	280.0	5.0	5.0	265.0	150.0	0.0	0.0	0.0	0.0	0.0
GR	Linear												
Spectral thorium [PPM]		0.5000	1.0	5.0	0.0	0.0	22.0	19.3	0.0	0.0	0.0	0.0	0.0
THOR_COR	Linear												
Spectral uranium [PPM]		1.0000	0.6	1.0	0.0	0.0	5.0	3.2	0.0	0.0	0.0	0.0	0.0
URAN_COR	Linear												
Unflushed conductivity [MH/M]		0.0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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     CT          Dual-water nonlinear     |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Flushed conductivity [MH/M]      0.0800 |   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|  20.42|  18.05|   0.00|
0.00|
     CXO         Dual-water nonlinear     -------------------------------------------------------------------------------------

 CONSTRAINTS:      Value Type Uncertainty
                                          -------------------------------------------------------------------------------------
 <PROG UNITY>    1.000 Tool     0.0100 |   1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.000|  0.000|  0.000|  0.000|
1.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG POROSITY>   0.000 Tool     0.0100 |   0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|  1.000| -
1.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG X BNDWAT>   0.000 Tool     0.0100 |   0.000|  0.000|  0.000|  0.000|  0.184|  0.049|  0.000| -1.000|  0.000|  0.000|
0.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG U BNDWAT>   0.000 Tool     0.0100 |   0.000|  0.000|  0.000|  0.000|  0.264|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG WATER MUD>  0.000 <=          - |   0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|
0.000|
                                          -------------------------------------------------------------------------------------


 PROPERTIES AND BOUNDS:
                                          -------------------------------------------------------------------------------------
 Mineral grain density                  |   2.650|  2.570|  5.000|  3.960|  2.780|  2.620|  0.000|  0.000|  0.000|  0.000|
0.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Mineral cation exchange capacity       |   0.000|  0.000|  0.000|  0.000|  0.250|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Lower Bound                            |   0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                          |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Upper Bound                            |   1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.500|  0.500|  0.500|  0.500|
0.500|
                                          -------------------------------------------------------------------------------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE FORMATION (1746.02 - 1751.99 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL (continued):

```
                               ---------------
                    Component |UBNDWAT|UFREWAT|
              Error of prediction | 0.2676| 0.5919|
                               ---------------
EQUATION RESPONSES:
     Log          Method       Uncertainty
                               ---------------
Formation density [G/C3]         0.0264 |  0.000|  0.000|
     RHO8        Linear           |-------|-------|
Neutron [V/V]                    0.0140 |  0.000|  0.000|
     NPOR        Linear           |-------|-------|
Sonic transit time [US/F]        1.0000 |   0.0|    0.0|
     DTCO        Linear           |-------|-------|
Photoelectric absorption [B/C3]  3.0000 |   0.00|   0.00|
     U           Linear           |-------|-------|
Total gamma [GAPI]               5.0000 |   0.0|    0.0|
     GR          Linear           |-------|-------|
Spectral thorium [PPM]           0.5000 |   0.0|    0.0|
     THOR_COR    Linear           |-------|-------|
Spectral uranium [PPM]           1.0000 |   0.0|    0.0|
     URAN_COR    Linear           |-------|-------|
Unflushed conductivity [MH/M]    0.0400 |   7.38|   1.51|
     CT          Dual-water nonlinear  |-------|-------|
Flushed conductivity [MH/M]      0.0800 |   0.00|   0.00|
     CXO         Dual-water nonlinear  ---------------


CONSTRAINTS:    Value Type Uncertainty
                               ---------------
<PROG UNITY>      1.000 Tool    0.0100 |  1.000|  1.000|
                               |-------|-------|
<PROG POROSITY>   0.000 Tool    0.0100 | -1.000| -1.000|
                               |-------|-------|
<PROG X BNDWAT>   0.000 Tool    0.0100 |  0.000|  0.000|
                               |-------|-------|
<PROG U BNDWAT>   0.000 Tool    0.0100 | -1.000|  0.000|
                               |-------|-------|
<PROG WATER MUD>  0.000 <=         - | -1.000| -1.000|
                               ---------------


PROPERTIES AND BOUNDS:
                               ---------------
```

```
Mineral grain density                    |   0.000|   0.000|
                                         |-------|-------|
Mineral cation exchange capacity         |   0.000|   0.000|
                                         |-------|-------|
Lower Bound                              |   0.000|   0.001|
                                         |-------|-------|
Upper Bound                              |   0.500|   0.500|
                                          ---------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE CB (1752.02 - 1772.49 metres)   Project PETRO_TXDM
        Reported by exptxd   on 17-Apr-2003 at 12:26
        Analysed by exptxd   on 21-Mar-2003 at 10:07

MODELS:
        Type   Name   Cond# Cutoff Expression

        Primary   CASINO2_KILL   6.015 10.0

FORMATION FLUID PARAMETERS:
        Fluid properties option = DEPTH
        Oil Gravity Degrees API = 30.00 dapi   Gas specific gravity = 0.650
        Rws = 0.6000 @ 80.00 degC   Cwbs = - @ - degC   Rmfs = 0.1239 @ 19.70 degC

BOREHOLE PARAMETERS:
        Mud base = WATER   Mud density = 1234.212 k/m3   KCl concentration of mud = 0.00 %
        SHT = -   BHT = - degC
        Rms = 0.1534 @ 20.10 degC   Rmcs = 0.199 @ 19.50 degC   Total depth = 2108.00 metres

        Average temperature of 70.98 degC by TLI/BLI method.
        Average pressure of 21329.70 kpa by MUD_DENS method.

MULTIMIN REPORT for well CASINO_2 interval WAARRE CB (1752.02 - 1772.49 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL:
    Cementation factor m = 1.650   Saturation exponent n = 2.000   Linear dual-water w = 2.00
    Expansion of clay bound water is enabled.

Component	QUARTZ	ORTHOCL	PYRITE	SIDER	ILLITE	KAOLIN	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Error of prediction	0.0955	0.3116	0.5565	0.8977	0.7736	0.8058	0.0265	0.1020	0.1105	0.0080	0.3080

EQUATION RESPONSES:

Log	Method	Uncertainty	QUARTZ	ORTHOCL	PYRITE	SIDER	ILLITE	KAOLIN	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Formation density [G/C3]		0.0264	2.645	2.541	4.987	3.911	2.776	2.620	0.025	1.024	1.024	4.084	0.000
RHO8	Linear												
Neutron [V/V]		0.0140	-0.050	-0.050	-0.019	0.129	0.300	0.451	0.357	0.960	0.960	-0.002	0.000
NPOR	Linear												
Sonic transit time [US/F]		1.0000	55.5	53.5	37.6	43.8	105.0	100.0	210.0	189.0	189.0	189.0	0.0
DTCO	Linear												
Photoelectric absorption [B/C3]		3.0000	4.78	7.29	82.22	56.22	11.73	5.38	0.02	0.66	0.66	1065.00	0.00
U	Linear												
Total gamma [GAPI]		5.0000	40.0	280.0	5.0	5.0	265.0	150.0	0.0	0.0	0.0	0.0	0.0
GR	Linear												
Spectral thorium [PPM]		0.5000	1.0	5.0	0.0	0.0	22.0	19.3	0.0	0.0	0.0	0.0	0.0
THOR_COR	Linear												
Spectral uranium [PPM]		1.0000	0.6	1.0	0.0	0.0	5.0	3.2	0.0	0.0	0.0	0.0	0.0
URAN_COR	Linear												
Unflushed conductivity [MH/M]		0.0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

```
    CT          Dual-water nonlinear    |------|------|------|------|------|------|------|------|------|------|------
|
 Flushed conductivity [MH/M]      0.0800 |   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|  20.53|  18.12|   0.00|
0.00|
    CXO         Dual-water nonlinear    ----------------------------------------------------------------------------

 CONSTRAINTS:    Value Type Uncertainty
                                        ----------------------------------------------------------------------------
 <PROG UNITY>     1.000 Tool     0.0100 |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.000|  0.000|  0.000|  0.000|
1.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 <PROG POROSITY>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|  1.000| -
1.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 <PROG X BNDWAT>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.184|  0.049|  0.000| -1.000|  0.000|  0.000|
0.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 <PROG U BNDWAT>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.264|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 <PROG WATER MUD> 0.000 <=           - |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|
0.000|
                                        ----------------------------------------------------------------------------

 PROPERTIES AND BOUNDS:
                                        ----------------------------------------------------------------------------
 Mineral grain density               |  2.650|  2.570|  5.000|  3.960|  2.780|  2.620|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 Mineral cation exchange capacity    |  0.000|  0.000|  0.000|  0.000|  0.250|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 Lower Bound                         |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |------|------|------|------|------|------|------|------|------|------|------
|
 Upper Bound                         |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.500|  0.500|  0.500|  0.500|
0.500|
                                        ----------------------------------------------------------------------------
```

```
MULTIMIN REPORT for well CASINO_2 interval WAARRE CB (1752.02 - 1772.49 metres)      Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL (continued):

                                  ---------------
                         Component |UBNDWAT|UFREWAT|
                 Error of prediction | 0.2678| 0.5925|
                                  ---------------
EQUATION RESPONSES:
     Log          Method       Uncertainty
                                  ---------------
Formation density [G/C3]         0.0264 |  0.000|  0.000|
     RHO8         Linear                |-------|-------|
Neutron [V/V]                    0.0140 |  0.000|  0.000|
     NPOR         Linear                |-------|-------|
Sonic transit time [US/F]        1.0000 |    0.0|    0.0|
     DTCO         Linear                |-------|-------|
Photoelectric absorption [B/C3]  3.0000 |   0.00|   0.00|
     U            Linear                |-------|-------|
Total gamma [GAPI]               5.0000 |    0.0|    0.0|
     GR           Linear                |-------|-------|
Spectral thorium [PPM]           0.5000 |    0.0|    0.0|
     THOR_COR     Linear                |-------|-------|
Spectral uranium [PPM]           1.0000 |    0.0|    0.0|
     URAN_COR     Linear                |-------|-------|
Unflushed conductivity [MH/M]    0.0400 |   7.41|   1.52|
     CT           Dual-water nonlinear  |-------|-------|
Flushed conductivity [MH/M]      0.0800 |   0.00|   0.00|
     CXO          Dual-water nonlinear  ---------------

CONSTRAINTS:      Value Type Uncertainty
                                  ---------------
<PROG UNITY>      1.000 Tool     0.0100 |  1.000|  1.000|
                                  |-------|-------|
<PROG POROSITY>   0.000 Tool     0.0100 | -1.000| -1.000|
                                  |-------|-------|
<PROG X BNDWAT>   0.000 Tool     0.0100 |  0.000|  0.000|
                                  |-------|-------|
<PROG U BNDWAT>   0.000 Tool     0.0100 | -1.000|  0.000|
                                  |-------|-------|
<PROG WATER MUD>  0.000 <=          -   | -1.000| -1.000|
                                  ---------------

PROPERTIES AND BOUNDS:
                                  ---------------
```

```
Mineral grain density                    |   0.000|   0.000|
                                         |-------|-------|
Mineral cation exchange capacity         |   0.000|   0.000|
                                         |-------|-------|
Lower Bound                              |   0.000|   0.001|
                                         |-------|-------|
Upper Bound                              |   0.500|   0.500|
                                          ---------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE CA (1772.51 - 1787.98 metres)   Project PETRO_TXDM
        Reported by exptxd   on 17-Apr-2003 at 12:26
        Analysed by exptxd   on 21-Mar-2003 at 10:07

MODELS:
        Type   Name   Cond# Cutoff Expression

        Primary   CASINO2_KILL   6.016 10.0

FORMATION FLUID PARAMETERS:
        Fluid properties option = DEPTH
        Oil Gravity Degrees API = 30.00 dapi   Gas specific gravity = 0.650
        Rws = 0.6000 @ 80.00 degC   Cwbs = - @ - degC   Rmfs = 0.1239 @ 19.70 degC

BOREHOLE PARAMETERS:
        Mud base = WATER   Mud density = 1234.212 k/m3   KCl concentration of mud = 0.00 %
        SHT = -   BHT = - degC
        Rms = 0.1534 @ 20.10 degC   Rmcs = 0.199 @ 19.50 degC   Total depth = 2108.00 metres

        Average temperature of 71.45 degC by TLI/BLI method.
        Average pressure of 21547.36 kpa by MUD_DENS method.

MULTIMIN REPORT for well CASINO_2 interval WAARRE CA (1772.51 - 1787.98 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL:
    Cementation factor m = 1.650   Saturation exponent n = 2.000   Linear dual-water w = 2.00
    Expansion of clay bound water is enabled.

Component	QUARTZ	ORTHOCL	PYRITE	SIDER	ILLITE	KAOLIN	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Error of prediction	0.0952	0.3116	0.5568	0.8981	0.7737	0.8059	0.0265	0.1019	0.1105	0.0080	0.3085

EQUATION RESPONSES:

Log	Method	Uncertainty											
Formation density [G/C3]		0.0264	2.645	2.541	4.987	3.911	2.776	2.620	0.027	1.024	1.024	4.084	0.000
RHO8	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Neutron [V/V]		0.0140	-0.050	-0.050	-0.019	0.129	0.300	0.451	0.359	0.959	0.959	-0.002	0.000
NPOR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Sonic transit time [US/F]		1.0000	55.5	53.5	37.6	43.8	105.0	100.0	210.0	189.0	189.0	189.0	0.0
DTCO	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Photoelectric absorption [B/C3]		3.0000	4.78	7.29	82.22	56.22	11.73	5.38	0.02	0.66	0.66	1065.00	0.00
U	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total gamma [GAPI]		5.0000	40.0	280.0	5.0	5.0	265.0	150.0	0.0	0.0	0.0	0.0	0.0
GR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Spectral thorium [PPM]		0.5000	1.0	5.0	0.0	0.0	22.0	19.3	0.0	0.0	0.0	0.0	0.0
THOR_COR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Spectral uranium [PPM]		1.0000	0.6	1.0	0.0	0.0	5.0	3.2	0.0	0.0	0.0	0.0	0.0
URAN_COR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Unflushed conductivity [MH/M]		0.0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

```
     CT         Dual-water nonlinear    |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Flushed conductivity [MH/M]     0.0800 |   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|  20.68|  18.21|   0.00|
0.00|
     CXO        Dual-water nonlinear    -------------------------------------------------------------------------------------

 CONSTRAINTS:     Value Type Uncertainty
                                        -------------------------------------------------------------------------------------
 <PROG UNITY>     1.000 Tool     0.0100 |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.000|  0.000|  0.000|  0.000|
1.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG POROSITY>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|  1.000| -
1.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG X BNDWAT>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.184|  0.049|  0.000| -1.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG U BNDWAT>  0.000 Tool     0.0100 |  0.000|  0.000|  0.000|  0.000|  0.264|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG WATER MUD> 0.000 <=            - |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|
0.000|
                                        -------------------------------------------------------------------------------------


 PROPERTIES AND BOUNDS:
                                        -------------------------------------------------------------------------------------
 Mineral grain density                  |  2.650|  2.570|  5.000|  3.960|  2.780|  2.620|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Mineral cation exchange capacity       |  0.000|  0.000|  0.000|  0.000|  0.250|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Lower Bound                            |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Upper Bound                            |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.500|  0.500|  0.500|  0.500|
0.500|
                                        -------------------------------------------------------------------------------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE CA (1772.51 - 1787.98 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL (continued):

```
                                 ---------------
                      Component |UBNDWAT|UFREWAT|
                 Error of prediction | 0.2680| 0.5932|
                                 ---------------
EQUATION RESPONSES:
     Log            Method      Uncertainty
                                 ---------------
Formation density [G/C3]         0.0264 |  0.000|  0.000|
     RHO8         Linear                 |-------|-------|
Neutron [V/V]                    0.0140 |  0.000|  0.000|
     NPOR         Linear                 |-------|-------|
Sonic transit time [US/F]        1.0000 |    0.0|    0.0|
     DTCO         Linear                 |-------|-------|
Photoelectric absorption [B/C3]  3.0000 |   0.00|   0.00|
     U            Linear                 |-------|-------|
Total gamma [GAPI]               5.0000 |    0.0|    0.0|
     GR           Linear                 |-------|-------|
Spectral thorium [PPM]           0.5000 |    0.0|    0.0|
     THOR_COR     Linear                 |-------|-------|
Spectral uranium [PPM]           1.0000 |    0.0|    0.0|
     URAN_COR     Linear                 |-------|-------|
Unflushed conductivity [MH/M]    0.0400 |   7.46|   1.53|
     CT           Dual-water nonlinear   |-------|-------|
Flushed conductivity [MH/M]      0.0800 |   0.00|   0.00|
     CXO          Dual-water nonlinear   ---------------


CONSTRAINTS:     Value Type Uncertainty
                                 ---------------
<PROG UNITY>      1.000 Tool      0.0100 |  1.000|  1.000|
                                 |-------|-------|
<PROG POROSITY>   0.000 Tool      0.0100 | -1.000| -1.000|
                                 |-------|-------|
<PROG X BNDWAT>   0.000 Tool      0.0100 |  0.000|  0.000|
                                 |-------|-------|
<PROG U BNDWAT>   0.000 Tool      0.0100 | -1.000|  0.000|
                                 |-------|-------|
<PROG WATER MUD>  0.000 <=            - | -1.000| -1.000|
                                 ---------------


PROPERTIES AND BOUNDS:
                                 ---------------
```

```
Mineral grain density                   |   0.000|   0.000|
                                        |-------|-------|
Mineral cation exchange capacity        |   0.000|   0.000|
                                        |-------|-------|
Lower Bound                             |   0.000|   0.001|
                                        |-------|-------|
Upper Bound                             |   0.500|   0.500|
                                         ---------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE B (1788.01 - 1830.48 metres)   Project PETRO_TXDM
    Reported by exptxd   on 17-Apr-2003 at 12:26
    Analysed by exptxd   on 21-Mar-2003 at 10:07

MODELS:
    Type   Name   Cond# Cutoff Expression

    Primary   CASINO2_KILL   6.016 10.0

FORMATION FLUID PARAMETERS:
    Fluid properties option = DEPTH
    Oil Gravity Degrees API = 30.00 dapi   Gas specific gravity = 0.650
    Rws = 0.6000 @ 80.00 degC   Cwbs = - @ - degC   Rmfs = 0.1239 @ 19.70 degC

BOREHOLE PARAMETERS:
    Mud base = WATER   Mud density = 1234.212 k/m3   KCl concentration of mud = 0.00 %
    SHT = -   BHT = - degC
    Rms = 0.1534 @ 20.10 degC   Rmcs = 0.199 @ 19.50 degC   Total depth = 2108.00 metres

    Average temperature of 72.21 degC by TLI/BLI method.
    Average pressure of 21898.44 kpa by MUD_DENS method.

MULTIMIN REPORT for well CASINO_2 interval WAARRE B (1788.01 - 1830.48 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KILL:
    Cementation factor m = 1.650   Saturation exponent n = 2.000   Linear dual-water w = 2.00
    Expansion of clay bound water is enabled.

Component	QUARTZ	ORTHOCL	PYRITE	SIDER	ILLITE	KAOLIN	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Error of prediction	0.0947	0.3116	0.5571	0.8989	0.7739	0.8060	0.0264	0.1017	0.1105	0.0081	0.3093

EQUATION RESPONSES:

Log	Method	Uncertainty											
Formation density [G/C3]		0.0264	2.645	2.541	4.987	3.911	2.776	2.620	0.029	1.024	1.024	4.084	0.000
RHO8	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Neutron [V/V]		0.0140	-0.050	-0.050	-0.019	0.129	0.300	0.451	0.363	0.959	0.959	-0.002	0.000
NPOR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Sonic transit time [US/F]		1.0000	55.5	53.5	37.6	43.8	105.0	100.0	210.0	189.0	189.0	189.0	0.0
DTCO	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Photoelectric absorption [B/C3]		3.0000	4.78	7.29	82.22	56.22	11.73	5.38	0.02	0.66	0.66	1065.00	0.00
U	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total gamma [GAPI]		5.0000	40.0	280.0	5.0	5.0	265.0	150.0	0.0	0.0	0.0	0.0	0.0
GR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Spectral thorium [PPM]		0.5000	1.0	5.0	0.0	0.0	22.0	19.3	0.0	0.0	0.0	0.0	0.0
THOR_COR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Spectral uranium [PPM]		1.0000	0.6	1.0	0.0	0.0	5.0	3.2	0.0	0.0	0.0	0.0	0.0
URAN_COR	Linear		-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Unflushed conductivity [MH/M]		0.0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

```
     CT          Dual-water nonlinear   |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Flushed conductivity [MH/M]    0.0800 |   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|  20.91|  18.36|   0.00|
0.00|
     CXO         Dual-water nonlinear   -----------------------------------------------------------------------------------

 CONSTRAINTS:       Value Type Uncertainty
                                        -----------------------------------------------------------------------------------
 <PROG UNITY>      1.000 Tool    0.0100 |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.000|  0.000|  0.000|  0.000|
1.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG POROSITY>   0.000 Tool    0.0100 |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|  1.000| -
1.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG X BNDWAT>   0.000 Tool    0.0100 |  0.000|  0.000|  0.000|  0.000|  0.184|  0.049|  0.000| -1.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG U BNDWAT>   0.000 Tool    0.0100 |  0.000|  0.000|  0.000|  0.000|  0.264|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG WATER MUD>  0.000 <=          -  |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|
0.000|
                                        -----------------------------------------------------------------------------------

 PROPERTIES AND BOUNDS:
                                        -----------------------------------------------------------------------------------
 Mineral grain density                  |  2.650|  2.570|  5.000|  3.960|  2.780|  2.620|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Mineral cation exchange capacity       |  0.000|  0.000|  0.000|  0.000|  0.250|  0.070|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Lower Bound                            |  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                        |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Upper Bound                            |  1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.500|  0.500|  0.500|  0.500|
0.500|
                                        -----------------------------------------------------------------------------------
```

```
MULTIMIN REPORT for well CASINO_2 interval WAARRE B (1788.01 - 1830.48 metres)        Project PETRO_TXDM


PRIMARY MODEL CASINO2_KILL (continued):


                                           ---------------
                                Component |UBNDWAT|UFREWAT|
                          Error of prediction | 0.2684| 0.5944|
                                           ---------------
EQUATION RESPONSES:
     Log            Method       Uncertainty
                                           ---------------
Formation density [G/C3]         0.0264 |  0.000|  0.000|
     RHO8          Linear               |-------|-------|
Neutron [V/V]                    0.0140 |  0.000|  0.000|
     NPOR          Linear               |-------|-------|
Sonic transit time [US/F]        1.0000 |   0.0|   0.0|
     DTCO          Linear               |-------|-------|
Photoelectric absorption [B/C3]  3.0000 |  0.00|  0.00|
     U             Linear               |-------|-------|
Total gamma [GAPI]               5.0000 |   0.0|   0.0|
     GR            Linear               |-------|-------|
Spectral thorium [PPM]           0.5000 |   0.0|   0.0|
     THOR_COR      Linear               |-------|-------|
Spectral uranium [PPM]           1.0000 |   0.0|   0.0|
     URAN_COR      Linear               |-------|-------|
Unflushed conductivity [MH/M]    0.0400 |   7.53|   1.54|
     CT            Dual-water nonlinear  |-------|-------|
Flushed conductivity [MH/M]      0.0800 |  0.00|  0.00|
     CXO           Dual-water nonlinear  ---------------


CONSTRAINTS:      Value Type Uncertainty
                                           ---------------
<PROG UNITY>       1.000 Tool       0.0100 |  1.000|  1.000|
                                           |-------|-------|
<PROG POROSITY>    0.000 Tool       0.0100 | -1.000| -1.000|
                                           |-------|-------|
<PROG X BNDWAT>    0.000 Tool       0.0100 |  0.000|  0.000|
                                           |-------|-------|
<PROG U BNDWAT>    0.000 Tool       0.0100 | -1.000|  0.000|
                                           |-------|-------|
<PROG WATER MUD>   0.000 <=           - | -1.000| -1.000|
                                           ---------------


PROPERTIES AND BOUNDS:
                                           ---------------
```

```
Mineral grain density              |   0.000|   0.000|
                                   |-------|-------|
Mineral cation exchange capacity   |   0.000|   0.000|
                                   |-------|-------|
Lower Bound                        |   0.000|   0.001|
                                   |-------|-------|
Upper Bound                        |   0.500|   0.500|
                                    ---------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE A (1830.50 - 1981.00 metres)   Project PETRO_TXDM
        Reported by exptxd   on 17-Apr-2003 at 12:26
        Analysed by exptxd   on 21-Mar-2003 at 10:07

 MODELS:
        Type   Name   Cond# Cutoff Expression

        Primary   CASINO2_KCALC   6.356 10.0

 FORMATION FLUID PARAMETERS:
        Fluid properties option = DEPTH
        Oil Gravity Degrees API = 30.00 dapi   Gas specific gravity = 0.650
        Rws = 0.6000 @ 80.00 degC   Cwbs = - @ - degC   Rmfs = 0.1239 @ 19.70 degC

 BOREHOLE PARAMETERS:
        Mud base = WATER   Mud density = 1234.212 k/m3   KCl concentration of mud = 0.00 %
        SHT = -   BHT = - degC
        Rms = 0.1534 @ 20.10 degC   Rmcs = 0.199 @ 19.50 degC   Total depth = 2108.00 metres

        Average temperature of 73.21 degC by TLI/BLI method.
        Average pressure of 22364.50 kpa by MUD_DENS method.

MULTIMIN REPORT for well CASINO_2 interval WAARRE A (1830.50 - 1981.00 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KCALC:
     Cementation factor m = 1.650   Saturation exponent n = 2.000   Linear dual-water w = 2.00
     Expansion of clay bound water is enabled.

Component	QUARTZ	CALCITE	ILLITE	KAOLIN	CHLOR	SPCMIN2	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Error of prediction	0.9280	0.9166	0.4116	0.4348	0.0962	0.0164	0.0447	0.0577	0.0634	0.0053	0.2186

EQUATION RESPONSES:

Log	Method	Uncertainty	QUARTZ	CALCITE	ILLITE	KAOLIN	CHLOR	SPCMIN2	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Formation density [G/C3]		0.0200	2.645	2.710	2.776	2.620	2.800	4.510	0.030	1.022	1.022	4.084	0.000
RHO8	Linear												
Neutron [V/V]		0.0140	-0.050	0.000	0.300	0.451	0.500	-0.030	0.365	0.958	0.958	-0.002	0.000
NPOR	Linear												
Sonic transit time [US/F]		1.0000	55.5	47.8	105.0	100.0	85.3	95.8	210.0	189.0	189.0	189.0	0.0
DTCO	Linear												
Photoelectric absorption [B/C3]		3.0000	4.78	13.77	11.73	5.38	25.00	490.00	0.02	0.66	0.66	1065.00	0.00
U	Linear												
Total gamma [GAPI]		3.0000	40.0	15.0	265.0	104.0	70.0	2800.0	0.0	0.0	0.0	0.0	0.0
GR	Linear												
Spectral thorium [PPM]		1.0000	1.0	1.0	22.0	19.3	5.0	50.0	0.0	0.0	0.0	0.0	0.0
THOR_COR	Linear												
Spectral uranium [PPM]		1.0000	0.6	1.0	5.0	3.2	5.0	10.0	0.0	0.0	0.0	0.0	0.0
URAN_COR	Linear												
Unflushed conductivity [MH/M]		0.0400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

```
     CT          Dual-water nonlinear    |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 Flushed conductivity [MH/M]     0.0800 |   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|   0.00|  21.71|  18.85|   0.00|
0.00|
     CXO         Dual-water nonlinear    ------------------------------------------------------------------------------

 CONSTRAINTS:    Value Type Uncertainty
                                         ------------------------------------------------------------------------------
 <PROG UNITY>    1.000 Tool     0.0100 |   1.000|  1.000|  1.000|  1.000|  1.000|  1.000|  0.000|  0.000|  0.000|  0.000|
1.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG POROSITY> 0.000 Tool     0.0100 |   0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|  1.000| -
1.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG X BNDWAT> 0.000 Tool     0.0100 |   0.000|  0.000|  0.184|  0.049|  0.111|  0.000|  0.000| -1.000|  0.000|  0.000|
0.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG U BNDWAT> 0.000 Tool     0.0100 |   0.000|  0.000|  0.264|  0.070|  0.160|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <PROG WATER MUD> 0.000 <=          - |   0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  1.000|  1.000|
0.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <USER CONSTR1>   0.040 >=          - |   0.000|  1.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                         |-------|-------|-------|-------|-------|-------|-------|-------|-------|-------
|
 <USER CONSTR2>   0.010 >=          - |   0.000|  0.000|  0.000|  0.000|  0.000|  1.000|  0.000|  0.000|  0.000|  0.000|
0.000|
                                         ------------------------------------------------------------------------------
```

MULTIMIN REPORT for well CASINO_2 interval WAARRE A (1830.50 - 1981.00 metres)   Project PETRO_TXDM

PRIMARY MODEL CASINO2_KCALC (continued):

PROPERTIES AND BOUNDS:

	QUARTZ	CALCITE	ILLITE	KAOLIN	CHLOR	SPCMIN2	XGAS	XBNDWAT	XFREWAT	XSPCFLU	UGAS
Mineral grain density	2.650	2.710	2.780	2.620	2.800	4.510	0.000	0.000	0.000	0.000	0.000
Mineral cation exchange capacity	0.000	0.000	0.250	0.070	0.150	0.000	0.000	0.000	0.000	0.000	0.000
Lower Bound	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Upper Bound	1.000	1.000	1.000	1.000	1.000	1.000	0.500	0.500	0.500	0.500	0.500

Component	UBNDWAT	UFREWAT
Error of prediction	0.1527	0.3398

EQUATION RESPONSES:

Log	Method	Uncertainty		
Formation density [G/C3]		0.0200	0.000	0.000
RHO8	Linear			
Neutron [V/V]		0.0140	0.000	0.000
NPOR	Linear			
Sonic transit time [US/F]		1.0000	0.0	0.0
DTCO	Linear			
Photoelectric absorption [B/C3]		3.0000	0.00	0.00
U	Linear			
Total gamma [GAPI]		3.0000	0.0	0.0
GR	Linear			
Spectral thorium [PPM]		1.0000	0.0	0.0
THOR_COR	Linear			
Spectral uranium [PPM]		1.0000	0.0	0.0

```
    URAN_COR     Linear                  |-------|-------|
Unflushed conductivity [MH/M]     0.0400 |   7.76|   1.58|
    CT           Dual-water nonlinear    |-------|-------|
Flushed conductivity [MH/M]       0.0800 |   0.00|   0.00|
    CXO          Dual-water nonlinear     --------------
```

```
MULTIMIN REPORT for well CASINO_2 interval WAARRE A (1830.50 - 1981.00 metres)      Project PETRO_TXDM

PRIMARY MODEL CASINO2_KCALC (continued):

CONSTRAINTS:                                    ---------------
                                               |UBNDWAT|UFREWAT|
                      Value Type Uncertainty   |-------|-------|
<PROG UNITY>          1.000 Tool       0.0100  |  1.000|  1.000|
                                               |-------|-------|
<PROG POROSITY>       0.000 Tool       0.0100  | -1.000| -1.000|
                                               |-------|-------|
<PROG X BNDWAT>       0.000 Tool       0.0100  |  0.000|  0.000|
                                               |-------|-------|
<PROG U BNDWAT>       0.000 Tool       0.0100  | -1.000|  0.000|
                                               |-------|-------|
<PROG WATER MUD>      0.000 <=             -    | -1.000| -1.000|
                                               |-------|-------|
<USER CONSTR1>        0.040 >=             -    |  0.000|  0.000|
                                               |-------|-------|
<USER CONSTR2>        0.010 >=             -    |  0.000|  0.000|
                                                ---------------


PROPERTIES AND BOUNDS:
                                                ---------------
Mineral grain density                          |  0.000|  0.000|
                                               |-------|-------|
Mineral cation exchange capacity               |  0.000|  0.000|
                                               |-------|-------|
Lower Bound                                    |  0.000|  0.001|
                                               |-------|-------|
Upper Bound                                    |  0.500|  0.500|
                                                ---------------
```

```
*************************************
*                                   *
*           MULTIMIN REPORT         *
*                                   *
*         *** End of Report ***     *
*                                   *
*     Project : PETRO_TXDM          *
*     User id : exptxd              *
*     Date    : 17-Apr-2003 12:26:09 *
*     Pages   :  16                 *
*                                   *
*************************************
```