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NUMBER 7031/2

PPL 24

EROMANGA AND COOPER BASINS

KIDMAN 5

TEST REPORTS

Submitted by

Delhi Petroleum Pty Ltd
1993

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MINES AND ENERGY
SOUTH AUSTRALIA



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Mines and Energy South Australia, PO Box 151, Eastwood, SA 5063

Enquiries: Information Services Branch
Mines and Energy South Australia
191 Greenhill Road, Parkside 5063
Telephone: (08) 274 7687
Facsimile: (08) 272 7597

ENVELOPE 7031/2

TENEMENT: PPL 24; Eromanga and Cooper Basins

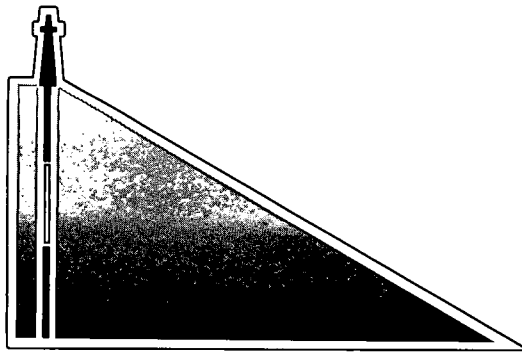
TENEMENT HOLDER: Delhi Petroleum Pty Ltd (operator), Santos Ltd, Vamgas Ltd and South Australian Oil and Gas Corporation Pty Ltd

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Flopetrol-Johnston, 1987. PVT study report, Patchawarra Formation gas reservoir samples [sampled on 18/6/87] (Adelaide Laboratory report no. 87PVA032, July 1987).	7031/2 R 3 Pgs 17-29
Larkin, R. and Peterson, G., 1988. Results of Toolachee Formation gas reservoir perforated interval 6394-6750 feet (Upper producing zone) pressure buildup and static pressure gradient surveys conducted over the period 16-27/7/88 (Expertest Pty Ltd).	7031/2 R 4 Pgs 30-48
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Halliburton Reservoir Evaluation System



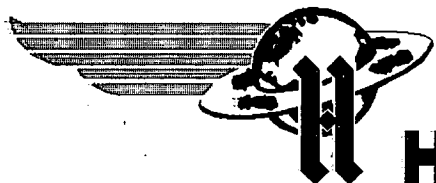
HALLIBURTON SERVICES
Duncan, Oklahoma 73533

 A Halliburton Company

NOMENCLATURE

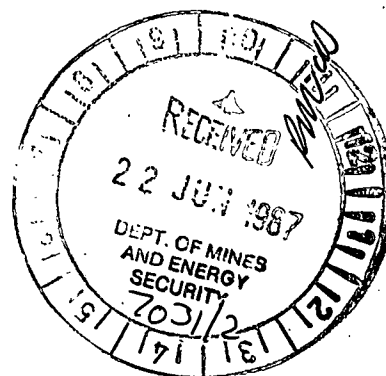
B	= Formation Volume Factor	(Res Vol/Std Vol)
c_t	= System Total Compressibility	(Vol/Vol)/psi
DR	= Damage Ratio	
h	= Estimated Net Pay Thickness	Ft
k	= Permeability	md
m	{	
	= (Liquid) Slope Extrapolated Pressure Plot	psi/cycle
	= (Gas) Slope Extrapolated m(P) Plot	MM psi ² /cp/cycle
m(P*)	= Real Gas Potential at P*	MM psi ² /cp
m(P _i)	= Real Gas Potential at P _i	MM psi ² /cp
AOF ₁	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF ₂	= Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P*	= Extrapolated Static Pressure	Psig
P _i	= Final Flow Pressure	Psig
Q	= Liquid Production Rate During Test	BPD
Q ₁	= Theoretical Liquid Production w/Damage Removed	BPD
Q _g	= Measured Gas Production Rate	MCFD
r _i	= Approximate Radius of Investigation	Ft
r _w	= Radius of Well Bore	Ft
S	= Skin Factor	
t	= Total Flow Time Previous to Closed-in	Minutes
Δt	= Closed-in Time at Data Point	Minutes
T	= Temperature Rankine	°R
φ	= Porosity (fraction)	
μ	= Viscosity of Gas or Liquid	cp
Log	= Common Log	

00003



HALLIBURTON SERVICES

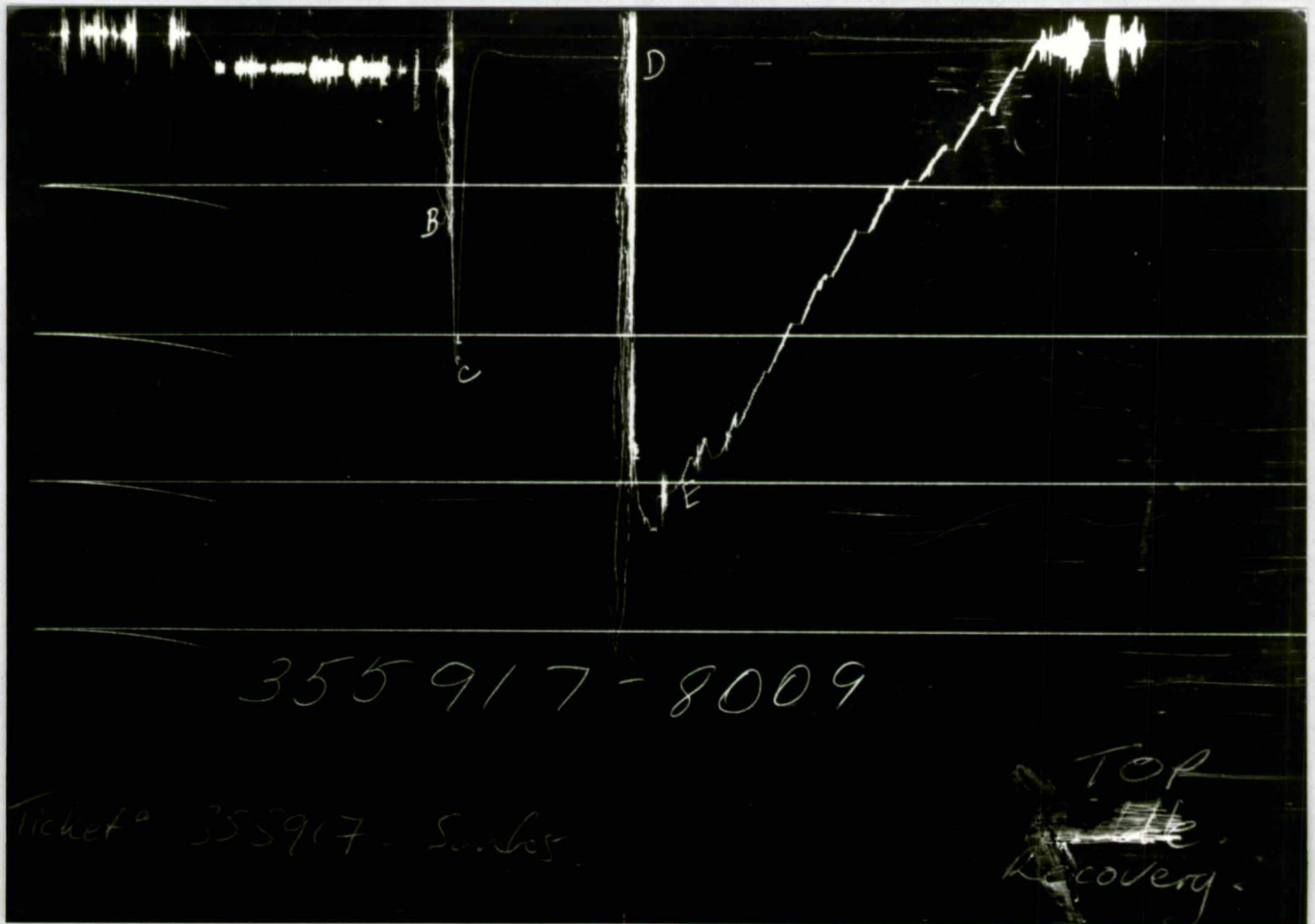
TICKET NO. 35591700
10-JUN-87
MDDMBA



FORMATION TESTING SERVICE REPORT

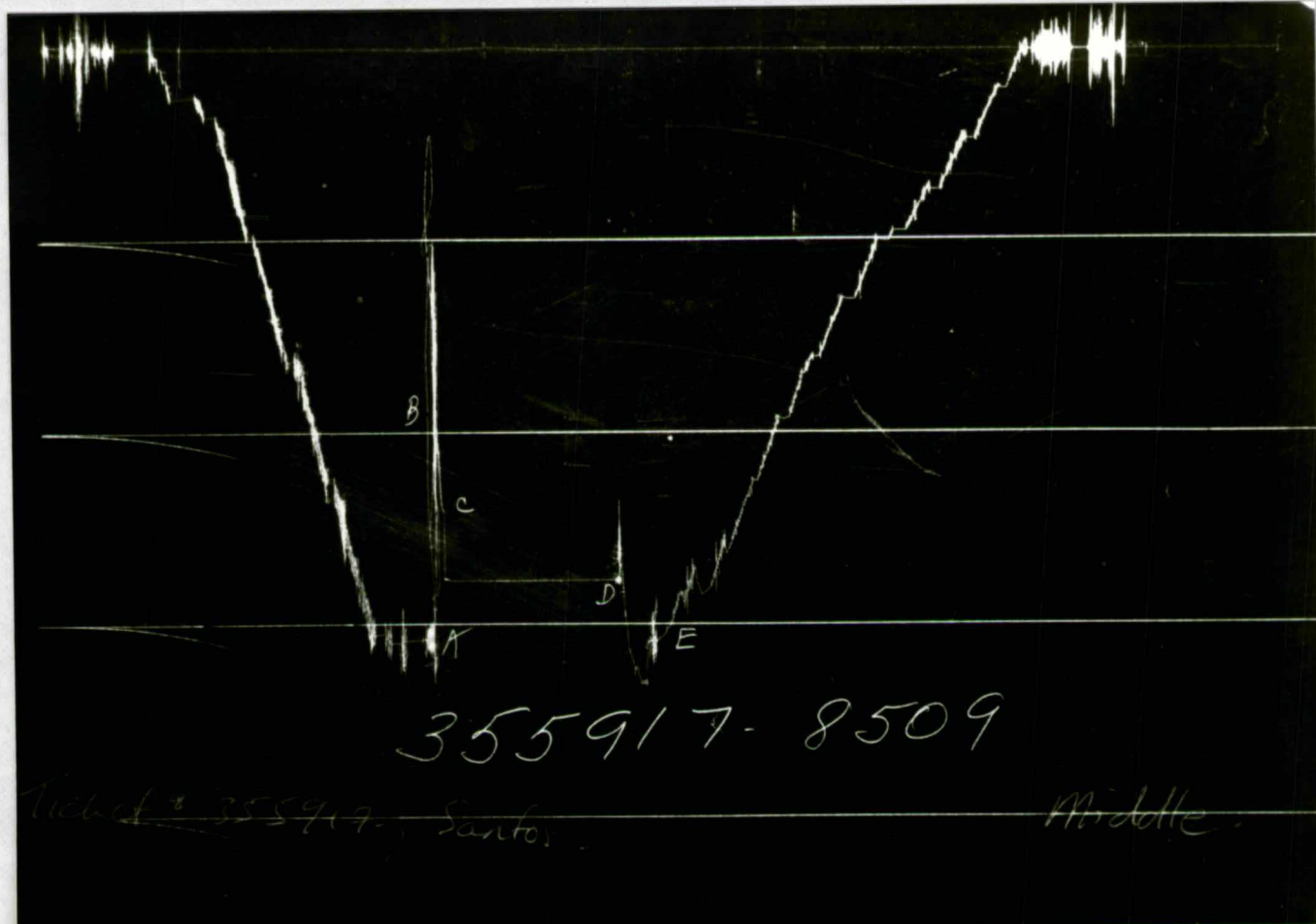
LEASE NAME		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
KIDMAN		5		1		6570.0 - 7438.0		SANTOS LIMITED	
LEGAL LOCATION		REFER TO REMARKS SECTION		FIELD AREA		COOPER BASIN		COUNTY SOUTH AUSTRALIA	
SEC. - TWP. - RNG.								STATE AUSTRALIA	
								SM	

CAED HOLE



GAUGE NO: 8009 DEPTH: 6411.6 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		1212.8			
C	FINAL FIRST FLOW		2207.7	11.0	10.7	F
C	INITIAL FIRST CLOSED-IN		2207.7			
D	FINAL FIRST CLOSED-IN	138	141.6	244.0	207.5	C
E	FINAL HYDROSTATIC		3095.9			



GAUGE NO: 8509 DEPTH: 6423.8 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3074	3100.5			
B	INITIAL FIRST FLOW	1856	1910.5	11.0	10.7	F
C	FINAL FIRST FLOW	2400	2408.0			
C	INITIAL FIRST CLOSED-IN	2400	2408.0	244.0	207.5	C
D	FINAL FIRST CLOSED-IN	2772	2770.9			
E	FINAL HYDROSTATIC	3087	3089.5			

355917-8508

Vint 355917 Santos

Bottom.

GAUGE NO: 8508 DEPTH: 6585.2 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW					
C	FINAL FIRST FLOW			11.0		F
C	INITIAL FIRST CLOSED-IN					
D	FINAL FIRST CLOSED-IN			244.0		C
E	FINAL HYDROSTATIC					

00007

EQUIPMENT & HOLE DATAFORMATION TESTED: TOOLACHEENET PAY (ft): 26.0 (PERFORATIONS)GROSS TESTED FOOTAGE: 868.0ALL DEPTHS MEASURED FROM: KELLY BUSHINGCASING PERFS. (ft): 6591-6617'HOLE OR CASING SIZE (in): 7.000ELEVATION (ft): 232.0TOTAL DEPTH (ft): 7438.0PACKER DEPTH(S) (ft): 6570FINAL SURFACE CHOKE (in): 0.50000BOTTOM HOLE CHOKE (in): 0.620MUD WEIGHT (lb/gal): 9.50

MUD VISCOSITY (sec): _____

ESTIMATED HOLE TEMP. (°F): _____

ACTUAL HOLE TEMP. (°F): 272 @ 6584.2 ftTICKET NUMBER: 35591700DATE: 4-21-87 TEST NO: 1TYPE DST: CASED HOLE

HALLIBURTON CAMP:

MOOMBATESTER: P. CORRYWITNESS: D. BAUER

DRILLING CONTRACTOR:

RICHTER RIG #16**FLUID PROPERTIES FOR
RECOVERED MUD & WATER**

SOURCE

RESISTIVITY

CHLORIDES

_____ @ _____ °F _____ ppm

_____ @ _____ °F _____ ppm

_____ @ _____ °F _____ ppm

_____ @ _____ °F _____ ppm

_____ @ _____ °F _____ ppm

_____ @ _____ °F _____ ppm

SAMPLER DATAP_{sig} AT SURFACE: _____

cu.ft. OF GAS: _____

cc OF OIL: _____

cc OF WATER: _____

cc OF MUD: _____

TOTAL LIQUID cc: _____

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F

GAS/OIL RATIO (cu.ft. per bbl): _____

GAS GRAVITY: _____

CUSHION DATA

TYPE AMOUNT WEIGHT

WATER (FT) 500.0 9.50**RECOVERED:**

APPROXIMATELY 260' OF WATER CUSHION

MEASURED FROM
TESTER VALVE**REMARKS:**

LEGAL LOCATION: LATITUDE 28 DEG, 13', 49.0"S

LONGITUDE 140 DEG, 46', 37.6"E.

CLOCK IN GAUGE # 8508 MALFUNCTIONED....NO READINGS AVAILABLE.

CHARTS INDICATE TOOLS WERE BYPASSED WHEN REVERSING BAR WAS DROPPED; TIME REPORTED AND TIME CALCULATED FOR THE CLOSED IN PERIOD DOES NOT AGREE.

00008

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE					TICKET NO: 35591700
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
4-21-87					
					HELD SAFETY MEETING
					LOADED BTS
0730					STARTED MAKING UP TOOLS
					MADE UP DRILL COLLARS
					FINISHED HALLIBURTON TOOLS
0845					RAN IN HOLE
					FILLED DRILL PIPE WITH 500' OF
					WATER CUSHION
1435					SECURED FLARE LINE, CHECKED RIG
					PUMPS, CONNECTED TEST HEAD,
					MANIFOLD AND CHICKSANS, ETC.
1448					SEATED RTTS PACKER
1500	.5				OPENED HYDROSPRING, WEAK BLOW
					BLOW INCREASING
1502	.5	200			BLOW STRONG, OPENED VALVE TO
					FLARE LINE
1504	.5	500			WATER CUSHION NOW UNLOADING
					FROM DRILL PIPE
1505	.5	900			
1506	.5	1100			
1507	.5	1200			
1508	.5	1320			
1509	.5	1400			
1510	.5	1410			
1511	.5	1415			CLOSED HYDROSPRING FOR CLOSED
					IN PERIOD.
1513					ALL WATER CUSHION NOW UNLOADED
					FROM DRILL PIPE AND CLEAN GAS
					TO THE SURFACE
1835					DROPPED REVERSING BAR
1836					PORTS OPEN - EQUALIZED ANNULUS
					AND DRILL PIPE
1845					CLOSED BLOW OUT PREVENTER
					STARTED REVERSING
1908					FINISHED REVERSING
1915					OPENED BYPASS AND RELEASED

TICKET NO: 35591700

[illegible]

00010

TICKET NO: 35591700

CLOCK NO: 30347 HOUR: 24



GAUGE NO: 8009

DEPTH: 6411.6

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	1212.8			
2	2.0	1607.1	394.3		
3	4.0	1912.5	305.4		
4	6.0	2127.1	214.7		
5	8.0	2191.6	64.5		
C 6	10.7	2207.7	16.0		
FIRST CLOSED-IN					
C 1	0.0	2207.7			
D 2	207.5	141.6	-2066.1	10.2	0.022

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

00011

TICKET NO: 35591700

CLOCK NO: 30349 HOUR: 24



GAUGE NO: 8509

DEPTH: 6423.8

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	1910.5			
2	2.0	1964.4	53.9		
3	4.0	2080.2	115.8		
4	6.0	2240.1	159.9		
5	8.0	2380.0	139.9		
C 6	10.7	2408.0	27.9		
FIRST CLOSED-IN					
C 1	0.0	2408.0			
2	1.0	2765.6	357.7	0.9	1.086
3	2.0	2766.7	358.7	1.7	0.813
4	3.0	2767.3	359.4	2.3	0.664
5	4.0	2767.8	359.9	2.9	0.570
6	5.0	2768.8	360.8	3.4	0.501
7	6.0	2769.7	361.7	3.8	0.447
8	7.0	2770.5	362.5	4.2	0.403
9	8.0	2771.1	363.2	4.6	0.371
10	9.0	2771.7	363.7	4.9	0.342
11	10.0	2772.4	364.5	5.2	0.317
12	12.0	2772.8	364.9	5.7	0.278
13	14.0	2773.2	365.3	6.1	0.247
14	16.0	2773.2	365.3	6.4	0.223
15	18.0	2773.2	365.3	6.7	0.203
16	20.0	2773.2	365.3	7.0	0.187
17	22.0	2773.2	365.3	7.2	0.173
18	24.0	2773.2	365.3	7.4	0.161
19	26.0	2773.2	365.3	7.6	0.150
20	28.0	2773.2	365.3	7.8	0.141
21	30.0	2773.2	365.3	7.9	0.133
22	35.0	2773.2	365.3	8.2	0.116
23	40.0	2773.2	365.3	8.5	0.103
24	45.0	2773.2	365.3	8.7	0.093
25	50.0	2773.2	365.3	8.8	0.085
26	55.0	2773.2	365.3	9.0	0.077
27	60.0	2773.2	365.3	9.1	0.072
28	70.0	2773.2	365.3	9.3	0.062
29	80.0	2773.2	365.3	9.5	0.055
30	90.0	2772.7	364.7	9.6	0.049
31	100.0	2772.7	364.7	9.7	0.044
32	109.9	2772.7	364.7	9.8	0.040
33	120.0	2772.2	364.2	9.9	0.037
34	135.0	2772.2	364.2	9.9	0.033
35	150.0	2772.2	364.2	10.0	0.030
36	165.0	2772.2	364.2	10.1	0.027
37	180.0	2771.4	363.4	10.1	0.025
38	195.0	2771.4	363.4	10.2	0.023
D 39	207.5	2770.9	362.9	10.2	0.022

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH
1					
	DRILL PIPE.....	3.500	2.764	6344.0	
50					
	IMPACT REVERSING SUB.....	5.000	1.750	1.0	6345.0
1					
	DRILL PIPE.....	3.500	2.764	63.2	
5					
	CROSSOVER.....	4.750	1.750	1.0	
80					
	AP RUNNING CASE.....	3.875	2.060	4.9	6411.6
5					
	CROSSOVER.....	3.875	1.500	1.0	
61					
	INDEXING HYDROSPRING TESTER.....	3.875	0.620	6.3	6420.8
80					
	AP RUNNING CASE.....	3.875	2.060	4.9	6423.8
14					
	EXTENSION JOINT.....	3.875	0.880	4.2	
14					
	EXTENSION JOINT.....	3.875	0.880	4.2	
5					
	CROSSOVER.....	4.750	2.750	1.0	
3					
	DRILL COLLARS.....	4.720	2.320	124.5	
5					
	CROSSOVER.....	4.750	1.750	0.7	
15					
	JAR.....	3.875	1.250	5.0	
16					
	VR SAFETY JOINT.....	3.875	1.940	2.5	
76					
	RTTS PACKER.....	5.750	2.400	3.7	6570.0
5					
	CROSSOVER.....	2.875	2.000	0.8	
5					
	CROSSOVER.....	2.875	1.750	0.8	
21					
	PERFORATED TAIL PIPE.....	3.750	1.750	10.0	
81					
	BLANKED-OFF RUNNING CASE.....	3.750		4.1	6585.2
TOTAL DEPTH					7438.0

EQUIPMENT DATA

EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[\frac{P^* - P_i}{m} - \text{LOG} \left(\frac{k (t/60)}{\phi \mu c_i r_w^2} \right) + 3.23 \right]$	
Damage Ratio	$DR = \frac{P^* - P_i}{P^* - P_i - 0.87 mS}$	
Theoretical Potential w/Damage Removed	$Q_i = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k (t/60)}{\phi \mu c_i}}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{.001637 Q_g T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[\frac{m(P^*) - m(P_i)}{m} - \text{LOG} \left(\frac{k (t/60)}{\phi \mu c_i r_w^2} \right) + 3.23 \right]$	
Damage Ratio	$DR = \frac{m(P^*) - m(P_i)}{m(P^*) - m(P_i) - 0.87 mS}$	
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_i)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_i)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k (t/60)}{\phi \mu c_i}}$	ft

Date Tested : 21/4/87
Interval Tested : 6591-6617'KB
Formation Tested : Toolachee (66-1 sand)
Recorder Depth : Middle 6423.8'KB, Bottom 6585.2'KB
Recorder Used : Middle (Bottom:clock stopped)

COMMENTS

Valid DST.

Gas to surface in 11 minutes.

Recovered approximately 260 feet of the 500 foot water cushion.

The primary purpose of this test was to determine reservoir pressure and the test was designed with short flow and long shut-in periods. The flow period was for 11 minutes however the surface pressure did not stabilize. The final surface flowing pressure recorded was 1430 psia on a 0.5 inch choke which corresponds to a flow rate of 7.4 MMscfd.

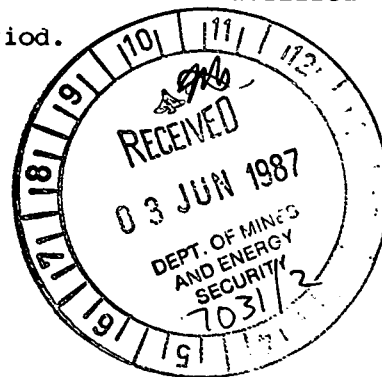
The reservoir pressure obtained for the 66-1 sand in Kidman #5 was about 2789 psia (2799 psia at a datum depth of 6340'SS). This indicates 100 psia depletion from an initial reservoir pressure of 2899 psia in Kidman #1, which is the only well producing from this sand. The drop in pressure at the end of the buildup of 2 psia was considered to be insignificant.

It was not possible to calculate any other reservoir parameters from the pressure buildup due to the shallow radius of investigation and unstabilized flowing conditions which resulted from the short flow period.

WP:4992N(8)

GS/jbf

26/5/87



PRESSURE (PSIA(SQ)*1000)

7680.0 7720.0 7760.0 7800.0 7840.0 7880.0 7920.0

1

2

3

4

5

6

7

8

9

10

$T+dt/dT$

20

30

40

50

60

70

80

00014

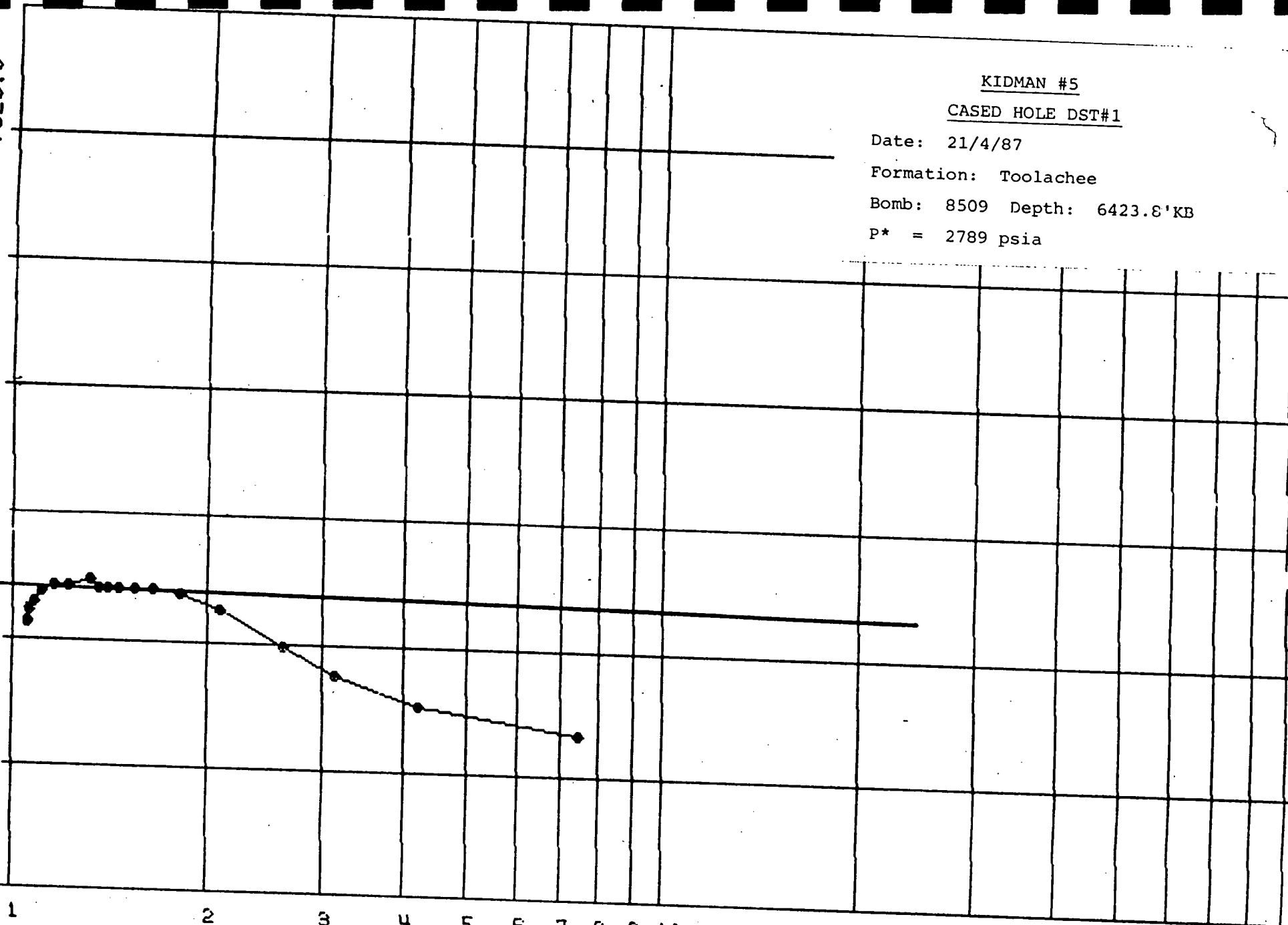
KIDMAN #5
CAGED HOLE DST#1

Date: 21/4/87

Formation: Toolachee

Bomb: 8509 Depth: 6423.8'KB

P* = 2789 psia



ELEMENT NUMBER IS 8509

	TIME(MIN)	DELTA P	T+dT/dT	PRESSURE(Psia)	PRESS(SQ)(PSIA2)*1000
1	0.000	0.0	0.00	3118.4	9724.4
2	0.000	0.0	0.00	3317.9	11008.2
3	0.000	0.0	0.00	1868.3	3490.7
4	0.000	0.0	0.00	2423.9	5875.1
5	1.767	357.0	7.46	2780.9	7733.3
6	3.533	358.5	4.23	2782.3	7741.4
7	5.300	360.2	3.15	2784.0	7750.9
8	7.067	361.8	2.61	2785.6	7759.6
9	10.600	363.7	2.08	2787.6	7770.6
10	14.134	364.5	1.81	2788.4	7775.0
11	17.667	364.8	1.65	2788.6	7776.5
12	21.201	364.8	1.54	2788.6	7776.5
13	24.734	364.8	1.46	2788.6	7776.5
14	28.268	364.8	1.40	2788.6	7776.5
15	31.801	364.8	1.36	2788.6	7776.5
16	35.335	365.3	1.32	2789.2	7779.4
17	53.002	364.9	1.22	2788.8	7777.2
18	70.670	364.9	1.16	2788.8	7777.2
19	106.005	364.5	1.11	2788.4	7775.0
20	141.340	364.0	1.08	2787.8	7772.1
21	176.675	363.5	1.06	2787.3	7769.1
22	212.010	362.9	1.05	2786.8	7766.2
23	244.200	362.8	1.05	2786.7	7765.5

POINT 1 IS 1ST HYDROSTATIC MUD PRESSURE

POINT 2 IS 2ND HYDROSTATIC MUD PRESSURE

POINT 3 IS INITIAL FLOWING PRESSURE

POINT 4 IS FINAL FLOWING PRESSURE

CORRECTED FLOW TIME IS 0.190HOURS

Date: 21/04/87Ticket No. 355917BOTTOM BOMB

B.T. 850.8 at 6585.2 ft. KB

24 Hr. Clock

Initial Flow Pressure - psia

Final Flow Pressure - psia

Final B/U Pressure - psia

Initial Hydrostatic - psia

Final Hydrostatic - psia

B.T. 850.9 at 6585.2 ft. KB

24 Hr. Clock

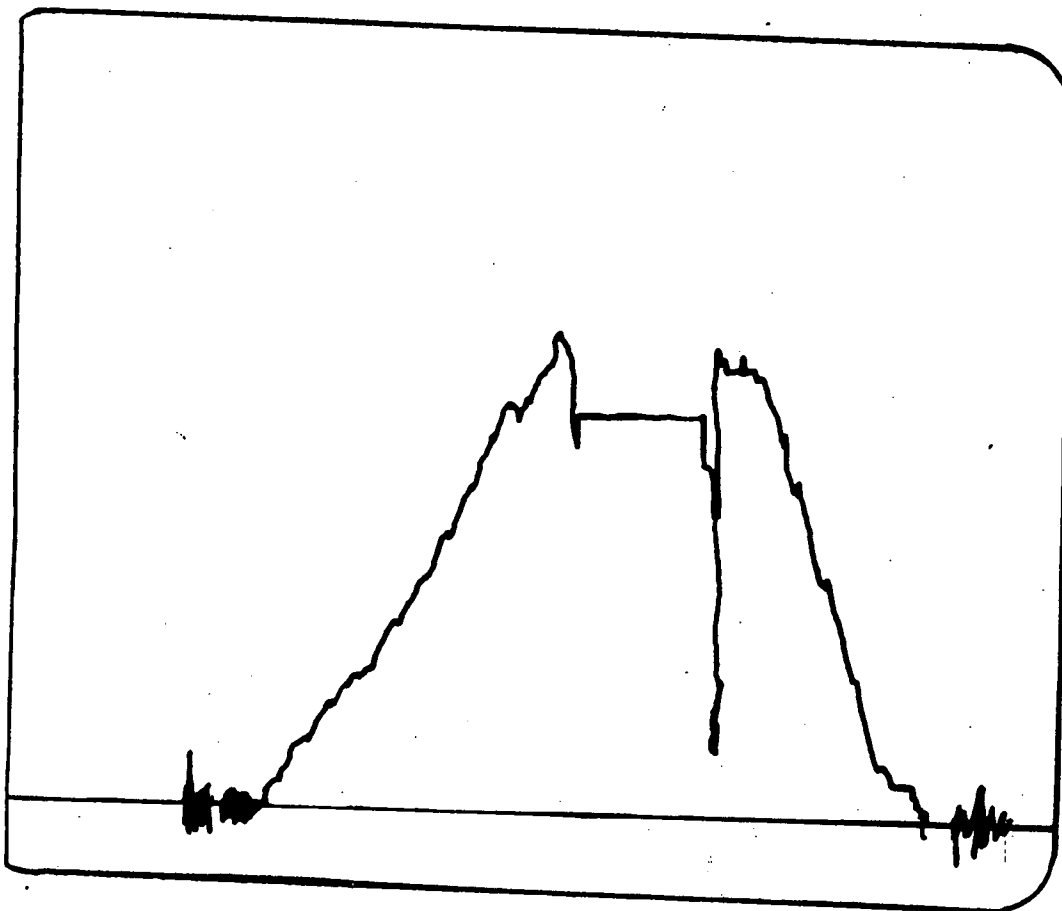
Initial Flow Pressure 1868.3 psia

Final Flow Pressure 2423.9 psia

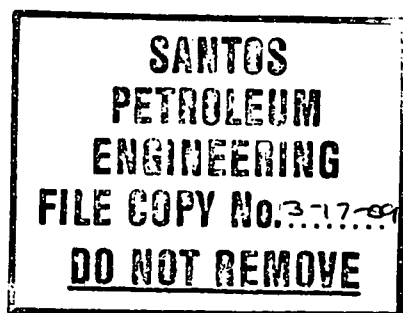
Final B/U Pressure 2786.7 psia

Initial Hydrostatic 3118.4 psia

Final Hydrostatic 3317.9 psia

NOTE: 200 psia increase in hydrostatic pressure due to $\approx$ 20 BBLs of KCL brine used to fill hole.Interval Tested: 6591 - 6617' KBFormation Tested: ToolacheeFlow Rate: 7.4 MMscfd.Recovery: approx. 260' water cushionFlow Time: 11 minutesBuild up time: 244 minutesB.H.T.: 272 °FCLOCK
STOPPED.

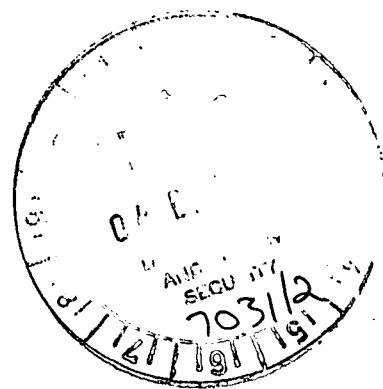
00016



P.V.T. STUDY REPORT

Client: SANTOS LTD.
Field : KIDMAN Well : KIDMAN 5 PATCH.
Zone : PATCHAWARRA Samp. date: 18/06/87

Report #: 87PVA032 Date: JULY 1987



ADELAIDE LABORATORY

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- ☒ ANNEX 1: SAMPLING CONDITIONS AND SAMPLE(S) VALIDITY
- ☒ ANNEX 2: MOLECULAR COMPOSITION OF FIELD SEPARATOR GAS(ES)
- ☒ ANNEX 3: RECOMBINATION OF SEPARATOR SAMPLES
- ☒ ANNEX 4: MOLECULAR COMPOSITION OF RESERVOIR FLUID(S)
- ☐ ANNEX 5: CONSTANT MASS STUDY
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- ☐ ANNEX 7: SEPARATION TEST(S)
- ☐ ANNEX 8: ADDITIONNAL ANALYSIS
- ☐ ANNEX 9:
- ☐ ANNEX 10:
- ☐ ANNEX 11:
- ☒ ANNEX 12: NOMENCLATURE AND SYSTEM OF UNITS

COMPANY : SANTOS LTD.

WELL : KIDMAN 5 PATCH.

TABLE 1

SAMPLING CONDITIONSI. RESERVOIR AND WELL CHARACTERISTICS

Producing zone	:	PATCHAWARRA
Static pressure	:	N/A
Bottom hole temperature	:	N/A
Tubing diameter	:	N/A
Casing size	:	N/A
Casing shoe	:	N/A

II. SAMPLING CONDITIONSA) SURFACE SAMPLE(S)

Date	:	18/06/87
Choke	:	26/64"
Flowing bottom hole pressure	:	N/A
Well head pressure	:	9004 Kpa
Separator pressure	:	1792 Kpa
Well head temperature	:	66 C
Separator temperature	:	38 C
Gas rate (Separator)	:	123966 M3/D
Stock tank temperature	:	N/A
Compressibility factor	:	0.948
Gas gravity	:	0.750 (Air=1)
Liquid rate (Separator)	:	9.3023 M3/D
G.L.R.	:	74827.4 scf/bbl
Sample(s) received	:	gas A4887, A12620, A12633
		liq.062, 177, 058

B) BOTTOM HOLE SAMPLE(S)

Date	:	-
Choke	:	-
Sample(s) received	:	-

COMPANY : SANTOS LTD.

WELL : KIDMAN 5 PATCH.

SAMPLE(S) VALIDITY

SEPARATOR LIQUID SAMPLE(S)

1) Sample bottle No 062

Bubble point pressure determination at 100 F is 265 psig

2) Sample bottle No 177

Bubble point pressure determination at 100 F is 266 psig

COMPANY : SANTOS LTD.

00021

WELL : KIDMAN 5 PATCH.

TABLE 2

BUBBLE POINT PRESSURE DETERMINATION AT 100 F

Separator liquid sample (cylinder 062)

Pressure (psig)	Pump reading (cm3)
1500	381.86
983	381.50
785	381.32
490	381.12
310	380.97
Pb = 265	380.92
258	379.69
248	378.09
237	376.11
224	373.12
215	368.95

FLASH OF SEPARATOR LIQUID TO STOCK TANK CONDITIONS

GLR : 132 Std cu ft/Std bbl
 Shrinkage factor : 0.903 Std bbl/bbl
 Liberated gas gravity : 1.117 (Air = 1)
 Stock tank liquid gravity: 0.766 60/60 F

This sample has been used for recombination

COMPANY : SANTOS LTD.

WELL : KIDMAN 5 PATCH.

BUBBLE POINT PRESSURE DETERMINATION AT 100 F

Separator liquid sample (cylinder 062)

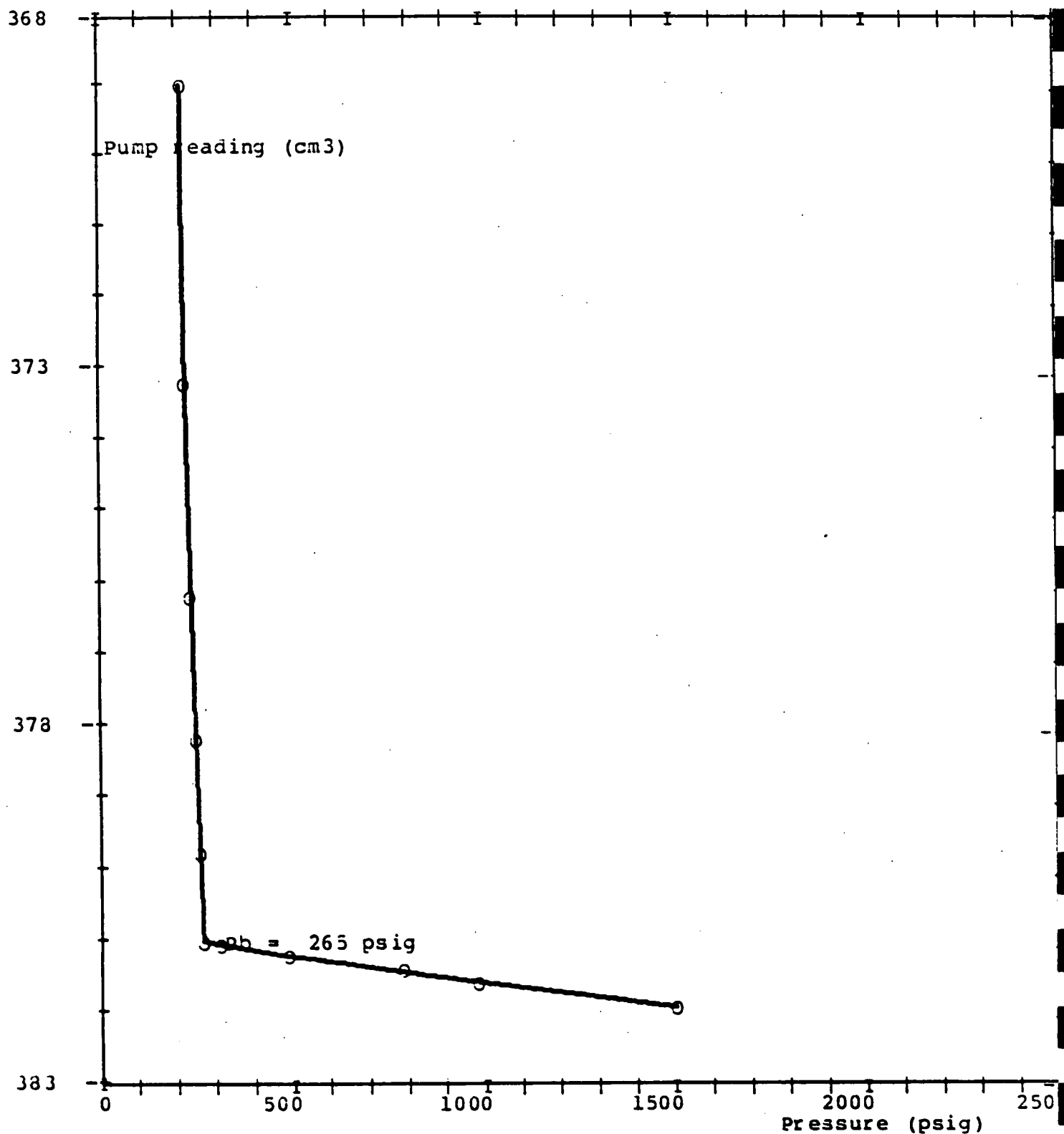


TABLE 3

BUBBLE POINT PRESSURE DETERMINATION AT 100 F

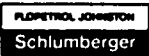
Separator liquid sample (cylinder 177)

Pressure (psig)	Pump reading (cm3)
1500	272.39
1246	272.25
1020	272.11
585	271.79
299	271.54
Pb = 266	271.51
254	269.27
247	268.17
238	266.38
222	263.16
202	258.18

FLASH OF SEPARATOR LIQUID TO STOCK TANK CONDITIONS

GLR : 135 Std cu ft/Std bbl
 Shrinkage factor : 0.913 Std bbl/bbl
 Liberated gas gravity : 1.117 (Air = 1)
 Stock tank liquid gravity: 0.767 60/60 F

00024



COMPANY : SANTOS LTD.

WELL : KIDMAN 5 PATCH.

BUBBLE POINT PRESSURE DETERMINATION AT 100 F

Separator liquid sample (cylinder 177)

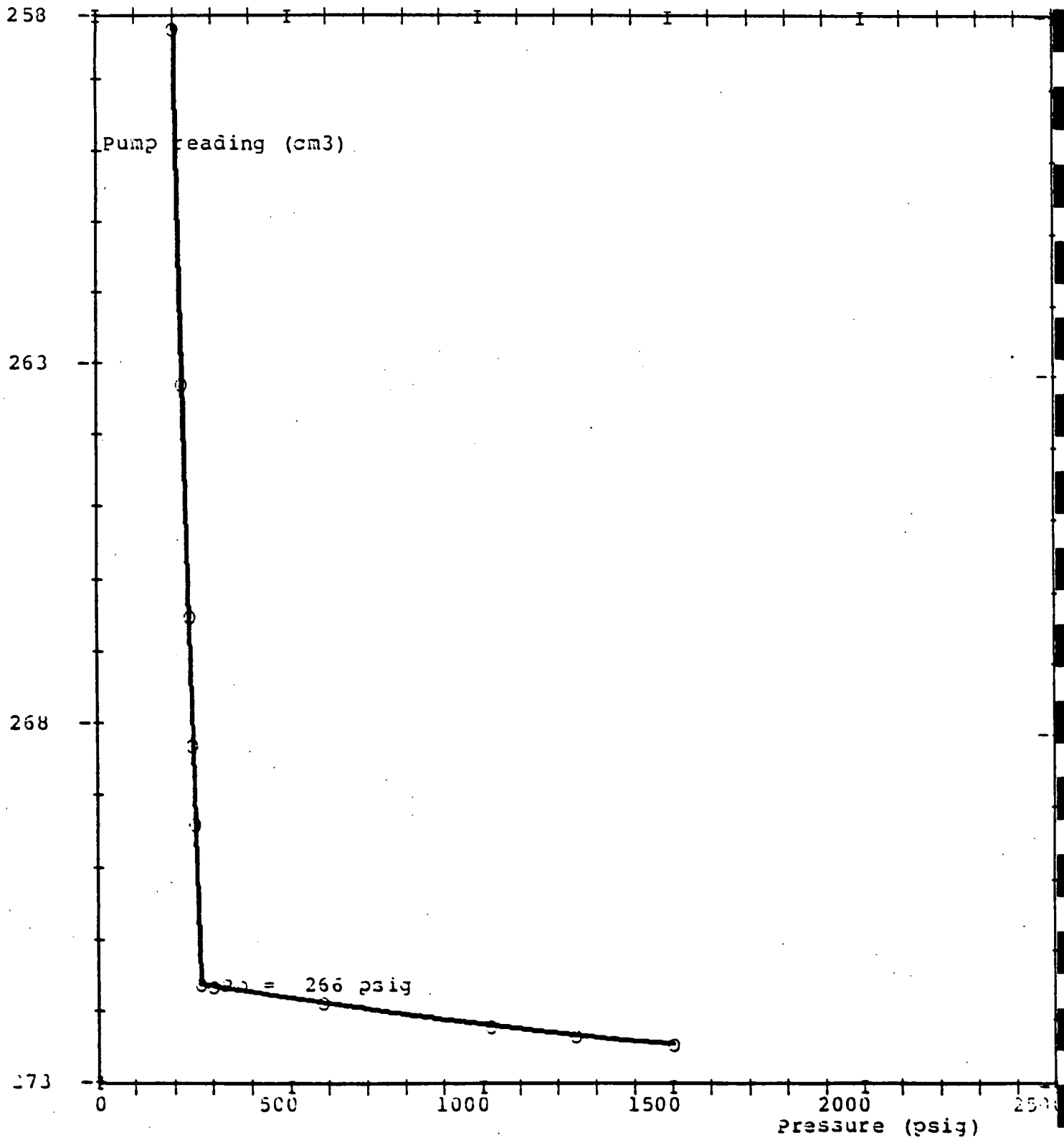


TABLE 4

MOLECULAR COMPOSITION OF FIELD SEPARATOR GAS(ES)

I-Molecular composition (mole percent)

Components	Cylinder A 4887	Cylinder A 12620
Nitrogen	1.77	1.74
Carbon dioxide	8.70	9.41
<u>Hydrocarbons:</u>		
Methane	76.70	76.95
Ethane	7.85	7.69
Propane	2.66	2.51
I - Butane	0.33	0.35
N - Butane	0.78	0.71
I - Pentane	0.22	0.00
N - Pentane	0.25	0.22
Hexanes	0.24	0.18
Heptanes plus	0.46	0.24
TOTAL	100.00	100.00
Molecular weight	21.874	21.579
Gravity (Air=1)	0.755	0.745
Molecular weight of heptanes plus	106.6	106.6

II-Liquid content (g.p.M)

Propane plus	1.598	1.294
Butanes plus	0.859	0.606
Pentanes plus	0.491	0.269

The cylinder A 4887 has been used for recombination

TABLE 5

RECOMBINATION OF SEPARATOR SAMPLES

I. FLASH OF SEPARATOR LIQUID TO STOCK TANK CONDITIONS

G.L.R. : 132 Std cu ft/Std bbl
Shrinkage factor : 0.903 Std bbl/bbl
Liberated gas gravity : 1.117 (Air=1)
Stock tank liquid gravity: 0.766 60/60 F

II. CORRECTION OF GAS LIQUID RATIO

Field G.L.R. : 74827 Std cu ft/bbl
Separator gas gravity(from chromatographic analysis)
G lab. : 0.755 (Air=1)
Compressibility factor Z at separator conditions
Z lab. : 0.963

$$\text{Corrected G.L.R.: Field G.L.R.} \times \sqrt{\frac{G \text{ field} \times Z \text{ field}}{G \text{ lab.} \times Z \text{ lab.}}}$$

$$\text{Corrected G.L.R.: } 74827 \times \sqrt{\frac{0.750 \times 0.948}{0.755 \times 0.963}} = 73996 \text{ Std cu ft /bbl}$$

III. PHYSICAL RECOMBINATION

Surface samples were physically recombined in the ratio of
73996 standard cubic feet of separator gas per barrel
of separator liquid

TABLE 6

FLASH OF SEPARATOR LIQUID TO STOCK TANK CONDITIONS
(Molecular composition)

Components	Stock tank liquid (mole percent)	Evolved gas (mole percent)	Recombined separator liquid (mole percent)
Nitrogen	0.00	0.48	0.07
Carbon dioxide	0.00	10.03	1.39
<u>Hydrocarbons:</u>			
Methane	0.00	43.61	6.04
Ethane	0.00	18.30	2.53
Propane	1.70	13.76	3.37
I - Butane	0.03	2.64	0.39
N - Butane	3.39	5.67	3.71
I - Pentane	1.95	1.67	1.91
N - Pentane	3.13	1.77	2.94
Hexanes	7.10	1.19	6.28
Heptanes	13.75	0.62	11.93
Octanes	25.84	0.24	22.29
Nonanes	16.21	0.02	13.97
Decanes	9.41	0.00	8.11
Undecanes	4.99	0.00	4.30
Dodecanes plus	12.50	0.00	10.77
TOTAL	100.00	100.00	100.00
Molecular weight	124.4	32.374	111.7
Gravity	0.766 60/60 F	1.117 (Air=1)	-----
Molar ratio	86.16	13.84	100.00
Mass ratio	95.99	4.01	100.00

Molecular weight of Dodecanes plus in STL: 213

TABLE 7

MOLECULAR COMPOSITION OF RESERVOIR FLUID

Components	Recombined Separator liquid (mole percent)	Separator gas (mole percent)	Recombined Reservoir fluid (mole percent)
Nitrogen	0.07	1.77	1.75
Carbon dioxide	1.39	8.70	8.62
<u>Hydrocarbons:</u>			
Methane	6.04	76.71	75.91
Ethane	2.53	7.85	7.79
Propane	3.37	2.66	2.67
I - Butane	0.39	0.38	0.38
N - Butane	3.71	0.78	0.81
I - Pentane	1.91	0.2	0.24
N - Pentane	2.94	0.25	0.28
Hexanes	6.28	0.24	0.31
Heptanes	11.93	0.22	0.35
Octanes	22.29	0.19	0.44
Nonanes	13.97	0.03	0.19
Decanes	8.11	0.00	0.09
Undecanes	4.30	0.00	0.05
Dodecanes plus	10.77	0.00	0.12
TOTAL	100.00	100.00	100.00
Molecular weight	111.7	21.874	22.9
Gravity	-----	0.755 (Air=1)	0.790 (Air=1)
Molar ratio	1.15	98.85	100.00
Mass ratio	5.59	94.47	100.00

Molecular weight of Dodecanes plus in reservoir fluid : 213

NOMENCLATURE

P	:	Pressure
V	:	Volume
T	:	Temperature
Pi	:	Initial static pressure
Pb	:	Bubble point pressure
Pd	:	Dew point pressure
$V_r = V/V_{Pb}$	:	Relative volume (oil reservoir fluid)
$V_r = V/V_{Pd}$	:	Relative volume (gas reservoir fluid)
$c = - \frac{1}{V} \frac{dV}{dP}$	:	Compressibility factor of reservoir fluid
$\alpha = \frac{1}{V} \frac{dV}{dT}$	:	Thermal expansion of reservoir fluid
$y = \frac{P_b/P - 1}{V_r - 1}$	:	Dimensionless compressibility function
Bo	:	Oil formation volume factor
Rs	:	Solution gas oil ratio
Z	:	Gas compressibility factor or gas deviation factor
Bg	:	Gas formation volume factor
do	:	Reservoir oil density
Go	:	Residual oil gravity
G	:	Gas gravity (Air=1)
sto	:	Stock tank oil
GOR	:	Gas oil ratio
GLR	:	Gas liquid ratio
WOR	:	Water liquid ratio
Shrinkage factor	:	<u>Oil volume at standard conditions</u> <u>Oil volume at separator conditions</u>
$Z = \frac{PV}{nRT}$	:	n=Total moles of a mixture in the gas state R=Universal gas constant (per mole)
gpm	:	Gallons per thousand standard cubic feet
Standard conditions	:	For gas volumes =60 F and 14.7 psia For oil measurements=60 F and atmospheric pressure

Gross heat content is calculated from API research project 44
Molecular weights, densities, critical values are from CRC Handbook of chemistry and physics
Gas viscosity is calculated with equations from Standing (Behavior of oil field hydrocarbon systems)

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEETWELL: Kidman # 5 Upper

Pf = 6500 kPa

ORIFICE SIZE: 63.500 mm 2.500 " ✓

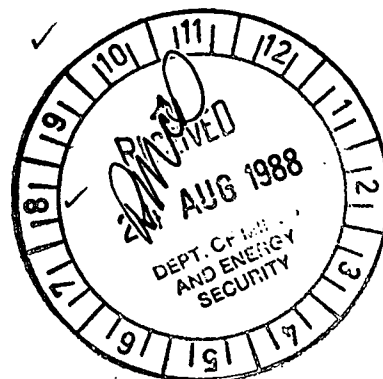
T = 96 °C

LINE SIZE: 73.660 mm 2.900 " ✓

Diff = 23 kPa

Cumulative Production to end of June = 147.192 m³ x 10⁶

Number of hours online in June = 716

Production in June = 12.121 m³ x 10⁶Average flow rate in June = (12.121 / 716) x 24 = 0.406 m³ x 10⁶ / dNumber of days online in July before Shut In 1200 hrs 23 / 7 / 88
= 20.375 daysProduction up to 1200 hrs 23 / 7 / 88 = 20.375 x 0.406 = 8.272 m³ x 10⁶Total cumulative production = 147.192 + 8.272
= 155.464 m³ x 10⁶
= 5518.048 mmscfFlow rate just prior to Shut In = 0.401 m³ x 10⁶
= 14.215 mmscf/d

703112

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS	RUN 01 FIELD KIDMAN	WELL 05U
EFF DEPTH	WELL STAT	TOOL HUNG 6334'
CASING	CASING PRESS	ON BOTTOM 0800 23/7
LINER	TUBING PRESS	OFF BOTTOM
DATE 880722	ELEMENT RANGE 0 - 5107	ZERO POINT
ELEVATION	ZONE	SHUT-IN 1200 23/7
MAX TEMP	PICK-UP	ON-PROD
PERF	CAL SER NO. 15451	MPP
TUBING		

UNITS ENGLISH PURPOSE BUILD-UP

SURVEY DATA

CO. SANTOS				RUN 01 FIELD KIDMAN				WELL 05U			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME				
12:00	2220.2	0.0	0.0	19:49	2282.9	62.7	7.8				
12:01	2238.6	18.4	.0	1:14	2285.0	64.8	13.2				
12:01	2250.3	30.2	.0	7:32	2285.7	65.5	19.5				
12:01	2268.5	48.4	.0	16:02	2288.8	68.6	28.0				
12:02	2273.6	53.5	.0	1:23	2288.4	68.3	37.4				
12:10	2277.7	57.5	.2	12:23	2289.7	69.6	48.4				
12:24	2280.6	60.5	.4	23:28	2290.7	70.6	59.5				
13:26	2281.2	61.1	1.4	10:50	2290.8	70.7	70.8				
14:24	2280.8	60.7	2.4	0:54	2292.6	72.5	84.9				
16:49	2281.1	60.9	4.8	* 8:10	2293.2	73.0	92.2				

LUB IN DWT = N/A / OUT = 1924 PSI
LUB IN AMERADA = N/A / OUT = 1929 PSI

* Unsure of precise time the bombs were pulled out of hole.

ISO - CHRONAL AND BUILD-UP SURVEY

00032

Well: KIDMAN # 5 UPPER

Date: 22-7-88

Lubricator Data:

① Clock ran slow.
② N/A 1929

Pressure with D.W.T.

(N : N/A

(1924 PSIG)
047 13266 27-7-88

Time Pressured 16:07 22-7-88

Time Depressed 11:25

Time Run in Hole 18:07 22-7-88

Time off Bottom 08:00 27-7-88

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range 28904 X 5200 psi	15451 X 5650 psi
Recorder No. 12979 X 15 TLS	12961 X 15 TLS
Clock and Lead Screw Data F 15295 X 120 hr	F 15296 X 120 hr.
Engage Stylus Date: 22-7-88 Time: 15:56	Date: 22-7-88 Time: 15:56
Disengage Date: 27-7-88 Time: 11:52	Date: 27-7-88 Time: 11:52

Remarks: Ran temp. element - element # 29217 range 144 - 338° F

- 3 hr. clock F. 15296

Well flowing on line temp. element failed.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Kpa Wellhead P.S.I.G.	Kpa Casing P.S.I.G.	°C Wellhead Temp.	Remarks
22-7-88						
	1607					Pressure up lub.
	1807					R.I. H. could not run
23-7-88						in against flow. Well
						secured overnight.
	0730					Well cut back to 15%
	0800		10473	0	94	Hang at 6340'
	0830		10480	0	87	
	0900		10508	0	81	
	0930		10480	0	87	
	1000		10480	0	87	
	1030		10480	0	87	
	1100		10480	0	87	
	1130		10474	0	87	
	1200		10474	0	87	Shut well in for build-up
	1215		13376	0		
	1230		13369	0		
	1245		13342	0		
	1300	1	13335	0		
	1315		13335	0		
	1330		13335	0		
	1345		13335	0		
	1400	2	13321	0		

ISO - CHRONAL AND BUILD-UP SURVEY

00033

Well: KIDMAN # 5 Upper

Date: 24-7-88

Lubricator Data:

Pressure with D.W.T.

Time Pressured

Time Depressed

Time Run in Hole

Time off Bottom

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range					
Recorder No.					
Clock and Lead Screw Data					
Engage Stylus	Date:	Time:	Date:	Time:	
Disengage	Date:	Time:	Date:	Time:	

Remarks:

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Kpa Wellhead P.S.I.G.	Kpa Casing P.S.I.G.	°C Wellhead Temp.	Remarks
23-7-88						
	1415		13321	0		
	1430		13321	0		
	1445		13314	0		
	1500	3	13321	0		
	1515		13307	0		
	1530		13307	0		
	1545		13307	0		
	1600	4	13307	0		
	2000	8	13307	0		
	2400	12	13294	0		
24-7-88						
	0400	16	13273	0		
	0800	20	13273	0		
	1200	24				No readings taken working Racoon # 1
	1600	28				
	2030	32	13273	0		
	2400	36	13280	0		
25-7-88						
	0400	40	13273	0		
	0800	44	13266	0		
	1200	48	13273	0		
	1600	52	13287	0		

00034

Date: 25-7-88

Pressure with D.W.T.

Time Pressured.

Time Depressed.

Time Run in Hole.

Time off Bottom

Bomb No. 2 Data

Element No. and Range					
Recorder No.					
Clock and Lead Screw Data					
Engage Stylus	Date:	Time:	Date:	Time:	
Disengage	Date:	Time:	Date:	Time:	

Remarks:

Well-Head Data for Final Build-up

[illegible]

WELL: <u>Kidman #5 Upper</u>					 SANTOS LTD. WELL TEST DATA SHEET										DATE: <u>22.07.88</u>					
TYPE OF TEST: <u>Flow & Build up</u>															PAGE No: <u>1</u>					
DATE TIME	WELLHEAD					GAS FLOW DATA					OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING kpa	TUBING kpa	TEMP. °C	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS. H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @60 °F	TANK DIP INS.	TANK PROD BBLs	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBLs/ DAY	WATER FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL	
22 nd July 1988																				
16:07																				
18:07	0	6854	95°	100%																
18:20																				
23 rd July 1988																				
06:00	0	6638	95°	100%																
07:30																				
08:00	0	10474	87°	15%																
08:30	0	10480	87°	15%																
09:00	0	10508	81°	15%																
09:30	0	10480	87°	15%																
10:00	0	10480	87°	15%																
10:30	0	10480	87°	15%																
11:00	0	10480	87°	15%																
11:30	0	10474	87°	15%																

OPERATOR: G. Peterson

00035

WELL: <i>Kidman #5 Upper</i>						 SANTOS LTD. WELL TEST DATA SHEET										DATE: <i>23:07:88</i>			
TYPE OF TEST: <i>Flow & Buildup</i>																PAGE No: <i>2</i>			
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING kpa	TUBING kpa	TEMP. °C	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS. H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @ 60 °F	TANK DIP INS.	TANK PROD BBLs	FLOW RATE MMSCFD	FLOW RATE BBLs/ DAY	FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL
23	<i>RD</i>	<i>July</i>	<i>1988</i>																
12:00	0	10474	37°	15%															
12:00		<i>Well shut in for the Buildup period</i>																	
12:15	0	13376																	
12:30	0	13369																	
12:45	0	13342																	
13:00	0	13342																	
13:15	0	13335																	
13:30	0	13335																	
13:45	0	13335																	
14:00	0	13321																	
14:15	0	13321																	
14:30	0	13321																	
14:45	0	13314																	
15:00	0	13321																	
15:15	0	13307																	
15:30	0	13307																	
15:45	0	13307																	
16:00	0	13307																	

OPERATOR: *G. Peterson*

00036

WELL: <u>Kidman #5 Upper</u>						 SANTOS LTD. WELL TEST DATA SHEET										DATE: <u>23.07.88</u>				
TYPE OF TEST: <u>Flow & Build up</u>						PAGE No: <u>3</u>														
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS					
	CASING kpa	TUBING kpa	TEMP. °C	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS. H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @60 °F	TANK DIP INS.	TANK PROD BBLs	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBLs/ DAY	WATER FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL	
23 RD July 1988																			Shut in Time	
20:00	0	13307				Continue the build up.														8
24:00	0	13294																	12	
24 th July 1988																				
04:00	0	13273																	16	
08:00	0	13273																	20	
12:00			No readings taken due to working at Rakoon #1																24	
16:00																			28	
20:30	0	13273																	32	
24:00	0	13280																	36	
25 th July 1988																				
04:00	0	13273																	40	
08:00	0	13266																	44	
12:00	0	13273																	48	
16:00	0	13287																	52	
20:00	0	13273																	56	
24:00	0	13273																	60	
26 th July 1988																				
04:00	0	13266																	64	

OPERATOR: G. Peterson

00037

TYPE OF TEST: Flow & Build up



WELL TEST DATA SHEET

PAGE No:.....4.....

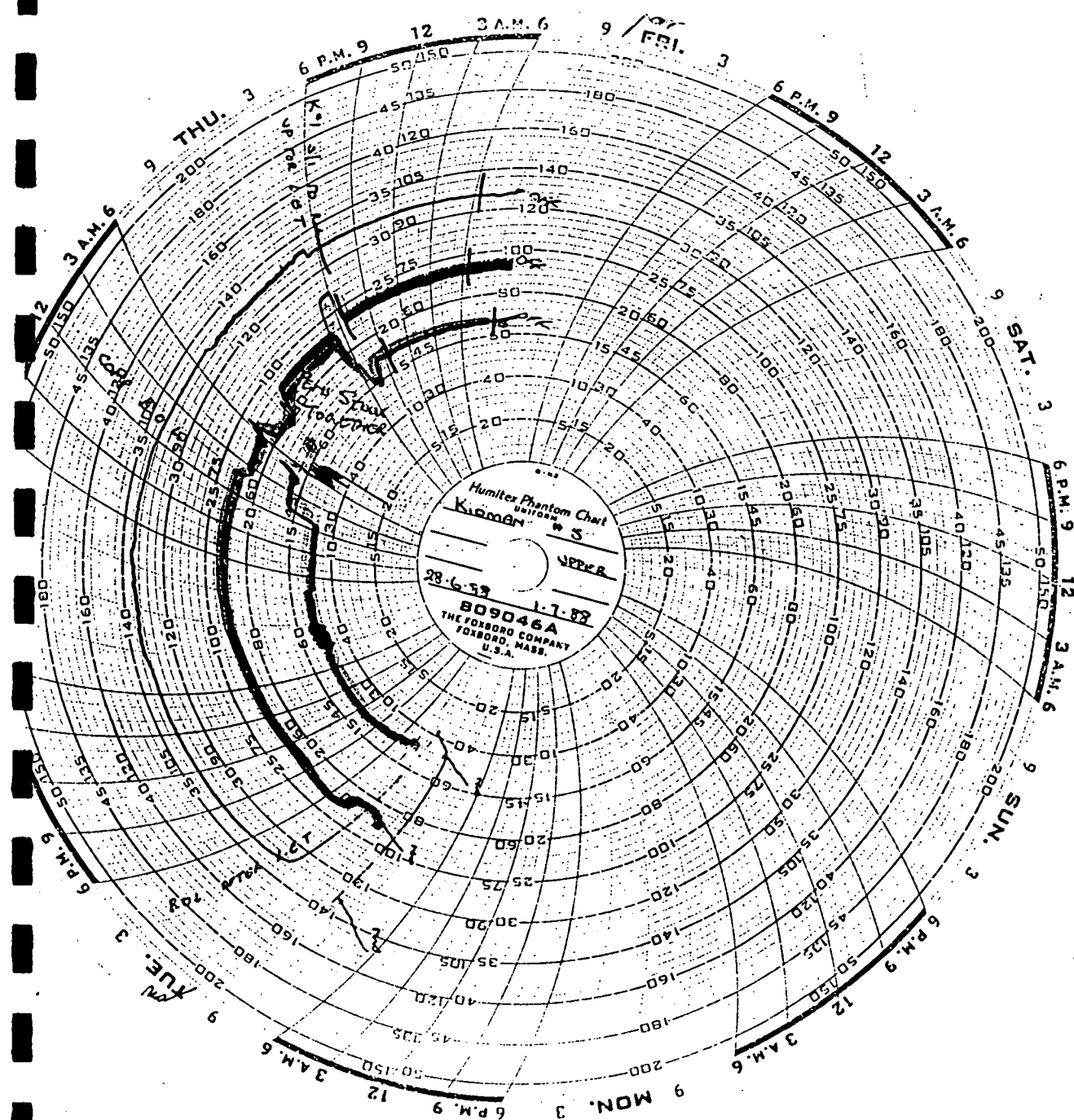
00038

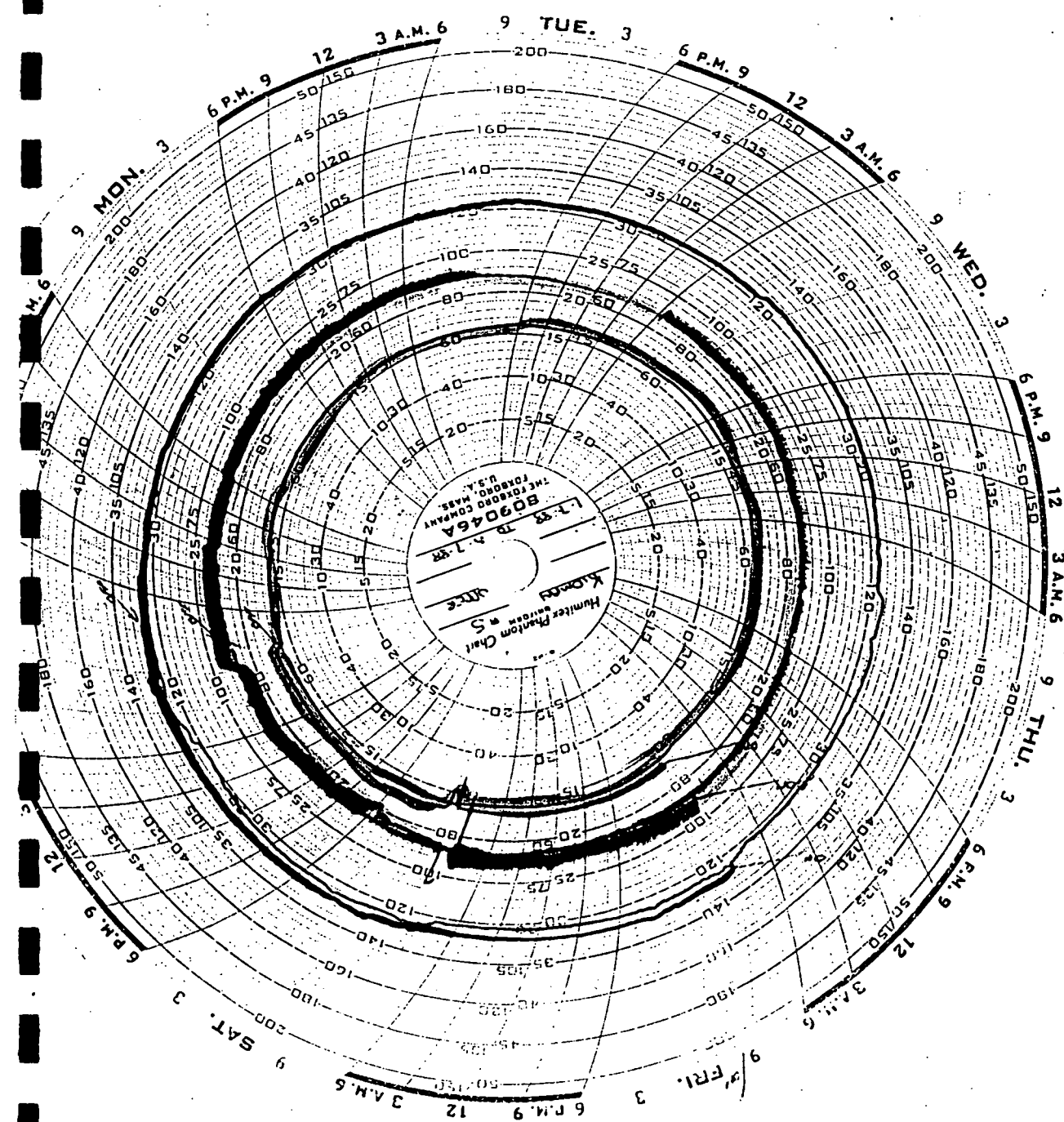
OPERATOR.....

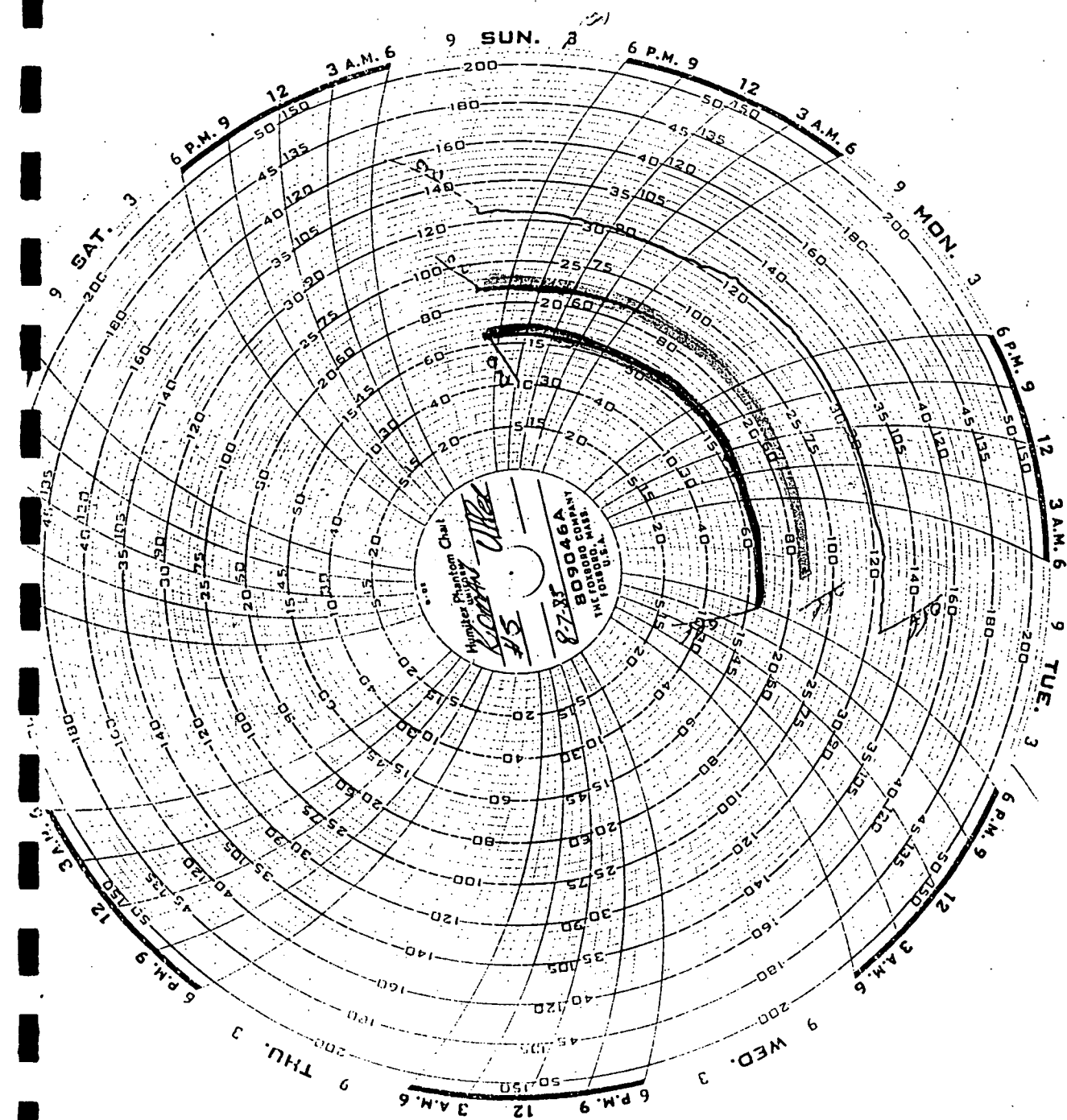
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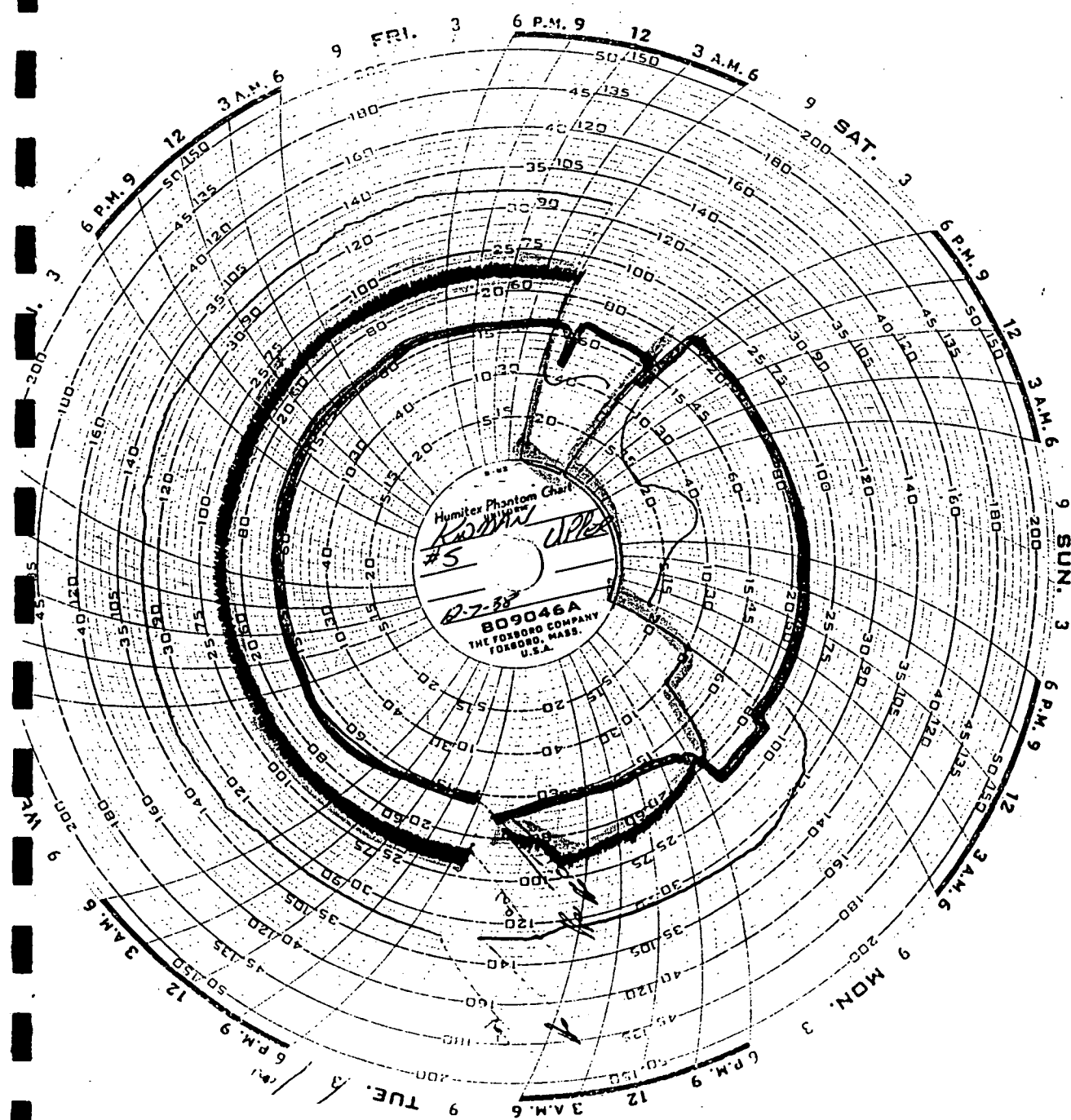
640/55

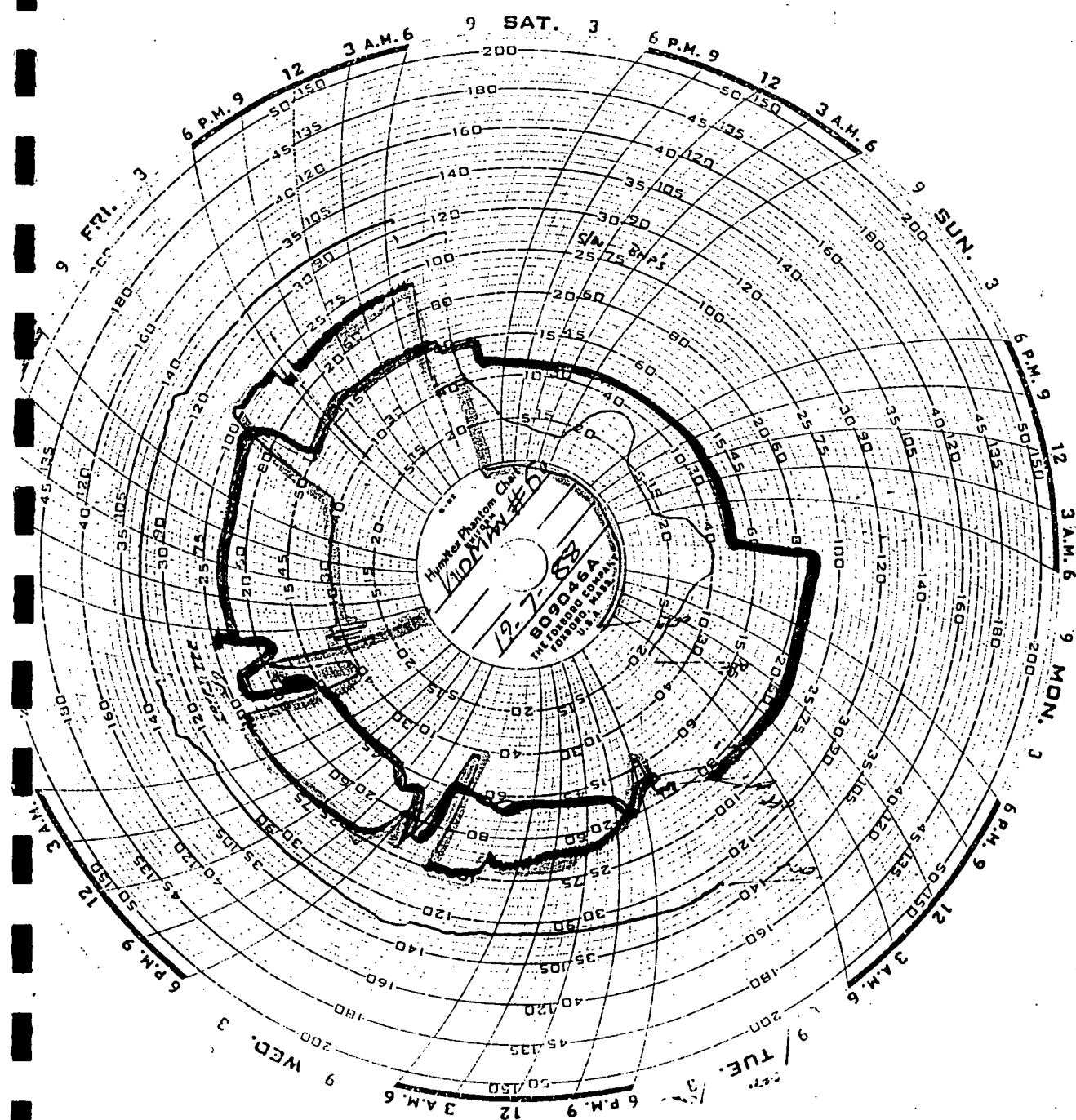
Run		KIDMAN		SANTOS	
Time		1050 a.m.		5 p.m.	
Meter Run Diam.		73.660 mm		Date 28.6.68	
Chart on by:		Remarks		Meter Number	
RANGE		0 - 20 mPa		63.500 mm	
STATIC PRESS		0 - 80 kPa		Time 0929 a.m.	
DIFF PRESS		0 - 150 °C		Orifice Plate No.	
TEMP		WELL ON TEST YES ☐ NO ☒		Chart off by: WP	
				Date 1/17/88	
				CHOKE SETTING ☐	











00045



**** KIDMAN 5 UPPER ****
STATIC PRESSURE GRADIENT

TEST DATE: 27/7/88

TOP PRESSURE ELEMENT 28904/5200				BOTTOM PRESSURE ELEMENT 15451/5650		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.7500	1927.9	----	0.7590	1917.0	----
1000	0.7740	1989.7	0.0618	0.7840	1980.9	0.0639
2000	0.7970	2049.0	0.0593	0.8090	2044.8	0.0639
3000	0.8210	2110.8	0.0619	0.8310	2101.1	0.0563
4000	0.8430	2167.5	0.0567	0.8540	2160.0	0.0589
5000	0.8640	2221.7	0.0542	0.8760	2216.3	0.0563
5500	0.8740	2247.5	0.0516	0.8870	2244.5	0.0563
6000	0.8840	2273.3	0.0516	0.8980	2272.7	0.0564
6340	0.8920	2294.0	0.0607	0.9070	2295.7	0.0678
LUB	0.7520	1933.0	----	0.7590	1917.0	----

GENERAL REMARKS:

RUN TEMP ELE 29217/144 338 F REC 14621/15 TLS CLOCK 2387/3 HR

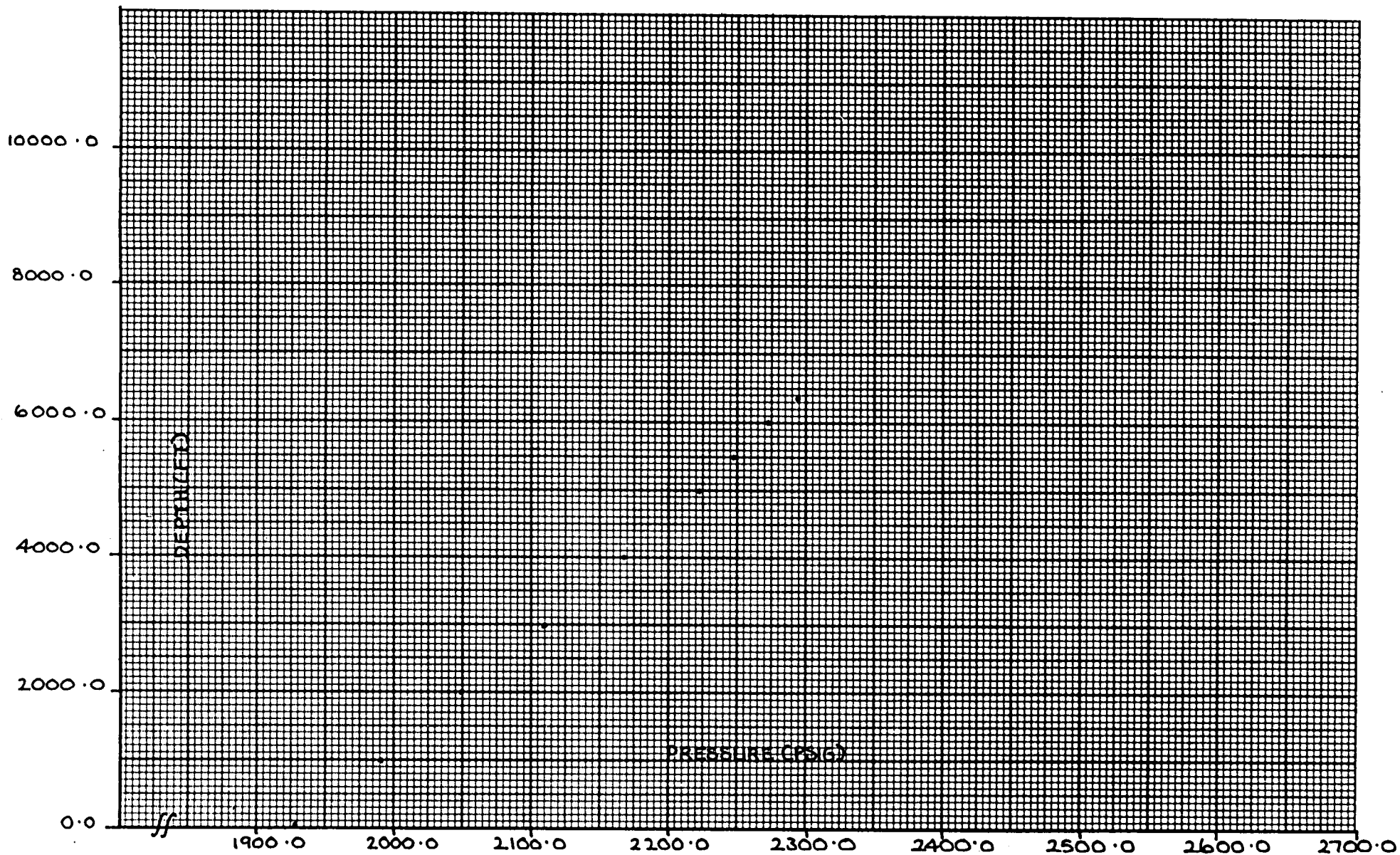
DWT IN: 1944
DWT OUT: 1939
MAX BHT: RUN TEMP ELE

ELEMENT 28904/5200 CALIBRATED 8.6.88
ELEMENT 15451/5650 CALIBRATED 8.6.88

KIDMAN # 5 UPPER

— STATIC PRESSURE GRADIENT — 27/7/88

ELEMENT # 28904 / 5200 (TOP)



00046

WIRELINE REPORT

CLIENT SANTOS P.E. WELL KIDMAN #5 upper
DATE 17/7/88
PROGRAMME BOTTOM HOLE PRESSURE SURVEY.
PURPOSE OF WORK DUMMY RUN

REPORT OF WORK PERFORMED WELL SHUT IN. 14:00
TRANSFER SWAB VALVE FROM 5 LOWER
TO UPPER STRING.
14:20 R.I.H. 1.75" B/B.
Tag stop BAR at 6342' KB.
Tubing clear P.O.O.H.
SECURE well.
Leave w/2 Rigged up
TO RUN PRES. ELEMENTS.

22-7-88

18:07 Attempt to R.I.H. well cut back. Could not get past
200' against Flow.

18:20 P.O.O.H. and hang in lubricator overnight

23-7-88

07:30 Well cut back to 152

08:00 Reach hang depth 6340' ready for Flow period and
build up.

Ron Larkin
Operator's Signature

WORKED PERFORMED BY R. LARKIN OF

WELL DATA:

Tubing Size 2 7/8" FWHP SIWHP 13600 KPA
Subsurface S.V./Landing Nipple @ S.S.D. @
'X' Nipple @ 6305' 'N'/XN' Nipple @ 6322' Other @
Min. I.D. 1.291" @ 6322' Packer @ 6293'
Perforated Interval: Toolachee 6591' - 6750'

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

00049

WELL: Kidman # 5 Upper

Pf = 5800 kPa

ORIFICE SIZE: 63.600 mm 2.500 "

T = 95 °C

LINE SIZE: 73.660 mm 2.900 "

Diff = 20 kPa

Cumulative Production to end of May = $248.155 \text{ m}^3 \times 10^6$

Number of hours online in May = 737

Production in May = $10.555 \text{ m}^3 \times 10^6$

.. Average flow rate in May = $(10.555/737) \times 24 = 0.344 \text{ m}^3 \times 10^6/\text{d}$

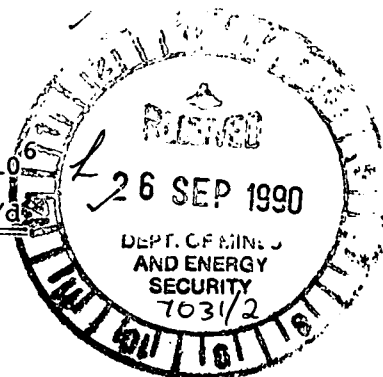
Number of days online in June before Shut In 0800 hrs 8 / 6 /89
= 6.542 days.

0600 11/6/89
0800 2/6/89

.. Production up to 0800hrs 8 / 6 /89 = $6.542 \times 0.344 = 2.250 \text{ m}^3 \times 10^6$

Total cumulative production = $2.250 + 248.155$
= $250.405 \text{ m}^3 \times 10^6$
= 8887.887 mmscf

Flow rate just prior to Shut In = $0.352 \text{ m}^3 \times 10^6/\text{d}$
= 12.503 mmscf/d



SUB-SURFACE PRESSURE SURVEY

CO. SANTOS		RUN 01 FIELD KI		WELL 5U
EFF DEPTH		WELL STAT		TOOL HUNG 6334
CASING	-	CASING PRESS		ON BOTTOM 2110 7/6
LINER	-	TUBING PRESS		OFF BOTTOM 0800 12/6
DATE 7/6/89		ELEMENT RANGE 0 - 3043		ZERO POINT
ELEVATION		ZONE		SHUT-IN 0800 8/6
MA TEMP		PICK-UP		ON-PROD
PERF	-	CAL SER NO. 29388		MPP
TUBING	-			
UNITS ENGLISH		PURPOSE BUILD-UP		

SURVEY DATA

CO. SANTOS		RUN 01 FIELD KI		WELL 5U			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
8:00	1926.9	1926.9	.0	11:59	2015.4	2015.4	4.0
8:03	1935.7	1935.7	.1	15:25	2016.3	2016.3	7.4
8:03	1942.1	1942.1	.1	2:09	2016.3	2016.3	18.1
8:03	1956.5	1956.5	.1	11:19	2014.7	2014.7	27.3
8:03	1972.9	1972.9	.1	21:28	2012.8	2012.8	37.5
8:03	1990.4	1990.4	.1	8:57	2013.9	2013.9	49.0
8:03	1997.8	1997.8	.1	18:44	2017.7	2017.7	58.7
8:06	2002.9	2002.9	.1	5:59	2019.7	2019.7	70.0
8:10	2005.8	2005.8	.2	19:07	2021.2	2021.2	83.1
8:15	2010.1	2010.1	.2	3:27	2023.6	2023.6	91.5
8:24	2012.7	2012.7	.4	6:22	2024.2	2024.2	94.4
9:22	2014.0	2014.0	1.4	8:00	2024.2	2024.2	96.0

LUB IN DWT = 866 PSI / OUT = 1710 PSI

LUB IN AMERADA = 858 PSI / OUT = 1718 PSI

SUB-SURFACE PRESSURE SURVEY

00051

CO. SANTOS		RUN 02 FIELD KI	WELL 5U
EFF DEPTH		WELL STAT	TOOL HUNG 6340
CASING	-	CASING PRESS	ON BOTTOM 2110 7/6
LINER	-	TUBING PRESS	OFF BOTTOM 0800 12/6
DATE 8/6		ELEMENT RANGE 0 - 3021	ZERO POINT
ELEVATION		ZONE	SHUT-IN 0800 8/6
MA TEMP		PICK-UP	ON-PROD
PERF	-	CAL SER NO. 29386	MPP
TUBING	-		
UNITS ENGLISH		PURPOSE BUILD-UP	

SURVEY DATA

CO. SANTOS			RUN 02 FIELD KI			WELL 5U		
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	
8:00	1926.3	1926.3	.0	9:53	2013.8	2013.8	1.9	
8:01	1937.3	1937.3	.0	15:04	2016.2	2016.2	7.1	
8:01	1957.3	1957.3	.0	22:28	2017.9	2017.9	14.5	
8:01	1976.9	1976.9	.0	13:52	2019.9	2019.9	29.9	
8:01	1992.7	1992.7	.0	4:12	2022.5	2022.5	44.2	
8:03	1997.7	1997.7	.1	13:03	2024.7	2024.7	53.0	
8:07	2001.0	2001.0	.1	1:12	2027.8	2027.8	65.2	
8:09	2004.1	2004.1	.1	14:20	2030.4	2030.4	78.3	
8:13	2007.6	2007.6	.2	3:54	2032.9	2032.9	91.9	
8:15	2009.7	2009.7	.3	6:36	2033.7	2033.7	94.6	
8:20	2011.8	2011.8	.3	8:00	2033.7	2033.7	96.0	

LUB IN DWT = 866 PSI / OUT = 1710 PSI

LUB IN AMERADA = 857 PSI / OUT = 1723 PSI

WIRELINE REPORT

CLIENT SANTOS LTD. WELL KIDMAN # 5^U Form: Toolachee

DATE 7.06.89

PROGRAMME Bottom hole pressure survey.

PURPOSE OF WORK

Run dummy run with 1.75" blind box to ensure
that tubing is clear of any obstruction.

REPORT OF WORK PERFORMED

7.06.89 0830 HR. Arrive on location. Shut well in.
Rig up wireline unit and (rig up swab valve,
BOP, lubricator pressure test - OK.)
0930 HR Run in hole with 1.75" blind box set of jors
knuckle joint and 5" stem.
0945 HR On bottom at 6342' KB top Bar collar.
0946 HR Pull out of hole.
1000 HR In lubricator.
Drive to Moomba.
1615 HR Arrive on location and prepare gauges for BHP survey.
1705 HR Pressure up lubricator
2040 HR Run in hole (well has to be choke down to 20% choke
size to run through wellhead and nipple,
2110 HR On bottom at 6340' KB (open well to 100% choke size
7.06.89 0800 HR Pull out of hole
0817 HR In lubricator
1017 HR Depressure lubricator 1025 HR Disengage stylus
Prepare gauges for Static gradient Survey.
1055 Run in hole
1156 Pull out of hole
1222 Dep. lub. Charts OK Rig down and rig up on bottom 5'.

Operator's Signature

WORKED PERFORMED BY I. Kurasia OF Expertest.

WELL DATA:

Tubing Size 2.7/8" FWHP 860 PSI SIWHP 1715 PSI
Subsurface S.V./Landing Nipple @ S.S.D. @
'X' Nipple @ 6305' KB 'N'/'XN' Nipple @ 6322' KB Other @
Min. I.D. 1.791" @ 6322' KB Packer @ 6295' KB 8
Perforated Interval: 6595' - 6750' KB.

00053

EXPERTEST

WIRELINE & WELL TESTING SERVICE

PO BOX 104 COVINGTON LA 70039

P-1 (504) 835-1499 TELE. 8457122

FAX (504) 427-7495

139 MIDCONE ROAD WABBITON

LA 70086-4902

Tested Monday, 12th June 1989.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN #5 U	Toolachee

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	29388	3000	28/ 4/89
Bottom	29386	2975	28/ 4/89

WELL DATA	
PARAMETER	VALUE
DWT In	11825 kPa
DWT Out	11790 kPa
Max BHT	Temp.elem

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.1300	1714.8	-----	1.1320	1701.2	-----
1000	1.1610	1762.2	0.047	1.1650	1751.0	0.050
2000	1.1920	1809.5	0.047	1.1970	1799.4	0.048
3000	1.2240	1858.4	0.049	1.2290	1847.7	0.048
4000	1.2550	1905.8	0.047	1.2620	1897.6	0.050
4500	1.2700	1928.7	0.046	1.2780	1921.8	0.048
5000	1.2860	1953.2	0.049	1.2940	1946.0	0.048
5500	1.3010	1976.1	0.046	1.3100	1970.2	0.048
6000	1.3190	2003.6	0.055	1.3290	1999.0	0.058
6340	1.3320	2023.5	0.058	1.3430	2020.2	0.062
LUB.	1.1300	1714.8	-----	1.1320	1701.2	-----

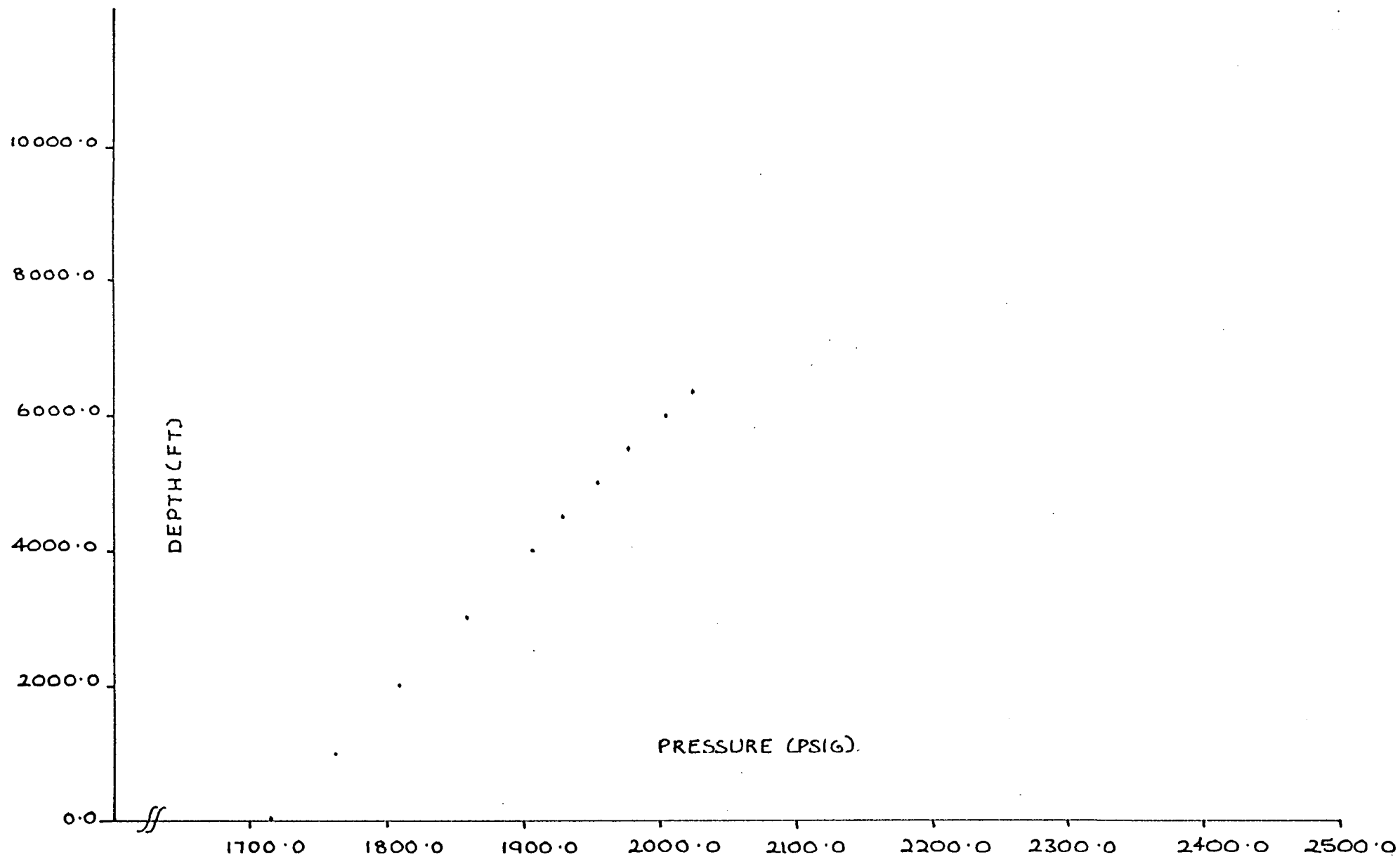
GENERAL REMARKS

Temp.elem.No:22821/139-995 F

Rec.No:28298/14 tlb

Clock No:2297 /? hrs

KIDMAN # 5 UPPER — STATIC PRESSURE GRADIENT — 12 / 6 / 89
ELEMENT # 29388 / 3000 (TOP)



00054

Well: KIDMAN #50 Form: Toolachee Date: 7.06-12.06.89

Lubricator Data: Operator I. KURASIAK

Pressure with D.W.T. In Tub 5971 kPa Cas 5964 kPa 84% Out Tub 11790 kPa Cas 11804 kPa

Time Pressured 17.05 HRS on 7.06.89 Time Depressed 10.17 Hrs on 12.06.89

Time Run in Hole 2040 HRS on 7.06.89 Time off Bottom 0800 Hrs on 12.06.89

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range	<u>29388 x 3000 PSI</u>	<u>29386 x 2975 PSI</u>
Recorder No.	<u>61001 x 14 TLS</u>	<u>61373 x 14 TLS</u>
Clock and Lead Screw Data	<u>24709 x 120 HRS.</u>	<u>24711 x 120 HRS.</u>
Engage Stylus	Date: <u>7.06.89</u> Time: <u>16 50 HRS</u>	Date: <u>7.06.89</u> Time: <u>16 50 HRS</u>
Disengage	Date: <u>12.06.89</u> Time: <u>10 25 HRS</u>	Date: <u>12.06.89</u> Time: <u>10 25 HR</u>

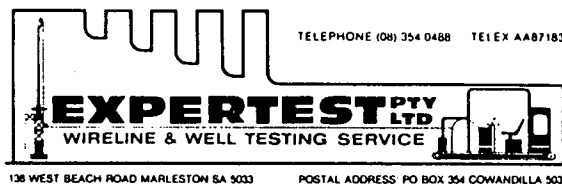
Remarks: Bomb No. 3. Data: Elem. No. 22821 x 139°-395° F

Rec. No. 28298 x 14 TLS

Clock No. 24703 x 120 HRS.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead kPa	Casing kPa	Wellhead Temp. °C	Remarks
7.06.89	2040		Well have to be choke down to 20% choke size to run through wellhead an X nipple at 6305' KB.			
	2110		Open well to 100% choke size at 6340' KB Hang depth.			
	2130		5930	5999	83°	
	2400		5999	5992	85°	
8.06.89	0300		6040	6012	84°	
	0630		5964	5930	83°	
	0800	0	5943	5909	83°	Shut well in
	0815		11908	11873	60°	
	0830		11908	11901	41°	
	0845		11894	11908	32°	
	0900	1	11894	11901	26°	
	0915		11894	11901	23°	
	0930		11894	11901	21°	
	0945		11894	11904	19°	
	1000	2	11894	11894	19°	
	1015		11894	11904	18°	
	1030		11894	11904	19°	
	1045		11887	11894	19°	
	1100	3	11894	11907	19°	
	1115		11887	11894	20°	
	1130		11894	11894	21°	
	1145		11887	11894	23°	
	1200	4	11894	11887	23°	



00056

Well: KIDMAN #50 Form: Toolachee Date: 7.06-12.06.89

Lubricator Data: Operator J. KURASIAK

Pressure with D.W.T. In Tub 5971 kPa Cas 5964 kPa 88°C Out Tub: 11790 kPa Cas: 11804 kPa

Time Pressured 17.05 HRS on 7.06.89 Time Depressed 10.17 Hrs on 12.06.89

Time Run in Hole 20.40 HRS on 7.06.89 Time off Bottom 08.00 Hrs on 12.06.89

Bomb No. 1 Data

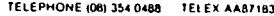
Bomb No. 2 Data

Element No. and Range	<u>29388 x 3000 PSI</u>	<u>29386 x 2975 PSI</u>
Recorder No.	<u>61001 x 14 TLS</u>	<u>61373 x 14 TLS</u>
Clock and Lead Screw Data	<u>24709 x 120 HRS.</u>	<u>24711 x 120 HRS.</u>
Engage Stylus	Date: <u>7.06.89</u> Time: <u>16 50 HRS</u>	Date: <u>7.06.89</u> Time: <u>16 50 HRS</u>
Disengage	Date: <u>12.06.89</u> Time: <u>10 25 HRS</u>	Date: <u>12.06.89</u> Time: <u>10 25 HR</u>

Remarks: Bomb No. 3. Data: Elem. No. 22821 x 139°-395° F
Rec. No. 28298 x 14 TLS
Clock No. 24703 x 120 HRS.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead kPa	Casing kPa	Wellhead Temp. °C	Remarks
8.06.89	1400	6	11894	11894	22°	
	1800	10	11887	11880	13°	
	2200	14	11873	11880	10°	
9.06.89	0200	18	11859	11866	10°	
	0600	22	11852	11859	10°	
	1000	26	11852	11866	15°	
	1400	30	N/A	N/A	N/A	N/A in Toolachee Static pressure
	1800	34	11846	11852	14°	
	2200	38	11852	11846	7°	
10.06.89	0200	42	11846	11852	6°	
	0600	46	11846	11846	6°	
	1000	50	N/A	N/A	N/A	In Moomba
	1400	54	Run bombs in Toolachee #28 f. Reading N/A			
	1800	58	11859	11852	15°	
	2200	62				
11.06.89	0200	66				
	0600	70	11852	11859	5°	
	1000	74				
	1530	79.30 min.	11797	11797	19°	
	1800	82				
	2200	86	11790	11804	6°	
12.06.89	0200	90				
	0600	94	11804	11804	5°	
	0800	96	11790	11797	5°	Pull out of hole





WELL KIDMAN# 5^U Form: Toolachee

OPERATOR I. KURASIAK

DATE 12.06.89

BOMB No. 1 DATA						BOMB No 2 DATA				DWT IN 11825 kPa DWT OUT 11790 kPa	
ELEMENT No. 29388		ELEMENT RANGE 3000 PSI				ELEMENT No. 29386		ELEMENT RANGE 2975 PSI			
RECORDER No 61001 x 14 TLS		CLOCK DATA 2530 x 3 HRS				RECORDER No 61373 x 14 TLS		CLOCK DATA 2387 x 3 HR			
ENGAGE SYLUS 1037 HRS		DISENGAGE 1229 HRS				ENGAGE SYLUS 1037 HRS		DISENGAGE 1229 HRS			
PRESSURE LUBRICATOR 1045 HR						BLEED LUBRICATOR 1222 HRS					
DATE	TIME	DEPTH'	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS	
12.06.89	1045	0				0				R14 at 1055 HRS	
	1100	1000				1000					
	1007	2000				2000					
	1114	3000				3000					
	1120	4000				4000					
	1125	4500				4500					
	1130	5000				5000					
	1135	5500				5500					
	1140	6000				6000					
	1146	6340				6340				POOH at 1156 HRS	
	1212	0				0					
										BOMB No 3 DATA	
										File: 22821 x 139°-395° F	
										Rec: 28298 x 14 TLS	
										Clock: 2297 x 3 HR	

GENERAL REMARKS:

0000

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEETWELL: Kidman # 5 Lower

Pf = 5500 kPa

ORIFICE SIZE: 30.000 mm 1.181 "

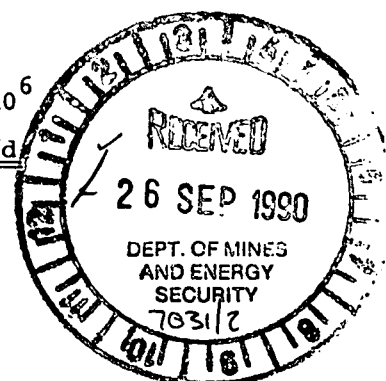
T = 88 °C

LINE SIZE: 73.660 mm 2.900 "

Diff = 34 kPa

Cumulative Production to end of May = 47.749 m³ x 10⁶

Number of hours online in May = 738

Production in May = 2.312 m³ x 10⁶. . Average flow rate in May = (2.312/738) x 24 = 0.075 m³ x 10⁶/dNumber of days online in June before Shut In 0830 hrs 13 / 6 / 89
= 11.563 days.. . Production up to 0830hrs 13 / 6 / 89 = 0.075 x 11.563 = 0.867 m³ x 10⁶Total cumulative production = 0.867 + 47.749
= 48.616 m³ x 10⁶
= 1725.583 mmscf ✓Flow rate just prior to Shut In = 0.067 m³ x 10⁶
= 2.381 mmscf/d

SUB-SURFACE PRESSURE SURVEY

00060

CO. SANTOS		RUN 02 FIELD KI		WELL 5L
EFF DEPTH		WELL STAT		TOOL HUNG 7000
CASING	-	CASING PRESS		ON BOTTOM 1730 12/6
LINER	-	TUBING PRESS		OFF BOTTOM 1600 18/6
DATE 13/6		ELEMENT RANGE 0 - 3021		ZERO POINT
ELEVATION		ZONE		SHUT-IN 0830 13/6
MA TEMP		PICK-UP		ON-PROD
PERF	-	CAL SER NO. 29386		MPP
TUBING	-			
UNITS ENGLISH		PURPOSE BUILD-UP		

SURVEY DATA

CO. SANTOS		RUN 02 FIELD KI		WELL 5L			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
8:30	1445.2	1445.2	.0	12:52	2357.9	2357.9	4.4
8:32	1528.9	1528.9	.0	12:59	2360.8	2360.8	4.5
8:34	1613.3	1613.3	.1	13:05	2365.9	2365.9	4.6
8:37	1706.3	1706.3	.1	13:12	2368.2	2368.2	4.7
8:39	1812.6	1812.6	.2	13:18	2369.8	2369.8	4.8
8:42	1924.0	1924.0	.2	13:27	2374.8	2374.8	4.9
8:44	2010.8	2010.8	.2	13:38	2382.5	2382.5	5.1
8:47	2099.2	2099.2	.3	13:51	2390.7	2390.7	5.4
8:48	2147.7	2147.7	.3	14:05	2396.5	2396.5	5.6
8:51	2198.0	2198.0	.3	14:22	2406.8	2406.8	5.9
8:54	2235.3	2235.3	.4	14:47	2417.1	2417.1	6.3
8:56	2246.6	2246.6	.4	15:05	2423.2	2423.2	6.6
8:57	2257.7	2257.7	.5	15:36	2433.4	2433.4	7.1
9:00	2274.3	2274.3	.5	16:23	2447.7	2447.7	7.9
9:02	2282.9	2282.9	.5	17:01	2456.2	2456.2	8.5
9:04	2290.6	2290.6	.6	18:05	2469.9	2469.9	9.6
9:08	2297.7	2297.7	.6	19:26	2482.4	2482.4	10.9
9:12	2303.9	2303.9	.7	20:41	2492.5	2492.5	12.2
9:17	2311.2	2311.2	.8	22:02	2500.4	2500.4	13.5
9:21	2316.9	2316.9	.8	23:42	2506.9	2506.9	15.2
9:28	2324.8	2324.8	1.0	1:46	2515.5	2515.5	17.3
9:36	2330.8	2330.8	1.1	4:12	2521.7	2521.7	19.7
9:44	2336.7	2336.7	1.2	6:52	2526.2	2526.2	22.4
9:57	2340.4	2340.4	1.4	9:52	2531.6	2531.6	25.4
10:28	2344.6	2344.6	2.0	13:43	2536.6	2536.6	29.2
11:04	2348.1	2348.1	2.6	17:57	2539.0	2539.0	33.5
11:32	2349.3	2349.3	3.0	23:38	2543.2	2543.2	39.1
12:07	2347.2	2347.2	3.6	4:43	2544.4	2544.4	44.2
12:34	2344.6	2344.6	4.1	10:06	2546.4	2546.4	49.6
12:41	2350.8	2350.8	4.2	16:13	2548.6	2548.6	55.7

SURVEY DATA

CO. SANTOS

RUN 02 FIELD KI

WELL 5L

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
0:44	2550.0	2550.0	60.2	3:46	2537.8	2537.8	91.3
2:57	2549.2	2549.2	66.5	7:46	2535.8	2535.8	95.3
11:23	2545.8	2545.8	74.9	8:30	2536.2	2536.2	96.0
17:54	2542.4	2542.4	81.4	0:00	.0	.0	.0

LUB IN DWT = 813 PSI / OUT =

LUB IN AMERADA = 813 PSI / OUT =

NOTE: NO EXIT DWT OR AMERADA PRESSURES AVAILABLE DUE TO
GAUGES BECOMING STUCK DOWNHOLE. THE WELL HAD TO OPENED
TO CLEAR THE TOOLSTRING



00062

WIRELINE REPORT

CLIENT SANTOS LTD. WELL KIDMAN #5L Form: PdchawannaDATE 12.06.89PROGRAMME Bottom hole pressure Survey.

PURPOSE OF WORK

Run dummy run with 1.5" toolstring to ensure that
tubing is clear of any obstruction and perfs are clear.

REPORT OF WORK PERFORMED

2.06.89 Rig down wireline unit from Kidman #5L and rig in swab valve
3.0P and wireline unit on Kidman #5L. Pressure test
of Swab valve 3.0P and lubricator to full shut in pressure - OK.

13.58 HR. Run in hole with 1.5" toolstring

After 4100' KB pick ups every 200' due to corkscrewed tubing.

13.58 HR. Top bottom at 7294' KB and get stuck in mud

Free toolstring out of mud after heavy pulling at 7240' KB.

14.01 HR Pull out of hole. 1 Perfs are clear

14.22 HR Arrive in lubricator.

Prepare gauges for Bottom hole pressure Survey.

15.11 HR Pressure up lubricator

17.11 HR Run in hole with two pressure and one temperature element.

17.50 HR On bottom at 7000' KB

18.06.89 0830 HR Shut well in for 96 HR build up.

17.6.89

0830: END BUILD UP. BUT UNABLE TO PULL OUT OF HOLE

SUSPECTED STUCK IN CORKSCREW TUBING.

PULL BIND ON WIRE WITH WIRELINE UNIT

0935: FLOW WELL TO AID THE PULLING OF THE BONDS.

Operator's Signature

WORKED PERFORMED BY I. KURASIAK OF Expertest.

WELL DATA:

Tubing Size 2 3/8" FWHP 5812 kPa SIWHP

Subsurface S.V./Landing Nipple @

S.S.D. @

'X' Nipple @ 6945' KB 'N'/'XN' Nipple @ 6956' KB Other @Min. I.D. 1.79" @ 6956' KB Packer @ 6930' KBPerforated Interval: 7031' - 7132' KB.



00063

WIRELINE REPORT

CLIENT SANTOS WELL KIDMAN # 54 DATE 17.6.89

PROGRAMME BOTTOM HOLE PRESSURE SURVEY

PURPOSE OF WORK

REPORT OF WORK PERFORMED

0950: WELL WILL NOT FLOW AT LINE PRESSURE.

1017: GO TO ATMOSPHERE TO UNLOAD WATER.

SANTOS FIELD OPERATOR IN CHARGE OF CLEAN UP.

12.6.89

1600: WITH WELL FLOWING ON 10% CHOKE TO ATMOSPHERE.

PULL COMISS OUT OF HOLE. PULLING A GREAT DEAL OF

WEIGHT. UNABLE TO GIVE FIGURES AS I DID NOT HAVE

A WEIGHT INDICATOR.

1620: WIRE LOST WEIGHT AT 5800' KB CONTINUE OUT
OF HOLE.

1652: BACK IN LUB.

1656: DEPRESSURE LUB.

UNABLE TO RUN STATIC GRADIENT DUE TO FLOWING THE WELL
& THE CORKSCREW TUBING. RIG DOWN END SURVEY.

* NOTE. RECOVERED CHARTS. GOOD EXCEPT TOP
ELE STOPPED A FEW HOURS SHORT OF
BUILD. IT STARTED AGAIN AFTER THE WELL
WAS FLOWED.

M.B. Mueller

Operator's Signature

WORKED PERFORMED BY M. Mueller OF EXPERTEST

WELL DATA:

Tubing Size _____ FWHP _____ SIWHP _____

Subsurface S.V./Landing Nipple @ _____ S.S.D. @ _____

'X' Nipple @ _____ 'N'/'XN' Nipple @ _____ Other @ _____

Min. I.D. @ _____ Packer @ _____

Perforated Interval: _____

Well: KIDMAN #5 L. Form: Patchawarra Date: 12.06.89 - 18.06.89

Lubricator Data:

Operator I. KURASIAK

Pressure with D.W.T. In Tub: 5737 kPa Cas: 6074 kPa Out 7309 12.6.89 WELL FLOWING 10"

Time Pressured 1511 HRS on 12.06.89 Time Depressed 1652 12.6.89

Time Run in Hole 1711 HRS on 12.06.89 Time off Bottom 1600 12.6.89

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range	<u>29388 x 3000 PSI</u>	<u>29386 x 2975 PSI</u>
Recorder No.	<u>61001 x 14 TLS.</u>	<u>61373 x 14 TLS</u>
Clock and Lead Screw Data	<u>24709 x 120 HRS</u>	<u>24703 x 120 HRS</u>
Engage Stylus	Date: <u>12.06.89</u> Time: <u>1500 HRS</u>	Date: <u>12.06.89</u> Time: <u>1500 HR.</u>
Disengage	Date: <u>12.6.89</u> Time: <u>1656</u>	Date: <u>12.6.89</u> Time: <u>1656</u>

Remarks: Bomb No. 3 Data: 22821 x 139°-395° F

Recorder: 28298 x 14 TLS

Clock: 24711 x 120 HRS

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead kPa	Casing kPa	Wellhead Temp. °C	Remarks
<u>12.06.89</u>	<u>1730</u>		<u>5722</u>	<u>6088</u>	<u>79</u>	<u>On bottom at 7000' KB</u>
	<u>2230</u>		<u>5826</u>	<u>6136</u>	<u>79</u>	<u>Well flowing at 100%</u>
<u>13.06.89</u>	<u>0330</u>		<u>5812</u>	<u>6109</u>	<u>80</u>	<u>choke Size.</u>
	<u>0830</u>	<u>0</u>	<u>5778</u>	<u>6088</u>	<u>80</u>	<u>Shut well in.</u>
	<u>0845</u>		<u>12894</u>	<u>5868</u>	<u>61</u>	
	<u>0900</u>		<u>13383</u>	<u>5854</u>	<u>45</u>	
	<u>0915</u>		<u>13659</u>	<u>5847</u>	<u>37</u>	
	<u>0930</u>	<u>1</u>	<u>13735</u>	<u>5840</u>	<u>31</u>	
	<u>0945</u>		<u>13755</u>	<u>5854</u>	<u>28</u>	
	<u>1000</u>		<u>13790</u>	<u>5847</u>	<u>25</u>	
	<u>1015</u>		<u>13804</u>	<u>5847</u>	<u>24</u>	
	<u>1030</u>	<u>2</u>	<u>13824</u>	<u>5847</u>	<u>23</u>	
	<u>1045</u>		<u>13838</u>	<u>5813</u>	<u>23</u>	
	<u>1100</u>		<u>13831</u>	<u>5826</u>	<u>22</u>	
	<u>1115</u>		<u>13838</u>	<u>5826</u>	<u>22</u>	
	<u>1130</u>	<u>3</u>	<u>13831</u>	<u>5813</u>	<u>22</u>	
	<u>1145</u>		<u>13838</u>	<u>5792</u>	<u>22</u>	
	<u>1200</u>		<u>13831</u>	<u>5799</u>	<u>23</u>	
	<u>1215</u>		<u>13824</u>	<u>5799</u>	<u>23</u>	
	<u>1230</u>	<u>4</u>	<u>13831</u>	<u>5792</u>	<u>23</u>	
	<u>1430</u>	<u>6</u>	<u>14224</u>	<u>5295</u>	<u>23</u>	
	<u>1830</u>	<u>10</u>	<u>14548</u>	<u>5654</u>	<u>15</u>	
	<u>2240</u>	<u>14.10 min.</u>	<u>14707</u>	<u>5709</u>	<u>12</u>	
<u>14.06.89</u>	<u>0230</u>	<u>18</u>	<u>14797</u>	<u>5716</u>	<u>11</u>	

Well: Date:

Lubricator Data: Operator

Pressure with D.W.T. In Out

Time Pressured Time Depressed

Time Run in Hole Time off Bottom

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range					
Recorder No.					
Clock and Lead Screw Data					
Engage Stylus	Date:	Time:	Date:	Time:	
Disengage	Date:	Time:	Date:	Time:	

Remarks:

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead KPA	Casing KPA	Wellhead Temp.	Remarks
14.06.89	0630	22	14845	5729	11	
	1030	26	N/A			CREW CHANGE
	1430	30	14969	5709	22	
	1830	34	14969	5750	20	
	2230	38	14976	5784	16	
15.06.89	0230	42	14997	5771	15	
	0630	46	15004	5771	13	
	1030	50	N/A	DOING	SGS AT STREZLECKI 1	
	1430	54	15066	5812	23	
	1830	58	15086	5812	21	
	2230	62	15100	5812	18	
16.06.89	0230	66	15100	5812	16	
	0630	70	15079	5805	14	
	1030	74	15100	5792	20	
	1430	78	15121	5737	26	
	1830	82	15113	5757	23	
	2230	86	15093	5791	18	
17.06.89	0230	90	15093	5791	17	
	0630	94	15086	5791	15	
		96	15093	5791	18	
			UNABLE TO PULL OUT OF HOLE DUE TO CORKSCREW TURBINE.			
	0935		FLOW WELL TO AID PULLING THE BOMBS.			
	1015		WELL WILL NOT FLOW IN LINE.			

Well: Date:

Lubricator Data: _____ Operator _____

Pressure with D.W.T. In Out

Time Pressured..... Time Depressed.....

Time Run in Hole..... Time off Bottom.....

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range				
Recorder No.				
Clock and Lead Screw Data				
Engage Stylus	Date:	Time:	Date:	Time:
Disengage	Date:	Time:	Date:	Time:

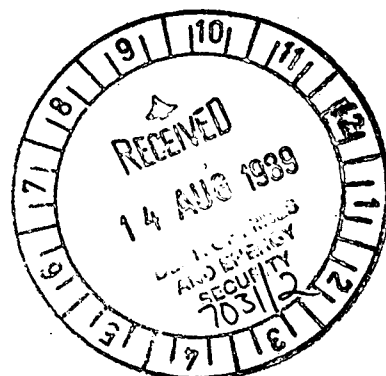
Remarks:.....

Well-Head Data for Final Build-up

[illegible]

SANTOS LIMITED
PETROLEUM DEVELOPMENT DEPARTMENT
KIDMAN #5U
MODIFIED ISOCHRONAL
3 - 14/6/87

Report No:RE:040/89
Author: A.G. Burdon
Date: July, 1989



C O N T E N T SPAGE NO.

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APPENDICES

I	Modified Isochronal Analysis
II	Pressure Build-up Analysis
III	Welltest Data
IV	Compositional Data
V	Static Gradient

1. INTRODUCTION

Kidman #5 was drilled in November 1986 as a gas appraisal well and encountered pay in the Toolachee and Patchawarra formations. The well was completed as a dual gas producer in April 1987.

The sand, pay thickness and perforated intervals are listed below.

FORMATION	SAND	NET PAY (ft)	PERFORATIONS (ft KB)
TOOLACHEE	64-0	16	6394 - 6412
		1	6422 - 6424
	64-5	32	6478 - 6512
	66-1	33	6591 - 6617
	66-7	20	6648 - 6654
	67-3	<u>40</u>	6703 - 6750
		142	
PATCHAWARRA	72-3	16	7031 - 7050
	72-5	20	7074 - 7108
	73-1	<u>8</u>	7126 - 7132
		44	

A clean-up flow was conducted on the Toolachee completion between May 30 and June 3, 1987. A modified isochronal test followed, commencing June 9, to determine the well deliverability and reservoir parameters.

Separator fluid samples were collected during the extended flow period and these have been recombined into a full well stream composition for fluid properties. A static pressure gradient survey was also conducted at the time of testing.

This report presents the results and conclusions arising from the well test.

2. RESULTS

The following results were obtained from modified isochronal analysis techniques.

Simplified Analysis:

AOF	60.32	MMscfd
c	12.E-5	MMscf/d/psi
n	0.82	

LIT Analysis:

AOF	51.7	MMscfd
a	4.096 E6	psia ² /cp/MMscfd
b	0.12	psia ² /cp/MMscfd ²
D	1.376	day/MMscf

The following results were obtained from pressure build-up analysis using the Horner Plot technique.

Flow capacity	11800 md-ft
Permeability	83.1 md
Apparent Skin	43.1
True Skin	29.5
Extrapolated Pressure	2826 psia @ 6342' KB
Flow rate	9.854 MMscfd @ FTHP 1855 psig
Condensate Production	19.4 BBLS/MMscf
Water Production	2.7 BBLS/MMscf

Reservoir Pressure at MPP of 6572' KB

P.B.U.	2841 psia
Static Survey	2847 psia

3. CONCLUSIONS/RECOMMENDATIONS

1. The well exhibits significant damage but this may reduce with increased production time. However, the condition does not inhibit the well's performance greatly as the system is governed by tubing performance.
2. Initial reservoir pressure should be taken from the extrapolated pressure build-up, namely 2841 psia at MPP.
3. The gas and condensate samples were found to satisfy quality checks, therefore the full well stream composition should be adopted for fluid property and reserves purposes.

4. DISCUSSION

The well is a prolific producer, responding to a very high flow capacity, and yielding considerable liquids at a rate of approximately 20 BBLS of condensate per MMscf.

The simplified isochronal analysis utilizes all of the data acquired. However, the LIT analysis is sensitive to minor clean-up effects in flows 2 and 3 which have been discarded to force a unit slope (which is implicit) on the back pressure plot. The results obtained are considered to be a good indication of well performance.

The final pressure build-up is very difficult to analyse given that the high flow capacity results in a very limited transient pressure response. No after-flow or well-bore storage effects were seen in the data and the slope chosen on the Horner plot is heavily weighted towards the earlier data. The results of the analysis are therefore qualified to some extent on this basis, but may be regarded as indicative of average reservoir parameters. Well interference effects are also evident in the PBU data.

Seven DST's were conducted in the well, two produced no gas to surface. Of the remainder, three have interpreted results. DST #3 over the 67-3 sand had a pressure build-up response judged to be too rapid to interpret. The following table compares the pressure build-up analysis with what data there is available from the various DST's.

	P.B.U.	DST #1	DST #2	DST #3	DST #6
Interval	Perforated	64-0	64-5	67-3	66-7
kh (md-ft)	11800	12	1568	?	562
k (md)	83.1	1	49	?	28
s'	43.1	1.3	5.0	?	8.0
p* (psia)	2826	2828	2103	2872	2616
Depth (ft KB)	6342				
q (MMscf/d)	9.85	.8	4.5	8.3	5.4

High pressure gas and condensate samples were collected from the separator towards the end of the extended flow period and these have been analysed by the AMDEL laboratory. The AMDEL report reproduces separator conditions and sample date which are not reconcilable with the daily test reports. Hence, the daily test reporting has been adopted for valid recording and sample date is accepted as 11/6/87 rather than 9/6/87. Also the separator pressure prevailing is taken as 1861 kPa at 1200 hrs rather than 276 kPa at 1900 hrs. The analysis of the samples are found to satisfy quality checking and have been recombined to provide the full well stream composition given in Appendix IV.

A static pressure survey was run at the completion of the well test and indicates a gas gradient to 6342' KB (Appendix V). The average gas gradient between 5000' and 6342' KB (0.065 psi/ft) has been used to extrapolate to the mid point perforations (MPP = 6572' KB) to provide an estimate of reservoir pressure.

APPENDIX I

Modified Isochronal Analysis

RUN TYPE : Analysis

PHASE : GAS

NO. OF WELLS : 1

PVT DATA : Reservoir temperature = 262.0 deg F
----- Standard temperature = 60.0 deg F
Standard pressure = 14.7 psia

Table : Pressure Z-factor Viscosity

psia	Z-factor	cpoise
200.0	0.984	0.01360
500.0	0.962	0.01400
1000.0	0.931	0.01500
1500.0	0.908	0.01590
2000.0	0.896	0.01700
2200.0	0.895	0.01760
2400.0	0.895	0.01820
2500.0	0.895	0.01840
2600.0	0.896	0.01870
2700.0	0.898	0.01900
2800.0	0.899	0.01930
2900.0	0.902	0.01970
3000.0	0.904	0.02000
3100.0	0.907	0.02030
3200.0	0.91	0.02060
3400.0	0.917	0.02130

WELL DATA : Well radius = 0.354 feet
----- Formation thickness = 142.0 feet
Porosity = 0.143
Rock compressibility = 4.500E-06 1/psi
Water saturation = 0.34
Water compressibility = 3.500E-06 1/psi

RATE DATA

Time	Rate
Hours	Mscf/day
0.0	4077.0
2.0	0.0
4.0	7774.0
6.0	0.0
8.0	10446.0
10.0	0.0
12.0	12401.0
14.0	9854.0
40.0	0.0

PRESSURE DATA

Time	Pressure
Hours	psia
0.0	2842.95
2.0	2794.05
4.0	2849.05
6.0	2717.65
8.0	2844.65
10.0	2677.45
12.0	2837.65
14.0	2648.55
40.0	2687.85
40.25	2819.75
40.5	2820.65
40.75	2821.05
41.0	2821.95
41.25	2821.85
41.5	2822.95
41.75	2823.55
42.0	2823.45
43.0	2823.75
44.0	2823.15
45.0	2822.65
46.0	2823.75
47.0	2822.95
48.0	2823.85
54.0	2822.65
60.0	2822.95
66.0	2820.95
72.0	2820.05
78.0	2820.65
84.0	2820.85
90.0	2821.65
96.0	2820.25
102.0	2820.65
107.5	2819.45

KIDMAN

KIDMAN 5U

Test 1 (9 JUN 1987)

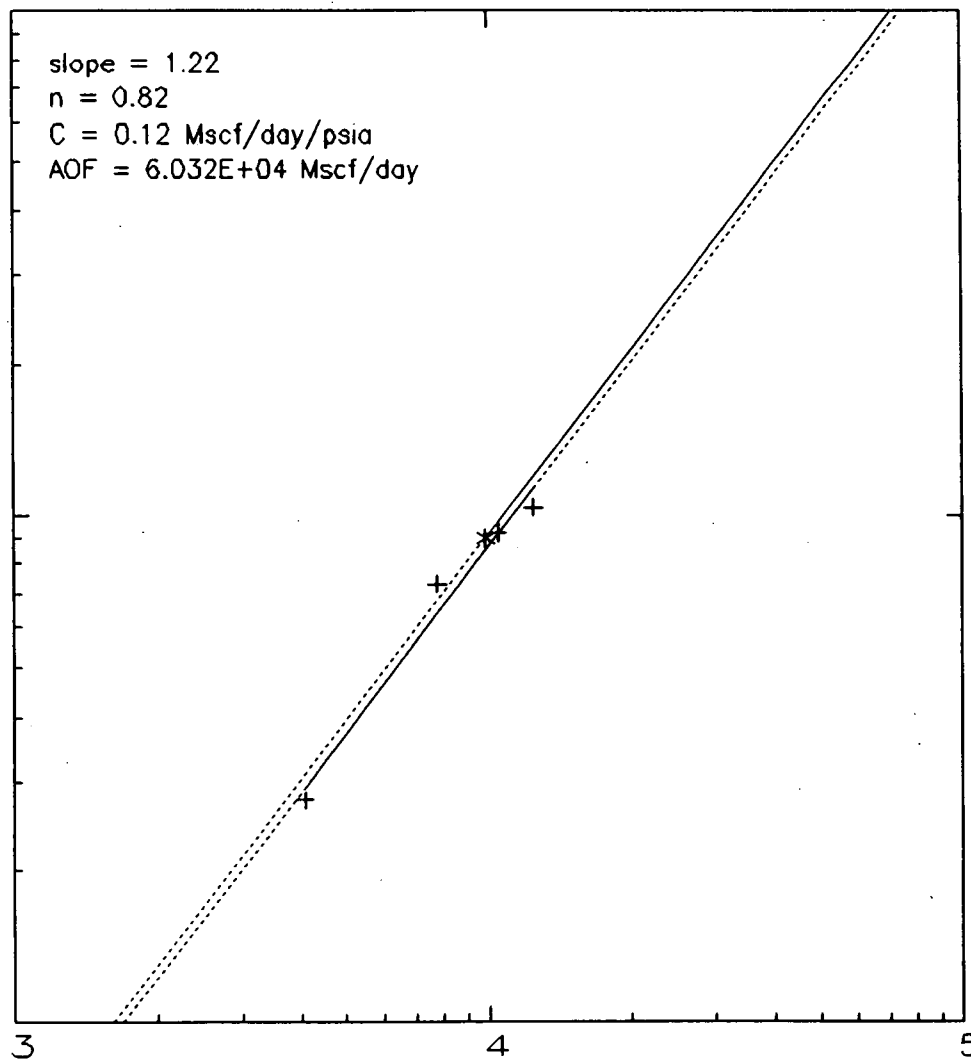
dP**2 10**

7

slope = 1.22
n = 0.82
C = 0.12 Mscf/day/psia
AOF = 6.032E+04 Mscf/day

6

5



RATE 10**

00078

KIDMAN

KIDMAN 5U

Test 1 (9 JUN 1987)

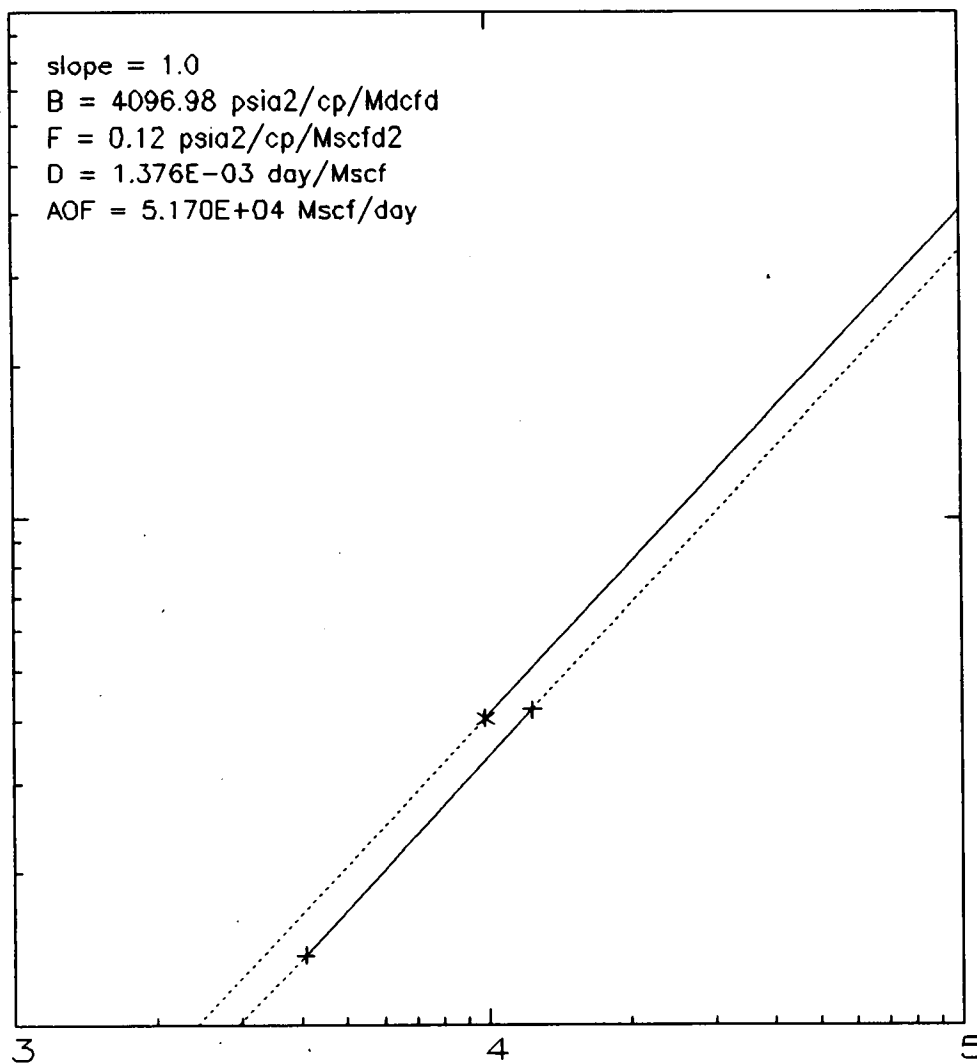
dm(P) - FQ**2 10**

9

slope = 1.0
B = 4096.98 psia²/cp/Mdcfd
F = 0.12 psia²/cp/Mscfd²
D = 1.376E-03 day/Mscf
AOF = 5.170E+04 Mscf/day

8

7



RATE 10**

00079

APPENDIX II

Pressure Build-up Analysis

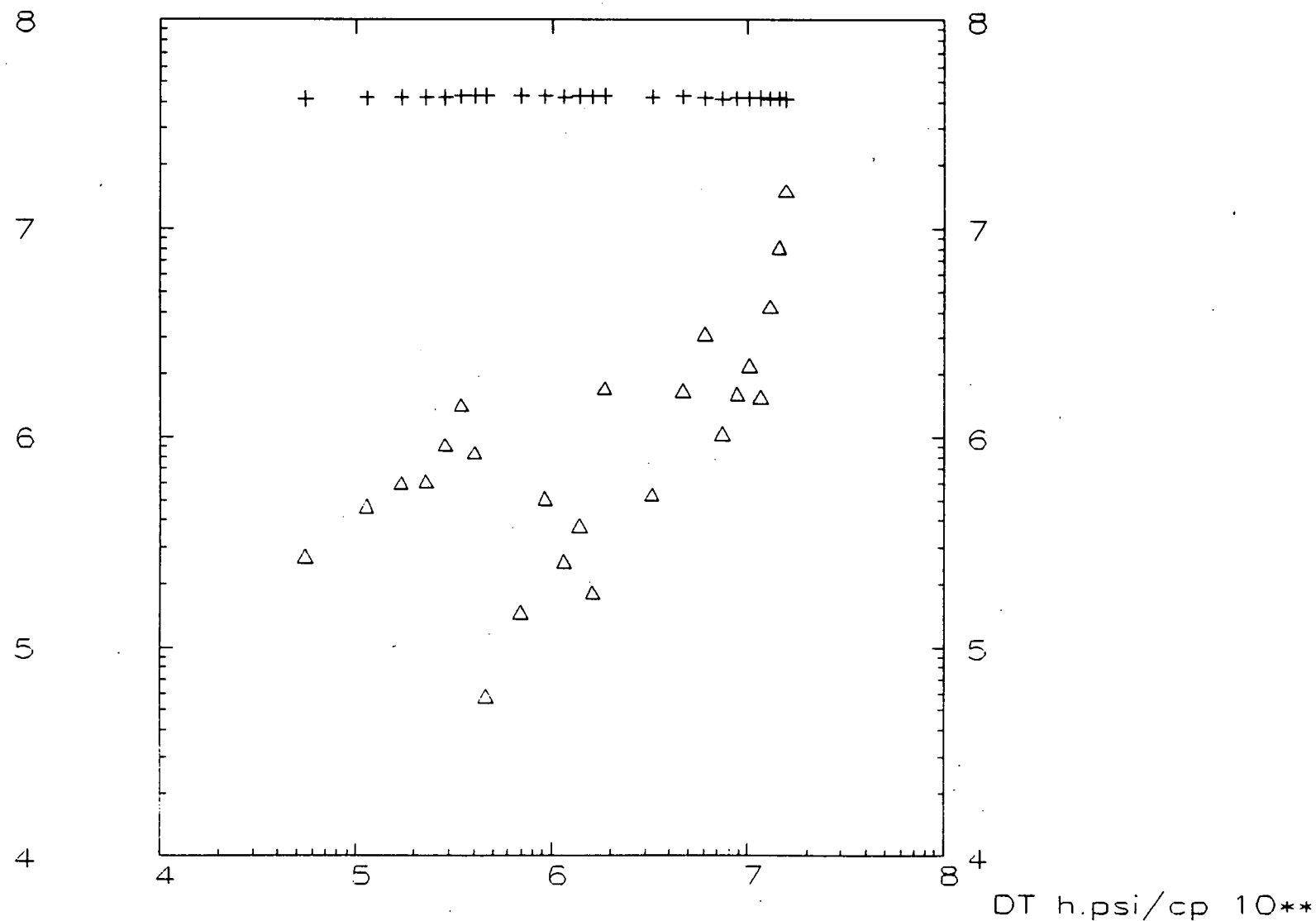
KIDMAN

KIDMAN 5U

Test 1 (9 JUN 1987)

DP psi2/cp 10**

Derivative P psi2/cp 10**



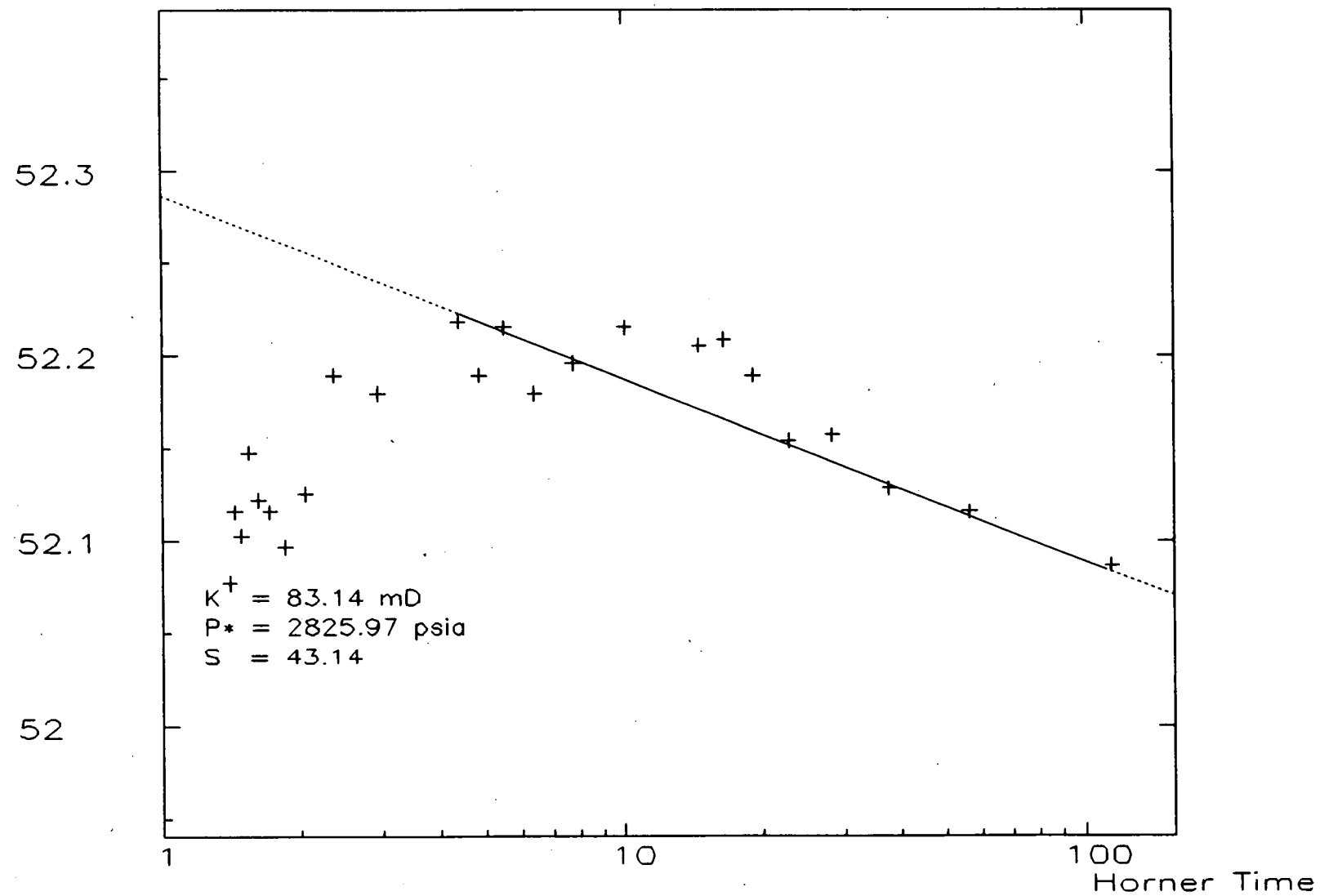
00081

KIDMAN

KIDMAN 5U

Test 1 (9 JUN 1987)

P psi2/cp *10**7



00082

APPENDIX III

Welltest Data

SANTOS LTD.
WELL TEST SUMMARY

Page 1.

WELL: Kidman # 5 upper	Lat.: 28°13'49.0" S	DATE: 3rd-14th June 1987
TESTED BY: Oilserv Australia	LOCATION: Long: 140°46'37.6" E	FORMATION: Toolachee
CASING SIZE: 7 ins	PERFORATIONS: 6394 - 6750 ft	PRODUCING THROUGH: Tubing
TUBING SIZE: 2-7/8 ins	WEIGHT: 23 & 26 lb/ft	GRADE: J55 & N80
	WEIGHT: 6.5 lb/ft	GRADE: J55

DESCRIPTION OF TEST

INITIAL SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			psig	psig	°F	
3/6/87	1201	0	2143	0	176	Shut well in
9/6/87	2100	152.98	2372	0	66	Opened well on mte. #1

Flow Period

Run No.: 1	Duration of Run: 2 Hours.	Orifice Size: 2.250 ins
Flow Well On: 20/64" Choke.		Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production Bbls/d	Water Production Bbls/d
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			psig	psig	°F	psig	inches	°F		
9/6/87	2100	0	2372	0	66					
	2200	1	2284	0	126	280	56	37	104.159	16.605
	2300	2	2284	0	131	280	56	43	137.369	21.134

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
9/6/87	2300	0	2384	0	131	
	2315	0.25	2387	0		
	2330	0.5	2387	0		
	2345	0.75	2387	0		
	2400	1	2387	0		
10/6/87	0015	1.25	2387	0		
	0030	1.5	2387	0		
	0045	1.75	2387	0		
	0100	2	2387	0		
						Opened well on rate # 2.

Run No.: 2 Duration of Run: 2 Hours.
Flow Well On: 32/64"Choke.

Orifice Size: 3.000 ins
Meter Run: 4.026 ins

[illegible]

5800

3RD SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
10/6/87	0300	0	1995	0	149	Shut well
	0315	0.25	2387	0		
	0330	0.5	2387	0		
	0345	0.75	2387	0		
	0400	1	2387	0		
	0415	1.25	2387	0		
	0430	1.5	2387	0		
	0445	1.75	2387	0		
	0500	2	2387	0		Opened well on rate # 3

Flow Period

Run No.: 3 Duration of Run: 2 Hours.
Flow Well On: 40/64" Choke.

Orifice Size: 3.000 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover		Data Temp. °F	Condensate Production Bbls/d	Water Production Bbls/D
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches			
10/6/87	0500	0	2387	0	154					
	0600	1	1740	0	154	295	94	88	264.172	37.739
	0700	2	1740	0	160	300	96	97	271.719	45.287

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SANTOS LTD.
WELL TEST SUMMARY

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4TH SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			psig	psig	°F	
10/6/87	0700	0	1740	0	160	Shut well in
	0715	0.25	2378	0		
	0730	0.5	2380	0		
	0745	0.75	2385	0		
	0800	1	2390	0		
	0815	1.25	2390	0		
	0830	1.5	2390	0		
	0845	1.75	2390	0		
	0900	2	2390	0		Opened well on rate # 4

Flow Period

Run No.: 4 Duration of Run: 2 Hours.
Flow Well On: 44/64" Choke.

Orifice Size: 3.000 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production Bbls/d	Water Production Bbls/d
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			psig	psig	°F	psig	inches	°F		
10/6/87	0900	0	2390	0						
	0945	0.75	1530	0	158	260	154	100		
	1020	1.33	1530	0	160	280	148	104	298.697	54.309
			Gauges slowly bring blown up hole.							
			Reduce choke to 38/64"							
	1030	1.5	1810	0	165					
	1043	1.72		0						
			Reduce choke to 36/64"							
	1045	1.75	1840	0	170					
	1100	2	1840	0	172					

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00087

✓

/

Orifice Size: 3.000 ins
Meter Run: 4.026 ins

✓
CK
00008

SANTOS LTD.
WELL TEST SUMMARY
CALCULATION SHEET

Page 8.

GAS RATES THROUGH SEPARATOR

Run No.	Hw (inches in water)	Pf (psig)	Size Orifice Plate (inches)	Ft (°F)
1	56	280	2.250	43
2	52	290	3.000	73
3	96	300	3.000	97
4	148	280	3.000	104
5	100	270	3.000	122

Separator Gas Properties

Specific Gravity = 0.7778 ✓
 TC = 402 °R ✓
 PC = 697 psia ✓
 CO2 CONTENT = 8.80 mole % ✓
 Meter Run = 4.026" ✓

GAS RATES THROUGH SEPARATOR / FWS FLOW RATE*

Run No.	Q (Mmscfd)	
1	4.008 / 4.077	✓
2	7.642 / 7.774	✓
3	10.268 / 10.446	✓
4	12.190 / 12.401	✓
5	9.687 / 9.854	✓

WP 2548G

* FWS RATES WERE DETERMINED BY
 DIVIDING THE SEPARATOR GAS RATE BY
 GAS MOLAR RATIO (0.983, see Appendix II)

00091

GAS WELL DELIVERABILITY TEST CALCULATIONS
(Base Conditions = 14.65 psia and 60°F)

WELL NAME: Kidman # 5 upperDATE: 3rd-14th June 1987ELEMENT NO: 64773DEPTH TESTED: 6342' KBDWT IN: 2372 PSIGOUT: 2355 PSIGLUB IN: 2358 PSIGOUT: 2338 PSIG

SIMPLIFIED ANALYSIS

	Duration (hours)	Sandface Pressure (psia)	Temp (°F)	Meas.	Δp^2 ($\times 10^6$ psia ²)	Flow Rate (Mmscfd)	H/Carbon Prod. (BBL/D)	Water Prod. (BBL/D)	REMARKS
Initial Shut In	152.98	2842.95	bottomhole Temp = 96 °F Recorded Temperature = 296 °F Maximum Temperature = 296 °F	✓	—	—	—	—	$q = C(\bar{p}_R^2 - p_{wf}^2)^n$ $\checkmark$ slope n = _____ $\bar{p}_R =$ _____ psia $\checkmark C = \frac{q}{(\bar{p}_R^2 - p_{wf}^2)^n}$ $\checkmark =$ _____ AOF (Mmscfd) $\checkmark =$ _____ $\checkmark$
Flow 1	2	2794.05		✓	0.276	4.077	120.764	18.870	
Shut In	2	2849.05		✓	—	—	—	—	
Flow 2	2	2717.65		✓	0.731	7.774	206.054	27.927	
Shut In	2	2844.65		✓	—	—	—	—	
Flow 3	2	2677.45		✓	0.923	10.446	267.946	41.513	
Shut In	2	2837.65		✓	—	—	—	—	
Flow 4	2	2648.55		✓	1.037	12.401	298.697	54.309	
Extended Flow	26	2687.85		✓	0.725	9.854	186.425	24.978	$\checkmark$
Final Shut In	67.5	2819.45		✓	—	—	—	—	

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00092

APPENDIX IV

Compositional Data

WELL: KIDMAN #5U

FORMATION: TOOLACHEE

DATE: 11/6/87

MOLECULAR COMPOSITION OF RESERVOIR FLUID

COMPONENT	RECOMBINED	SEPARATOR	RECOMBINED
	SEPARATOR	GAS	RESERVOIR
	LIQUID		FLUID
	Mole (%)	Mole (%)	Mole (%)
NITROGEN	0.36	2.42	2.38
CARBON DIOXIDE	1.51	8.80	8.67
METHANE	5.94	72.88	71.72
ETHANE	3.56	9.88	9.77
PROPANE	3.55	3.48	3.48
i - BUTANE	1.06	0.47	0.48
n - BUTANE	3.02	0.90	0.94
i - PENTANE	2.10	0.29	0.32
n - PENTANE	2.87	0.30	0.34
HEXANES	6.05	0.32	0.42
HEPTANES	10.42	0.18	0.36
OCTANES+	59.56	0.08	1.11
TOTALS	100.00	100.00	100.00
MOLECULAR WT.	109.96	22.51	24.09
SPECIFIC GRAVITY		0.778	0.832
MOLAR RATIO	1.7	98.3	100.00
SPECIFIC GRAVITY OF C8+			0.790
MOLECULAR WEIGHT OF C8+			141.0

REF: AMDEL REPORT # F5266/87

WP:6269N(12)

APPENDIX V

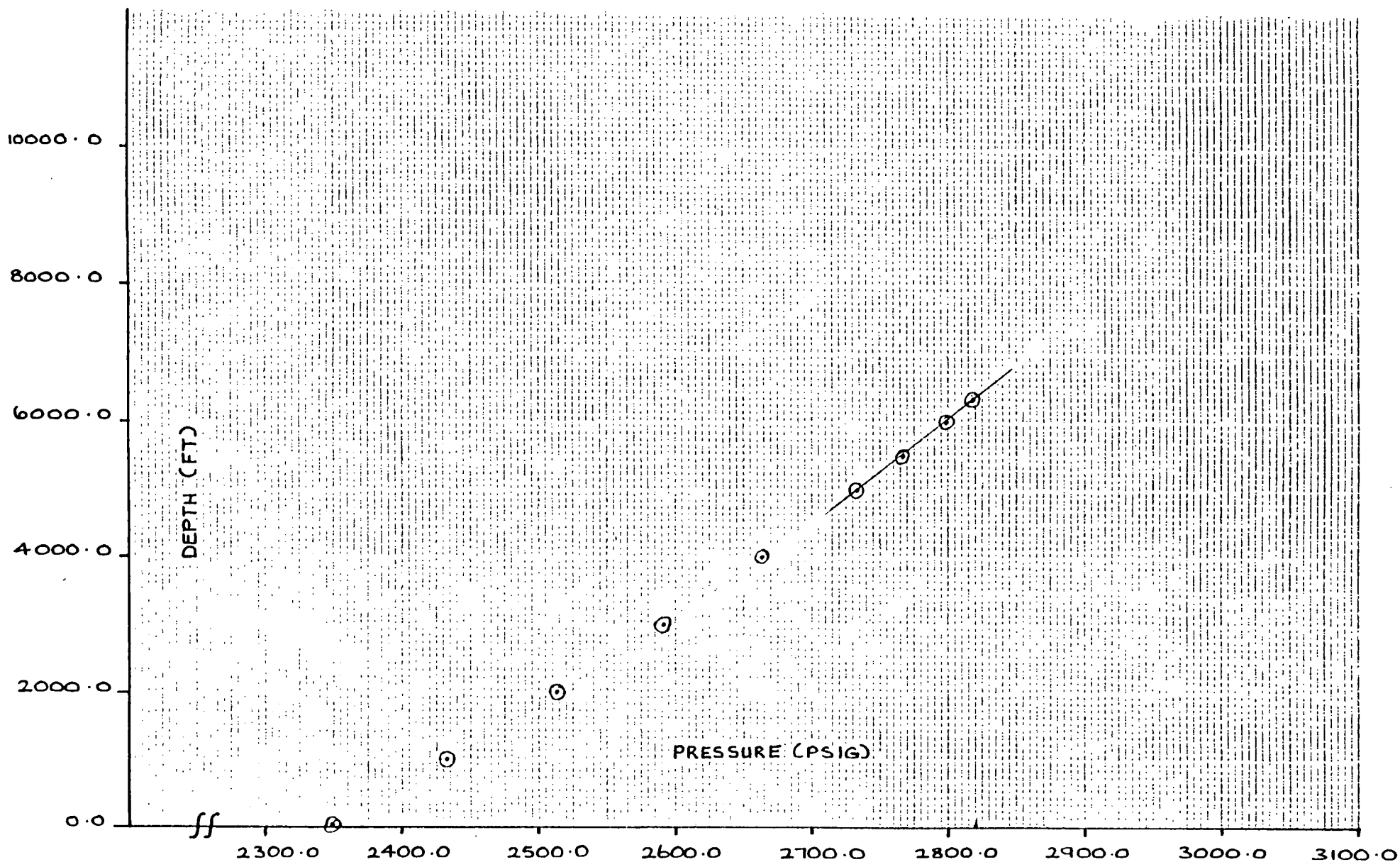
Static Gradient

KIDMAN # 5 UPPER

— STATIC PRESSURE GRADIENT —

14/6/87

ELEMENT # 64773 / 4000 (BOT)



96000

SANTOS LIMITED
PETROLEUM DEVELOPMENT DEPARTMENT
KIDMAN #5L
MODIFIED ISOCHRONAL
8 - 21/6/87

Report No:RE:041/89
Author: A.G. Burdon
Date: July, 1989

C O N T E N T SPAGE NO.

1.	INTRODUCTION	1
2.	RESULTS	2
3.	CONCLUSIONS/RECOMMENDATIONS	3
4.	DISCUSSION	4

APPENDIX

I	Modified Isochronal Analysis
II	Pressure Build-up Analysis
III	Welltest Data
IV	Compositional Data
V	Static Gradient

00099

1. INTRODUCTION

Kidman #5 was drilled in November 1986 as a gas appraisal well and encountered pay in the Toolachee and Patchawarra formations. The well was completed as a dual gas producer in April 1987.

The sand, pay thickness and perforated intervals are listed below.

FORMATION	SAND	NET PAY (ft)	PERFORATIONS (ft KB)
TOOLACHEE	64-0	16	6394 - 6412
		1	6422 - 6424
	64-5	32	6478 - 6512
	66-1	33	6591 - 6617
	66-7	20	6648 - 6654
	67-3	<u>40</u>	6703 - 6750
		142	
PATCHAWARRA	72-3	16	7031 - 7050
	72-5	20	7074 - 7108
	73-1	<u>8</u>	7126 - 7132
		44	

A clean-up flow was conducted on the Patchawarra completion between 5 - 8 June, 1987. A modified isochronal test followed, commencing June 16, to determine the well deliverability and reservoir parameters.

Separator fluid samples were collected during the extended flow period and these have been recombined into a full well stream composition for fluid properties. A static pressure gradient survey was also conducted at the time of testing.

This report presents the results and conclusions arising from the well test.

2. RESULTS

The following results were obtained from modified isochronal analysis techniques.

Simplified Analysis:

AOF	8.43	MMscfd
c	5.516E-7	MMscf/d/psi
n	1.03	

LIT Analysis:

AOF	8.64	MMscfd
a	64.85 E6	psia ² /cp/MMscfd
b	0.39	psia ² /cp/MMscfd ²
D	0.154	day/MMscf

The following results were obtained from pressure build-up analysis using the Horner Plot technique.

Flow capacity	414 md-ft
Permeability	9.4 md
Apparent Skin	18.3
True Skin	17.6
Extrapolated Pressure	3057 psia @ 7143' KB
Flow rate	4.372 MMscfd @ FTHP 1306 psig
Condensate Production	11.6 BBLS/MMscf
Water Production	12.8 BBLS/MMscf

Reservoir Pressure at MPP of 7070' KB

P.B.U.	3052 psia
Static Survey	3057 psia

3. CONCLUSIONS/RECOMMENDATIONS

1. The modified isochronal test was successful in establishing reservoir parameters.
2. The skin value indicates some completion damage which may reduce with additional production.
3. Water production from the well is excessive and should be plugged-off (bridge plug between 7109' and 7124' KB) to prevent invasion of the productive gas sands during periods of shut-in.
4. Reservoir pressure is indicated to be 3052 psia at the MPP datum of 7070' KB.
5. The recombined full well stream should be adopted for future fluid property and reserves purposes.

4. DISCUSSION

The well produced at a moderate rate (approximately 4 MMscf/d) on test and yielded an average water/gas ratio of approximately 13 BBLs/MMscf. The high WGR is consistent with production of formation water, probably from the lower set of perforations (7126 - 7132' KB) where log analyses indicated water saturation in the vicinity of 50 percent. The water production could be detrimental to the well's future performance if allowed to continue non-checked.

The modified isochronal analyses are relatively straight forward although the simplified analysis indicates a slope of 0.97 on the correlation line of the back pressure plot. Theoretically, this value can not be less than 1, but the discrepancy is judged to be of little importance in this analysis. Both the simplified and LIT analysis indicate a very small effect from turbulence in the reservoir.

The pressure buildup data indicates a change in slope in late time on the Horner plot. This phenomenon is not consistent with any identifiable reservoir properties and is judged to be a consequence of water influx into the wellbore during shut-in. If an extrapolation of the final pressure trend is made, the resultant infinite shut-in time pressure exceeds all other reservoir pressure indicators by approximately 40 psi.

The following table compares the results of the isochronal test with the earlier DST results in the Patchawarra Formation.

	MOD. ISO.	DST #4
Interval (ft KB)	7031 - 7132	7006 - 7061
kh (md)	414	
k	9.4	
s'	18.3	
p* (psia)	3057	3066 (1)
Depth (ft KB)	7143	7024
q (MMscf/d)	4.37	3.7

(1) Final shut-in pressure

High pressure gas and liquid samples were collected from the separator during the extended flow period of the test and these have been recombined to produce a full well stream composition given in Appendix IV. Quality control checking of the separator liquid sample by examination of the equilibrium ratios of flash gas and stock tank components revealed anomalies in the iso-butane and C8+ fractions. Corrections were made to the reported fractions together with methane and ethane components to produce a synthesised separator liquid composition. This composition was found to have internal consistency with the separator gas and the recombination procedure was finalised.

A static pressure gradient was run at the completion of the test which indicates a gas gradient exists to 7155' KB (see Appendix V). The average gradient between 4000' and 6000' KB (0.068 psi/ft) was extrapolated to the MPP depth of 7070' KB to reveal a reservoir pressure of 3056.7 psia.

APPENDIX I

Modified Isochronal Analysis

RUN TYPE : Analysis

PHASE : GAS

NO. OF WELLS : 1

PVT DATA : Reservoir temperature = 286.0 deg F
----- Standard temperature = 60.0 deg F
Standard pressure = 14.7 psia

Table	Pressure	Z-factor	Viscosity
	psia		cpoise
	100.0	0.994	0.01400
	500.0	0.97	0.01440
	1000.0	0.946	0.01530
	1500.0	0.93	0.01600
	2000.0	0.922	0.01700
	2200.0	0.921	0.01750
	2400.0	0.922	0.01800
	2600.0	0.924	0.01840
	2700.0	0.926	0.01870
	2800.0	0.928	0.01890
	2900.0	0.93	0.01920
	3000.0	0.932	0.01950
	3100.0	0.935	0.01970
	3200.0	0.938	0.02000
	3300.0	0.941	0.02030

WELL DATA : Well radius = 0.354 feet
----- Formation thickness = 44.0 feet
Porosity = 0.121
Rock compressibility = 4.500E-06 1/psi
Water saturation = 0.24
Water compressibility = 3.500E-06 1/psi

RATE DATA

00106

Time	Rate
Hours	Mscf/day
0.0	1454.0
2.0	0.0
4.0	2809.9
6.0	0.0
8.0	4038.0
10.0	0.0
12.0	4717.0
14.0	4372.0
48.0	0.0

PRESSURE DATA

Time	Pressure
Hours	psia
0.0	3068.9
2.0	2782.1
4.0	3060.4
6.0	2480.5
8.0	3054.1
10.0	2188.6
12.0	3048.4
14.0	2009.5
48.0	2107.2
48.25	2805.95
48.5	2982.15
48.75	2994.15
49.0	2999.35
49.25	3003.25
49.5	3006.65
49.75	3009.35
50.0	3011.75
51.0	3017.95
52.0	3021.95
53.0	3025.45
54.0	3028.35
60.0	3036.25
66.0	3040.85
72.0	3044.35
78.0	3045.75
84.0	3048.55
90.0	3049.25
96.0	3053.65
100.63	3059.35
107.08	3060.65

KIDMAN

KIDMAN 5L

Test 1 (8 JUN 1987)

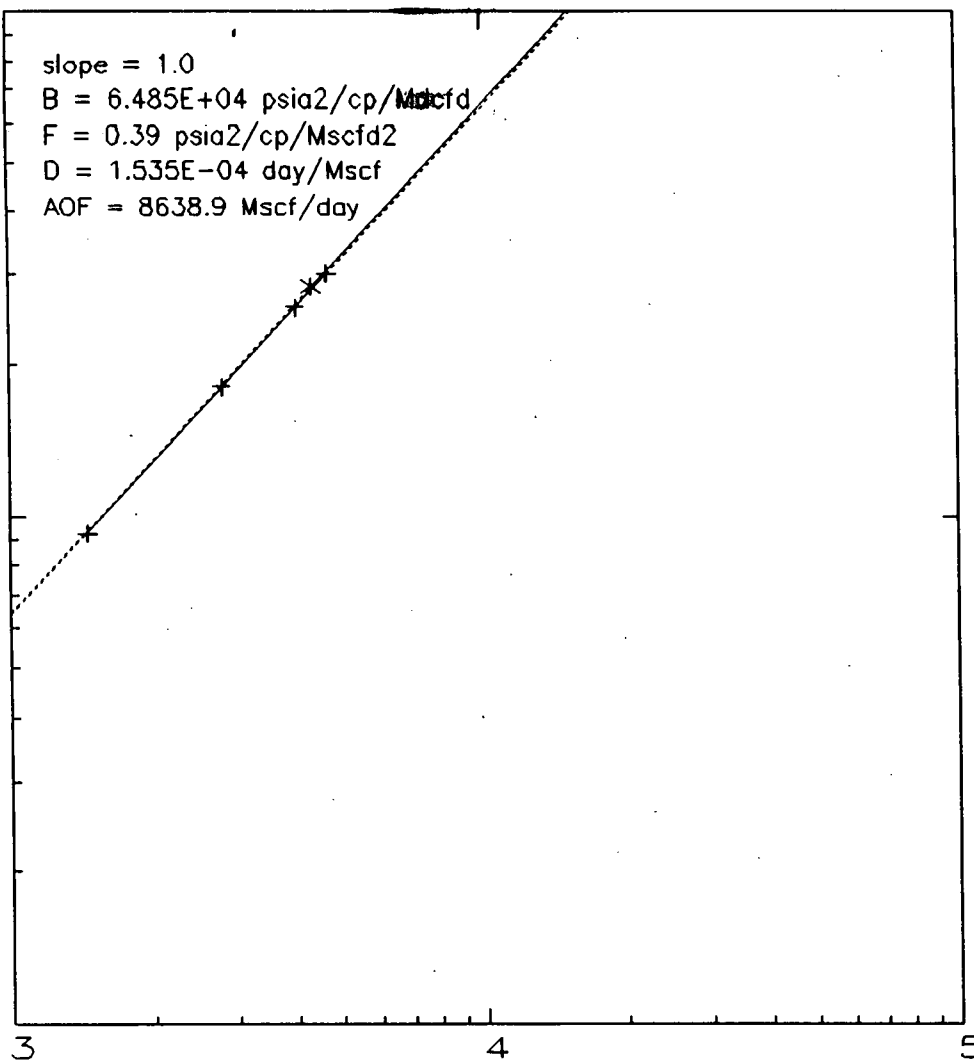
dm(P) - FQ**2 10**

9

slope = 1.0
B = 6.485E+04 psia²/cp/Mscf
F = 0.39 psia²/cp/Mscf²
D = 1.535E-04 day/Mscf
AOF = 8638.9 Mscf/day

8

7



RATE 10**

00103

KIDMAN

KIDMAN 5L

Test 1 (8 JUN 1987)

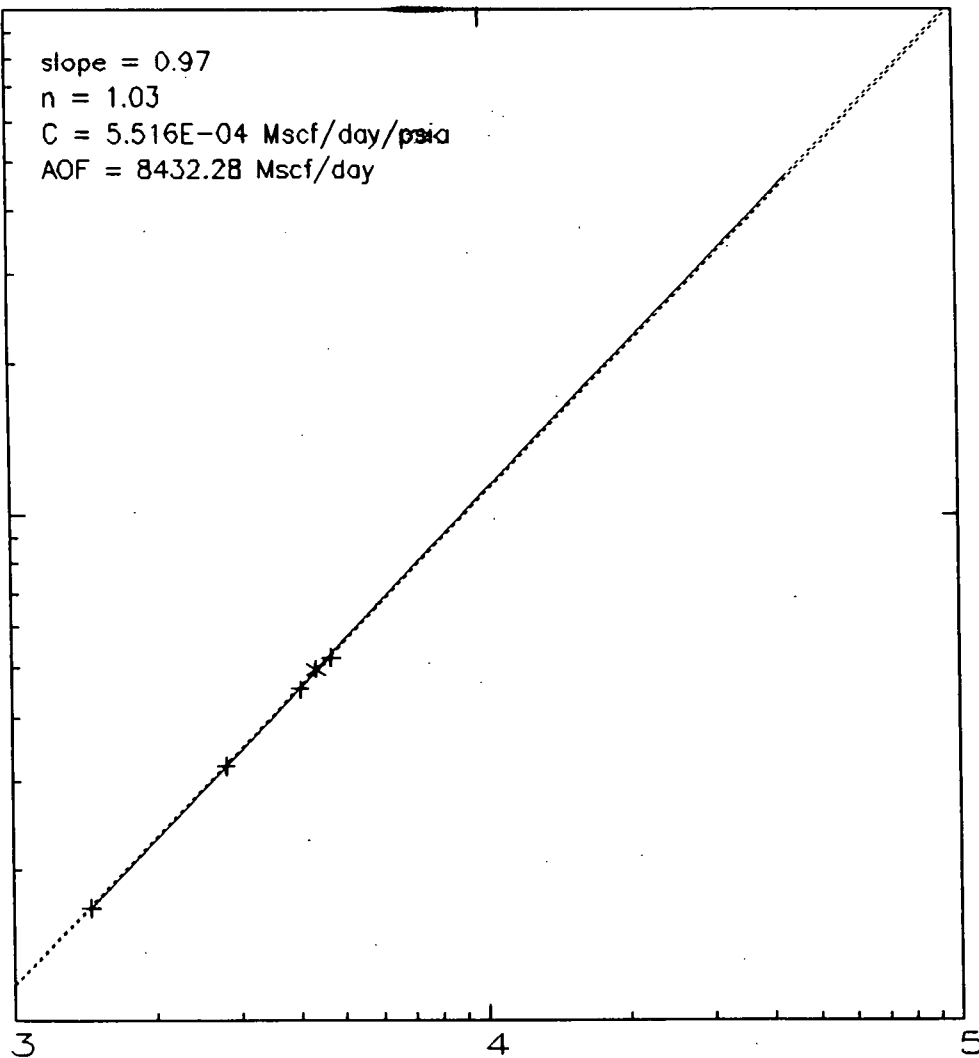
dP**2 10**

8

slope = 0.97
n = 1.03
C = 5.516E-04 Mscf/day/psia
AOF = 8432.28 Mscf/day

7

6



RATE 10**

00109

APPENDIX II

Pressure Build-up Analysis

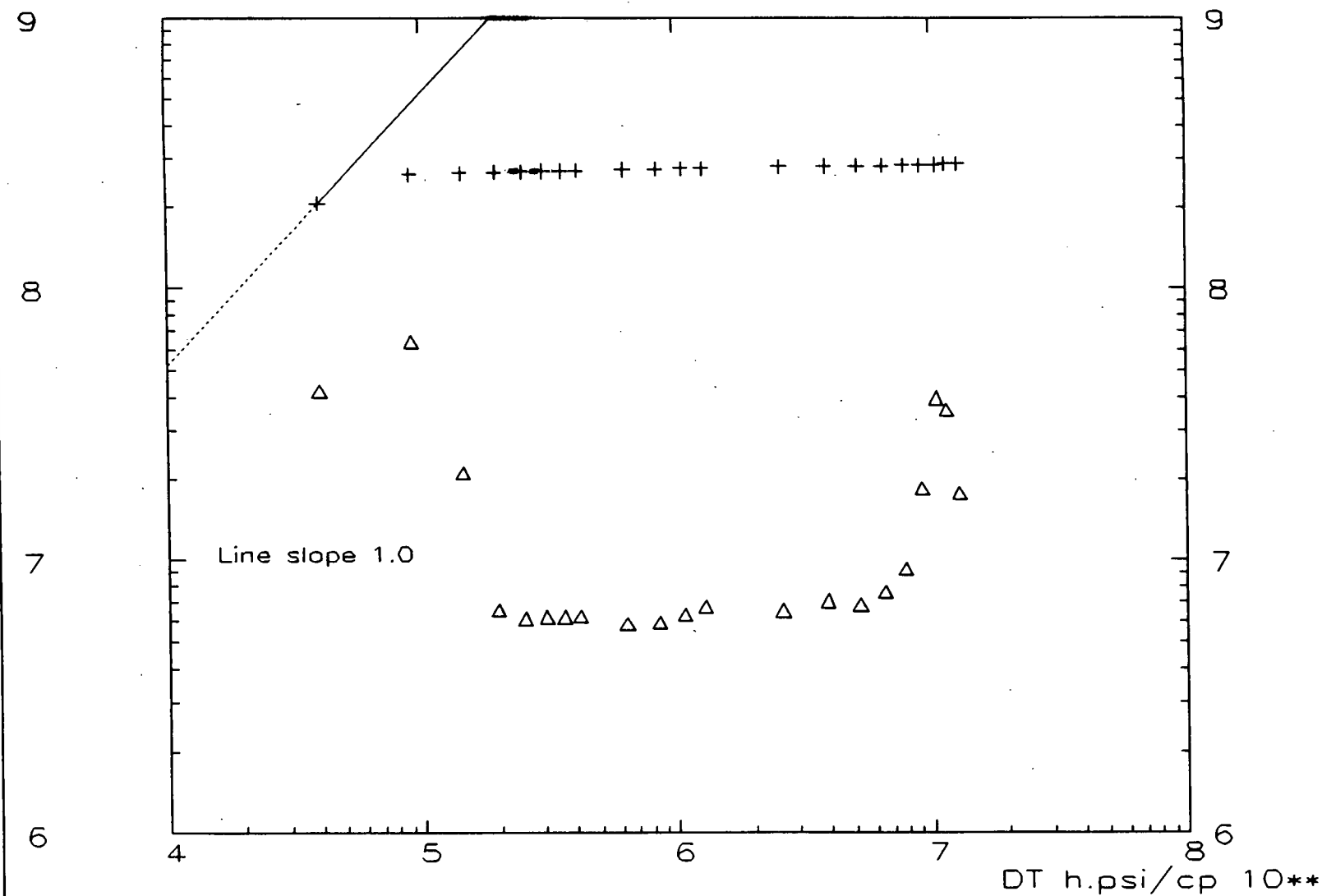
KIDMAN

KIDMAN 5L

Test 1 (8 JUN 1987)

DP psi2/cp 10**

Derivative P psi2/cp 10**

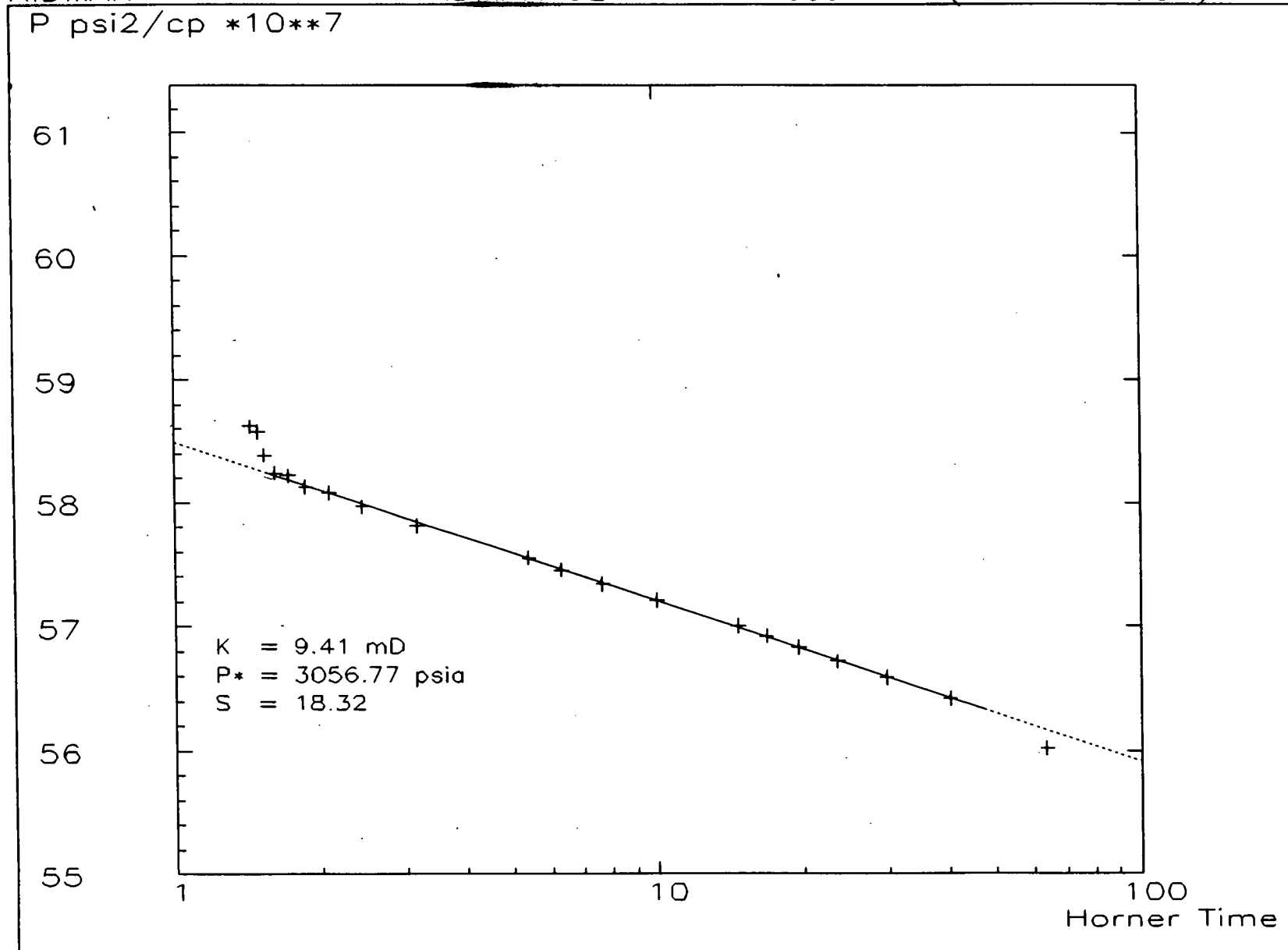


00111

KIDMAN

KIDMAN 5L

Test 1 (8 JUN 1987)

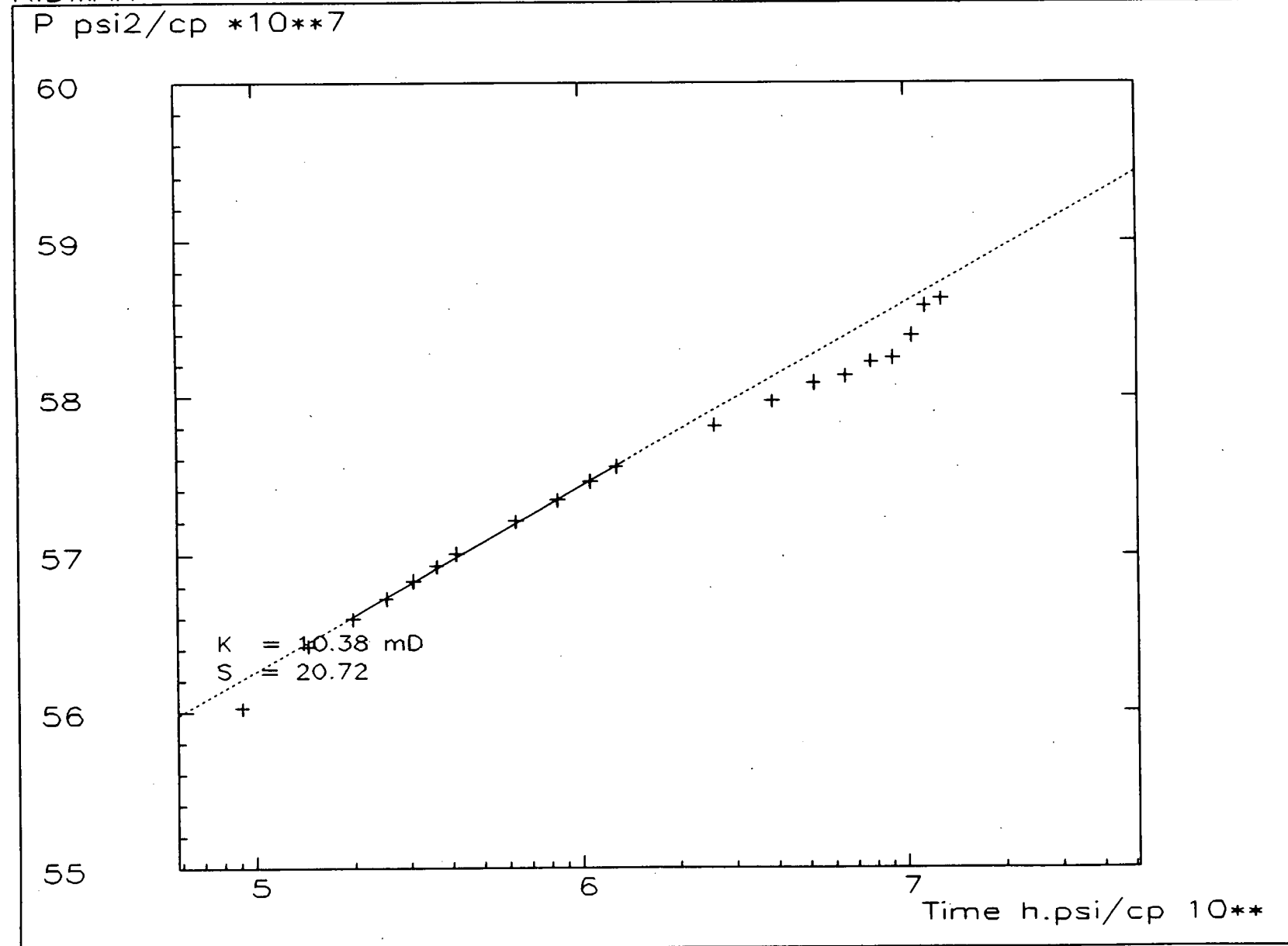


00112

KIDMAN

KIDMAN 5L

Test 1 (8 JUN 1987)



00113

APPENDIX III

Welltest Data

SANTOS LTD.
WELL TEST SUMMARY

Page 1.

WELL: Kidman # 5 Lower	Lat.: 28°13'49.0" S	LOCATION: Long: 140°46'37.6" E	DATE: 8-21/6/87	FORMATION: Patchawarra ✓
TESTED BY: oilserv Australia	PERFORATIONS: 7031 - 7132 ft	PRODUCING THROUGH: Tubing		
CASING SIZE: 7 ins	WEIGHT: 23 1/2 lb/ft	GRADE: J55 & N80		
TUBING SIZE: 2-3/8 ins	WEIGHT: 4.7 lb/ft	GRADE: J55 ✓		

DESCRIPTION OF TEST

INITIAL SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
8/6/87	2130	0	1080	0	153	
16/6/87	1100	181.5	2451	0	59	Brought well on line for rate # 1

Flow Period

Run No.: 1	Duration of Run: 2 Hours.	Orifice Size: 1.750 ins
Flow Well On: 15/64" Choke.		Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data		Condensate Production Bbls/d	Water Production Bbls/d
			Tubing	Casing	Temp.	Pf	Hw		
			psig	psig	°F	psig	inches		
16/6/87	1100	0	2451	0	59				
	1200	1	2250	0	102	270	22	21.889	6.793
	1300	2	2250	0	106	280	20	41.513	9.812

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			psig	psig	°F	
16/6/87	1300	0	2250	0	106	Shut well in
	1315	0.25	2507	0		
	1330	0.5	2520	0		
	1345	0.75	2528	0		
	1400	1	2532	0		
	1415	1.25	2532	0		
	1430	1.5	2532	0		
	1445	1.75	2533	0		
	1500	2	2533	0		Opened well on rate # 2

Run No.: 2 Duration of Run: 2 Hours.
Flow Well On: 19/64" Choke.

Orifice Size: 1.750 ins
Meter Run: 4.026 ins

[illegible]

00119

3RD SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
16/6/87	1700	0	1944	0	115	Shut well in
	1715	0.25	2520	0		
	1730	0.5	2527	0		
	1745	0.75	2529	0		
	1800	1	2532	0		
	1815	1.25	2534	0		
	1830	1.5	2534	0		
	1845	1.75	2534	0		
	1900	2	2534	0		Opened well on rate # 3

Flow Period

Run No.: 3 Duration of Run: 2 Hours.
Flow Well On: 24/64" Choke.

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production Bbls/d	Water Production Bbls/D
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F		
16/6/87	1900	0	2534	0						
	2000	1	1455	0	117	275	64	57	65.666	13.586
	2100	2	1435	0	122	275	58	64	81.516	15.096

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Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
16/6/87	2100	0	1435	0	122	
	2115	0.25	2497	0		
	2130	0.5	2515	0		
	2145	0.75	2525	0		
	2200	1	2532	0		
	2215	1.25	2534	0		
	2230	1.5	2534	0		
	2245	1.75	2534	0		
	2300	2	2534	0		Opened well on rate # 4

Orifice Size: 2.500 ins
Meter Run: 4.026 ins

[illegible]

FINAL STABILIZATION FLOW PERIOD

Flow Period

Run No.: 5 Duration of Run: 34 Hours.
Flow Well On: 26/64" Choke.

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production Bbls/d	Water Production Bbls/d
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			psig	psig	°F	psig	inches	°F		
17/6/87	0100	0	1080	0	124					
	0200	1	1297	0	127	258	77	77	32.455	56.608
	0300	2	1298	0	129	259	76	81	3.774	5.283
	0400	3	1299	0	131	259	76	81	1.510	6.038
	0500	4	1298	0	133	260	74	84	37.139	90.573
	0600	5	1301	0	135	260	76	86	75.478	45.287
	0700	6	1300	0	136	260	76	88	60.382	67.930
	0800	7	1295	0	136	260	76	88	46.796	73.968
	0900	8	1300	0	136	260	76	88	75.478	60.382
	1000	9	1302	0	138	260	76	88	43.777	70.949
	1100	10	1302	0	138	270	74	91	61.892	64.911
	1200	11	1302	0	138	280	72	93	45.287	67.930
	1300	12	1302	0	142	280	72	95	64.156	52.834
	1400	13	1304	0	144	280	72	97	52.834	37.739
	1500	14	1303	0	144	265	76	97	30.191	45.287
	1600	15	1305	0	144	260	76	97	33.210	41.813
	1700	16	1304	0	144	260	76	97	56.608	75.478
	1800	17	1304	0	144	260	76	95	40.758	75.478
	1900	18	1304	0	145	250	78	95	42.267	67.930
	2000	19	1304	0	145	250	79	95	45.287	64.911
	2100	20	1302	0	147	250	80	97	52.080	67.930
	2200	21	1304	0	147	250	80	97	69.439	43.777
	2300	22	1303	0	147	250	80	97	55.853	64.911
	2400	23	1305	0	147	255	80	97	32.455	76.987
18/6/87	0100	24	1305	0	147	255	78	99	57.363	51.325
	0200	25	1305	0	147	255	78	99	46.796	73.968
	0300	26	1305	0	149	255	78	99	47.551	73.213
	0400	27	1306	0	149	255	78	99	52.834	64.156
	0500	28	1304	0	149	255	78	99	54.344	64.156
	0600	29	1304	0	149	255	78	99	38.494	65.666
	0700	30	1304	0	149	255	78	99	69.439	51.325
	0800	31	1304	0	149	255	78	99	33.965	79.251
	0900	32	1306	0	151	260	78	101	52.080	59.627

WELL TEST SUMMARY

Run No.: 5 Duration of Run: 34 Hours.
Flow Well On: 26/64" Choke.

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

WP 2548G

00120

WELL TEST SUMMARY

WP 2548G

00121

FINAL BUILD-UP, SUBSURFACE PRESSURES

ELEMENT NO. 44918

BOMB DEPTH ~~4143~~ 'KB

7143' KB

DWT IN: 2451 PSI / OUT: 2535 PSI

LUB. IN: 2539 PSI / OUT: 2524 PSI

IN: 2535 PSI / OUT: 2520R

IN: 2534 PSI / OUT: 2517 PSI

[illegible]

SANTOS LTD.
WELL TEST SUMMARY
CALCULATION SHEET

Page 8.

GAS RATES THROUGH SEPARATOR

Run No.	Hw (inches in water)	Pf (psig)	Size Orifice Plate (inches)	Ft (°F)
1	20	280	1.750	30
2	68	320	1.750	46
3	58	275	2.250	64
4	54	260	2.500	84
5	78	260	2.250	101

Separator Gas Properties

Specific Gravity = 0.755
 TC = 395.16°R
 PC = 697.38 psia
 CO2 CONTENT = 8.70 mole %
 Meter Run = 4.026"

GAS RATES THROUGH SEPARATOR

Run No.	Q (Mmscfd)	
1	1.438	1.434 ✓
2	2.779	2.807 ✓
3	3.994	4.038 ✓
4	4.665	4.717 ✓
5	4.324	4.372 ✓

WP 2548G

00123

GAS WELL DELIVERABILITY TEST CALCULATIONS
 (Base Conditions = 14.65 psia and 60°F)

WELL NAME: Kidman # 5 LowerDATE: 8-21/6/87ELEMENT NO: 44918DEPTH TESTED: 7143' KBDWT IN: 2451 PSI / 2535OUT: 2535 PSI / 2520 PSILUB IN: 2539 PSI / 2534OUT: 2524 PSI / 2517 PSI

SIMPLIFIED ANALYSIS

	Duration (hours)	Sandface Pressure (psia)	Temp. (°F)	Meas.	Δp^2 (x10 ⁶ psia ²)	Flow Rate (Mmscfd)	H/Carbon Prod. (BBLS/D)	Water Prod. (BBLS/D)	REMARKS
Initial Shut In	181.5	3068.9		✓	—	—	—	—	$q = C(\bar{p}_R^2 - p_{wf}^2)^n$ slope n = _____ $\bar{p}_R =$ _____ psia $C = \frac{q}{(\bar{p}_R^2 - p_{wf}^2)^n}$ = _____ AOF (Mmscfd) = _____
Flow 1	2	2782.1		✓	1.678		31.701 ✓	8.303 ✓	
Shut In	2	3060.4		✓	—	—	—	—	
Flow 2	2	2480.5		✓	3.213		47.928 ✓	11.322 ✓	
Shut In	2	3054.1		✓	—	—	—	—	
Flow 3	2	2188.6		✓	4.538		73.591 ✓	14.341 ✓	
Shut In	2	3048.4		✓	—	—	—	—	
Flow 4	2	2009.5		✓	5.255		57.363 ✓	71.704 ✓	
Extended Flow	34	2107.2		✓	4.928		50.643 ✓	63.815 ✓	
Final Shut In	59.08	3060.7	286.5	✓	—	—	—	—	

WP 2548G

00124

APPENDIX IV

Compositional Data

WELL: KIDMAN #5L

FORMATION: PATCHAWARRA

DATE: 18/6/87

MOLECULAR COMPOSITION OF RESERVOIR FLUID

COMPONENT	RECOMBINED	SEPARATOR	RECOMBINED
	SEPARATOR	GAS	RESERVOIR
	LIQUID		FLUID
	Mole (%)	Mole (%)	Mole (%)
NITROGEN	0.07	1.77	1.75
CARBON DIOXIDE	1.38	8.71	8.63
METHANE	6.20	76.83	76.02
ETHANE	2.97	7.86	7.81
PROPANE	3.34	2.66	2.67
i - BUTANE	1.11	0.38	0.39
n - BUTANE	3.66	0.78	0.81
i - PENTANE	1.88	0.22	0.24
n - PENTANE	2.90	0.25	0.28
HEXANES	6.19	0.24	0.31
HEPTANES	11.75	0.22	0.35
OCTANES+	58.55	0.06	0.73
TOTALS	100.00	100.00	100.00
MOLECULAR WT.	111.7	21.87	22.79
SPECIFIC GRAVITY		0.755	0.787
MOLAR RATIO	1.1	98.9	100.00
SPECIFIC GRAVITY OF C8+			0.825
MOLECULAR WEIGHT OF C8+			144.1

REF: FLOPETROL REPORT # 87PVA032

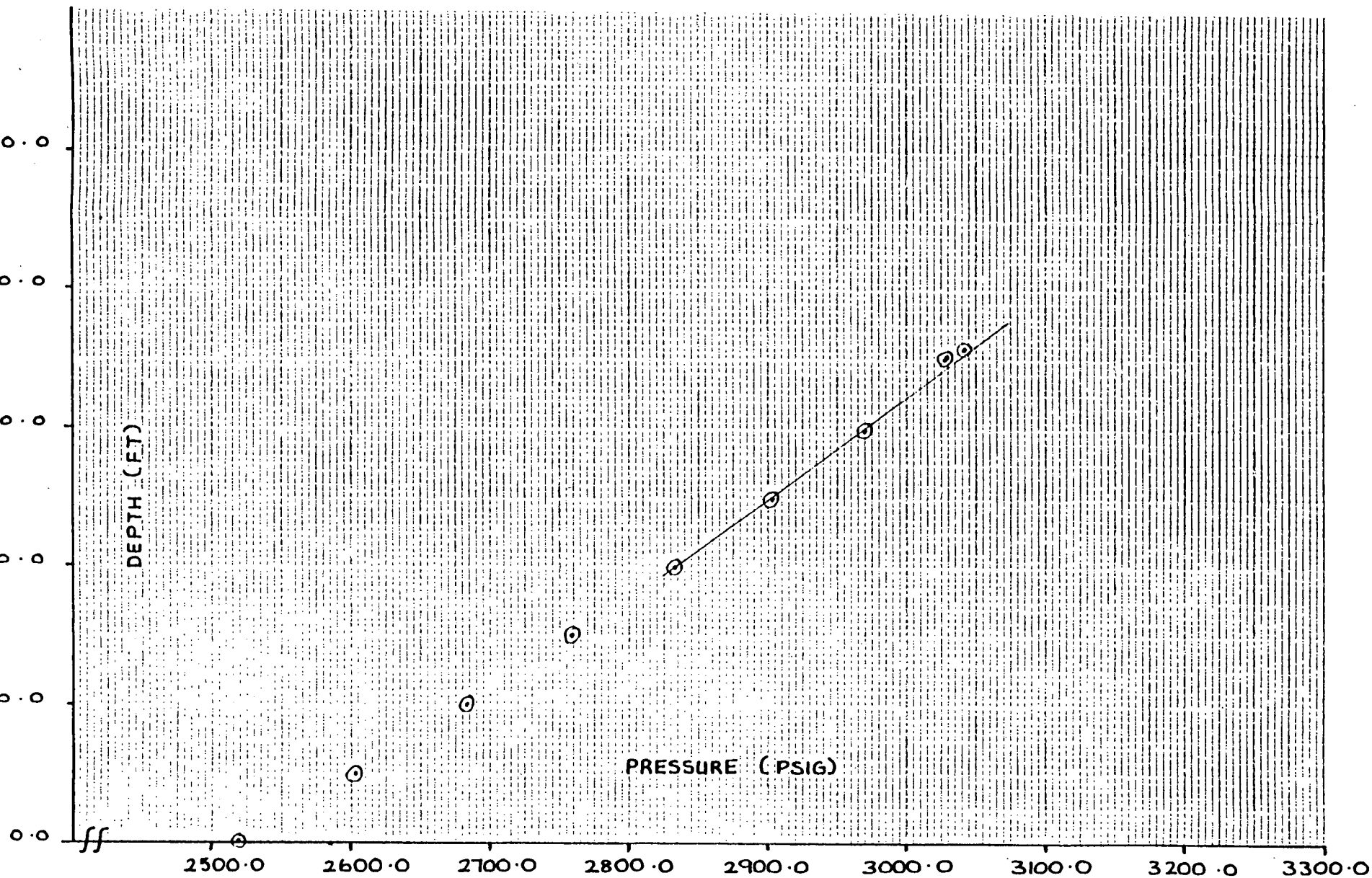
WP:6284N(12)

APPENDIX V

Static Gradient

KIDMAN # 5 LOWER - STATIC GRADIENT SURVEY - 21/6/87

ELEMENT # 44918 / 5000 (TOP)



00128

WELL: Kidman # 5 Upper

Pf = 5600 kPa

ORIFICE SIZE: 63.500 mm 2.500 "

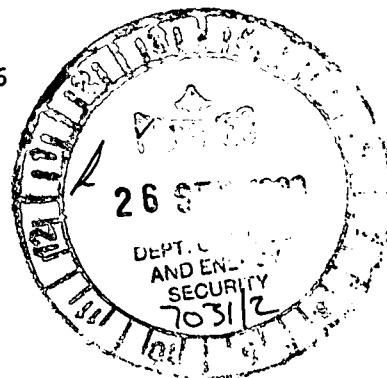
T = 108 °C

LINE SIZE: 73.660 mm 2.900 "

Diff = 4.5 kPa

Cumulative Production to end of May = 347.5 m³ x 10⁶

Number of hours online in May = 686 ✓

Production in May = 4.036 m³ x 10⁶ ✓Average flow rate in May = (4.036 / 686) x 24 = 0.141 m³ x 10⁶ / d ✓Number of days online in June before Shut In 0045 hrs 8 / 6 / 90
= 5.656 daysProduction up to 0045 hrs 8 / 6 / 90 = 5.656 x 0.141 = 0.798 m³ x 10⁶Total cumulative production = 347.5 + 0.798
= 348.298 m³ x 10⁶
= 12362.5 mmscf ✓Flow rate just prior to Shut In = 0.163 m³ x 10⁶
= 5.773 mmscf/d

SUB-SURFACE PRESSURE SURVEY

CO.		RUN 01 FIELD KIDMAN	WELL 5U
EFF DEPTH		WELL STAT	TOOL HUNG 6328'
CASING	-	CASING PRESS	ON BOTTOM 1330 7/6
LINER	-	TUBING PRESS	OFF BOTTOM 0900 11/6
DATE	900607	ELEMENT RANGE 0 - 3199	ZERO POINT
ELEVATION		ZONE	SHUT-IN 0045 8/6
MAX TEMP	258°F	PICK-UP	ON-PROD
PERF	-	CAL SER NO. 28514	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	BUILD-UP

SURVEY DATA

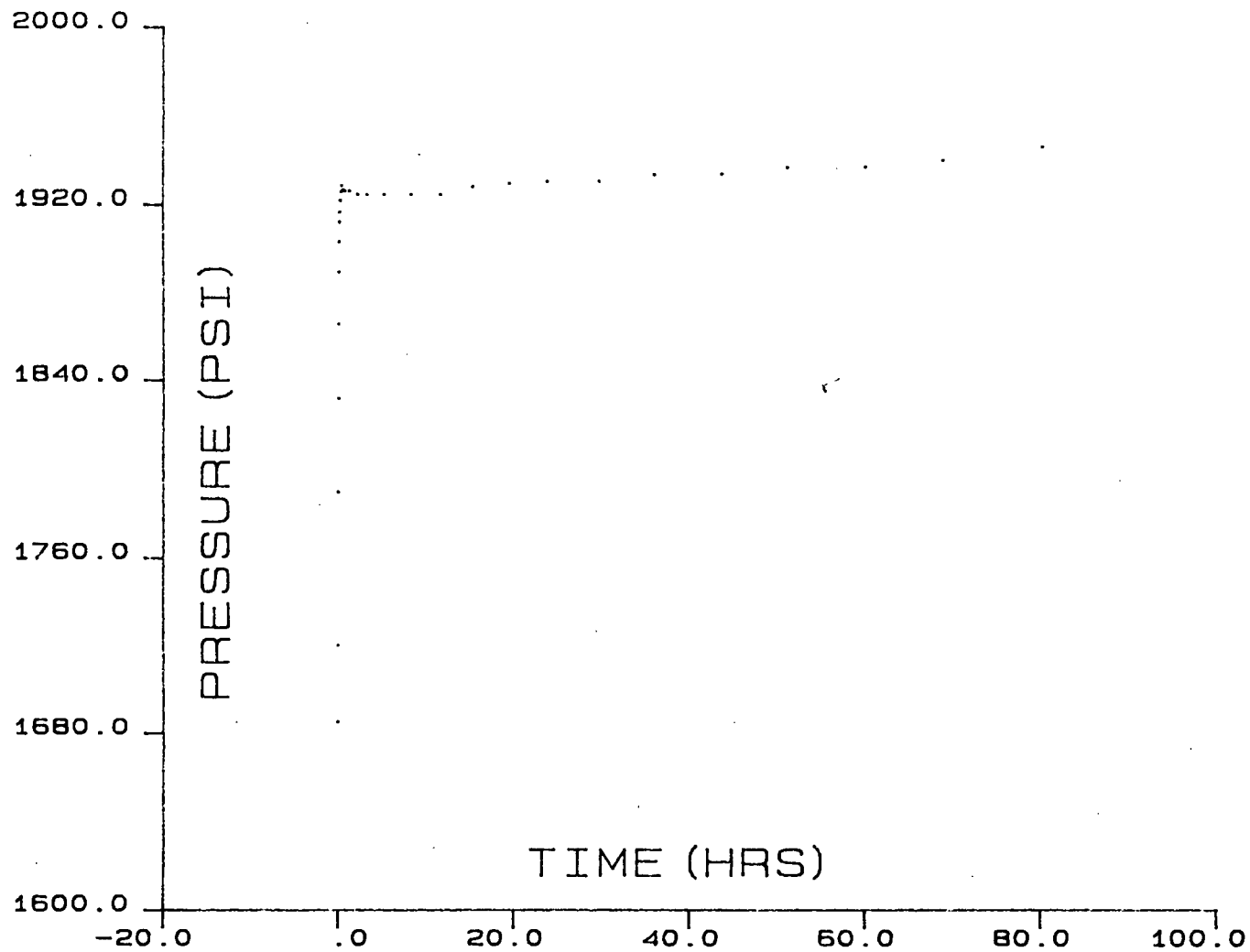
RUN 01 FIELD KIDMAN				WELL 5U			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
0:45	1685.5	1685.5	.0	3:03	1924.4	1924.4	2.3
0:47	1720.6	1720.6	.0	4:07	1924.4	1924.4	3.4
0:48	1789.8	1789.8	.0	6:02	1924.5	1924.5	5.3
0:49	1831.8	1831.8	.1	9:08	1924.6	1924.6	8.4
0:51	1865.7	1865.7	.1	12:29	1924.7	1924.7	11.7
0:53	1889.2	1889.2	.1	16:07	1928.5	1928.5	15.4
0:54	1903.3	1903.3	.1	20:18	1929.9	1929.9	19.6
0:57	1912.4	1912.4	.2	0:38	1930.6	1930.6	23.9
0:59	1916.6	1916.6	.2	6:30	1930.8	1930.8	29.8
1:04	1921.9	1921.9	.3	12:48	1933.8	1933.8	36.0
1:08	1925.8	1925.8	.4	20:28	1934.0	1934.0	43.7
1:12	1928.7	1928.7	.5	3:58	1937.3	1937.3	51.2
1:21	1926.8	1926.8	.6	12:49	1937.5	1937.5	60.1
1:33	1926.2	1926.2	.8	21:39	1940.5	1940.5	68.9
2:04	1926.2	1926.2	1.3	9:00	1946.4	1946.4	80.3

LUB IN DWT = 810 PSI / OUT = 1612 PSI

LUB IN AMERADA = 817 PSI / OUT = 1614 PSI

KIDMAN #5U BUILD-UP 7-11/6/90

ELEMENT #28514 (TOP)



00131

SUB-SURFACE PRESSURE SURVEY

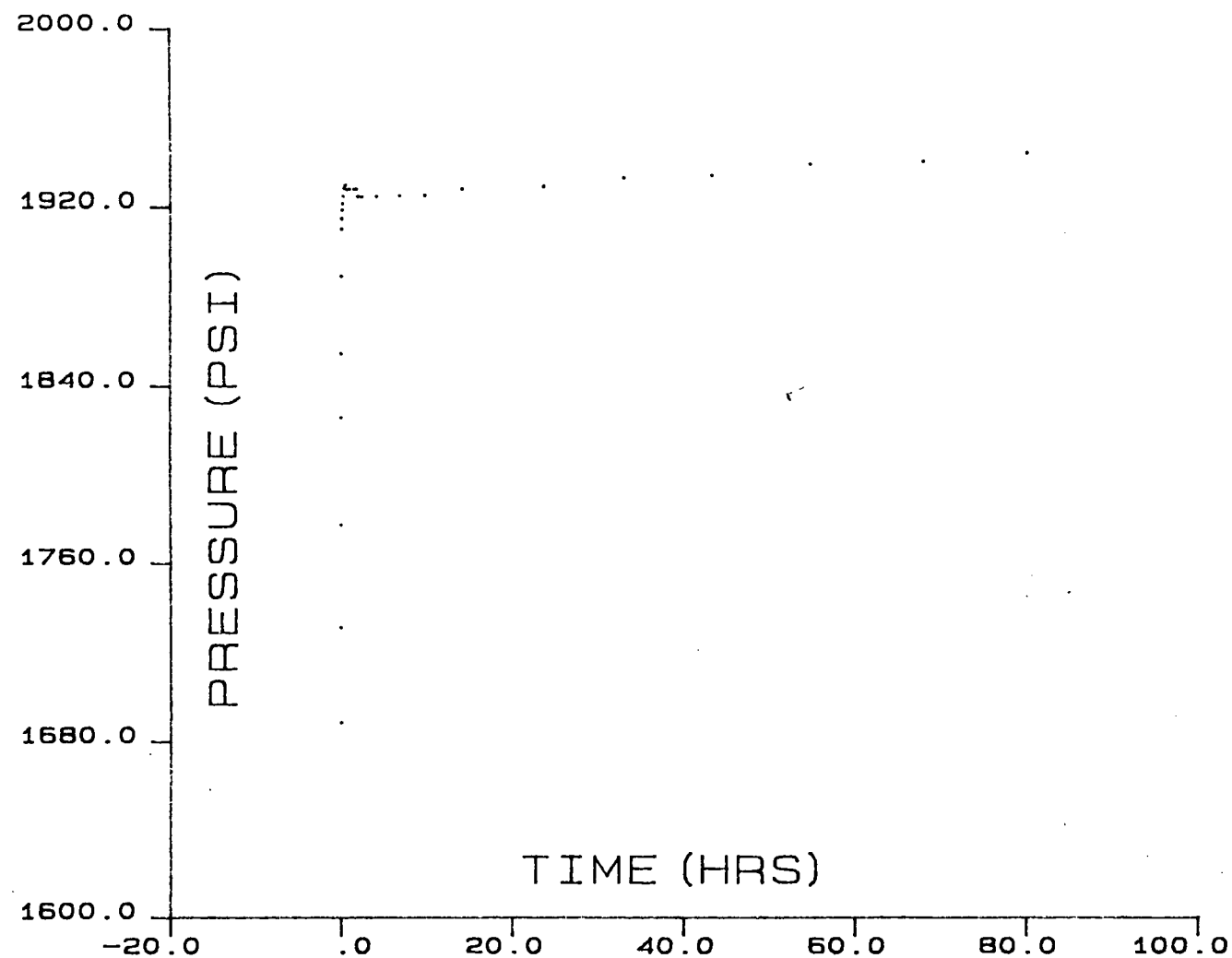
CO.		RUN 02 FIELD KI	WELL 5U
EFF DEPTH		WELL STAT	TOOL HUNG 6334'
CASING	-	CASING PRESS	ON BOTTOM 1330 7/6
LINER	-	TUBING PRESS	OFF BOTTOM 0900 11/6
DATE	900607	ELEMENT RANGE 0 - 3103	ZERO POINT
ELEVATION		ZONE	SHUT-IN 0045 8/6
MAX TEMP	268°F	PICK-UP	ON-PROD
PERF	-	CAL SER NO. 29387	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	BUILD-UP

SURVEY DATA

CO.				RUN 02 FIELD KI				WELL 5U			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
0:45	1688.3	1688.3	.0	2:19	1928.1	1928.1	1.6				
0:46	1730.9	1730.9	.0	2:37	1928.1	1928.1	1.9				
0:47	1777.2	1777.2	.0	2:46	1924.7	1924.7	2.0				
0:48	1825.9	1825.9	.1	3:14	1924.7	1924.7	2.5				
0:49	1854.7	1854.7	.1	4:57	1924.9	1924.9	4.2				
0:50	1889.2	1889.2	.1	7:40	1925.2	1925.2	6.9				
0:52	1910.3	1910.3	.1	10:37	1925.4	1925.4	9.9				
0:54	1914.9	1914.9	.2	15:00	1928.2	1928.2	14.2				
0:57	1918.7	1918.7	.2	0:29	1929.2	1929.2	23.7				
1:00	1921.7	1921.7	.2	9:50	1932.9	1932.9	33.1				
1:03	1924.8	1924.8	.3	20:09	1933.9	1933.9	43.4				
1:09	1928.3	1928.3	.4	7:38	1939.1	1939.1	54.9				
1:18	1929.9	1929.9	.5	20:52	1940.4	1940.4	68.1				
1:30	1928.0	1928.0	.8	9:00	1944.2	1944.2	80.3				
1:48	1928.0	1928.0	1.1	0:00	.0	.0	.0				

LUB IN DWT = 810 PSI / OUT = 1612 PSI
 LUB IN AMERADA = 810 PSI / OUT = 1627 PSI

KIDMAN #5U BUILD-UP 7-11/6/90
ELEMENT #29387 (BOT)





Tested Monday, 11th June 1990.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN #5U	TOOLACHE

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	28514	3000	3/ 5/90
Bottom	29387	2975	3/ 5/90

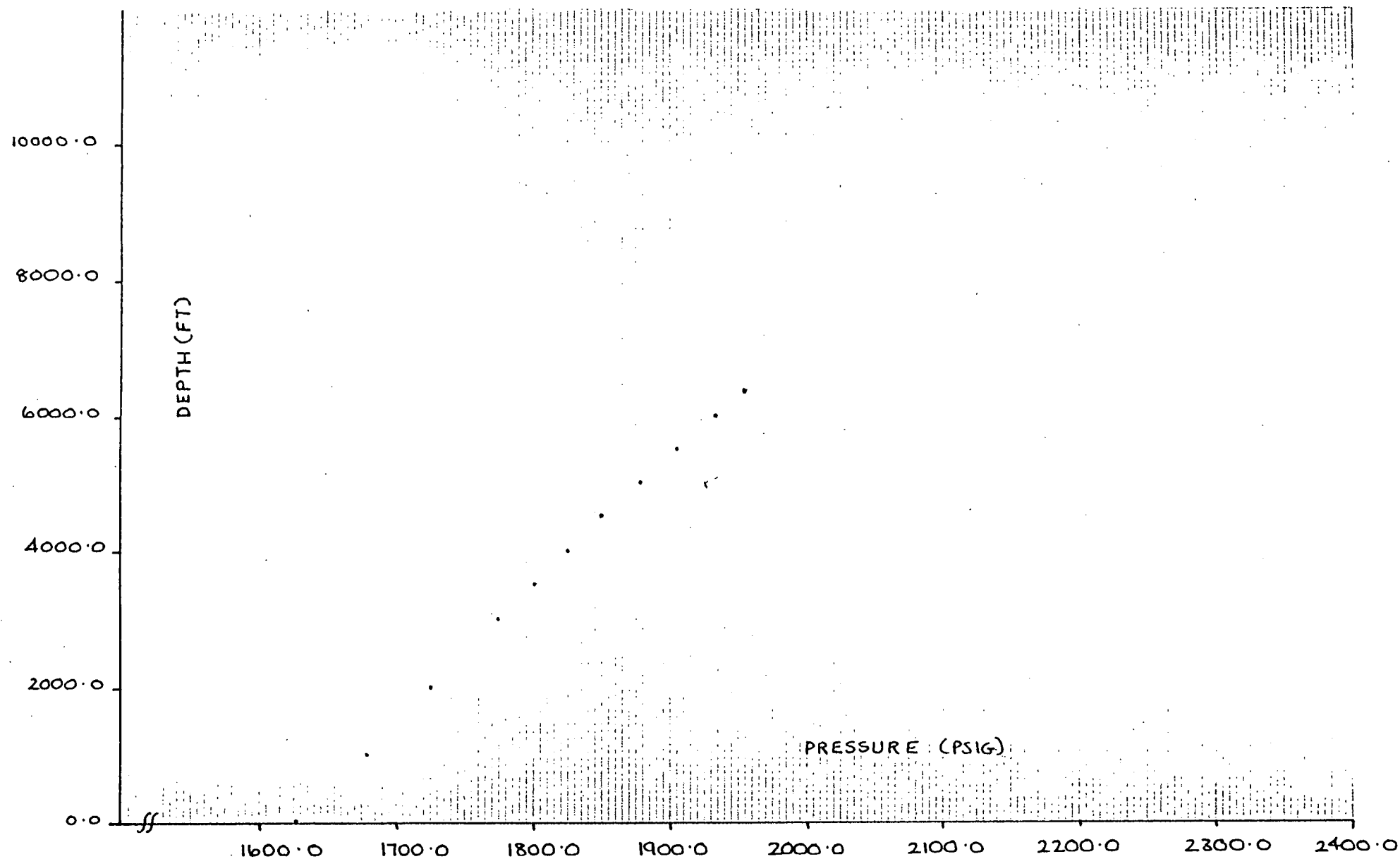
WELL DATA	
PARAMETER	VALUE
DWT In	1613
DWT Out	1617
Max BHT	N.A. 258°F

DEPTH FT KB	TOP ELEMENT			BOTTOM ELEMENT		
	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.0200	1627.1	----	1.0430	1626.4	----
1000	1.0500	1675.3	0.048	1.0760	1678.3	0.052
2000	1.0810	1725.1	0.050	1.1060	1725.5	0.047
3000	1.1100	1771.8	0.047	1.1370	1774.3	0.049
3500	1.1240	1794.3	0.045	1.1540	1801.1	0.054
4000	1.1370	1815.2	0.042	1.1690	1824.7	0.047
4500	1.1530	1840.9	0.052	1.1850	1849.9	0.050
5000	1.1700	1868.2	0.055	1.2020	1876.7	0.054
5500	1.1880	1897.2	0.058	1.2200	1905.0	0.057
6000	1.2050	1924.5	0.055	1.2380	1933.3	0.057
6340	1.2240	1955.1	0.090	1.2510	1953.8	0.060
LUB.	1.0280	1640.0	----	1.0470	1632.7	----

GENERAL REMARKS

Temperature element #22819 179-411 deg F ran as bottom element. This static gradient follows a flow and build up survey, coinciding with Kidman field shut down.

KIDMAN # 5 UPPER — STATIC PRESSURE GRADIENT — 11/6/90
ELEMENT # 29387/2975 (BOT)



00135

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER :

SANTOS

PERFORATIONS:

6591 - 6750

PAGE:

OF

4

WELL NAME:

KIDMAN #54

FORMATION :

TOOLACHEE

DATE:

7.6.90

TEST TYPE :

BHPS

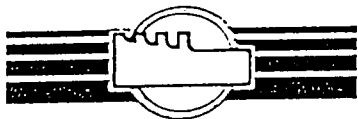
OPR :

M. MUELLER

TIME		WELLHEAD DATA				FLOW RATES					CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m ³ /10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	GAS MMSCFD m ³ /10 ³	OIL BBLS m ³	WATER BBLS m ³		
7.6.90															
1110		5585	5585	-	100 %	PRESSURE LUBRICATOR.									
1310		5585	5585	94	"	RUN IN HOLE.									
1330		7998	7998	91	"	ON DEPTH.									
1400		5654	5654	91	"										
1430		5585	5585	91	"										
1500		5585	5585	92	"										
1530		5585	5585	92	"										
1600		5585	5585	92	"										
1630		5585	5585	92	"										
1700		5585	5585	93	"										
1730		5592	5592	93	"										
1800		5592	5592	93	"										
1830		5592	5592	93	"										
1900		5599	5599	94	"										
1930		5599	5599	94	"										
2000		5606	5606	94	"										
2030		5613	5613	94	"										
2100		5619	5619	94	"										
2130		5626	5626	95	"										
2200		5633	5633	95	"										
2230		5633	5633	95	"										

00136

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER :

SANTOS

PERFORATIONS:

6591 - 6750

PAGE: 2 OF 4

WELL NAME:

KIDMAN #54

FORMATION :

TOOLACHEE

DATE: 7.6.90

TEST TYPE :

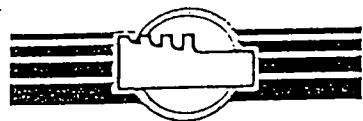
B.H.P.S

OPR: M. MUELLER

TIME		WELLHEAD DATA							FLOW RATES			CUMULATIVE PRODUCTION				
DATE	TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLS m³	WATER BBLS m³		
7.6.90																
	2300		5640	5640	95	100 %										
	2330		5640	5640	95	"										
	2400		5640	5640	95	"										
8.6.90																
	0030		5413	5413	95	"										
	0045		4516	4516	95	"	SHUT WELL IN START BUILD UP.									
	0100		10198	10198												
	0115		10370	10370												
	0130		10536	10536												
	0145	1	10729	10729												
	0200		10991	10991												
	0215		11149	11149												
	0230		11280	11280												
	0245	2	11280	11280												
	0300		11266	11266												
	0315		11259	11259												
	0330		11238	11238												
	0345	3	11238	11238												
	0400		11238	11238												
	0415		11238	11238												
	0430		11238	11238												

00137

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER :

SANTOS

PERFORATIONS:

6591' - 6750'

PAGE:

3 OF 4

WELL NAME:

KIDMAN #5U

FORMATION :

TOOLACHEE

DATE:

8.6.90

TEST TYPE :

B.H.P.S.

OPR :

R. BUCKLAND

TIME		WELLHEAD DATA						FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLS m³	WATER BBLS m³		
8-6-90															
0445	4	11238	11238												
0845	8	11225	11225												
1245	12	11170	11170												
1645	16	11169	11169												
2045	20	11169	11170												
9-6-90															
0045	24	11176	11176												
0445	28	11184	11184												
0845	32	11163	11163												
1245	36	11156	11156												
1645	40	11156	11156												
2045	44	11170	11170												
10-6-90															
0045	48	11177	11177												
0445	52	11177	11177												
0845	56	11163	11163												
1245	60	11156	11156												
1645	64	11142	11142												
2045	68	11142	11142												
11-6-90		11142	11142												
0045	72	11142	11142												

00138

00138

TEST RESULTS

CUSTOMER : SANTOS LTD

PERFORATIONS: 6591- 6750

PAGE: 4 OF 4

WELL NAME: KIDMAN #54

FORMATION : TOOL ACIDLE

DATE: 11.6.90

TEST TYPE : FLOW AND BUILD UP.

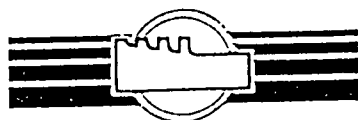
COST CODE: 605-3918-813

OPR : R. BUCKLAND.

[illegible]

00138

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER :

SANTOS

PERFORATIONS:

6591 - 6750

PAGE: 1 OF

WELL NAME:

KIDMAN #54

FORMATION :

TOOLACHEE

DATE: 7.6.90

TEST TYPE :

BHPS. - F&BU.

COST CODE : 605.3918.813

OPR : M/MUELLER

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(PSI/KPa)ANNULUS
PRESSURE
(PSI/KPa)

ELEMENT SERIAL NO.

28514

29387

22819

DATE : 7.6.90

ELEMENT RANGE

3000 PSI

2975 PSI

179-411 °F

PRESSURE LUBRICATOR :

1110

5585

5585

RECORDING SECTION SERIAL NO.

14631

59791

30929

RUN IN HOLE :

1310

5585

5585

DATE OF CALIBRATION:

3.5.90

3.5.90

ON DEPTH AT :

6340

FT/M

1330

7626

7626

CLOCK SERIAL NO.

N° 4

N° 6

F15683

DATE : 11.6.90

CLOCK RANGE

120 HR

120 HR

120 HR

PULL OUT OF HOLE :

0900

11107

11107

LEAD SCREW TYPE

15 TLS

15 TLS

15 TLS

AT SURFACE :

0917

11100

11100

DEPRESSURE LUBRICATOR :

1343

11114

11114

ENGAGE STYLUS

DATE

7.6.90

TIME

1106

1106

1106

MAXIMUM BHT AT

FT/M =

%FC

(1612)

DISENGAGE STYLUS

DATE

TIME

N.B. ALL DEPTHS ARE MEASURED FROM K.B.

DATE

TIME

REMARKS

TEMPERATURE ELEMENT RUN.

SI 0045 8/6

IN

OUT

①

817

1614

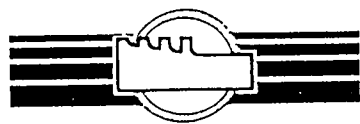
②

810

1627

00140

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD.

PERFORATIONS: 6591- 6750

PAGE: 1 OF

WELL NAME: KIPMAN 5 U

FORMATION : TOOLAGUEE.

DATE: 11.6.90

TEST TYPE : STATIC GRADIENT SURVEY.

COST CODE: 605. 3918. 813

OPR : R. BUCKLAND

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(PSI/KPa)ANNULUS
PRESSURE
(PSI/KPa)

ELEMENT SERIAL NO.

28514

29387

22819

DATE

: 11.6.90.

ELEMENT RANGE

3000

2975

179"-411"

PRESSURE LUBRICATOR

:

1414

1613

1613

RECORDING SECTION SERIAL NO.

14631

59791

30929

RUN IN HOLE

:

1434

1613

1613

DATE OF CALIBRATION:

3.5.90

3.5.90

ON DEPTH AT

: 6340 FT/M

1552

-

CLOCK SERIAL NO.

1

2502

2518

DATE

: 11.6.90.

CLOCK RANGE

3HR.

3HR

3HR

PULL OUT OF HOLE

:

1607

1617

1617

LEAD SCREW TYPE

15 TLS

15 TLS

15 TLS

AT SURFACE

:

1630

1617

1617

DEPRESSURE LUBRICATOR

:

1645

1617

1617

ENGAGE STYLUS

DATE 11.6.90.

TIME

1409

1409

1409.

MAXIMUM BHT AT N.A.

FT/M =

°F/C

DISENGAGE STYLUS

DATE 11.6.90

TIME

1654

1654

1654

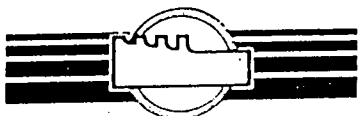
N.B. ALL DEPTHS ARE MEASURED FROM K.B.

DATE

TIME

REMARKS

00141



SEQUENCE OF EVENTS

CUSTOMER : SANTOS

PERFORATIONS: 6591- 6750'

PAGE: 1 OF 1:

WELL NAME: KIDMAN 54

FORMATION : TOOLACHEE.

DATE: 31.5.90

TEST TYPE : BHPS. F&BU

COST CODE: 605.3918.813.

OPR: M MUELLER

R. BUCKLAND

DATE/TIME	DESCRIPTION OF EVENTS
31.5.90	
1300	SHUT WELL IN & FIT SWAB VALVE
1318	WELL BACK ON LINE RIG UP WIRELINE UNIT.
1430	RUN IN HOLE WITH 1.84" BLIND BOX
1520	TAG N NIPPLE @ 6322' KB NO OBSTRUCTIONS * NOTE WELL HAD TO BE CHOKED BACK TO R.H.
1523	PULL OUT OF HOLE.
1537	IN LUBRICATOR RIG OUT WIRELINE UNIT. (LEAVE SWAB VALVE ON FOR BHPS)
7.6.90.	
1045	PREPARE PRESSURE AND TEMPERATURE ELEMENTS FOR BUILD UP SURVEY WHEN KIDMAN SATELLITE SHUTS DOWN FOR MAINTANANCE. RIG UP WIRELINE EQUIPMENT
1110	PRESSURE UP LUBRICATOR
1310	R.I.H. WITH Bombs TO HANGING DEPTH OF 6340' KB. (CHOKED WELL BACK TO 10% TO R.I.H.)
1330	ARRIVE AT HANGING DEPTH. (BRING WELL ON TO 100% CHOKE)
	OBSERVE WELL-HEAD PRESSURE AND TEMPERATURE.
8.6.90	
0045	SHUT WELL IN START BUILD UP.
11.6.90	
0900	P.O.O.H WITH Bombs.
1343	DEPRESSURE LUBRICATOR, INSPECT CHARTS, OK, PREPARE TO RUN STATIC GRADIENT SURVEY.
1419	PRESSURE UP LUBRICATOR
1434	RUN IN HOLE WITH TWO PRESSURE ELEMENTS AND ONE TEMPERATURE ELEMENT FOR STATIC GRADIENT SURVEY
1645	DE PRESSURE LUBRICATOR, INSPECT CHARTS, O.K. RIG DOWN WIRELINE EQUIPMENT, MOVE OUT.

DELHI/SANTOS AND PARTNERS

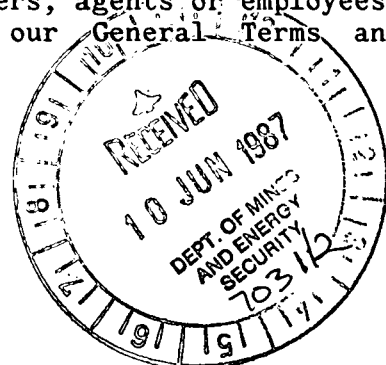
A report on the GEOGRAM processing of data
from the VELOCITY SURVEY of the well

KIDMAN 5

FIELD : WILDCAT
COUNTRY : AUSTRALIA
STATE : SOUTH AUSTRALIA
COORDINATES : 28 13' 49.0" SOUTH
140 46' 37.6" EAST
DATE OF SURVEY : 23 NOV 86
REFERENCE NUMBER : 550180 and 550181

The near surface velocity, well name, seismic line details, formation tops, borehole reference data and location map were furnished by the customer.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee, the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by one of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.



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1 INTRODUCTION

A velocity check shot survey was conducted in the KIDMAN 5 well on 23rd November 1986. Twenty four levels were shot, from 232 feet to 7430 feet below the Kelly Bushing, using a dynamite source. All levels have been used in the calibration of the sonic log.

3 DATUM SURVEY

Three shots at varying source offset in addition to the checkshot survey were taken with the downhole tool locked at 232 feet below KB.

For each shot the reference hydrophone was at a horizontal distance of 5 feet from the source and 4.5 feet below GL. Ground level was surveyed at 215.3 feet above mean sea level.

Table 1 : Datum Survey Results

Stack Shot No.	Shot Depth Below Ground (feet)	Shot Offset From Wellhead (feet)	Recorded Transit Time (ms)	Shot To Datum Vertical Transit Time (ms)	Surface to Datum Vertical Transit Time (ms)
29	4.5	60.8	56.	53.9	55.5
28	4.5	80.6	56.	52.4	53.9
27	4.5	100.5	57.	51.5	53.1
26*	5.5	131.9	60.	50.8	52.8
25*	5.5	131.9	56.	47.5	49.4
24*	5.5	131.9	57.	48.3	50.2

* Shot from checkshot survey with tool at MSL.

Shot to Datum Vertical Transit Time = Recorded Transit Time *

$$\sqrt{\text{Shot Elevation}^2 + \text{Shot Offset}^2}$$

Where Shot Elevation = GL - Shot Depth.

The Surface to Datum Static was computed using a Velocity from Source to Surface of 2851 feet/second. This velocity is from the nearest uphole survey.

Table 2 : Comparison of Seismic and Velocity Survey Statics

	Seismic Line	Velocity Survey	Difference
Ground Level (feet)	N.A.	215.3	.
Surface to Datum Static (millisecond)	49.**	53.7*	4.7
Interval Velocity GL-MSL (feet/second)	.	4009.	.

* The static was determined by the customer using a velocity model based on uphole information.

** Estimated static from nearest uphole information on line:85-YDW, stn:350.

4 CHECKSHOT SURVEY

A number of shots were made running in to check for relaxation of the shot hole. These shots were performed with the geophone anchored at Mean Sea Level and at the top of the Cadna-Owie formation

Twenty four levels were recorded from 232 feet to 7430 feet below KB with a subsurface sampling not exceeding 500 feet.

Figure 2 : Survey Geometry

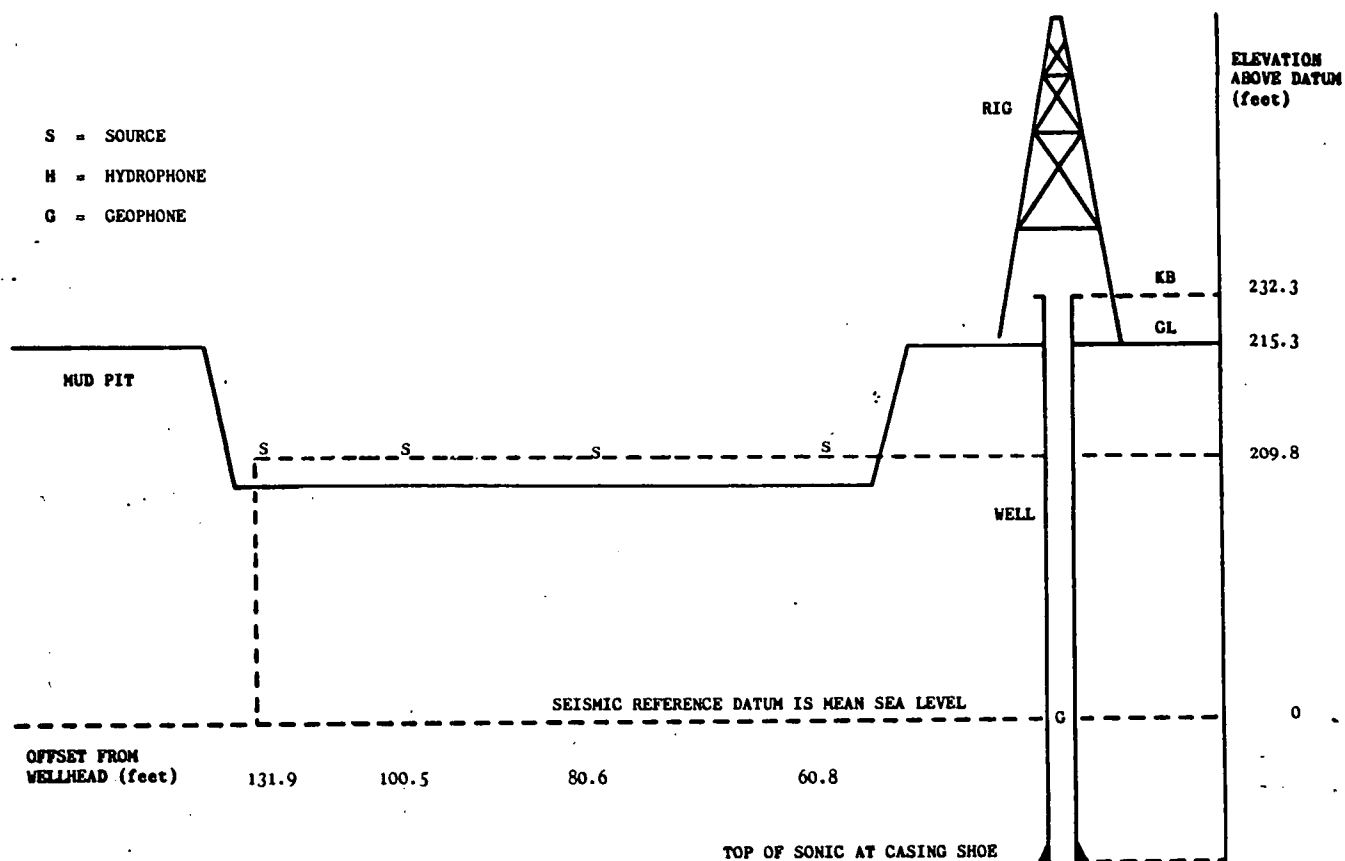
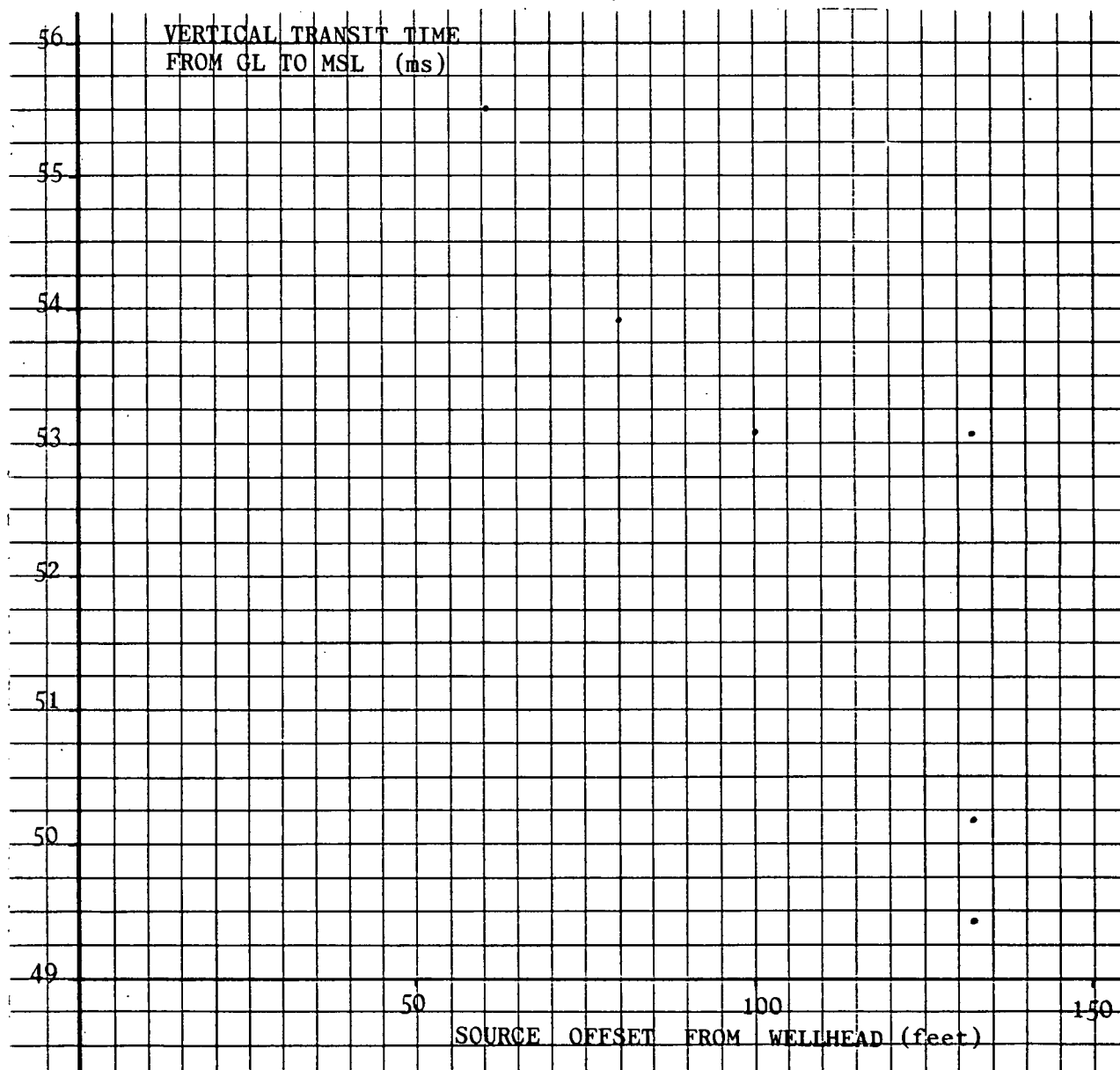


Figure 3 : Static Time

The static time from Ground Level to Mean Sea Level, when source offset is zero, is 53.7 milliseconds.

To impose this static time a recorded transit time, 61.209 milliseconds, is imposed when the geophone is anchored at Mean Sea Level.



5 SONIC CALIBRATION

A drift curve is obtained using the sonic log and the vertical check times. The term drift is defined as the seismic time (from check shots) minus the sonic time (from integration of the sonic log).

The gradient of drift, that is the slope of the drift curve, can be negative or positive or zero.

For a negative gradient of the drift curve the change in drift divided by the change in depth is less than zero, the sonic time is greater than the seismic time over a certain section of the log.

For a positive gradient of the drift curve the change in drift divided by the change in depth is greater than zero, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is an indication of the error on the integrated sonic as we assume checkshot times give us the absolute time/depth correspondence at the well. Drift defines the correction to be applied to the sonic to have the TTI (integrated transit time) of the corrected sonic match the check shot times within a predefined error limit.

Two methods of correction to the sonic log are used.

- . Uniform or block shift.

This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is represented by the drift curve gradient expressed in microseconds/foot.

- . DELTA-t Minimum.

In the case of negative drift a different method is used. This method applies a differential correction to the sonic log, it is empirically proven that the greatest transit time error is caused by the lower velocity sections on the log. Over a given interval the method will correct only DELTA-t values which are higher than a threshold, the DELTA-t-min. Values of DELTA-t which are lower than the threshold are not corrected. The correction is a reduction based on the criteria (DELTA-t) minus (DELTA-t-min)

(DELTA-t) minus (DELTA-t-min) is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, is defined as:

$$G = 1 + \frac{\text{DRIFT}}{\int (\text{DELTA-t} - \text{DELTA-t-min})dZ}$$

Where "DRIFT" is the drift over the interval to be corrected and the value " $\int (\text{DELTA-t} - \text{DELTA-t-min}) dZ$ " is the time difference between the integrals of the two curves DELTA-t and DELTA-t-min, only over the intervals where DELTA-t is greater than DELTA-t-min.

Hence the corrected sonic:

$$\text{DELTA-t}_{\text{corrected}} = G * (\text{DELTA-t} - \text{DELTA-t-min}) + \text{DELTA-t-min}.$$

6 SONIC CALIBRATION PROCESSING

6.1 Open Hole Logs

Both the sonic and density logs used have been edited and depth matched prior to input into the processing chain for Well Seismic Calibration.

A constant density reading of 2.4 grams/cubic centimeter has been imposed over the interval above the top of the density log. Generally the hole was in good condition and hence the density data is reliable through most of the logged interval. Minor zones of cycle skipping have been edited.

Density log interval : 7450-5768 feet below KB.

Sonic log interval : 7450-1002.5 feet below KB.

6.2 Correction To Datum

The checkshots taken with the geophone anchored at Mean Sea Level gave the source to datum static as 51.8 milliseconds (i.e. subtract ground level to source elevation static of 1.9 milliseconds from ground level to datum static, from Figure 3). This was used as the vertical correction to datum.

6.3 Sonic Calibration Results

The top of the sonic log (1002.5 feet below KB) is taken as the start point for the calibration drift curve.

The drift curve indicates a number of corrections to be made to the sonic log. Knees (which separate zones of adjustment) have been selected at major formation changes, including the CADNA-OWIE formation as indicated by the log data.

The imposed drift curve follows the calculated drift as indicated by the corrected shot times. There are no anomalous shots. A list of shifts used on the sonic data is given in the sonic adjustment parameter report.

The adjusted sonic curve is considered to be the best result using the available data.

6.4 Drift Tie Point

The drift curve was shifted to impose zero drift at the CADNA-OWIE formation.

6.5 Processing Without Drift Correction

To generate a seismogram from data that has not been drift corrected the top of the sonic log was kept at the time from the checkshot survey and a dummy shot was imposed at TD to equal the total integrated time from the sonic. Then a bulk shift was applied to this seismogram to tie it with the drift corrected seismogram at the CADNA-OWIE formation.

7 GEOGRAM PROCESSING

GEOGRAM plots were generated using a 10-55 Hz Klauder wavelet with phase rotations of 0, 90, 180 and 270 degrees.

The presentations include both normal and reverse polarity at 5 inches/second.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the wellbore. The steps in the processing chain are the following:

- Time to depth conversion
- Reflection coefficients
- Attenuation coefficients
- Convolution
- Output.

7.1 Time To Depth Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and read from the top to bottom in order to match the seismic section.

7.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 milliseconds). Reflection coefficients are then computed using:

$$R = \frac{(\text{density}(2) * \text{velocity}(2)) - (\text{density}(1) * \text{velocity}(1))}{(\text{density}(2) * \text{velocity}(2)) + (\text{density}(1) * \text{velocity}(1))}$$

where

- . density(1) = density of the layer above the reflection interface
- . density(2) = density of the layer below the reflection interface
- . velocity(1) = compressional wave velocity of the layer above the reflection interface
- . velocity(2) = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

7.3 Primaries With Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A(n) = (1 - R(1)^2) \cdot (1 - R(2)^2) \cdot (1 - R(3)^2) \dots (1 - R(n)^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$\text{Primary}(n) = R(n) \cdot A(n)^{-1}$$

7.4 Primaries Plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the total (Primaries + Multiples) impulse response of the earth. The transform outputs primaries plus multiples.

7.5 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

- Klauder wavelet
- Ricker zero phase wavelet
- Ricker minimum phase wavelet
- User defined wavelet.

All wavelets can be chosen with or without Butterworth filtering and with user defined center frequencies. Polarity conventions are shown on the plots of the synthetic seismograms. A time variant filter can be applied.

7.6 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

8 DATA ACQUISITION

Table 3 : Field Equipment and Survey Parameters

Elevation SRD	0 feet above MSL
Elevation KB	232.3 feet above MSL
Elevation RT/DF	231.3 feet above MSL
Elevation GL	215.3 feet above MSL
No. of Levels	24
Well Deviation	Nil
Total Depth	7450 feet below KB
Energy Source	Dynamite 300grams, Anzomex Boosters
Source Offset	131.9 feet from well
Source Depth	5.5 feet below Ground Level
Source Azimuth	0 degrees from magnetic north
Reference Sensor	Hydrophone
Sensor Offset	5 feet
Sensor Depth	5.5 feet below Ground Level
Sensor Azimuth	0 degrees
Downhole Geophone	Geospace HS-1
	High Temp. (350 F)
	Coil Resist. 225 ohms
	Natural Freq. 8-12 hertz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60

Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format.

9 SUMMARY OF GEOPHYSICAL LISTINGS

The geophysical data listings show the detail of the data analysis. Following is a brief description of the format of each listing and the mnemonics.

9.1 Checkshot Survey Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : DRT, the depth in feet from rotary table.
3. Vertical depth from SRD : DSRD, the depth in feet from seismic reference datum.
4. Vertical depth from GL : DGL, the depth in feet from ground level.
5. Observed travel time HYD to GEO : TIMO, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO : TIMV, is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO : SHTM, is TIMV corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, DRSD / SHTM.
9. Delta depth between shots : DELTA depth, the vertical distance between each level.
10. DELTA-time between shots : DELTA-time, the difference in vertical travel time (SHTM) between each level.
11. Interval velocity between shots : the average seismic velocity between each level, DELTA depth / DELTA-time.

9.2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : the depth in feet from rotary table.
3. Vertical depth from SRD : the depth in feet from seismic reference datum.
4. Vertical depth from GL : the depth in feet from ground level.
5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Checkshot Survey Report).
6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.
7. Computed drift at level : the checkshot time minus the integrated raw sonic time.
8. Computed blk - shft correction : the drift gradient between any two checkshot levels ($\text{DELTA drift} / \text{DELTA depth}$).

9.3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)
2. Vertical depth from RT : the depth in feet from rotary table.
3. Vertical depth from SRD : the depth in feet from seismic reference datum.
4. Vertical depth from GL : the depth in feet from ground level.
5. Drift at knee : the value of drift imposed at each knee.
6. Blockshift used : the change in drift divided by the change in depth between any two levels.
7. DELTA-t minimum used : see the sonic calibration section.
8. Reduction factor : see the sonic calibration section.
9. Equivalent blockshift : the gradient of the imposed drift curve.

9.4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : the depth in feet from rotary table
3. Vertical depth from SRD : the depth in feet from seismic reference datum
4. Vertical depth from GL : the depth in feet from ground level
5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Checkshot Survey Report)
6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)
7. Drift=shot time - raw son : the check shot time minus the raw integrated sonic time.
8. Residual=shot time - adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.
9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

9.5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 milliseconds) and the sampling rate is 2 milliseconds.
2. Measured depth from RT : the depth from RT at each corresponding value of two way time.
3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.
5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$V_{rms}^2 = \frac{\sum_{i=1}^n V_i^2 \cdot T_i}{\sum_{i=1}^n T_i}$$

where V_i is the velocity between each 2 milliseconds interval.

6. First normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).
7. Second normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 4500 feet)
8. Third normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).
9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 milliseconds two way time, (1 millisecond one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

NOTE:

The checkshots at mean sea level gave vertical transit times from ground level to datum of 52.8, 49.4 and 50.2 milliseconds (see table 1, DATUM SURVEY section). These was changed to the correct vertical transit time of 53.7 milliseconds (see table 2, DATUM SURVEY section).

An artificial transit time was specified with the receiver anchored at datum, to impose a vertical transit time from ground level to datum of 53.7 milliseconds (see CHECKSHOT SURVEY section). This results in a vertical transit time from source to datum of 51.8 milliseconds shown in the CHECKSHOT SURVEY REPORT.

ANALYST: C. BUTTERWORTH.

17-MAR-87 11:56:44

PROGRAM: GSHOT 007.E08

```
*****  
*                                     *  
*                                     *  
*                                     *  
*                                     *  
*          SCHLUMBERGER          *  
*                                     *  
*                                     *  
*                                     *  
*****
```

CHECKSHOT SURVEY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

00163

ANALYST: C. BUTTERWORTH.

17-MAR-87 11:56:44

PROGRAM: GSHOT 007.E08

*
*
*

*
*
*
*

SCHLUMBERGER

CHECKSHOT SURVEY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
 SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
 EKB - ELEVATION OF KELLY BUSHING
 GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
 VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
 VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
 GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
 GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
 HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
 HYDEWZ - HYDROPHONE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
 HYDNSZ - HYDROPHONE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
 TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
 TRTSRD - TRAVEL TIME FROM THE SOURCE TO THE SRD
 DEWEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH - SHOT NUMBER
 DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING
 DSRD.GSH - DEPTH FROM SRD
 DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
 TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
 TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
 SHTM.GSH - SHOT TIME (WST)
 AVGV.GSH - AVERAGE SEISMIC VELOCITY
 DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
 DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
 INTV.GSH - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	232.300	FT
ELEV OF SRD AB. MSL (WST)	SRD	:	0	FT
ELEVATION OF KELLY BUSHING	EKB	:	232.300	FT
ELEV OF GL AB. SRD (WST)	GL	:	215.300	FT
VEL SOURCE-HYDRO (WST)	VELHYD	:	5000.00	FT/S
VEL SOURCE-SRD (WST)	VELSUR	:	4044.58	FT/S

(MATRIX PARAMETERS)

49100

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 2

	SOURCE ELV FT	SOURCE EW FT	SOURCE NS FT	HYDRO ELEV FT	HYDRO EW FT	HYDRO NS FT
1	209.5	0	131.9	209.5	0	131.9

	TRT HYD-SC MS	TRT SC-SRD MS
1	0	-51.80

	MD @ KB FT	VD @ KB FT	VD @ SRD FT	E-W COORD FT	N-S COORD FT
1	232.3	232.3	0	0	0
2	500.0	500.0	267.7	0	0
3	1000.0	1000.0	767.7	0	0
4	1212.0	1212.0	979.7	0	0
5	1662.0	1662.0	1429.7	0	0
6	2160.0	2160.0	1927.7	0	0
7	2630.0	2630.0	2397.7	0	0
8	3124.0	3124.0	2891.7	0	0
9	3620.0	3620.0	3387.7	0	0
10	4096.0	4096.0	3863.7	0	0
11	4482.0	4482.0	4249.7	0	0
12	4748.0	4748.0	4515.7	0	0
13	4898.0	4898.0	4665.7	0	0
14	5223.0	5223.0	4990.7	0	0
15	5640.0	5640.0	5407.7	0	0
16	5775.0	5775.0	5542.7	0	0
17	6035.0	6035.0	5802.7	0	0
18	6378.0	6378.0	6145.7	0	0
19	6758.0	6758.0	6525.7	0	0
20	6892.0	6892.0	6659.7	0	0
21	7027.0	7027.0	6794.7	0	0
22	7213.0	7213.0	6980.7	0	0
23	7318.0	7318.0	7085.7	0	0
24	7430.0	7430.0	7197.7	0	0

00163

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 3

LEVEL NUMBER	MEASUR DEPTH FROM KB FT	VERTIC DEPTH FROM SRD FT	VERTIC DEPTH FROM GL FT	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO FT/S	DELTA DEPTH BETWEEN SHOTS FT	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS FT/S
1	232.3	0	215.3	61.21	51.80	0				
2	500.0	267.7	483.0	100.00	96.39	44.59	6004	267.7	44.59	6004
3	1000.0	767.7	983.0	176.00	174.42	122.62	6261	500.0	78.03	6408
4	1212.0	979.7	1195.0	209.00	207.73	155.93	6283	212.0	33.31	6365
5	1662.0	1429.7	1645.0	275.00	274.11	222.32	6431	450.0	66.39	6778
6	2160.0	1927.7	2143.0	342.00	341.35	289.55	6658	498.0	67.24	7407
7	2630.0	2397.7	2613.0	401.00	400.49	348.69	6876	470.0	59.14	7948
8	3124.0	2891.7	3107.0	460.00	459.58	407.79	7091	494.0	59.10	8359
9	3620.0	3387.7	3603.0	518.00	517.65	465.85	7272	496.0	58.07	8542
10	4096.0	3863.7	4079.0	573.00	572.70	520.90	7417	476.0	55.05	8647
11	4482.0	4249.7	4465.0	615.00	614.73	562.93	7549	386.0	42.03	9184
12	4748.0	4515.7	4731.0	640.00	639.75	587.95	7680	266.0	25.02	10632
13	4898.0	4665.7	4881.0	653.00	652.76	600.96	7764	150.0	13.01	11529
14	5223.0	4990.7	5206.0	678.00	677.78	625.98	7973	325.0	25.02	12989
15	5640.0	5407.7	5623.0	709.00	708.80	657.01	8231	417.0	31.02	13442
16	5775.0	5542.7	5758.0	723.00	722.81	671.01	8260	135.0	14.01	9639
17	6035.0	5802.7	6018.0	740.00	739.82	688.02	8434	260.0	17.01	15283
18	6378.0	6145.7	6361.0	765.00	764.84	713.04	8619	343.0	25.01	13713
19	6758.0	6525.7	6741.0	798.00	797.85	746.05	8747	380.0	33.01	11511
20	6892.0	6659.7	6875.0	806.00	805.85	754.05	8832	134.0	8.00	16741
21	7027.0	6794.7	7010.0	816.00	815.86	764.06	8893	135.0	10.00	13495
22	7213.0	6980.7	7196.0	832.00	831.86	780.06	8949	186.0	16.00	11622
23	7318.0	7085.7	7301.0	837.00	836.86	785.07	9026	105.0	5.00	20987
24	7430.0	7197.7	7413.0	842.00	841.87	790.07	9110	112.0	5.00	22385

00166

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 4

LEVEL NUMBER	MEASUR DEPTH FROM KB FT	VERTIC DEPTH FROM SRD FT	VERTIC DEPTH FROM GL FT	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO FT/S	DELTA DEPTH BETWEEN SHOTS FT	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS FT/S
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00167

92598

Computer Resources Company

DRIFT COMPUTATION REPORT

00168

COMPANY : DELHI/SANTOS & PARTNERS
LONG DEFINITIONS

WELL : KIDMAN 5

PAGE 1

GLOBAL
KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE
LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED
SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
RAWS - RAW SONIC (WST)
SHDR - DRIFT AT SHOT OR KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 232.300	FT
ELEV OF SRD AB. MSL (WST)	SRD	: 0	FT
ELEVATION OF KELLY BUSHI	EKB	: 232.300	FT
ELEV OF GL AB. SRD (WST)	GL	: 215.300	FT
TOP OF ZONE PROCD (WST)	XSTART	: 0	FT
BOT OF ZONE PROCD (WST)	XSTOP	: 0	FT
RAW SONIC CH NAME (WST)	GAD001	: DT.ATT.002.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	: 2.30000	G/C3

(ZONED PARAMETERS)		(VALUE)	(LIMITS)	
LAYER OPTION FLAG DENS	LOFDEN	: 1.000000	99999.0	- 0
USER SUPPLIED DENSITY DA	LAYDEN	: -999.2500 G/C3	99999.0	- 0

00169

COMPANY : DELHI/SANTOS & PARTNERS	LEVEL MEASURED	VERTICAL DEPTH	WELL VERTICAL DEPTH	: KIDMAN 5 VERTICAL TRAVEL TIME	INTEGRATED RAW SONIC TIME	COMPUTED DRIFT AT LEVEL	PAGE 2 COMPUTED BLK-SHFT CORRECTION
NUMBER	FROM KB FT	FROM SRD FT	FROM GL FT	SRD/GEO MS	MS	MS	US/F
1	232.3	0	215.3	0	0	0	0
2	500.0	267.7	483.0	44.59	44.59	0	0
3	1000.0	767.7	983.0	122.62	122.62	0	0
4	1002.5	770.2	985.5	123.01	123.01	0	0
5	1212.0	979.7	1195.0	155.93	155.34	.58	2.79
6	1662.0	1429.7	1645.0	222.32	219.94	2.38	3.99
7	2160.0	1927.7	2143.0	289.55	285.51	4.05	3.35
8	2630.0	2397.7	2613.0	348.69	341.27	7.42	7.18
9	3124.0	2891.7	3107.0	407.79	399.69	8.09	1.36
10	3620.0	3387.7	3603.0	465.85	455.21	10.64	5.13
11	4096.0	3863.7	4079.0	520.90	508.16	12.75	4.42
12	4482.0	4249.7	4465.0	562.93	549.37	13.56	2.11
13	4748.0	4515.7	4731.0	587.95	574.84	13.11	-1.67
14	4898.0	4665.7	4881.0	600.96	587.40	13.56	2.97
15	5223.0	4990.7	5206.0	625.98	613.44	12.54	-3.13
16	5640.0	5407.7	5623.0	657.01	645.19	11.82	-1.74
17	5775.0	5542.7	5758.0	671.01	656.19	14.82	22.28
18	6035.0	5802.7	6018.0	688.02	675.57	12.46	-9.11
19	6378.0	6145.7	6361.0	713.04	699.42	13.61	3.38
20	6758.0	6525.7	6741.0	746.05	730.60	15.45	4.82
21	6892.0	6659.7	6875.0	754.05	740.40	13.65	-13.39
22	7027.0	6794.7	7010.0	764.06	750.00	14.06	3.00
23	7213.0	6980.7	7196.0	780.06	763.57	16.49	13.10
24	7318.0	7085.7	7301.0	785.07	771.15	13.92	-24.53

00170

92598

COMPANY : DELHI/SANTOS & PARTNERS			WELL : KIDMAN 5			INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	PAGE COMPUTED BLK-SHFT CORRECTION US/F
LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEO MS				
25	7430.0	7197.7	7413.0	790.07	777.40	12.67	-11.12	
26	7450.0	7217.7	7433.0	791.27	778.60	12.67	0	

Computer Resources Company

00171

Computer Resources Company 15001

PROGRAM: GADJST 008.E08

SCHLUMBERGER

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

2109

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 1

LONG DEFINITIONS

GLOBAL
SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE
ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED
SHOT - SHOT NUMBER
VOKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)	(VALUE)
ORIG OF ADJ DATA (WST)	SRCDRF : 2.00000
CONS SONIC ADJUST (WST)	CONADJ : 7.50000 US/F
UNIFORM EARTH VELOCITY	UNERTH : 7000.00 FT/S

(ZONED PARAMETERS)	(VALUE)	(LIMITS)
USER DRIFT ZONE (WST)	ZDRIFT : .5000000 MS	7450.00 - 4482.00
		0 4482.00 1002.50
		-13.50000 1002.50 0
ADJUSMNT MODE (WST)	ADJOPZ :-999.2500	99999.0 - 0
USER DELTA-T MIN (WST)	ADJUSZ :-999.2500 US/F	99999.0 - 0
LAYER OPTION FLAG VELOC	LOFVEL : 1.000000	99999.0 - 0
USER VELOC (WST)	LAYVEL : 5000.000 FT/S	99999.0 - 0

00173

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 2

KNEE NUMBER	VERTICAL DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
2	1002.5	770.2	985.5	-13.50		98.50	.69	-13.47
3	4482.0	4249.7	4465.0	0	3.88			3.88
4	7450.0	7217.7	7433.0	.50	.17			.17

00174

ANALYST: C. BUTTERWORTH.

17-MAR-87 13:44:39

PROGRAM: GADJST 008.E08

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*          SCHLUMBERGER              *
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VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

00173

ANALYST: C. BUTTERWORTH.

17-MAR-87 13:44:39

PROGRAM: GADJST 008.E08

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SCHLUMBERGER

VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 3

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	232.300	FT
ELEV OF SRD AB. MSL (WST)	SRD	:	0	FT
ELEVATION OF KELLY BUSHI	EKB	:	232.300	FT
ELEV OF GL AB. SRD (WST)	GL	:	215.300	FT
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0

00176

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 4

LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY FT/S
1	232.3	0	215.3	0	0	0	0	
2	500.0	267.7	483.0	44.59	44.59	0	0	6004
3	1000.0	767.7	983.0	122.62	122.62	0	0	6408
4	1002.5	770.2	985.5	123.01	123.00	0	.01	6536
5	1212.0	979.7	1195.0	155.93	156.14	.58	-.21	6322
6	1662.0	1429.7	1645.0	222.32	222.48	2.38	-.16	6784
7	2160.0	1927.7	2143.0	289.55	289.98	4.05	-.42	7378
8	2630.0	2397.7	2613.0	348.69	347.56	7.42	1.13	8162
9	3124.0	2891.7	3107.0	407.79	407.90	8.09	-.12	8187
10	3620.0	3387.7	3603.0	465.85	465.35	10.64	.51	8634
11	4096.0	3863.7	4079.0	520.90	520.13	12.75	.77	8689
12	4482.0	4249.7	4465.0	562.93	562.85	13.56	.09	9036
13	4748.0	4515.7	4731.0	587.95	588.36	13.11	-.40	10428
14	4898.0	4665.7	4881.0	600.96	600.94	13.56	.02	11915
15	5223.0	4990.7	5206.0	625.98	627.03	12.54	-1.05	12457
16	5640.0	5407.7	5623.0	657.01	658.85	11.82	-1.85	13105
17	5775.0	5542.7	5758.0	671.01	669.87	14.82	1.14	12251
18	6035.0	5802.7	6018.0	688.02	689.30	12.46	-1.28	13384
19	6378.0	6145.7	6361.0	713.04	713.21	13.61	-.18	14344
20	6758.0	6525.7	6741.0	746.05	744.46	15.45	1.59	12163
21	6892.0	6659.7	6875.0	754.05	754.28	13.65	-.22	13646
22	7027.0	6794.7	7010.0	764.06	763.90	14.06	.16	14031
23	7213.0	6980.7	7196.0	780.06	777.50	16.49	2.57	13677
24	7318.0	7085.7	7301.0	785.07	785.09	13.92	-.03	13826

COMPANY : DELHI/SANTOS & PARTNERS

WELL : KIDMAN 5

PAGE 5

LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY FT/S
25	7430.0	7197.7	7413.0	790.07	791.36	12.67	-1.29	17869
26	7450.0	7217.7	7433.0	791.27	792.56	12.67	-1.28	16719

00178

ANALYST: C. BUTTERWORTH.

17-MAR-87 13:51:53

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* SCHLUMBERGER *
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TIME CONVERTED VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

00179

ANALYST: C. BUTTERWORTH.

17-MAR-87 13:51:53

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SCHLUMBERGER

TIME CONVERTED VELOCITY REPORT

COMPANY : DELHI/SANTOS & PARTNERS
WELL : KIDMAN 5
FIELD : WILDCAT
REFERENCE: 550181

GLOBAL
KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN - UNIFORM DENSITY VALUE

MATRIX
MVOIDS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA
LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED
TWOT - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
AVGV - AVERAGE SEISMIC VELOCITY
RMSV - ROOT MEAN SQUARE VELOCITY (SEISMIC)
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 232.300	FT
ELEV OF SRD AB. MSL(WST)	SRD	: 0	FT
ELEV OF GL AB. SRD(WST)	GL	: 215.300	FT
UNIFORM EARTH VELOCITY	UNERTH	: 7000.00	FT/S
UNIFORM DENSITY VALUE	UNFDEN	: 2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST FT
1	3000.0
2	4500.0
3	6000.0

08100

92598

COMPANY : DELHI/SANTOS & PARTNERS
(ZONED PARAMETERS)

WELL : KIDMAN 5
(VALUE) (LIMITS)

PAGE 2

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0
LAYER OPTION FLAG DENS	LOFDEN	:	1.000000		99999.0	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	99999.0	-	0

00181

COMPANY : DELHI/SANTOS & PARTNERS		WELL : KIDMAN 5		PAGE		3		
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
2.00	238.3	6.0	6004	6004	497.68	747.52	997.36	6004
4.00	244.3	12.0	6004	6004	495.70	745.53	995.37	6004
6.00	250.3	18.0	6004	6004	493.72	743.54	993.38	6004
8.00	256.3	24.0	6004	6004	491.74	741.56	991.39	6004
10.00	262.3	30.0	6004	6004	489.78	739.59	989.41	6004
12.00	268.3	36.0	6004	6004	487.82	737.62	987.43	6004
14.00	274.3	42.0	6004	6004	485.88	735.65	985.46	6004
16.00	280.3	48.0	6004	6004	483.94	733.69	983.49	6004
18.00	286.3	54.0	6004	6004	482.00	731.74	981.52	6004
20.00	292.3	60.0	6004	6004	480.08	729.79	979.56	6004
22.00	298.3	66.0	6004	6004	478.16	727.84	977.60	6004
24.00	304.3	72.0	6004	6004	476.26	725.90	975.65	6004
26.00	310.3	78.0	6004	6004	474.36	723.97	973.70	6004
28.00	316.4	84.1	6004	6004	472.46	722.04	971.75	6004
30.00	322.4	90.1	6004	6004	470.58	720.12	969.81	6004
32.00	328.4	96.1	6004	6004	468.70	718.20	967.87	6004
34.00	334.4	102.1	6004	6004	466.84	716.29	965.94	6004
36.00	340.4	108.1	6004	6004	464.98	714.38	964.01	6004
38.00	346.4	114.1	6004	6004	463.12	712.48	962.08	6004
40.00	352.4	120.1	6004	6004	461.28	710.59	960.16	6004
42.00	358.4	126.1	6004	6004	459.44	708.70	958.24	6004
44.00	364.4	132.1	6004	6004	457.61	706.81	956.33	6004
46.00	370.4	138.1	6004	6004	455.79	704.93	954.42	6004
48.00	376.4	144.1	6004	6004	453.98	703.06	952.51	6004

00182

00182

COMPANY : DELHI/SANTOS & PARTNERS				WELL RMS : KIDMAN 5				PAGE
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
50.00	382.4	150.1	6004	6004	452.18	701.19	950.61	6004
52.00	388.4	156.1	6004	6004	450.38	699.32	948.71	6004
54.00	394.4	162.1	6004	6004	448.59	697.46	946.82	6004
56.00	400.4	168.1	6004	6004	446.81	695.61	944.93	6004
58.00	406.4	174.1	6004	6004	445.04	693.76	943.04	6004
60.00	412.4	180.1	6004	6004	443.27	691.92	941.16	6004
62.00	418.4	186.1	6004	6004	441.51	690.08	939.28	6004
64.00	424.4	192.1	6004	6004	439.76	688.25	937.41	6004
66.00	430.4	198.1	6004	6004	438.02	686.42	935.54	6004
68.00	436.4	204.1	6004	6004	436.29	684.60	933.67	6004
70.00	442.4	210.1	6004	6004	434.56	682.78	931.81	6004
72.00	448.4	216.1	6004	6004	432.84	680.97	929.95	6004
74.00	454.4	222.1	6004	6004	431.13	679.16	928.10	6004
76.00	460.4	228.1	6004	6004	429.43	677.36	926.25	6004
78.00	466.4	234.1	6004	6004	427.73	675.57	924.40	6004
80.00	472.5	240.2	6004	6004	426.04	673.78	922.56	6004
82.00	478.5	246.2	6004	6004	424.36	671.99	920.72	6004
84.00	484.5	252.2	6004	6004	422.69	670.21	918.88	6004
86.00	490.5	258.2	6004	6004	421.03	668.44	917.05	6004
88.00	496.5	264.2	6004	6004	419.37	666.67	915.23	6004
90.00	502.7	270.4	6008	6008	417.39	664.40	912.73	6184
92.00	509.1	276.8	6017	6017	415.02	661.54	909.43	6408
94.00	515.5	283.2	6025	6025	412.68	658.73	906.20	6408
96.00	521.9	289.6	6033	6034	410.39	655.97	903.05	6408

92598

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	5
98.00	528.3	296.0	6040	6042	408.14	653.27	899.95	6408	
100.00	534.7	302.4	6048	6049	405.93	650.61	896.92	6408	
102.00	541.1	308.8	6055	6056	403.75	648.00	893.94	6408	
104.00	547.5	315.2	6062	6063	401.60	645.43	891.02	6408	
106.00	553.9	321.6	6068	6070	399.48	642.90	888.15	6408	
108.00	560.3	328.0	6074	6076	397.39	640.41	885.33	6408	
110.00	566.7	334.4	6081	6083	395.33	637.96	882.55	6408	
112.00	573.1	340.8	6086	6088	393.30	635.54	879.81	6408	
114.00	579.5	347.2	6092	6094	391.30	633.15	877.12	6408	
116.00	586.0	353.7	6097	6100	389.32	630.80	874.46	6408	
118.00	592.4	360.1	6103	6105	387.36	628.47	871.84	6408	
120.00	598.8	366.5	6108	6110	385.43	626.18	869.26	6408	
122.00	605.2	372.9	6113	6115	383.52	623.91	866.71	6408	
124.00	611.6	379.3	6117	6120	381.63	621.67	864.19	6408	
126.00	618.0	385.7	6122	6125	379.76	619.45	861.70	6408	
128.00	624.4	392.1	6127	6129	377.91	617.26	859.24	6408	
130.00	630.8	398.5	6131	6134	376.09	615.09	856.81	6408	
132.00	637.2	404.9	6135	6138	374.28	612.94	854.41	6408	
134.00	643.6	411.3	6139	6142	372.49	610.81	852.03	6408	
136.00	650.0	417.7	6143	6146	370.71	608.71	849.67	6408	
138.00	656.4	424.1	6147	6150	368.96	606.62	847.34	6408	
140.00	662.8	430.5	6151	6154	367.22	604.56	845.03	6408	
142.00	669.2	436.9	6154	6157	365.50	602.51	842.75	6408	
144.00	675.7	443.4	6158	6161	363.79	600.48	840.48	6408	

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COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE
								6408	
146.00	682.1	449.8	6161	6164	362.10	598.47	838.24	6408	
148.00	688.5	456.2	6164	6168	360.43	596.48	836.02	6408	
150.00	694.9	462.6	6168	6171	358.77	594.50	833.81	6408	
152.00	701.3	469.0	6171	6174	357.12	592.54	831.62	6408	
154.00	707.7	475.4	6174	6177	355.49	590.59	829.46	6408	
156.00	714.1	481.8	6177	6180	353.88	588.66	827.30	6408	
158.00	720.5	488.2	6180	6183	352.27	586.75	825.17	6408	
160.00	726.9	494.6	6183	6186	350.68	584.84	823.05	6408	
162.00	733.3	501.0	6186	6189	349.11	582.96	820.95	6408	
164.00	739.7	507.4	6188	6191	347.54	581.08	818.86	6408	
166.00	746.1	513.8	6191	6194	345.99	579.22	816.79	6408	
168.00	752.5	520.2	6193	6197	344.45	577.38	814.73	6408	
170.00	759.0	526.7	6196	6199	342.92	575.54	812.68	6408	
172.00	765.4	533.1	6198	6202	341.41	573.72	810.65	6408	
174.00	771.8	539.5	6201	6204	339.91	571.91	808.64	6408	
176.00	778.2	545.9	6203	6206	338.42	570.11	806.63	6408	
178.00	784.6	552.3	6205	6209	336.94	568.33	804.64	6408	
180.00	791.0	558.7	6208	6211	335.47	566.55	802.66	6408	
182.00	797.4	565.1	6210	6213	334.01	564.79	800.69	6408	
184.00	803.8	571.5	6212	6215	332.56	563.03	798.74	6408	
186.00	810.2	577.9	6214	6217	331.13	561.29	796.80	6408	
188.00	816.6	584.3	6216	6219	329.70	559.56	794.86	6408	
190.00	823.0	590.7	6218	6221	328.28	557.84	792.94	6408	
192.00	829.4	597.1	6220	6223	326.88	556.13	791.03	6408	

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 7
194.00	835.8	603.5	6222	6225	325.48	554.43	789.13	6408	
196.00	842.3	610.0	6224	6227	324.10	552.74	787.24	6408	
198.00	848.7	616.4	6226	6229	322.72	551.06	785.36	6408	
200.00	855.1	622.8	6228	6231	321.36	549.39	783.49	6408	
202.00	861.5	629.2	6229	6233	320.00	547.73	781.63	6408	
204.00	867.9	635.6	6231	6234	318.66	546.07	779.78	6408	
206.00	874.3	642.0	6233	6236	317.32	544.43	777.94	6408	
208.00	880.7	648.4	6235	6238	315.99	542.80	776.11	6408	
210.00	887.1	654.8	6236	6239	314.67	541.17	774.29	6408	
212.00	893.5	661.2	6238	6241	313.36	539.55	772.48	6408	
214.00	899.9	667.6	6239	6243	312.06	537.95	770.67	6408	
216.00	906.3	674.0	6241	6244	310.77	536.35	768.88	6408	
218.00	912.7	680.4	6243	6246	309.49	534.76	767.09	6408	
220.00	919.1	686.8	6244	6247	308.21	533.17	765.31	6408	
222.00	925.6	693.3	6246	6249	306.95	531.60	763.54	6408	
224.00	932.0	699.7	6247	6250	305.69	530.03	761.78	6408	
226.00	938.4	706.1	6248	6251	304.44	528.47	760.02	6408	
228.00	944.8	712.5	6250	6253	303.20	526.92	758.28	6408	
230.00	951.2	718.9	6251	6254	301.97	525.38	756.54	6408	
232.00	957.6	725.3	6253	6256	300.74	523.84	754.81	6408	
234.00	964.0	731.7	6254	6257	299.53	522.32	753.08	6408	
236.00	970.4	738.1	6255	6258	298.32	520.80	751.36	6408	
238.00	976.8	744.5	6256	6259	297.12	519.29	749.66	6408	
240.00	983.2	750.9	6258	6261	295.92	517.78	747.95	6408	

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COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE
242.00	989.6	757.3	6259	6262	294.74	516.28	746.26	6408	8
244.00	996.0	763.7	6260	6263	293.56	514.79	744.57	6408	
246.00	1002.5	770.2	6262	6265	292.36	513.27	742.83	6455	
248.00	1008.8	776.5	6262	6265	291.27	511.89	741.30	6291	
250.00	1015.1	782.8	6262	6265	290.18	510.54	739.79	6274	
252.00	1021.1	788.8	6261	6263	289.21	509.36	738.53	6071	
254.00	1027.2	794.9	6259	6262	288.23	508.15	737.20	6117	
256.00	1034.2	801.9	6265	6268	286.76	506.17	734.83	6990	
258.00	1040.3	808.0	6264	6267	285.81	505.01	733.58	6069	
260.00	1046.7	814.4	6265	6268	284.70	503.59	731.96	6384	
262.00	1052.8	820.5	6263	6266	283.74	502.41	730.68	6097	
264.00	1059.0	826.7	6263	6266	282.73	501.15	729.27	6209	
266.00	1065.2	832.9	6263	6266	281.72	499.87	727.85	6227	
268.00	1071.5	839.2	6263	6266	280.70	498.57	726.39	6258	
270.00	1077.5	845.2	6261	6264	279.81	497.48	725.22	5998	
272.00	1083.4	851.1	6258	6262	278.93	496.41	724.07	5970	
274.00	1089.7	857.4	6258	6262	277.93	495.14	722.64	6246	
276.00	1096.0	863.7	6259	6262	276.89	493.79	721.10	6346	
278.00	1102.3	870.0	6259	6262	275.90	492.53	719.69	6228	
280.00	1108.3	876.0	6257	6261	275.00	491.39	718.44	6080	
282.00	1115.3	883.0	6262	6266	273.68	489.58	716.26	6934	
284.00	1122.1	889.8	6266	6269	272.45	487.92	714.29	6769	
286.00	1128.3	896.0	6265	6269	271.50	486.70	712.92	6215	
288.00	1134.4	902.1	6264	6268	270.59	485.55	711.64	6121	

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	9
290.00	1140.7	908.4	6265	6268	269.59	484.24	710.14	6346	
292.00	1147.0	914.7	6265	6269	268.62	482.97	708.69	6301	
294.00	1153.0	920.7	6263	6267	267.80	481.96	707.59	5940	
296.00	1159.1	926.8	6262	6266	266.90	480.79	706.28	6163	
298.00	1165.7	933.4	6264	6268	265.82	479.33	704.57	6571	
300.00	1172.2	939.9	6266	6269	264.79	477.95	702.96	6472	
302.00	1178.7	946.4	6267	6271	263.75	476.56	701.33	6502	
304.00	1184.6	952.3	6265	6269	262.95	475.56	700.24	5944	
306.00	1190.8	958.5	6265	6268	262.07	474.41	698.95	6165	
308.00	1197.8	965.5	6269	6273	260.83	472.68	696.84	6989	
310.00	1204.3	972.0	6271	6274	259.83	471.33	695.25	6483	
312.00	1211.0	978.7	6274	6278	258.71	469.78	693.40	6769	
314.00	1217.9	985.6	6277	6281	257.58	468.19	691.49	6828	
316.00	1224.9	992.6	6282	6286	256.36	466.48	689.39	7030	
318.00	1231.6	999.3	6285	6289	255.29	465.00	687.63	6705	
320.00	1237.9	1005.6	6285	6289	254.41	463.83	686.28	6271	
322.00	1244.7	1012.4	6288	6292	253.31	462.29	684.42	6823	
324.00	1250.8	1018.5	6287	6291	252.50	461.22	683.21	6128	
326.00	1257.1	1024.8	6287	6291	251.63	460.06	681.87	6268	
328.00	1263.7	1031.4	6289	6293	250.65	458.69	680.25	6593	
330.00	1270.4	1038.1	6292	6296	249.61	457.25	678.51	6730	
332.00	1276.8	1044.5	6292	6296	248.72	456.03	677.09	6384	
334.00	1283.9	1051.6	6297	6302	247.55	454.36	675.03	7087	
336.00	1290.7	1058.4	6300	6304	246.52	452.91	673.28	6775	

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	10
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
338.00	1297.9	1065.6	6305	6310	245.33	451.18	671.14	7205		
340.00	1304.9	1072.6	6309	6315	244.22	449.59	669.18	7020		
342.00	1311.7	1079.4	6312	6317	243.22	448.17	667.47	6771		
344.00	1318.3	1086.0	6314	6319	242.28	446.86	665.90	6615		
346.00	1324.9	1092.6	6315	6321	241.36	445.58	664.36	6585		
348.00	1331.2	1098.9	6316	6321	240.53	444.42	663.01	6369		
350.00	1338.1	1105.8	6319	6324	239.49	442.94	661.20	6917		
352.00	1345.4	1113.1	6324	6330	238.35	441.28	659.12	7227		
354.00	1352.9	1120.6	6331	6337	237.12	439.44	656.81	7500		
356.00	1361.6	1129.3	6344	6353	235.37	436.75	653.30	8717		
358.00	1368.0	1135.7	6344	6353	234.57	435.64	651.98	6380		
360.00	1374.5	1142.2	6346	6354	233.71	434.42	650.52	6571		
362.00	1381.4	1149.1	6349	6357	232.74	433.03	648.82	6880		
364.00	1388.9	1156.6	6355	6364	231.58	431.30	646.64	7442		
366.00	1396.3	1164.0	6361	6370	230.44	429.59	644.49	7438		
368.00	1403.1	1170.8	6363	6373	229.52	428.27	642.87	6807		
370.00	1410.0	1177.7	6366	6376	228.59	426.91	641.20	6898		
372.00	1416.8	1184.5	6368	6378	227.69	425.62	639.62	6786		
374.00	1423.6	1191.3	6371	6381	226.78	424.29	637.98	6866		
376.00	1430.6	1198.3	6374	6384	225.83	422.89	636.25	7001		
378.00	1437.0	1204.7	6374	6384	225.07	421.82	634.98	6401		
380.00	1443.1	1210.8	6373	6382	224.43	420.94	633.98	6030		
382.00	1449.6	1217.3	6373	6383	223.64	419.81	632.61	6551		
384.00	1456.5	1224.2	6376	6386	222.77	418.53	631.04	6826		

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	11
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
386.00	1463.6	1231.3	6380	6390	221.81	417.10	629.25	7123		
388.00	1470.5	1238.2	6383	6393	220.91	415.78	627.61	6941		
390.00	1477.0	1244.7	6383	6393	220.17	414.71	626.32	6465		
392.00	1484.0	1251.7	6386	6396	219.27	413.39	624.68	6966		
394.00	1491.3	1259.0	6391	6401	218.28	411.89	622.78	7308		
396.00	1499.9	1267.6	6402	6414	216.83	409.60	619.77	8638		
398.00	1508.1	1275.8	6411	6425	215.56	407.62	617.19	8197		
400.00	1514.6	1282.3	6412	6425	214.82	406.55	615.89	6555		
402.00	1520.6	1288.3	6409	6423	214.26	405.77	615.00	5921		
404.00	1526.7	1294.4	6408	6421	213.64	404.89	613.97	6149		
406.00	1532.8	1300.5	6407	6420	213.03	404.03	612.96	6113		
408.00	1539.3	1307.0	6407	6420	212.34	403.03	611.75	6435		
410.00	1545.8	1313.5	6407	6420	211.63	402.00	610.50	6506		
412.00	1552.7	1320.4	6409	6423	210.83	400.79	610.50	6880		
414.00	1559.3	1327.0	6411	6424	210.10	399.71	607.67	6627		
416.00	1565.3	1333.0	6409	6422	209.53	398.92	606.74	6000		
418.00	1572.1	1339.8	6411	6424	208.76	397.75	605.29	6833		
420.00	1578.3	1346.0	6410	6423	208.14	396.86	604.23	6226		
422.00	1585.2	1352.9	6412	6425	207.35	395.67	602.73	6911		
424.00	1591.3	1359.0	6410	6424	206.79	394.87	601.79	6042		
426.00	1597.6	1365.3	6410	6423	206.17	393.96	600.71	6282		
428.00	1604.0	1371.7	6410	6423	205.52	393.01	599.55	6402		
430.00	1610.6	1378.3	6411	6424	204.82	391.95	598.24	6663		
432.00	1618.2	1385.9	6416	6430	203.87	390.48	596.33	7542		

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COMPANY : DELHI/SANTOS & PARTNERS		WELL RMS		: KIDMAN 5		PAGE		12
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
434.00	1625.1	1392.8	6418	6432	203.11	389.31	594.86	6931
436.00	1632.0	1399.7	6421	6434	202.35	388.16	593.42	6893
438.00	1638.9	1406.6	6423	6436	201.61	387.04	592.00	6868
440.00	1645.8	1413.5	6425	6438	200.86	385.89	590.55	6923
442.00	1652.3	1420.0	6425	6439	200.23	384.95	589.39	6457
444.00	1658.9	1426.6	6426	6440	199.56	383.92	588.11	6671
446.00	1665.7	1433.4	6428	6441	198.85	382.84	586.76	6802
448.00	1672.5	1440.2	6430	6443	198.15	381.76	585.40	6816
450.00	1679.5	1447.2	6432	6445	197.41	380.62	583.95	6971
452.00	1686.3	1454.0	6434	6447	196.71	379.56	582.61	6807
454.00	1693.3	1461.0	6436	6449	195.99	378.44	581.19	6939
456.00	1701.0	1468.7	6442	6456	195.08	376.98	579.27	7727
458.00	1708.0	1475.7	6444	6458	194.35	375.85	577.83	7012
460.00	1714.9	1482.6	6446	6460	193.66	374.78	576.48	6862
462.00	1721.6	1489.3	6447	6461	193.02	373.79	575.24	6692
464.00	1728.6	1496.3	6450	6463	192.30	372.67	573.80	7036
466.00	1735.7	1503.4	6452	6466	191.57	371.53	572.33	7091
468.00	1742.8	1510.5	6455	6469	190.85	370.39	570.87	7087
470.00	1750.8	1518.5	6462	6477	189.89	368.84	568.81	8056
472.00	1758.2	1525.9	6466	6481	189.10	367.58	567.17	7414
474.00	1765.3	1533.0	6468	6484	188.40	366.47	565.74	7085
476.00	1772.0	1539.7	6469	6485	187.78	365.51	564.53	6720
478.00	1779.1	1546.8	6472	6487	187.09	364.41	563.11	7085
480.00	1785.9	1553.6	6474	6489	186.46	363.43	561.85	6817

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	13
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
482.00	1793.1	1560.8	6476	6491	185.76	362.32	560.42	7139		
484.00	1800.3	1568.0	6479	6494	185.06	361.20	558.97	7174		
486.00	1807.3	1575.0	6481	6497	184.39	360.14	557.60	7041		
488.00	1814.3	1582.0	6483	6499	183.75	359.12	556.29	6967		
490.00	1821.2	1588.9	6485	6500	183.12	358.13	555.02	6891		
492.00	1828.9	1596.6	6490	6506	182.30	356.80	553.25	7762		
494.00	1837.0	1604.7	6497	6513	181.42	355.35	551.31	8063		
496.00	1846.5	1614.2	6509	6528	180.17	353.24	548.41	9511		
498.00	1854.8	1622.5	6516	6536	179.27	351.73	546.39	8264		
500.00	1862.4	1630.1	6520	6541	178.51	350.50	544.75	7640		
502.00	1869.5	1637.2	6523	6543	177.87	349.47	543.42	7118		
504.00	1876.8	1644.5	6526	6546	177.20	348.39	541.99	7295		
506.00	1884.3	1652.0	6530	6550	176.49	347.23	540.46	7502		
508.00	1891.2	1658.9	6531	6552	175.91	346.30	539.26	6893		
510.00	1897.8	1665.5	6531	6552	175.39	345.48	538.21	6593		
512.00	1905.1	1672.8	6534	6555	174.73	344.40	536.80	7317		
514.00	1912.2	1679.9	6537	6557	174.12	343.42	535.51	7104		
516.00	1919.2	1686.9	6538	6559	173.54	342.48	534.28	6978		
518.00	1926.1	1693.8	6540	6560	172.98	341.58	533.12	6867		
520.00	1936.9	1704.6	6556	6582	171.48	338.97	529.47	10843		
522.00	1944.9	1712.6	6562	6588	170.71	337.67	527.72	8042		
524.00	1951.6	1719.3	6562	6588	170.20	336.86	526.67	6680		
526.00	1958.7	1726.4	6564	6591	169.62	335.91	525.43	7109		
528.00	1966.0	1733.7	6567	6593	169.00	334.90	524.09	7295		

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	14
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
530.00	1973.3	1741.0	6570	6596	168.41	333.92	522.80	7226		
532.00	1981.2	1748.9	6575	6601	167.68	332.70	521.15	7938		
534.00	1989.8	1757.5	6582	6610	166.81	331.22	519.12	8625		
536.00	1996.9	1764.6	6584	6612	166.25	330.30	517.92	7098		
538.00	2004.0	1771.7	6586	6614	165.69	329.38	516.70	7127		
540.00	2012.0	1779.7	6592	6620	164.97	328.17	515.06	7994		
542.00	2019.5	1787.2	6595	6623	164.36	327.15	513.69	7464		
544.00	2026.2	1793.9	6595	6623	163.88	326.36	512.67	6739		
546.00	2033.5	1801.2	6598	6626	163.32	325.43	511.43	7224		
548.00	2040.4	1808.1	6599	6627	162.81	324.60	510.34	6920		
550.00	2047.9	1815.6	6602	6630	162.20	323.57	508.96	7547		
552.00	2054.7	1822.4	6603	6631	161.72	322.80	507.95	6749		
554.00	2061.6	1829.3	6604	6632	161.23	321.98	506.87	6902		
556.00	2069.3	1837.0	6608	6636	160.59	320.90	505.41	7752		
558.00	2076.7	1844.4	6611	6639	160.02	319.94	504.12	7410		
560.00	2083.5	1851.2	6611	6640	159.55	319.18	503.12	6760		
562.00	2090.2	1857.9	6612	6640	159.10	318.44	502.15	6703		
564.00	2097.7	1865.4	6615	6643	158.53	317.47	500.86	7454		
566.00	2105.0	1872.7	6617	6645	157.98	316.55	499.61	7358		
568.00	2112.6	1880.3	6621	6649	157.39	315.54	498.25	7621		
570.00	2122.0	1889.7	6630	6660	156.49	313.96	496.03	9316		
572.00	2128.8	1896.5	6631	6661	156.03	313.20	495.03	6832		
574.00	2135.9	1903.6	6633	6662	155.54	312.38	493.94	7072		
576.00	2143.0	1910.7	6634	6664	155.05	311.55	492.82	7132		

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE 15	
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
578.00	2151.6	1919.3	6641	6672	154.30	310.25	491.02	8621		
580.00	2160.2	1927.9	6648	6679	153.57	308.98	489.25	8584		
582.00	2168.6	1936.3	6654	6686	152.88	307.77	487.58	8407		
584.00	2177.4	1945.1	6661	6695	152.12	306.44	485.73	8804		
586.00	2185.3	1953.0	6665	6699	151.53	305.43	484.34	7857		
588.00	2192.7	1960.4	6668	6701	151.02	304.56	483.15	7408		
590.00	2200.0	1967.7	6670	6704	150.52	303.71	482.01	7308		
592.00	2207.5	1975.2	6673	6706	150.01	302.83	480.81	7468		
594.00	2214.6	1982.3	6675	6708	149.54	302.03	479.73	7180		
596.00	2222.9	1990.6	6680	6714	148.90	300.91	478.18	8294		
598.00	2232.3	2000.0	6689	6725	148.07	299.44	476.09	9418		
600.00	2240.2	2007.9	6693	6729	147.52	298.47	474.77	7835		
602.00	2247.0	2014.7	6693	6729	147.11	297.79	473.85	6825		
604.00	2253.9	2021.6	6694	6730	146.69	297.08	472.90	6920		
606.00	2261.8	2029.5	6698	6734	146.14	296.11	471.56	7913		
608.00	2269.6	2037.3	6702	6738	145.61	295.19	470.29	7743		
610.00	2277.4	2045.1	6705	6741	145.07	294.26	469.00	7833		
612.00	2285.2	2052.9	6709	6745	144.55	293.35	467.74	7756		
614.00	2293.3	2061.0	6713	6750	143.97	292.33	466.33	8155		
616.00	2305.5	2073.2	6731	6775	142.65	289.91	462.81	12177		
618.00	2313.8	2081.5	6736	6780	142.07	288.88	461.37	8294		
620.00	2321.5	2089.2	6739	6783	141.57	288.01	460.17	7701		
622.00	2329.1	2096.8	6742	6786	141.10	287.19	459.04	7563		
624.00	2336.4	2104.1	6744	6788	140.66	286.42	457.99	7370		

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COMPANY : DELHI/SANTOS & PARTNERS								
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
626.00	2343.9	2111.6	6746	6790	140.21	285.63	456.89	7476
628.00	2351.4	2119.1	6749	6793	139.75	284.83	455.79	7529
630.00	2359.3	2127.0	6752	6797	139.24	283.94	454.55	7899
632.00	2368.7	2136.4	6761	6806	138.52	282.62	452.67	9415
634.00	2377.0	2144.7	6765	6811	137.98	281.66	451.32	8213
636.00	2384.7	2152.4	6769	6815	137.50	280.82	450.15	7782
638.00	2392.5	2160.2	6772	6818	137.02	279.98	448.97	7804
640.00	2400.3	2168.0	6775	6821	136.56	279.15	447.82	7752
642.00	2407.9	2175.6	6778	6824	136.11	278.37	446.73	7600
644.00	2415.5	2183.2	6780	6826	135.67	277.59	445.66	7583
646.00	2423.3	2191.0	6783	6829	135.20	276.76	444.49	7838
648.00	2432.2	2199.9	6790	6837	134.59	275.65	442.91	8912
650.00	2440.4	2208.1	6794	6841	134.09	274.75	441.64	8160
652.00	2448.3	2216.0	6797	6845	133.63	273.93	440.48	7870
654.00	2456.0	2223.7	6800	6848	133.18	273.13	439.36	7780
656.00	2463.8	2231.5	6803	6851	132.74	272.34	438.27	7732
658.00	2471.1	2238.8	6805	6852	132.34	271.65	437.30	7370
660.00	2479.4	2247.1	6809	6857	131.84	270.74	436.02	8269
662.00	2487.9	2255.6	6814	6862	131.32	269.80	434.68	8460
664.00	2498.1	2265.8	6825	6875	130.55	268.37	432.60	10243
666.00	2507.2	2274.9	6832	6883	129.95	267.27	431.02	9129
668.00	2515.8	2283.5	6837	6888	129.43	266.34	429.68	8526
670.00	2525.2	2292.9	6844	6897	128.80	265.17	428.00	9439
672.00	2534.3	2302.0	6851	6905	128.21	264.10	426.45	9131

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COMPANY : DELHI/SANTOS & PARTNERS	WELL : KIDMAN 5								
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
674.00	2542.6	2310.3	6855	6910	127.74	263.25	425.25	8234	
676.00	2550.7	2318.4	6859	6913	127.29	262.43	424.08	8135	
678.00	2558.7	2326.4	6862	6917	126.86	261.66	422.98	7960	
680.00	2566.6	2334.3	6866	6920	126.44	260.89	421.90	7947	
682.00	2574.8	2342.5	6870	6924	125.99	260.07	420.73	8203	
684.00	2583.0	2350.7	6874	6928	125.54	259.25	419.55	8232	
686.00	2591.9	2359.6	6879	6935	125.02	258.29	418.18	8837	
688.00	2601.0	2368.7	6886	6942	124.47	257.29	416.72	9076	
690.00	2609.0	2376.7	6889	6945	124.05	256.52	415.62	8074	
692.00	2617.6	2385.3	6894	6951	123.57	255.64	414.36	8569	
694.00	2625.5	2393.2	6897	6954	123.17	254.91	413.32	7943	
696.00	2633.5	2401.2	6900	6957	122.77	254.18	412.28	7939	
698.00	2642.1	2409.8	6905	6962	122.29	253.31	411.02	8635	
700.00	2649.9	2417.6	6907	6965	121.91	252.61	410.03	7796	
702.00	2657.6	2425.3	6910	6967	121.55	251.95	409.09	7699	
704.00	2665.3	2433.0	6912	6969	121.18	251.28	408.14	7708	
706.00	2674.4	2442.1	6918	6976	120.67	250.33	406.76	9045	
708.00	2682.8	2450.5	6922	6980	120.23	249.52	405.58	8477	
710.00	2690.8	2458.5	6925	6983	119.85	248.82	404.59	7922	
712.00	2698.5	2466.2	6928	6986	119.49	248.16	403.64	7772	
714.00	2706.5	2474.2	6930	6989	119.11	247.47	402.65	7945	
716.00	2714.6	2482.3	6934	6992	118.72	246.74	401.60	8138	
718.00	2723.5	2491.2	6939	6998	118.24	245.85	400.31	8917	
720.00	2731.4	2499.1	6942	7001	117.88	245.18	399.35	7885	

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COMPANY : DELHI/SANTOS & PARTNERS		WELL : KIDMAN 5		PAGE 18				
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
722.00	2739.3	2507.0	6945	7003	117.51	244.52	398.39	7894
724.00	2747.4	2515.1	6948	7006	117.14	243.82	397.39	8046
726.00	2755.9	2523.6	6952	7011	116.72	243.04	396.25	8529
728.00	2764.1	2531.8	6955	7015	116.33	242.33	395.22	8182
730.00	2772.4	2540.1	6959	7018	115.94	241.60	394.17	8289
732.00	2780.7	2548.4	6963	7022	115.55	240.87	393.11	8325
734.00	2789.0	2556.7	6966	7026	115.16	240.15	392.07	8266
736.00	2797.3	2565.0	6970	7030	114.78	239.43	391.03	8296
738.00	2805.5	2573.2	6974	7033	114.39	238.72	389.99	8298
740.00	2813.8	2581.5	6977	7037	114.02	238.02	388.98	8229
742.00	2821.7	2589.4	6980	7040	113.67	237.38	388.05	7954
744.00	2829.6	2597.3	6982	7042	113.34	236.76	387.14	7886
746.00	2837.8	2605.5	6985	7045	112.97	236.08	386.15	8199
748.00	2845.8	2613.5	6988	7048	112.63	235.45	385.24	7938
750.00	2853.9	2621.6	6991	7051	112.28	234.79	384.29	8096
752.00	2861.9	2629.6	6994	7054	111.93	234.14	383.35	8083
754.00	2870.0	2637.7	6997	7057	111.59	233.50	382.41	8080
756.00	2878.6	2646.3	7001	7061	111.20	232.77	381.34	8564
758.00	2887.0	2654.7	7004	7065	110.83	232.08	380.32	8408
760.00	2895.1	2662.8	7007	7068	110.49	231.44	379.40	8066
762.00	2903.1	2670.8	7010	7071	110.16	230.82	378.49	8072
764.00	2911.9	2679.6	7015	7076	109.76	230.07	377.39	8739
766.00	2919.9	2687.6	7017	7078	109.44	229.46	376.50	7991
768.00	2927.7	2695.4	7019	7080	109.13	228.88	375.66	7859

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COMPANY : DELHI/SANTOS & PARTNERS	WELL : KIDMAN 5								
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
770.00	2935.7	2703.4	7022	7083	108.81	228.27	374.77	8008	
772.00	2943.7	2711.4	7024	7085	108.48	227.67	373.89	8023	
774.00	2951.7	2719.4	7027	7088	108.17	227.08	373.03	7927	
776.00	2959.7	2727.4	7029	7090	107.85	226.48	372.16	8032	
778.00	2967.7	2735.4	7032	7093	107.54	225.89	371.29	8011	
780.00	2975.7	2743.4	7034	7095	107.22	225.30	370.42	8025	
782.00	2983.8	2751.5	7037	7098	106.91	224.70	369.54	8063	
784.00	2992.1	2759.8	7040	7101	106.57	224.07	368.61	8307	
786.00	3000.3	2768.0	7043	7104	106.25	223.46	367.72	8158	
788.00	3008.5	2776.2	7046	7107	105.93	222.85	366.82	8218	
790.00	3016.7	2784.4	7049	7110	105.61	222.24	365.91	8254	
792.00	3025.0	2792.7	7052	7114	105.28	221.62	365.01	8280	
794.00	3033.8	2801.5	7057	7118	104.92	220.92	363.97	8783	
796.00	3042.2	2809.9	7060	7122	104.58	220.29	363.04	8420	
798.00	3050.7	2818.4	7064	7126	104.25	219.65	362.09	8489	
800.00	3059.5	2827.2	7068	7130	103.89	218.97	361.07	8779	
802.00	3067.7	2835.4	7071	7133	103.59	218.39	360.21	8178	
804.00	3075.7	2843.4	7073	7136	103.29	217.83	359.38	8050	
806.00	3083.7	2851.4	7076	7138	103.00	217.27	358.57	8025	
808.00	3091.9	2859.6	7078	7141	102.70	216.70	357.72	8161	
810.00	3100.2	2867.9	7081	7144	102.39	216.11	356.85	8286	
812.00	3108.5	2876.2	7084	7147	102.09	215.53	355.98	8297	
814.00	3116.5	2884.2	7087	7149	101.80	214.98	355.17	8055	
816.00	3124.8	2892.5	7089	7152	101.50	214.41	354.32	8262	

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COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 20
818.00	3133.0	2900.7	7092	7155	101.21	213.85	353.49	8163	
820.00	3141.1	2908.8	7095	7157	100.92	213.30	352.68	8125	
822.00	3149.2	2916.9	7097	7160	100.63	212.75	351.86	8148	
824.00	3157.3	2925.0	7099	7162	100.35	212.22	351.07	8034	
826.00	3165.4	2933.1	7102	7164	100.07	211.68	350.27	8113	
828.00	3173.9	2941.6	7105	7168	99.76	211.08	349.38	8530	
830.00	3182.3	2950.0	7108	7171	99.47	210.51	348.53	8368	
832.00	3190.5	2958.2	7111	7174	99.18	209.97	347.72	8203	
834.00	3198.9	2966.6	7114	7177	98.89	209.40	346.87	8363	
836.00	3207.3	2975.0	7117	7180	98.59	208.84	346.02	8402	
838.00	3215.5	2983.2	7120	7183	98.32	208.30	345.22	8211	
840.00	3223.7	2991.4	7122	7186	98.03	207.76	344.41	8278	
842.00	3232.1	2999.8	7125	7189	97.75	207.20	343.58	8353	
844.00	3240.5	3008.2	7129	7192	97.46	206.64	342.74	8454	
846.00	3248.8	3016.5	7131	7195	97.18	206.11	341.94	8251	
848.00	3257.3	3025.0	7134	7198	96.89	205.54	341.09	8513	
850.00	3265.7	3033.4	7138	7201	96.60	204.99	340.26	8434	
852.00	3274.0	3041.7	7140	7204	96.33	204.47	339.48	8261	
854.00	3282.2	3049.9	7143	7206	96.06	203.95	338.70	8238	
856.00	3290.6	3058.3	7146	7209	95.79	203.41	337.90	8355	
858.00	3299.1	3066.8	7149	7213	95.50	202.86	337.06	8549	
860.00	3307.5	3075.2	7152	7216	95.23	202.32	336.26	8393	
862.00	3315.8	3083.5	7154	7218	94.96	201.81	335.49	8279	
864.00	3324.4	3092.1	7158	7222	94.68	201.25	334.65	8605	

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	21
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
866.00	3332.9	3100.6	7161	7225	94.40	200.72	333.85	8433		
868.00	3341.3	3109.0	7164	7228	94.13	200.20	333.05	8422		
870.00	3349.8	3117.5	7167	7231	93.86	199.66	332.24	8557		
872.00	3358.3	3126.0	7170	7234	93.59	199.13	331.44	8463		
874.00	3367.4	3135.1	7174	7239	93.27	198.52	330.51	9111		
876.00	3376.0	3143.7	7177	7242	93.00	197.98	329.70	8591		
878.00	3384.5	3152.2	7180	7246	92.73	197.46	328.91	8477		
880.00	3392.9	3160.6	7183	7248	92.47	196.96	328.15	8372		
882.00	3401.3	3169.0	7186	7251	92.21	196.45	327.37	8471		
884.00	3409.8	3177.5	7189	7254	91.95	195.93	326.59	8521		
886.00	3418.4	3186.1	7192	7257	91.69	195.42	325.81	8507		
888.00	3426.9	3194.6	7195	7261	91.42	194.90	325.03	8524		
890.00	3435.3	3203.0	7198	7263	91.17	194.41	324.28	8420		
892.00	3443.6	3211.3	7200	7266	90.92	193.92	323.55	8319		
894.00	3452.2	3219.9	7203	7269	90.67	193.42	322.78	8542		
896.00	3460.6	3228.3	7206	7272	90.41	192.92	322.03	8448		
898.00	3469.1	3236.8	7209	7275	90.16	192.43	321.28	8488		
900.00	3477.4	3245.1	7211	7277	89.92	191.96	320.56	8317		
902.00	3485.6	3253.3	7214	7280	89.69	191.50	319.87	8219		
904.00	3494.3	3262.0	7217	7283	89.43	190.99	319.09	8667		
906.00	3503.1	3270.8	7220	7287	89.16	190.47	318.29	8784		
908.00	3511.9	3279.6	7224	7290	88.90	189.94	317.48	8846		
910.00	3520.9	3288.6	7228	7294	88.62	189.40	316.66	8945		
912.00	3530.4	3298.1	7233	7300	88.32	188.79	315.72	9491		

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COMPANY : DELHI/SANTOS & PARTNERS	WELL : KIDMAN 5	PAGE 22						
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
914.00	3539.2	3306.9	7236	7304	88.05	188.28	314.93	8848
916.00	3548.4	3316.1	7240	7308	87.77	187.72	314.08	9157
918.00	3557.3	3325.0	7244	7312	87.51	187.19	313.26	8983
920.00	3567.4	3335.1	7250	7319	87.17	186.52	312.22	10092
922.00	3578.5	3346.2	7259	7330	86.76	185.70	310.95	11076
924.00	3588.9	3356.6	7265	7338	86.41	185.00	309.85	10396
926.00	3598.7	3366.4	7271	7344	86.10	184.38	308.90	9763
928.00	3607.9	3375.6	7275	7348	85.83	183.84	308.07	9233
930.00	3617.2	3384.9	7279	7353	85.56	183.30	307.23	9250
932.00	3625.5	3393.2	7282	7355	85.34	182.86	306.56	8365
934.00	3633.9	3401.6	7284	7358	85.12	182.44	305.91	8329
936.00	3642.4	3410.1	7286	7360	84.90	181.99	305.22	8524
938.00	3650.8	3418.5	7289	7363	84.68	181.55	304.55	8410
940.00	3659.1	3426.8	7291	7365	84.46	181.13	303.90	8353
942.00	3667.9	3435.6	7294	7368	84.23	180.66	303.18	8743
944.00	3676.4	3444.1	7297	7371	84.01	180.22	302.51	8497
946.00	3685.5	3453.2	7301	7375	83.75	179.71	301.72	9147
948.00	3693.8	3461.5	7303	7377	83.55	179.31	301.10	8272
950.00	3702.3	3470.0	7305	7379	83.33	178.87	300.43	8510
952.00	3710.7	3478.4	7308	7382	83.12	178.46	299.79	8374
954.00	3718.9	3486.6	7309	7384	82.92	178.06	299.18	8246
956.00	3727.7	3495.4	7313	7387	82.69	177.60	298.48	8760
958.00	3736.0	3503.7	7315	7389	82.49	177.20	297.85	8356
960.00	3744.3	3512.0	7317	7391	82.28	176.80	297.23	8296

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	23
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
962.00	3752.5	3520.2	7319	7393	82.09	176.41	296.64	8187		
964.00	3761.3	3529.0	7322	7396	81.86	175.96	295.94	8814		
966.00	3769.8	3537.5	7324	7398	81.66	175.55	295.30	8438		
968.00	3778.5	3546.2	7327	7401	81.44	175.11	294.63	8688		
970.00	3786.9	3554.6	7329	7403	81.24	174.71	294.00	8458		
972.00	3795.8	3563.5	7332	7407	81.01	174.26	293.31	8846		
974.00	3804.5	3572.2	7335	7410	80.80	173.83	292.64	8707		
976.00	3813.3	3581.0	7338	7413	80.58	173.39	291.97	8799		
978.00	3821.8	3589.5	7341	7415	80.38	172.98	291.33	8562		
980.00	3830.3	3598.0	7343	7418	80.18	172.58	290.71	8497		
982.00	3838.9	3606.6	7345	7420	79.97	172.18	290.08	8536		
984.00	3847.3	3615.0	7348	7422	79.78	171.78	289.47	8461		
986.00	3856.0	3623.7	7350	7425	79.57	171.37	288.83	8635		
988.00	3864.5	3632.2	7353	7427	79.38	170.98	288.22	8498		
990.00	3872.8	3640.5	7355	7429	79.19	170.59	287.63	8368		
992.00	3881.4	3649.1	7357	7432	78.99	170.20	287.01	8540		
994.00	3890.3	3658.0	7360	7435	78.78	169.77	286.34	8890		
996.00	3898.9	3666.6	7363	7438	78.57	169.37	285.72	8662		
998.00	3907.5	3675.2	7365	7440	78.38	168.97	285.10	8620		
1000.00	3916.4	3684.1	7368	7443	78.17	168.55	284.45	8817		
1002.00	3925.6	3693.3	7372	7447	77.94	168.10	283.73	9239		
1004.00	3934.4	3702.1	7375	7450	77.74	167.68	283.09	8841		
1006.00	3943.1	3710.8	7377	7453	77.54	167.29	282.47	8682		
1008.00	3951.6	3719.3	7380	7455	77.36	166.91	281.88	8488		

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COMPANY TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 24
1010.00	3960.2	3727.9	7382	7458	77.16	166.52	281.28	8605	
1012.00	3968.7	3736.4	7384	7460	76.98	166.16	280.71	8439	
1014.00	3977.3	3745.0	7387	7462	76.79	165.77	280.10	8668	
1016.00	3985.8	3753.5	7389	7464	76.61	165.40	279.53	8470	
1018.00	3994.6	3762.3	7392	7467	76.41	165.00	278.91	8800	
1020.00	4003.3	3771.0	7394	7470	76.22	164.62	278.30	8724	
1022.00	4012.1	3779.8	7397	7473	76.03	164.23	277.69	8732	
1024.00	4020.7	3788.4	7399	7475	75.84	163.85	277.09	8696	
1026.00	4030.0	3797.7	7403	7479	75.62	163.41	276.41	9267	
1028.00	4038.8	3806.5	7406	7482	75.43	163.02	275.80	8785	
1030.00	4047.7	3815.4	7409	7485	75.24	162.63	275.19	8880	
1032.00	4056.9	3824.6	7412	7488	75.03	162.21	274.52	9198	
1034.00	4066.1	3833.8	7415	7492	74.83	161.79	273.86	9177	
1036.00	4075.4	3843.1	7419	7496	74.61	161.36	273.19	9334	
1038.00	4085.0	3852.7	7423	7501	74.39	160.91	272.47	9572	
1040.00	4094.7	3862.4	7428	7505	74.17	160.45	271.74	9704	
1042.00	4104.4	3872.1	7432	7510	73.94	159.98	271.01	9760	
1044.00	4113.6	3881.3	7435	7514	73.74	159.58	270.37	9165	
1046.00	4123.1	3890.8	7439	7518	73.53	159.14	269.68	9517	
1048.00	4132.4	3900.1	7443	7522	73.32	158.72	269.02	9332	
1050.00	4141.9	3909.6	7447	7526	73.11	158.30	268.34	9466	
1052.00	4151.2	3918.9	7450	7530	72.91	157.88	267.69	9331	
1054.00	4160.6	3928.3	7454	7534	72.71	157.47	267.03	9381	
1056.00	4170.0	3937.7	7458	7538	72.51	157.06	266.38	9346	

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COMPANY : DELHI/SANTOS & PARTNERS									
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 25
1058.00	4179.1	3946.8	7461	7541	72.32	156.67	265.77	9135	
1060.00	4188.4	3956.1	7464	7545	72.12	156.27	265.14	9282	
1062.00	4198.3	3966.0	7469	7550	71.90	155.81	264.40	9960	
1064.00	4207.9	3975.6	7473	7555	71.69	155.39	263.73	9593	
1066.00	4217.4	3985.1	7477	7559	71.49	154.98	263.08	9462	
1068.00	4226.6	3994.3	7480	7562	71.30	154.60	262.48	9186	
1070.00	4236.3	4004.0	7484	7567	71.09	154.16	261.79	9767	
1072.00	4245.6	4013.3	7488	7570	70.90	153.78	261.18	9253	
1074.00	4255.0	4022.7	7491	7574	70.71	153.38	260.55	9411	
1076.00	4264.5	4032.2	7495	7578	70.51	152.98	259.91	9489	
1078.00	4273.5	4041.2	7498	7581	70.34	152.62	259.34	8981	
1080.00	4282.6	4050.3	7501	7584	70.16	152.26	258.77	9090	
1082.00	4291.7	4059.4	7504	7587	69.98	151.90	258.19	9132	
1084.00	4301.0	4068.7	7507	7591	69.80	151.52	257.59	9253	
1086.00	4310.2	4077.9	7510	7594	69.62	151.15	257.00	9270	
1088.00	4319.4	4087.1	7513	7597	69.44	150.79	256.42	9162	
1090.00	4328.6	4096.3	7516	7600	69.27	150.42	255.84	9204	
1092.00	4337.5	4105.2	7519	7603	69.10	150.09	255.31	8878	
1094.00	4346.8	4114.5	7522	7606	68.92	149.72	254.72	9300	
1096.00	4355.6	4123.3	7524	7609	68.76	149.39	254.20	8787	
1098.00	4364.5	4132.2	7527	7611	68.60	149.06	253.67	8901	
1100.00	4373.5	4141.2	7529	7614	68.43	148.71	253.12	9066	
1102.00	4382.1	4149.8	7531	7616	68.29	148.41	252.64	8531	
1104.00	4390.6	4158.3	7533	7618	68.14	148.11	252.17	8497	

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE	26
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
1106.00	4399.0	4166.7	7535	7619	68.00	147.82	251.71	8426		
1108.00	4407.3	4175.0	7536	7620	67.86	147.54	251.26	8297		
1110.00	4415.6	4183.3	7537	7622	67.72	147.26	250.81	8295		
1112.00	4424.0	4191.7	7539	7623	67.58	146.96	250.35	8451		
1114.00	4432.2	4199.9	7540	7624	67.45	146.70	249.93	8154		
1116.00	4440.2	4207.9	7541	7625	67.32	146.44	249.52	7995		
1118.00	4448.1	4215.8	7542	7626	67.20	146.18	249.12	7960		
1120.00	4456.2	4223.9	7543	7626	67.07	145.92	248.71	8083		
1122.00	4464.9	4232.6	7545	7628	66.93	145.62	248.23	8643		
1124.00	4474.0	4241.7	7547	7631	66.76	145.29	247.70	9098		
1126.00	4483.7	4251.4	7551	7635	66.58	144.91	247.09	9737		
1128.00	4494.0	4261.7	7556	7641	66.37	144.48	246.40	10305		
1130.00	4504.5	4272.2	7561	7647	66.16	144.04	245.68	10553		
1132.00	4515.4	4283.1	7567	7654	65.93	143.57	244.92	10867		
1134.00	4526.3	4294.0	7573	7661	65.71	143.11	244.17	10841		
1136.00	4536.8	4304.5	7578	7667	65.50	142.67	243.46	10590		
1138.00	4547.2	4314.9	7583	7673	65.30	142.25	242.79	10381		
1140.00	4557.7	4325.4	7588	7678	65.09	141.82	242.10	10451		
1142.00	4569.1	4336.8	7595	7687	64.85	141.32	241.29	11423		
1144.00	4579.5	4347.2	7600	7692	64.65	140.90	240.61	10431		
1146.00	4589.9	4357.6	7605	7698	64.46	140.50	239.96	10339		
1148.00	4600.9	4368.6	7611	7705	64.24	140.04	239.21	11026		
1150.00	4611.1	4378.8	7615	7710	64.05	139.64	238.58	10214		
1152.00	4621.4	4389.1	7620	7715	63.86	139.25	237.94	10337		

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PAGE 27									
COMPANY : DELHI/SANTOS & PARTNERS	WELL RMS	: KIDMAN 5							
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
1154.00	4631.3	4399.0	7624	7719	63.69	138.89	237.36	9831	
1156.00	4641.3	4409.0	7628	7724	63.51	138.52	236.76	10020	
1158.00	4651.2	4418.9	7632	7728	63.33	138.16	236.18	9931	
1160.00	4661.3	4429.0	7636	7733	63.16	137.79	235.58	10064	
1162.00	4671.4	4439.1	7640	7737	62.98	137.42	234.99	10063	
1164.00	4681.5	4449.2	7645	7742	62.80	137.05	234.39	10143	
1166.00	4691.8	4459.5	7649	7747	62.62	136.67	233.78	10252	
1168.00	4701.9	4469.6	7653	7752	62.45	136.30	233.18	10127	
1170.00	4712.1	4479.8	7658	7757	62.27	135.93	232.58	10211	
1172.00	4722.4	4490.1	7662	7762	62.09	135.56	231.97	10342	
1174.00	4733.1	4500.8	7667	7768	61.90	135.16	231.32	10655	
1176.00	4744.1	4511.8	7673	7774	61.69	134.73	230.63	10976	
1178.00	4756.2	4523.9	7681	7784	61.45	134.22	229.79	12131	
1180.00	4768.1	4535.8	7688	7793	61.21	133.73	228.99	11882	
1182.00	4779.6	4547.3	7694	7800	60.99	133.27	228.24	11563	
1184.00	4791.4	4559.1	7701	7809	60.77	132.79	227.47	11757	
1186.00	4803.2	4570.9	7708	7817	60.54	132.32	226.69	11802	
1188.00	4815.4	4583.1	7716	7827	60.30	131.81	225.86	12234	
1190.00	4827.0	4594.7	7722	7835	60.09	131.37	225.13	11572	
1192.00	4839.0	4606.7	7729	7843	59.86	130.89	224.35	11959	
1194.00	4850.8	4618.5	7736	7852	59.65	130.43	223.60	11787	
1196.00	4862.6	4630.3	7743	7860	59.43	129.97	222.85	11836	
1198.00	4874.3	4642.0	7750	7868	59.21	129.52	222.12	11743	
1200.00	4886.3	4654.0	7757	7877	58.99	129.06	221.36	11983	

00206

COMPANY : DELHI/SANTOS & PARTNERS					WELL : KIDMAN 5				PAGE	28
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
1202.00	4898.7	4666.4	7764	7886	58.76	128.57	220.55	12338		
1204.00	4910.9	4678.6	7772	7896	58.53	128.09	219.76	12272		
1206.00	4923.7	4691.4	7780	7906	58.29	127.57	218.91	12773		
1208.00	4936.4	4704.1	7788	7916	58.05	127.06	218.08	12721		
1210.00	4948.4	4716.1	7795	7925	57.83	126.61	217.34	12011		
1212.00	4960.3	4728.0	7802	7933	57.63	126.18	216.63	11832		
1214.00	4972.3	4740.0	7809	7941	57.42	125.73	215.90	12019		
1216.00	4984.5	4752.2	7816	7950	57.20	125.28	215.15	12212		
1218.00	4996.8	4764.5	7823	7960	56.98	124.82	214.40	12311		
1220.00	5009.3	4777.0	7831	7969	56.76	124.35	213.63	12468		
1222.00	5022.1	4789.8	7839	7979	56.53	123.85	212.81	12863		
1224.00	5034.2	4801.9	7846	7988	56.32	123.42	212.10	12079		
1226.00	5046.7	4814.4	7854	7997	56.11	122.96	211.35	12467		
1228.00	5058.8	4826.5	7861	8006	55.90	122.53	210.64	12171		
1230.00	5071.1	4838.8	7868	8015	55.70	122.09	209.92	12266		
1232.00	5083.2	4850.9	7875	8023	55.50	121.67	209.22	12132		
1234.00	5095.7	4863.4	7882	8032	55.29	121.23	208.49	12436		
1236.00	5108.1	4875.8	7890	8041	55.08	120.79	207.77	12412		
1238.00	5120.8	4888.5	7897	8051	54.87	120.34	207.02	12681		
1240.00	5133.5	4901.2	7905	8060	54.65	119.89	206.28	12680		
1242.00	5146.2	4913.9	7913	8070	54.44	119.43	205.52	12791		
1244.00	5159.1	4926.8	7921	8080	54.22	118.97	204.77	12840		
1246.00	5171.9	4939.6	7929	8090	54.01	118.52	204.02	12844		
1248.00	5184.8	4952.5	7937	8100	53.80	118.07	203.28	12887		

00207

COMPANY : DELHI/SANTOS & PARTNERS									PAGE	29
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
1250.00	5197.6	4965.3	7945	8110	53.59	117.63	202.55	12800		
1252.00	5210.2	4977.9	7952	8119	53.39	117.21	201.85	12533		
1254.00	5222.5	4990.2	7959	8127	53.20	116.80	201.18	12374		
1256.00	5235.1	5002.8	7966	8136	53.00	116.38	200.49	12557		
1258.00	5247.4	5015.1	7973	8145	52.82	115.99	199.83	12341		
1260.00	5259.7	5027.4	7980	8153	52.63	115.59	199.18	12326		
1262.00	5272.3	5040.0	7987	8162	52.44	115.18	198.50	12579		
1264.00	5284.8	5052.5	7994	8170	52.25	114.78	197.84	12456		
1266.00	5297.3	5065.0	8002	8179	52.06	114.38	197.18	12514		
1268.00	5309.7	5077.4	8009	8187	51.88	113.99	196.53	12394		
1270.00	5322.6	5090.3	8016	8197	51.68	113.58	195.84	12895		
1272.00	5335.4	5103.1	8024	8206	51.49	113.17	195.16	12807		
1274.00	5347.6	5115.3	8030	8214	51.32	112.80	194.55	12229		
1276.00	5360.4	5128.1	8038	8223	51.13	112.39	193.88	12785		
1278.00	5373.2	5140.9	8045	8232	50.94	111.99	193.22	12779		
1280.00	5386.5	5154.2	8053	8243	50.74	111.56	192.50	13287		
1282.00	5399.5	5167.2	8061	8252	50.55	111.16	191.83	12988		
1284.00	5412.9	5180.6	8069	8263	50.34	110.72	191.11	13445		
1286.00	5426.2	5193.9	8078	8273	50.15	110.30	190.40	13333		
1288.00	5439.6	5207.3	8086	8284	49.95	109.88	189.70	13412		
1290.00	5452.8	5220.5	8094	8293	49.76	109.47	189.03	13121		
1292.00	5466.4	5234.1	8102	8304	49.56	109.04	188.31	13594		
1294.00	5479.6	5247.3	8110	8314	49.37	108.64	187.64	13223		
1296.00	5492.5	5260.2	8118	8323	49.19	108.26	187.01	12905		

00208

COMPANY : DELHI/SANTOS & PARTNERS				WELL		: KIDMAN 5		PAGE		30
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S		
1298.00	5505.3	5273.0	8125	8332	49.02	107.89	186.39	12777		
1300.00	5518.2	5285.9	8132	8341	48.84	107.51	185.76	12963		
1302.00	5531.5	5299.2	8140	8351	48.65	107.11	185.10	13299		
1304.00	5544.9	5312.6	8148	8361	48.47	106.71	184.43	13413		
1306.00	5558.9	5326.6	8157	8372	48.27	106.28	183.71	13917		
1308.00	5573.0	5340.7	8166	8384	48.06	105.85	182.98	14103		
1310.00	5586.7	5354.4	8175	8395	47.87	105.43	182.30	13772		
1312.00	5600.5	5368.2	8183	8406	47.68	105.02	181.61	13782		
1314.00	5614.8	5382.5	8193	8418	47.47	104.59	180.88	14291		
1316.00	5628.8	5396.5	8201	8429	47.28	104.17	180.18	14024		
1318.00	5641.9	5409.6	8209	8438	47.11	103.81	179.58	13051		
1320.00	5653.6	5421.3	8214	8444	46.98	103.52	179.11	11713		
1322.00	5665.3	5433.0	8219	8450	46.85	103.24	178.64	11660		
1324.00	5676.8	5444.5	8224	8455	46.72	102.97	178.18	11497		
1326.00	5688.4	5456.1	8229	8461	46.59	102.69	177.72	11667		
1328.00	5700.7	5468.4	8235	8468	46.45	102.38	177.21	12232		
1330.00	5712.7	5480.4	8241	8474	46.31	102.09	176.72	12045		
1332.00	5725.1	5492.8	8247	8482	46.16	101.78	176.20	12392		
1334.00	5737.5	5505.2	8254	8489	46.02	101.47	175.68	12401		
1336.00	5750.2	5517.9	8260	8497	45.87	101.15	175.14	12732		
1338.00	5763.5	5531.2	8268	8506	45.70	100.80	174.56	13300		
1340.00	5776.8	5544.5	8275	8515	45.54	100.45	173.98	13236		
1342.00	5790.2	5557.9	8283	8524	45.38	100.09	173.38	13466		
1344.00	5803.4	5571.1	8290	8533	45.22	99.76	172.82	13125		

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COMPANY : DELHI/SANTOS & PARTNERS	WELL : KIDMAN 5								
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
1346.00	5816.1	5583.8	8297	8541	45.08	99.45	172.30	12728	
1348.00	5828.6	5596.3	8303	8548	44.94	99.15	171.79	12535	
1350.00	5841.2	5608.9	8309	8556	44.80	98.84	171.29	12559	
1352.00	5854.5	5622.2	8317	8564	44.64	98.51	170.73	13295	
1354.00	5868.0	5635.7	8324	8574	44.48	98.17	170.15	13499	
1356.00	5881.3	5649.0	8332	8583	44.32	97.83	169.59	13371	
1358.00	5895.0	5662.7	8340	8593	44.16	97.48	169.01	13669	
1360.00	5908.6	5676.3	8347	8602	44.00	97.14	168.43	13586	
1362.00	5921.8	5689.5	8355	8611	43.86	96.82	167.90	13181	
1364.00	5935.5	5703.2	8362	8620	43.70	96.48	167.32	13735	
1366.00	5949.5	5717.2	8371	8631	43.53	96.13	166.73	13950	
1368.00	5963.2	5730.9	8379	8640	43.37	95.79	166.16	13772	
1370.00	5977.5	5745.2	8387	8651	43.21	95.42	165.54	14313	
1372.00	5991.1	5758.8	8395	8661	43.05	95.09	164.99	13587	
1374.00	6004.3	5772.0	8402	8669	42.91	94.79	164.49	13132	
1376.00	6017.0	5784.7	8408	8676	42.78	94.51	164.01	12689	
1378.00	6030.9	5798.6	8416	8686	42.63	94.18	163.45	13900	
1380.00	6044.5	5812.2	8424	8695	42.48	93.85	162.91	13668	
1382.00	6058.0	5825.7	8431	8704	42.33	93.54	162.39	13434	
1384.00	6072.4	5840.1	8439	8715	42.17	93.19	161.79	14443	
1386.00	6086.7	5854.4	8448	8725	42.01	92.84	161.21	14304	
1388.00	6100.9	5868.6	8456	8736	41.85	92.51	160.64	14173	
1390.00	6115.1	5882.8	8465	8746	41.70	92.17	160.07	14269	
1392.00	6129.5	5897.2	8473	8757	41.54	91.82	159.49	14386	

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COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	DELHI/SANTOS & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 32
1394.00	6143.8	5911.5	8481	8767	41.38	91.49	158.93	14246	
1396.00	6158.0	5925.7	8489	8777	41.23	91.16	158.38	14188	
1398.00	6172.4	5940.1	8498	8788	41.08	90.83	157.81	14388	
1400.00	6186.5	5954.2	8506	8798	40.93	90.51	157.27	14112	
1402.00	6200.7	5968.4	8514	8808	40.78	90.18	156.73	14254	
1404.00	6215.3	5983.0	8523	8819	40.62	89.85	156.16	14576	
1406.00	6229.8	5997.5	8531	8830	40.47	89.52	155.60	14479	
1408.00	6244.2	6011.9	8540	8840	40.32	89.19	155.05	14425	
1410.00	6258.7	6026.4	8548	8851	40.17	88.87	154.50	14479	
1412.00	6273.2	6040.9	8557	8861	40.02	88.54	153.95	14545	
1414.00	6287.9	6055.6	8565	8872	39.87	88.22	153.40	14671	
1416.00	6302.6	6070.3	8574	8883	39.72	87.89	152.84	14699	
1418.00	6317.4	6085.1	8583	8894	39.56	87.56	152.28	14844	
1420.00	6331.6	6099.3	8591	8904	39.42	87.25	151.77	14210	
1422.00	6346.1	6113.8	8599	8914	39.28	86.94	151.25	14488	
1424.00	6360.9	6128.6	8608	8925	39.13	86.62	150.71	14748	
1426.00	6375.1	6142.8	8615	8935	39.00	86.33	150.21	14217	
1428.00	6385.8	6153.5	8618	8938	38.92	86.16	149.93	10706	
1430.00	6398.9	6166.6	8625	8945	38.80	85.91	149.51	13099	
1432.00	6411.9	6179.6	8631	8952	38.69	85.67	149.10	13046	
1434.00	6424.6	6192.3	8636	8958	38.59	85.44	148.71	12610	
1436.00	6437.5	6205.2	8642	8965	38.48	85.21	148.31	12924	
1438.00	6451.0	6218.7	8649	8973	38.36	84.95	147.88	13531	
1440.00	6463.5	6231.2	8654	8978	38.26	84.73	147.51	12450	

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COMPANY : DELHI/SANTOS & PARTNERS									
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 33
1442.00	6475.9	6243.6	8660	8984	38.16	84.51	147.14	12460	
1444.00	6488.9	6256.6	8666	8991	38.05	84.28	146.75	12937	
1446.00	6501.8	6269.5	8672	8998	37.94	84.05	146.36	12938	
1448.00	6514.2	6281.9	8677	9003	37.85	83.84	146.00	12433	
1450.00	6524.2	6291.9	8678	9005	37.78	83.70	145.77	9976	
1452.00	6538.1	6305.8	8686	9013	37.66	83.44	145.33	13873	
1454.00	6549.1	6316.8	8689	9016	37.59	83.28	145.05	11064	
1456.00	6560.5	6328.2	8693	9020	37.51	83.10	144.76	11347	
1458.00	6572.5	6340.2	8697	9025	37.42	82.91	144.43	12043	
1460.00	6584.1	6351.8	8701	9029	37.33	82.73	144.13	11549	
1462.00	6595.9	6363.6	8705	9033	37.25	82.55	143.82	11817	
1464.00	6608.5	6376.2	8711	9039	37.15	82.34	143.46	12557	
1466.00	6620.5	6388.2	8715	9044	37.06	82.14	143.14	12075	
1468.00	6632.6	6400.3	8720	9048	36.97	81.95	142.82	12065	
1470.00	6644.7	6412.4	8724	9053	36.89	81.76	142.49	12088	
1472.00	6657.1	6424.8	8729	9059	36.79	81.56	142.15	12393	
1474.00	6670.4	6438.1	8736	9066	36.69	81.33	141.77	13301	
1476.00	6682.5	6450.2	8740	9071	36.60	81.14	141.44	12159	
1478.00	6690.2	6457.9	8739	9069	36.57	81.07	141.32	7656	
1480.00	6702.1	6469.8	8743	9073	36.48	80.89	141.02	11861	
1482.00	6714.6	6482.3	8748	9079	36.39	80.69	140.68	12525	
1484.00	6726.7	6494.4	8753	9084	36.31	80.51	140.36	12135	
1486.00	6738.9	6506.6	8757	9088	36.22	80.32	140.05	12149	
1488.00	6751.7	6519.4	8763	9094	36.13	80.11	139.70	12843	

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COMPANY : DELHI/SANTOS & PARTNERS									PAGE
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: KIDMAN 5 FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	34
1490.00	6765.5	6533.2	8769	9102	36.02	79.88	139.30	13780	
1492.00	6779.2	6546.9	8776	9110	35.91	79.64	138.90	13742	
1494.00	6792.9	6560.6	8783	9118	35.80	79.41	138.50	13715	
1496.00	6806.7	6574.4	8789	9126	35.69	79.17	138.10	13803	
1498.00	6820.3	6588.0	8796	9133	35.59	78.95	137.72	13553	
1500.00	6834.0	6601.7	8802	9141	35.49	78.72	137.34	13677	
1502.00	6846.7	6614.4	8807	9146	35.40	78.53	137.00	12747	
1504.00	6860.4	6628.1	8814	9154	35.29	78.30	136.62	13665	
1506.00	6873.9	6641.6	8820	9161	35.19	78.08	136.25	13551	
1508.00	6888.0	6655.7	8827	9169	35.08	77.85	135.85	14023	
1510.00	6902.3	6670.0	8834	9178	34.97	77.61	135.44	14338	
1512.00	6916.3	6684.0	8841	9186	34.87	77.38	135.05	13954	
1514.00	6930.3	6698.0	8848	9194	34.76	77.15	134.66	14040	
1516.00	6944.4	6712.1	8855	9202	34.66	76.92	134.26	14120	
1518.00	6958.5	6726.2	8862	9211	34.55	76.69	133.87	14126	
1520.00	6972.6	6740.3	8869	9219	34.45	76.46	133.49	14041	
1522.00	6986.6	6754.3	8876	9227	34.34	76.24	133.10	14011	
1524.00	7000.6	6768.3	8882	9234	34.24	76.01	132.73	13998	
1526.00	7014.5	6782.2	8889	9242	34.14	75.80	132.36	13895	
1528.00	7028.5	6796.2	8896	9250	34.04	75.58	131.98	14048	
1530.00	7041.4	6809.1	8901	9256	33.96	75.39	131.67	12841	
1532.00	7054.8	6822.5	8907	9262	33.86	75.19	131.32	13472	
1534.00	7069.1	6836.8	8914	9271	33.76	74.97	130.94	14223	
1536.00	7083.7	6851.4	8921	9280	33.65	74.73	130.54	14639	

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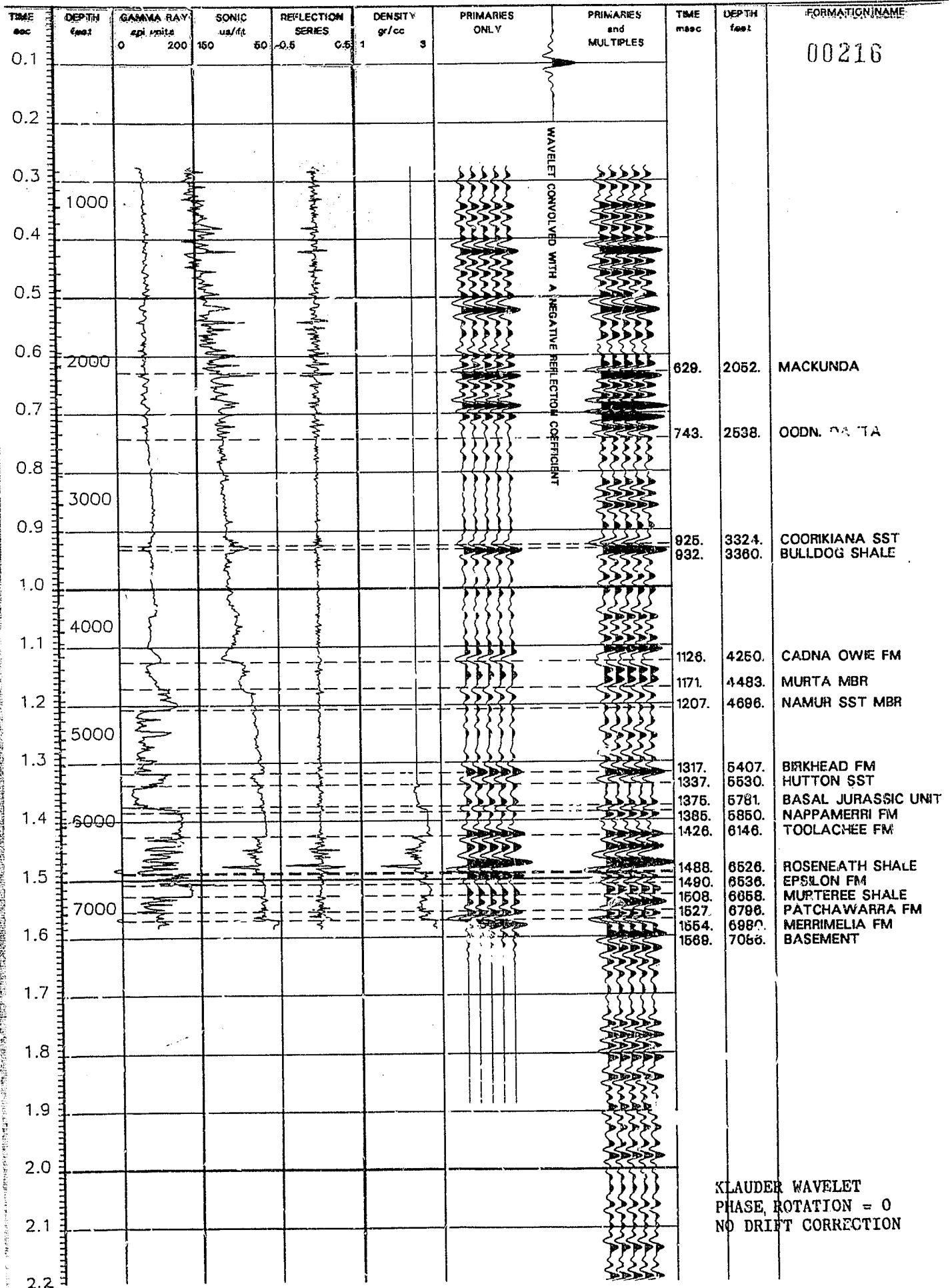
PAGE 35									
COMPANY : DELHI/SANTOS & PARTNERS	WELL : KIDMAN 5								
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
1538.00	7097.3	6865.0	8927	9286	33.56	74.53	130.20	13581	
1540.00	7110.4	6878.1	8933	9292	33.48	74.35	129.88	13146	
1542.00	7123.9	6891.6	8939	9299	33.39	74.15	129.55	13494	
1544.00	7137.9	6905.6	8945	9307	33.29	73.94	129.19	13981	
1546.00	7151.6	6919.3	8951	9314	33.20	73.74	128.85	13671	
1548.00	7165.8	6933.5	8958	9322	33.10	73.53	128.48	14208	
1550.00	7178.8	6946.5	8963	9327	33.02	73.35	128.18	13058	
1552.00	7193.6	6961.3	8971	9337	32.91	73.12	127.79	14757	
1554.00	7206.3	6974.0	8976	9342	32.84	72.95	127.50	12735	
1556.00	7219.9	6987.6	8981	9348	32.75	72.76	127.17	13565	
1558.00	7233.8	7001.5	8988	9356	32.66	72.56	126.83	13903	
1560.00	7247.8	7015.5	8994	9363	32.57	72.36	126.49	13958	
1562.00	7261.2	7028.9	9000	9369	32.48	72.17	126.18	13452	
1564.00	7275.2	7042.9	9006	9377	32.39	71.97	125.84	13995	
1566.00	7286.9	7054.6	9010	9380	32.33	71.84	125.60	11720	
1568.00	7300.5	7068.2	9016	9387	32.24	71.65	125.29	13524	
1570.00	7316.5	7084.2	9024	9398	32.12	71.39	124.85	16013	
1572.00	7335.2	7102.9	9037	9416	31.96	71.04	124.24	18780	
1574.00	7353.8	7121.5	9049	9433	31.81	70.71	123.66	18508	
1576.00	7372.4	7140.1	9061	9450	31.65	70.36	123.08	18655	
1578.00	7390.7	7158.4	9073	9467	31.51	70.04	122.53	18270	
1580.00	7407.5	7175.2	9083	9480	31.38	69.77	122.06	16806	
1582.00	7424.1	7191.8	9092	9492	31.26	69.51	121.61	16572	
1584.00	7440.6	7208.3	9101	9504	31.14	69.25	121.17	16551	

00214

Company: DELTA/SANTOS & PARTNERS
Well: KUDMAN #5
Field: KUDMAN
Location: LINE 71-YN STN:50.3

KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC * DENSITY
NO DRIFT CORRECTION APPLIED.

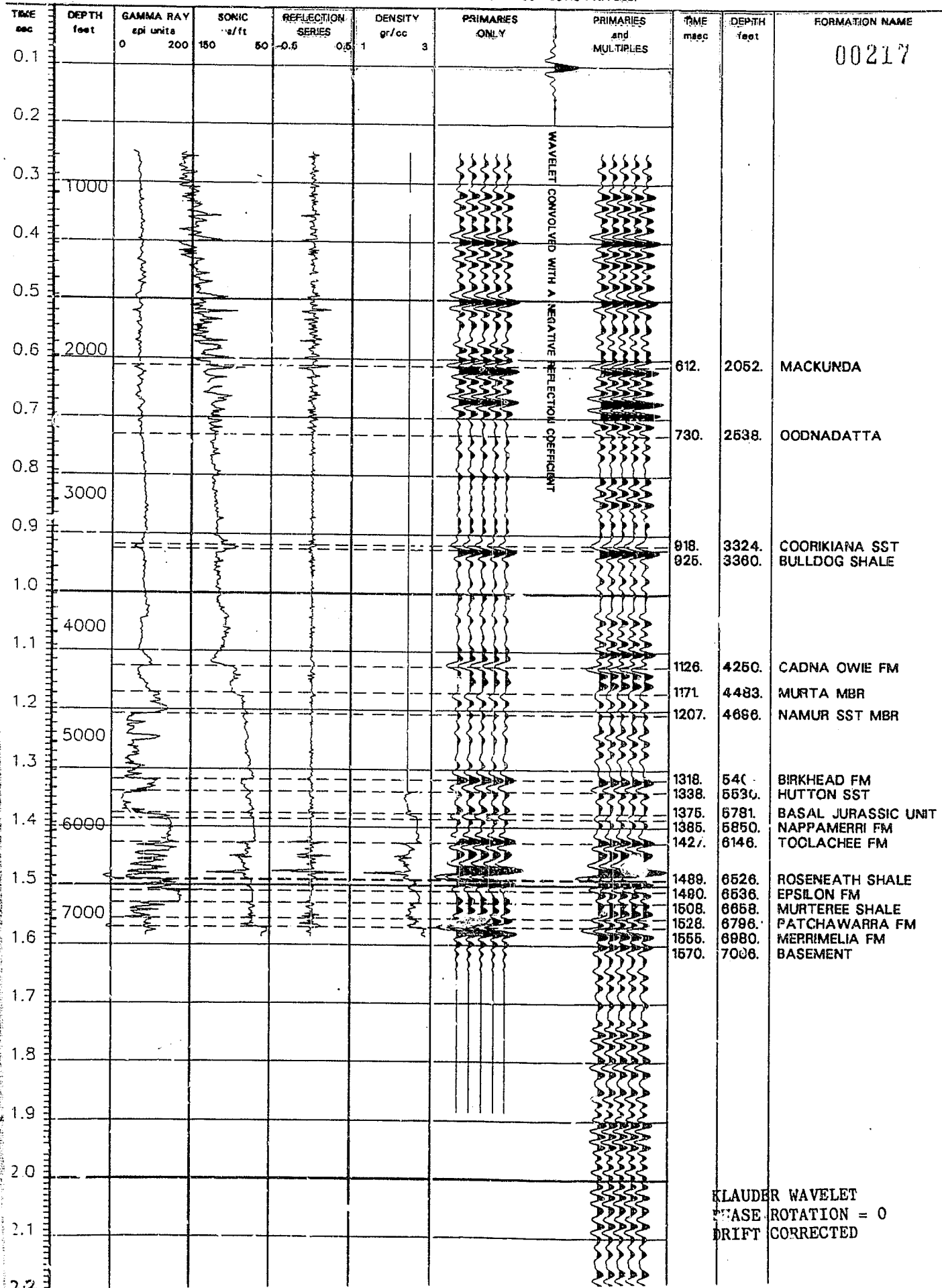
Schlumberger



Company: DELHI/SANTOS & PARTNERS
Well: KIDMAN #5
Field: KIDMAN
Location: LINE 71-YN STN:50.3

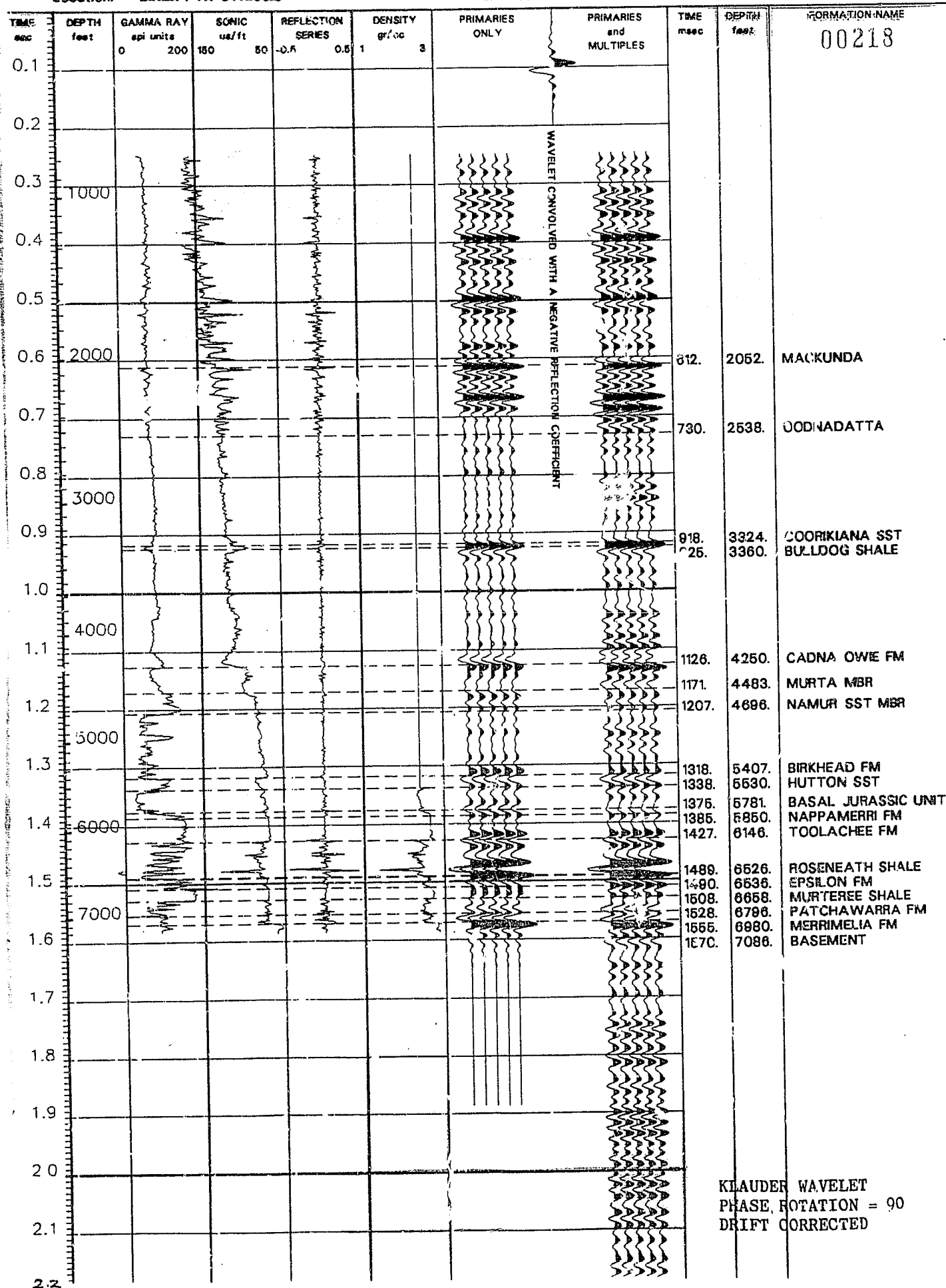
KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.

Schlumberger



Company: DELHI/SANTOS & PARTNERS
Well: KIDMAN #5
Field: KIDMAN
Location: LINE:71-YN STN:50.3

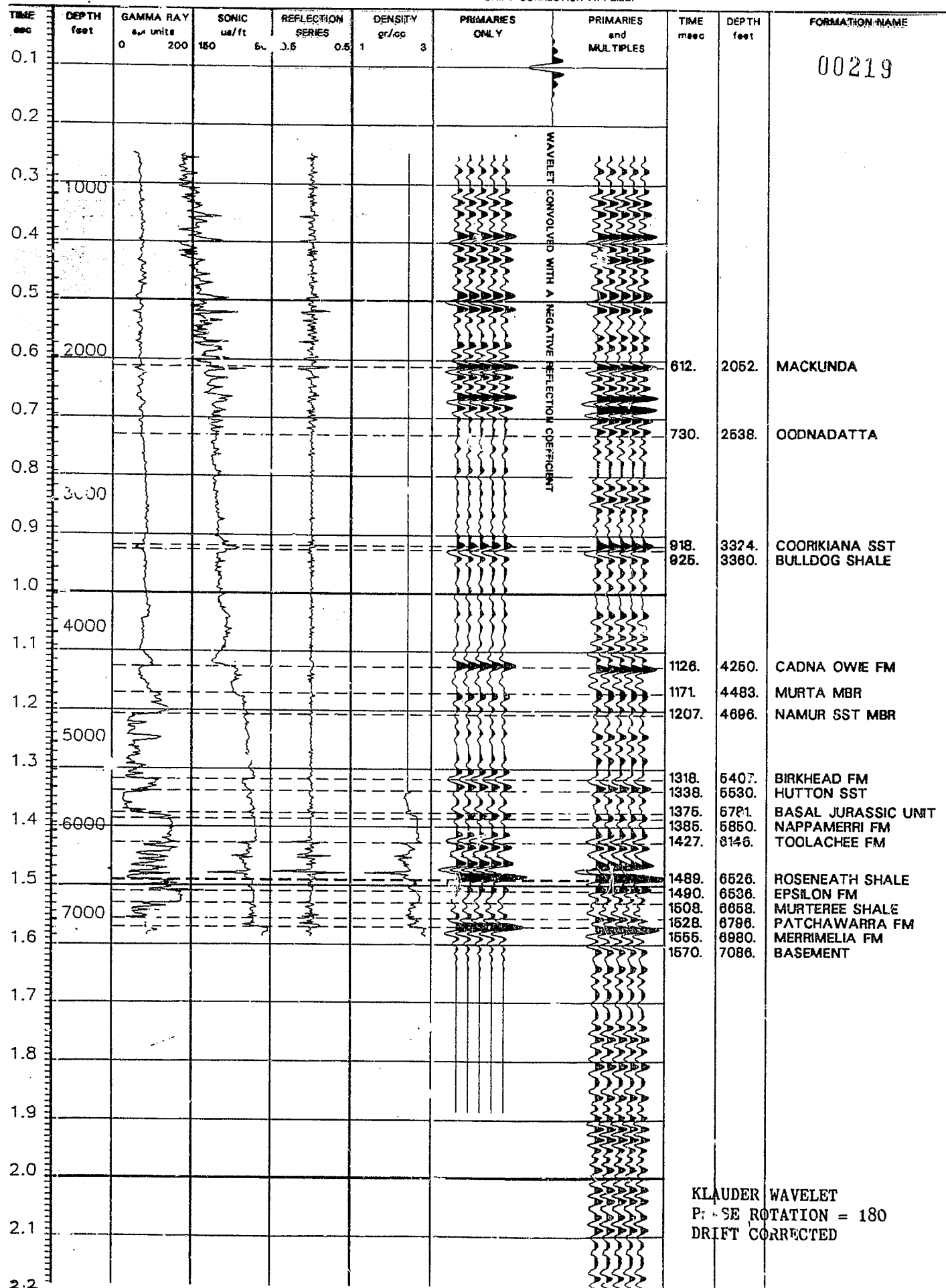
KLAUDER WAVELET
PHASE ROTATION = 90
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.



Company: DELHI/SANTOS & PARTNERS
Well: KIDMAN #5
Field: KIDMAN
Location: LINE 71-YN STN:50.3

KLAUDER WAVELET
PHASE ROTATION = 180
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.

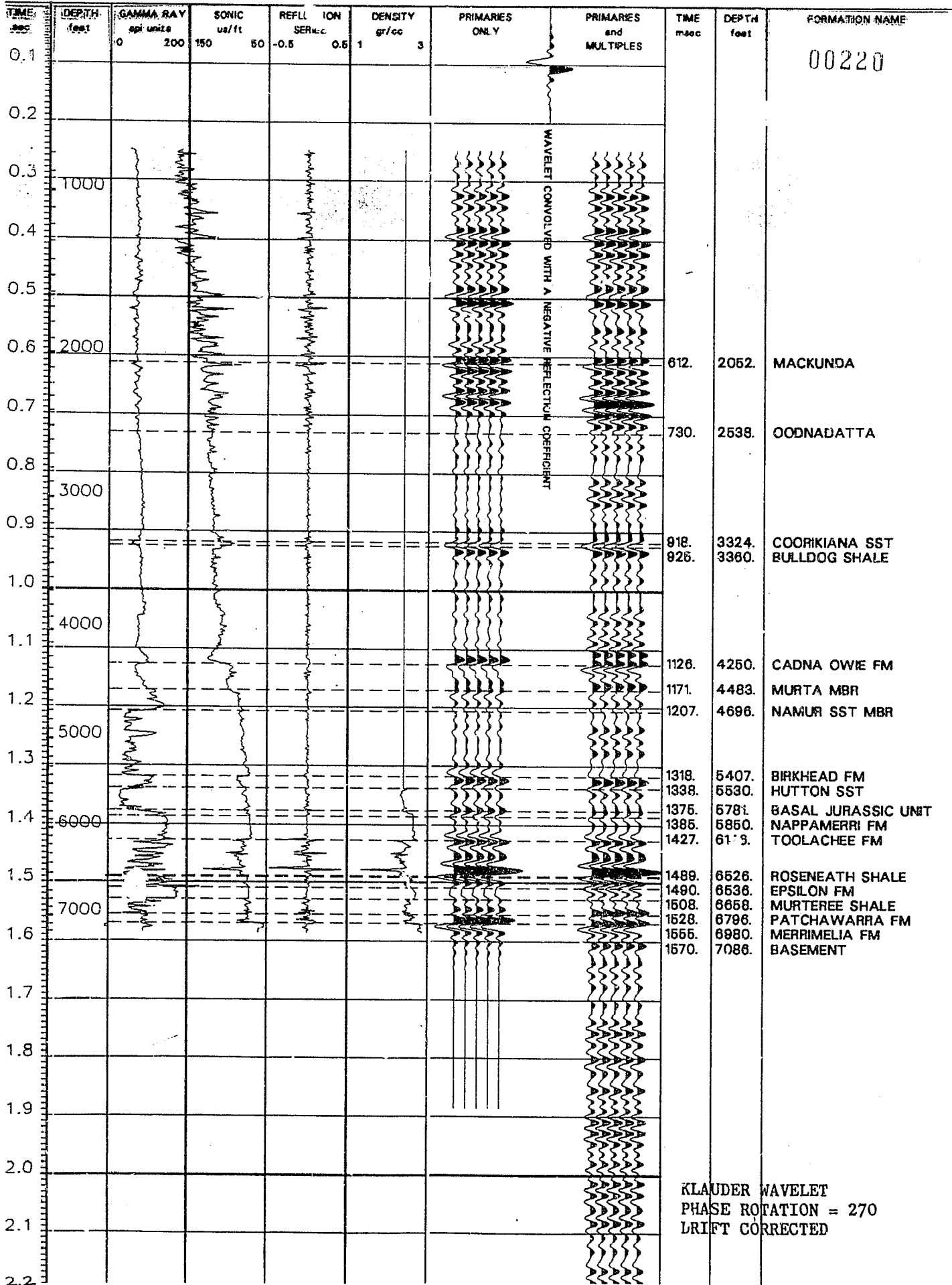
Schlumberger



Company: DELMONTES & PARTNERS
 Well: KIDMAN #5
 Field: KIDMAN
 Location: LINE 71-YN STN:50.3

KLAUDER WAVELET
 PHASE ROTATION = 270
 REFLECTION SERIES FROM SONIC * DENSITY
 DRIFT CORRECTION APPLIED.

Schlumberger



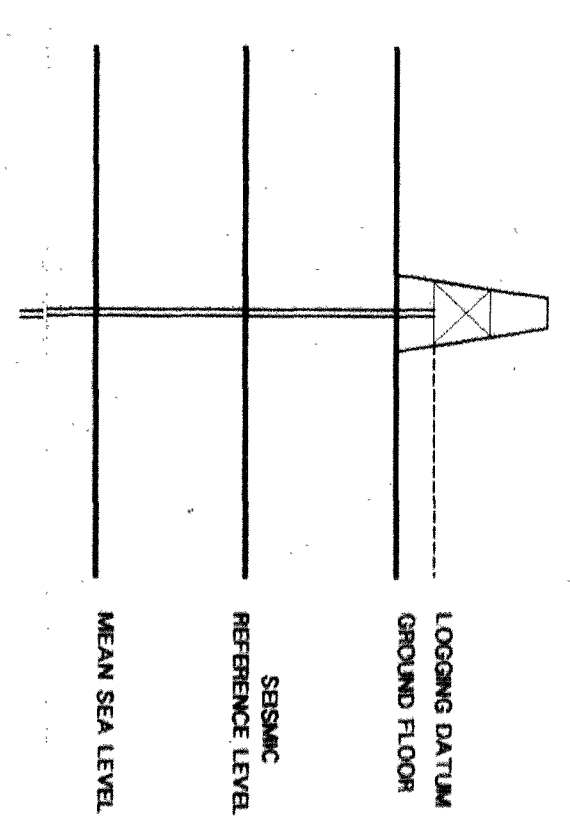
SEISMIC CALIBRATION LOG

(Adjusted Continuous Velocity Log)

Company:	DELTA/SANTOS & PARTNERS
Well:	KIDMAN #5
Field:	WILDCAT
Country:	AUSTRALIA
Reference No:	550181
Date Logged:	23 NOV 86
Location:	028° 13' 49.0" S 140° 46' 37.6" E
Elevations:	KB: 232.3 ft DF: 231.3 ft QE: 216.3 ft
Permanent Datum:	MSL Depth Units: FEET
FIELD RECORDING ENGINEER:	J GOTYALKS
LOCATION:	LEI Program Version 28.4
COMPUTATION:	ANALYST BUTENWORTH/CARR
	F.A.J. Baskette
	14-1154

ELEVATION ABOVE MEAN SEA LEVEL

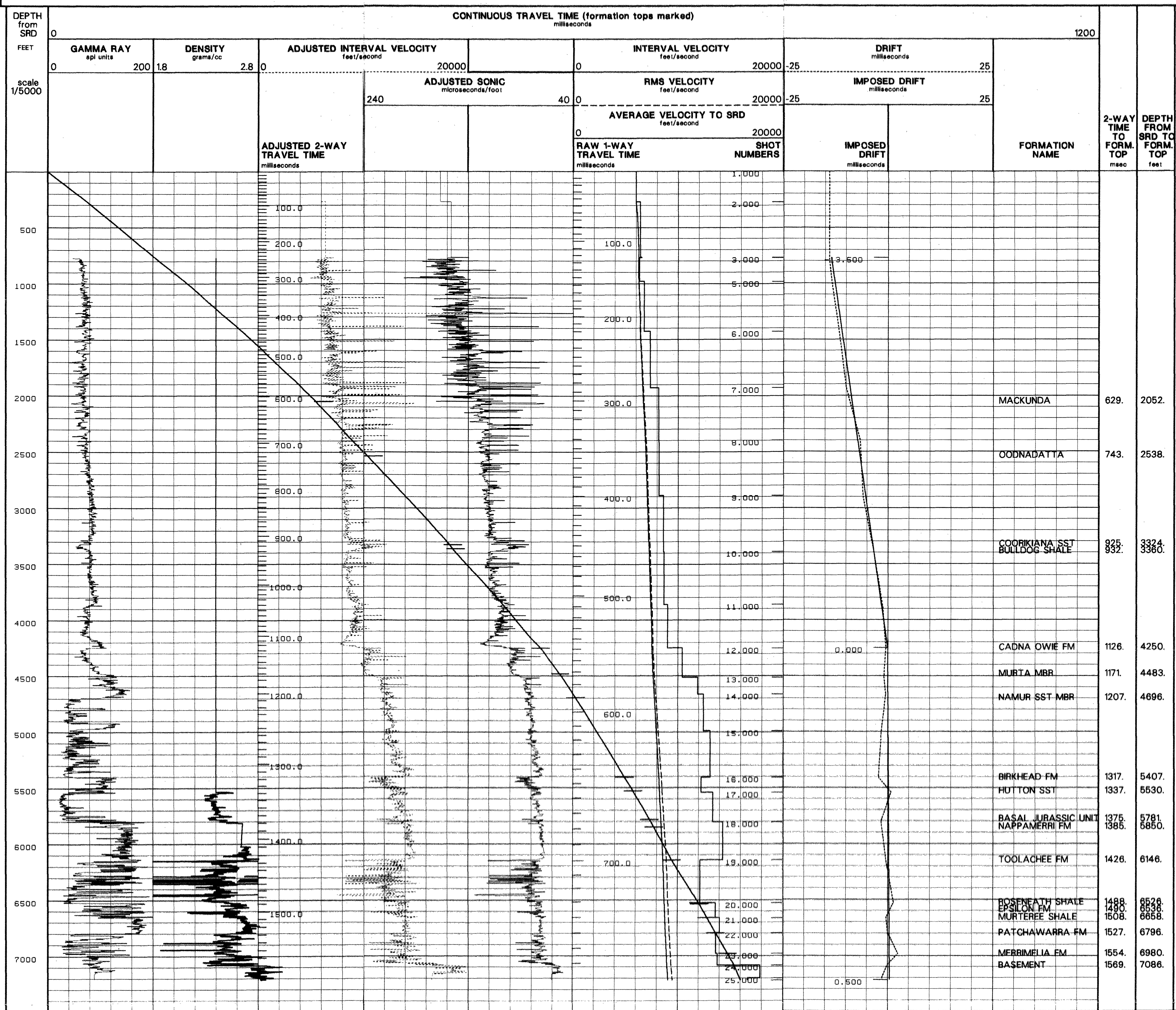
Logging Datum:	232.3 ft
Seismic Reference Datum:	MSL
Ground Level (floor)	215.3 ft



Total Number of VSP Levels 24 (232 - 6430 ft below KB)

VSP		USDRM Reference		SRD		SRD	
Run	Time	Reference					
Run	Date	Test Type		Br/Sw/Depth	Camp Sw/Depth	Twp Depth	Bottom Depth
1	23/07/86	SLS		12.25' @ 102 ft	9.625' @ 102 ft	1004 ft	7438
				8.8' @ 7430 ft			
VSP	Date	Gain Offset	Hydro. Offset	Gain Elevation	Hydrophone Elevation	Gain Armitt	Hydro Armitt
1	23 NOV 86	131.8 ft	131.8 ft	209.5 ft above SBD	209.5 ft above SBD	0'	0'

FOLD HERE



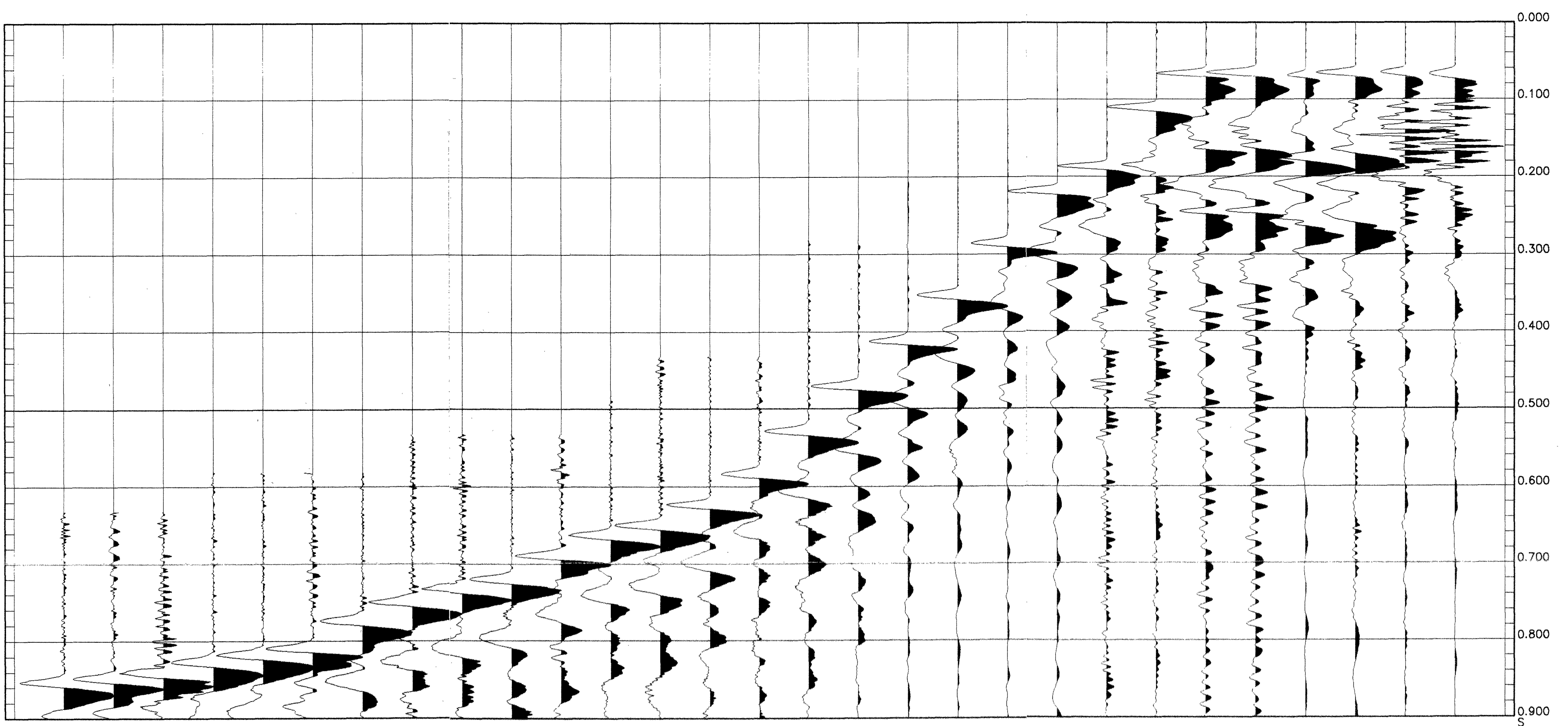
	Company	DELHI/SANTOS & PARTNERS
	Well	KIDMAN #5
	Field	WILDCAT

CLIENT : DELHI/SANTOS & PTRNRS
WELL : KIDMAN 5
LOCATION : STN:50.3 LINE:71--YN

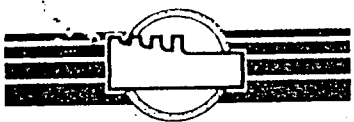
STACKED DATA

SHOTS WITH LOW SIGNAL/NOISE
RATIO HAVE BEEN ELIMINATED PRIOR
TO STACKING

RAW DEPTH	TRANSIT TIME	SOURCE OFFSET	LEVEL NO	MIN AMPLITUDE	MAX AMPLITUDE
232.0	0.056	60.8	29	-11224.831	10919.171
232.0	0.056	80.6	28	-8249.175	8294.825
232.0	0.057	100.5	27	-9240.994	11655.008
232.0	0.060	131.9	26	-11193.189	16742.814
232.0	0.056	131.9	25	-13017.154	9982.846
232.0	0.057	131.9	24	-10776.969	8935.033
500.0	0.100	131.9	23	-9143.505	6572.497
1000.0	0.176	131.9	22	-3653.801	2496.200
1212.0	0.209	131.9	21	-2744.616	2055.384
1662.0	0.275	131.9	20	-1938.110	2671.890
2160.0	0.342	131.9	19	-980.411	1208.589
2630.0	0.401	131.9	18	-883.875	1120.125
3124.0	0.460	131.9	17	-824.179	656.821
3620.0	0.518	131.9	16	-397.791	444.209
4096.0	0.573	131.9	15	-293.877	385.123
4482.0	0.615	131.9	14	-296.602	335.732
4748.0	0.640	131.9	13	-287.804	312.196
4898.0	0.653	131.9	12	-237.873	278.127
5233.0	0.678	131.9	11	-294.064	315.936
5640.0	0.709	131.9	10	-175.627	206.373
5775.0	0.723	131.9	9	-148.121	179.879
6035.0	0.740	131.9	8	-146.747	167.253
6378.0	0.765	131.9	7	-31.266	152.734
6758.0	0.798	131.9	6	-179.579	190.421
6892.0	0.806	131.9	5	-123.174	130.826
7027.0	0.816	131.9	4	-113.148	133.852
7213.0	0.832	131.9	3	-113.854	128.146
7318.0	0.837	131.9	2	-101.954	124.546
7430.0	0.842	131.9	1	-84.058	94.942



EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : Santos Ltd.

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 2

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 10th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Potter

DATE/TIME	DESCRIPTION OF EVENTS
10 th June 1993	
0800	M.I.R.U. wireline unit.
0915	R.I.H. with 1.75" B.B. Flow too strong to pass into Tubing. Contact field operator
1000	Choke well back to 10% R.I.H. with 1.75" B.B.
1033	P.B.T.D @ 6898' K.B. No obstructions. P.O.O.H.
1053	At surface, secure unit. Open well to 100% choke.
1100	Rig in separator to flow in line.
1130	Press test lines and vessel to F.T.H.P. (550 psi)
1200	Divert flow through separator. Commence L.E.T. Rate ①. Gas in line, 100% choke
1205	Engage 1.75" orifice plate.
11 th June 1993	
1030	Prepare gauges for F.G.S.
1121	R.I.H. with 2 x 5000psi. pressure element & 1 x Temp element and Perform F.G.S. Flow too strong to pass into tubing. P.O.O.H. Add 5' stem to toolstring.
1146	R.I.H. with B.H.P. gauges and perform F.G.S. Choke Back well to 80%
1244	Hang depth @ 6572' KB
1308	At surface. Both charts good
1330	Increase choke size to 100%

SEQUENCE OF EVENTS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 2 OF 2

WELL NAME: Kidman #5

FORMATION : Toolachee

DATE: 11th June 1993

TEST TYPE : 2-rate L.E.T # F.G.S.

OPR : B. Potter

DATE/TIME

DESCRIPTION OF EVENTS

11th June 1993

1600 L.E.T Rate ① completed. Bypass separator.

Depressure lines and Rig in separator to flow to flare.

1610 Decrease choke size to 80%, Divert well flow to flare pit, Bypass Sep.

1635 Decrease choke size to 25%

1700 Divert flow through separator. Commence Test Rate ②

Gas to flare. 2.00" ori face plate engaged.

Program F.T.H.P (2000 kPa) unobtainable due to High rate through separator.

12th June 1993

0600 Continue to monitor surface parameters.

1400 Prepare B.H.P gauges for F.G.S. Collect 2x0.5lt Water samples.

1442 R.I.H with B.H.P. gauges and Perform F.G.S. Choke Back well to 15%
to allow gauges through tubing due to High gas rate.

1614 At surface with B.H.P gauges. Both charts good.

1700 L.E.T rate ② completed. Bypass separator.

Shut in well and remove swab valve.

1710 Well back on line by production dept.

Rig out test equipment.

RATE #1

CHOKE: 100%

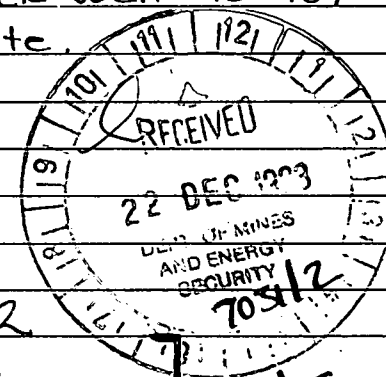
FTHP: 3810 kPa

Q_g: 91.593 E3m³/dQ_c: 5.046 m³/dQ_w: 16.701 m³/d

RATE #2

CHOKE: 25%

FTHP: 3089 kPa

Q_g: 96.721 E3m³/dQ_c: 3.845 m³/dQ_w: 17.382 m³/d

00222



FIELD READINGS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 3

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 10th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Potter

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE %	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN/GM)	OIL (IN/GM)	OIL API GRAVITY @ 60°F	WATER (IN/GM)	
10 th June 1993															
0800		M.I.R.U. wireline unit.													
0915		R.I.H. 1.75" B.B. Flow too strong to pass into tubing Contact field operator													
1000		Choke back well to 10% R.T.H. with 1.75" B.B.													
1033		P.B.T.D. @ 6898' KB. No obstructions. P.O.O.H.													
1058		At surface, secure unit. Open well to 100% choke													
1100		Rig in separator to flow in line.													
1130		Pressure Test lines and vessel to F.T.H.P. (550 psi)													
1200	0	3758	1310	71	100										
1205		Engage 1.75" orifice plate.									0.0	0.0		0.0	
1400	2	3841	1310	70	100	-	1.75"	513	60	126	7.0	0.5		6.5	
1600	4	3834	1310	72				503	63	126	13.5	1.5		12	
1800	6	3834	1317	72				503	64	131	20.75	3.5		17.25	
11 th June 1993															
0600	18	3792	827	71				500	64	126	61.5	12.25		49.25	
0800	20	3778	717	72				499	64	122	68.75	14.25		54.5	
1000	22	3778	627	73				499	64	124	75.5	16.25		59.25	
1030		Prepare gauges for F.G.S.													
1121		R.I.H. with B.H.P. gauges and perform F.G.S.													
		Unable to pass into tubing due to high flow rate. Add extra 5' stem.													



FIELD READINGS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 2 OF 3

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 11th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S.

OPR : B. Potter

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE op	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN/GM)	OIL (IN/GM)	OIL API GRAVITY @ 60°F	WATER (IN/GM)	
11 th June 1993															
1146		R.I.H. with B.H.P. gauges and perform F.G.S. Choke back well to 80%													
1200	24	3882	586	71	80	-	1.75"	496	60	122	82.0	17.25		64.75	
1308		At surface with B.H.P. gauges. Both charts good.													
1330		Increase choke size to 100%													
1400	26	3792	586	71	100	-	1.75"	498	64	122	89.25	19.25		70.0	
1600	28	3792	586	71	100		1.75"	498	64	118	95.0	20.25		74.75	
		L.E.T Rate ① completed. Bypass separator.													
		Depressure lines and rig in separator to flow to flare.													
1610		Decrease choke size to 80%, Divert well flow to flare pit. Bypass Separator													
1635		2213	414	70	Decrease choke size to 25%										
1700	29	2999	358	70	25	Divert flow through separator. Commence L.E.T rate ②									
		Gas to flare, 2.00" o.p. program F.T.H.P. (2000 kpa) unobtainable. Rate to large for Separator													
1800		3082	358	70	25	-	2.00"	222	85	108	98.5	20.25		78.25	
12 th June 1993															
0600	41	3130	345	71	↓		↓	235	68	108	138.0	27.5		110.5	
0800	43	3089	310	72				224	84	106	145.5	28.75		116.75	
1000	45	3027	214	71				202	95	99	151.5	29.75		121.75	
1200	47	3103	207	72				228	86	100	158.5	31.0		127.5	
1400	49	3103	172	72				230	85	100	164.75	32.25		132.5	
		Prepare B.H.P. Gauges for F.G.S.													
		Collect 2 x 0.5 Lt water samples as per program.													

00224

FIELD READINGS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 3 OF 3

WELL NAME: K; dman # 5

FORMATION : Toolachee

DATE: 12th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S.

OPR : B. Potter

[illegible]

TEST RESULTS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 2

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 10th June 1993

TEST TYPE : 2-rate L.E.T #

F.G.S

OPR : B. Potter

TIME		WELLHEAD DATA				Separator		FLOW RATES			CUMULATIVE PRODUCTION			L.G.R m ³ /10m ³	
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE %	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m ³ 10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	GAS MMSCF m ³ 10 ³	OIL BBLs m ³	WATER BBLs m ³		
10 th June 1993															
1200	0	3758	1310	71	100	Divert flow through separator Commence Test Rate ①									
1400	2	3841	1310	70	↓	3537	52	91.22	1.60	20.83	7.602	1.133	1.735	246	
1600	4	3834	1310	72		3468	52	92.49	3.20	17.62	15.309	4.400	3.203	225	
1800	6	3834	1317	72		3468	55	92.68	6.41	16.82	23.032	9.934	4.605	251	
11 th June 1993															
0600	18	3792	827	71	↓	3447	52	92.92	4.67	17.09	69.492	3.270	13.149	234	
0800	20	3778	717	72		3441	50	93.26	6.41	16.82	77.264	3.804	14.551	249	
1000	22	3778	627	73		3441	51	93.04	6.41	15.22	85.017	4.338	15.819	232	
1145	(3810)	Perform F.G.S as per program. Choke Back well to 80% to pass into tubing													
1200	24	3882	586	71	80	3420	50	90.00	3.20	17.62	92.517	4.605	17.287	231	
1330		Increase choke size to 100%													
1400	26	3792	586	71	100	3434	50	93.16	6.41	16.82	100.28	5.139	18.689	249	
1600	28	3792	586	71	100	3434	48	93.61	3.20	15.22	108.08	5.406	19.957	197	
		L.E.T Rate ① completed. Bypass separator. Rig sep to flow to flare													
1700	28	2999	358	70	25	Divert flow through separator. Commence Test Rate ②									
1800	29	3082	358	70	↓	1531	42	99.35	-	22.43	112.22	5.406	20.891	226	
12 th June 1993															
0600	41	3130	345	71		↓	1620	42	91.37	3.87	17.22	157.91	7.342	29.502	231
0800	43	3089	310	72			1544	41	99.41	4.01	20.02	166.19	7.676	31.171	242
1000	45	3027	214	71	1393		37	101.25	3.20	16.02	174.63	7.943	32.506	189	

TEST RESULTS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 2 OF 2

WELL NAME: Kidman #5

FORMATION : Toolachee

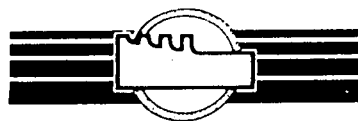
DATE: 12th June 1993

TEST TYPE : 2- rate L.E.T & F.G.S

OPR : B. Patter

[illegible]

EXPERTEST PTY. LTD.



GAS FLOW CALCULATIONS

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 2

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 10th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Patter

ORIFICE METER TYPE: Daniels Shr

STATIC PRESSURE RANGE : 0-1500 PSIG

GAS SPECIFIC GRAVITY (SG) = .787

METER RUN SIZE : 2.900"

DIFFERENTIAL PRESS. RANGE: 0-100 IN WC

FG $\sqrt{(1/SG)}$ = 1.1272

SEPARATOR NO : 238

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU x FG) = 27.053

DATE TIME	FLOW TIME (HOURS)	CHOKE SIZE %	STATIC PRESS P _F (PSIA)	DIFF PRESS H _W (IN WC)	GAS FLOW TEMP (°F)	ORIF. PLATE SIZE (IN)	$\sqrt{(P_F \times H_W)}$	C ₁ = F _B x F _{TF} x F _{PV} x Y ₂				C ₁	C (C = C ₁ x C ₂)	GAS FLOW RATE Q = $\sqrt{(P_F \times H_W) \times C}$	
								F _B	F _{TF}	F _{PV}	Y ₂			(MMSCFD)	(m ³ 10 ³ /D)
10 th June 1993															
1200	0	100	Commence Test . Rate ①												
1400	2		528	60	126	1.75"	177.94	674.44	.9420	1.0526	1.0006	669.156	18103.0	3.221	91.22
1600	4		518	63	126		180.60		.9420	1.0515	1.0006	668.504	18085.4	3.266	92.49
1800	6		518	64	131		182.03		.9380	1.0500	1.0006	664.645	17981.0	3.273	92.68
11 th June 1993															
0600	18		515	64	126		181.50		.9420	1.0512	1.0006	668.309	18080.1	3.281	92.92
0800	20		514	64	122		181.32		.9452	1.0524	1.0006	671.391	18163.5	3.293	93.26
1000	22		514	64	124		181.32		.9436	1.0517	1.0006	669.809	18120.7	3.285	93.04
1200	24	80	511	60	122		175.05		.9452	1.0521	1.0006	671.154	18157.1	3.178	90.00
1400	26	100	513	64	122		181.15		.9452	1.0523	1.0006	671.321	18161.6	3.289	93.16
1600	28	100	513	64	118		181.15		.9485	1.0537	1.0006	674.529	18248.4	3.305	93.61
			L.E.T Rate ① completed.												
1700	28	25	Commence Test Rate ②												
1800	29	25	237	85	108	2.00"	141.85	930.65	.9568	1.0251	1.0016	914.289	24734.7	3.508	99.35
12 th June 1993															
0600	41		250	68	108		130.31		.9568	1.0265	1.0012	915.222	24759.9	3.226	91.37
0800	43		239	84	106		141.61		.9585	1.0256	1.0015	916.347	24790.4	3.510	99.41
1000	45		217	95	99		143.49		.9644	1.0241	1.0019	921.109	24919.3	3.575	101.25

PAGE: 2 OF 2

DATE: 12th June 1993

OPR : B. Potter

GAS SPECIFIC GRAVITY (SG)	= 0.787
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FG	$\sqrt{(I/SG)}$	= 1.1272
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$$C_2 \quad (FU \times FG) = 27.053$$

00229

EXPERTEST PTY. LTD.



LIQUID PRODUCTION

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 2

WELL NAME: Kidman #5

FORMATION : Toolachee

DATE: 10th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Potter

TANK NUMBER	#1 = 70	TANK CAPACITY	#1 = 56.6 bbls/m ³	TANK SCALE	#1 = 2.67 m ³ /in bbls/in - m ³ /cm	OIL API GRAVITY = @ 60°F
	#2 =		#2 = bbls/m ³		#2 = bbls/in - m ³ /cm	

DATE TIME	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP (IN/GM)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (IN/GM)	TANK PRODUCTION (BBLS/m ³)	FLOW RATE (BPD/m ³ D)	CUMULATIVE PRODUCTION (BBLS/m ³)	TANK DIP (IN/GM)	TANK PRODUCTION (BBLS/m ³)	FLOW RATE (BPD/m ³ D)	CUMULATIVE PRODUCTION (BBLS/m ³)
10 th June 1993											
1200	0	#70	0.0	0.0	Initial oil dip			0.0	Initial water dip		
1400	2		7.0	0.5	.133	1.60	.133	6.5	1.735	20.83	1.735
1600	4		13.5	1.5	.267	3.20	.400	12	1.468	17.62	3.203
1800	6		20.75	3.5	.534	6.41	.934	17.25	1.402	16.82	4.605
11 th June 1993											
0600	18		61.5	12.25	2.336	4.67	3.270	49.25	8.544	17.09	13.149
0800	20		68.75	14.25	.534	6.41	3.804	54.5	1.402	16.82	14.551
1000	22		75.5	16.25	.534	6.41	4.338	59.25	1.268	15.22	15.819
1200	24		82.0	17.25	.267	3.20	4.605	64.75	1.468	17.62	17.287
1400	26		89.25	19.25	.534	6.41	5.139	70.0	1.402	16.82	18.689
1600	28		95.0	20.25	.267	3.20	5.406	74.75	1.268	15.22	19.957
20 HRS TOTAL		L.E.T rate ①	completed	Qc = 5.046 m ³ /d				Qw = 16.901 m ³ /d			
1700	28	#70	95.0	20.25	Initial oil dip			74.75	Initial water dip		
1800	29		98.5	20.25	-	-	5.406	78.25	.934	22.43	20.891
12 th June 1993											
0600	41		138.0	27.5	1.936	3.87	7.342	110.5	8.611	17.22	29.502
0800	43		145.5	28.75	.334	4.01	7.676	116.75	1.669	20.02	31.171
1000	45		151.5	29.75	.267	3.20	7.943	121.75	1.335	16.02	32.506
1200	47		158.5	31.0	.334	4.01	8.277	127.5	1.535	18.42	34.041

LIQUID PRODUCTION

CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 2 OF 2

WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 12th June

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Potter

TANK	#1 = # 70
NUMBER	#2 =

TANK	#1 =	56.6	bbls/m ³
------	------	------	---------------------

TANK #1 = 1" = 0.267 m³ bbls/in ~~m³/cm~~

OIL API GRAVITY = @ 60°F

CAPACITY	#2 =	bbls/m ³
----------	------	---------------------

SCALE #2 = bbls/in - m³/cm

[illegible]

td	PERFORATIONS:
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WELL NAME: Kidman # 5

FORMATION : Toolachee

DATE: 11th June 1993

TEST TYPE : Flowing Gradient

OPR : B. Potter

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)
ELEMENT SERIAL NO.		K1589	K1889	29217	DATE : 11. 6. 93			
ELEMENT RANGE (PSI)		5075	5150	135°-378°F	PRESSURE LUBRICATOR :	11:36	3778	579
RECORDING SECTION SERIAL NO.		K1313	K1314	12952	RUN IN HOLE :	11:46	3778	
DATE OF CALIBRATION: @ 290°F		20.1.93	20.1.93	12.8.92	ON DEPTH AT : 6572 FT/M	12:44	3834	
CLOCK SERIAL NO.		1	2	2297	DATE : 11. 6. 93			
CLOCK RANGE (hr)		3	3	3	PULL OUT OF HOLE :	12:54	3834	
LEAD SCREW TYPE		15 TLS	15 TLS	15 TLS	AT SURFACE :	13:08	3889	
					DEPRESSURE LUBRICATOR :	13:23	3896	↓
ENGAGE STYLUS	DATE 11. 6. 93 TIME	10:59	10:59	10:59	MAXIMUM BHT AT - FT/M = - °F/C see Temp chart.			
DISENGAGE STYLUS	DATE 11. 6. 93 TIME	13:28	13:28	13:28	N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

[illegible]

00232

**EXPRESS**

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWARDILLA 5033

PH. (08) 354 0488 TELEX AA87183

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON

SOUTH AUSTRALIA 5033

00233

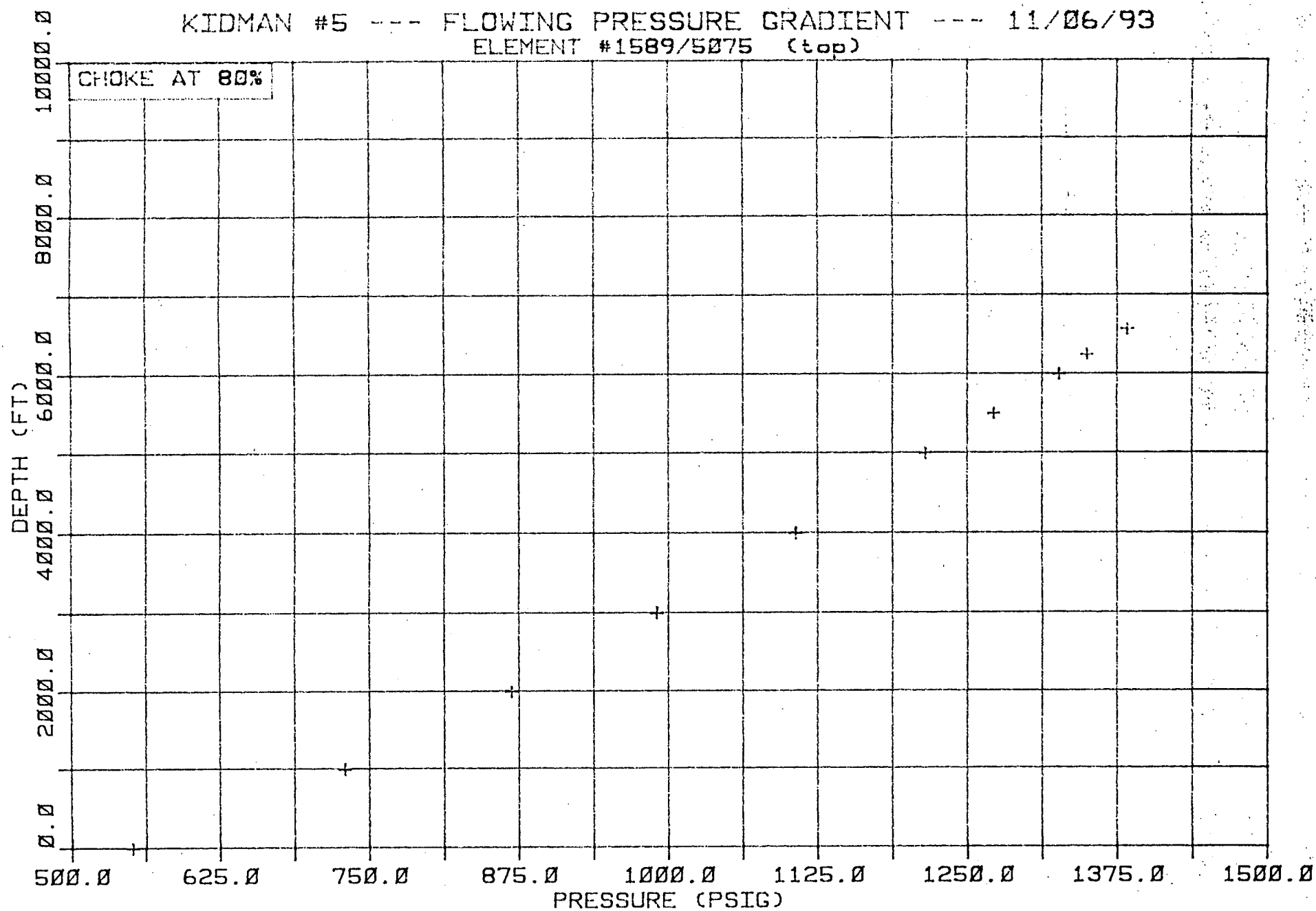
Tested Friday, 11th June 1993.

FLOWING PRESSURE GRADIENT REPORT

CLIENT				LOCATION		FORMATION	
SANTOS LTD.				KIDMAN #5		TOOLACHEE	
P R E S S U R E E L E M E N T D A T A				W E L L D A T A			
POSITION	SERIAL NO.	RANGE	CALIBRATED	PARAMETER		VALUE	
Top	1589	5075	20/ 1/93	DWT In		548 PSIG	
Bottom	1889	5150	20/ 1/93	DWT Out		565 PSIG	
				Max BHT			
T O P E L E M E N T				B O T T O M E L E M E N T			
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	
LUB.	0.2120	551.3	-	0.2140	562.7	-	
1000	0.2810	729.2	0.178	0.2850	746.4	0.184	
2000	0.3350	868.6	0.139	0.3390	886.1	0.140	
3000	0.3820	990.0	0.121	0.3860	1007.7	0.122	
4000	0.4270	1106.4	0.116	0.4310	1124.1	0.116	
5000	0.4690	1215.0	0.109	0.4730	1232.8	0.109	
5500	0.4910	1271.9	0.114	0.4940	1287.1	0.109	
6000	0.5120	1326.3	0.109	0.5140	1338.9	0.104	
6250	0.5210	1349.6	0.093	0.5240	1364.8	0.104	
6572	0.5340	1383.2	0.105	0.5360	1395.8	0.097	
LUB.	0.2160	561.6	-	0.2180	573.0	-	

GENERAL REMARKS

RATE #1 WELL FLOWING IN LINE. 100% CHOKE
DECREASED CHOKE TO 80% DURING GRADIENT



00234

	BHP/BHT GAUGE RUN DATA		
	CUSTOMER : Santos Ltd	PERFORATIONS: 6394' - 6750' KB	PAGE: 2 OF 2
	WELL NAME: Kidman #5	FORMATION : Toolachee	DATE: 12 th June 1993
	TEST TYPE : Flowing Gradient.		OPR : B. Potter

PAGE: 2 OF 2

DATE: 12th June 1993

OPR : B. Potter

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)
ELEMENT SERIAL NO.		K1589	K1889	29217	DATE : 12.6.93			
ELEMENT RANGE (PSI)		5075	5150	135°-378°F	PRESSURE LUBRICATOR :	14:27	3130	172
RECORDING SECTION SERIAL NO.		K1313	K1314	12952	RUN IN HOLE :	14:42	3130	172
DATE OF CALIBRATION: @ 290°F		20.1.93	20.1.93	12.8.92	ON DEPTH AT : 6572 FT/M	15:43	3634	138
CLOCK SERIAL NO.		1	2	2297	DATE : 12.6.93			
CLOCK RANGE (hr)		3	3	3	PULL OUT OF HOLE :	15:58	3647	138
LEAD SCREW TYPE		15 TLS	15 TLS	15 TLS	AT SURFACE :	16:14	3758	138
					DEPRESSURE LUBRICATOR :	16:29	3744	138
ENGAGE STYLUS	DATE 12.6.93 TIME	14:21	14:21	14:21	MAXIMUM BHT AT - FT/M = - °F/C See temp chart.			
DISENGAGE STYLUS	DATE 12.6.93 TIME	16:33	16:33	16:33	N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

[illegible]


EXPRESS

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX AA87183

FAX (08) 43 7408

 138 RICHMOND ROAD MARLESTON
SOUTH AUSTRALIA 5033

Tested Saturday, 12th June 1993.

FLOWING PRESSURE GRADIENT REPORT

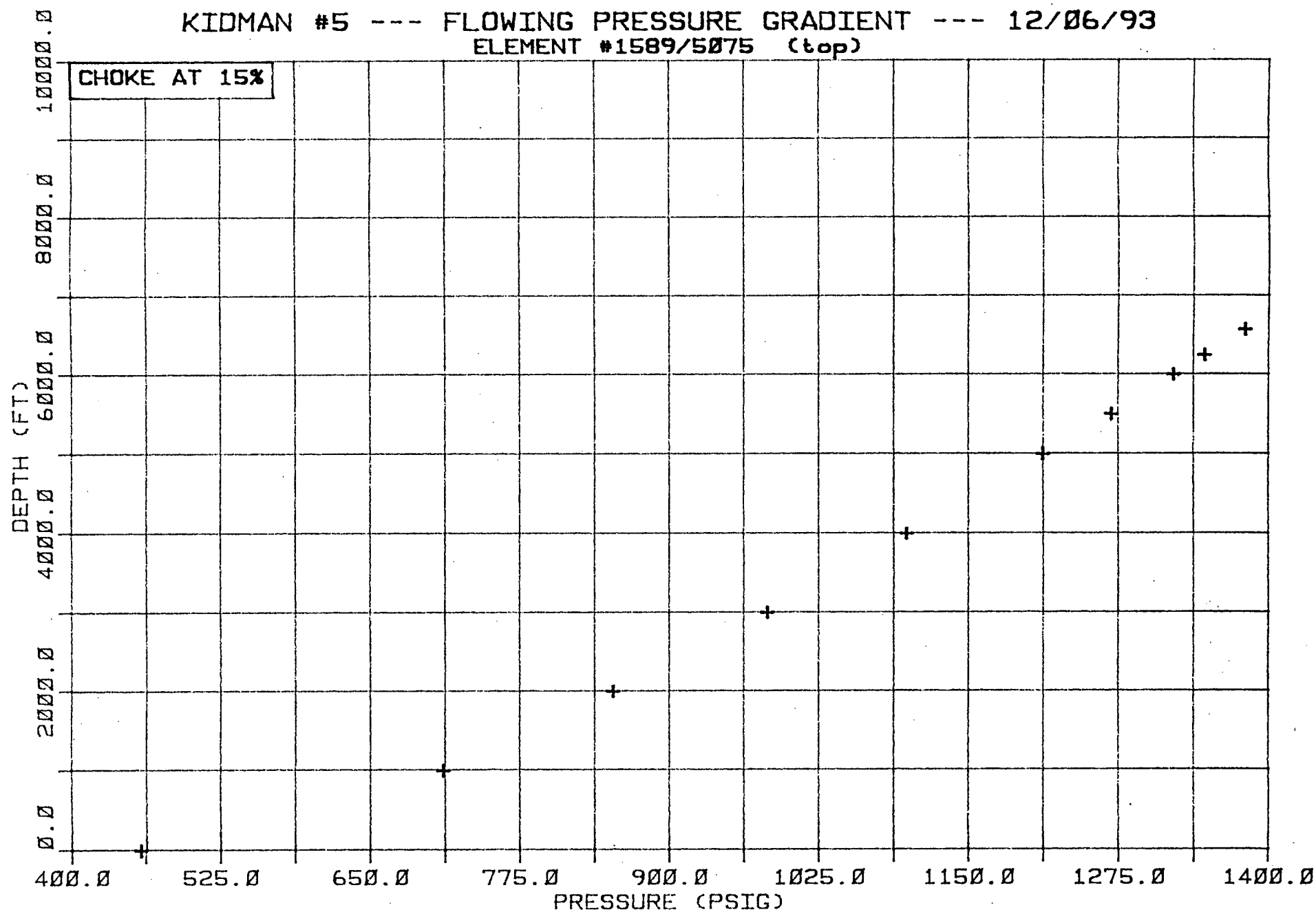
CLIENT	LOCATION	FORMATION
SANTOS LTD.	KIDMAN #5	TOOLACHEE

PRESSURE ELEMENT DATA				WELL DATA	
POSITION	SERIAL NO.	RANGE	CALIBRATED	PARAMETER	VALUE
Top	1589	5075	20/ 1/93	DWT In	454 PSIG
Bottom	1889	5150	20/ 1/93	DWT Out	543 PSIG
				Max BHT	

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.1760	458.6	-	0.1770	466.9	-
1000	0.2740	711.1	0.253	0.2750	720.6	0.254
2000	0.3290	853.1	0.142	0.3310	865.4	0.145
3000	0.3790	982.3	0.129	0.3800	992.2	0.127
4000	0.4240	1098.6	0.116	0.4260	1111.2	0.119
5000	0.4680	1212.4	0.114	0.4690	1222.4	0.111
5500	0.4900	1269.4	0.114	0.4910	1279.4	0.114
6000	0.5100	1321.1	0.104	0.5110	1331.1	0.104
6250	0.5200	1347.0	0.104	0.5210	1357.0	0.104
6572	0.5330	1380.7	0.105	0.5340	1390.7	0.105
LUB.	0.2090	543.6	-	0.2090	549.7	-

GENERAL REMARKS

RATE #2. WELL FLOWING TO FLARE.25%CHOKE.
DECREASED CHOKE TO 15% DURING GRADIENT.
TEMPERATURE ELEMENT RUN



00237



CUSTOMER : Santos Ltd

PERFORATIONS: 6394' - 6750' KB

PAGE: 1 OF 1

WELL NAME: Kidman #5

FORMATION : Toolachee

DATE: 12th June 1993

TEST TYPE : 2-rate L.E.T & F.G.S

OPR : B. Potter

SAMPLE

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
14:00	# 1	500	water	1	-	-	-		Dump line		-	-	-	15	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @ 60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	L.G.R m³/10⁶m³	PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
3103	72	25%	-	1586	38	1.0272	.787		101.95	4.01	16.02	197			

REMARKS:

SAMPLE

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
14:00	# 2	500	Water	1	-	-	-		Dump line		-	-	-	15	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	L. Q. R m³ / 10⁶ m³	PRESSURE	TEMPERATURE	
														(PSI/KPa)	(°F/°C)
3103	72	25%	-	1586	38	1.0272	.787		101.95	4.01	16.02	197			

REMARKS:

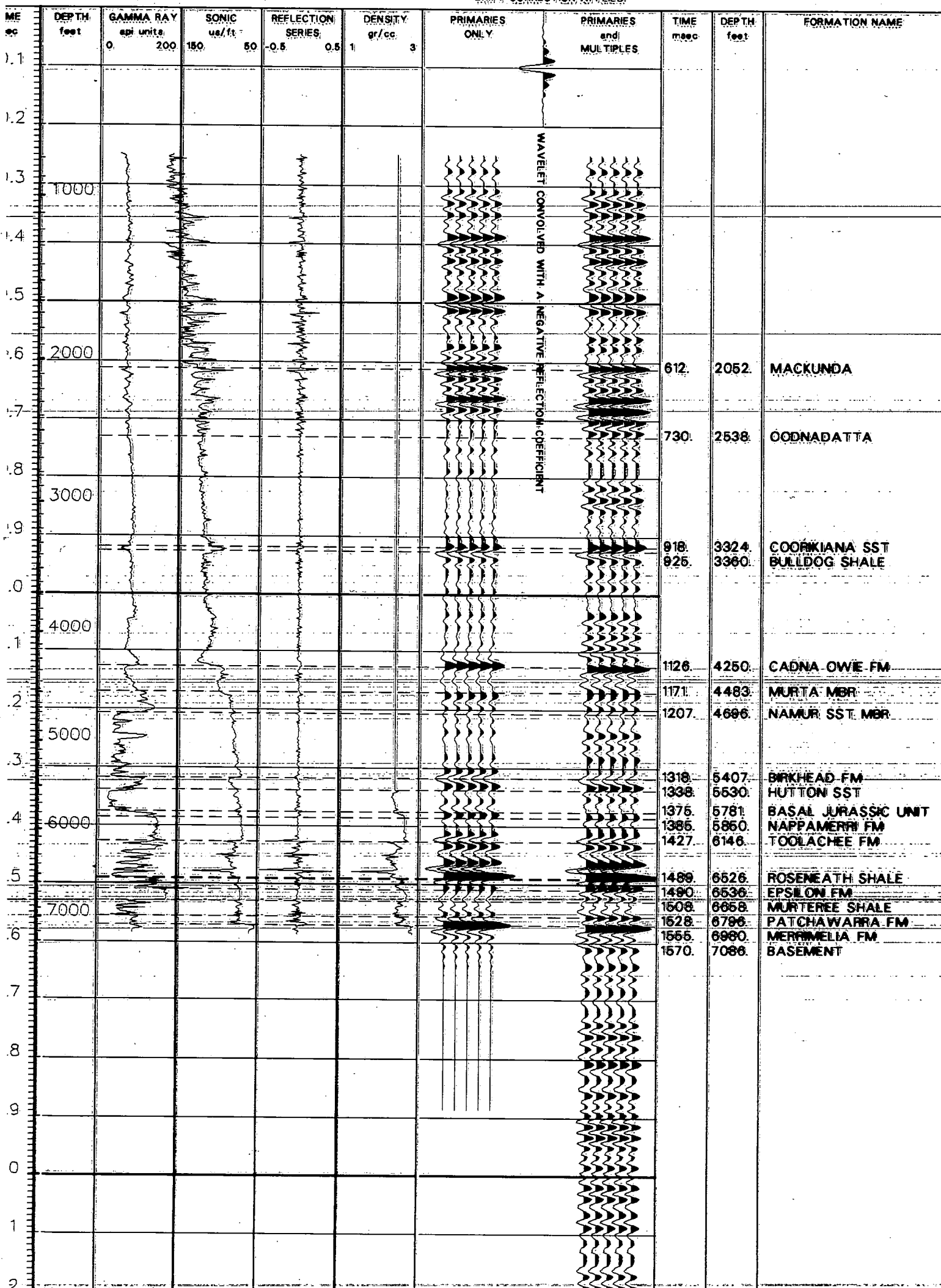
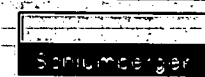
SAMPLE

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @ 60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	

REMARKS:

Company: DELHI/SANTOS & PARTNERS
 Well: KIDMAN #5
 Field: KIDMAN
 Location: LINE 71-YN STN 50.3

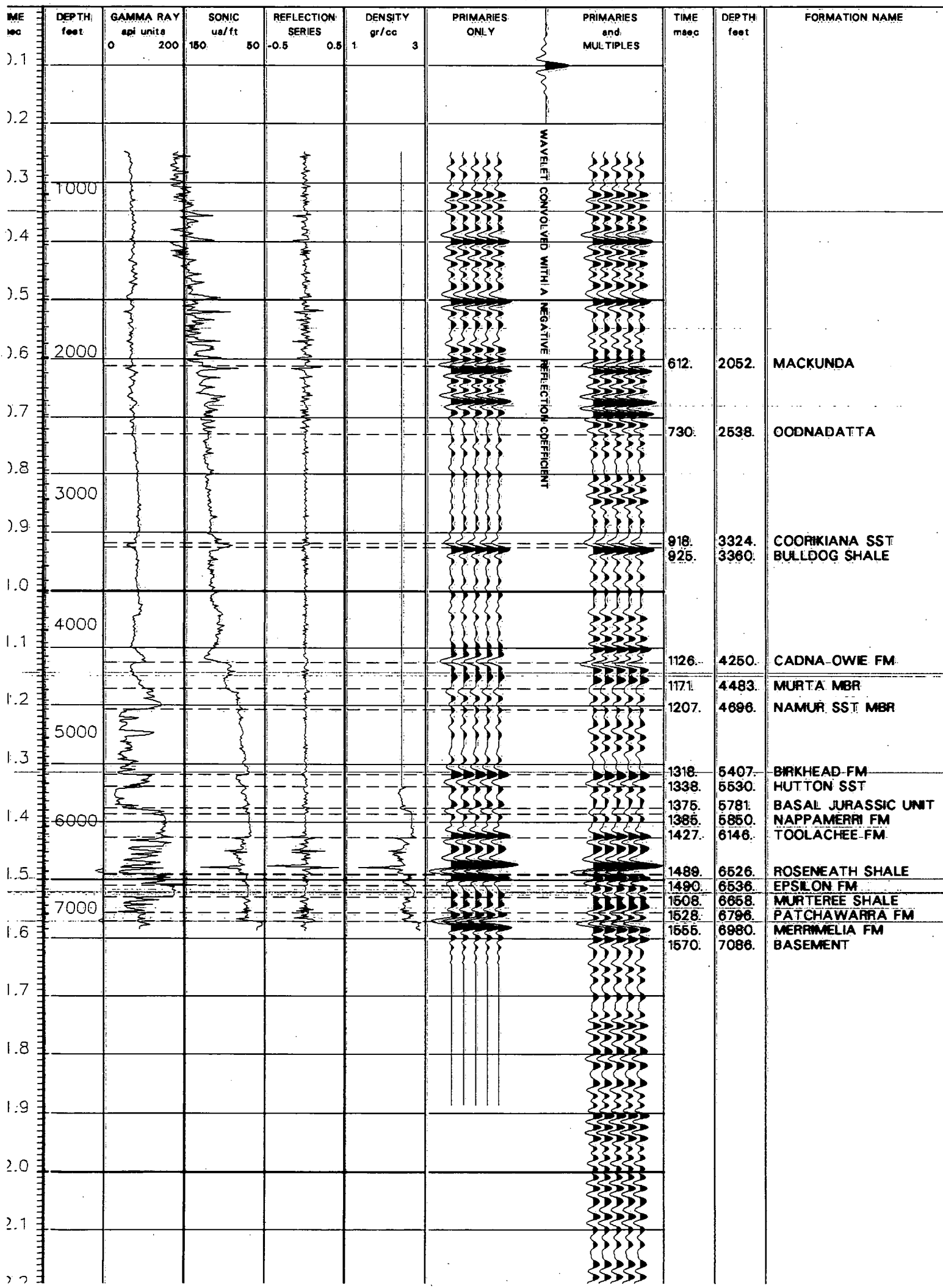
KLAUDER WAVELET
 PHASE ROTATION = 180
 REFLECTION SERIES FROM SONIC * DENSITY
 DRIFT CORRECTION APPLIED



Company: DELHI/SANTOS & PARTNERS
 Well: KIDMAN #5
 Field: KIDMAN
 Location: LINE:71-YN STN:50.3

KLAUDER WAVELET
 PHASE ROTATION = 0
 REFLECTION SERIES FROM SONIC * DENSITY
 DRIFT CORRECTION: APPLIED.

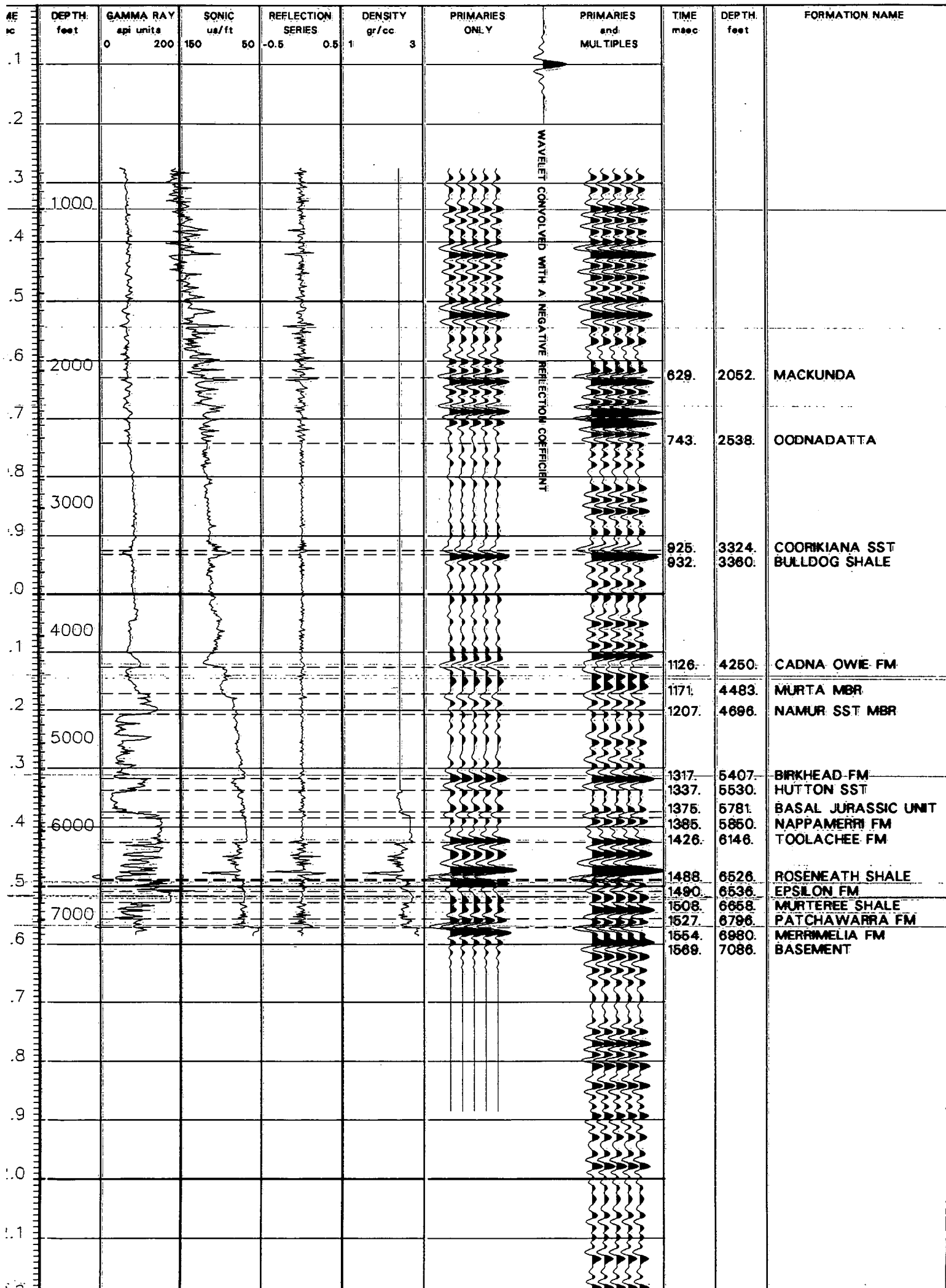
Schlumberger



Company: DELH/SANTOS & PARTNERS
Well: KIDMAN #5
Field: KIDMAN
Location: LINE-71-YN STN:50.3

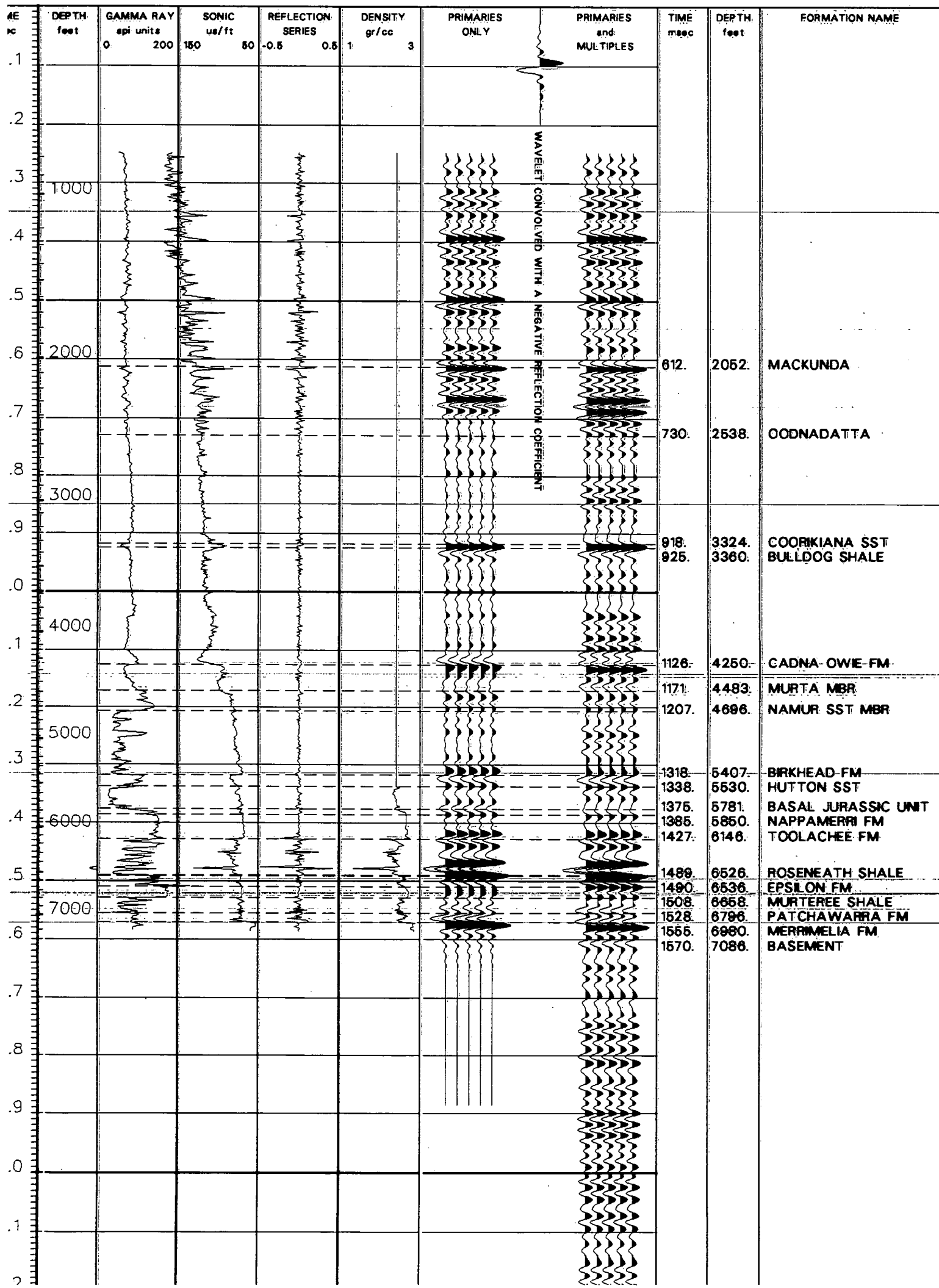
KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC * DENSITY
NO DRIFT CORRECTION APPLIED.

Schlumberger



Company: DELHI/SANTOS & PARTNERS
 Well: KIDMAN #5
 Field: KIDMAN
 Location: LINE:71-YN STN:50.3

KLAUDER WAVELET
 PHASE ROTATION = 90
 REFLECTION SERIES FROM SONIC * DENSITY
 DRIFT CORRECTION: APPLIED.



Company: DELHI/SANTOS & PARTNERS
Well: KIDMAN #5
Field: KIDMAN
Location: LINE:71-YN STN:50.3

KLAUDER WAVELET
PHASE ROTATION = 270
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.

Schlumberger

