SOUTH AUSTRALIA

DEPARTMENT OF MINES AND ENERGY

OPEN FILE ENVELOPE NO. 7030/2

PEL 5 AND PEL 6, TOOLACHEE BLOCK

COOPER AND EROMANGA BASINS

KIDMAN NORTH 1

TEST REPORTS

Submitted by

Delhi Petroleum Pty Ltd

1991

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ENVELOPE 7030/2

TENEMENT: PEL 5 and PEL 6, Toolachee Block; Cooper and Eromanga Basins

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

CONTENTS OF VOLUME ONE

		SADME NO.
REPORTS:	**Halliburton Services, 1987.** Formation testing service report - DST 1 (23 March 1987).	**7030/2 R 1** Pgs 36-46
	Halliburton Services, 1987. Formation testing report - DST 2 (21 April 1987).	**7030/2 R 2** Pgs 3-14
	Halliburton Services, 1987. Formation testing service report - DST 3 (23 March 1987).	**7030/2 R 3** Pgs 15-24
	Halliburton Services, 1987. Formation testing service report - DST 4 (23 March 1987).	**7030/2 R 4** Pgs 25-35
	Oilserv Australia Ltd, 1987. Results of Upper (Toolachee Formation) producing zone clean up and modified isochronal test, 3-14 August 1987.	**7030/2 R 5** Pgs 47-146
	Oilserv Australia Ltd, 1987. Results of Lower (Patchawarra Formation) producing zone clean up and modified isochronal test, 18-27 August 1987.	**7030/2 R 6** Pgs 147-294

CONTENTS OF VOLUME TWO

REPORTS:	**Keane, K., and Bond, W., 1988.** Results of Upper (Toolachee) zone reservoir pressure buildup and static (pressure) gradient survey, 19-24 September 1988 (Expertest Pty Ltd).	**7030/2 R 7** Pgs 295-307
	Smith, A., 1988. Results of Lower (Patchawarra) zone reservoir pressure buildup and static (pressure) gradient survey, 24-28 September 1988 (Expertest Pty Ltd).	**7030/2 R 8** Pgs 308-319
	Burdon, A.G., 1989. (Interpretation of) Kidman North #1U modified isochronal (test), 3-14/8/87 (Santos Ltd Petroleum Development Department report no: RE:046/89, July 1989).	**7030/2 R 9** Pgs 320-352
APPENDIX I:	Modified isochronal analysis.	Pgs 328-333
APPENDIX II:	Pressure build-up analysis.	Pgs 334-337
APPENDIX III:	Well test data.	Pgs 338-348
APPENDIX IV:	Compositional data.	Pgs 349-350
APPENDIX V:	Static gradient survey data.	Pgs 351-352

REPORT:	**Burdon, A.G., 1989.** (Interpretation of) Kidman North #1L modified isochronal (test), 19-26/8/87 (Santos Ltd Petroleum Development Department report no: RE:045/89, July 1989).	**7030/2 R 10** Pgs 353-383
APPENDIX I:	Modified isochronal analysis.	Pgs 360-365
APPENDIX II:	Pressure build-up analysis.	Pgs 366-368
APPENDIX III:	Well test data.	Pgs 369-378
APPENDIX IV:	Compositional data.	Pgs 379-380
APPENDIX V:	Static gradient survey data.	Pgs 381-383
REPORTS:	**Smith, A., 1989.** Results of Upper zone reservoir pressure buildup and static (pressure) gradient survey, 8-17 November 1989 (Expertest Pty Ltd).	**7030/2 R 11** Pgs 384-397
	Smith, A., 1989. Results of Lower zone reservoir pressure buildup and static (pressure) gradient survey, 4-8 November 1989 (Expertest Pty Ltd).	**7030/2 R 12** Pgs 398-407
	Mueller, M., and Buckland, R., 1990. Results of Upper zone reservoir buildup and static (pressure) gradient survey, 7-11 June 1990 (Expertest Pty Ltd).	**7030/2 R 13** Pgs 408-420
	Mueller, M., and Buckland, R., 1990. Results of Lower zone reservoir pressure buildup and static (pressure) gradient survey, 7-11 June 1990 (Expertest Pty Ltd).	**7030/2 R 14** Pgs 421-431
	Larkin, R., 1991. Results of liquids evaluation test (LET) and flowing (pressure) gradient survey (FGS), Patchawarra production zone, 2-4 June 1991 (Expertest Pty Ltd).	**7030/2 R 15** Pgs 432-444

END OF CONTENTS

000003

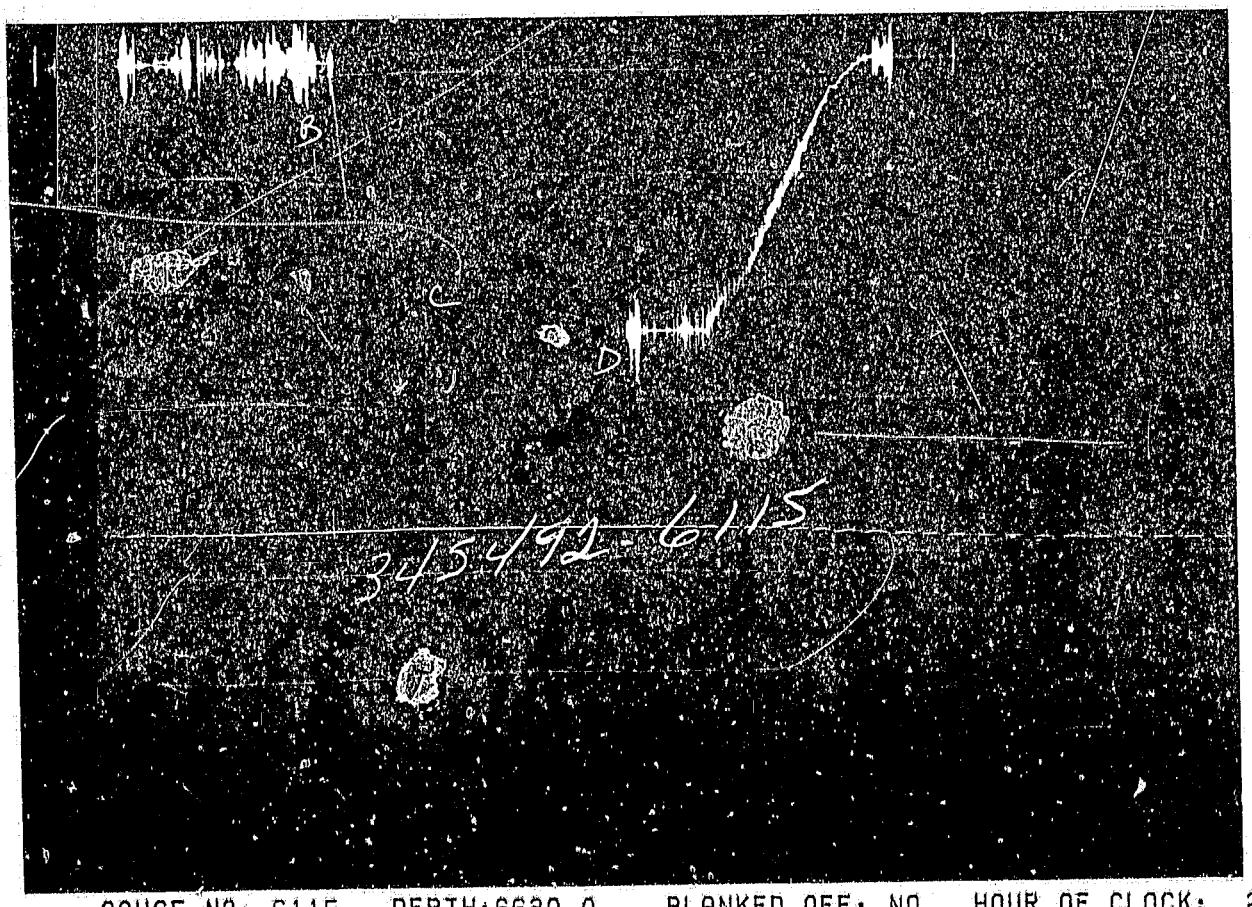
KIOMAN NORTH	1	2	DELHI PETROLEUM PTY. LTD.
LEASE NAME	WELL NO.	TEST NO.	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RNG.	FIELD AREA	COUNTY	STATE
SEE REMARKS	COOPER BASIN	SOUTH AUSTRALIA	AUSTRALIA IC

HALLIBURTON
SERVICES

TICKET NO. 34549200
21-APR-87
MOOMBA

7030/2

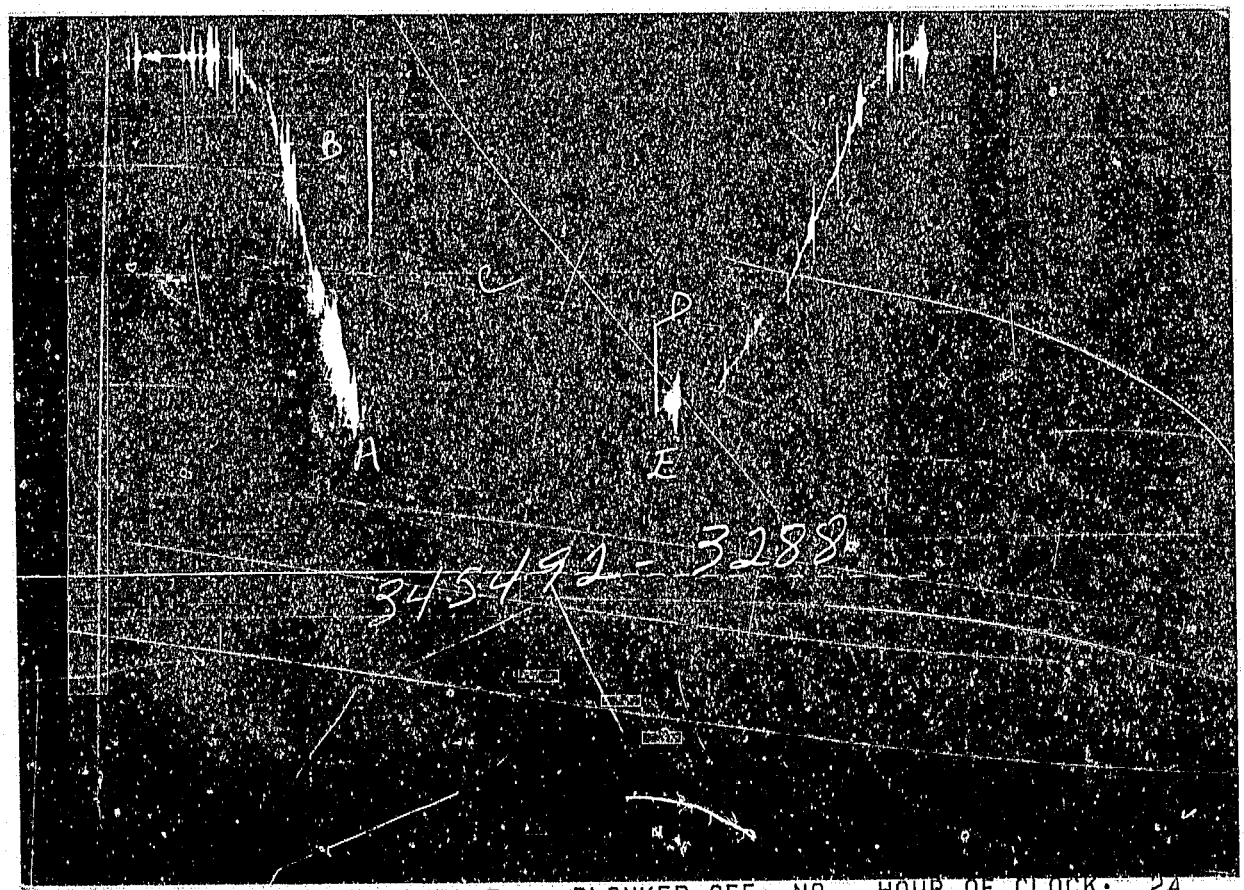
FORMATION TESTING SERVICE REPORT



GAUGE NO: 6115 DEPTH: 6630.0 BLANKED OFF: NO HOUR OF CLOCK: 24

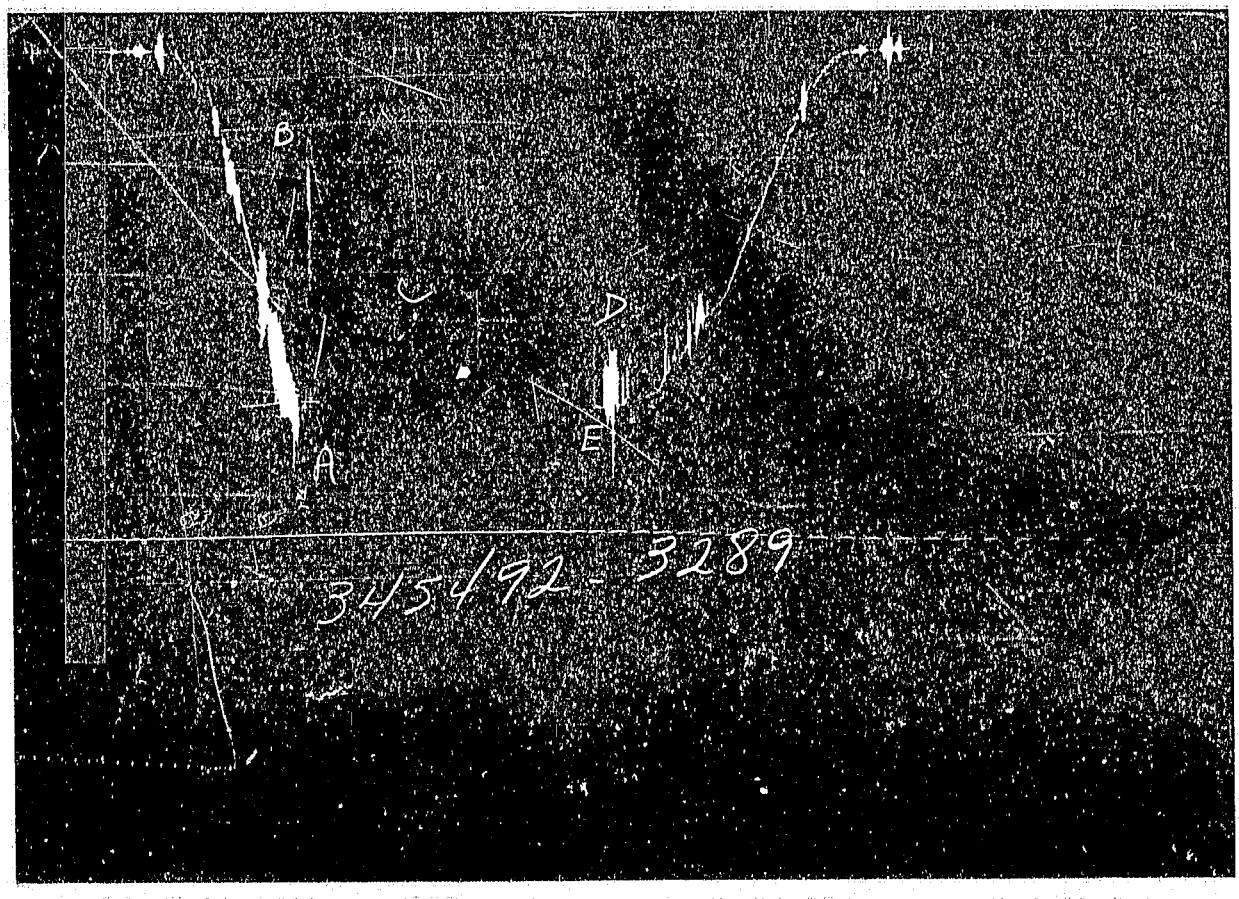
ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		140.4	123.0	124.4	F
C	FINAL FIRST FLOW		2388.8			
C	INITIAL FIRST CLOSED-IN		2388.8	240.0	238.6	C
D	FINAL FIRST CLOSED-IN	2393	2394.3			
E	FINAL HYDROSTATIC					
F	HYDROSTATIC RELEASE					

000005



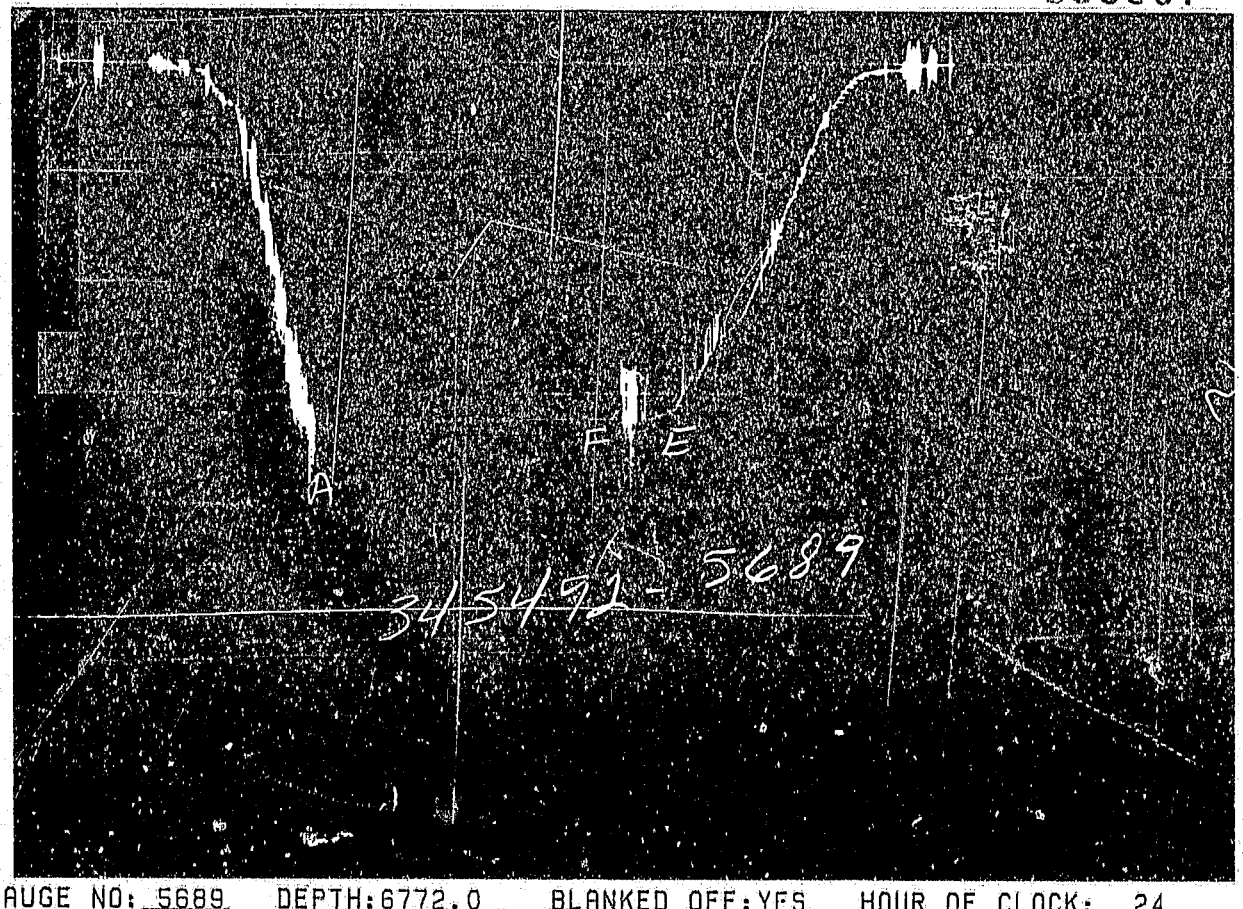
GAUGE NO: 3288 DEPTH: 6650.7 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3205	3227.1			
B	INITIAL FIRST FLOW	1236	1252.4	123.0	124.4	F
C	FINAL FIRST FLOW	2399	2424.8			
C	INITIAL FIRST CLOSED-IN	2399	2424.8	240.0	238.6	C
D	FINAL FIRST CLOSED-IN	2416	2443.0			
E	FINAL HYDROSTATIC	3205	3226.0			
F	HYDROSTATIC RELEASE					



GAUGE NO: 3289 DEPTH: 6703.5 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3246	3246.3			
B	INITIAL FIRST FLOW	797	801.1	123.0	124.4	F
C	FINAL FIRST FLOW	2425	2431.5			
C	INITIAL FIRST CLOSED-IN	2425	2431.5	240.0	238.6	C
D	FINAL FIRST CLOSED IN	2446	2447.1			
E	FINAL HYDROSTATIC	3233	3244.3			
F	HYDROSTATIC RELEASE					



GAUGE NO: 5689 DEPTH: 6772.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3311	3318.6			
B	INITIAL FIRST FLOW			123.0		F
C	FINAL FIRST FLOW					
C	INITIAL FIRST CLOSED-IN			240.0		C
D	FINAL FIRST CLOSED-IN					
E	FINAL HYDROSTATIC	3233	3315.8			
F	HYDROSTATIC RELEASE		3237.7			

202

600008

EQUIPMENT & HOLE DATA

FORMATION TESTED: TOOLACHEE
NET PAY (ft):
GROSS TESTED FOOTAGE: 33.0
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft): 257.0
TOTAL DEPTH (ft): 6775.0
PACKER DEPTH(S) (ft): 6667, 6675, 6708, 6716
FINAL SURFACE CHOKE (in): 0.50000
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.50
MUD VISCOSITY (sec): 36
ESTIMATED HOLE TEMP. (°F):
ACTUAL HOLE TEMP. (°F): 250 @ 6771.0 ft

TICKET NUMBER: 34549200

DATE: 11-26-86 TEST NO: 2

TYPE DST: ON BTM. STRADDLE

HALLIBURTON CAMP: MOOMBA

TESTER: N. COWLEY

WITNESS: RAY ELL

DRILLING CONTRACTOR: RITCHER DRILLING RIG #4

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm
	@ °F	ppm

SAMPLER DATA

Psig 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

RECOVERED:

90 FEET OF MUDDY WATER
5785 FEET OF GAS CUT WATER

MEASURED FROM TESTER VALVE

REMARKS:

LEGAL LOCATION: LAT. 28 DEG., 12', 30"S; LONG. 140 DEG., 48', 36.1"E.

ALL DEPTHS RECORDED ARE 20' HIGH BECAUSE OF FILL ON BOTTOM OF HOLE.

TEST DATE: 26-NOV-86.

000009

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE					TICKET NO: 34549200
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-25-86					
2245					MADE UP TOOL
11-26-86					
0041					MADE UP TOOL AND RAN IN HOLE
0325					HEAD UP
0336					PUT 30000# ON TOOL - HAD
					APPROXIMATELY 20' OF FILL
0337	.5				OPENED TOOL - HAD NO SLIP DOWN -
					WEAK BLOW AT TOP OF BUCKET
0339					BLOW INCREASED TO STRONG
0411					GAS TO SURFACE
0417					BLOW DECREASED TO WEAK AT BOTTOM
					OF BUCKET
0440					SAME
0500					SAME
0540					CLOSED TOOL
0940					OPENED BYPASS AND PULLED FREE-
					HAD 30000# OVERPULL INDICATING
					FLUID IN PIPE - PULLED TO FLUID
1125					FLUID AT SURFACE - WATERY MUD -
					KEPT PULLING
1450					TOOL AT FLOOR - STARTED BREAKING
					DOWN
1610					TOOL BROKE DOWN AND LAID OUT

000010

TICKET NO: 34549200
CLOCK NO: 16139 HOUR: 24

HALLIBURTON SERVICES

GAUGE NO: 6115
DEPTH: 6630.0

FIRST FLOW

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
B	1	0.0	140.4			
	2	10.0	841.0	700.6		
	3	20.0	1341.4	500.4		
	4	30.0	1644.8	303.4		
	5	40.0	1871.5	226.6		
	6	50.0	2037.9	166.4		
	7	60.0	2152.0	114.1		
	8	70.0	2236.0	84.0		
	9	80.0	2296.6	60.6		
	10	90.0	2334.7	38.1		
	11	100.0	2361.1	26.3		
	12	110.0	2376.6	15.6		
	13	120.0	2385.1	8.4		
C	14	124.4	2388.8	3.8		

FIRST CLOSED-IN

C	1	0.0	98.8			
D	2	238.6	94.3	5.5	81.8	0.182

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

REMARKS:

TICKET NO: 34549200
CLOCK NO: 26294 HOUR: 24

HALLIBURTON SERVICES

GAUGE NO: 3288
DEPTH: 6650.7

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	1253.4			
	2	17.9	1260.8	7.4		
	3	33.9	1754.3	493.4		
	4	39.3	1867.8	113.6		
	5	47.8	2014.9	147.1		
	6	58.1	2161.8	146.9		
	7	68.1	2260.5	98.7		
	8	78.0	2322.9	62.4		
	9	81.5	2341.5	18.6		
	10	84.7	2351.2	9.7		
	11	91.4	2376.0	24.8		
	12	100.0	2399.6	23.5		
	13	110.0	2410.6	11.0		
	14	120.0	2422.7	12.1		
C	15	124.4	2424.8	2.2		
			FIRST CLOSED-IN			
C	1	0.0	2424.8			
	2	1.0	2430.2	5.4	1.0	2.096
	3	2.0	2431.7	6.9	2.0	1.798
	4	3.0	2432.2	7.3	2.9	1.630
	5	4.0	2432.4	7.6	3.9	1.507
	6	5.0	2432.8	8.0	4.8	1.411
	7	10.0	2435.0	10.2	9.3	1.129
	8	15.0	2436.1	11.2	13.4	0.968
	9	20.0	2436.7	11.9	17.2	0.858
	10	25.0	2436.7	11.9	20.8	0.776
	11	30.0	2436.7	11.9	24.2	0.711
	12	35.0	2437.4	12.5	27.3	0.659
	13	40.0	2437.8	13.0	30.3	0.614
	14	45.0	2437.8	13.0	33.1	0.576
	15	50.0	2438.0	13.2	35.7	0.543
	16	55.0	2438.0	13.2	38.1	0.514
	17	60.0	2438.4	13.6	40.5	0.488
	18	70.0	2438.9	14.0	44.8	0.444
	19	80.0	2439.5	14.7	48.7	0.407
	20	90.0	2440.0	15.1	52.2	0.377
	21	100.0	2440.0	15.1	55.4	0.351
	22	110.0	2440.8	16.0	58.4	0.328
	23	120.0	2442.1	17.3	61.1	0.309
	24	150.0	2442.8	17.9	68.0	0.262
	25	180.0	2443.0	18.1	73.6	0.228
	26	210.0	2443.0	18.1	78.1	0.202
D	27	238.6	2443.0	18.1	81.8	0.182

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

LEGEND:
☐ STAIR-STEP

REMARKS:

000012

TICKET NO: 34549200	GAUGE NO: 3289
CLOCK NO: 30368 HOUR: 24	DEPTH: 6703.5

HALLIBURTON SERVICES

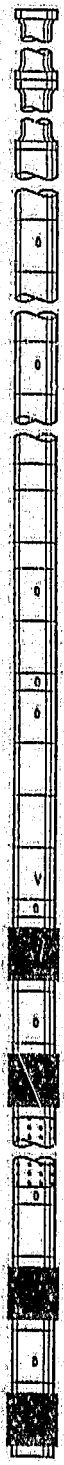
REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
		FIRST FLOW				
B	1	0.0	801.1			
	2	10.0	1128.0	326.9		
	3	20.0	1459.3	331.2		
	4	30.0	1728.9	269.6		
	5	40.0	1925.6	196.8		
	6	50.0	2089.4	163.7		
	7	60.0	2198.9	109.5		
	8	70.0	2286.3	87.4		
	9	80.0	2344.3	57.9		
	10	90.0	2381.1	36.9		
	11	100.0	2405.9	24.7		
	12	110.0	2420.2	14.3		
	13	120.0	2428.6	8.5		
C	14	124.4	2431.5	2.8		
		FIRST CLOSED-IN				
C	1	0.0	2431.5			
	2	1.0	2435.4	3.9	1.0	2.094
	3	2.0	2438.2	6.7	2.0	1.803
	4	3.0	2439.0	7.6	3.0	1.624
	5	4.0	2440.1	8.7	3.9	1.502
	6	5.0	2440.6	9.1	4.8	1.416
	7	10.0	2441.4	10.0	9.3	1.128
	8	15.0	2442.1	10.6	13.4	0.967
	9	20.0	2442.9	11.5	17.2	0.858
	10	25.0	2443.4	11.9	20.8	0.776
	11	30.0	2443.8	12.4	24.2	0.711
	12	34.9	2444.0	12.6	27.3	0.659
	13	40.0	2444.5	13.0	30.3	0.614
	14	45.0	2444.9	13.4	33.1	0.576
	15	50.0	2444.9	13.4	35.7	0.542
	16	55.0	2445.3	13.9	38.1	0.514
	17	60.0	2445.3	13.9	40.5	0.488
	18	70.0	2446.2	14.8	44.8	0.444
	19	80.0	2446.2	14.8	48.7	0.407
	20	90.0	2446.4	15.0	52.2	0.377
	21	100.0	2446.4	15.0	55.4	0.351
	22	110.0	2447.1	15.6	58.4	0.329
	23	120.0	2447.1	15.6	61.1	0.309
	24	150.0	2447.1	15.6	68.0	0.262
	25	180.0	2447.1	15.6	73.6	0.228
	26	210.0	2447.1	15.6	78.1	0.202
D	27	238.6	2447.1	15.6	81.8	0.182

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

REMARKS:

:10000

000013
TICKET NO. 34549200

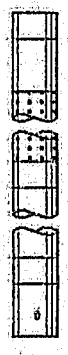


		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE.....	4.500	3.826	6035.0	
4	FLEX WEIGHT.....	4.500	2.764	178.8	
3	DRILL COLLARS.....	6.500	2.812	353.4	
51	PUMP OUT REVERSING SUB.....	6.000	3.000	1.0	6567.5
3	DRILL COLLARS.....	6.500	2.812	30.8	
50	IMPACT REVERSING SUB.....	6.000	3.000	1.0	6599.0
3	DRILL COLLARS.....	6.500	2.812	28.9	
258	BAR CATCHER SUB.....	5.750	1.120	1.0	6628.5
80	AP RUNNING CASE.....	5.000	2.250	4.1	6630.0
5	CROSSOVER.....	5.000	2.200	1.0	
12	DUAL CIP VALVE.....	5.000	0.870	4.9	
202	SAMPLE CHAMBER.....	5.000	2.500	4.9	
33	DRAIN VALVE.....	5.000	2.200	0.9	
60	HYDROSPRING TESTER.....	5.000	0.750	5.3	6649.4
80	AP RUNNING CASE.....	5.000	2.250	4.1	6650.7
15	JAR.....	5.000	1.750	5.0	
16	VR SAFETY JOINT.....	5.000	1.000	2.8	
17	PRESSURE EQUALIZING CROSSOVER...	4.870	3.000	1.0	
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6666.9
18	DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6675.0
20	FLUSH JOINT ANCHOR.....	5.000	2.370	25.0	
17	PRESSURE EQUALIZING CROSSOVER...	4.620	2.750	1.0	
80	AP RUNNING CASE.....	5.000	2.250	4.1	6703.5
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6708.0
18	DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6715.8

CONTINUED

EQUIPMENT DATA

TICKET NO. 000014 34549200

			O.D.	I.D.	LENGTH	DEPTH
5		CROSSOVER.....	5.000	2.200	1.0	
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	16.0	
5		CROSSOVER.....	5.750	2.250	1.0	
9		DRILL COLLARS.....	6.500	2.812	27.5	
5		CROSSOVER.....	5.750	2.200	1.0	
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	6772.0
		TOTAL DEPTH				6775.0

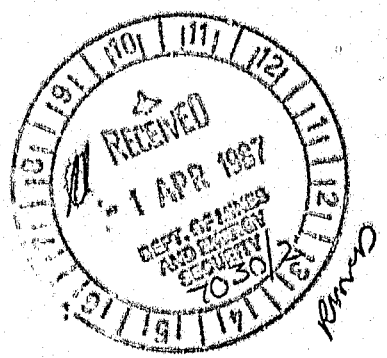
EQUIPMENT DATA

000016

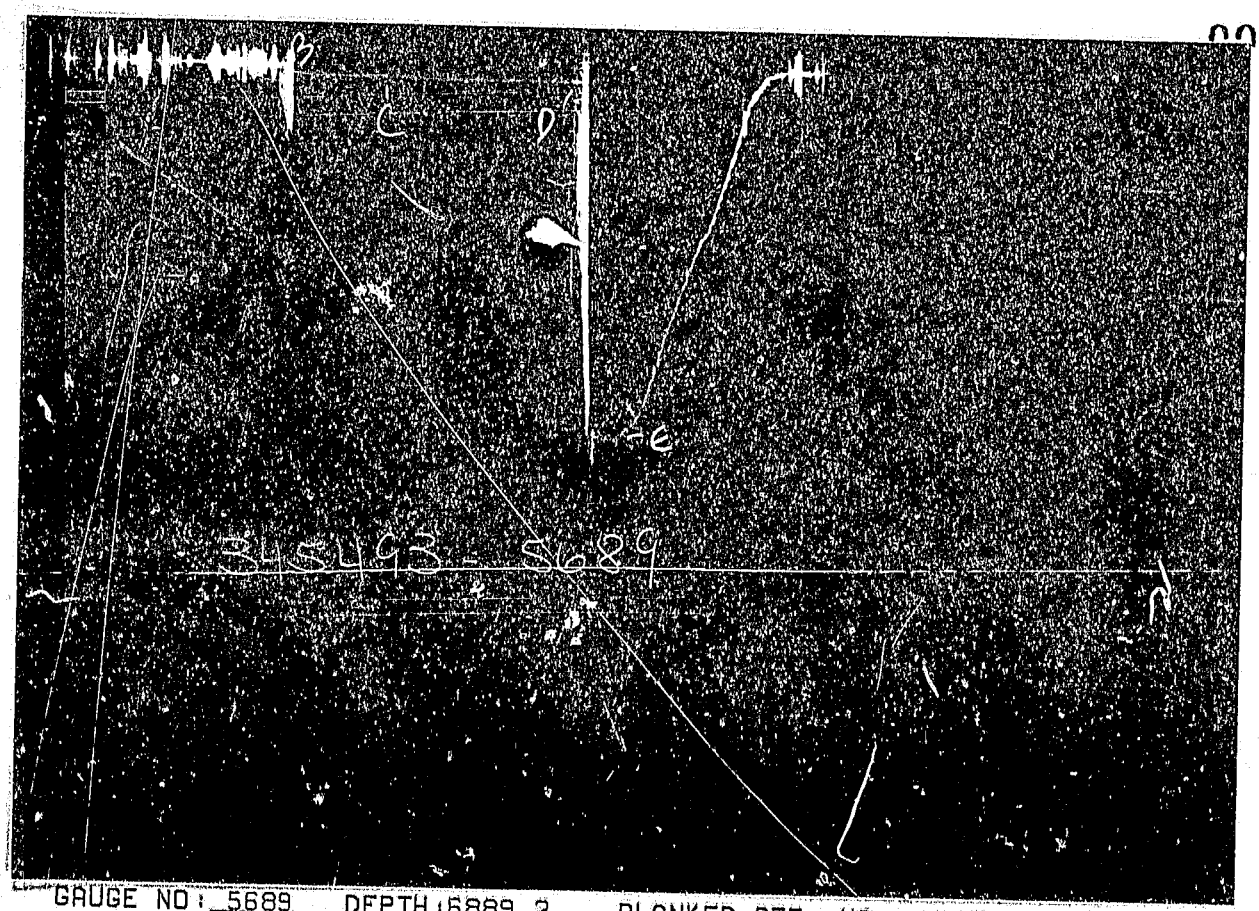
KIDMAN NORTH	1	3	6932.3 - 5961.0	DELHI PETROLEUM PTY. LIMITED	
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME	
LEGAL LOCATION SEC. - TWP. - RNG.	SEE REMARKS	COOPER BASIN	SOUTH AUSTRALIA	AUSTRALIA PM	
	FIELD AREA	COUNTY	STATE		

HALLIBURTON SERVICES

TICKET NO. 04549300
23-MAR-87
MOOMBA

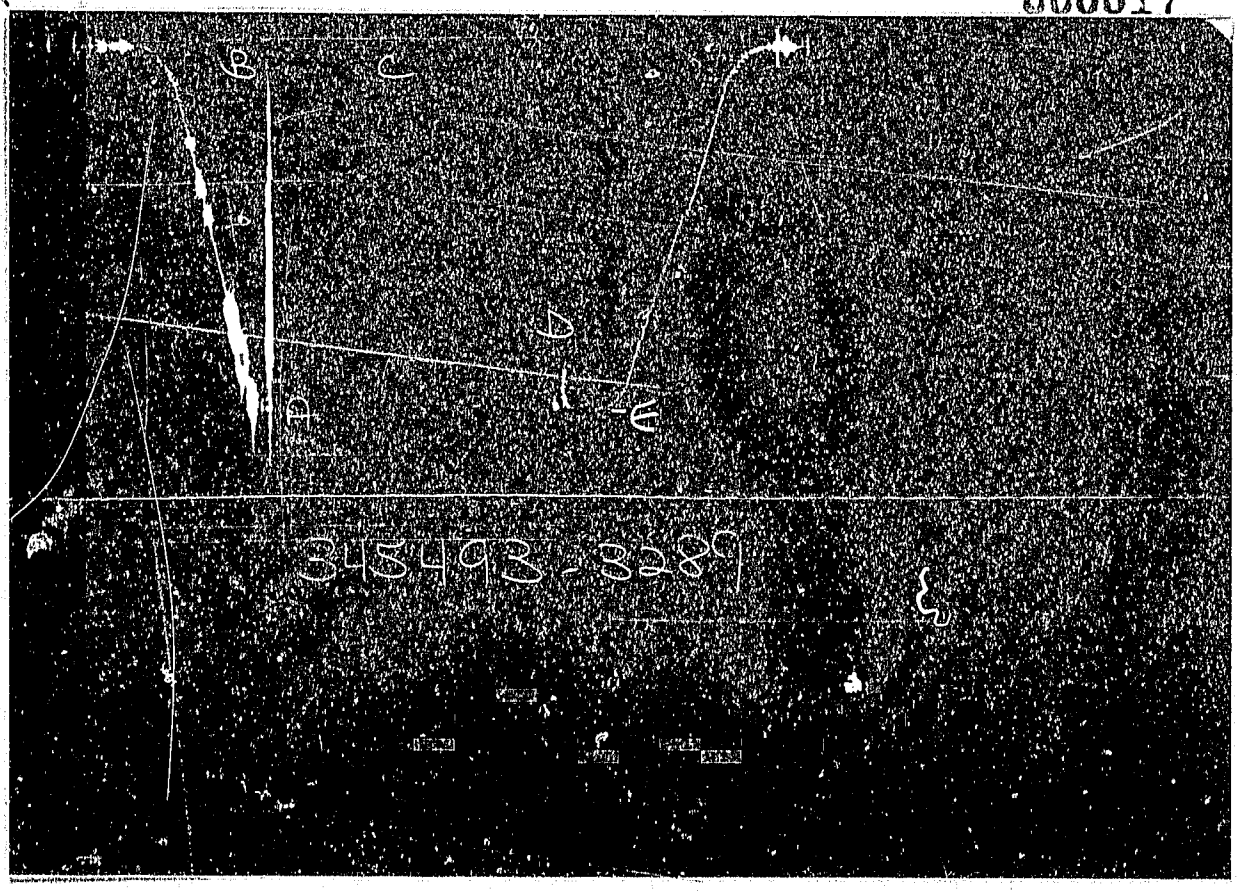


FORMATION TESTING SERVICE REPORT



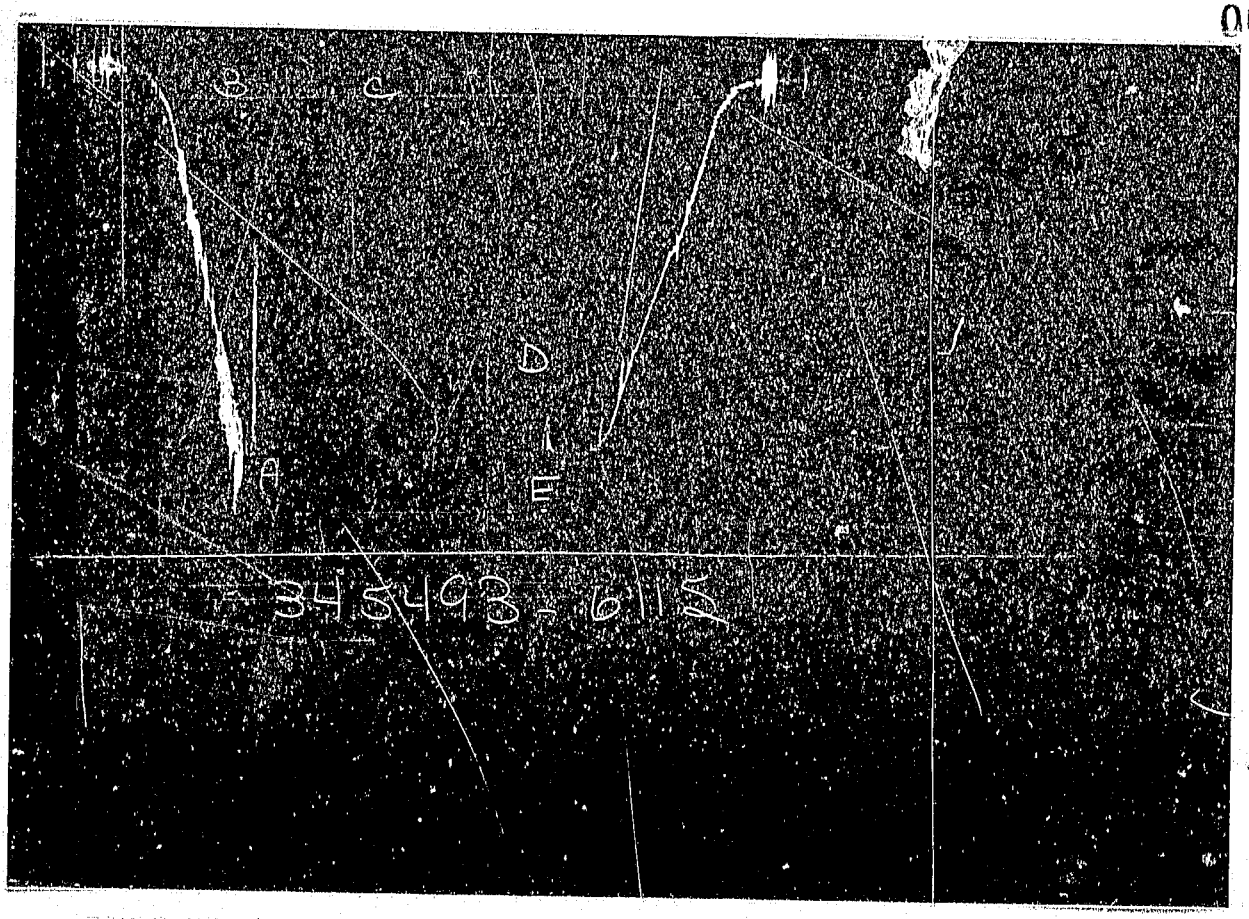
GAUGE NO: 5689 DEPTH: 6889.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		31.6	122.0	123.2	F
C	FINAL FIRST FLOW		107.3			
C	INITIAL FIRST CLOSED-IN		107.3	240.0	238.8	C
D	FINAL FIRST CLOSED-IN	128	124.9			
E	FINAL HYDROSTATIC		3335.7			



GAUGE NO: 3289 DEPTH: 6910.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3306	3337.3			
B	INITIAL FIRST FLOW	65	57.1	122.0	123.2	F
C	FINAL FIRST FLOW	104	96.8			
C	INITIAL FIRST CLOSED-IN	104	96.8	240.0	238.8	C
D	FINAL FIRST CLOSED-IN	2807	2807.8			
E	FINAL HYDROSTATIC	3293	3337.3			



GAUGE NO: 6115 DEPTH: 6957.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3374	3381.3			
B	INITIAL FIRST FLOW	90	82.9	122.0	123.2	F
C	FINAL FIRST FLOW	98	103.4			
C	INITIAL FIRST CLOSED-IN	98	103.4	240.0	238.8	C
D	FINAL FIRST CLOSED-IN	2844	2853.7			
E	FINAL HYDROSTATIC	3374	3380.0			

EQUIPMENT & HOLE DATA

FORMATION TESTED: EPSILON
NET PAY (ft): _____
GROSS TESTED FOOTAGE: 28.7
ALL DEPTHS MEASURED FROM: KB
CASING PERFS. (ft): _____
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft): 257.0
TOTAL DEPTH (ft): 6961.0
PACKER DEPTH(S) (ft): 6925, 6932
FINAL SURFACE CHOKE (in): 0.50000
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.50
MUD VISCOSITY (sec): 36
ESTIMATED HOLE TEMP. (°F): _____
ACTUAL HOLE TEMP. (°F): 240 @ 6957.0 ft

TICKET NUMBER: 34549300
DATE: 11-27-86 TEST NO: 3
TYPE DST: OPEN HOLE
HALLIBURTON CAMP: MOOMBA
TESTER: N. COWLEY / P. BATES
WITNESS: C. DORSCH
DRILLING CONTRACTOR: RITCHER RIG #14

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY		CHLORIDES
_____	_____ @	°F	_____ ppm
_____	_____ @	°F	_____ ppm
_____	_____ @	°F	_____ ppm
_____	_____ @	°F	_____ ppm
_____	_____ @	°F	_____ ppm
_____	_____ @	°F	_____ ppm

SAMPLER DATA

Psig 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
_____	_____	_____
_____	_____	_____

RECOVERED:

670 FEET OF VERY SLIGHTLY OIL CUT MUD

MEASURED FROM TESTER VALVE

REMARKS:

LEGAL LOCATION: 28 DEGREES - 12' - 30" SOUTH LAT.
140 DEGREES - 48' - 36.1" EAST LONG.

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE | TICKET NO: 34549300

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-27-86					
1500					MADE-UP TOOLS
1554					TOOLS MADE-UP AND RUN IN HOLE
1833					RIGGED UP HEAD AND FLOOR LINES
1846					SEAT PACKERS
1850	.50"				OPENED TOOL - MODERATE TO
					STRONG BLOW.
1851	"				STRONG BLOW
1858	"	1			
1901	"	1			GAS TO SURFACE
1905	"	3			
1910	"	6			
1920	"	11			
1930	"	18			
1940	"	19			
1950	"	22			
2000	"	24			
2030	"	26			
2052	"	27			CLOSED TOOL
11-28-86					
0052	"				OPENED BYPASS AND PULLED FREE
0104					DROPPED IMPACT BAR
0105					STARTED REVERSING
0155					FINISHED REVERSING
0156					LAID DOWN HEAD
0202					STARTED OUT OF HOLE
0520					STARTED BREAKING OUT TOOLS
0620					FINISHED LAYING DOWN TOOLS

TICKET NO: 34549300	GAUGE NO: 5689
CLOCK NO: 29507 HOUR: 24	DEPTH: 6889.2

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	31.6			
2	10.0	81.9	50.3		
3	20.0	88.5	6.6		
4	30.0	92.9	4.4		
5	40.0	97.1	4.2		
6	50.0	100.7	3.5		
7	60.0	102.9	2.2		
8	70.0	104.6	1.8		
9	80.0	104.6	0.0		
10	90.0	104.6	0.0		
11	100.0	105.1	0.4		
12	110.0	105.1	0.0		
13	120.0	107.1	2.0		
C 14	123.2	107.3	0.2		
FIRST CLOSED-IN					
C 1	0.0	107.3			
D 2	238.8	124.5	17.7	81.3	0.181

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

REMARKS:

000022

TICKET NO: 34549300	GAUGE NO: 3289
CLOCK NO: 30368 HOUR: 24	DEPTH: 6910.2

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	57.1			
2	10.0	73.1	15.9		
3	20.0	76.5	3.4		
4	30.0	81.0	4.5		
5	40.0	85.1	4.1		
6	50.0	89.4	4.3		
7	60.0	92.5	3.0		
8	70.0	94.0	1.5		
9	80.0	95.3	1.3		
10	90.0	97.0	1.7		
11	100.0	97.0	0.0		
12	110.0	97.0	0.0		
13	120.0	97.0	0.0		
C 14	123.2	96.8	-0.2		
		FIRST CLOSED-IN			
C 1	0.0	96.8			
2	10.0	2096.7	2000.0	9.2	1.125
3	20.0	2318.4	2221.7	17.2	0.855
4	30.0	2419.7	2323.0	24.1	0.708
5	40.0	2486.1	2389.3	30.2	0.611
6	50.0	2533.6	2436.9	35.6	0.540
7	60.0	2570.7	2473.9	40.4	0.485
8	70.0	2599.3	2502.6	44.7	0.441
9	80.0	2624.3	2527.5	48.5	0.405
10	90.0	2644.5	2547.7	52.0	0.375
11	100.0	2664.9	2568.1	55.2	0.349
12	110.0	2681.1	2584.4	58.1	0.326
13	120.0	2695.4	2598.7	60.8	0.307
14	130.0	2708.0	2611.3	63.3	0.290
15	140.0	2720.2	2623.4	65.5	0.274
16	150.0	2732.1	2635.3	67.6	0.260
17	160.0	2742.7	2646.0	69.6	0.248
18	170.0	2752.5	2655.7	71.4	0.237
19	180.0	2760.3	2663.5	73.1	0.226
20	190.0	2768.5	2671.8	74.7	0.217
21	200.0	2777.0	2680.2	76.2	0.208
22	210.0	2785.2	2688.5	77.6	0.200
23	220.0	2793.9	2697.2	79.0	0.193
24	230.0	2801.7	2705.0	80.2	0.186
D 25	238.8	2807.8	2711.0	81.3	0.181

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

REMARKS:

TICKET NO: 34549300	GAUGE NO: 6115
CLOCK NO: 16139 HOUR: 24	DEPTH: 6957.0

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	82.9			
	2	10.0	85.5	2.6		
	3	20.0	86.8	1.3		
	4	30.0	90.0	3.2		
	5	40.0	93.4	3.4		
	6	50.0	96.2	2.8		
	7	60.0	99.6	3.4		
	8	70.0	101.3	1.7		
	9	80.0	102.6	1.3		
	10	90.0	103.6	1.1		
	11	100.0	103.6	0.0		
	12	110.0	103.6	0.0		
	13	120.0	103.6	0.0		
C	14	123.2	103.4	-0.2		
			FIRST CLOSED-IN			
C	1	0.0	103.4			
	2	10.0	2194.7	2091.3	9.2	1.125
	3	20.0	2382.9	2279.5	17.2	0.855
	4	30.0	2476.8	2373.4	24.1	0.708
	5	40.0	2538.1	2434.7	30.2	0.611
	6	50.0	2586.3	2482.9	35.6	0.539
	7	60.0	2618.1	2514.7	40.3	0.485
	8	70.0	2649.7	2546.3	44.6	0.441
	9	80.0	2673.7	2570.3	48.5	0.405
	10	90.0	2694.5	2591.1	52.0	0.375
	11	100.0	2712.0	2608.6	55.2	0.349
	12	110.0	2729.1	2625.6	58.1	0.326
	13	120.0	2743.4	2639.9	60.8	0.307
	14	130.0	2757.1	2653.6	63.3	0.289
	15	140.0	2768.8	2665.2	65.5	0.274
	16	150.0	2781.1	2677.6	67.6	0.260
	17	160.0	2790.1	2686.7	69.6	0.248
	18	170.0	2799.8	2696.4	71.4	0.237
	19	180.0	2807.6	2704.2	73.1	0.226
	20	190.0	2816.4	2713.0	74.7	0.217
	21	200.0	2824.2	2720.8	76.2	0.208
	22	210.0	2832.0	2728.6	77.6	0.200
	23	220.0	2839.8	2736.4	79.0	0.193
	24	230.0	2847.2	2743.7	80.2	0.186
D	25	238.8	2853.7	2750.3	81.3	0.181

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

REMARKS:

000024

TICKET NO. 34548300

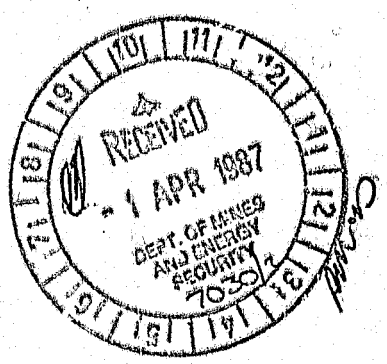
			O.D.	I.D	LENGTH	DEPTH
1		DRILL PIPE	4.500	3.826	6264.6	
4		FLEX WEIGHT	4.500	2.764	178.8	
3		DRILL COLLARS	6.500	2.812	384.2	
51		PUMP OUT REVERSING SUB	6.000	3.000	1.0	6827.7
3		DRILL COLLARS	6.500	2.812	28.9	
50		IMPACT REVERSING SUB	6.000	3.000	1.0	6857.5
3		DRILL COLLARS	6.500	2.812	27.5	
258		BAR CATCHER SUB	5.750	1.120	1.0	6888.0
80		AP RUNNING CASE	5.000	2.250	4.1	6889.2
5		CROSSOVER	5.000	2.200	1.0	
12		DUAL CIP VALVE	5.000	0.870	4.8	
202		SAMPLE CHAMBER	5.000	2.500	4.9	
33		DRAIN VALVE	5.000	2.200	0.5	
60		HYDROSPRING TESTER	5.000	0.750	5.3	6906.1
80		AP RUNNING CASE	5.000	2.250	4.1	6910.2
15		JAR	5.000	1.750	5.0	
16		VR SAFETY JOINT	5.000	1.000	2.8	
70		OPEN HOLE PACKER	7.750	1.680	5.8	6924.5
18		DISTRIBUTOR VALVE	5.000	1.680	2.0	
70		OPEN HOLE PACKER	7.750	1.680	5.8	6932.3
19		ANCHOR PIPE SAFETY JOINT	5.000	1.500	4.3	
20		FLUSH JOINT ANCHOR	5.000	2.370	19.0	
81		BLANKED-OFF RUNNING CASE	5.000		4.1	6957.0
		TOTAL DEPTH				6961.0

EQUIPMENT DATA

000025

HALLIBURTON SERVICES

TICKET NO. 31662000
23-MAR-87
MOOMBA



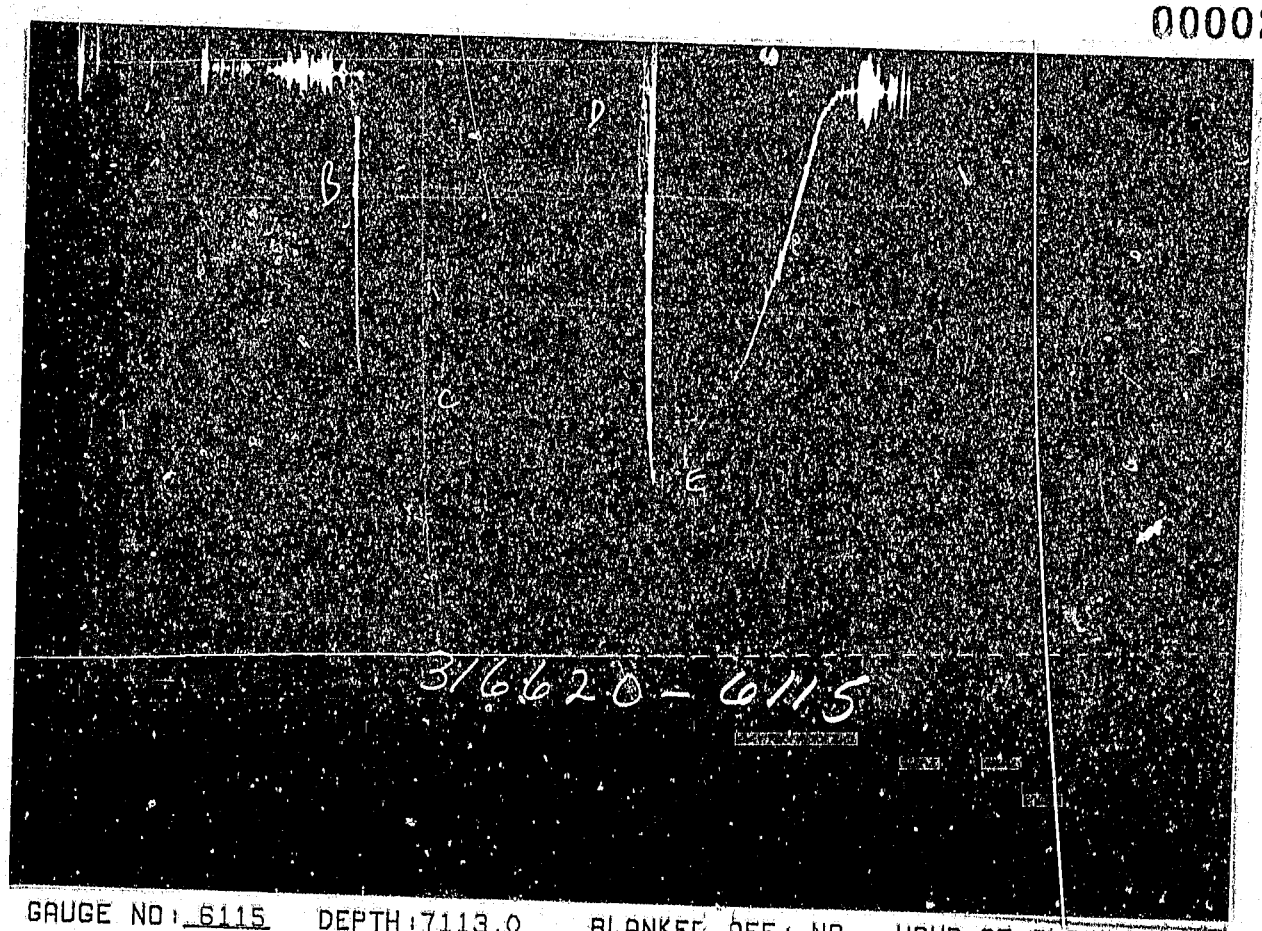
FORMATION TESTING SERVICE REPORT

KIDMAN NORTH	1	4	7156.8 - 7209.0
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL

DELHI PETROLEUM PTY. LTD.
LEASE OWNER/COMPANY NAME

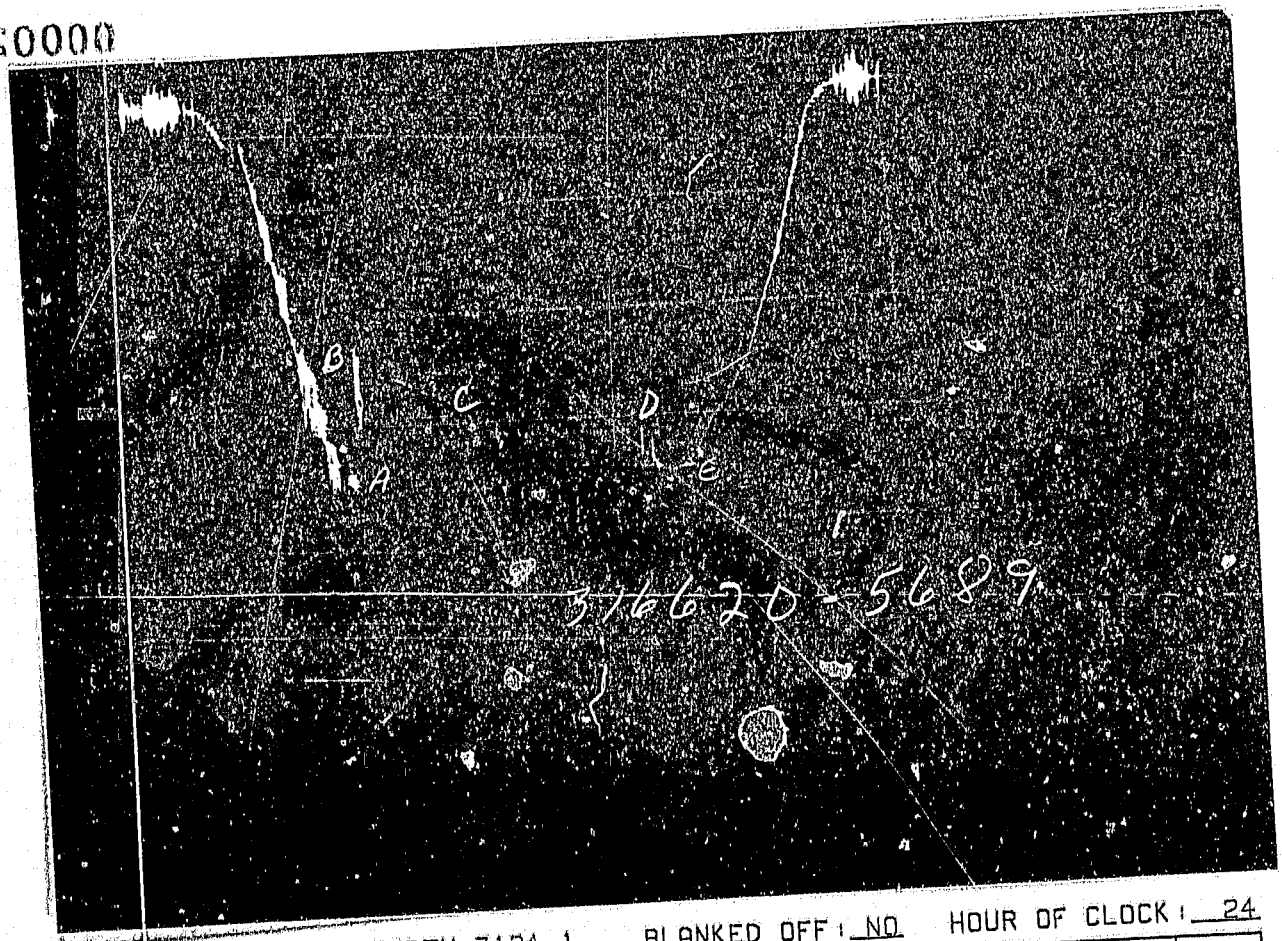
LEGAL LOCATION SEC - TWP - RNG	SEE REMARKS	FIELD AREA	COOPER BASIN	COUNTY SOUTH AUSTRALIA

STATE AUSTRALIA DR



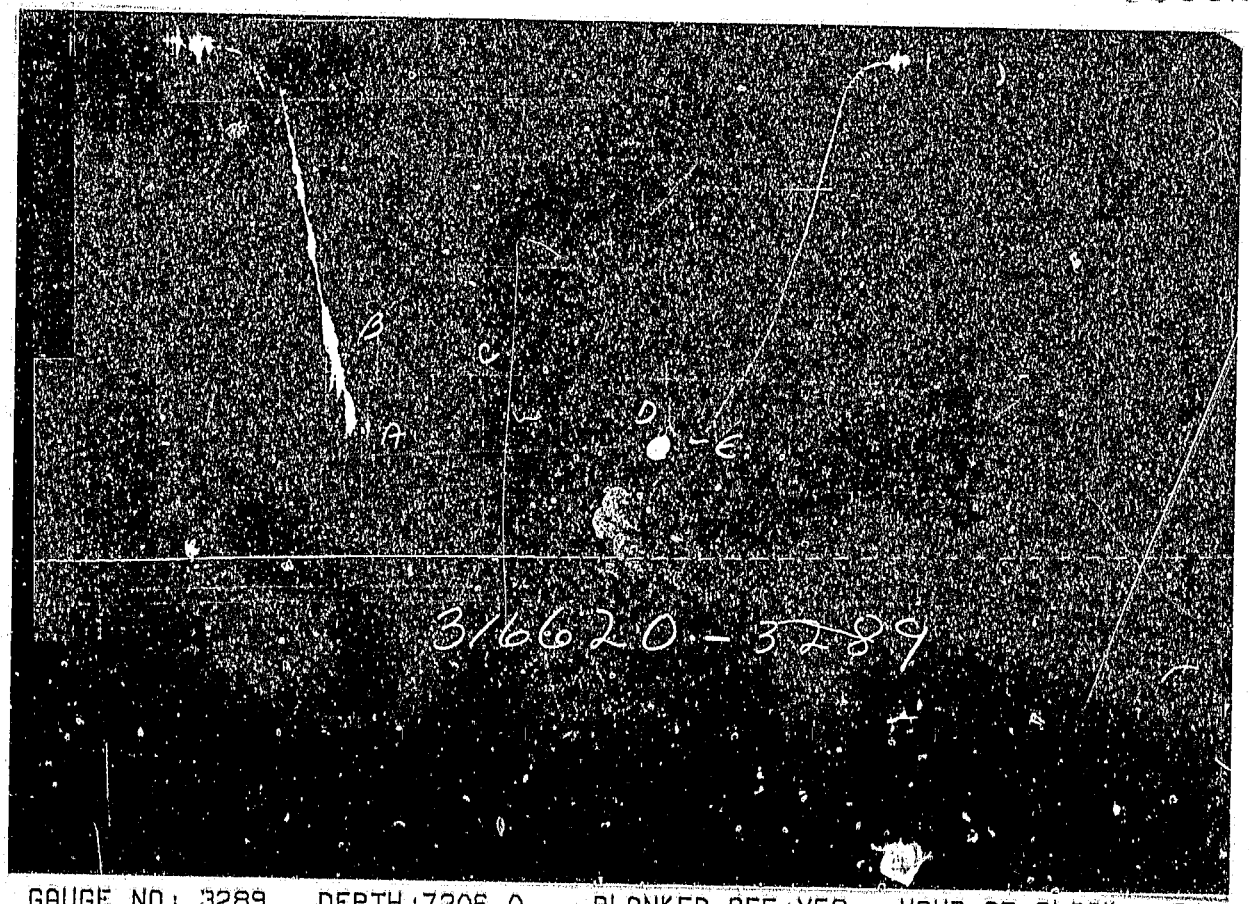
GAUGE NO: 6115 DEPTH: 7113.0 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		975.6			
C	FINAL FIRST FLOW		2686.3	120.0	119.4	F
C	INITIAL FIRST CLOSED-IN		2686.3			
D	FINAL FIRST CLOSED-IN	30	28.4	241.0	241.6	C
E	FINAL HYDROSTATIC		3454.6			



GAUGE NO: 5689 DEPTH: 7134.1 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3485	3468.4			
B	INITIAL FIRST FLOW	2549	2570.6	120.0	119.4	F
C	FINAL FIRST FLOW	2927	2927.3			
C	INITIAL FIRST CLOSED-IN	2927	2927.3	241.0	241.6	C
D	FINAL FIRST CLOSED-IN	3143	3138.7			
E	FINAL HYDROSTATIC	3472	3467.5			



GAUGE NO: 3289 DEPTH: 7206.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3508	3501.9			
B	INITIAL FIRST FLOW	2686	2666.8	120.0	119.4	F
C	FINAL FIRST FLOW	2972	2972.7			
C	INITIAL FIRST CLOSED-IN	2972	2972.7	241.0	241.6	C
D	FINAL FIRST CLOSED-IN	3144	3146.0			
E	FINAL HYDROSTATIC	3486	3492.9			

EQUIPMENT & HOLE DATA

FORMATION TESTED: PATCHAWARRA
NET PAY (ft): 46.0
GROSS TESTED FOOTAGE: 52.2
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft): 257.0
TOTAL DEPTH (ft): 7209.0
PACKER DEPTH(S) (ft): 7149, 7157
FINAL SURFACE CHOKE (in): 0.50000
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.50
MUD VISCOSITY (sec): 36
ESTIMATED HOLE TEMP. (°F):
ACTUAL HOLE TEMP. (°F): 275 @ 7205.0 ft

TICKET NUMBER: 31662000

DATE: 11-30-86 TEST NO: 4

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: MOOMBA

TESTER: P. BATES

WITNESS: C. DORSCH

DRILLING CONTRACTOR: RICHTER RIG #14

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY		CHLORIDES
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm

SAMPLER DATA

Psig 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: 0.780 EST.

CUSHION DATA

TYPE	AMOUNT	WEIGHT

RECOVERED:

90' OF CONDENSATE
WELL FLOWED GAS @ 10300 MCFD AND 77 BBLS. CONDENSATE PER DAY

MEASURED FROM TESTER VALVE

REMARKS:

LEGAL LOCATION: 28 DEGREES 12' 30"S. LAT. AND 140 DEGREES 48' 36.1" E. LONG.

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE | TICKET NO: 31662000

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-29-86					
1338					STARTED PICKING UP TOOLS
1500					FINISHED MAKING UP TOOLS
1510					STARTED IN HOLE
1600					LOADED TEST HEAD
1614					CONTINUED IN HOLE
1810					RIGGED UP HEAD AND FLOOR LINES
1817	.5				TAGGED BOTTOM
1824					SEATED THE PACKERS
1829					OPENED TOOL WITH A MODERATE
					BLOW
1830					STRONG BLOW
1831		375			GAS TO SURFACE
1832		600			
1833		800			
1834		1100			
1835		1200			
1836		1400			
1837		1500			
1838		1650			
1843		1800			
1845		1850			
1849		1950			
1900		1950			FLOWED THROUGH OIL SERVICE
					SEPARATOR
1915		1950			
1930		1950			
1945		1950			
2000		1950			
2012		1980			
2020		1980			
2029	.5	1980			CLOSED TOOL
11-30-86					
0030					OPENED BYPASS
0035					PULLED 20'
0041					DROPPED BAR
0042					STARTED REVERSING

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE | TICKET NO: 31662000

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
0110					FINISHED CIRCULATING
0116					LAID DOWN TEST HEAD

000032

TICKET NO: 31662000	GAUGE NO: 6115
CLOCK NO: 16139 HOUR: 24	DEPTH: 7113.0

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	975.6			
	2	5.0	2325.3	1349.6		
	3	10.0	2670.5	345.3		
	4	15.0	2706.3	35.8		
	5	20.0	2683.4	-22.9		
	6	25.0	2683.4	0.0		
	7	30.0	2683.4	0.0		
	8	35.0	2683.4	0.0		
	9	40.0	2685.3	1.9		
	10	45.0	2694.7	9.5		
	11	50.0	2694.7	0.0		
	12	55.0	2689.3	-5.5		
	13	60.0	2689.3	0.0		
	14	65.0	2689.3	0.0		
	15	70.0	2688.2	-1.1		
	16	75.0	2688.2	0.0		
	17	80.0	2681.5	-6.7		
	18	85.0	2686.3	4.8		
	19	90.0	2686.3	0.0		
	20	95.0	2688.8	2.5		
	21	100.0	2683.2	-5.7		
	22	105.0	2686.3	3.2		
	23	110.0	2686.3	0.0		
	24	115.0	2686.3	0.0		
C	25	119.4	2686.3	0.0		
			FIRST CLOSED-IN			
C	1	0.0	2686.3			
D	2	241.6	28.4	-2657.9	79.9	0.174

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

REMARKS:

000033

TICKET NO: 31662000	GAUGE NO: 5689
CLOCK NO: 29507 HOUR: 24	DEPTH: 7134.1

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	2570.6			
	2	5.0	2670.4	99.8		
	3	10.0	2867.8	197.4		
	4	15.0	2930.0	62.2		
	5	20.0	2928.8	-1.3		
	6	25.0	2921.5	-7.3		
	7	30.0	2924.0	2.6		
	8	35.0	2924.0	0.0		
	9	40.0	2924.0	0.0		
	10	45.0	2924.0	0.0		
	11	50.0	2929.0	4.9		
	12	55.0	2929.0	0.0		
	13	60.0	2929.0	0.0		
	14	65.0	2926.6	-2.4		
	15	70.0	2926.4	-0.2		
	16	75.0	2926.4	0.0		
	17	80.0	2927.7	1.3		
	18	85.0	2925.8	-1.9		
	19	90.0	2925.8	0.0		
	20	95.0	2927.0	1.3		
	21	100.0	2930.9	3.9		
	22	105.0	2926.8	-4.1		
	23	110.0	2926.8	0.0		
	24	115.0	2926.8	0.0		
C	25	119.4	2927.3	0.4		
			FIRST CLOSED-IN			
C	1	0.0	2927.3			
	2	1.0	3124.2	197.0	1.0	2.069
	3	2.0	3125.1	197.9	1.9	1.791
	4	3.0	3125.8	198.5	2.9	1.608
	5	4.0	3126.6	199.4	3.9	1.487
	6	5.0	3126.6	199.4	4.8	1.395
	7	6.0	3127.5	200.2	5.7	1.319
	8	7.0	3127.5	200.2	6.6	1.258
	9	8.0	3128.6	201.3	7.5	1.202
	10	9.0	3128.6	201.3	8.4	1.153
	11	10.0	3128.6	201.3	9.2	1.113
	12	12.0	3129.7	202.4	10.9	1.040
	13	14.0	3129.7	202.4	12.5	0.979
	14	16.0	3130.1	202.8	14.1	0.928
	15	18.0	3130.1	202.8	15.6	0.883
	16	20.0	3131.0	203.7	17.1	0.844
	17	22.0	3131.0	203.7	18.6	0.807
	18	24.0	3131.0	203.7	20.0	0.776
	19	26.0	3131.0	203.7	21.3	0.748
	20	28.0	3131.0	203.7	22.7	0.722
	21	30.0	3132.0	204.8	24.0	0.697
	22	35.0	3132.0	204.8	27.1	0.644
	23	40.0	3132.0	204.8	29.9	0.601

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
			FIRST CLOSED-IN - CONTINUED			
	24	45.0	3133.5	206.3	32.7	0.563
	25	50.0	3133.3	206.1	35.2	0.530
	26	55.0	3133.3	206.1	37.6	0.501
	27	60.0	3133.8	206.5	39.9	0.476
	28	70.0	3135.9	208.7	44.1	0.432
	29	80.0	3135.9	208.7	47.9	0.397
	30	90.0	3135.9	208.7	51.3	0.367
	31	100.0	3137.0	209.8	54.4	0.341
	32	110.0	3137.0	209.8	57.2	0.319
	33	120.0	3137.7	210.4	59.8	0.300
	34	135.0	3137.7	210.4	63.3	0.275
	35	150.0	3137.7	210.4	66.5	0.254
	36	165.0	3138.3	211.1	69.3	0.236
	37	180.0	3138.3	211.1	71.8	0.221
	38	195.0	3138.3	211.1	74.0	0.207
	39	210.0	3138.3	211.1	76.1	0.195
	40	225.0	3138.3	211.1	78.0	0.185
D	41	241.6	3138.7	211.5	79.9	0.174

REMARKS:

TICKET NO: 31662000	GAUGE NO: 3289
CLOCK NO: 30368 HOUR: 24	DEPTH: 7206.0

	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	2666.8			
	2	5.0	2775.3	108.5		
	3	10.0	2926.0	150.8		
	4	15.0	2977.2	51.2		
	5	20.0	2971.4	-5.9		
	6	25.0	2966.6	-4.8		
	7	30.0	2969.2	2.6		
	8	35.0	2969.0	-0.2		
	9	40.0	2969.2	0.2		
	10	45.0	2969.0	-0.2		
	11	50.0	2973.5	4.6		
	12	55.0	2973.5	0.0		
	13	60.0	2973.5	0.0		
	14	65.0	2973.3	-0.2		
	15	70.0	2971.8	-1.5		
	16	75.0	2971.8	0.0		
	17	80.0	2971.8	0.0		
	18	85.0	2971.8	0.0		
	19	90.0	2971.8	0.0		
	20	95.0	2971.8	0.0		
	21	100.0	2977.7	5.9		
	22	105.0	2973.5	-4.1		
	23	110.0	2973.5	0.0		
	24	115.0	2973.5	0.0		
C	25	119.4	2972.7	-0.9		
			FIRST CLOSED-IN			
C	1	0.0	2972.7			
	2	1.0	3134.5	161.8	1.0	2.081
	3	2.0	3136.6	163.9	1.9	1.790
	4	3.0	3138.2	165.5	3.0	1.607
	5	4.0	3140.9	168.2	3.9	1.487
	6	5.0	3140.9	168.2	4.8	1.396
	7	6.0	3140.9	168.2	5.7	1.323
	8	7.0	3140.9	168.2	6.6	1.257
	9	8.0	3140.9	168.2	7.5	1.201
	10	9.0	3140.9	168.2	8.4	1.155
	11	10.0	3140.9	168.2	9.2	1.112
	12	12.1	3140.9	168.2	11.0	1.037
	13	14.0	3140.9	168.2	12.5	0.980
	14	16.0	3140.9	168.2	14.1	0.927
	15	18.0	3140.9	168.2	15.6	0.883
	16	20.0	3140.9	168.2	17.1	0.843
	17	22.0	3140.9	168.2	18.6	0.808
	18	24.0	3140.9	168.2	20.0	0.776
	19	26.0	3140.9	168.2	21.4	0.747
	20	28.0	3140.9	168.2	22.7	0.721
	21	30.0	3140.9	168.2	24.0	0.697
	22	35.0	3140.9	168.2	27.1	0.644
	23	40.0	3140.9	168.2	29.9	0.601

	REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
		FIRST CLOSED-IN - CONTINUED				
	24	45.0	3140.9	168.2	32.7	0.563
	25	50.0	3140.9	168.2	35.3	0.530
	26	55.0	3140.9	168.2	37.7	0.501
	27	60.0	3140.9	168.2	39.9	0.476
	28	70.0	3140.9	168.2	44.1	0.432
	29	80.0	3143.0	170.4	47.9	0.396
	30	90.0	3143.0	170.4	51.3	0.367
	31	100.0	3143.0	170.4	54.4	0.341
	32	110.0	3143.0	170.4	57.2	0.319
	33	120.0	3143.0	170.4	59.8	0.300
	34	135.0	3143.3	170.6	63.4	0.275
	35	150.0	3144.5	171.9	66.5	0.254
	36	165.0	3144.5	171.9	69.3	0.236
	37	180.0	3144.5	171.9	71.8	0.221
	38	195.0	3144.5	171.9	74.0	0.207
	39	210.0	3144.5	171.9	76.1	0.195
	40	225.0	3144.5	171.9	78.0	0.185
D	41	241.6	3146.0	173.4	79.9	0.174

REMARKS:

000035

TICKET NO. 31662000

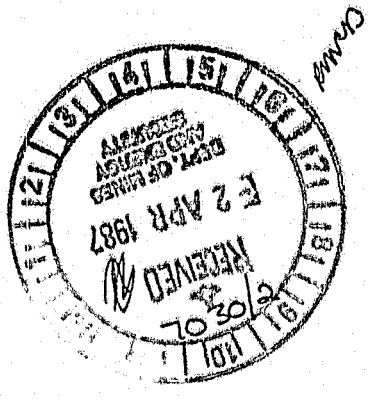
		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE.....	4.500	3.826	6496.0	
4	FLEX WEIGHT.....	4.500	2.764	178.0	
3	DRILL COLLARS.....	6.250	2.810	384.2	
51	PUMP OUT REVERSING SUB.....	6.000	3.000	1.0	7053.2
3	DRILL COLLARS.....	6.250	2.810	28.9	
50	IMPACT REVERSING SUB.....	6.000	3.000	1.0	7083.0
3	DRILL COLLARS.....	6.250	2.810	27.5	
258	BAR CATCHER SUB	5.750	1.120	1.0	7112.0
80	AP RUNNING CASE.....	5.000	2.250	4.1	7113.0
5	CROSSOVER.....	5.000	2.200	1.0	
12	DUAL CIP VALVE.....	5.000	0.870	4.8	
202	SAMPLE CHAMBER.....	5.000	2.500	4.8	
33	DRAIN VALVE.....	5.000	2.200	0.8	
60	HYDROSPRING TESTER.....	5.000	0.750	5.3	7132.6
80	AP RUNNING CASE.....	5.000	2.250	4.1	7134.1
15	JAR.....	5.000	1.750	5.0	
16	VR SAFETY JOINT.....	5.000	1.000	2.8	
70	OPEN HOLE PACKER.....	7.500	1.680	5.8	7148.0
18	DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70	OPEN HOLE PACKER.....	7.500	1.680	5.8	7156.8
19	ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
20	FLUSH JOINT ANCHOR.....	5.000	2.370	42.0	
81	BLANKED-OFF RUNNING CASE.....	5.00		4.1	7206.0
	TOTAL DEPTH				7209.0

EQUIPMENT DATA

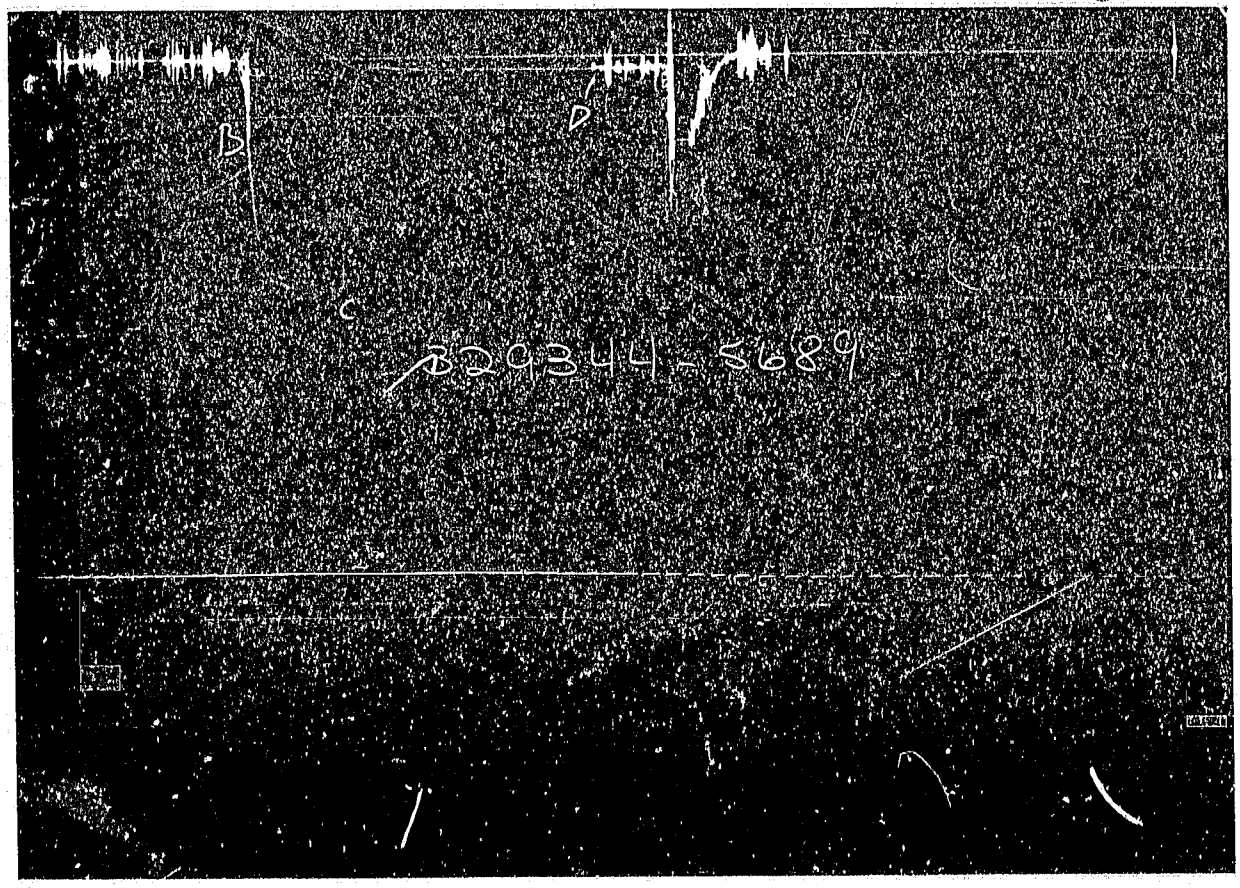
KIDMAN NORTH	DELHI PETROLEUM PTY., LTD.
LEASE NAME	LEASE OWNER/COMPANY NAME
1	1
WELL NO.	TEST NO.
SEC - TWP - RNG: SEE REMARKS	6584.8 - 6613.0
FIELD AREA: COOPER BASIN	TESTED INTERVAL
COUNTY: SOUTH AUSTRALIA	STATE: AUSTRALIA PM

HALLIBURTON SERVICES

TICKET NO. 32934400
23-MAR-87
MOOMBA

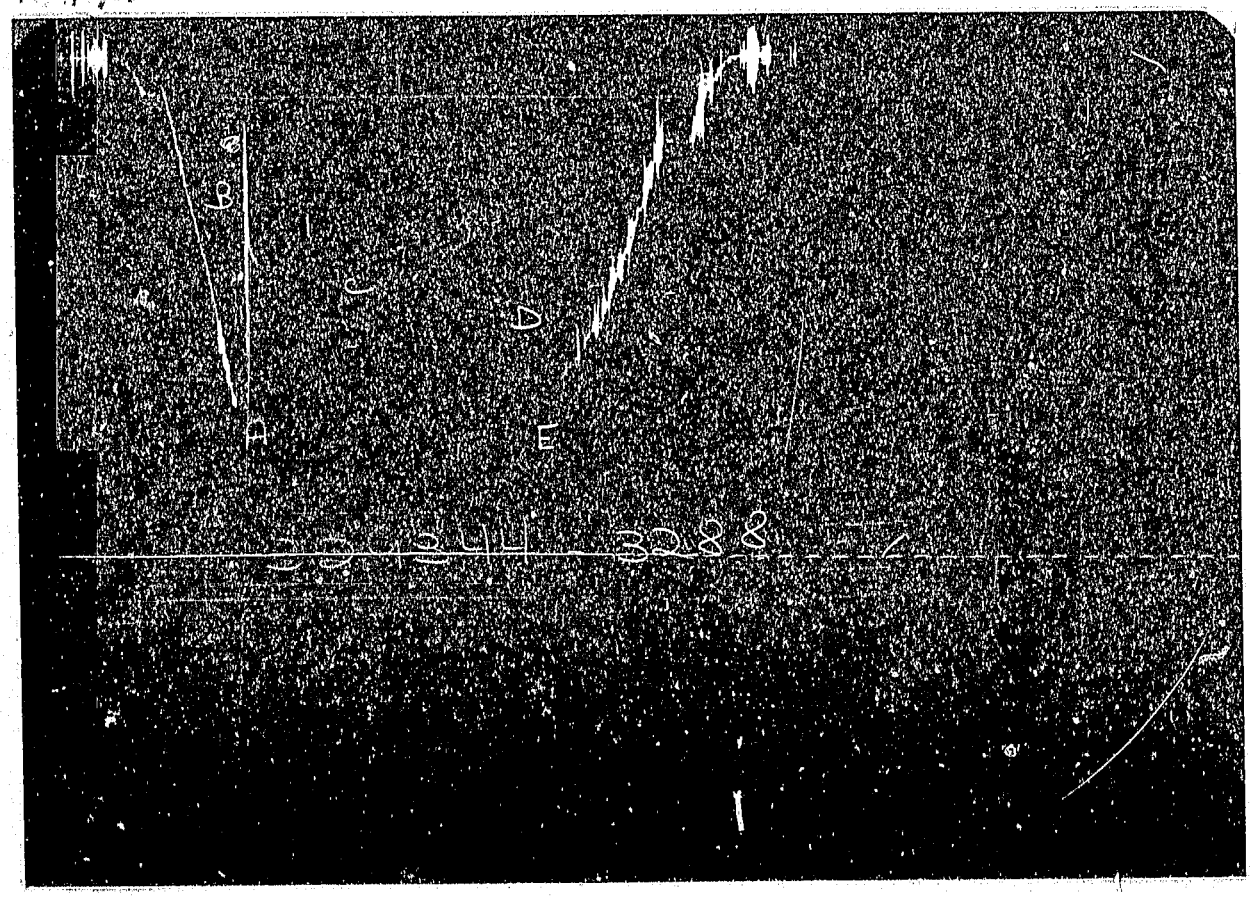


FORMATION TESTING SERVICE REPORT



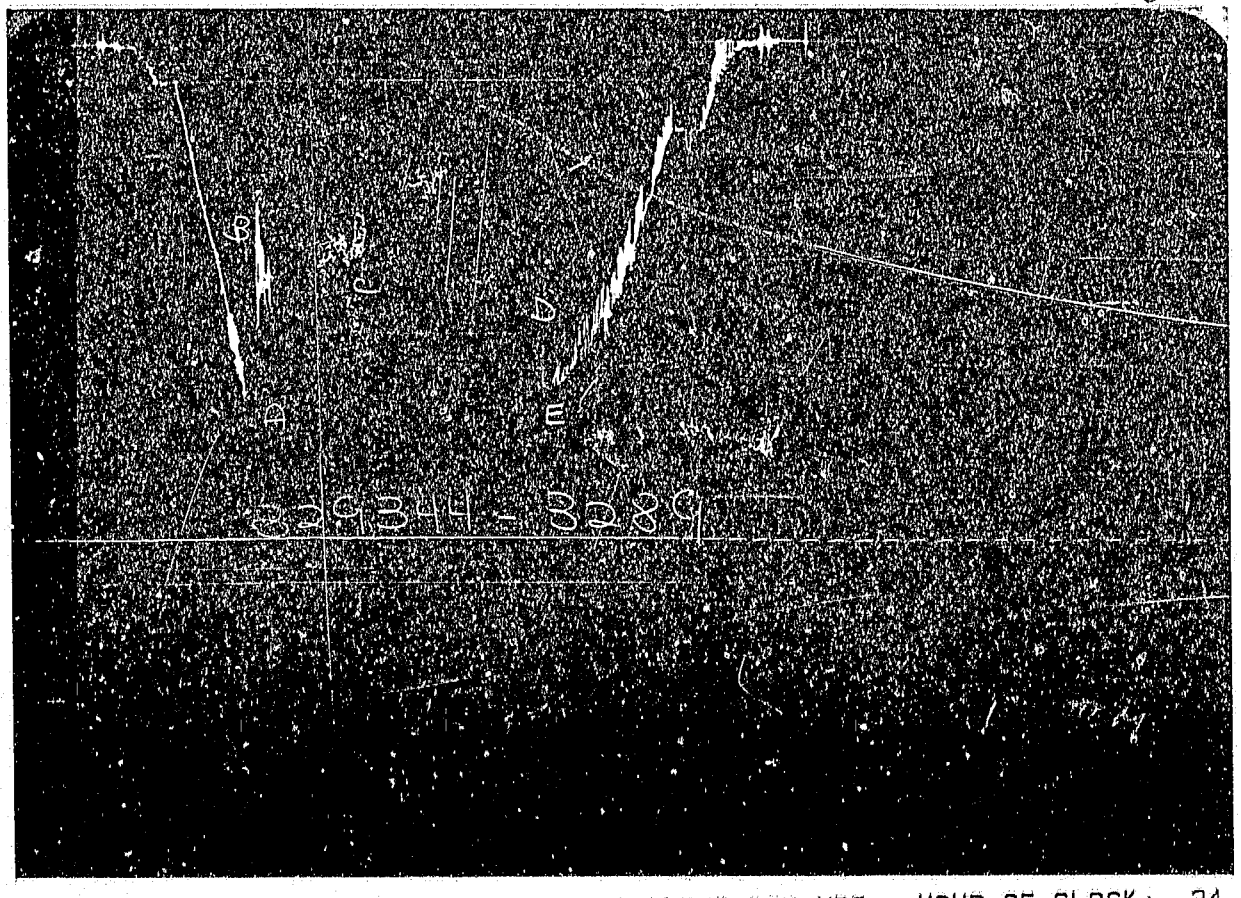
GAUGE NO: 5689 DEPTH: 6541.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		783.4	123.0	121.3	F
C	FINAL FIRST FLOW		2147.0			
C	INITIAL FIRST CLOSED-IN		2147.0	237.0	238.7	C
D	FINAL FIRST CLOSED-IN	133	114.6			
E	FINAL HYDROSTATIC					



GAUGE NO: 3288 DEPTH: 6562.2 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3214	3210.9			
B	INITIAL FIRST FLOW	889	1619.5	123.0	121.3	F
C	FINAL FIRST FLOW	2279	2278.0			
C	INITIAL FIRST CLOSED-IN	2279	2278.0	237.0	238.7	C
D	FINAL FIRST CLOSED-IN	2715	2709.9			
E	FINAL HYDROSTATIC	3210	3207.0			



GAUGE NO: 3289 DEPTH: 6610.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3221	3207.1			
B	INITIAL FIRST FLOW	1461	1727.2	123.0	121.3	F
C	FINAL FIRST FLOW	2286	2285.7			
C	INITIAL FIRST CLOSED-IN	2286	2285.7	237.0	238.7	C
D	FINAL FIRST CLOSED-IN	2677	2686.3			
E	FINAL HYDROSTATIC	3191	3198.1			

EQUIPMENT & HOLE DATA

FORMATION TESTED: TOOLACHEE
NET PAY (ft):
GROSS TESTED FOOTAGE: 28.2
ALL DEPTHS MEASURED FROM: KB
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft): 257.0
TOTAL DEPTH (ft): 6613.0
PACKER DEPTH(S) (ft): 6577, 6585
FINAL SURFACE CHOKE (in): 0.50000
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.40 +
MUD VISCOSITY (sec): 38
ESTIMATED HOLE TEMP. (°F):
ACTUAL HOLE TEMP. (°F): 254 @ 6609.0 ft

TICKET NUMBER: 32934400
DATE: 11-24-86 TEST NO: 1
TYPE DST: OPEN HOLE
HALLIBURTON CAMP: MOOMBA
TESTER: P. CORRY
WITNESS: RAY ELL
DRILLING CONTRACTOR: RICHTER RIG #14

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY		CHLORIDES
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm
	@ °F		ppm

SAMPLER DATA

Psig 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

RECOVERED:

RECOVERED GAS FROM THE SAMPLE CHAMBER
RECOVERED 492 FEET OF CLEAN CONDENSATE WHEN REVERSING OUT.

MEASURED FROM TESTER VALVE

REMARKS:

LEGAL LOCATION: 28 DEGREES - 12' - 30" SOUTH LAT.
140 DEGREES - 48' - 36.1" EAST LONG.

CHARTS INDICATE POSSIBLE PARTIAL PLUGGING OF ANCHOR PERFORATIONS DURING THE EARLY PORTION OF THE FLOW PERIOD.

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE | TICKET NO: 32934400

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
11-24-86					
0805					STARTED PICKING UP TOOLS
0905					RUN IN HOLE
1153					HEAD UP - ON BOTTOM
					SEAT PACKERS WITH 30,000#
1154	.50"				OPENED TOOL - STRONG BLOW
					OPENED VALVE TO FLARE PIT
1155		100			
1156		220			
1157		440			
1158		580			GAS TO SURFACE
1159		700			
1200		830			
1201		900			
1202		990			
1205		1100			
1209		1200			
1214		1300			
1220		1400			
1224		1400			
1231		1420			
1242		1410			
1314		1450			
1324		1480			
1335		1470			
1345		1480			
1357		1490			CLOSED TOOL
1754					OPENED BYPASS
1759					PULLED FREE AND STARTED PULLING
					OUT OF HOLE.
2055					CONNECTED HEAD TO REVERSE
					CIRCULATE.
2100					DROPPED BAR
2101					PORTS OPEN - ALLOWED MUD TO
					EQUALIZE.
2107					CLOSED HYDRIL AND STARTED
					REVERSING.

000042

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE | TICKET NO: 32934400

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
2115					FINISHED REVERSING - BREAK
					OFF HEAD AND PULLED OUT OF
					HOLE.
2230					TOOLS AT ROTARY TABLE
2320					FINISHED

000043

TICKET NO: 32934400	GAUGE NO: 5689
CLOCK NO: 29507 HOUR: 24	DEPTH: 6541.2

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	784.4			
	2	5.0	1331.7	548.2		
	3	10.0	1644.3	312.6		
	4	15.0	1833.0	188.7		
	5	20.0	1958.4	125.4		
	6	25.0	2036.5	78.1		
	7	30.0	2072.1	35.6		
	8	35.0	2094.2	22.1		
	9	40.0	2102.8	8.6		
	10	45.0	2107.9	5.2		
	11	50.0	2127.5	19.5		
	12	55.0	2139.3	11.8		
	13	60.0	2142.7	3.4		
	14	65.0	2145.1	2.4		
	15	70.0	2146.8	1.7		
	16	75.0	2164.4	17.6		
	17	80.0	2185.2	20.8		
	18	85.0	2185.2	0.0		
	19	90.0	2180.0	-5.2		
	20	95.0	2180.0	0.0		
	21	100.0	2171.7	-8.4		
	22	105.0	2158.2	-13.5		
	23	110.0	2152.8	-5.4		
	24	115.0	2152.8	0.0		
	25	120.0	2148.3	-4.5		
C	26	121.3	2147.0	-1.3		
			FIRST CLOSED IN			
C	1	0.0	2147.0			
D	2	238.7	114.6	-2032.4	80.4	0.178

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

REMARKS:

TICKET NO: 32934400	GAUGE NO: 3288
CLOCK NO: 26294 HOUR: 24	DEPTH: 6562.2

FIRST FLOW

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
B	1	0.0	1619.5			
	2	5.0	1802.2	182.7		
	3	10.0	1891.2	89.1		
	4	15.0	2022.2	181.0		
	5	20.0	2145.6	123.3		
	6	25.0	2200.9	55.3		
	7	30.0	2231.1	30.2		
	8	35.0	2247.5	16.4		
	9	40.0	2254.2	6.7		
	10	45.0	2260.3	6.0		
	11	50.0	2284.9	24.6		
	12	55.0	2294.4	9.5		
	13	60.0	2294.4	0.0		
	14	65.0	2296.3	1.9		
	15	70.0	2296.3	0.0		
	16	75.0	2308.4	12.1		
	17	80.0	2318.8	10.4		
	18	85.0	2320.3	1.5		
	19	90.0	2314.7	-5.6		
	20	95.0	2312.1	-2.6		
	21	100.0	2297.4	-14.7		
	22	105.0	2289.0	-8.4		
	23	110.0	2285.5	-3.5		
	24	115.0	2285.5	0.0		
	25	120.0	2280.3	-5.2		
C	26	121.3	2278.0	-2.4		

FIRST CLOSED-IN

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
C	1	0.0	2278.0			
	2	1.0	2659.2	381.2	1.0	2.103
	3	2.0	2664.6	386.6	2.0	1.792
	4	3.0	2669.8	391.8	3.0	1.611
	5	4.0	2673.2	395.2	3.9	1.495
	6	5.0	2675.4	397.4	4.8	1.404
	7	6.0	2676.5	398.5	5.7	1.327
	8	7.0	2677.8	399.8	6.6	1.265
	9	8.0	2679.7	401.7	7.5	1.210
	10	9.0	2680.6	402.6	8.3	1.163
	11	10.0	2682.7	404.8	9.3	1.117
	12	12.0	2683.6	405.6	10.9	1.046
	13	14.0	2684.7	406.7	12.5	0.986
	14	16.0	2685.2	408.2	14.1	0.933
	15	18.0	2688.3	410.4	15.7	0.888
	16	20.0	2689.2	411.2	17.2	0.849
	17	22.0	2689.4	411.4	18.6	0.814
	18	24.0	2690.7	412.7	20.0	0.782
	19	26.0	2691.8	413.8	21.4	0.753
	20	28.0	2691.8	413.8	22.8	0.727
	21	30.0	2692.7	414.7	24.1	0.703
	22	35.0	2695.2	417.3	27.2	0.649

FIRST CLOSED-IN - CONTINUED

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
	23	40.0	2696.5	418.6	30.1	0.605
	24	45.0	2698.1	420.1	32.8	0.568
	25	50.0	2699.1	421.2	35.4	0.535
	26	55.0	2700.0	422.0	37.8	0.506
	27	60.0	2701.1	423.1	40.1	0.480
	28	70.0	2702.2	424.2	44.4	0.436
	29	80.0	2703.7	425.7	48.2	0.401
	30	90.0	2705.6	427.6	51.7	0.370
	31	100.0	2705.6	427.6	54.8	0.345
	32	110.0	2706.9	428.9	57.7	0.323
	33	120.0	2706.9	428.9	60.3	0.303
	34	135.0	2708.2	430.2	63.9	0.278
	35	150.0	2708.2	430.2	67.0	0.257
	36	165.0	2709.1	431.1	69.9	0.239
	37	180.0	2710.6	432.6	72.5	0.224
	38	195.0	2710.6	432.6	74.8	0.210
	39	210.0	2710.6	432.6	76.9	0.198
	40	225.0	2710.6	432.6	78.8	0.187
D	41	238.7	2709.9	432.0	80.4	0.178

REMARKS:

TICKET NO: 32934400	GAUGE NO: 3289
CLOCK NO: 30368 HOUR: 24	DEPTH: 6610.0

FIRST FLOW

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
B	1	0.0	1727.2			
	2	5.0	2107.4	380.2		
	3	10.0	2141.0	33.6		
	4	15.0	2138.4	-2.6		
	5	20.0	2161.2	22.8		
	6	25.0	2208.7	47.5		
	7	30.0	2242.1	33.4		
	8	35.0	2254.7	12.6		
	9	40.0	2261.6	6.9		
	10	45.0	2261.6	0.0		
	11	50.0	2287.4	25.8		
	12	55.0	2294.4	6.9		
	13	60.0	2296.1	1.7		
	14	65.0	2296.1	0.0		
	15	70.0	2296.1	0.0		
	16	75.0	2302.8	6.7		
	17	80.0	2312.4	9.5		
	18	85.0	2314.5	2.2		
	19	90.0	2314.5	0.0		
	20	95.0	2307.4	-7.2		
	21	100.0	2295.2	-12.1		
	22	105.0	2285.0	-10.2		
	23	110.0	2281.1	-3.9		
	24	115.0	2283.1	2.0		
	25	120.0	2284.6	1.5		
C	26	121.3	2285.7	1.1		

FIRST CLOSED-IN

C	1	0.0	2285.7			
	2	1.0	2626.5	340.8	1.0	2.104
	3	2.0	2636.7	351.0	2.0	1.781
	4	3.0	2642.1	356.4	3.0	1.612
	5	4.0	2645.3	359.7	3.9	1.493
	6	5.0	2648.8	363.1	4.8	1.403
	7	6.0	2650.5	364.9	5.7	1.328
	8	7.0	2652.9	367.2	6.6	1.263
	9	8.0	2654.4	368.8	7.5	1.210
	10	9.0	2655.5	369.8	8.4	1.159
	11	10.0	2656.8	371.2	9.3	1.117
	12	12.0	2658.4	372.7	10.9	1.047
	13	14.0	2660.1	374.4	12.5	0.986
	14	16.0	2661.6	375.9	14.1	0.934
	15	18.0	2663.8	378.1	15.7	0.889
	16	20.0	2665.5	379.8	17.2	0.849
	17	22.0	2667.2	381.6	18.8	0.814
	18	24.0	2668.3	382.6	20.0	0.782
	19	26.0	2668.3	382.6	21.4	0.753
	20	28.0	2668.3	382.6	22.7	0.727
	21	30.0	2668.3	382.6	24.1	0.702
	22	35.0	2670.3	384.6	27.2	0.650

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t+\Delta t}$	$\log \frac{t+\Delta t}{\Delta t}$
	FIRST CLOSED-IN - CONTINUED					
	23	40.0	2672.2	386.6	30.1	0.606
	24	45.0	2673.5	387.9	32.8	0.568
	25	50.0	2674.8	389.2	35.4	0.535
	26	55.0	2676.6	390.9	37.8	0.506
	27	60.0	2676.6	390.9	40.2	0.480
	28	70.0	2677.9	392.2	44.4	0.437
	29	80.0	2679.0	393.3	48.2	0.401
	30	90.0	2681.1	395.4	51.7	0.371
	31	100.0	2682.4	396.7	54.8	0.345
	32	110.0	2682.4	396.7	57.7	0.323
	33	120.0	2682.4	396.7	60.3	0.303
	34	135.0	2683.3	397.6	63.9	0.278
	35	150.0	2683.9	398.3	67.1	0.257
	36	165.0	2684.4	398.7	69.9	0.239
	37	180.0	2684.4	398.7	72.5	0.224
	38	195.0	2684.4	398.7	74.8	0.210
	39	210.0	2685.5	399.8	76.9	0.198
	40	225.0	2685.5	399.8	78.8	0.187
D	41	238.7	2686.3	400.7	80.4	0.178

REMARKS:

TICKET NO. 32934400

		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE.....	4.500	3.826	5917.0	
4	FLEX WEIGHT...	4.500	2.764	178.8	
9	DRILL COLLARS.....	6.500	2.750	353.4	
51	PUMP OUT REVERSING SUB.....	6.000	3.000	1.0	6450.4
3	DRILL COLLARS.....	6.500	2.750	59.7	
50	IMPACT REVERSING SUB.....	6.000	3.000	1.0	6511.0
3	DRILL COLLARS.....	6.500	2.750	27.5	
258	BAR CATCHER SUB	5.750	1.120	1.0	6540.0
80	AP RUNNING CASE.....	5.000	2.250	4.1	6541.2
5	CROSSOVER.....	5.000	2.200	1.0	
12	DUAL CIP VALVE.....	5.000	0.870	4.9	
202	SAMPLE CHAMBER.....	5.000	2.500	4.9	
33	DRAIN VALVE.....	5.000	2.200	0.9	
60	HYDROSPRING TESTER.....	5.000	0.750	5.3	6560.1
80	AP RUNNING CASE.....	5.000	2.250	4.1	6562.2
15	JAR.....	5.000	1.750	5.0	
16	VR SAFETY JOINT.....	5.000	1.000	2.8	
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6577.0
19	ANCHOR PIPE SAFETY JOINT.....	5.000	1.680	2.0	
70	OPEN HOLE PACKER.....	7.750	1.680	5.8	6584.8
19	ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
20	FLUSH JOINT ANCHOR.....	5.000	2.370	16.0	
81	BLANKED-OFF RUNNING CASE.....	5.000		4.1	6610.0
	TOTAL DEPTH				6613.0

EQUIPMENT DATA

OILSERV AUSTRALIA

Well Testing/Oilfield Equipment Supply/Personnel-Consultant Placement

KIDMAN NORTH #1 UPPER

TOOLACHEE FORMATION

CLEAN UP & MODIFIED ISOCHRONAL TEST

3 - 14 AUGUST, 1987.

Suite 21, 242-244 Glen Osmond Road,
Fullarton, S.A. 5063
Telephone: (08) 338 1630 — Telex: AA88713

CLEAN UP FLOW

8/2/88
ENV 7030/2
VOL. 2

WELL TEST DATA SHEETS

CLEAN UP FLOW

WELL: Kidman North #1 (U)

TYPE OF TEST: Multi Isochronal.

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 3 August 87

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
							Clean up Flow.												
07.00.			Rig up all surface equipment																
17.40	0	2210	59			Open To Choke manifold To pressure Test line.													
18.30	0	2210	60	16/64		Open well To Have Separator by-passed.													
18.45.	0.	2190	65	20/64		Change choke.									4.6	est			
19.30	0	2100.	68	20/64											4.4	"			
20.30	0.	2105	68.	20/64		Slugging cond/water.									4.4	"			
22.30	7	1980	93	20/64		(Unstable choke)									4.2	"			
4 August 87.																			
00.30	10	1990	96	20/64											4.2	"			
02.30	13	1975	97	20/64											4.1	"			
04.30	15	1984	100	20/64											4.2	"			
06.30	18	1997	101	20/64											4.2	"			
08.30	21	1945	101	20/64											4.1	"			
10.30	25	1905	101	20/64											4.1	"			
12.30	27	1930	104	20/64											4.1	"			
14.30	28	1940	101	20/64											4.1	"			
16.30	30	1920	104	20/64											4.1	"			
18.30	30	1910	104	20/64											4.1	"			
20.30	31	1960	104	20/64											4.2	"			

OPERATOR: B Lohrey T Hirst.

000050

WELL: Kidman North #1 (U)

TYPE OF TEST: M. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 4-5 August 87

PAGE No: 2 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
2230	35	1900	106	20/64											4.0	est			
5 August 87																			
0030	35	1902	106	20/64											4.0	est			
0230	35	1910	106	20/64											4.1	est			
0430	35	1910	106	20/64											4.1	est			
0630	35	1910	106	20/64											4.1	est			
0830	44	1900	109	20/64											4.0	est			
0906					Shut well in the repair leak on pipe work														
0910				20/64	Open well														
0914					Shut in well To repair leak on Wellhead union														
0918	58	2170	95	20/64	Open well To flare.														
1230	42	1868	106	20/64	Flow into separator								90						
1430	51	1915	108	20/64		225	21	37	2.250	360	1.19	56	80	0.5	2.2	14	6	20	157142
1630	55	1870	111	20/64		225	19	39	2.250	750	2.0	56	150	0.4	2.1	24	5	29	87500
1830	60	1890	108	20/64		215	21	32	2.250	1260	3.2	56	150	0	2.2	38	0	38	57894
2030	62	1915	108	20/64		210	19	23	2.250	1600	2.1	56	150	0	2.1	25	0	25	84000
2230	64	1915	107	20/64		210	19	27	2.250	1750	0.9	56	150	0	2.1	10	0	10	210000
6 August 87																			
0030	64	1915	107	20/64		195	19	27	2.250	2350	3.5	56	180	.18	2.0	42	2	44	47619
0230	64	1915	107	20/64		195	18	25	2.250	2700	2.2	56	180	0	1.97	26	0	26	75769

OPERATOR: Blohberg T. Hirst

000051

WELL: Kilman North #1 (V)

TYPE OF TEST: Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 6 August 87

PAGE No: 3 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
0430	62	1917	108	20/64		180	30	25	2.000	3100	2.3	56	210	0.18	1.9	28	2	30.0	67857
06:30	62	1917	108	20/64		180	30	25	2000	3425	1.2	56	340	0.82	1.9	14.7	9.8	245	129251
08:30	62	1915	109	20/64	Change Sep 85/64	200	32	28	2.000	3750	1.2	56	470	0.82	2	14.7	9.8	24.5	136054
10:30	90	1787	111	22/64		210	48	39	2.000	4270	3.3	56	~~470~~	0	2.5	39.2	0	39.2	63775
12:30	107	1780	113	22/64		220	48	45	2.000	4720	1.4	56	700	1.4	2.6	16.8	16.8	33.6	15476
1430	120	1792	117	22/64		220	46	46	2.000	5220	2.0	57.3	880	1.1	2.5	24	13	37	104166
14 30		Change choke to 24/64																	
16:30	198	1600	120	24/64		170	100	48	2.000	6075	3.5	57.3	1170	1.8	3.3	42	22	64	78571
18:30	220	1610	122	24/64		160	100	48	2.00	100/850	2.8	57.3	0/300	1.88	3.2	34	23	57	94117
20:30	242	1613	122	24/64		150	108	48	2.00	1475	3	57.3	450	0.94	3.2	36	11.3	47.3	88888
22:30	265	1612	124	24/64		150	108	48	2.00	2080	2.8	57.3	610	1.0	3.2	33.6	12	45.6	95238
	7th	August	1987																
00:30	295	1611	125	24/64		140	112	48	2.00	2650	2.4	57.3	800	1.2	3.2	28.6	14.3	42.9	111888
02:30	319	1605	126	24/64		138	111	48	2.00	3240	2.8	57.3	950	0.94	3.115	33.2	11.3	44.5	93825
04:30	332	1606	126	24/64		140	112	50	2.00	3800	1.95	57.3	1200	1.57	3.143	23.4	18.8	42.2	134316
06:30	350	1602	127	24/64		142	110	50	2.00	4325	2.68	57.3	1300	0.62	3.1	32	7	39	96875
08:30	350	1600	127	24/64		142	108	52	2.00	4980	3.10	57.3	1460	1.0	3.1	37	12	49	83783
10:30	350	1598	127	24/64		150	104	57	2.000	5500	2.7	57.3		0.56	3.1	32	7	39	96875
12:30	355	1595	129	24/64		170	100	59	2.000	629/700	3.2	57.3	80/150	0.44	3.2	38	5	43	84210
14:30	400	1595	129	24/64		175	92	61	2.000	1100	1.8	57.3	260	0.69	3.127	21.9	8.3	30.2	142785

OPERATOR B Lohrey T Hirst

000052

WELL: Kidman North #1 (U)

TYPE OF TEST: M. Isochronal

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 7th August 1987

PAGE No: 4 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
16·30	410	1595	129	24/64		180	90	61	2·00	1800	3·2	57·3	450	1·19	3.135	38.5	14.3	52.8	81428.
18·30	405	1592	129	24/64		160	92	61	2·000	2300	2·5	57·3	550	0.62	3·0.	30	7	37	100,000
20·30	405.	1591	129	24/64		150.	100.	61.	2·000	2750	2·0	57·3	680	0·81.	3·0	24	10	30	125,000
22·30	405	1590	129	24/64		140	104	54	2·000	3300	2·57	57·3	820	0·88	3·0	30.9	10·5	41.4	97087
	8th	August	1987																
00·30	440	1585	129	24/64		140	106	55	2·000	3710	2·32	57·3	860	0·25	3.04	27.9	3.0	30.9	108960
02·30	445	1580	131	24/64		139	109	55	2·000	4250	2·51	57·3	1000	0·68	3.07	30.1	10.5	40.6	101993
04·30	450	1580	131	24/64		138	110	55	2·000	4725	2·1	57·3	1140	0·88	3.07	25.2	10.5	35.7	121825
06·30	455	1575	129	24/64		138	110.	54	2·000.	5250	2·6	57·3	1240	0·62	3·08.	32.1	7.4	39	96250
08·30	455	1575	131	24/64		140	110	55	2·000.	5800	2·2	57·3	1430	1·19	3·09	27	14	41	114444.
09·45				Start	To	do chokes		Sett	ings.										
10·25		2080		6/64		Rate # 1													
10·40	315	2090	120.	6/64		140	36.	54	1·000						0·42				
		Rate #		2															
11·00		1830.		14/64															
11·15	330	1850	124	14/64		160.	32.	50	2·000						1·78				
		Rate #		3															
11·35		1470.		22/64															
11·50	340.	1480.	129	22/64.		200	88	64	2·000.						3·25				
		Rate #		4															

OPERATOR: B Lohrey T Hirst

000053

WELL: Kidman North #1 (U)

TYPE OF TEST: M. Isochronal

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 8 August 87

PAGE No: 5 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
12.05		1120		28															
12.20	400	1133	131	28		190	58	79	2.5						4.16				
			Rate	#	5														
12 50		835		34.															
13.05	480	830	133	34		205	30	95	3.0						4.83				
			Rate	#	6														
13.35				20		change choke to 20/64.													
14 35	480	1552	133	20.		180	100	79	2.0						3.2				
16 35	490	1552	133	20		180	100.	66	2.0.						3.2				
17.30	490	1552	133	20		Shut in for build up.													
17.45	450	2125																	
18.00	415	2139																	
18 30	260.	2145																	
19.30	210	2155																	
20.30	100	2160																	
22.30	0	2175		Lower zone opened for clean up flow.															
9	Aug	UST	87																
00.30	485	2195																	
02.30	690	2207																	
04 30	920	2221																	

OPERATOR: B Lohley T Hirst

000054

WELL: Kidman North #1 (U)

TYPE OF TEST: Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 9 August 87

PAGE No: 6 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
06·30	1200.	2225				Shut in for 13 hrs.													
08·30	1520	2227																	
10·30	1580	2235																	
12·30	1630	2247																	
14·30	1675	2251																	
16·30	1710	2261																	
18·30	1745	2265																	
20·30	1760	2265																	
22·30	1790	2265																	
	10th	August		1987															
00·30	1805	2275																	
02·30	1825	2280																	
04·30	1845	2285																	
06·30	1860	2288				Shut in for 37 hrs													
08·30	1880	2288																	
10·30	1890	2288																	
12·30	2020	2288																	
14·30	2125	2300																	
16·30	2175	2310																	
18·30	2175	2313																	

OPERATOR: BLohrey T Hirst

WELL: KIDMAN North #1 Upper

TYPE OF TEST: Modified Iso.

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 10th August 1987

PAGE No: 7 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1831		Shut in		Kidman		North	#1	Lower											
1845	1965	2310																	
1900	1900	2307																	
1930	1590	2302																	
2030	1220	2299																	
2230	765	2295																	
	11th	August		1987															
0030	460	2293																	
0230	260	2291																	
0630	100	2290						61	hrs	shut	in	time							
0830	0	2292																	
1030	0	2292																	
1230	0	2291		Run in hole with 1.750" guage ring. Tag plug @ 6555 'K.B. (10 feet lower than program depth)															
1430	0	2295																	
1630	0	2295				Ready for Modified Isochronal Test													

OPERATOR: S. MAYER / T. HIRST

000056

SANTOS FLUID PRODUCTION SHEETS

WELL Kielman North #1 Upper

TANK:— CAPACITY 2 x 7850 litres
SCALE Calib. Dip Stick.

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 5 August 87.
PAGE No. 1 of 2
OPERATOR Blakey T Hirst.

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP INS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP INS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
			Clean up flow.									
12.30			Flow into separator.									
12.30		90	—			56	0	—				
14.30		360	1.19	14.2	1.19	56	80	0.5	6	0.5	18000	20/64 choke
16.30		750	20	24.0	3.19	56	150	0 14	4.8	0.9	18000	
18.30		1260	32	38.4	6.39	56	150	0	0	0.9		
20.30		1600	2.1	25.2	8.49	56	150	0	0	09		
22.30		1750	0.9	10.8	8.58	56	150	0	0	6.9		
6 August		87										
00.30		2350	3.5	42	12.08	56	180	.18	2	1.08	17000	
02.30		2700	2.2	26	14.28	56	180	0.0	0	1.08		
04.30		3100	2.3	28	16.58	56	210	.18	2	126	17000	
06.30		3425	1.2	14.7	17.78	56	340	0.82	9.8	2.08	17000	
08.30		3750	1.2	14.7	18.98	56	470	0.82	9.8	2.9	17000	change choke to 22/64.
10.30		4270	3.3	39.2	22.28	56	470	0.0	0	2.9		
12.30		4720	1.4	16.8.	23.68	56	700	1.4	16.8.	4.3	16000	
14.30		5220.	2.0	24.0.	25.68	57.3	880	1.1	13.2	5.4	16000	change choke to 24/64.
16 30		6075.	3.5	42.0	29.18	57.3	1170.	1.8	21.6	7.2	16000	
18.30		100/850	2.8	33.6	31.98	57.3	9/300	1.88	22.56	9.08	16000	
20.30		1475	3	35.9	34.98	57.3	450	0.94	11.32	10.02	16000	

*0/5576

DD3

000058

WELL Kidman North #1

TANK:— CAPACITY 2 x 7850 litres
SCALE Calib. Dip Stick

SANTOS LTD
FLUID PRODUCTION SHEET

DATE 6th August 1987
PAGE No. 2 of 2
OPERATOR B Lohrey T Hirst

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
22·30		1475/2080	2.8	33.6	37.78	57·3	450/610	1.0	12	11.02	16,000	
	7th August 1987											
00·30		2650	2.4	28.6	40.18	57·3	800	1.2	14.3	12.22	16,000	
02·30		3240	2.77	33.2	42.95	57·3	950	0.94	11.3	13.16		
04·30		3800	1.95	23.4	44.9	57·3	1200	1.57	18.8	14.73	10,000	
06·30		4325	2.68	32.1	47·58	57·3	1300.	0.62	7·4.	15·35	10,000	
08·30		4980.	3·1	37·2.	50·68.	57·3.	1460.	1·0	12	16·35.	2000.	
10·30.		5500.	2·7	32.4	53·38	57·3.	1550.	0·56	7.	16.91	2000.	
12·30.		120/700	3·2	38·4.	56·58	57·3	80/150.	0·44.	5	17.35	2000.	
14·30		1100	1·8	21.9	58.38	57·3	260	0·69	8·3	18.04	2000.	
16·30		1800	3.2	38.5	61.40	57·3	450	1·19	14.3	19.23	2000.	
18·30		2300	2·5	30.	63·9	57·3	550	0·62	7.4	19·85	2000	
20·30.		2750.	2.0.	24.	65·9.	57·3.	680	0·81	9·7.	20·66	2000.	
22·30		3300	2.57	30.9	68.47	57·3	820	0·88	10.5	21.54	2000	
8 August 87.												
00·30		3710	2.32	27.9	70.79	57·3	860	0·25	3·0	21.79	2000	
02·30		4250	2.51	30.1	73.3	57·3	1000	0·88	10.5	22.67	2000	
04·30		4725	2.10	25.2	75.4	57·3	1140	0·88	10.5	23.55	2000	
06·30		5250	2·68	32.1	78·08	57·3	1240.	0.62	7·4	24.17	2000.	
08·30.		5800.	2·26.	27·1	80.34.	57·3.	1430.	1.19	14·2	25·36	2000.	

END OF CLEAN UP FLOW.

*0/5576

DDS

000059

OILSERV GAS FLOW RATE CALCULATIONS

FORM NO. 31-15 (2/74)

OSA PRODUCTION SERVICES

DATE: 5·8·87

COMPANY SANTOS LTD WELL NO. North #1

FIELD KIDMAN INTERVAL TESTED 6894 - 6796'

COUNTRY S. Australia TECHNICIAN B Lohrey

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 1 OF 4

ORIFICE FITTING TYPE: Daniel Senior ORIFICE FITTING SIZE: 4.026" [X] FLANGE TAPS. [ ] PIPE TAPS.

GAS FLOW RECORDER TYPE: Foxboro. SER. NO. PRESSURE RANGE: 0-1500 PSI DIFFERENTIAL RANGE: 0-100"

DATE OF LAST CALIBRATION: 4·8·87 GAS SPECIFIC GRAVITY As Tested. CALIBRATED BY: B Lohrey

TIME DATA: DATE & TIME HOURS	TIME DATA: ELAPSED TIME HOURS	CHOKE SIZE 64THS. INCH	METER RUN DATA: PRESS. PSIA	METER RUN DATA: DIFF. INCHES WATER	METER RUN DATA: TEMP. °F	METER RUN DATA: PLATE SIZE INCHES	$\sqrt{P_f x hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{PV}	C'	FLOW RATE $Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	REMARKS
				Clean up Flow.														
12 30		20/64		Flow into separator.														
14·30		20/64	240	21	37	2.250	70.95	1089.91	1	1	1.1426	1.0229	1	1.0005	1.0383	1323.2	2.2	
16·30		20/64	240	19	39	2.250	67.48	1089.91	1	1	1.1426	1.0208	1	1.0005	1.0378	1319.9	2.1	
18·30		20/64	230	21	32	2.250	69.45	1089.91	1	1	1.1426	1.0281	1	1.0005	1.0379	1329.4	2.2	
20·30		20/64	225	19	28	2.250	66.34	1089.91	1	1	1.1426	1.0323	1	1.0005	1.0381	1335.0	2.1	
22·30		20/64	225	19	27	2.250	66.34	1089.91	1	1	1.1426	1.0333	1	1.0005	1.0384	1336.8	2.1	
6 August			87.															
00 30		20/64	210	19	27	2.250	63.12	1089.91	1	1	1.1426	1.0333	1	1.0005	1.0355	1333.24	2.0	
02·30		20/64	210	18	25	2.250	61.44	1089.91	1	1	1.1426	1.0355	1	1.0005	1.0361	1336.61	2.0	
			D/P	unit	replaced	by	Baton					Cont.	next	page.				

000061

FORM NO. 31-15 (2/74)

OSA PRODUCTION SERVICES

DATE: 6 August 87

COMPANY SANTOS LTD. WELL NO. 1

FIELD Kidman North. INTERVAL TESTED 6594'-6796'

COUNTRY Australia. TECHNICIAN B Lahrey.

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 2 OF 4

ORIFICE FITTING TYPE: Daniel Senior ORIFICE FITTING SIZE: 4.026" ☒ FLANGE TAPS. ☐ PIPE TAPS.

GAS FLOW RECORDER TYPE: Barton. SER. NO. PRESSURE RANGE: 0-1000 PSI. DIFFERENTIAL RANGE: 0-200"

DATE OF LAST CALIBRATION: 20.6.87. GAS SPECIFIC GRAVITY As Tested. CALIBRATED BY: L Correia.

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE $Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'		
02:30		20	195	30	25	2.0	76.43	842.11	1	1	1.1426	1.0355	1	1.0009	1.0333	1030.3	1.89	SG. 0.766
06:30		20	195	30	25	2.0	76.43	842.11	1	1	1.1426	1.0355	1	1.0009	1.0333	1030.3	1.89	
08:30		20	215	32	28	2.0	82.89	842.11	1	1	1.1426	1.0323	1	1.0009	1.0362	1030.13	2.04	Change choke to 22/64
10:30		22	225	48	39	2.0	103.86	842.11	1	1	1.1426	1.0208	1	1.0013	1.0352	1018.11	2.53	
12:30		22	235	48	45	2.0	106.14	842.11	1	1	1.1426	1.0117	1	1.0012	1.0347	1008.48	2.56	
14:30		22	235	46	46	2.0	103.91	842.11	1	1	1.1396	1.0137	1	1.0012	1.0355	1008.65	2.51	Change choke to 24/64
16:30		24	185	100	48	2.0	135.91	842.11	1	1	1.1396	1.0117	1	1.0033	1.0271	1000.53	3.26	SG 0.770
18:30		24	175	100	48	2.0	132.18	842.11	1	1	1.1396	1.0117	1	1.0035	1.0255	999.20	3.17	
20:30		24	165	108	48	2.0	133.38	842.11	1	1	1.1396	1.0117	1	1.0040	1.0240	998.20	3.19	
22:30		24	165	108	48	2.0	133.38	842.11	1	1	1.1396	1.0117	1	1.0040	1.0240	998.20	3.19	
	7th	August	1987															
00:30		24	155	112	48	2.0	131.64	842.11	1	1	1.1396	1.0117	1	1.0044	1.0224	997.12	3.15	
02:30		24	153	111	48	2.0	130.20	842.11	1	1	1.1396	1.0117	1	1044	1.0221	996.84	3.11	
04:30		24	155	112	50	2.0	131.64	842.11	1	1	1.1396	1.0098	1	1.0044	1.0221	994.68	3.14	

000062

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f X hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	7th. August			1987														
06:30		24	157	110	50	2·0	131·30	842·11	1	1	1·1396	1·0098	1	1·0043	1·0224	99504	3·13.	SG 0·770.
08:30		24	157	108	52	2·0	130·10	842·11	1	1	1·1396	1·0078	1	1·0042	1·0221	992·73	3·10	"
10·30		24.	165	104.	57·	2·0	130·88	842·11	1	1	1·396	1·0029	1	1·0039	1·0226	988·00	3·10	"
12·30		24.	185	100	59	2·0	135·91	842·11	1	1	1·396	1·0010	1	1·0033	1·0252	988·04	3·22.	"
14·30		24	190	92	61	2·0	132·11	842·11	1	1	1·1396	0·9990	1	1·0030	1·0256	986.17	3·13	"
16·30		24	195	90	61	2·0	132·38	842.11	1	1	1.1396	0.9990	1	1.0028	1.0263	986.72	3·13	"
18·30		24	175	92	61	2.0	126·78	842.11	1	1	1·896	0·9990	1	1·0032	1·0234	984·37	2·99.	"
20 30		24.	165	100.	61.	2.0.	128·34	842.11	1	1	1·1396	0.9990	1	1·0037	1·0220	983·49	3·03.	"
22·30		24	155	104	54	2·0	126·85	842·11	1	1	1·1396	1·0058	1	1·0041	1·0216	990·13	3·01	"
8 August			87.															
0030		24	155	106	55	2·0	128·06	842.11	1	1	1·1396	1·0048	1	1·0042	1·0214	989.11	3·04	"
0230		24	154	109	55	2·0	129·44	842.11	1	1	1·1396	1·0048	1	1·0043	1·0213	989.11	3·07	"
0430		24	153	110	55	2·0	129·61	842.11	1	1	1.1396	1·0048	1	1·0044	1·0211	989.04	3·07	"
06·30		24.	153	110	54	2·0.	129·61	842·11	1	1	1·1396	1·0058	1	1·0044	1·0213	990.14	3·08.	"
08·30		24	155	110	55	2·0	130·46	842.11	1	1	1·1396	1·0048	1	1·0043	1·0214	989·27	3·09.	"
09.45				Start To		do	Choke	Settings.										
				Rate #		1												
1040		6	155	36	54	1·0	74·63	201·98	1	1	11396	1·0058	1	1·0016	1·0216	236·88	0·424	"
				Rate #		2												

000063

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
11:15		14.	175	32	50.	2.0	74.77	842.11	1	1	1.1396	1.0098	1	1.0011	1.0252	994.55	1.785	56.0.770.
				Rate # 3														
11.50		22	215	88	64	2.0	137.46	842.11	1	1	1.1396	0.9962	1	1.0025	1.0286	985.80	3.252	
				Rate # 4.														
12.20		28	205	58	79	2.5	108.96	1381.17	1	1	1.1396	0.9822	1	1.0015	1.0247	1593.40	4.167.	
				Rate # 5.														
13.05		34	220	30	95	3.0	81.19	2194.95	1	1	1.1396	0.9680	1	1.0005	1.0241	2480.73	4.834.	
				Rate # 6.														
14.35		20	195	100	79	2.0	139.54	842.11	1	1	1.1396	.9822	1	1.0031	1.0234	967.70	3.241.	
16 35		20	195	100.	66	2.0	139.54	842.11	1	1	1.1396.	.9943	1	1.0031,	1.0254	981.52	3.287.	
17.30				Shut in well for buildup.														

0000064

WELL TEST DATA METRIC SUMMARY SHEETS

WELL: Kidman North #1 (H)

OPERATOR: B. Lohrey T. Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 3 August 1987

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
						Clean up flow									
07:00					Rig up all	surface	equipment								
17:40	0	0	2210	15238		59	15	Open to Choke manifold to				pressure test line			
18:30	0	0	2210	15238	16/64	60	18	Open well to flare			Separator by-passed				
18:45	0	0	2190	15100	20/64	65	18	Change Choke				4.6 (est.)	129		
19:30	0	0	2100	14479	20/64	68	20					4.4	123		
20:30	0	0	2105	14514	20/64	68	20	Slugging cond./water				4.4	123		
22:30	7	48	1980	13652	20/64	93	34	(Variable choke)				4.2	118		
.	4th	August	1987												
00:30	10	69	1990	13721	20/64	96	36					4.2	118		
02:30	13	89	1975	13618	20/64	97	36					4.1	116		
04:30	15	103	1984	13680	20/64	100	38					4.2	118		

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

930006

WELL: Kidman North #1 (U)

OPERATOR: B. Lohvey T Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 4 August 1987

PAGE No: 2 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
06·30	18	124	1997	13769	20/64	101	38					4·2 (est)	118		
08·30	21	145	1945	13411	20/64	101	38					4·1	116		
10·30	25	172	1905	13135	20/64	101	38					4·1	116		
12·30	27	186	1930	13307	20/64	104	40					4·1	116		
14·30	28	193	1940	13376	20/64	101	38					4·1	116		
16·30	30	207	1920	13238	20/64	104	40					4 1	116		
18·30	30	207	1910	13169	20/64	104	40					4·1	116		
20·30	31	214	1960	13514	20/64	104	40					4·2	118		
22·30	35	241	1900	13100	20/64	106	41					4·0	113		
	5th	August		1987											
00·30	35	241	1902	13114	20/64	106	41					4·0	113		
02·30	35	241	1910	13169	20/64	106	41					4·1	116		

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

230087

WELL: Kidman North #1 (C)
OPERATOR: B.Lohrey THirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 5th August 1987
PAGE No: 3 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
04·30	35	241	1910	13169	20/64	106	41					4·1(est)	116		
06·30	35	241	1910	13169	20/64	106	41					4·1	116		
08·30	44	303	1900	13100	20/64	109	43					4·0	113		
09·06								Shut well in		Repair leak on		pipe work			
09·10					20/64			Open well						"	
09·14								Shut well in		to repair leak on		hammer union			
09·48	38	262	2170	14962	20/64	95	35	Open to flare							
12·30	42	283	1868	12880	20/64	106	41	Flow into Separator							
14·30	51	352	1915	13204	20/64	108	42	14	2.22	6	0.95	2·2	62	157142	27861
16·30	55	379	1870	12894	20/64	111	44	24	3.81	5	0.79	2·1	59	87500	15514
18·30	60	414	1890	13032	20/64	108	42	38	6.04	0	0	2·2	62	57894	10265
20·30	62	427	1915	13204	20/64	108	42	25	3.97	0	0	2·1	59	84000	14893

CONVERSION FACTORS:
- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

830000

WELL: Kidman North #1 (U)
OPERATOR: B. Lohrey THurst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 5 August 1987
PAGE No: 4 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
22·30	64	441	1915	13204	20/64	107	42	10	1.58	0	0	2·1	59	210000	37233
	6th	August	1987												
00·30	64	441	1915	13204	20/64	107	42	42	6.67	2	3.17	2·0	56	47619	8442
02·30	64	441	1915	13204	20/64	107	42	26	4.13	0	0	1·97	55	75769	13433
04·30	62	427	1917	13218	20/64	108	42	28	4.45	2	3.17	1·9	53	67857	12031
06·30	62	427	1917	13218	20/64	108	42	14·7	2.33	9·8	1.55	1·9	53	129251	22916
08·30	62	427	1915	13204	20/64	109	43	14·7	2.33	9·8	1.55	2	56	136054	24122
10·30	90	621	1787	12321	22/64	111	44	39·2	6.23	0	0	2·5	70	63775	11307
12·30	107	738	1780	12273	22/64	113	45	16·8	2.67	16·8	2.67	2·6	73	15476	2743
14·30	120	827	1792	12356	22/64	117	47	24	3.81	13	2.06	2·5	70	104166	18468
14·30					24/64			Change Choke to			24/64				
16·30	198	1365	1600	11032	24/64	120	49	42	6.67	22	3.49	3·3	93	78571	13930

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

630009

WELL: Kidman North #1 (V)

OPERATOR: B. Lohrey. T Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 6th August 1987

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
18·30	220	1517	1610	11101	24/64	122	50	34	5.4	23	3.65	3·2	90	94117	16686
20·30	242	1669	1613	11122	24/64	122	50	36	5.72	11·3	1·79	3·2	90	88888	15759
22·30	265	1827	1612	11115	24/64	124	51	33·6	5.34	12	1·90	3·2	90	95238	16885
	7th	August	1987												
00·30	295	2034	1611	11108	24/64	125	52·5	28·6	4.54	14·3	2.27	3·2	90	111888	19837
02·30	319	2199	1605	11066	24/64	126	52	33.2	5·27	11·3	1.79	3·1	87	93825	16635
04·30	332	2289	1606	11073	24/64	126	52	23·4	3.72	18·8	2.98	3·1	87	134316	23814
06·30	350	2413	1602	11046	24/64	127	53	32	5.08	7	1.11	3·1	87	96875	17175
08·30	350	2413	1600	11032	24/64	127	53	37	5.88	12	1.90	3·1	87	83783	14854
10·30	350	2413	1598	11018	24/64	127	53	32	5.08	7	1.11	3·1	87	96875	17175
12·30	355	2448	1595	10998	24/64	129	54	38	6.04	5	0.79	3·2	90	84210	14930
14·30	400	2758	1595	10998	24/64	129	54	21.9	3.48	8·3	1.31	3·1	87	142785	25315

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

000070

WELL: Kidman North #1 (U)

OPERATOR: B Lohrey THirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 7th August 1987

PAGE No: 6 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
16·30	410	2827	1595	10998	24/64	129	54	38.5	6.12	14.3	2.27	3.1	87	81428	14437
18·30	405	2792	1592	10977	24/64	129	54	30	4.76	7	1.11	3.0	84	100000	17730
20·30	405	2792	1591	10970	24/64	129	54	24	3.81	10	1.58	3.0	84	125000	22162
22·30	405	2792	1590	10963	24/64	129	54	30.9	4.91	10.5	1.66	3.0	84	97087	17213
	8th	August	1987												
00·30	440	3034	1585	10929	24/64	129	54	27.9	4.43	3.0	0.47	3.0	84	108960	19318
02·30	445	3068	1580	10894	24/64	131	55	30.1	4.78	10.5	1.66	3.1	87	101993	18083
04·30	450	3103	1580	10894	24/64	131	55	25.2	4.00	10.5	1.66	3.1	87	121825	21599
06·30	455	3137	1575	10859	24/64	129	54	32.1	5.10	7.4	1.17	3.08	87	96250	17065
08·30	455	3137	1575	10859	24/64	131	55	27	4.29	14	2.22	3.09	87	114444	20291
09·45								Start to set choke sizes.							
10·25			2080	14342	6/64			Rate #1							

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

000071

WELL: Kidman North #1 (V)

OPERATOR: B. Lahrey T. Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 8th August 1987

PAGE No: 7 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
10.40	315	2172	2090	1441	6/64	120	49					0.42	11.8		
								Rate	#2						
11.00			1830	12618	14/64										
11.15	330	2275	1850	12756	14/64	124	51					1.78	50.1		
								Rate	#3						
11.35			1470	10136	22/64										
11.50	340	2344	1480	10205	22/64	129	54					3.25	91.5		
								Rate	#4						
12.05			1120	7722	28/64										
12.20	400	2758	1133	7812	28/64	131	55					4.16	117.2		
								Rate	#5						
12.50			835	5757	34/64										

CONVERSION FACTORS: •BBL'S x 0.15899 = M^3 •MMSCF x 28.174 = $10^3 M^3$ •Cu/FT PER BBL x 0.1773 = M^3/M^3 •PSI x 6.895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

220000

WELL: Kidman North #1 (U)

OPERATOR: Blohrey T Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 8th August 1987

PAGE No: 8 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
13.05	480	3310	830	5723	34/64	133	56					4.83	136.0		
								Rate #6							
13.35					20/64			Change choke to 20/64							
14.35	460	3310	1552	10701	20/64	133	56					3.2	90.1		
16.35	490	3379	1552	10701		133	56					3.2	90.1		
17.30	490	3379	1552	10701		133	56	Shut well in for build up.							
17.45	450	3103	2125	14652											
18.00	415	2861	2139	14748											
18.30	260	1793	2145	14790											
19.30	210	1448	2155	14859											
20.30	100	690	2160	14893											
22.30	0	0	2175	14997				Lower Zone opened for clean up flow.							

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

PETENG 007

0000073

WELL: [redacted]

OPERATOR: B.Lohrey....T.Hirst.

SANTOS

WELL TEST DATA
METRIC SUMMARY SHEET

DATE: [redacted]

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
	9th	August	1987												
00·30	485	3344	2195	15135											
02·30	690	4758	2207	15217											
04·30	920	6343	2221	15313											
06·30	1200	8274	2225	15341				Shut in		for 13	hrs.				
08·30	1520	10480	2227	15355											
10·30	1580	10894	2235	15410											
12·30	1630	11239	2247	15493											
14·30	1675	11549	2251	15521											
16·30	1710	11728	2261	15											
18·30	1745	12031	2265	15617											
20·30	1760	12135	2265	15617											

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

000074

WELL: Kidman North #1 (U)

OPERATOR: B. Lohrey T. Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 9th August 1987

PAGE No: 10 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
22.30	1790	12342	2265	15617											
	10th	August	1987												
0030	1805	12445	2275	15686											
02.30	1825	12583	2280	15720											
04.30	1845	12721	2285	15755											
06.30	1860	12825	2288	15776											
08.30	1880	12963	2288.	15776											
10.30	1890	13032	2288	15776											
12.30	2020	13928	2300	15859				Increase in flow on lower zone as per choke settings.							
14.30	2125	14652	2303	15879											
16.30	2175	14997	2310	15927											
18.30	2175	14997	2313	15948											

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

000075

WELL: KIDMAN Nth #1 Upper

OPERATOR: Mayer / Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 10th Aug/87

PAGE No: 11 of 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1845	1965	13549	2310	15927											
1900	1900	13101	2301	15865											
1930	1590	10963	2302	15872											
2030	1220	8412	2299	15852											
2230	765	5275	2295	15824											
C	11th	August	1987												
0030	460	3172	2293	15810											
0230	260	1793	2291	15796											
0630	100	690	2290	15790											
0830	0	0	2292	15803											
1030	0	0	2292	15803											
1230	0	0	2291	15796		RIH	with	1.750"	guage	ring					

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000076

WELL: KIDMAN Nth #1 Upper.
OPERATOR: Mayer / Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 10th Aug/87
PAGE No: 12 of 12

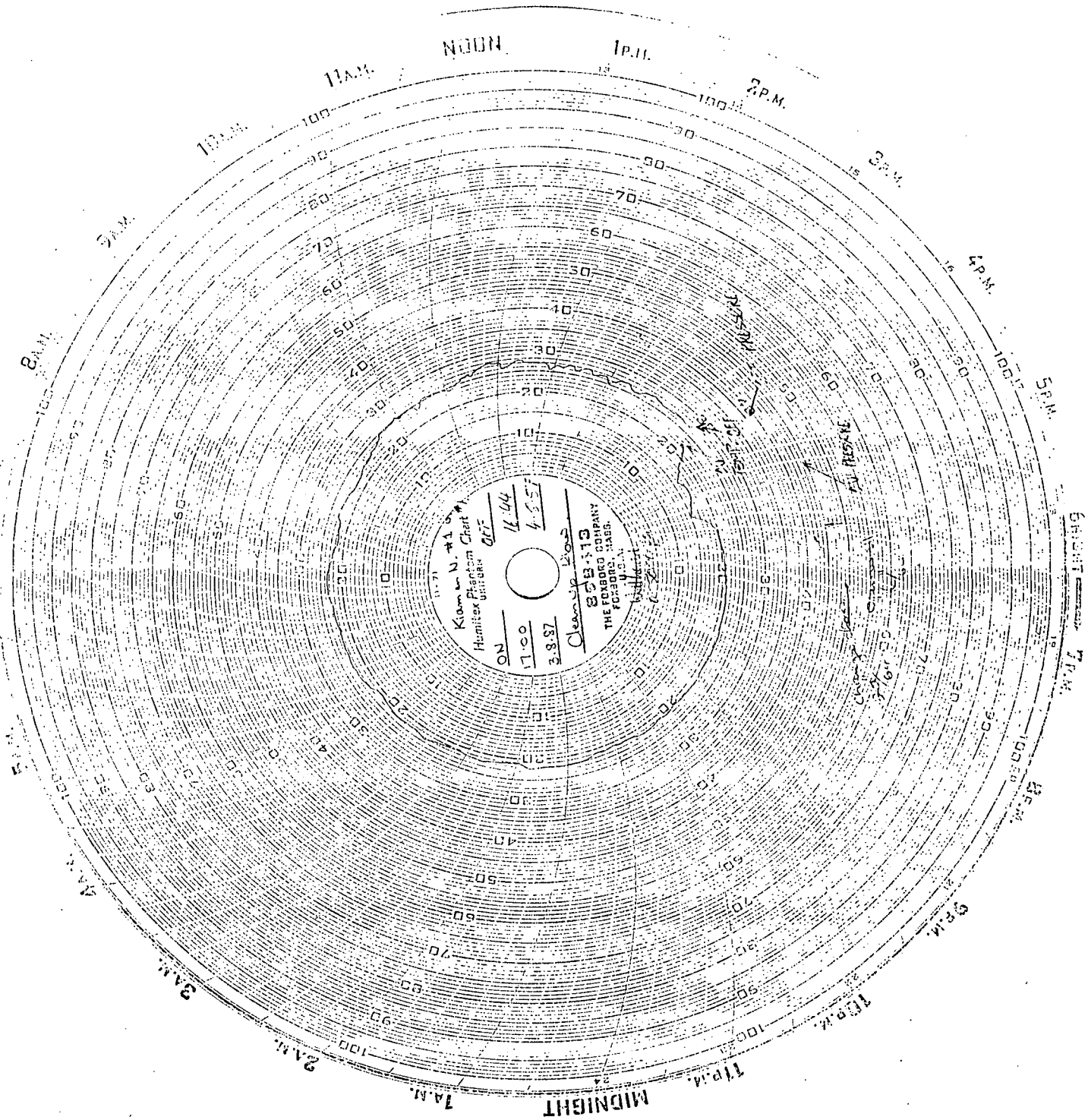
DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1430	0	0	2295	15824											
1630	0	0	2295	15824											
				Ready for	Modified	Isochronal	Test								

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000277

RECORDER CHARTS

000079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10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
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7 A.M.
8 A.M.
9 A.M.
10 A.M.
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Kimble Chart
Humiditherm Phantom Chart
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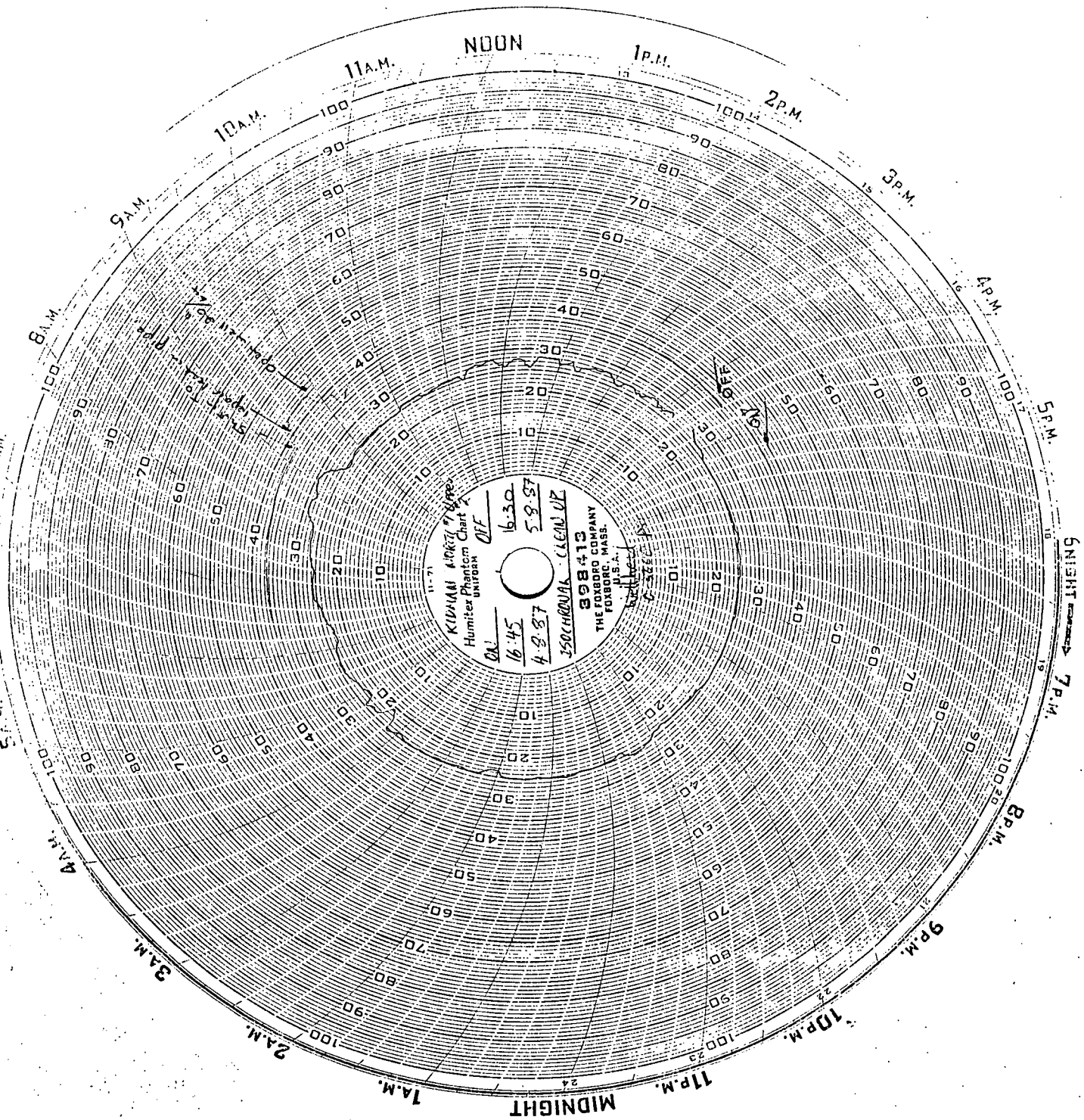
Clemmie Lee
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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MIDNIGHT
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6A.M.
7A.M.
8A.M.
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KIMAN Model "I" Type
Humiter Phantom Chart
UNIPEN
ON
16:45
4.8.87
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THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
ISOCHRONAL CLEAN UP
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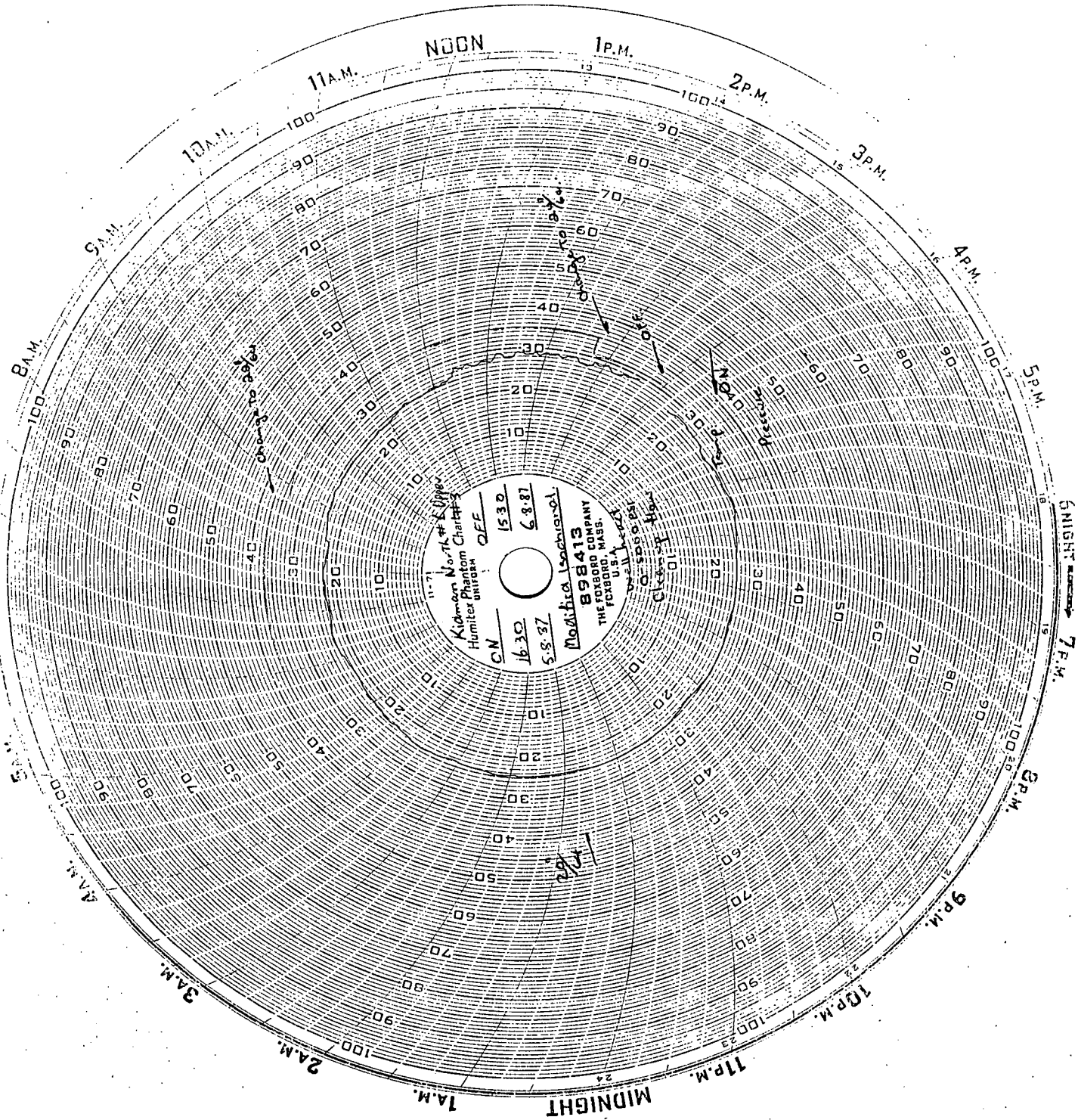
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MIDNIGHT
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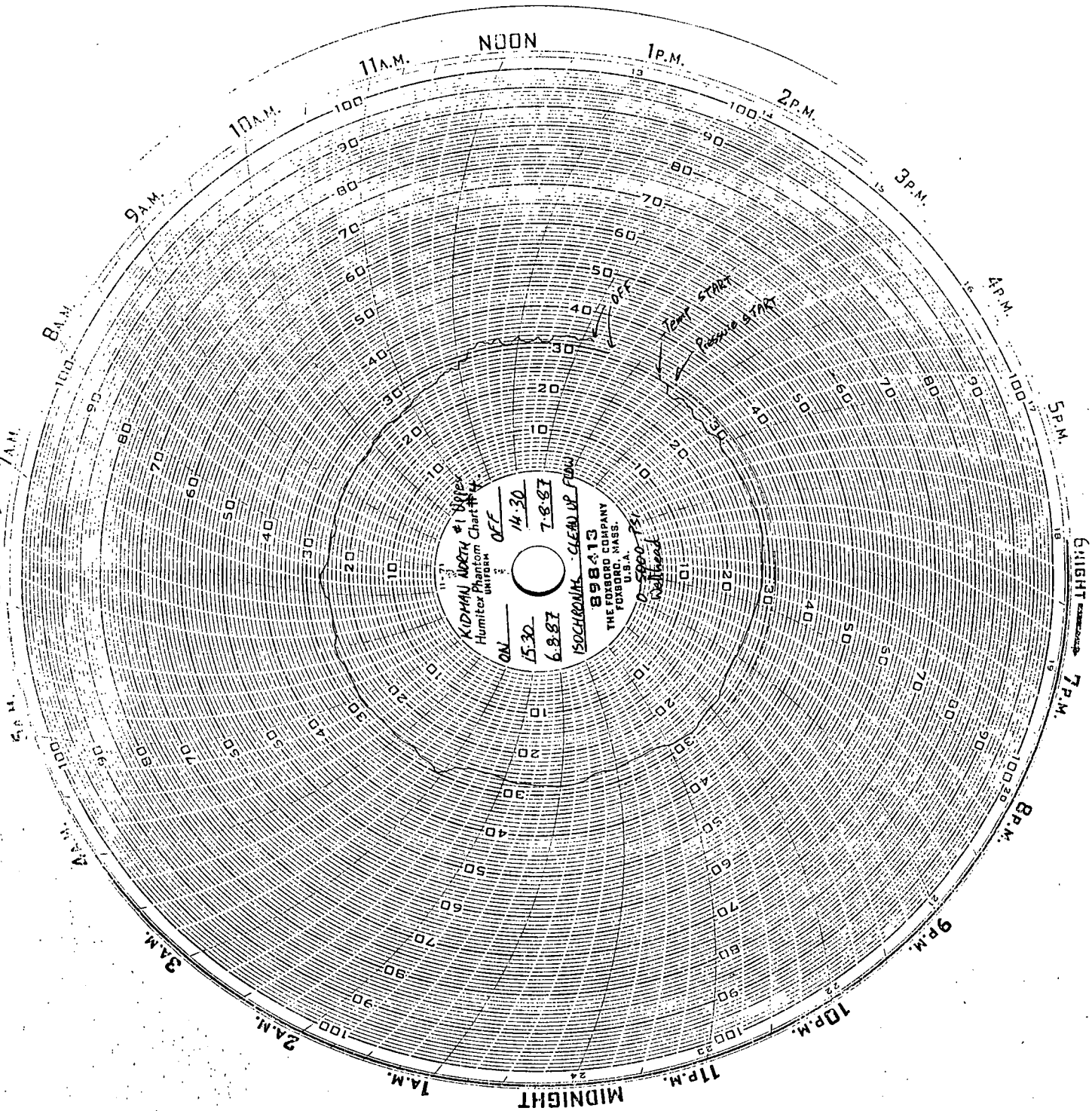
9A.M.
10A.M.
11A.M.
Kidman North #2 Upper
Humiter Phantom Chart #3
UNIFORM
CN
1630
5-8-87
Modified Isochronal
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Pressure
Temp
Clean-1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MIDNIGHT
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2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
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OFF
TEMP START
PRESS START
KIDMAN NORTH #1 Upper
Humiter Phantom Chart #
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ON
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6.8.87
OFF
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7.8.87
CLEAN UP FLOW
ISOCHRONAL
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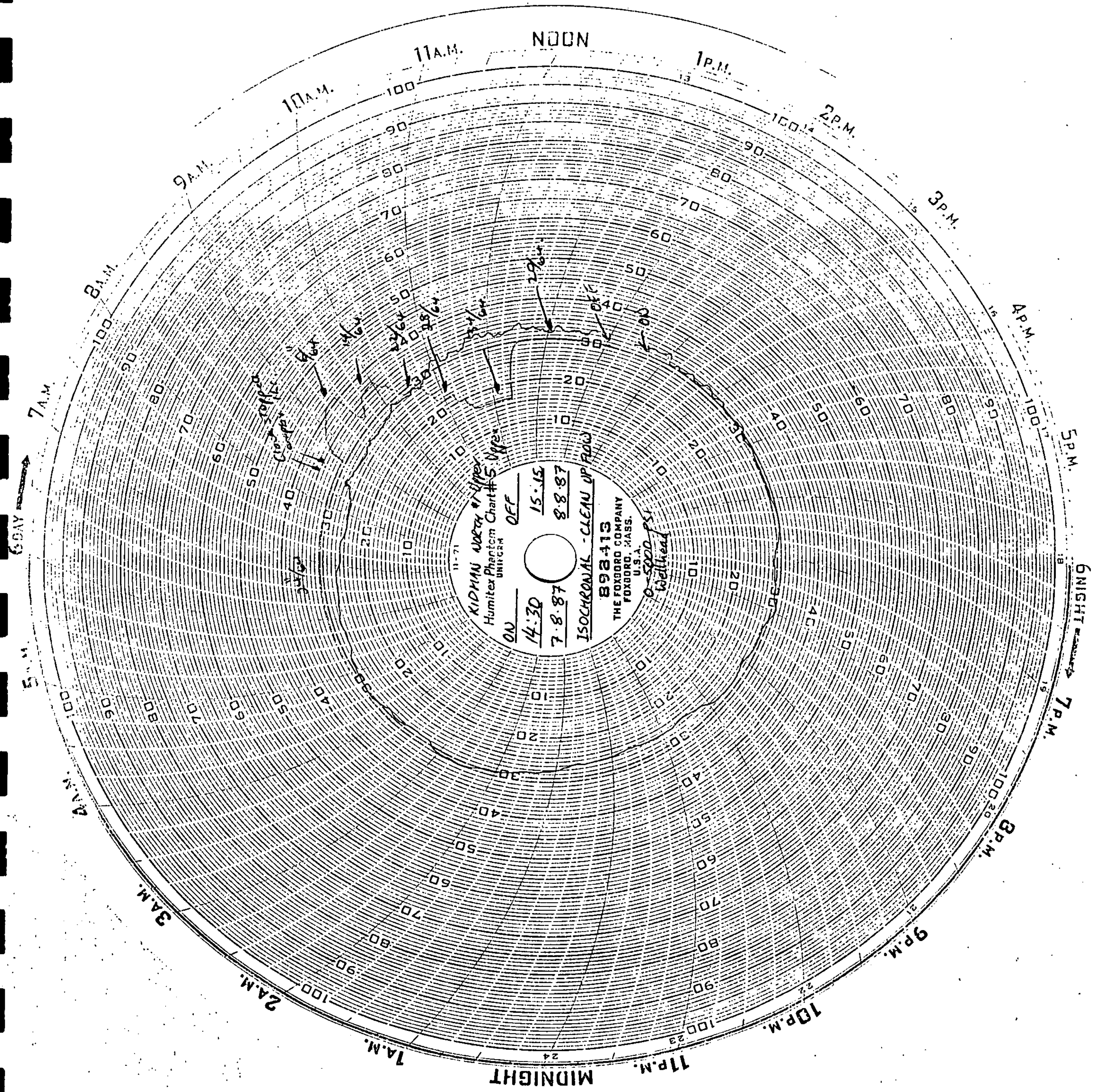
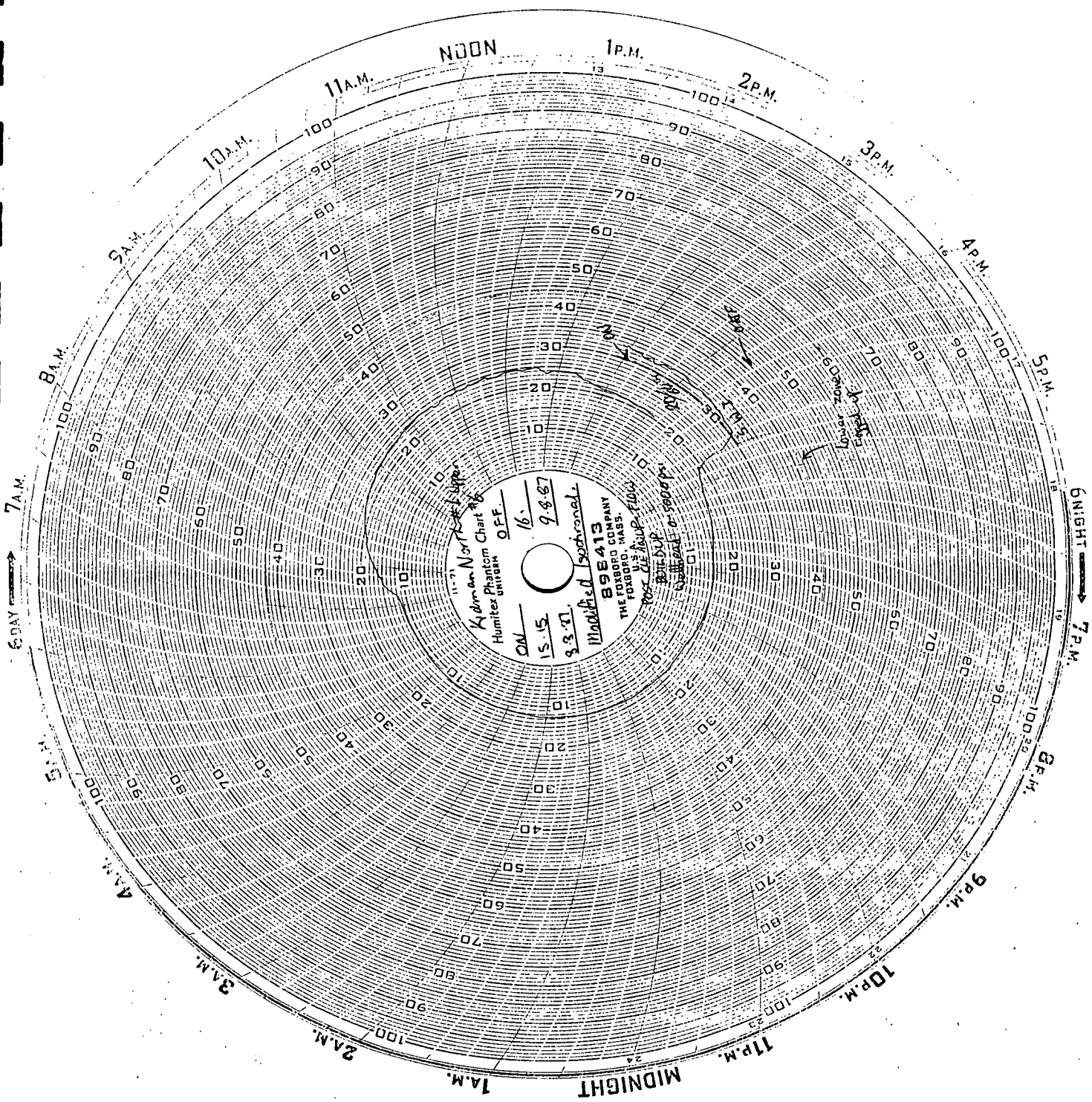
Railroad
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


NOON
MIDNIGHT
KIDMAN NORTH #1 Upper
Humitex Phantom Chart #5 Upper
ON
14:30
7.8.87
OFF
15:15
8.8.87
ISOCHRONAL - CLEAN UP FLOW
892-413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
0-5000 PSI
Wellhead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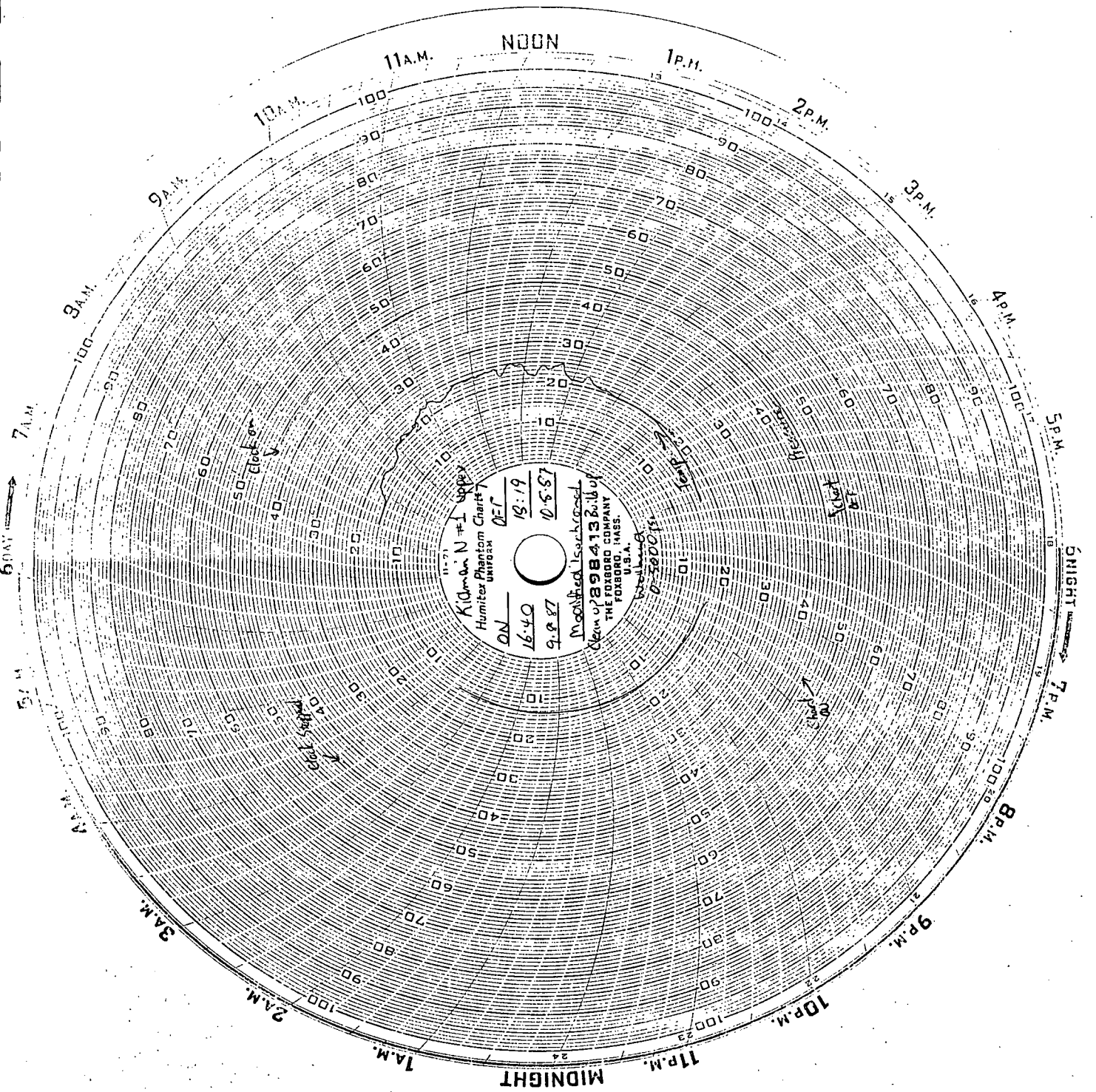
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6 NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6 DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Humitex Phantom Chart
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Modified Sectional
Lower Zone
First Floor

000085


NOON
11A.M.
1P.M.
10A.M.
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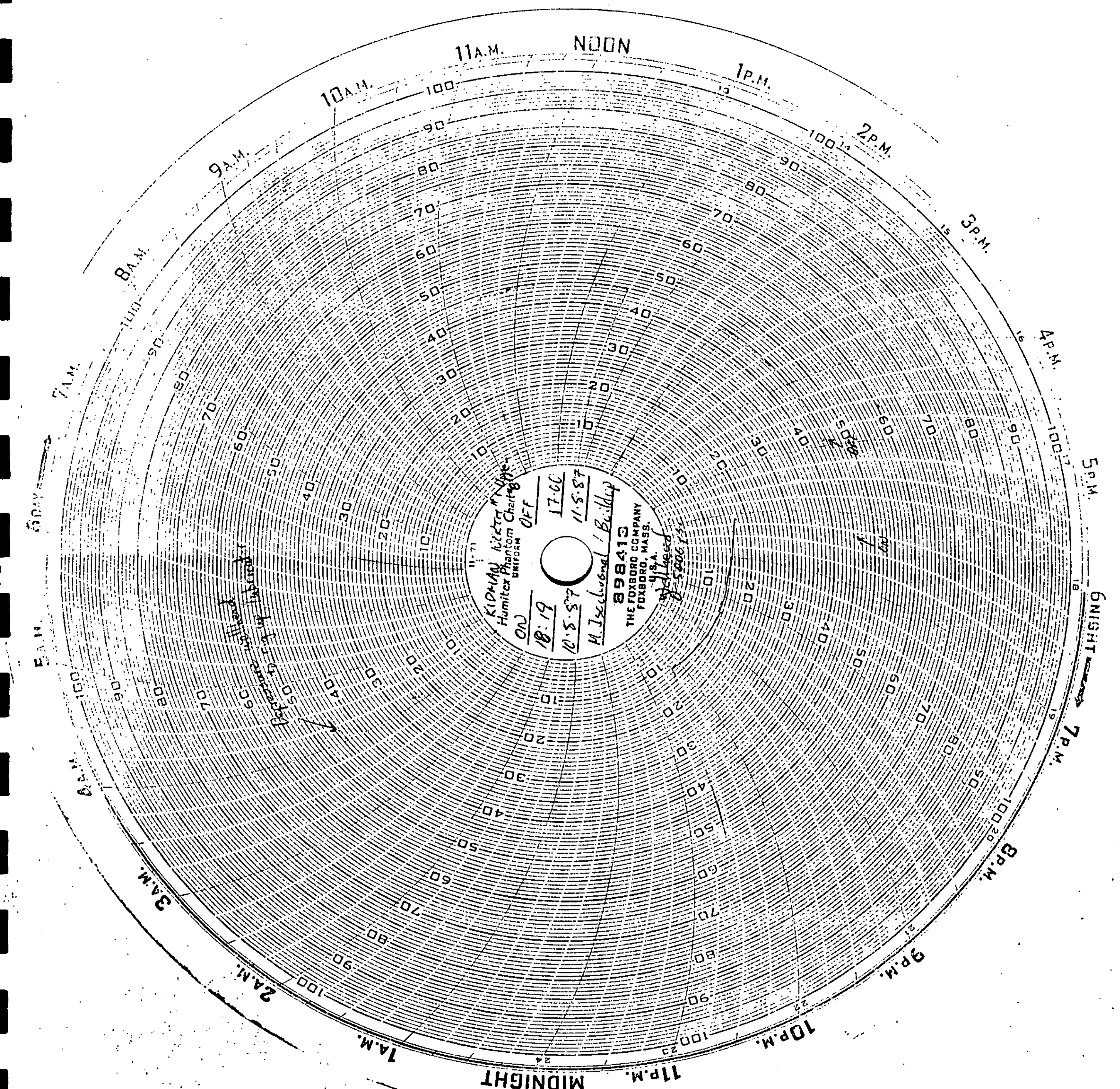
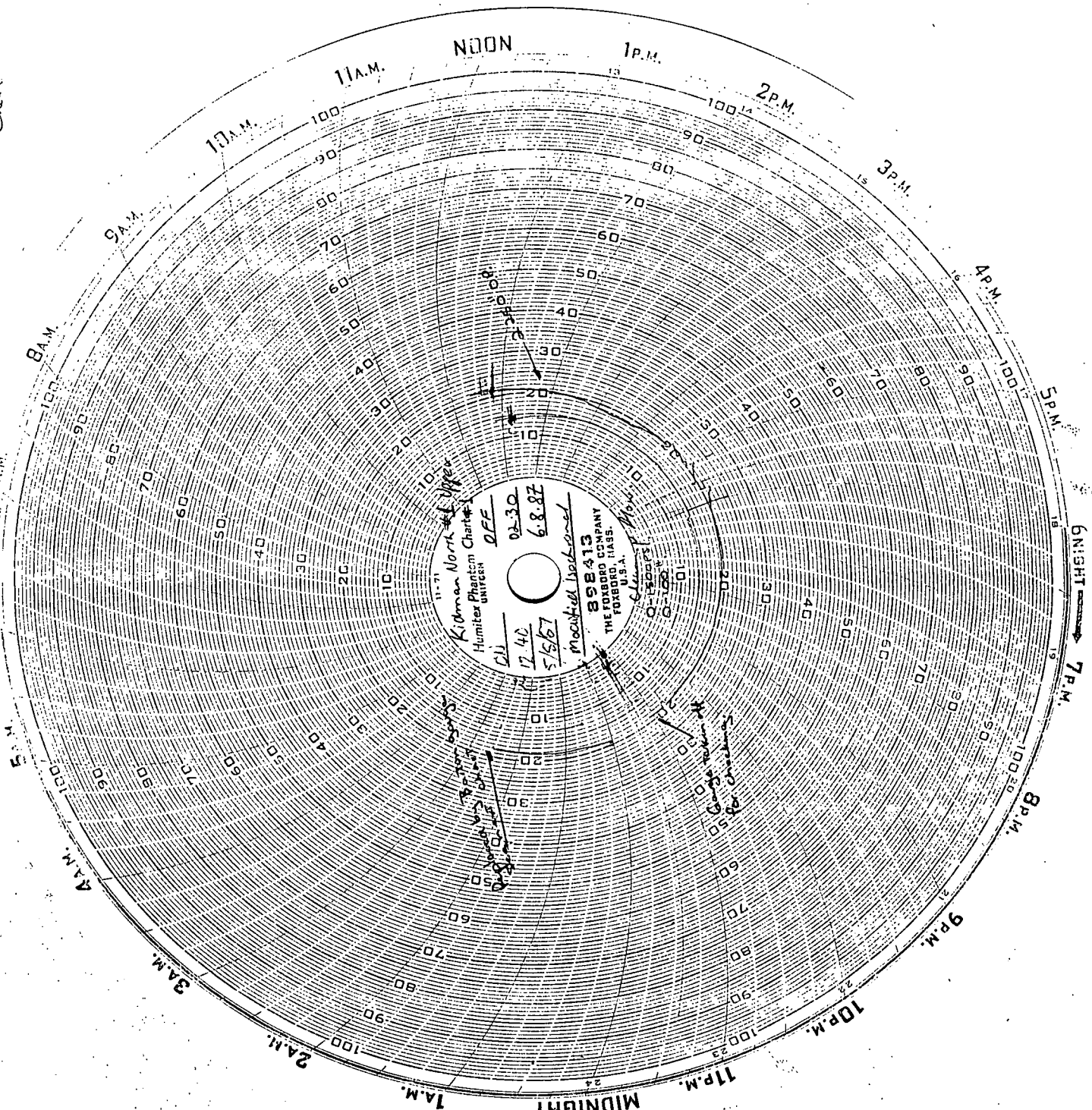
9A.M.
3P.M.
3A.M.
4P.M.
7A.M.
5P.M.
6PM
NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
Kidman N #1 Spacy
Humiter Phantom Chart
UNIPOSA
ON
16:40
9.9.87
DEC
13:19
10.6.87
Mounted Isorhythmic
Clem of 3984132 Build up
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Weather
0-3600 ft
Temp 32
Clock on
Clock stopped
Chart
Recorder
Chart
Off

000086



NOON
11 A.M.
1 P.M.
10 A.M.
2 P.M.
9 A.M.
3 P.M.
8 A.M.
4 P.M.
7 A.M.
5 P.M.
6 A.M.
6 NIGHT
5 A.M.
7 P.M.
4 A.M.
8 P.M.
3 A.M.
9 P.M.
2 A.M.
10 P.M.
1 A.M.
11 P.M.
MIDNIGHT
Humitex Phantom Chart
UNIFORM
ON
18:19
10.5.87
OFF
17.00
11.5.87
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

000087


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Kidman North #1 Upper
Humiter Phantom Chart
UNIFORM
OFF
02:30
6.8.87
12.40
5/5/87
Marshall Sackner
858413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Star Chart

830000

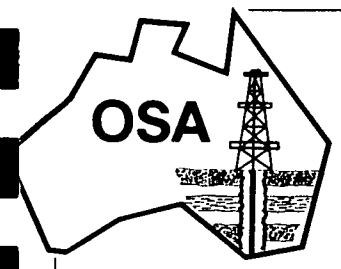
Separater chart
Kidman N. #1
CALIBRATED CHARTS #2.
TUBE & ORIF. SIZE
4026 2"
TIME TAKEN OFF
02:45 M
DATE TAKEN OFF
7-8 1987
METER NUMBER
TIME PUT ON
03:16 M
DATE PUT ON
6-8 1987
MW-0-100%
0-100% clean sp Hg
SIGNED Monica Lockyer
0-1000 PSI.
0-200"
Change chart to 24 hour
OFF
ON
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.

830000

Separator chart

Separate chart

CALIBRATED CHARTS #4.
TUBE & ORIF. SIZE
4" orf.
TIME TAKEN OFF
8 AM
DATE TAKEN OFF
8 8 87
METER NUMBER
TIME PUT ON
02:30 PM
DATE PUT ON
17 30 87
MW 0-100%
0-100%
in. H2O
SIGNED
Clem Upchurch
Flow
0-100 psi
Kaman Nodar #1 Orifice
Static 350 psi
Diff 100" H2O
Temp 75°F
Static 350 psi
Diff 100" H2O
Temp 75°F
Static 350 psi
Diff 100" H2O
Temp 75°F



OILSERV AUSTRALIA

Well Testing/Oilfield Equipment Supply/Personnel-Consultant Placement

Suite 21, 242-244 Glen Osmond Road,
Fullarton, S.A. 5063
Telephone: (08) 338 1630 — Telex: AA88713

MODIFIED ISOCHRONAL TEST

WELL TEST DATA SHEETS

WELL: KIRMAN NTH 1 Upper

TYPE OF TEST: MODIFIED ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 11 AUGUST, 1987

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
	0					MODIFIED ISOCHRONAL TEST													
1807	0	2295		PRESSURE UP LUBRICATOR															
1830	0	2295																	
1907	0	2295		RUN IN HOLE WITH TANDEM PRESSURE ELEMENTS + ONE TEMP. ELEMENT															
1938	0	2291		RECORDERS ON BOTTOM - HANGING AT 9550' KB (5 feet above plug)															
2100	0	2290																	
			RATE # 1																
2100	0	2290		OPEN WELL ON 8/64" CHOKE								(fixed bean choke)							
2105	0	2265		8/64															
2110	0	2260	73	Hydrating at choke - Begin to inject methanol upstream of choke															
2115	0	2262	77	8/64		330	90	6	0.625			Hydrate cleared			0.409				
2130	0	2263	90	8/64		360	150	32	0.625						0.563				
2145	0	2253	99	8/64		320	106	32	0.75						0.640				
2200	0	2252	99	8/64		300	108	30	0.75	3650			1500		0.626	6.0	0	6.0	104,333
2215	0	2250	100	8/64		295	108	25	0.75						0.625				
2230	0	2248	100	8/64		295	106	21	0.75						0.623				
2245	0	2243	100	8/64		290	107	21	0.75						0.620				
2300	0	2240	102	8/64		290	108	19	0.75	3675			1500		0.625	3.8	0	3.8	164,474
2300	0			Shut in well - End Rate #1								1st Rate Gas Production				4928	1 SCF		
2305	0	2297																	

OPERATOR: S. Mayer / T. Hirst

000000

WELL: KIDMAN N^TH #1 Upper

TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 11-8-87

PAGE No: 2 of 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
2310	0	2302																	
2315	0	2302																	
2330	0	2305																	
2345	0	2305																	
2400	0	2305																	
	12th	August		1987															
0015	0	2304																	
0030	0	2304																	
0045	0	2303																	
0100	0	2303																	
	RATE	#2																	
0100	0	2303		OPEN WELL ON				14/64	" CHOKE			(fixed bean choke)							
0105	0	2080	100	14/64															
0110	0	2038	102	14/64															
0115	0	2032	106	14/64		280	73	19	1.50						2.045				
0130	0	2028	108	14/64		350	57	30	1.50						2.005				
0145	0	2024	109	14/64		390	48	32	1.50						1.947				
0200	0	2023	111	14/64		300	67	32	1.50	3940		57.9	1500		1.995	40.0	0	40.0	49,875
0215	0	2021	113	14/64		295	68	32	1.50						1.974				
0230	0	2019	113	14/64		290	70	28	1.50						2.014				

OPERATOR: S. Mayer/T. Hirst

000094

WELL: KIDMAN NTH 1 Upper

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 12th AUGUST 1987

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
0245	0	2018	113	14/64		305	66	32	1.50						1.997				
0300	0	2016	113	14/64		300	65	32	1.50	4140			1500		1.965	30.2	0	30.2	65,066
0300		Shut in well - End of Rate #2											2nd Rate		Gas Production			1660	63 SCF
0305	0	2267																	
0310	0	2293																	
0315	0	2294																	
0330	0	2298																	
0345	0	2300																	
0400	0	2301																	
0415	0	2301																	
0430	0	2301																	
0445	0	2301																	
0500	0	2301																	
			RATE #3																
0500	0	2301		OPEN WELL		ON		22/64	CHOKE			(fixed bean choke)							
0505	0	1660	108	22/64															
0510	0	1554	109	22/64															
0515	0	1521	113	22/64		295	85	45	2.50						3.986				
0530	0	1507	117	22/64		300	83	50	2.50						3.947				
0545	0	1496	118	22/64		300	83	54	2.50						3.927				

OPERATOR: S. Mayer / T. Hirst

000095

WELL: KIDMAN NTH #1 Upper

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 12th AUGUST 1987

PAGE No: 4 of 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
0600	1	1487	119	22/64		300	82	55	2.00	CO_2 - 15%			H_2S 16 ppm		3.898	54.3	0	54.3	71,786
0615	2	1483	120	22/64		300	80	59	2.00						3.830				
0630	5	1480	120	22/64		330	74	63	2.00						3.852				
0645	13	1475	122	22/64		360	68	64	2.00						3.862				
0700	24	1473	122	22/64		300	81	64	2.00	4880			1655		3.830	34.0	23.4	57.4	112,647
0700		Shut in well - End Rate #3																	
0705	29	2180						3rd	Rate	gas production -			324		292	SCF			
0710	20	2264																	
0715	12	2270																	
0730	3	2274																	
0745	0	2279																	
0800	0	2280																	
0815	0	2280																	
0845	0	2281																	
0900	0	2281																	
		RATE # 4																	
0900	0		Open		well	on	34/64	adjustable	choke.										
0905	0	1349	108	34/64															
0910	0	1220	113	34/64															
0915	0	1198	113	34/64		290	120	63	2.00						4.556				

OPERATOR... S. Mayer / T. Hirst

000096

WELL: KIDMAN NTH #1 Upper

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 12th AUGUST 1987

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
0930	0	1193	115	34/64		295	118	66	2.0						4.541				
0945	4	1193	115	34/64		307	112	75	2.0						4.467				
1000	11	1190	115	34/64		307	112	75	2.0	5275		58.0	1725		4.467	49.1	10.6	59.7	90,978
1015	30	1187	117	34/64		313	109	77	2.0						4.440				
1030	48	1186	117	34/64		313	109	79	2.0						4.430				
1045	78	1188	119	34/64		325	106	81	2.0						4.454				
1100	102	1188	119	34/64		320	105	82	2.0	5655			1820		4.381	43.0	14.3	57.3	101,883
		EXTENDED RATE									4th	Rate	gas production =			372	250	SCF	
1101		Cut	to	28/64	fixed choke.														
1106		Cut	to	24/64	fixed choke														
1115	138	1430	122	24/64		310	145	73	1.75						3.860				
1130	157	1432	123	24/64		307	144	73	1.75						3.827				
1145	176	1431	123	24/64		307	144	74	1.75						3.823				
1200	196	1431	123	24/64		307	144	74	1.75	5980			1950		3.823	29.4	19.6	49.0	130,034
1230	247	1430	125	24/64		320	138	76	1.75						3.814				
1300	268	1427	125	24/64		325	136	77	1.75	6300			2050		3.812	33.2	15.1	48.3	114,819
1330	305	1428	124	24/64		320	136	77	1.75						3.781				
1400	334	1422	123	24/64		330	135	77	1.75	70/350			0/45		3.828	35.5	6.8	42.3	107,830
1500	392	1419	126	24/64		335	132	80	1.75	680			110		3.801	40.0	9.8	49.8	95,025
1600	435	1415	123	24/64		335	130	81	1.75	1000			225		3.768	32.5	17.4	49.9	115,938

OPERATOR: S. Mayer / T. Hirst

000097

WELL: KIRMAN NTH 1 Upper

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 12th AUGUST 1987

PAGE No: 6 of 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP	TANK PROD BBLS	API GRAVITY @60 °F	TANK DIP	TANK PROD BBLS	FLOW RATE MMSCFD	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	FLOW RATE BBLS/DAY	SCF/BBL
1700	471	1422	125	24/64		325	135	81	1.75						3.78	32.5	11.3	43.8	116308
1800	508	1419	122	24/64		320	136	81	1.75						3.76	34.7	13.6	48.3	108357
1900	522	1416	122	24/64		305	139	81	1.75						3.71	43.0	16.6	59.6	86279
2000	537	1412	122	24/64		310	137	81	1.75						3.71	36.2	11.3	47.5	102486
2100	544	1410	124	24/64		310	137	81	1.75						3.71	31.7	10.6	42.3	117035
2200	580	1406	127	24/64		300	140	81	1.75						3.69	29.4	9.8	39.2	125510
2300	609	1404	129	24/64		300	140	81.5	1.75						3.69	34.0	13.6	47.6	108529
2400	624	1400	129	24/64		300	140	82	1.75						3.69	34.0	11.3	45.3	108529
	13th August 1987																		
0100	631	1399	128	24/64		300	140	82	1.75						3.69	29.4	15.1	44.5	125510
0200	638	1397	127	24/64		300	140	82	1.75						3.69	37.0	12.8	49.8	99189
0300	645	1398	128	24/64		300	141	84	1.75						3.69	34.7	10.6	45.3	106340
0400	653	1396	128	24/64		300	141	84	1.75						3.69	31.7	12.1	43.8	116403
0500	667	1393	130	24/64		300	141	84	1.75						3.69	31.7	12.8	44.5	116403
0600	682	1389	130	24/64		300	142	86	1.75						3.69	31.7	11.3	43.0	116403
0700	689	1390	129	24/64		300	142	86	1.75						3.72	35.5	6.8	42.3	104788
0800	696	1390	129	24/64		300	142	86	1.75						3.72	34.0	9.8	43.8	109412
0900	703	1387	129	24/64		315	138	88	1.75						3.72	34.0	12.1	46.1	109412
1000	711	1387	131	24/64		325	133	90	1.75						3.71	35.5	9.8	45.3	104507
1100	718	1385	132	24/64		335	129	90	1.75						3.71	34.7	11.3	46.0	106916

OPERATOR S. Mayer / T. Hirst

000098

WELL: KIDMAN NTH #1 Upper

TYPE OF TEST: MODIFIED ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 13th AUGUST 1987

PAGE No: 7 of 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1200	722	1388	132	24/64		335	129	91	1.750						3.71	31.7	13.6	45.3	117,034
		1208-1330	Hrs -	Samples taken.															
1300	729	1369	131	24/64		338	128	91	1.750						3.71	31.7	10.6	42.3	117034
1400	732	1385	131	24/64		338	126	91	1.750						3.68	34.7	9.1	43.8	106,052
1405		SHUT IN WELL FOR PRESSURE BUILDUP																	
1410	722	2097					EXTENDED RATE GAS PROD. - 4189750 SCF												
1415	696	2140					TOTAL GAS -			510	2000	SCF							
1430	580	2148					TOTAL COND -			39.	435	BBLS							
1445	493	2153					TOTAL WATER -			15.	529	BBLS							
1500	421	2158																	
1515	377	2159																	
1530	319	2161																	
1545	261	2162																	
1600	217	2163																	
1700	62	2167																	
1800	13	2171																	
1900	0	2176																	
2000	0	2180																	
2400	0	2196																	

OPERATOR S. Mayer/S. Comrack

03000

WELL: KIDMAN NTH #1 Upper

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 14th AUGUST 1987

PAGE No: 8 of 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
0600	0	2212			16 hours shut in time														
1200	0	2229																	
1555	0	2238			Begin flowing lower zone														
1830	363	2258			Shut in lower zone														
2100	0	2261																	
2400	0	2261																	
	15th August 1987																		
0600	0	2261			40 hrs shut in time														
1200	0	2265																	
1800	0	2267																	
2400	0	2271																	
	16th August 1987																		
0600	0	2273				64 hrs		S/I	time										
0714	0	2273			Pull up ameradas														
0847	0	2275			Depressure lube														
1031	0	2279			Run in hole with ameradas to conduct static gradient survey.														
1243	0	2281			Static gradient completed - Depressure lube														
1600	0	2280			Rig down BOP's + lubricator														
								End of test.											

2278

OPERATOR S. Mayer / S. Coppock

000100

SANTOS FLUID PRODUCTION SHEETS

WELL KIDMAN NTH #1 Upper

TANK:— CAPACITY 2 X 50 BBL
SCALE Calibrated Dipstick

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 11th AUGUST 1987
PAGE No. 1 of 3
OPERATOR S. Mayer / T. Hirst

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	SALINITY PPM	
			MODIFIED ISOCHRONAL TEST									
2100	RATE #1	3610			0		1500			0		
2200		3650	0.252	6.0	0.252		1500	0	0	0		
2300		3675	0.157	3.8	0.409		1500	0	0	0		
12-8-87 0100	RATE #2											
0200		3940	1.667	40.0	2.076	57.9	1500	0	0	0		
0300		4140	1.258	30.2	3.334		1500	0	0	0		
0500	RATE #3											
0600		4500	2.264	54.3	5.598	57.4	1500	0	0	0		
0700		4880	1.415	33.98	7.013		1655	0.974	23.39	0.974	1000	
0900	RATE #4											
1000		5275	2.044	49.06	3.459	56.0	1725	0.440	10.56	1.414		
1100		5655	1.792	43.03	3.207		1820	0.597	14.33	2.011		
1100	EXTENDED RATE											
1200		5980	1.227	29.44	2.642		1950	0.817	19.62	2.828	1000	
1300		6300	1.384	33.21	4.026		2050	0.628	15.09	3.456		
1400		70/350	1.478	35.47	5.504	54.4	0/45	0.283	6.79	3.739		Change Tanks
1500		680	1.667	40.01	7.171		110	0.408	9.81	4.147		
1600		1000	1.289	30.94	8.460		225	0.723	17.35	4.870	500	
1700		1290	1.352	32.45	9.812		300	0.472	11.32	5.342		

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DD3

000102

WELL KIDMAN NTH #1 Upper

TANK:-- CAPACITY 2 x 50 BBl

SCALE

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 12th AUGUST 1987

PAGE No. 2 of 3

OPERATOR S. Mayer / T Hirst

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	SALINITY PPM	
1800		1610	1.446	34.72	11.258	54.9	390	0.566	13.58	5.908		
1900		2005	1.792	43.02	13.050		500	0.692	16.60	6.600		
2000		2320	1.509	36.23	14.559		575	0.472	11.32	7.072	500	
2100		2600	1.321	31.70	15.880		645	0.440	10.57	7.512		
2200		2860	1.226	29.43	17.106		710	0.409	9.81	7.921		
2300		3175	1.415	33.97	18.521		800	0.566	13.58	8.487		
2400		3475	1.415	33.97	19.936	54.8	875	0.471	11.32	8.958	500	
	13th August 1987											
0100		3770	1.226	29.43	21.162		975	0.629	15.09	9.587		
0200		4100	1.541	36.98	22.703		1060	0.534	12.83	10.121		
0300		4400	1.447	34.72	24.150		1130	0.440	10.57	10.561		
0400		4690	1.321	31.70	25.471		1210	0.503	12.07	11.064		
0500		4985	1.321	31.70	26.792		1295	0.534	12.83	11.598		
0600		5270	1.321	31.70	28.113	54.3	1370	0.472	11.32	12.070	1000	
0700		5550	1.478	35.47	29.591		1415	0.283	6.79	12.353		
0800		5840	1.415	33.96	31.006		1480	0.409	9.81	12.762		
0900		6145	1.415	33.96	32.421		1560	0.503	12.07	13.265		
1000		6445	1.478	35.47	33.899		1625	0.409	9.81	13.674		
1100		6750	1.447	34.72	35.346		1700	0.472	11.32	14.146		
1200		7050	1.321	31.70	36.667	53.6	1790	0.566	13.58	14.712	500	

WELL KIDMAN Nth 1 Upper

TANK:— CAPACITY 2 x 50 BBL

SCALE

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 13-AUGUST 1987

PAGE No. 3 of 3

OPERATOR S. Mayer / T. Hirst

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
1300		7330	1.321	31.70	37.988		1860	0.440	10.57	15.152		Change Tanks
1400		60/350	1.447	34.71	39.435		30/90	0.377	9.06	15.529		
1405			Shut in	well	for pressure buildup.							

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DD3

000100

OILSERV GAS FLOW RATE CALCULATIONS

FORM NO. 31-15 (2/74)

OSA PRODUCTION SERVICES

DATE: 11 AUG 1987

COMPANY SANTOS LTD. WELL NO. KIDMAN NTH 1 Upper

FIELD _____ INTERVAL TESTED 6594-6796'

COUNTRY AUSTRALIA TECHNICIAN S. Mayer / T. HIRST

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 1 OF 4

ORIFICE FITTING TYPE: DANIELS SENIOR ORIFICE FITTING SIZE: 4.026" ☒ FLANGE TAPS. ☐ PIPE TAPS.

GAS FLOW RECORDER TYPE: BARTON 202A SER. NO. _____ PRESSURE RANGE: 0-1000 PSI DIFFERENTIAL RANGE: 0-200"

DATE OF LAST CALIBRATION: 10-AUG 1987 GAS SPECIFIC GRAVITY AS Tested CALIBRATED BY: S. Mayer

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	RATE # 1																
2115	0.25	8	345	90	43	0.625	176.14	78.42	1	1	1.1509	1.0168	1	1.0017	1.0534	96.831	0.409	S.G. = 0.755
2130	0.5	8	375	150	32	0.625	237.08	78.42	1	1	1.1509	1.0281	1	1.0027	1.0640	98.99	0.563	
2145	0.75	8	335	106	32	0.75	188.37	113.08	1	1	1.1509	1.0281	1	1.0021	1.0561	141.60	0.640	
2200	1	8	315	108	30	0.75	184.37	113.08	1	1	1.1509	1.0302	1	1.0023	1.0531	141.50	0.626	
2215	1.25	8	310	108	25	0.75	182.90	11308	1	1	1.1509	1.0355	1	1.0023	1.0541	142.38	0.625	
2230	1.5	8	310	106	21	0.75	181.19	113.08	1	1	1.1509	1.0398	1	1.0023	1.0558	143.20	0.623	
2245	1.75	8	305	107	21	0.75	180.57	113.08	1	1	1.1509	1.0398	1	1.0023	1.0548	143.06	0.620	
2300	2	8	305	108	19	0.75	181.41	113.08	1	1	1.1509	1.0419	1	1.0024	1.0557	143.48	0.625	
	RATE #2																
0115	0.25	14	295	73	19	1.50	146.68	460.79	1	1	1.1456	1.0419	1	1.0016	1.0547	581.01	2.045	S.G. = 0.762
0130	0.5	14	365	57	30	1.50	144.19	460.79	1	1	1.1456	1.0302	1	1.0010	1.0644	579.38	2.005	
0145	0.75	14	405	48	32	1.50	139.38	460.79	1	1	1.1456	1.0281	1	1.0008	1.0718	582.08	1.947	
0200	1	14	315	67	32	1.50	145.21	460.79	1	1	1.1456	1.0281	1	1.0014	1.0534	572.43	1.995	
0215	1.25	14	305	68	32	1.50	143.95	460.79	1	1	1.1456	1.0281	1	1.0014	1.0514	571.41	1.974	

000106

KIDMAN NORTH #1 Upper

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f x h w}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	Rate #2		(cont.)															
0230	1.5	14	305	70	28	1.50	146.05	460.79	1	1	1.1456	1.0323	1	1.0015	1.0530	574.64	2.014	S.G. = 0.762
0245	1.75	14	320	66	32	1.50	145.26	460.79	1	1	1.1456	1.0281	1	1.0013	1.0543	572.94	1.997	
0306	2	14	315	65	32	1.50	143.03	460.79	1	1	1.1456	1.0281	1	1.0013	1.0534	572.40	1.965	
	RATE #3																	
0515	0.25	22	310	85	45	2.00	162.26	842.12	1	1	1.1403	1.0147	1	1.0017	1.0486	1023.5	3.986	S.G. = 0.769
0530	0.5	22	315	83	50	2.00	161.62	842.12	1	1	1.1403	1.0098	1	1.0016	1.0477	1017.5	3.947	
0545	0.75	22	315	83	54	2.00	161.62	842.12	1	1	1.1403	1.0058	1	1.0016	1.0463	1012.3	3.927	
0600	1	22	315	82	55	2.00	160.65	842.12	1	1	1.1403	1.0048	1	1.0016	1.0460	1010.9	3.898	
0615	1.25	22	315	80	59	2.00	158.68	842.12	1	1	1.1403	1.0010	1	1.0015	1.0477	1005.8	3.830	
0630	1.5	22	345	74	63	2.00	159.72	842.12	1	1	1.1403	0.9971	1	1.0013	1.0481	1004.9	3.852	
0645	1.75	22	375	68	64	2.00	159.63	842.12	1	1	1.1403	0.9962	1	1.0011	1.0525	1007.9	3.862	
0700	2	22	315	81	64	2.00	159.67	842.12	1	1	1.1403	0.9962	1	1.0016	1.0432	999.5	3.830	
	RATE #4																	
0915	0.25	34	305	120	63	2.00	191.23	842.12	1	1	1.1301	0.9971	1	1.0024	1.0437	992.79	4.556	SG = 0.783
0930	0.5	34	310	118	66	2.00	191.18	842.12	1	1	1.1301	0.9943	1	1.0023	1.0436	989.77	4.541	
0945	0.75	34	322	112	75	2.00	189.83	842.12	1	1	1.1301	0.9859	1	1.0021	1.0427	980.42	4.467	
1000	1	34	322	112	75	2.00	189.83	842.12	1	1	1.1301	0.9859	1	1.0021	1.0427	980.42	4.467	
1015	1.25	34	328	109	77	2.00	189.00	842.12	1	1	1.1301	0.9840	1	1.0020	1.0430	978.77	4.440	
1030	1.5	34	328	109	79	2.00	189.00	842.12	1	1	1.1301	0.9822	1	1.0020	1.0425	976.41	4.430	

001007

KIDMAN Nth #1 Upper

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA				$\sqrt{P_f \times hw}$	$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES		F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
		RATE	#4	(cont.)														
1045	1.75	34	340	106	79	2.00	189.77	842.12	1	1	1.1301	0.9822	1	1.0019	1.0442	977.9	4.454	
1100	2	34	335	105	82	2.00	187.47	842.11	1	1	1.1301	0.9795	1	1.0019	1.0426	973.7	4.381	
		EXTENDED RATE																
1115	0.25	24	325	145	73	1.75	216.99	634.39	1	1	1.1301	0.9877	1	1.0028	1.0438	741.21	3.860	SG = 0.783
1130	0.5	24	322	144	73	1.75	215.24	634.39	1	1	1.1301	0.9877	1	1.0028	1.0433	740.90	3.827	
1145	0.75	24	322	144	74	1.75	215.24	634.39	1	1	1.1301	0.9868	1	1.0028	1.0430	740.00	3.823	
1200	1	24	322	144	74	1.75	215.24	634.39	1	1	1.1301	0.9868	1	1.0028	1.0430	740.00	3.823	
1230	1.5	24	335	138	76	1.75	214.92	634.39	1	1	1.1301	0.9850	1	1.0026	1.0443	739.38	3.814	
1300	2	24	340	136	77	1.75	214.94	634.39	1	1	1.1301	0.9840	1	1.0025	1.0448	738.94	3.812	
1330	2.5	24	335	136	77	1.75	213.36	634.39	1	1	1.1301	0.9840	1	1.0026	1.0440	738.45	3.781	
1400	3	24	345	135	77	1.75	215.72	634.39	1	1	1.1301	0.9840	1	1.0025	1.0455	739.42	3.828	
1500	4	24	350	132	80	1.75	214.85	634.39	1	1	1.1301	0.9813	1	1.0024	1.0453	737.15	3.801	
1600	5	24	350	130	81	1.75	213.22	634.39	1	1	1.1301	0.9804	1	1.0024	1.0450	736.23	3.768	
1700	6	24	340	135	81	1.75	214.16	634.39	1	1	1.1287	0.9804	1	1.0025	1.0438	734.59	3.776	SG = 0.785
1800	7	24	335	136	81	1.75	213.36	634.39	1	1	1.1287	0.9804	1	1.0026	1.0431	734.13	3.759	
1900	8	24	320	139	81	1.75	210.81	634.39	1	1	1.1287	0.9804	1	1.0028	1.0410	732.77	3.707	
2000	9	24	325	137	81	1.75	210.92	634.39	1	1	1.1287	0.9804	1	1.0027	1.0417	733.21	3.712	
2100	10	24	325	137	81	1.75	210.92	634.39	1	1	1.1287	0.9804	1	1.0027	1.0417	733.21	3.712	
2200	11	24	315	140	81	1.75	209.91	634.39	1	1	1.1287	0.9804	1	1.0028	1.0403	732.33	3.689	Cum gas (Cxf) 1723948

000108

KIDMAN N4 #1 Upper

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
2300	12	24	315	140	81.5	1.750	209.91	634.39	1	1	1.1287	0.9799	1	1.0028	1.0402	731.89	3.687	0.785
2400	13	24	315	140	82	1.750	209.91	634.39	1	1	1.1287	0.9795	1	1.0028	1.0400	731.46	3.685	
	13th	August	1987	c														
0100	14	24	315	140	82	1.750	209.91	634.39	1	1	1.1287	0.9795	1	1.0028	1.0400	731.46	3.685	
0200	15	24	315	140	82	1.750	209.91	634.39	1	1	1.1287	0.9795	1	1.0028	1.0400	731.46	3.685	
0300	16	24	315	141	84	1.750	210.66	634.39	1	1	1.1287	0.9777	1	1.0028	1.0395	729.76	3.690	
0400	17	24	315	141	84	1.750	210.66	634.39	1	1	1.1287	0.9777	1	1.0028	1.0395	729.76	3.690	
0500	18	24	315	141	84	1.750	210.66	634.39	1	1	1.1287	0.9777	1	1.0028	1.0395	729.76	3.690	
0600	19	24	315	142	86	1.750	211.40	634.39	1	1	1.1287	0.9759	1	1.0029	1.0390	728.08	3.694	Cum Gas Flowed Ext. Rate = 2.753 MMSCF
0700	20	24	315	142	86	1.750	211.40	634.39	1	1	1.1287	0.9759	1	1.0029	1.0390	728.08	3.725	Total 3.[illegible]
0800	21	24	315	142	86	1.750	211.40	634.39	1	1	1.1287	0.9759	1	1.0029	1.0390	728.08	3.725	
0900	22	24	330	138	88	1.750	213.31	634.39	1	1	1.1287	0.9741	1	1.0027	1.0405	727.64	3.725	
1000	23	24	340	133	90	1.750	212.57	634.39	1	1	1.1287	0.9723	1	1.0025	1.0413	726.75	3.708	
1100	24	24	350	129	90	1.750	212.40	634.39	1	1	1.1287	0.9723	1	1.0023	1.0426	727.57	3.709	
1200	25	24	350	129	91	1.750	212.403	634.39	1	1	1.1287	0.9715	1	1.0023	1.0423	726.72	3.705	
1300	26	24	353	128	91	1.750	212.48	634.39	1	1	1.1287	0.9715	1	1.0023	1.0427	726.96	3.707	
1400	27	24	353	126	91	1.750	210.82	634.39	1	1	1.1287	0.9715	1	1.0023	1.0427	726.94	3.678	
1405				Shut in well for pressure buildup														

001000

WELL TEST DATA METRIC SUMMARY SHEETS

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 11/3/87

PAGE No: 1

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
	MODIFIED ISOCHRONAL														
1807	0	0	2295	15824				Pressure up Lubricator							
1907			2295	15824				R.I.H with pressure elements							
1938			2291	15796				On bottom, hang @ 9550' KB							
2100			2290	15790	8/64			Open well; start rate #1							
2105			2265	15617											
2110			2260	15583		73	23								
2115			2262	15596		77	25					0.409	11.523		
2130			2263	15603		90	32					0.563	15.862		
2145			2253	15534		99	37					0.640	18.031		
2200			2252	15528		99	37	6.0	0.954	0	0	0.626	17.637	104333	18498
2215			2250	15514		100	38					0.625	17.609		

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

0001111

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 11/8/87

PAGE No: 2

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
2230	0	0	2248	15500	8/64	100	38					0.623	17.552		
2245			2243	15466								0.620	17.468		
2300			2240	15445		102	39	3.8	0.604	0	0	0.625	17.609	164474	29161
2300								S/I . End rate #1		Cumulative	49281 scfd				
2305			2297	15838	S/I										
2310			2302	15872											
2315			2302	15872											
2330			2305	15893											
2345															
2400															
12/8/87															
0015			2304	15886											

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

0001112

WELL: KUMAN NORTH #1 UPPER

OPERATOR: S. MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/8/87

PAGE No: 3

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0030	0	0	2304	15886	S/I										
0045			2303	15879											
0100			2303	15879				Open well, start rate #2							
0105			2080	14342	4/64	100	38								
0110			2038	14052		102	39								
0115			2032	14011		106	41					2.045	57.616		
0130			2028	13983		108	42					2.005	56.489		
0145			2024	13955		109	43					1.947	54.855		
0200			2023	13949		111	44	40.0	6.360	0	0	1.995	56.207	49875	8843
0215			2021	13935		113	45					1.974	55.615		
0230			2019	13921								2.014	56.742		
0245			2018	13914								1.997	56.263		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER | T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/3/87

PAGE No: 4

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0300	0	0	2016	13900	14/64	113	45	30.2	4.801	0	0	1.965	55.362	65066	11536
0300								S/I. End rate #2							
0305			2267	15631	S/I										
0310			2293	15810											
0315			2294	15817											
0330			2298	15845											
0345			2300	15859											
0400			2301	15865											
0415															
0430															
0445															
0500								Open well start rate #3							

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000114

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER | T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/8/87

PAGE No: 5

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0505	0	0	1660	11446	22/64	108	42								
0510			1554	10715		109	43								
0515			1521	10487		113	45					3.986	112.302		
0530			1507	10391		117	47					3.947	111.203		
0545			1496	10315		118	48					3.927	110.639		
0600	1	7	1487	10253		119	48	54.3	8.633	0	0	3.898	109.822	71786	12728
0615	2	14	1483	10225		120	49					3.880	107.906		
0630	5	35	1480	10205								3.852	108.526		
0645	13	90	1475	10170		122	50					3.862	108.808		
0700	24	166	1473	1056		122	50	34.0	5.406	23.4	3.720	3.830	107.906	112647	19972
0700								S/I. End rate #3							
0705	29	200	2180	15031	S/I										

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000115

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/8/87

PAGE No: 6

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0710	20	138	2264	15610	S/I										
0715	12	83	2270	15652											
0730	3	21	2274	15679											
0745	0	0	2279	15714											
0800			2280	15721											
0815															
0845			2281	15728											
0900								Open well, start rate #4							
0905			1349	9301	34/64	108	42								
0910			1220	8412		113	45								
0915			1198	8260								4.556	128.361		
0930			1193	8226		115	46					4.541	127.938		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER | T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/8/87

PAGE No: 7

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0945	4	28	1193	8226	34/64	115	46					4.467	125.853		
1000	11	76	1190	8205				49.1	7.806	10.6	1.685			90978	16130
1015	30	207	1187	8184		117	47					4.440	125.093		
1030	48	331	1186	8177								4.430	124.811		
1045	78	538	1188	8191		119	48					4.454	125.487		
1100	102	703						43.0	6.837	14.3	2.274	4.381	123.430	101383	18064
1105					34/64			Extended	Flow.						
1115	138	952	1430	9860	24/64	122	50					3.860	108.752		
1130	157	1083	1432	9874		123	51					3.827	107.822		
1145	176	1214	1431	9867								3.823	107.709		
1200	196	1351						29.4	4.674	19.6	3.116			130034	23055
1230	247	1703	1430	9860		125	52					3.814	107.456		

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S.MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12/8/87

PAGE No: 8

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1300	268	1848	1427	9839	24/64	125	52	33.2	5.279	15.1	2.401	3.812	107.399	114819	20357
1330	305	2103	1428	9846	"	124	51	"	"	"	"	3.781	106.526		
1400	334	2303	1422	9805	"	123	51	35.5	5.644	6.8	1.081	3.828	107.850	107830	19118
1500	392	2703	1419	9784	"	126	52	40.0	6.360	9.8	1.558	3.801	107.089	95025	16848
1600	435	2999	1415	9756	"	123	51	32.5	5.167	17.4	2.766	3.768	106.160	115938	20556
1700	471	3248	1422	9805	"	125	52	"	"	11.3	1.797	3.78	106.498	116308	20621
1800	508	3503	1419	9784	"	122	50	34.7	5.517	13.6	2.162	3.76	105.934	108357	19212
1900	522	3599	1416	9763	"	"	"	43.0	6.837	16.6	2.639	3.71	104.526	86279	15297
2000	537	3703	1412	9736	"	"	"	36.2	5.755	11.3	1.797	"	"	102486	18171
2100	544	3751	1410	9722	"	124	51	31.7	5.040	10.6	1.685	"	"	117035	20750
2200	580	3999	1406	9694	"	127	53	29.4	4.674	9.8	1.558	3.69	103.962	125510	22253
2300	609	4199	1404	9681	"	129	54	34.0	5.406	13.6	2.162	"	"	108529	19242

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000118

PETENG 007

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER / T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 13/8/87

PAGE No: 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
2400	624	4303	1400	9653	24/64	129	54	34.0	5.406	11.3	1.797	3.69	103.962	108529	19242
13/8/87.															
0100	631	4351	1399	9646		128	53	29.4	4.674	15.1	2.401			125510	22253
0200	638	4399	1397	9632		127	53	37.0	5.883	12.8	2.035			99189	17586
0300	645	4447	1398	9639		128	53	34.7	5.517	10.6	1.685			106340	18854
0400	653	4502	1396	9625				31.7	5.040	12.1	1.924			116403	20638
0500	667	4599	1393	9605		130	54			12.8	2.035				
0600	682	4702	1389	9577						11.3	1.797				
0700	689	4751	1390	9584		129	54	35.5	5.644	6.8	1.081	3.72	104.807	104788	18579
0800	696	4799						34.0	5.406	9.8	1.558			109412	19399
0900	703	4847	1387	9563						12.1	1.924				
1000	711	4902				131	55	35.5	5.644	9.8	1.558	3.71	104.526	104507	18529

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000119

PETENO 003

WELL: KIDMAN NORTH # 1 UPPER

OPERATOR: S. MAYER | T. HIRST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 13/8/87

PAGE No: 10

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1100	718	4951	1385	9550	24/64	132	56	347	5.517	11.3	1.797	3.71	104.526	106916	18956
1200	722	4978	1388	9570	|	|	|	31.7	5.040	13.6	2.162	|	|	117034	20750
1300	729	5027	1369	9439	|	131	55	|	|	10.6	1.685	|	|	|	|
1400	732	5047	1385	9550	|	|	|	347	5.517	9.1	1.447	3.68	103.680	106052	18803
1410	722	4978	2097	14459	S/I			Shut in 1405 hrs for build up.							
1415	696	4799	2140	14755	|										
1430	580	3999	2148	14811	|										
1445	493	3399	2153	14845	|			Total Gas		5102000	scf				
1500	421	2903	2158	14879	|			Total Condensate		39.435	bbls	6.270 m^3			
1515	377	2599	2159	14886	|			Total Water.		15.529	bbls	2.469 m^3			
1530	319	2200	2161	14900	|										
1545	261	1800	2162	14907	|										

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000120

WELL: KIDMAN NORTH #1 UPPER

OPERATOR: S. MAYER / S. COPPOCK

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 13/8/87

PAGE No: 11

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1600	217	1496	2163	14914	8/I										
1700	62	428	2167	14942											
1800	13	90	2171	14969											
1900	0	0	2176	15004											
2000			2180	15031											
2400			2196	15141											
14/8/87															

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

0001121

PETENO 007

SANTOS WIRELINE REPORT

000123

WIRELINE REPORT

WELL: KIDMAN NORTH #1 Upper

DATE: 11th August 1987

PROGRAM: MODIFIED ISOCHRONAL TEST

PURPOSE OF WORK: DUMMY RUN

REPORT OF WORK PERFORMED:

Rig up swab valve, B.O.P's, & lubricator.
Pressure test B.O.P.'s to SITP. (2295 psi)
Run in hole with 1.750" guage ring.
Tag plug at bottom of tubing @ 6555' KB (10 feet lower than depth noted in program)
Pull out of hole.
No problems or constrictions encountered.

OPERATOR'S SIGNATURE

WORK PERFORMED BY: S. Mayer OF Oilserv

WELL DATA:

Tubing Size: 2 3/8 FWHP: SIWHP: 2295 psi

Sub Surface ~~S.V.~~/Landing Nipple @ 7025' S.S.D. @:

"X" Nipple @ "N"/"XN" Nipple @ 7036' other

Min I.D. 1.791" @ 7036' Packer @ 7007'

Perforated Interval: 6594 - 6796'

Forward to: **Petroleum Engineering — Adelaide**
Production Department — Moomba

5504

SANTOS LTD.

000124

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NORTH #1 Upper Date: 11th AUGUST, 1987

Lubricator Data:

Pressure with D.W.T. IN - 2295 PSI / OUT - 2275

Time Pressured 1807 hr 11-8-87 Time Depressured 0847 16th-8-87

Time Run in Hole 1907 hr 11th August Time off Bottom 0714 16th August

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	17788 x 3950 PSI	56508 x 4000 PSI
Recorder No.	46680 x 15 TLS	62363 x 15 TLS
Clock and Lead Screw Data	D11889 x 120 HOUR	F19219 x 120 HOUR
Engage Stylus	Date: 11-8-87 Time: 1745 hr	Date: 11-8-87 Time: 1745 hr
Disengage	Date: Time:	Date: Time:

Remarks: Run with RT-7 Temp. guage # 55573 100°-400°F & 120 hr clock

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp.	Remarks
11-8-87	1938					On bottom - 6550'KB
	2100	-	2290	0		Begin Rate #1
	2300	-	2240	0	102°F	Shut in well
12-8-87	0100		2303	0		Begin Rate #2
	0300	-	2016	0	113°	Shut in well
	0500	2	2301	0		Begin Rate #3
	0700	-	1473	24	122°	Shut in well
	0900	2	2281	0		Begin Rate #4
	1100	-	1188	102	119°	Begin extended rate
	1800		1419	508	122°	
13-8-87	0600		1389	682	130°	
	1405		1385	722	131°	Shut in well
	1430		2148	580		
	1500	1	2158	421		
	1600	2	2163	217		
	1800	4	2171	13		
	2000	6	2180	0		
	2400	10	2196	0		
14-8-87	0600	16	2212	0		
	1200	22	2229	0		
	2400	34	2261	0		
15-8-87	0600	40	2261	0	-	
	1800		2267	0		

WELL NAME: KIDMAN NORTH #1 Upper **STATIC GRADIENT SURVEY** DATE: 16th August 1987

BOMB No. 1 DATA

ELEMENT No. 17788 ELEMENT RANGE: 0-3950 psi
RECORDER No. 46680 x 15TLS CLOCK DATA: 18547 x 3hr
ENGAGE STYLUS: 0953 DISENGAGE: 1258

BOMB No. 2 DATA

ELEMENT No. 56508 ELEMENT RANGE: 0-4000
RECORDER No. 62363 CLOCK DATA: 18548 x 3hr
ENGAGE STYLUS: 0953 DISENGAGE: 1258

LUBRICATOR DATA

PRESSURE WITH D.W.T.: IN/2279 OUT/2281
TIME PRESSURED: 1014 hrs
TIME DEPRESSURED: 1243 hrs

DATE	TIME	DEPTH '	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH '	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
16-8-87	1031	0				0				Run in hole
	1039	1000				1000				
	1050	2000				2000				
	1059	3000				3000				
	1110	4000				4000				
	1121	5000				5000				
	1131	6000				6000				
	1140	6550				6550				
	1227	0				0				
	1243	0				0				Depressure lube

General Comments: Bottom stop @ 6550 due to revised hanging depth on test.

000125

WELL NAME: KIDMAN NORTH #1 Upper — STATIC GRADIENT SURVEY — DATE: 16-8-87

BOMB No. 1 DATA

ELEMENT No. 55573 — ELEMENT RANGE: 100-400 °F

RECORDER No: 57959 x 7½ KS — CLOCK DATA: 6824 x 12 hr (DPLS)

ENGAGE STYLUS: 0953 — DISENGAGE: 1258

BOMB No. 2 DATA

ELEMENT No: — ELEMENT RANGE:

RECORDER No: — CLOCK DATA:

ENGAGE STYLUS: — DISENGAGE:

LUBRICATOR DATA

PRESSURE WITH D.W.T.:

TIME PRESSURED:

TIME DEPRESSURED:

DATE	TIME	DEPTH '	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH '	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
16-8-87	1031	0								Run in hole
	1039	1000								
	1050	2000								
	1059	3000								
	1110	4000								
	1121	5000								
	1131	6000								
	1140	6550								
	1227	0								Depressure lube
	1243	0								

General Comments:

000126

AMERADA CHARTS

PRESS

000126

Client SANTOS

Gauge Type GRC RPG 3 Range 0-3950 PSI

Well Name KIDMAN NTH #1 Upper T.H. Pressure 2295 PSI

Date of Run 11-8 19 87 Depth Reached 6550 Feet

Base Line Temperature 60 °F Max. Temperature °F

Pressure Element Serial No. 17788 Clock No. D 11889 Hrs 120

Stopped at 6550 ft KB

Datum MOD ISOCHRONAL

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS

Gauge Type GRC RPG-3 Range 0-4000 PSI

Well Name KIDMAN NTH #1 Upper T.H. Pressure 2295 psi

Date of Run 11-8 19 87 Depth Reached 6550 Feet

Base Line Temperature 60 °F Max. Temperature °F

Pressure Element Serial No. 56508 Clock No. F 19219 Hrs 120

Stopped at 6550 ft KB

Datum MOD. ISOCHRONAL

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

RT 7

Client SANTOS

Gauge Type R-T-7 Range 100°-400° F

Well Name KIDMAN NTH #1 Upper T.H. Pressure 2295 PSI

Date of Run 11-8 19 87 Depth Reached 6550 Feet

Base Line Temperature 60 °F Max. Temperature °F

Pressure Element Serial No. 55573 Clock No. Hrs 120

Stopped at 6550 ft KB

Datum MOD. ISOCHRONAL

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client: SANTOS LTD

Garage Type: GRC RPG 3 — Range: 0-4000 PSI

Well Name: KIDMAN NTH #1 Upper — T.H. Pressure: 2279 PSI

Date of Run: 16-8-1987 — Depth Reached: 6550 Feet

Base Line Temperature: 60 °F — Max. Temperature: °F

Pressure Element Serial No: 56508 — Clock No: 18548 — Hrs: 3

Stopped at: 0, 1000, 2000, 3000, 4000, 5000, 6000, 6550

Datum: STATIC GRADIENT

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client: SANTOS LTD

Garage Type: GRC RPG 3 — Range: 0-3950

Well Name: KIDMAN NTH #1 Upper — T.H. Pressure: 2279 PSI

Date of Run: 16-8-1987 — Depth Reached: 6550 Feet

Base Line Temperature: 60 °F — Max. Temperature: °F

Pressure Element Serial No: 17788 — Clock No: 18547 — Hrs: 3

Stopped at: 0, 1000, 2000, 3000, 4000, 5000, 6000, 6550, 0.

Datum: STATIC GRADIENT

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client: SANTOS LTD

Garage Type: RT-7 — Range: 100°-400° F

Well Name: KIDMAN NTH #1 Upper — T.H. Pressure: 2279 PSI

Date of Run: 16-8-1987 — Depth Reached: 6550 Feet

Base Line Temperature: 60 °F — Max. Temperature: °F

Pressure Element Serial No: 55573 — Clock No: 6824 — Hrs: 12 hr X DPLS

Stopped at: 0, 1000, 2000, 3000, 4000, 5000, 6000, 6550, 0.

Datum: STATIC GRADIENT

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

AMERADA PRESSURE GAUGE CALIBRATION REPORT

OSA PRODUCTION SERVICES

COMPANY SANTOS LTD WELL NO. KIDMAN NTH #1

FIELD _____ INTERVAL TESTED _____

COUNTRY AUSTRALIA TECHNICIAN L CORREIA

DATE: 2 AUG/87 CALIBRATION NO. 0208087 DATE OF LAST CALIBRATION: 15 June 1987

Subsurface Pressure Gauge Calibration Report

PAGE ____ OF ____

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	Y (4)	ΔY (5)	Y'	Y P	Pc = KY + a	NON LINEARITY CORRECTION c = P - Pc	C'
500		0.2518				499.7401	+0.2599	0.5
1000		0.5032				997.9242	+2.0756	4.1
2000		1.0108				2003.8047	-3.8046	6.6
3000		1.5138				3000.5696	-0.5696	1.1
3500		1.7648				3497.9611	+2.0389	4.0
Σ						Σ + = 4.3744 Σ - = 4.3743		16.3

LEAST SQUARES CALCULATIONS

$A = \frac{\Sigma P}{n} =$ _____ =

$B = \frac{\Sigma Y}{n} =$ _____ =

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$ _____ =

$D = \frac{\Sigma (YP)}{\Sigma Y} =$ _____ =

$K = \frac{D - A}{C - B} =$ _____ = 1981.6398

a = A - BK = _____ = +0.7633

a = D - CK = _____ = +0.7633

$q = \frac{\Sigma C'}{n} =$ _____ = 3.26

OWNER OF GAUGE: OSA TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 17788 RANGE: 0-3950 PSI RECORDING SECTION NO. _____

DEADWEIGHT TESTER TYPE AND RANGE: 10M CHANDLER SERIAL NO. _____

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_O = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 254° CALIBRATION TEMPERATURE = 255° F

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK _____

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS +.7448

LEVEL DIFFERENCE H = 2 ft

SPECIFIC GRAVITY OF OIL D = 0.86 } p = ☐ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

CALIBRATION RESULTS

K = 1981.6398

a + p = +1.5181

$D_R - D_O = Y_R =$ _____ $P_R =$ _____

REMARKS

In tandem with P.E. #5658

Checked @ 2520 - Recorded 2521.8

Use linear correction

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p
(2) Do = READING FOR BASE LINE
(3) Dr = READING FOR REFERENCE LINE
☐ D - Do IF NO REFERENCE LINE
(5) Δ Y = FOR CHECKING
(6) n = NUMBER OF CALIBRATION STEPS
(7) Σ = SUM
(8) Q = STANDARD DEVIATION

000121

OSA PRODUCTION SERVICES

DATE: 2 Aug/87

COMPANY SANTOS LTD. WELL NO. KIDMAN NTH #1

FIELD _____ INTERVAL TESTED _____

COUNTRY AUSTRALIA TECHNICIAN L. CORRIEA

CALIBRATION NO. 02080087 DATE OF LAST CALIBRATION: 26 June 1987

Subsurface Pressure Gauge Calibration Report

PAGE ____ OF ____

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	Y (4)	ΔY (5)	Y'	Y P	Pc = KY + a	NON LINEARITY CORRECTION c = P - Pc	C'
500		0.2442				500.7214	-0.7214	1.4
1000		0.4872				1000.4124	-0.4124	0.8
2000		0.9724				1998.1493	+1.8507	3.7
3000		1.4592				2999.1764	+.8236	1.6
3500		1.7035				3501.5406	-1.5406	3.0
Σ						Σ + = 2.6743 Σ - = 2.6744		10.5

LEAST SQUARES CALCULATIONS

$A = \frac{\Sigma P}{n} =$ _____ =

$B = \frac{\Sigma Y}{n} =$ _____ =

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$ _____ =

$D = \frac{\Sigma (YP)}{\Sigma Y} =$ _____ =

$K = \frac{D - A}{C - B} =$ _____ = 2056.3416

a = A - BK = _____ = -1.4372

a = D - CK = _____ = -1.4372

$q = \frac{\Sigma C'}{n} =$ _____ = 2.1

OWNER OF GAUGE: OSA TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 56508 RANGE: 0-4000 PSI RECORDING SECTION NO. _____

DEADWEIGHT TESTER TYPE AND RANGE: 10 M CHANDLER SERIAL NO. _____

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_O = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 254 CALIBRATION TEMPERATURE = 255 °F

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☑ WITH A CRANK _____

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS _____

LEVEL DIFFERENCE H = 2 ft

SPECIFIC GRAVITY OF OIL D = 0.86 } p = ☑ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

CALIBRATION RESULTS

K = 2056.3416

a + p = -0.6924

$D_R - D_O = Y_R =$ _____ $P_R =$ _____

REMARKS

In tandem with RE. # 17768

Checked @ 2520 - Recorded 2522 psi

No linear correction required

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p
(2) Do = READING FOR BASE LINE
(3) Dr = READING FOR REFERENCE LINE
(4) ☐ D - Do IF NO REFERENCE LINE
(5) Δ Y = FOR CHECKING
(6) n = NUMBER OF CALIBRATION STEPS
(7) Σ = SUM
(8) Q = STANDARD DEVIATION

0001132

SURFACE SAMPLE REPORT

INSERT THIS COPY WITH WELL TEST DATA 000124

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid Condensate Date 13-8-87 Container no. 77-009
Formation Toolachee Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1325	9550	24/64	56	2344	33	104525	5.04	1.69

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs
Sample pt. Test separator
Remarks; Destination

Sampled by $MgSO_4$ displacement
Total cylinder volume = 335 cc
Outage = 65 cc
Final sample pressure = 1689 KPa

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid Condensate Date 13-8-87 Container no. 77-002
Formation Toolachee Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1303	9550	24/64	56	2344	33	104525	5.04	1.69

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs
Sample pt. Test separator
Remarks; Destination

Sampled by $MgSO_4$ displacement
Total cylinder volume = 335 cc
Outage = 65 cc
Final sample pressure = 1689 KPa

INSERT THIS COPY WITH WELL TEST DATA

000125

SANTOS

SANTOS LTD. - FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN N^th #1 Fluid CONDENSATE Date 13-8-87 Container no. 77-001

Formation TOOLACHEE Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1230	9570	24/64	56	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Test separator

Remarks; Destination

Sampled by MgSO4 displacement

Total cylinder volume = 335 cc

Outage = 65 cc

Final sample pressure = 1689 kPa

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. - FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN N^th #1 Fluid CONDENSATE Date 13-8-87 Container no. 77-011

Formation TOOLACHEE Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1212	9570	24/64	56	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Test separator

Remarks; Destination

Sampled by MgSO4 displacement

Total cylinder volume = 335 cc

Outage = 65 cc

Final sample pressure = 1689 kPa

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid GAS Date 13-8-87 Container no. 81A-4485

Formation Toolachee Perforations 6594-6791 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1330	9570	24/64	56°	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hr.

Sample pt. Test separator

Remarks; Destination

Sampled by vacuum method.

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid GAS Date 13-8-87 Container no. 81A-4488

Formation Toolachee Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1325	9550	24/64	56	2344	33	104526	5.04	1.69

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hr.

Sample pt. Test separator

Remarks; Destination

Sampled by vacuum method.

INSERT THIS COPY WITH WELL TEST DATA

000137

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN N^th #1 Fluid Water Date 13-8-87 Container no. L.P.

Formation Toolachee Perforations 6594 - 6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1200	1570	24/64	56	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Stock tank

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN N^th #1 Fluid WATER Date 13-8-87 Container no. L.P.

Formation Toolachee Perforations 6594 - 6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1200	9570	24/64	56	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Stock tank

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

000128

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid Water Date 13-8-87 Container no. L.P.

Formation Toolachee Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1200	9570	24/64	56	2310	33	104526	5.04	2.16

S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Stock tank

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN Nth #1 Fluid Water Date 13-8-87 Container no. L.P.

Formation Toolachee Perforations 6594-6796 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1200	9570	24/64	56	2310	33	104526	5.04	2.16

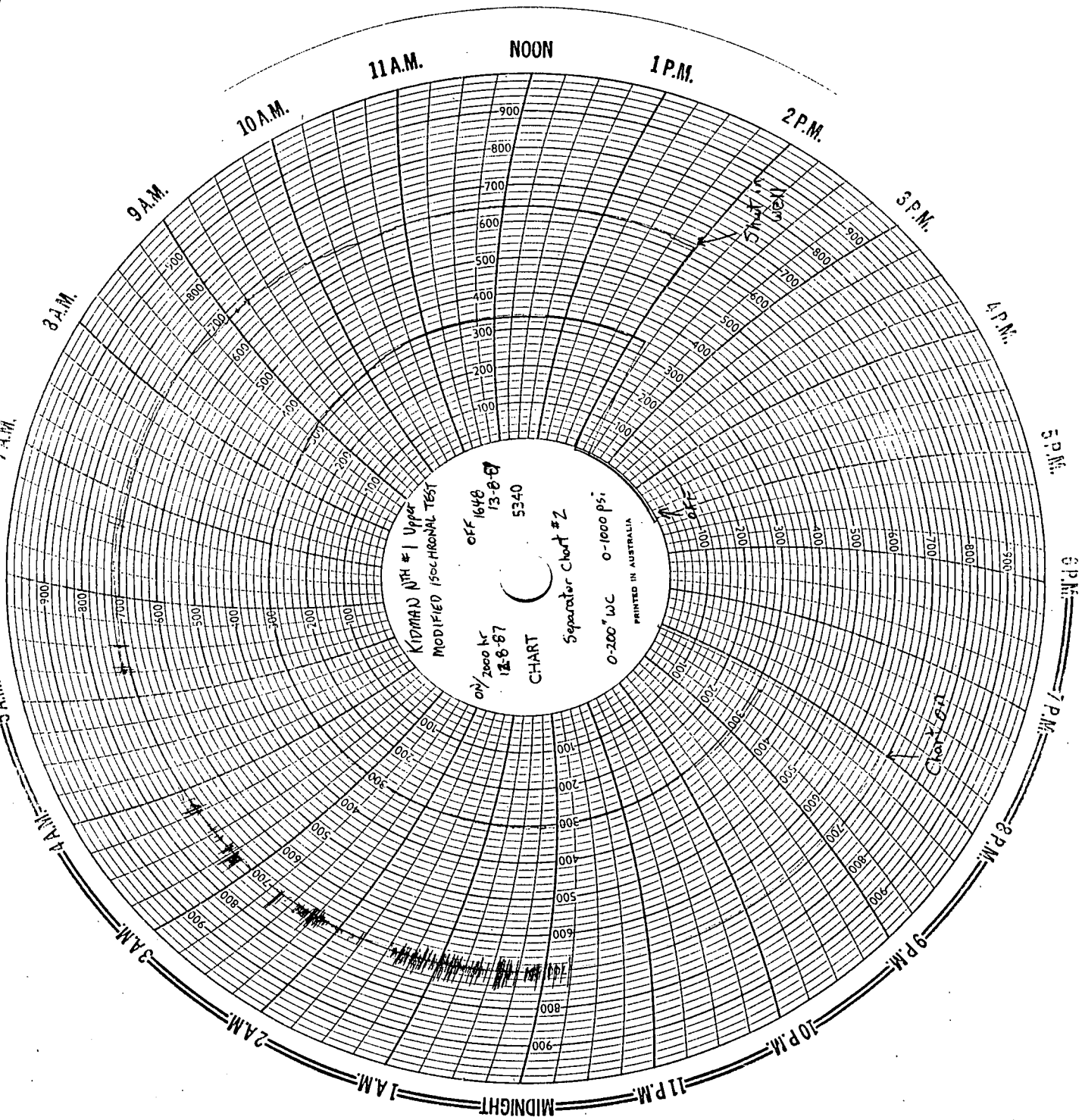
S.I.T.P (Kpa) 15824 @ Date / time 11-8-87 1800 hrs

Sample pt. Stock tank

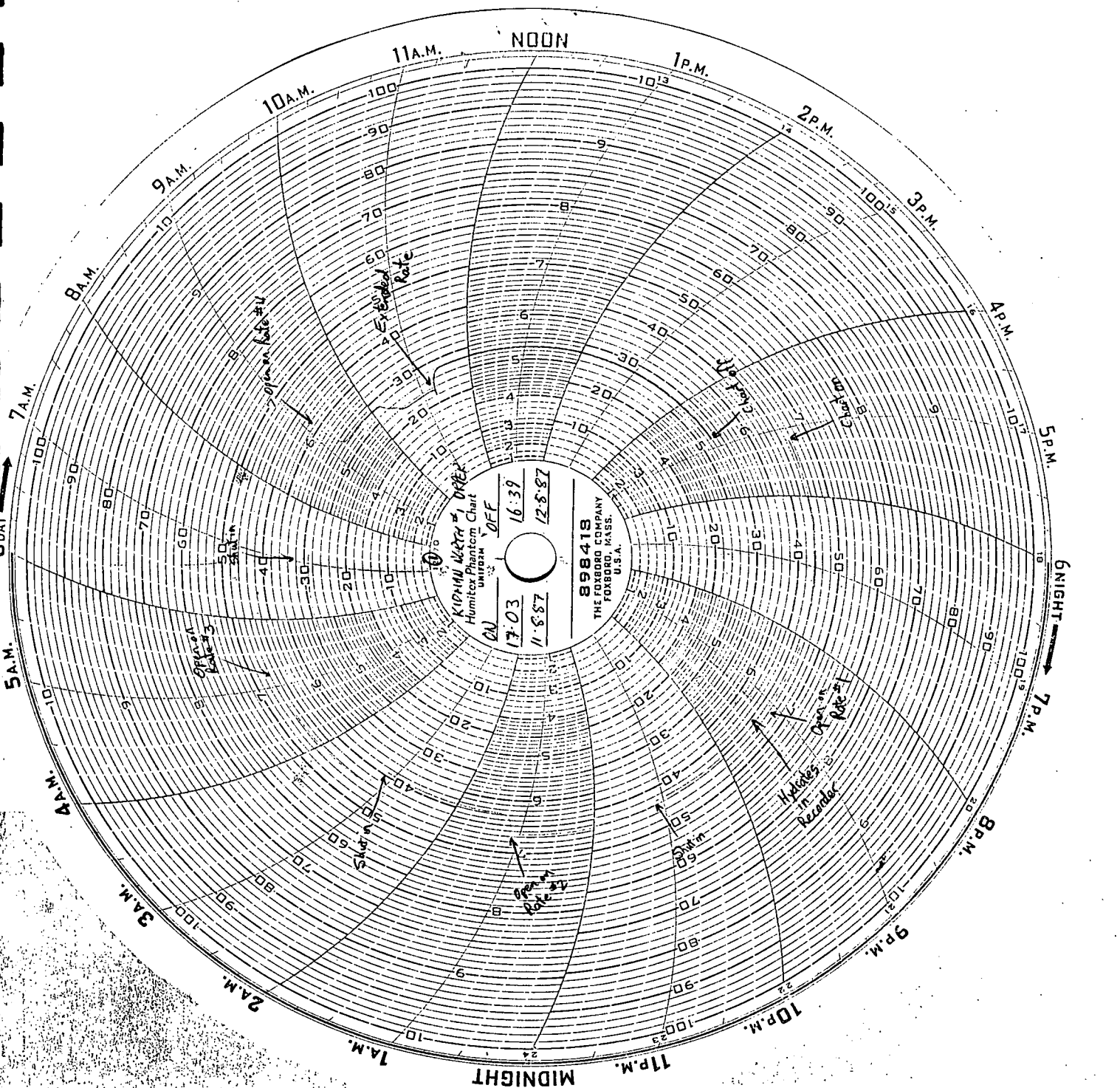
Remarks; Destination

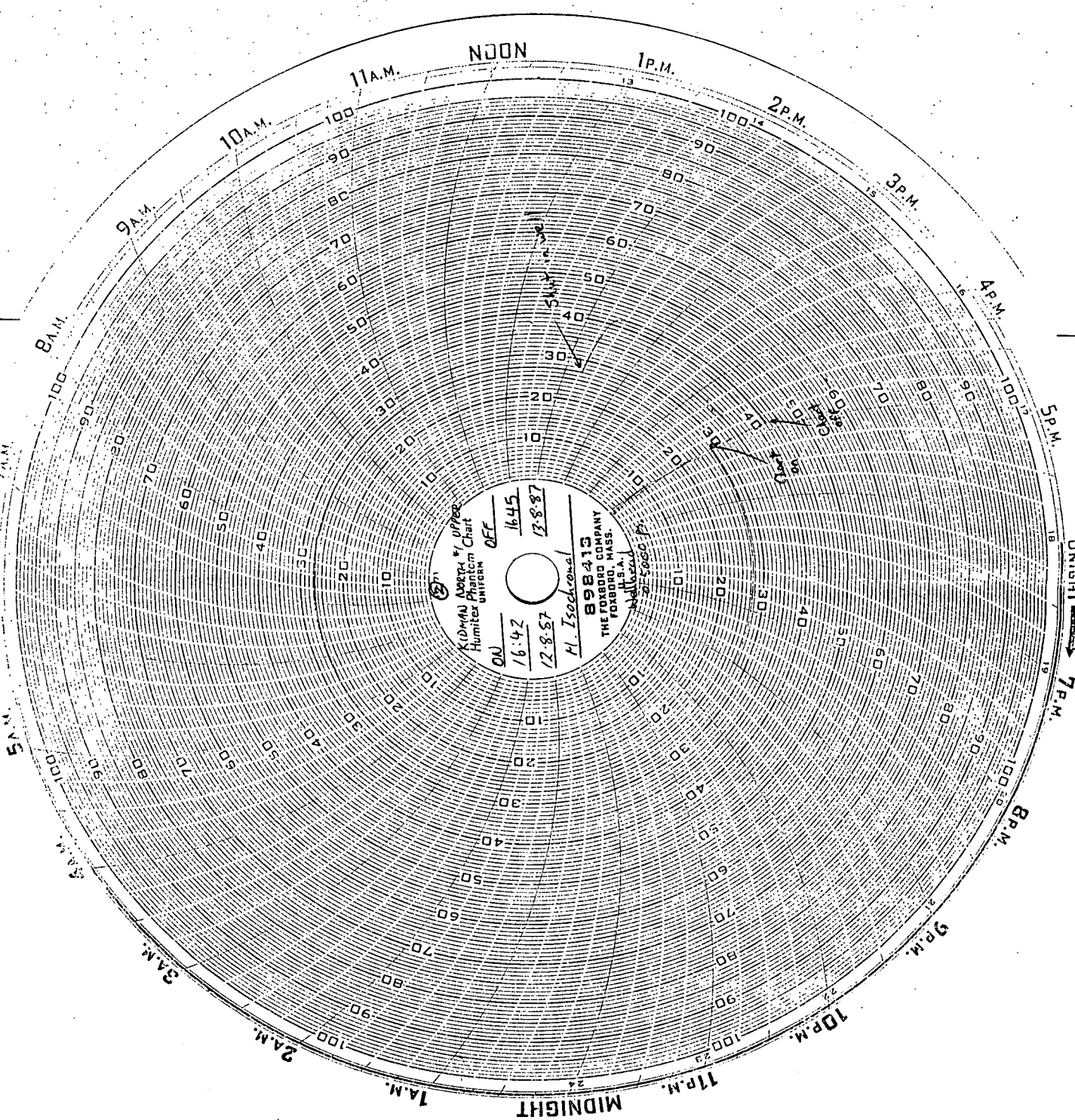
RECORDER CHARTS

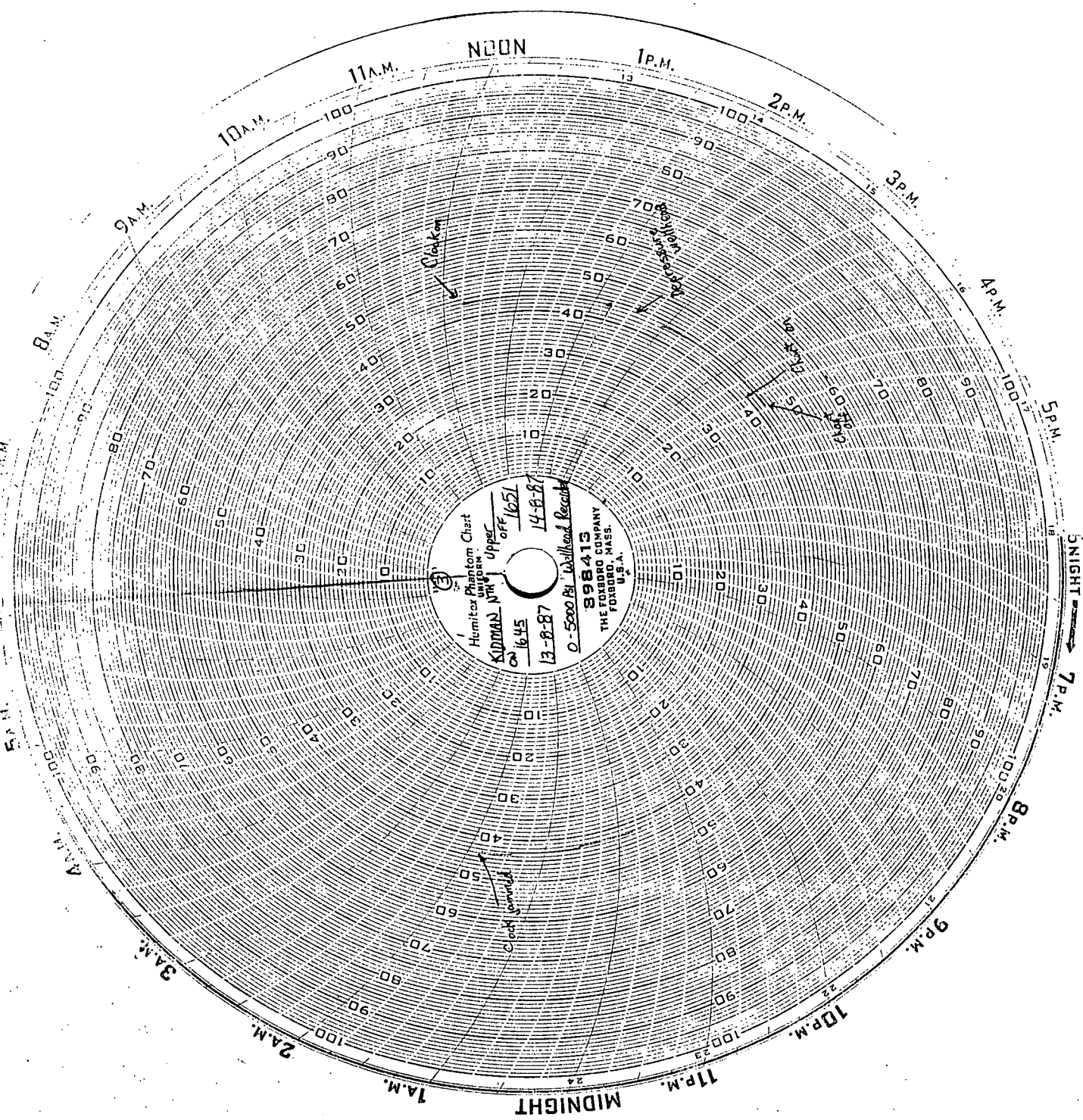
CALIBRATED CHARTS
Chart #1
Kidman #1
Upper
METER NUMBER
TIME PUT ON
2100 hrs
DATE PUT ON
11-8-87
TUBE ORIF. SIZE
TIME TAKEN OFF
2000 hrs
DATE TAKEN OFF
12-8-87
MW-0-100%
0-100%
0-200" wc
0-1000 psi
SIGNED
Modified Barton
Separator
CHART ON
RATE #1
RATE #2
RATE #3
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 MIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11

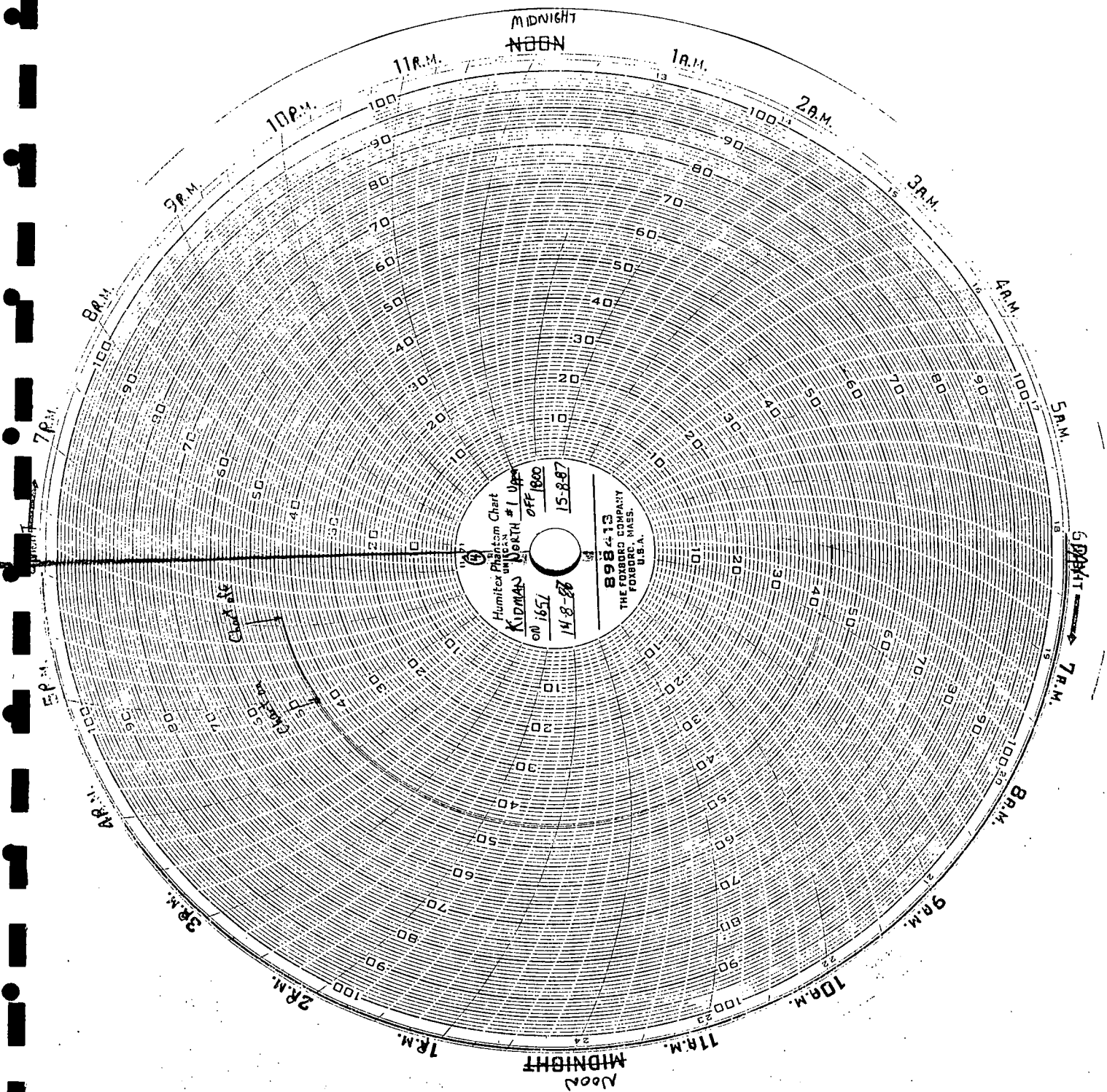

NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
KIDMAD NTH #1 Upper
MODIFIED ISOCHRONAL TEST
CHART
Separator Chart #2
0-200" WC
0-1000 psi
PRINTED IN AUSTRALIA
Start Test
Chart Test

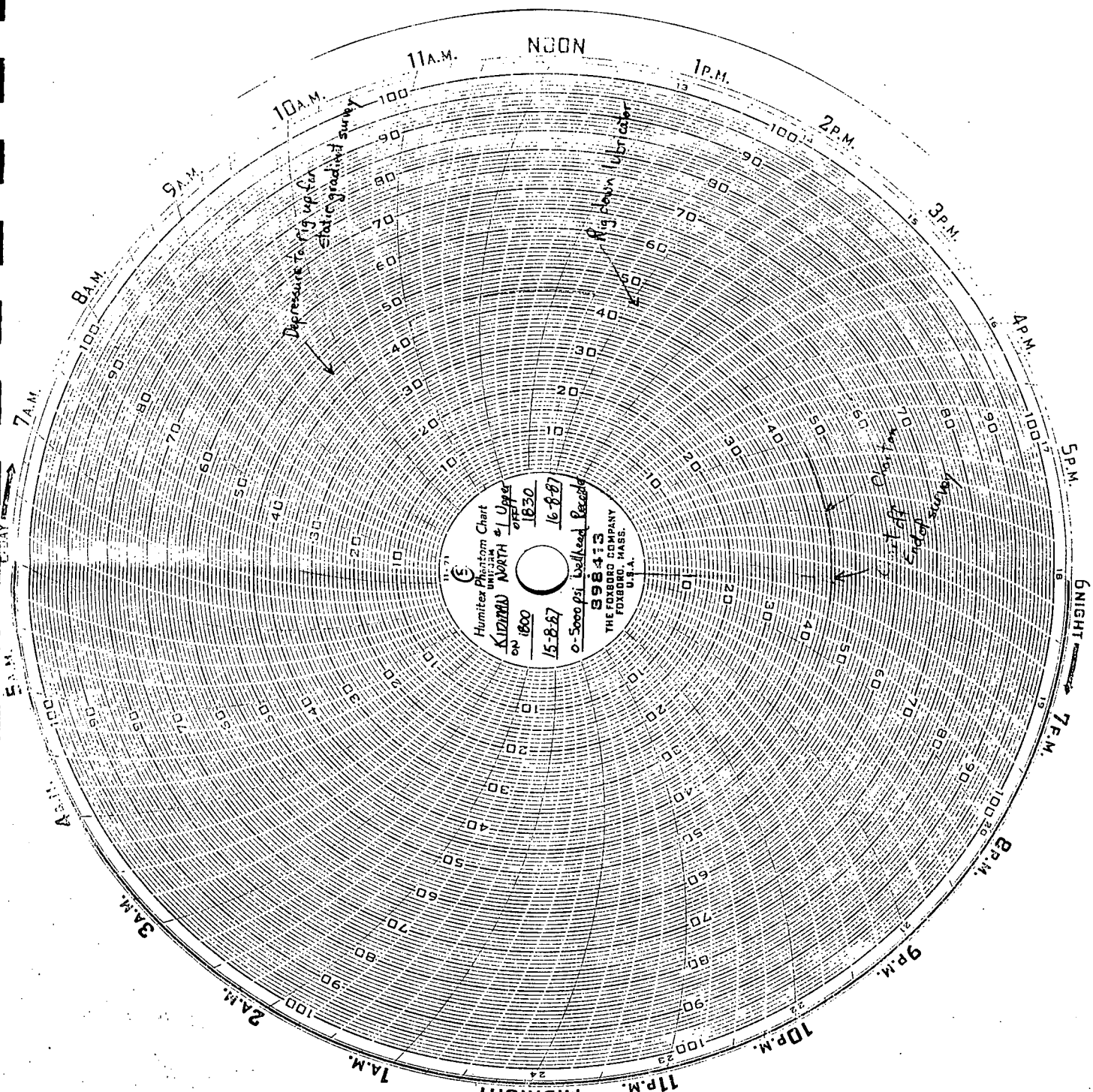
000142


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Humitrax Phantom Chart
UNIPRAX
KIOWA WATER #1 DATE
ON 17:03 11·5·87
OFF 16:39 12·5·87
898418
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Extended Rate
Hydrates in Recorder
Shut-in


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Clock Off 6:00
Clock On 5:00
OFF
1645
12-8-87
ON
16:42
12-8-87
H. Isackson
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Clockwise
Humitrex Phantom Chart
UNIFORM
Upper
KIDMAN MFG.
OFF
1651
14-8-87
1645
13-8-87
0-5000 Rh Inverted Recorder
398413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


MIDNIGHT
NOON
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
MIDNIGHT
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
Humiter Phantom Chart
UNICAM
NORTH #1 Upper
OFF 1800
15-8-87
KIDMAN
ON 1657
14-8-87
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
TODAY
YESTERDAY
Humiter Phantom Chart
NORTH
KIDMAN
0-5000 psi Wellhead Record
398413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

OILSERV AUSTRALIA

Well Testing/Oilfield Equipment Supply/Personnel-Consultant Placement

KIDMAN NORTH #1 LOWER

PATCHAWARRA FORMATION

CLEAN UP AND MODIFIED ISOCHRONAL TEST

8-27th AUGUST, 1987.

Suite 21, 242-244 Glen Osmond Road,
Fullarton, S.A. 5063
Telephone: (08) 338 1630 — Telex: AA88713

CLEAN UP FLOW

8/2/88

EW 7030/2

VOL. 2

WELL TEST DATA SHEETS

WELL: Kidman North #1 Lower

TYPE OF TEST: MIsochronal

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 8 August 87

DATE / TIME	WELLHEAD (CLEAN UP)					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
						Clean up flow.													
21.30						Open well TO choke manifold To test lines.													
22.00	0	2615		24.		Open well TO flare. (Separator by-passed).													
22.01						Auto shut down Valve closes. Reset valve.													
22.30	0	2615		24.		Open well To flare (Separator by passed).													
9 August 87																			
00.30	485	2030	135.	24.											5.96	est.			496666 cor.
02.30	690	2043	138	24											5.98	est			498 333
04.30	920	2047	140	24											5.98	est.			498 ???
06.30	1200	2053.	147	24		8hrs since open well.									5.96	est			496666
08.30	1520	2043	149	24											5.93	est.			
10.30	1580	2049	151	24											5.93	est			
12.30	1630	2050	153	24											5.93	est			
14.30	1675	2055	154	24											5.94	est			
16.30	1710	2053	154	24											5.93	est			
16.30	1710	2053	154	24		Flow through			Separator.	110			0		5.93	est			
18.30	1745	2055	156	24		215	40	73	3.0	710	1.89	51	300	1.88	5.78	23	23	46	251304
20.30	1760	2055	156	24.		200	40.	72	3.0.	1500	3.39	51.	550.	1.57.	5.59	41	19.	60	136341
22.00	1790	2055.	158	24.		200	40	72	3.0.	2200.	2.2	51	900	2.2	5.59	26	26	52	215000.
10	August		87.																

OPERATOR: B Lohrey T Hirst

WELL: Kidman North #1 Lower

TYPE OF TEST: M. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 10 August 1987

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
00·30	1805	2064	158	24		200	40	73	3·0	2750	1.58	51	1200	1.88	5.58	18.9	22·6	41·5	295238
02·30	1825	2063	158	24		200	40	73	3·0	3470	2.99	51	1445	1.54	5.58	35.8	18.5	54·3	155866
04·30	1845	2063	158	24		200	40	73	3·0	4125	2.19	51.	1750	1.92	5.58	26.4	23	49.4	211364
06·30	1860.	2065	158	24		200	40	73	3·0	4790	2.86	51.	1960	1.32	5.58	34	16.	50	164117
06·30						32 hrs		since well		open,		14 hrs	since flow to sep						
08 30	1880	2065	160	24.		200	40	73	3.0	5510	2.70	51.	2250	1·82	5·58	32	22	54	174375.
10·30	1890	2066	160	24.		200	40	77	3·0.	100/750	2.2	51.	0/300	1·88	5·55	26	23	49.	211538.
10·45				Start	To	ao choke		settings.											
11·00	1830	2370		16															
11·15	1825	2375	158	16		180	44	66	2·5						3·54				
				Rate	#2														
11·25		2010.		24															
11·40	1850	1985	160.	24		220	114	79.	2·5						6·21.				
				Rate	# 3.														
11·55		1610.	160	32											8.2	(estimated)			
12.00.						Wellhead pressure increases 200 psi.													
12·03				36		Change choke to 36/64.													
12·15		1650		36.		Pressure increasing.									10.8	(est.)			
12·45	2020	2110	163	36.											13·7	(est.)			
13·45	2100	2130	163	36.											13·9	(est.)			

OPERATOR: Bhohren T Hirst

0001151

WELL: Kidman North #1 Lower

TYPE OF TEST: M. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 10th August

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1430	2125	2120	163	36		220	40	77	3.0	2210	5.41	51	900	3.77	13.8	32.4	22.6	55	425926
1630	2175	2125	163	36		220	46	81	3.0	2880	2.51	51	1170	1.70	13.8	30.1	20.4	50.5	458471
1830	2175	2135	163	36		220	46	81	3.0	3610	2.45	51	1510	2.14	13.9	29.4	25.7	55.1	472789
1831		Shut in well as requested by Pet. Eng., due to possible communication																	
			with Kidman North #2 B.H.P.S.																
1845	1965	2626																	
1900	1900	2628																	
1930	1590	2629																	
2030	1220	2625																	
2230	765	2619																	
	11th	August	1987																
0030	460	2620																	
0230	260	2620																	
0630	100	2620					12	hrs	shut	in	time								
0830	0	2612																	
1030	0	2611																	
1230	0	2608																	
1430	0	2605																	
1630	0	2604																	
1830	0	2602																	

OPERATOR: S. MAYER / T. HIRST

000152

WELL: Kidman North #1 Lower

TYPE OF TEST: M. Iso

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 11th August 1987

PAGE No: 4 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
2030	0	2602				2100	hrs -	Begin	modified	isochronal	test	on	upper	zone					
2230	0	2602																	
	12	August 1987																	
0030	0	2604																	
0230	0	2605																	
0430	0	2603																	
0630	7	2611				36	Hours	shut	in	time									
0830	0	2607																	
1030	48	2614																	
1230	247	2619																	
1430	368	2622																	
1630	464	2623																	
1830	522	2625																	
2030	551	2627																	
2230	580	2630																	
	13	August 1987																	
0030	630	2632																	
0230	642	2634																	
0430	660	2634																	
0630	691	2634				60	Hours	shut	in	time									

OPERATOR S. Mayer / T. Hirst

000152

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: MOD ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 13 AUGUST 1987

PAGE No: 5 of 7

DATE / TIME	WELLHEAD (CLEAN UP) CASING PSI	WELLHEAD TUBING PSI	WELLHEAD TEMP. °F	WELLHEAD CHOKE SIZE INS.	WELLHEAD B.S.W. %	GAS FLOW DATA PI PSI	GAS FLOW DATA HW INS.H_2O	GAS FLOW DATA TEMP. °F	GAS FLOW DATA ORIFICE SIZE INS.	OIL/CONDENSATE PRODUCTION TANK DIP INS.	OIL/CONDENSATE PRODUCTION TANK PROD BBLS	OIL/CONDENSATE PRODUCTION API GRAVITY @60 °F	WATER PRODUCTION TANK DIP INS.	WATER PRODUCTION TANK PROD BBLS	WELL TEST RESULTS GAS FLOW RATE MMSCFD	WELL TEST RESULTS OIL FLOW RATE BBLS/DAY	WELL TEST RESULTS WATER FLOW RATE BBLS/DAY	WELL TEST RESULTS TOTAL LIQUID FLOW RATE BBLS/DAY	WELL TEST RESULTS G.O.R. SCF/BBL
0830	700	2629																	
1030	714	2627																	
1230	725	2627																	
1430	580	2627		1405 hrs	- Shut in upper zone for pressure buildup														
1630	140	2622																	
1830	5	2616																	
	14th	August		1987															
0030	0	2610																	
0630	0	2602		84	hours shut in time														
01230	0	2602																	
1540	0	2600					CHOKE SETTINGS												
1555	0	2600		Open	well on		36/64	adjustable choke to determine choke settings.											
1600	0	1850	100	36/64			Flowing through test seperator												
1605	0	1650	106	36/64															
1610	0	1643	110	36/64		305	71	46	3.0						9.54				
1625	0	1651	115	36/64		305	73	52	3.0						9.60				
1626	Open choke to 40/64 (adjustable)																		
1630	1	1368	116	40/64		310	100	66	3.0		Change to 40/64 fixed choke				Gas Rate = 11.13				
1635	9	1440	117	40/64		310	98	66	3.0						11.02				
1640	20	1447	118	40/64			Begin injecting methanol upstream of choke												

OPERATOR: S. Mayer / S. Kopak

000154

WELL: KIRMAN...Nth #1...Lower

TYPE OF TEST: M.D.T...ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 14th AUG. 1987

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1641		Decrease		to	38/64	adj.	choke		to	compare		fixed/adjustable			choke settings				
1645	44	1457	120	38/64		310	99	68	3.0	Decrease to			32/64 (fixed)		Gas	Rate =		11.046	
1650	134	1807	121	32/64		295	176	59	2.5						9.19				
1655	180	1811	121	32/64				Decrease to		28/64 adjustable choke									
1700	268	1920	125	28/64		290	154	54	2.5						8.57				
1705			Decrease		choke to	24/64 (fixed)													
1718	370	2200	124	24/64		250	96	45	2.5	Decrease to		20/64 adj choke			6.33				
1730	421	2286	124	20/64		260	68	39	2.5						5.48				
1731		Decrease to		16/64	fixed choke					Increase methanol injection to 28 gallons/day									
1750	428	2462	123	16/64		205	86	32	2.0						3.35				
1800	384	2459	122	16/64		200	86	27	2.0						3.33				
1830	363	2457	121	16/64		200	85	23	2.0						3.32				
1831		Shut in well @ choke manifold for pressure buildup																	
1900	74	2606																	
2000	0	2609																	
2100	0	2606																	
2400	0	2603																	
	15th	AUGUST																	
0600	0	2600																	
1200	0	2600																	

OPERATOR: S. Mayer / S. Kopak

000155

WELL: KIDMAN Nth #1 Lower

TYPE OF TEST: MOD ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 15th AUGUST 1987

PAGE No: 7 of 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1800	0	2597																	
2400	0	2593																	
		16th	August 1987																
0600	0	2592					35.5 hours shut in time												
1200	0	2593			Rig up Swab valve, BOPs & lubricator														
1620	0	2593			Run in hole with 1.60" guage ring. Tag bottom @ 7277 'KB														
1800	0	2593																	
2400	0	2591																	
		17th August	1987																
0600	0	2589						59.5 hours shut in time											
					Ready for Modified Isochronal Test														

OPERATOR S. Mayer/S. Coppock

0001156

SANTOS FLUID PRODUCTION SHEETS

WELL Kiaman North 1 Lower.

TANK:— CAPACITY 2 x 7850 Litres
SCALE Calib Dip Stick.

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 9th August 1987
PAGE No. 1 of 1
OPERATOR Blohrey T Hirst.

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP litres.	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
16.30		110/	Clean up flow.				0/				12000	Flow into sep.
18.30		710	1.89	22.68.	1.89.	51.	300.	1.88	22.56	1.88.	12000	
20.30.		1500.	3.39	40.68	5.28	51.	550	1.57	18.84.	3.45.	12000.	
22.00.		2200.	2.20.	26.40	7.48	51.	900.	2.20	26.40	5.65	12000.	
10 August 87												
00.30.		2750	1.58	18.95	9.06	51	1200	1.88	22.64	7.53	12000	
02.30		3470	2.99	35.86	12.05	51	1445	1.54	18.49	9.07	10.000	
04.30		4125	2.19	26.39	14.24	51	1750	1.92	23.01	10.99	10,000	
06.30		4790.	2.86	34.32	17.1.	51.	1960.	1.32	15.84.	12.31	10000	
08.30		5510	2.70	32.4.	19.8	51	2250.	1.82	21.84	14.13	8000	
10.30.		100/750	2.20	26.4	22.0	51	0/300.	1.88	22.64	16.01	8000.	
14.30		2210	5.41	32.4	27.41	51	900	3.77	22.64	19.78	4000	
16.30		2880	2.51	30.1	29.92	51	1170	1.70	20.37	21.48	0	
18.30		3610	2.45	29.4	32.37	51	1510	2.14	25.66	23.62	0	

*0/5576

DPI 158

OILSERV GAS FLOW RATE CALCULATIONS

FORM NO. 31-15 (2/74)

OSA PRODUCTION SERVICES

DATE: 8 August 87

COMPANY SANTOS LTD — WELL NO. North #1 Lower

FIELD Kiaman — INTERVAL TESTED 7128' - 7269

COUNTRY Australia — TECHNICIAN B Lohrey

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 1 OF 3

ORIFICE FITTING TYPE: Daniel Senior — ORIFICE FITTING SIZE: 4.026. — [X] FLANGE TAPS. [ ] PIPE TAPS.

GAS FLOW RECORDER TYPE: Barton. — SER. NO. — PRESSURE RANGE: 0-1000 PSI — DIFFERENTIAL RANGE: 0-200 "

DATE OF LAST CALIBRATION: 20.6.87 — GAS SPECIFIC GRAVITY 0.790 — CALIBRATED BY: L Correia.

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE $Q = C' \times 24 \times \sqrt{P_f \times h_w}$ MMSCF/DAY	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times h_w}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'		
22.30		24	Open well to flare.															
9 August			87.															
00.30		24												estimated rate			5.96	496,666
02.30		24															5.98	498 333
04.30		24															5.98	498333
06.30		24															5.96	496666.
06.30															total	cum.	prod.	1,989,998.
08.30		24												estimated	rate		5.93	494166.
10.30		24															5.93	494166
12.30		24															5.93	494166
14.30		24															5.94	495000
16.30		24															5.93	494166
16.30															total	cum.	prod:	4,461,662
16.30		24	Flow through Separator														5.93	494166

KIDMAN Nth #1 Lower

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{PV}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f x hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{PV}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	9th	AUGUST 1987																S.G. = 0.790
1830		24	230	40	73	3.0	95.86	2195	1	1	1.251	.9877	1	1.0006	1.0306	2515.5	5.78	
2030		24	215	40	72	3.0	92.67	2195	1	1	1.251	.9887	1	1.0007	1.0287	2513.22	5.59	
2230		24	215	40	72	3.0	92.67	2195	1	1	1.251	.9887	1	1.0007	1.0287	2513.22	5.59	
	10th	AUGUST 1987																
0030		24	215	40	73	3.0	92.67	2195	1	1	1.251	.9877	1	1.0007	1.0285	2510.41	5.58	
0230		24	215	40	73	3.0	92.67	2195	1	1	1.251	.9877	1	1.0007	1.0285	2510.41	5.58	
0430		24	215	40	73	3.0	92.67	2195	1	1	1.251	.9877	1	1.0007	1.0285	2510.41	5.58	
0630		24	215	40	73	3.0	92.67	2195	1	1	1.251	.9877	1	1.0007	1.0285	2510.41	5.58	
0830		24	215	40	73	3.0	92.67	2195	1	1	1.251	.9877	1	1.0007	1.0285	2510.41	5.58	
1030		24	215	40	77	3.0	92.67	2195	1	1	1.251	.9840	1	1.0007	1.0278	2499.28	5.55	
	Rate #1																	
1115		16	195	44	66	2.5	92.56	1387.2	1	1	1.251	.9943	1	1.0012	1.0...	1595.32	3.54	
	Rate #2																	
1140		24	235	114	79	2.5	163.58	1387.2	1	1	1.251	.9822	1	1.0026	1.0301	1583.17	6.21	
	Rate #3																	
1430		36	235	40	77	3.0											13.8	
1630		36	235	46	81	3.0		FLOW RATES CALCULATED ACROSS CHOKE due to Daniels meter problem.									13.8	
1830		36	235	46	81	3.0											13.9	

0001161

FORM NO. 31-16 (2/74)

KIDMAN NORTH #1 Lower

Gas Flow Rate Calculation Report Continuation Form

PAGE 3 OF ____

TIME DATA		CHOKE	METER RUN DATA					C' = $F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f x hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	Q = C' x 24 x $\sqrt{P_f \times hw}$ MMSCF/DAY	
14-8-87				Determining choke settings for Modified Isochronal Test														Estimated S.G. = 0.790
1610		36/64	320	71	46	3.0	150.67	2195	1	1	1.1251	1.013	1	1.0008	1.0532	2638.7	9.542	
1625		36	320	73	52	3.0	152.78	2195	1	1	1.1251	1.0078	1	1.0008	1.0509	2617.6	9.598	
1630		40	325	100	66	3.0	180.20	2195	1	1	1.1251	0.9943	1	1.0011	1.0469	2573.4	11.130	
1635		40	325	98	66	3.0	178.39	2195	1	1	1.1251	0.9943	1	1.0011	1.0469	2573.4	11.018	
1645		38	325	99	68	3.0	179.30	2195	1	1	1.1251	0.9924	1	1.0011	1.0462	2566.9	11.046	
1650		32	310	176	59	2-5	233.48	1387.2	1	1	1.1251	1.0010	1	1.0030	1.0467	1640.0	9.190	
1700		28	305	154	54	2.5	216.63	1387.2	1	1	1.1251	1.0058	1	1.0027	1.0475	1648.72	8.572	
1718		24	265	96	45	2-5	159.42	1387.2	1	1	1.1251	1.0147	1	1.0019	1.0433	1655.36	6.333	
1750		16	220	86	32	2.0	137.47	842.1	1	1	1.1251	1.0281	1	1.0024	1.0386	1014.06	3.346	
1800		16	215	86	27	2.0	135.89	842.1	1	1	1.1251	1.0333	1	1.0024	1.0390	1019.71	3.326	
1830		16	215	85	23	2.0	135.10	842.1	1	1	1.1251	1.0376	1	1.0024	1.0402	1025.05	3.324	
1831				Shut in well														

0001162

WELL TEST DATA METRIC SUMMARY SHEETS

WELL: Kidman North #1 Lower

OPERATOR: Blohrey T Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 8 August 87

PAGE No: 1 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
	.			Clean up flow.											
22·00	0	0	2615		24			Open well to flare.							
22·01								Auto shut down valve close well shut in.							
								reset valve.							
22·30	0	0.	2615		24			Open well to flare Separator by-passed.							
9	August 87.														
0030	485	3344.	2030	13996	24	135.	57				(est.)	*5.96.	167.9		
02·30	690	4757	2043	14086	24	138	59				"	*5.98	168.5		
04·30	920	6343	2047	14114	24	140	60.				"	*5.98	168.5		
06·30.	1200,	8274	2053	14155.	24	147	64				"	*5.96	167.9		
08·30	1520	10480	2043	14086	24	149	65				"	*5.93	167.		
10·30	1580	10894	2049	14128	24	151	66				"	*5.93	167.		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M3
- MMSCF x 28·174 = 10³ M3
- Cu/FT PER BBL x 0·1773 = M3/M3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

* estimate

00016464

WELL: Kidman North #1 Lower

OPERATOR: B.Lohrey T.Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 9th August 1987

PAGE No: 2 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
12·30	1630	11239	2050	14135	24/64	153	67					5.93*	167		
14·30	1675	11549	2055	14169	24/64	154	68					5.94*	167		
16·30	1710	11728	2053	14155	24/64	154	68					5.93*	167		
16·30	1710	11728	2053	14155	24/64	154	68	Flow	through	Separator		5.93*	167		
18·30	1745	12031	2055	14169	24/64	156	69	23	3.6	23	3.6	5.78	162	251304	44556
20·30	1760	12135	2055	14169	24/64	156	69	41	6.5	19	3.0	5.59	157	136341	24173
22·30	1790	12342	2055	14169	24/64	158	70.	26	4.1	26	4.1	5.59	157	215000	38119
10 August 87.															
00·30	1805	12445	2064	14231	24/64	158	70	19	3.0	23	3.6	5.58	157	295238	52346
02·30	1825	12583	2063	14224	24/64	158	70	36	5.7	19	3.0	5.58	157	155866	27635
04·30	1845	12721	2063	14224	24/64	158	70	26	4.1	23	3.6	5.58	157	211364	37475
06·30	1860	12825	2065	14238	24/64	158	70	34	5.4	16	2.5	5.58	157	164117	29098

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

* est.

00016

WELL: KIDMAN Nth #1 Lower

OPERATOR: S. Mayer T. Hirst

SANTOS

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 10th Aug/87

PAGE No: 3 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0830	1880	12963	2065	14238	24/64	160	71	32	5.1	22	3.5	5.58	157	174375	30916
1030	1890	13032	2065	14238	24/64	160	71	26	4.1	23	3.7	5.55	156	211538	37505
1100	1830	12618	2370	16341	16/64	158	70								
1115	1825	12583	2375	16376	16/64	158	70					3.54	99		
1125			2010	13859	24/64										
1140	1850	12756	1985	13687	24/64	160	71					6.21	175		
1155			1610	11100	32/64	160	71					8.2	231		
1215			1650	11377	36/64							10.8	304		
1245	2020	13928	2110	14458	36/64	163	73					13.7	386		
1345	2100	14480	2130	14686	36/64	163	73					13.9	392		
1430	2125	14652	2120	14617	36/64	163	73								000100
1630	2175	14997	2125	14652	36/64	163	73								991

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$

•Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

WELL: KIDMAN Nth #1 Lower

OPERATOR: Mayer/Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 10th Aug/87

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1830	2175	14997	2135	14721	32/64	163	73	29	4.6	25	4.0	13.9	.117	472769	
1831		Shut in	well	for	pressure			building							
1845	1965	13549	2626	18106											
1900	1900	13100	2628	18120											
1930	1590	10963	2629	18127											
2030	1220	8412	2625	18099											
2230	765	5274	2619	18058											
	11th	Aug	1987												
0030	460	3172	2620	18065											
0230	260	1793	2620	18065											
0630	100	690	2620	18065											
0830	0		2612	12493											

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

WELL: KIDMAN Nth #1 Lower

OPERATOR: Mayer/Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 11th Aug./87

PAGE No: 5 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1030	0	0	2611	18003											
1230	0	0	2608	17982											
1430	0	0	2605	17961											
1630	0	0	2604	17955											
1830	0	0	2604	17955											
2030	0	0	2602	17941											
2230	0	0	2602	17941											
	12th	August													
0030	0	0	2604	17955											
0430	0	0	2603	17947											
0830	0	0	2607	17975											
1230	247	0	2619	18058											

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

807000
000138

WELL: KIDMAN Nth #1 Lower

OPERATOR: Mayer/Hirst

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 12-8-87

PAGE No: 6 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1630	464	3199	2623	18086											
2030	551	3799	2627	18113											
	13 August		1987												
0030	630	4344	2632	18148											
0630	691	4764	2634	18161											
1230	725	4999	2602	17940											
1830	5	35	2616	18037											
	14	August	1987												
0030	0	0	2610	17996											
0630	0	0	2602	17940											
1230	0	0	2602	17940											
1540	0	0	2600	17927											

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$

•Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

03100

WELL: KIDMAN NORTH #1 Lower

OPERATOR: Mayer/Kopek

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 14th August 1987.

PAGE No: 8 of 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1830	363	2503	2457	16941	16/64							3.32	94		
1831		Shut in well for pressure buildup													
1900	74	510	2606	17968											
2000	0	0	2609	17989											
2100	0	0	2606	17968											
2400	0	0	2603	17948											
	15th August 1987														
0600	0	0	2600	17927											
1200	0	0	2600	17927											
1800	0	0	2597	17906											
2400	0	0	2593	17879											

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000170

WELL: KIDMAN N^TH #1 Lower

OPERATOR: Mayer/Coppock

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 16^th - 8 - 87

PAGE No: 9 of 9

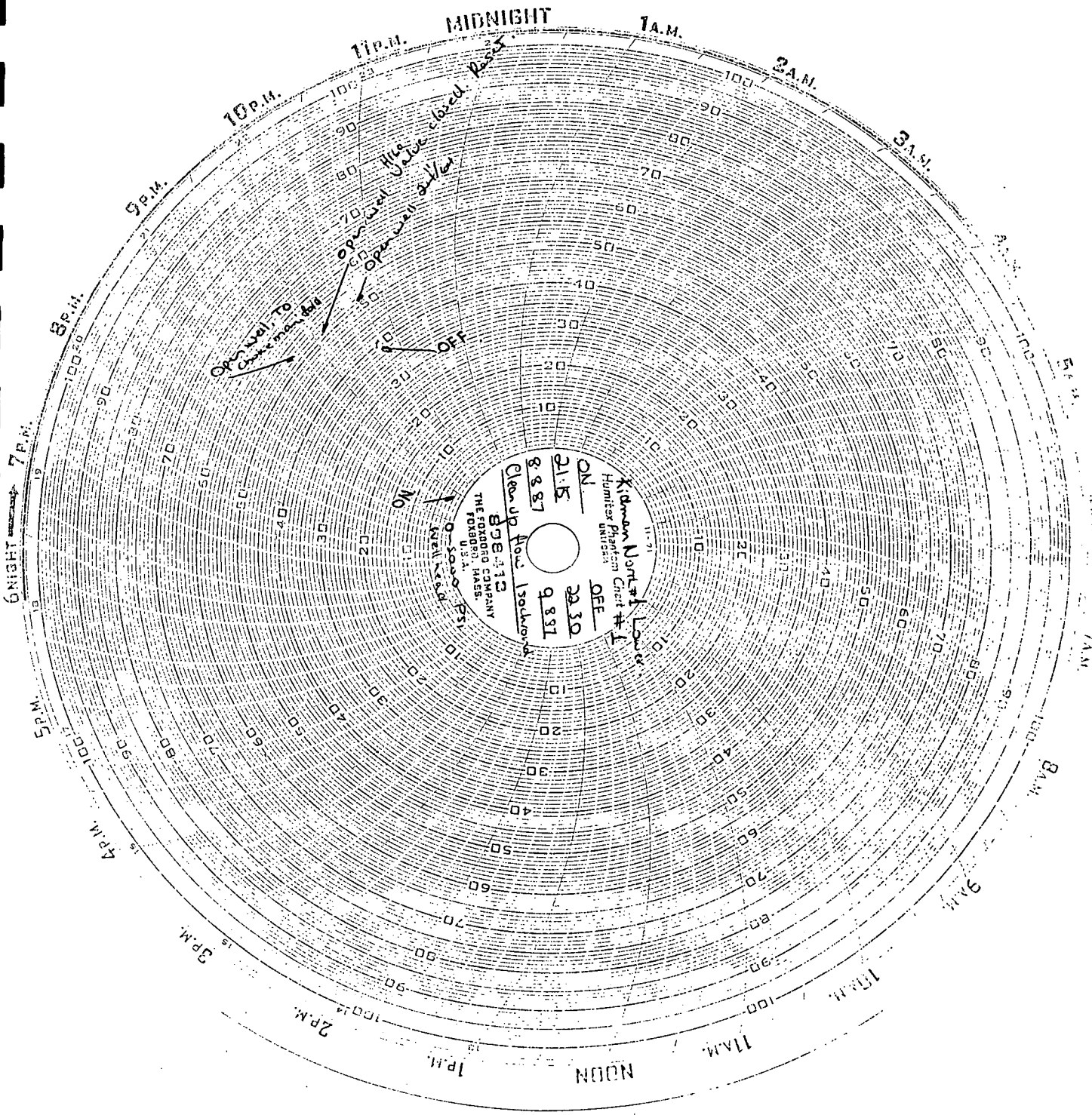
DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0600	0	0	2592	17872	S/I										
1200	0	0	2593	17879	Rig up Swab Valve, BOP's & lubricator										
1620	0	0	2593	17879	Run in hole with 1.60" guage ring. Tag bottom @ 7277' KB.										
1800	0	0	2593	17879											
2400	0		2591	17865											
		17^th	August		1987										
0600	0	0	2589	17851											
				End	of clean up			period -		Ready for		M.I. Test.			

CONVERSION FACTORS:

- BBL'S x 0·15899 = M3
- MMSCF x 28·174 = 10^3 M3
- Cu/FT PER BBL x 0·1773 = M3/M3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

0001171

RECORDER CHARTS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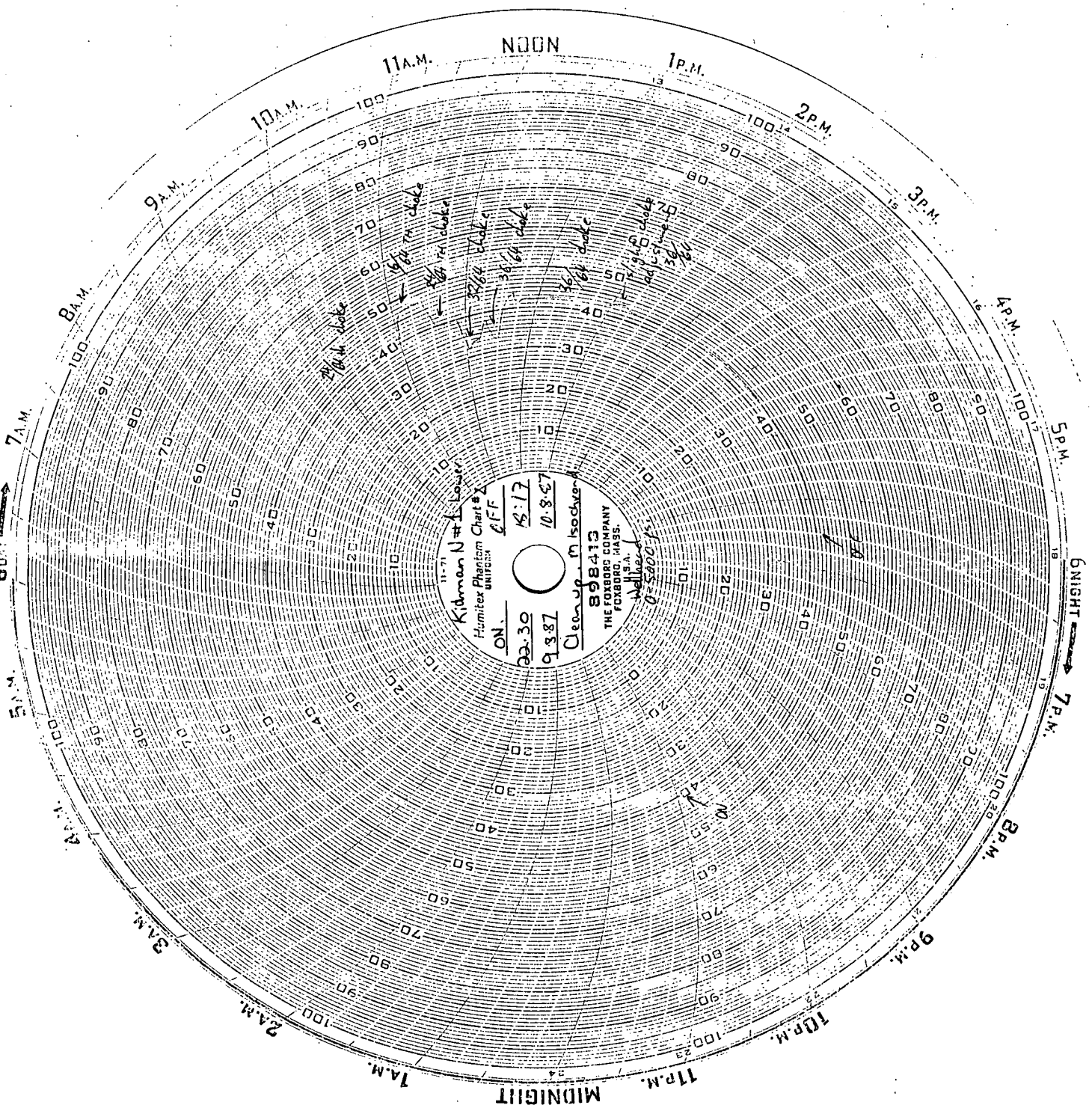
9A.M.
10A.M.
11A.M.
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
6NIGHT
6DAY
OFF
ON
No
Kidman Northern Lower
Humitrol Phantom Chart #1
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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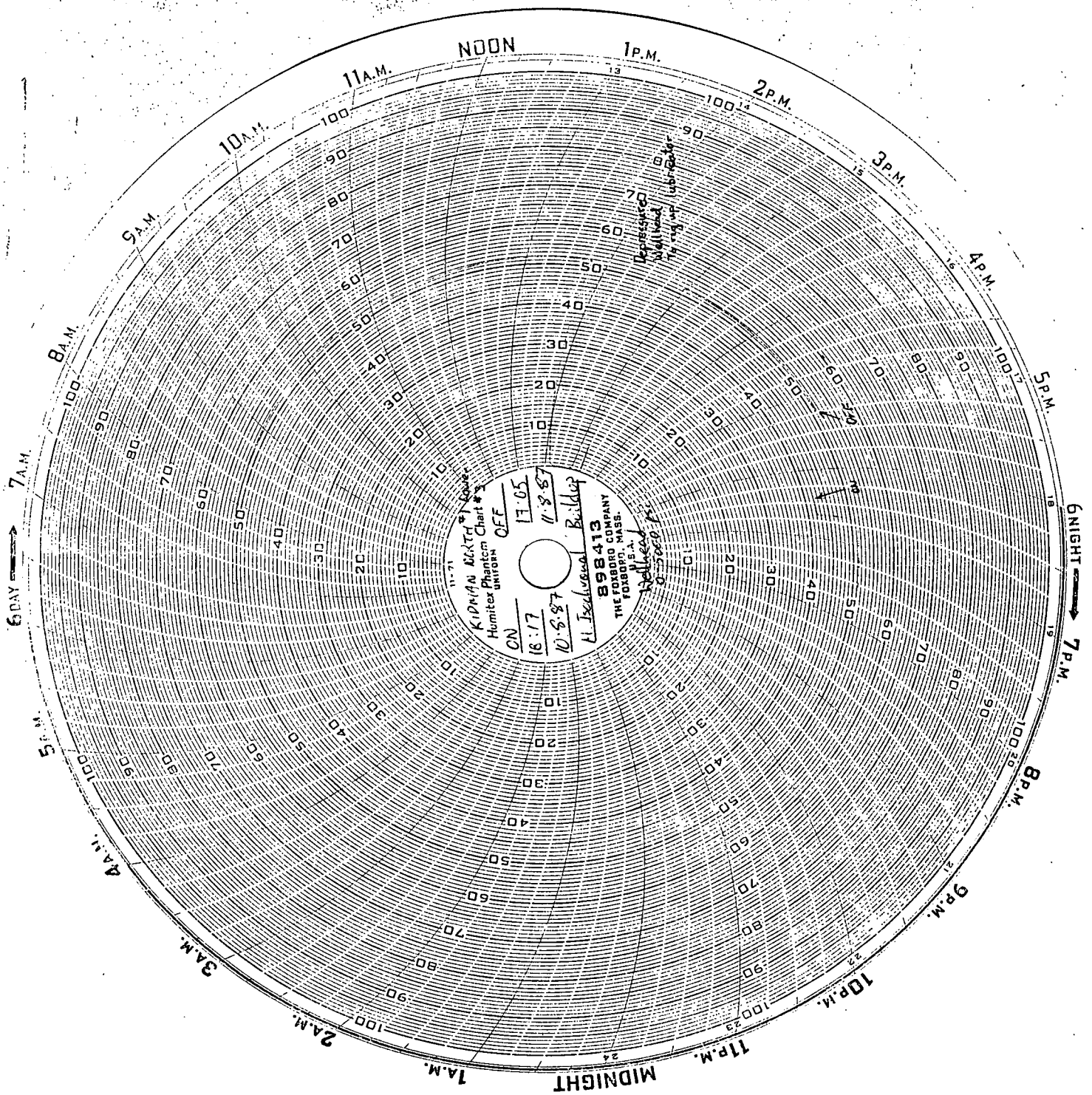
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 DAY
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NIGHT
Humitex Phantom Chart #1
UNITRON
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Kidman N#1 Lower
ON
22:30
9.3.87
KS:13
10.3.87
Cleaned Isolated
Wellhead
0-Space
24 H. date
16 H. date
32 H. date
48 H. date
64 H. date
96 H. date
128 H. date
160 H. date
192 H. date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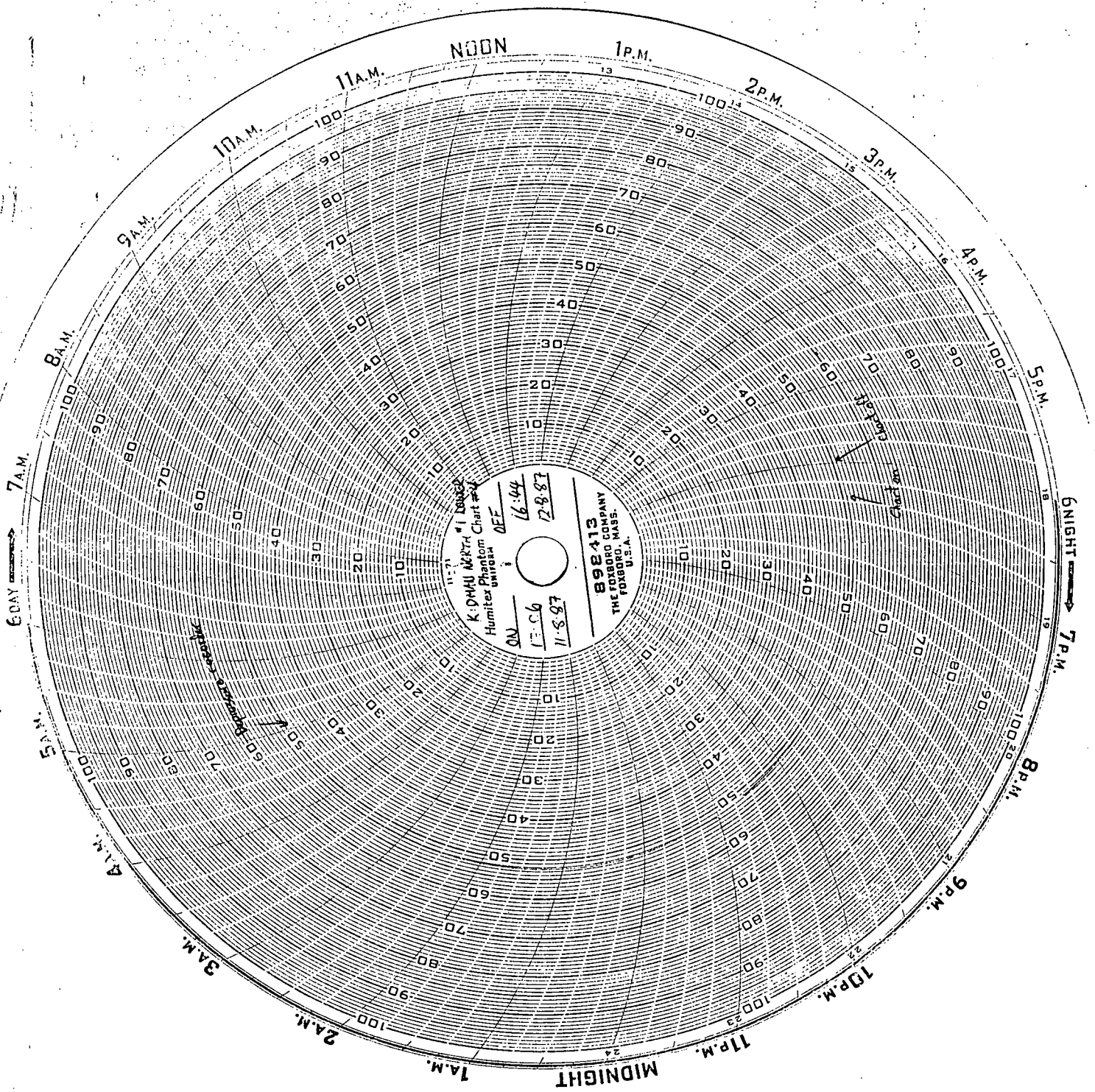
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Kipp-Zonen Multi-Trace Recorder
Humitex Phantom Chart #3
UNIFORM
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
ON
16:17
10.5.87
OFF
17:05
11.5.87
Bellevue Building
Bellevue Pa
Depressed Wall Heat Transfer Unit
Depressed Wall Heat Transfer Unit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11P.M.
MIDNIGHT
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2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Ambient Temperature
Barometric Pressure
K-DMM-NKRH-1 Issue 2
Humiter Phantom Chart #1
UNIPOAR
DEF
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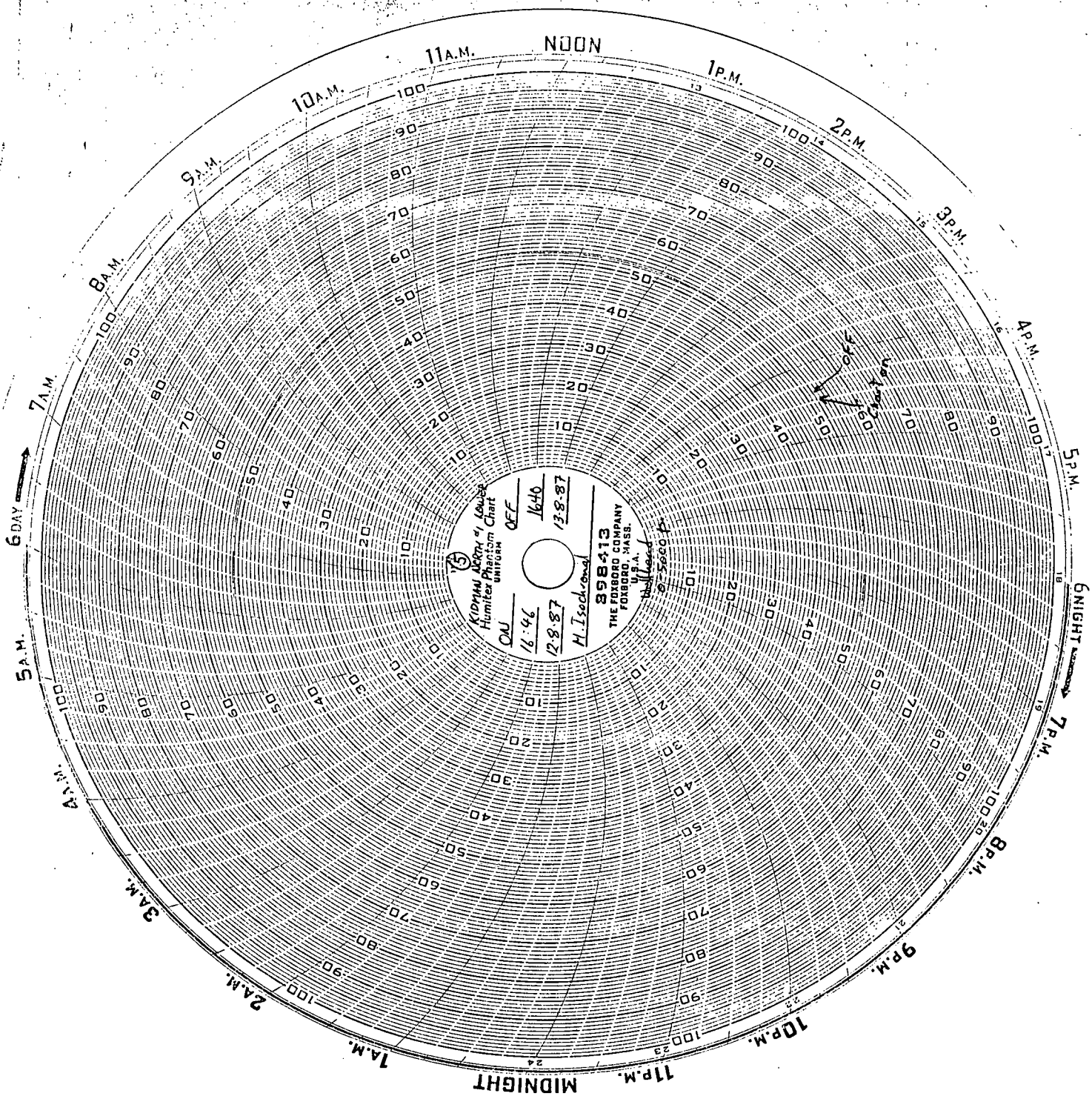
892413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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7P.M.
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10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6 DAY
7A.M.
8A.M.
9A.M.
10A.M.
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OFF
1646
12-8-87
398413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
OFF
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12-8-87
H. Isackson
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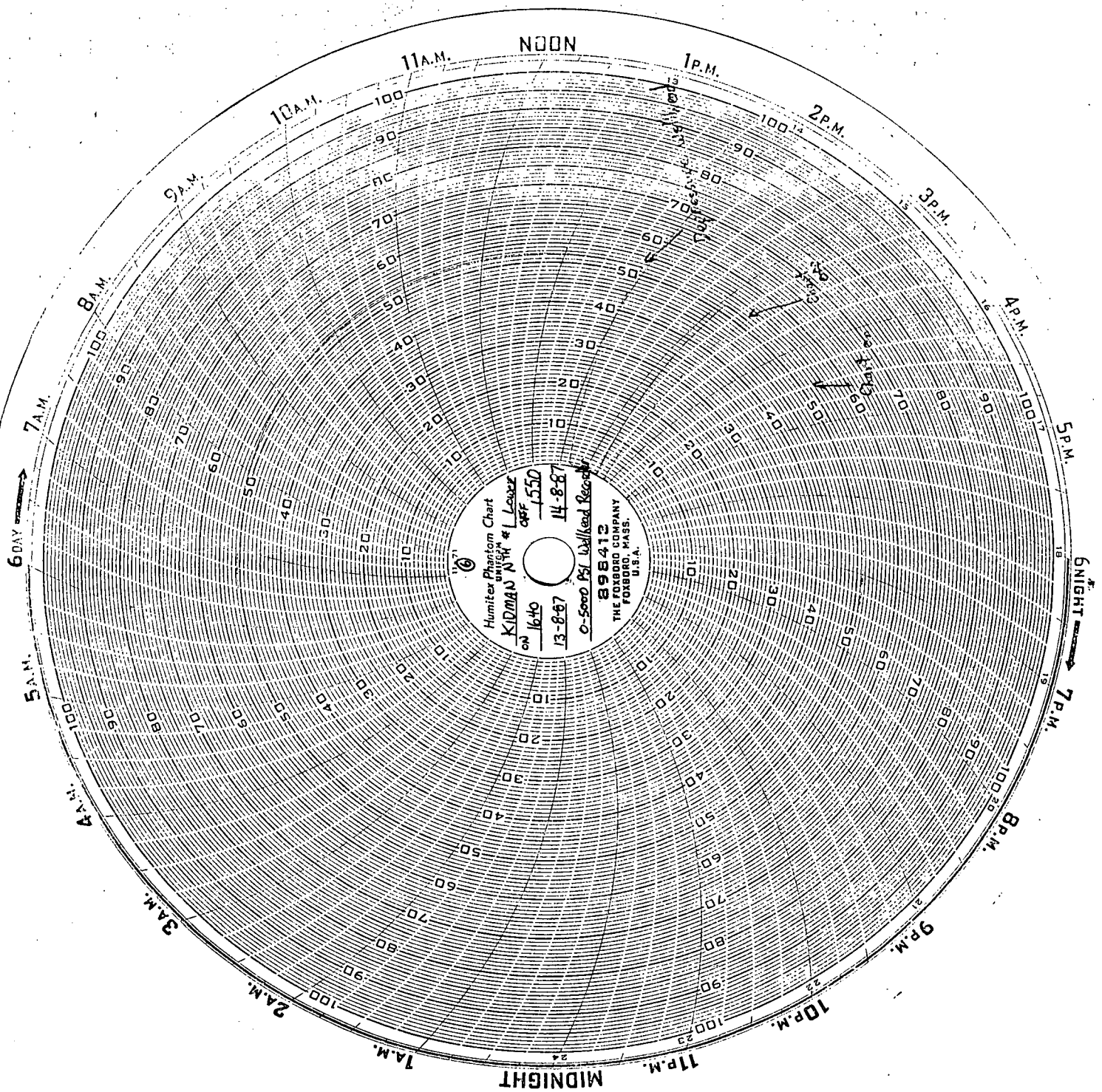
000178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MIDNIGHT
1A.M.
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4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
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Humiter Phantom Chart
KIDMAN NW #1
Lease
Off 1550
On 1640
14-8-87
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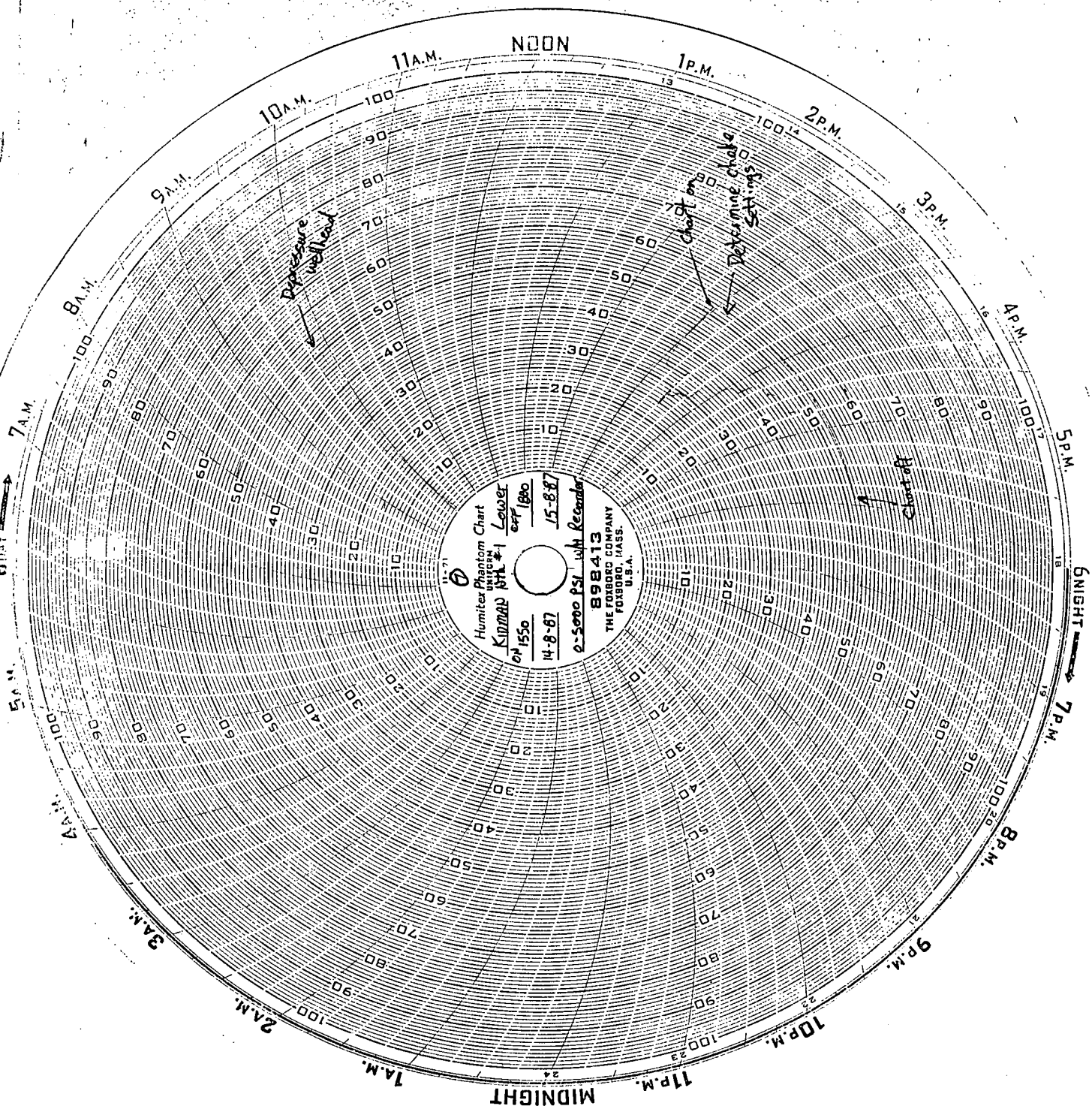
0-5000 PSI Wellhead Recorder
898412
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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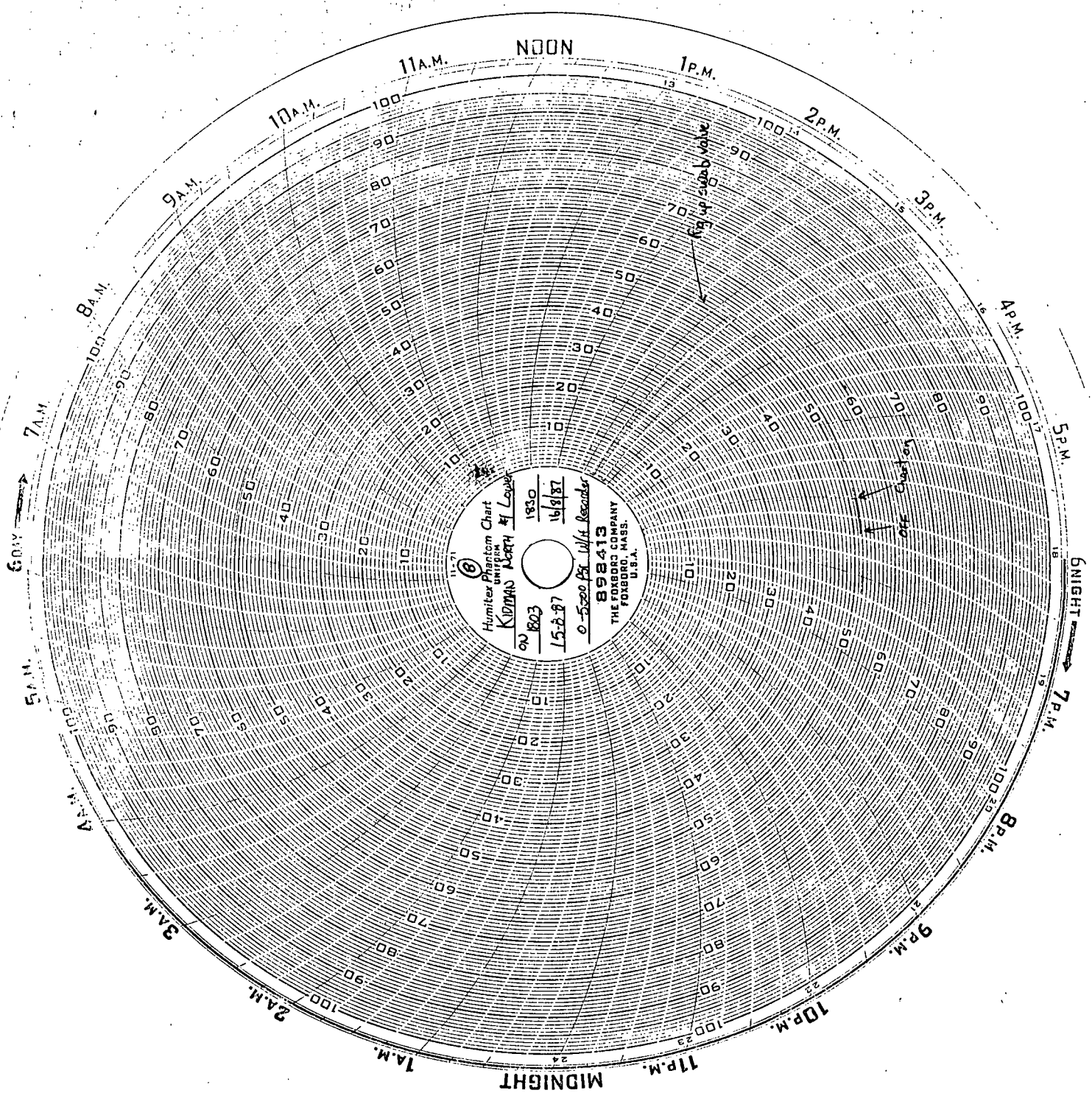
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Pressure welhead
Chart on
Determine chart settings
Chart off
Humiter Phantom Chart
UNIFORM
Lower
Kidmad
Orf 1550
14-8-87
Orf 1800
15-8-87
0-5000 PSI with Recorder
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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2A.M.
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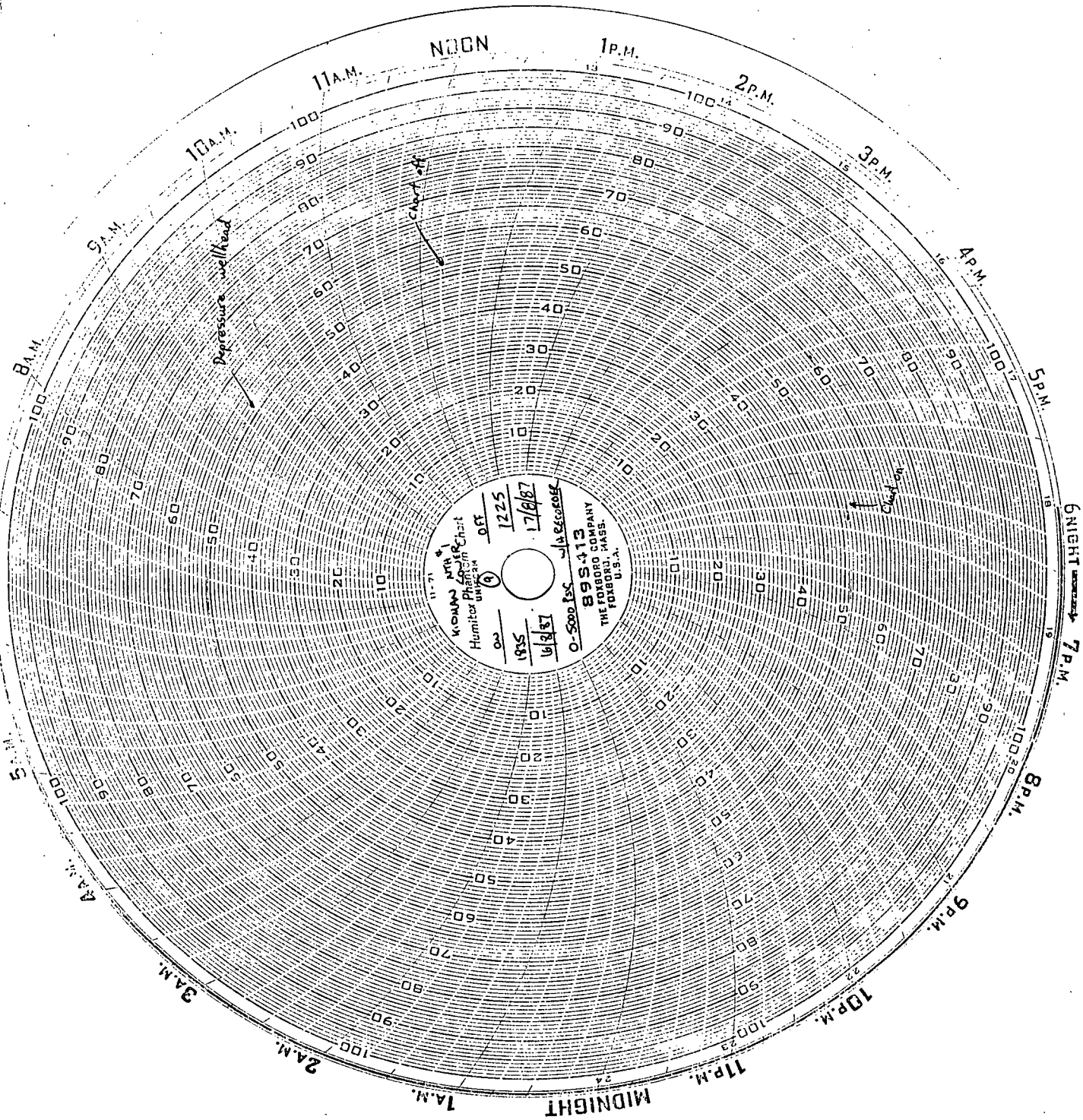
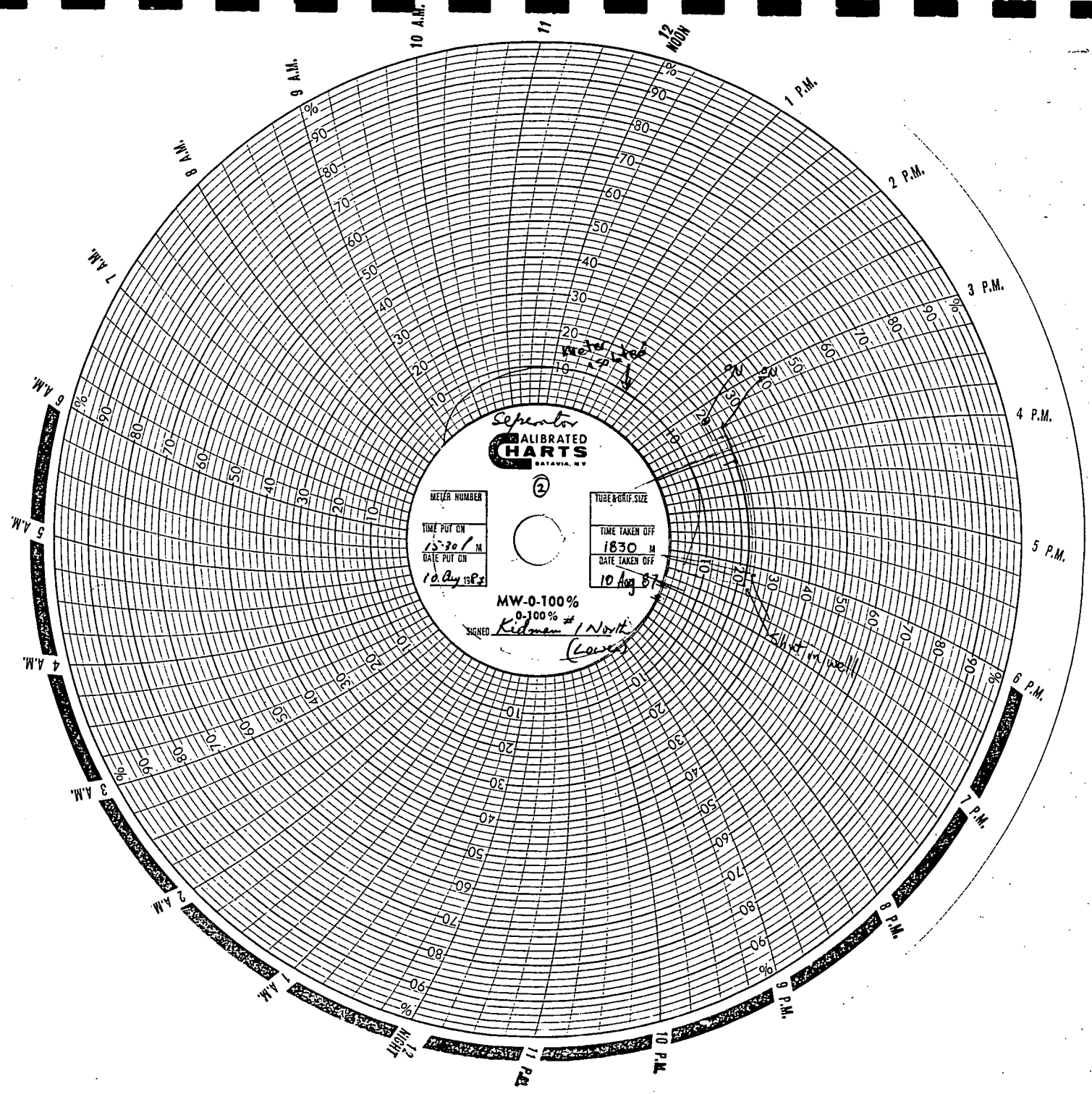
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Humiter Phantom Chart
Kidman North #1 Lower
1930
16/9/87
0-5200 psi w/ft Recorder
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
Fig 4 cable valve
Off Charts

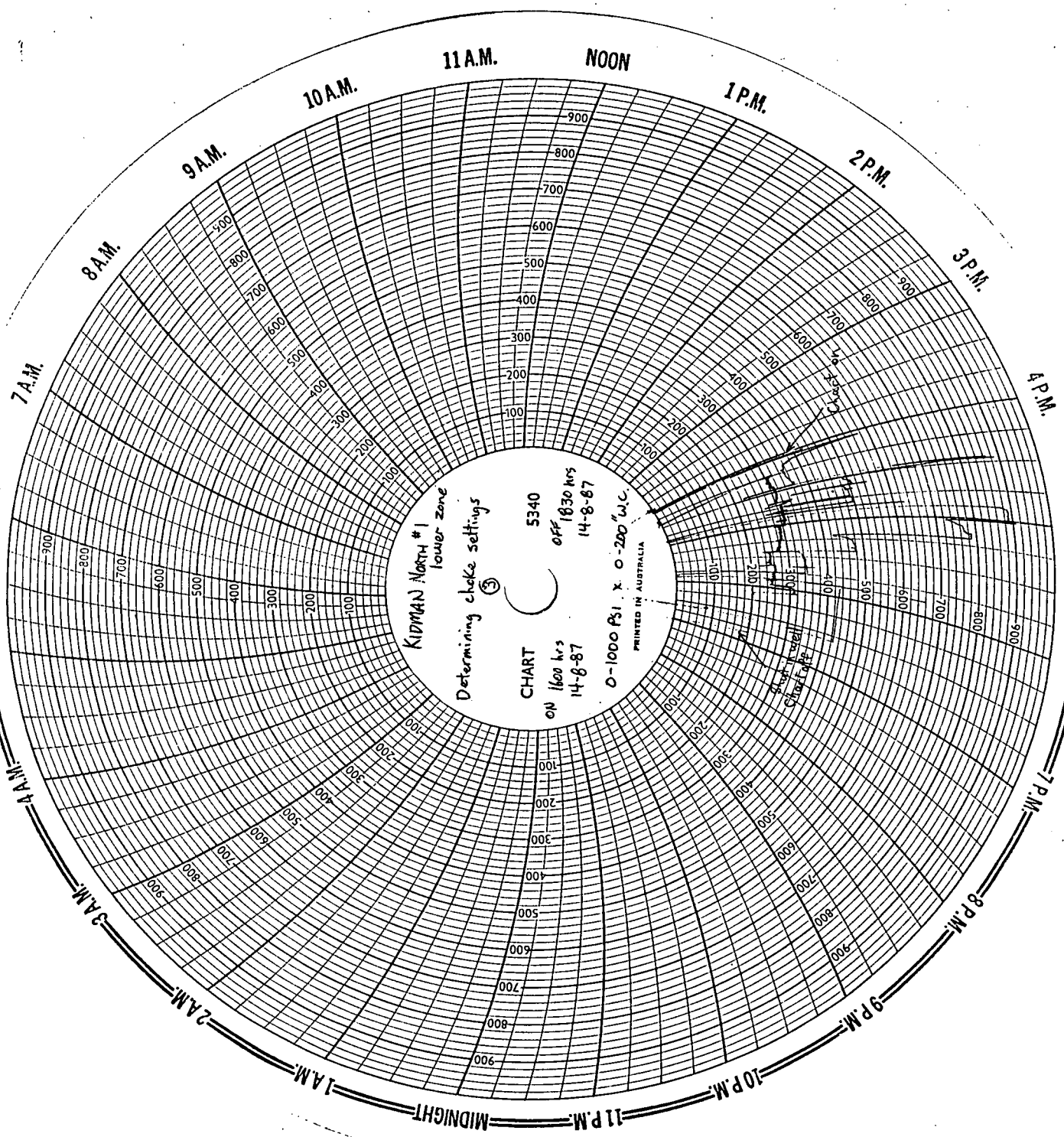

NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6 NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6 DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Pressure rectified
Chart off
Chart on
KIMAX Chart
Humitor Phantom
off
1225
12/8/87
1935
12/8/87
0-5000 fpm
89S413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

000182

Schaevitz
CALIBRATED CHARTS
METER Invercon
4.026
TIME PUT ON
DATE PUT ON
9 May 1982
TUBE & ORIF. SIZE
3"
TIME TAKEN OFF
DATE TAKEN OFF
May 1982
Chart #1
MW-0-100%
0-100% #
SIGNED
Kadman Lowell
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.


Separator
CALIBRATED
CHARTS
BATAVIA, N.Y.
METER NUMBER
TIME PUT ON
13:30 M
DATE PUT ON
10 Aug 1987
TUBE & ORIF. SIZE
TIME TAKEN OFF
1830 M
DATE TAKEN OFF
10 Aug 87
MW-0-100%
0-100% # 1 Work
SIGNED Kidman
(Lower)
Meter Run
Orifice
Static Line
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11

000183


KIDMAN North #1
lower zone
Determining choke settings
③
5340
off 1830 hrs
14-8-87
CHART
on 1600 hrs
14-8-87
0-1000 PSI x 0-200 °W.C.
PRINTED IN AUSTRALIA
Start Install Chart
Chart off
11 A.M.
NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.

MODIFIED ISOCHRONAL TEST #1

WELL TEST DATA SHEETS

WELL: KIDMAN NTH #1 Lower

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD. TEST #1

WELL TEST DATA SHEET

DATE: 17th AUGUST 1987

PAGE No: 1 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
							MODIFIED ISOCHRONAL TEST #1												
0600	0	2589																	
0945	0	2589		Pressure up lubricator															
1050	0	2590		Run in hole with tandem amerada pressure recorders and one temperature recorder															
1127	0	2591		Ameradas on bottom - Hanging at 7100 ft. KB															
1300	0	2590																	
				RATE # 1															
1300	0	2590		Open well on 16/64" choke through test separator															
1305	0	2430	90	16/64		Injecting methanol upstream of choke @ 104 gallons/day													
1310	0	2422	93	16/64															
1315	0	2422	94	16/64		295	109	7	1.75						3.58				
1330	0	2421	98	16/64		295	106	3	1.75						3.55				
1345	0	2420	100	16/64		297	104	3	1.75						3.53				
1400	0	2420	101	16/64		300	102	10	1.75						3.47	36.2	10.6	46.8	96.
1415	0	2421	103	16/64		302	100	10	1.75						3.45				
1430	0	2422	104	16/64		305	100	14	1.75						3.45				
1445	0	2424	105	16/64		310	98	14	1.75						3.45				
1500	0	2426	105	16/64		310	98	14	1.75						3.45	36.2	15.1	51.3	95.
1500			Shut in well. End of Rate # 1																

OPERATOR... MAYER/COPPOCK

000182

WELL: KIDMAN NTH #1 Lower

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 17th AUGUST 1987

PAGE No: 2 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
1505	0	2596		5/1															
1510	0	2592																	
1515	0	2593																	
1530	0	2594																	
1545	0	2597																	
1600	0	2598																	
1615	0	2598																	
1630	0	2598																	
1645	0	2597																	
1700	0	2597																	
			RATE # 2																
1700	0	2597		Open well on 20/64" choke through test separator															
1705	0	2327	98	20/64			Injecting methanol @ 61 gallons/day												
1710	0	2313	103	20/64															
1715	0	2313	105	20/64		287	128	14	2.0						5.01				
1730	0	2313	108	20/64		282	124	10	2.0						4.91				
1745	0	2318	109	20/64		282	125	18	2.0						4.87				
1800	0	2319	111	20/64		275	127	23	2.0						4.81	27.2	25.7	52.9	177
1815	0	2321	112	20/64		275	128	23	2.0						4.83				
1830	1	2323	114	20/64		275	128	23	2.0						4.83				

OPERATOR: Mayer / Coppock

000188

WELL: KIDMAN NORTH #1 LOWER

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 17th August 1987

PAGE No: 3 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^{-3} SCF/BBL
1845	7	2324	115	20/64		270	130	25	2.0						4.80				
1900	20	2325	116	20/64		272	129	23	2.0						4.81	34.0	9.8	43.8	141
1900		Shut in	well	-		End	Rate	#2											
1905	16	2604		S/I															
1910	10	2601																	
1915	4	2601																	
1930	0	2601																	
1945	0	2602																	
2000	0	2603																	
2015	0	2602																	
2030	0	2602																	
2045	0	2602																	
2100	0	2601																	
		RATE #3																	
2100	0	2601		Open well on				26/64" choke through test separator											
2105	0	2165	103	26/64				Injecting methanol @ 54 gallons/day. upstream of choke											
2110	0	2090	109	26/64															
2115	0	2075	113	26/64		295	88	25	2.50						6.80				
2130	0	2081	117	26/64		300	84	36	2.50						6.60				
2145	16	2084	119	26/64		300	64*	34	2.50						N/A				

OPERATOR: Mayer/Coppock

00183

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 17th August 1987

PAGE No: 4 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
2200	75	2086	121	26/64		295	64 *	36	2.50						N/A	44.5	4.5	49.0	
2215	78	2088	123	26/64		295	76 *	36	2.50						N/A				
2230	82	2090	125	26/64		300	79 *	37	2.50						N/A				
2245	82	2092	126	26/64		295	68 *	39	2.50						N/A				
2300	82	2096	127	26/64		300	54 *	41	2.50						N/A	44.5	9.8	54.3	
2300		Shut in well - End of Rate #3																	
2305	82	2608																	
2310	82	2609		*	Hydrates were forming in the meter run during Rate #3,														
2315	81	2609			giving an inaccurate differential reading. This was														
2330	77	2608			discovered at the end of the rate when checking the														
2345	57	2608			orifice plate. Due to the lack of an accurate flow rate,														
2400	26	2608			it was decided to flow the rate again.														
	18th August 1987																		
0015	8	2608																	
0030	3	2607																	
0045	0	2606																	
0100	0	2606																	
		RATE # 3A																	
0100	0	Open well on 26/64" choke through test separator																	
0105	0	210																	

OPERATOR: S. Mayer/S. Coppock

000190

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 18-August 1987

PAGE No: 5 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
0110	3	2080	117	26/64		Injecting methanol alternately between choke and meter run.													
0115	9	2079	119	26/64		305	95	32	2.50						7.136				
0130	86	2089	123	26/64		300	95	36	2.50						7.033				
0145	152	2089	125	26/64		305	97	39	2.50						7.139				
0200	248	2091	127	26/64		340	93	41	2.50						7.390	45.3	15.1	60.4	163
0215	380	2093	128	26/64		320	90	43	2.50						7.016				
0230	495	2094	129	26/64		310	94	43	2.50						7.050				
0245	610	2095	131	26/64		305	95	45	2.50						7.007				
0300	720	2096	132	26/64		305	96	45	2.50						7.044	40.8	20.4	61.2	173
0300		Shut in well			End	of Rate # 3A													
0305	680	2611																	
0310	590	2610																	
0315	520	2611																	
0330	390	2611																	
0345	250	2611																	
0400	150	2611																	
0415	68	2610																	
0430	40	2610																	
0445	15	2609																	
0500	8	2608																	

0001911

OPERATOR: S. Mayer / S. Coppock

WELL: KIRMAN NORTH #1 Lower

TYPE OF TEST: Mod. Isochronal

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 18 August 1987

PAGE No: 6 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
		RATE # 4																	
0500	8	2608			Open well on 36/64" choke through test separator														
0505	19	2055	121	36/64															
0510	49	1520	123	36/64															
0515	153	1554	127	36/64		310	134	55	2.75						10.45				
0530	440	1549	130	36/64		300	138	66	2.75						10.28				
0545	580	1549	133	36/64		300	138	70	2.75						10.23				
0600	730	1554	135	36/64		305	138	72	2.75						10.29	45.3	15.1	60.4	227
0615	850	1555	137	36/64		305	89	72	3.00						10.31				
0630	920	1555	138	36/64		300	90	77	3.00						10.28				
0645	1050	1560	140	36/64		300	90	79	3.00						10.26				
0700	1110	1565	142	36/64		300	90	81	3.00						10.23	40.8	20.4	61.2	251
		END of RATE #4				-	BEGIN EXTENDED RATE												
0701		Decrease choke to				30/64" (adjustable)													
0705		Change to 30/64" fixed choke																	
0710	1210	1894	143	30/64															
0715	1220	1901	143	30/64		290	158	70	2.50						8.57				
0720	1240	1902	144	30/64		292	158	68	2.50						8.65				
0730	1270	1902	145	30/64		292	158	68	2.50						8.65				
0745	1320	1902	145	30/64		292	158	68	2.50						8.62				

OPERATOR: S. Mayer / S. Coppock

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 18th August 1987

PAGE No: 7 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
0800	1365	1903	145	30/64		298	156	70	2.50						8.63	12.1	48.3	60.4	713
0815	1405	1904	145	30/64		300	156	70	2.50						8.66				
0830	1435	1904	146	30/64		300	156	72	2.50	Gas	sample	tested-	19% CO_2		8.64				
0845	1480	1906	147	30/64		302	154	73	2.50				24 ppm H_2S		8.58				
0900	1510	1906	148	30/64		302	152	73	2.50						8.55	43.0	30.9	73.9	200
1000	1635	1904	151	30/64		320	147	79	2.50						8.60	71.7	29.4	101.1	120
1100	1725	1906	153	30/64		320	147	82	2.50						8.57	27.2	31.7	58.9	315
1200	1810	1907	154	30/64		320	148	86	2.50						8.50	37.7	30.2	67.9	225
1300	1860	1911	158	30/64		320	146	88	2.50						8.48	43.0	40.8	83.8	197
1400	1900	1912	160	30/64		320	146	91	2.50						8.45	25.7	38.5	64.2	329
1500	1950	1913	161	30/64		310	149	91	2.50						8.40	53.6	21.3	74.9	157
1600	2000	1913	161	30/64		310	149	91	2.50						8.40	24.9	42.3	67.2	337
1700	2030	1913	163	30/64		310	150	93	2.50						8.41	38.5	24.2	62.7	218
1800	2100	1914	165	30/64		305	152	93	2.50						8.39	34.7	28.7	63.4	242
1900	2125	1915	166	30/64		295	158	93	2.50						8.41	45.3	24.9	70.2	186
2000	2150	1917	166	30/64		285	160	95	2.50						8.30	30.2	27.2	57.4	275
2100	2175	1918	167	30/64		280	162	97	2.50						8.26	43.7	30.2	73.9	189
2200	2190	1917	168	30/64		280	163	97	2.50						8.28	37.0	24.4	61.4	224
2300	2210	1917	168	30/64		280	164	99	2.50						8.29	32.5	30.2	62.7	255
2400	2230	1918	169	30/64		275	166	99	2.50						8.27	40.8	21.9	62.7	203

OPERATOR: S. Mayer / S. Coppock

001 CO

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 19th August 1987

PAGE No: 8 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
0100	2250	1918	170	30/64		270	168	99	2.50						8.24	38.5	22.6	61.1	214
0200	2260	1918	170	30/64		270	168	99	2.50						8.24	34.7	29.4	64.1	237
0300	2275	1919	171	30/64		270	168	99	2.50						8.24	34.7	28.7	63.4	237
0400	2290	1919	171	30/64		268	169	99	2.50						8.23	33.2	31.7	64.9	248
0500	2300	1921	172	30/64		270	169	100	2.50						8.25	35.4	26.4	61.8	233
0600	2310	1924	172	30/64		270	169	100	2.50	Gas	sample	tested	19% CO_2		8.25	37.0	32.4	69.4	223
0700	2330	1922	172	30/64		267	171	100	2.50				22 ppm H_2S		8.26	26.4	26.4	52.8	313
0800	2340	1922	172	30/64		267	171	100	2.50						8.26	32.5	27.2	59.7	254
0900	2350	1925	172	30/64		285	160	102	2.50						8.23	41.5	19.6	61.1	198
1000	2360	1925	172	30/64		295	156	102	2.50						8.27	34.0	26.4	60.4	243
1100	2380	1925	173	30/64		310	150	104	2.50						8.27	36.2	27.9	64.1	228
1100		SHUT IN WELL				FOR	PRESSURE		BUILDUP										
							1019 - 1036 hrs.			- Samples taken.									
										Total Gas Production		=	11.986 MMSCF						
										Total Condensate		=	57.54 BBls						
										Total Water		=	43.62 BBls						
										Total Time Flowing		=	38 Hours						

OPERATOR: Mayer / Coppock

000194

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 19th August 1987

PAGE No: 9 of

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
			PRESSURE BUILDUP																
1100	2380	1925		Well	shut in														
1105	2380	2621																	
1110	2280	2623																	
1115	2200	2623																	
1130	2025	2622																	
1145	1810	2624																	
1200	1790	2622																	
1215	1590	2622																	
1230	1485	2621																	
1245	1420	2621																	
1300	1300	2620																	
1400	900	2616																	
1500	760	2615																	
1600	550	2612																	
1700	450	2611																	
2300	0	2604																	
	20th	August	1985																
0500	0	2601																	
1100	0	2598																	

0001985

OPERATOR: Mayer/Coppock

WELL: KIDMAN NORTH #1 Lower

TYPE OF TEST: MOD. ISOCHRONAL

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 20th August 1987

PAGE No: 10 of 10

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
1700	0	2596																	
2300	0	2593																	
	21st	August 1987																	
0500	0	2592																	
1100	0	2592																	
1700	0	2591																	
2300	0	2589																	
	22nd	August	1987																
0500	0	2588																	
0700	0	2588		Pull out of hole with amerada's.															
0741	0	2589		Amerada's in lubricator.															
0842	0	2589		Depressure lubricator															
0900		Inspect amerada charts. No time trace recorded due to clocks not																	
		being engaged properly. Notify Petroleum Engineering of problem.																	
1000	Decision is made to re-test the well. - Prepare separator																		

OPERATOR... S. Mayer / S. Coppock

000196

OILSERV GAS FLOW RATE CALCULATIONS

FORM NO. 31-15 (2/74)

OSA PRODUCTION SERVICES

DATE: 17 August 1987

COMPANY SANTOS LTD. WELL NO. KIDMAN NORTH #1 Lower

FIELD PATCHAWARRA INTERVAL TESTED 7128-7269'

COUNTRY AUSTRALIA TECHNICIAN S. Mayer

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 1 OF

ORIFICE FITTING TYPE: Daniels Senior ORIFICE FITTING SIZE: 4.026 ☑ FLANGE TAPS. ☐ PIPE TAPS.

GAS FLOW RECORDER TYPE: Barton 202 A SER. NO. PRESSURE RANGE: 0-1000 PSI DIFFERENTIAL RANGE: 0-200" wc

DATE OF LAST CALIBRATION: 11-8-87 GAS SPECIFIC GRAVITY as tested CALIBRATED BY: S. Mayer

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	RATE #1																	
1315		16	310	109	7	1.75	183.74	634.39	1	1	1.1323	1.0552	1	1.0022	1.0676	811.004	3.576	Gas S.G. = 0.780
1330		16	310	106	3	1.75	181.19	634.39	1	1	1.1323	1.0598	1	1.0022	1.0699	816.23	3.550	
1345		16	312	104	3	1.75	180.06	634.39	1	1	1.1323	1.0598	1	1.0021	1.0705	816.61	3.529	
1400		16	315	102	10	1.75	179.17	634.39	1	1	1.1323	1.0518	1	1.0021	1.0672	807.97	3.474	
1415		16	317	100	10	1.75	177.97	634.39	1	1	1.1323	1.0518	1	1.0020	1.0677	808.33	3.453	
1430		16	320	100	14	1.75	178.81	634.39	1	1	1.1323	1.0474	1	1.0020	1.0662	803.78	3.449	
1445		16	325	98	14	1.75	178.39	634.39	1	1	1.1323	1.0474	1	1.0019	1.0675	804.67	3.445	
1500		16	325	98	14	1.75	178.39	634.39	1	1	1.1323	1.0474	1	1.0019	1.0675	804.67	3.445	
	RATE #2																	
1715		20	302	128	14	2.00	196.52	842.12	1	1	1.1294	1.0474	1	1.0026	1.0626	1061.2	5.005	Gas S.G. = 0.784
1730		20	297	124	10	2.00	191.82	842.12	1	1	1.1294	1.0518	1	1.0025	1.0634	1066.50	4.910	
1745		20	297	125	18	2.00	192.59	842.12	1	1	1.1294	1.0430	1	1.0026	1.0594	1053.6	4.870	
1800		20	290	127	23	2.00	191.82	842.12	1	1	1.1294	1.0376	1	1.0027	1.0555	1044.4	4.808	
1815		20	290	128	23	2.00	192.58	842.12	1	1	1.1294	1.0376	1	1.0027	1.0555	1044.4	4.827	

0001198

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f X hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
17-8-87			RATE #2		(cont)													
1830		20/64	290	128	23	2.00	192.58	842.12	1	1	1.1294	1.0376	1	1.0027	1.0555	1044.4	4.827	
1845		20/64	285	130	25	2.00	192.39	842.12	1	1	1.1294	1.0355	1	1.0028	1.0536	1040.4	4.804	
1900		20/64	287	129	23	2.00	192.32	842.12	1	1	1.1294	1.0376	1	1.0027	1.0549	1043.8	4.818	
			RATE #3															
2115		26/64	310	88	25	2.50	165.09	1387.2	1	1	1.1251	1.0355	1	1.0015	1.0602	1715.8	6.799	S.G. = 0.790
2130		26/64	315	84	36	2.50	162.60	1387.2	1	1	1.1251	1.0239	1	1.0014	1.0563	1690.3	6.596	
18-8-87			RATE # 3A															
0115		26/64	320	95	32	2.50	174.28	1387.2	1	1	1.1287	1.0281	1	1.0016	1.0582	1706.0	7.136	S.G. = .785
0130		26/64	315	95	36	2.50	172.91	1387.2	1	1	1.1287	1.0239	1	1.0016	1.0555	1694.7	7.033	
0145		26/64	320	97	39	2.50	176.11	1387.2	1	1	1.1287	1.0208	1	1.0016	1.0552	1689.2	7.139	
0200		26/64	355	93	41	2.50	181.63	1387.2	1	1	1.1287	1.0188	1	1.0014	1.0614	1695.3	7.390	
0215		26/64	335	90	43	2.50	173.57	1387.2	1	1	1.1287	1.0168	1	1.0014	1.0565	1684.2	7.016	
0230		26/64	325	94	43	2.50	174.71	1387.2	1	1	1.1287	1.0168	1	1.0015	1.0545	1681.3	7.050	
0245		26/64	320	95	45	2.50	174.28	1387.2	1	1	1.1287	1.0147	1	1.0016	1.0528	1675.2	7.007	
0300		26/64	320	96	45	2.50	175.20	1387.2	1	1	1.1287	1.0147	1	1.0016	1.0528	1675.2	7.044	
			RATE #4															
0515		36/64	325	134	55	2.75	208.60	1746.70	1	1	1.1308	1.0048	1	1.0019	1.0495	2086.9	10.448	SG. = 0.782
0530		36/64	315	138	66	2.75	208.41	1746.7	1	1	1.1308	0.9943	1	1.0020	1.0442	2054.9	10.278	

0001199

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f X hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
0600		36/64	320	138	72	2.75	210.05	1776.1	1	1	1.1308	0.9887	1	1.0020	1.0428	2041.2	10.290	S.G = 0.782
0615		36/64	320	89	77	3.00	168.69	2195.0	1	1	1.1308	0.9840	1	1.0010	1.0418	2547.1	10.312	
0630		36/64	315	90	77	3.00	168.30	2195.0	1	1	1.1308	0.9840	1	1.0011	1.0410	2545.4	10.282	
0645		36/64	315	90	79	3.00	168.30	2195.0	1	1	1.1308	0.9822	1	1.0011	1.0405	2539.4	10.257	
0700		36/64	315	90	81	3.00	168.30	2195.0	1	1	1.1308	0.9804	1	1.0011	1.0400	2533.4	10.233	
	EXTENDED RATE																	
0715		30/64	305	158	70	2.50	219.43	1387.2	1	1	1.1345	0.9905	1	1.0027	1.0409	1627.0	8.568	Gas S.G. = 0.777
0730		30/64	307	159	68	2.50	220.84	1387.2	1	1	1.1345	0.9924	1	1.0027	1.0418	1631.4	8.647	
0745		30/64	307	158	68	2.50	220.14	1387.2	1	1	1.1345	0.9924	1	1.0027	1.0418	1631.4	8.619	
0800		30/64	313	156	70	2.50	220.88	1387.2	1	1	1.1345	0.9905	1	1.0026	1.0421	1628.7	8.634	
0815		30/64	315	156	70	2.50	221.58	1387.2	1	1	1.1345	0.9905	1	1.0026	1.0424	1629.1	8.664	
0830		30/64	315	156	72	2.50	221.58	1387.2	1	1	1.1345	0.9887	1	1.0026	1.0418	1625.2	8.643	
0845		30/64	317	154	73	2.50	220.15	1387.2	1	1	1.1345	0.9877	1	1.0026	1.0416	1623.1	8.576	
0900		30/64	317	152	73	2.50	219.42	1387.2	1	1	1.1345	0.9877	1	1.0025	1.0418	1623.5	8.549	
1000		30/64	335	147	79	2.50	221.82	1387.2	1	1	1.1345	0.9822	1	1.0022	1.0427	1615.4	8.600	
1100		30/64	335	147	82	2.50	221.82	1387.2	1	1	1.1345	0.9795	1	1.0023	1.0419	1609.6	8.569	
1200		30/64	335	146	86	2.50	221.07	1387.2	1	1	1.1345	0.9759	1	1.0023	1.0408	1602.02	8.500	
1300		30/64	335	146	88	2.50	221.07	1387.2	1	1	1.1345	0.9741	1	1.0023	1.0402	1598.27	8.480	
1400		30/64	335	146	91	2.50	221.07	1387.2	1	1	1.1345	0.9715	1	1.0023	1.0394	1592.71	8.450	

002000

FORM NO. 31-16 (2/74)

PAGE

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE SIZE	METER RUN DATA				$\sqrt{P_f \times hw}$	$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE $Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES		F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	
1600		30/64	325	149	91	2.50	219.97	1387.2	1	1	1.1345	0.9715	1	1.0024	1.0382	1590.9	8.399	S.G. = 0.777
1700		30	325	150	93	2.50	220.70	1387.2	1	1	1.1345	0.9697	1	1.0024	1.0382	1587.3	8.408	
1800		30	320	152	93	2.50	220.45	1387.2	1	1	1.1337	0.9697	1	1.0025	1.0371	1585.6	8.389	S.G. = 0.778
1900		30	310	158	93	2.50	221.22	1387.2	1	1	1.1337	0.9697	1	1.0027	1.0359	1584.0	8.410	
2000		30	300	160	95	2.50	218.99	1387.2	1	1	1.1337	0.9680	1	1.0028	1.0342	1578.7	8.298	
2100		30	295	162	97	2.50	218.51	1387.2	1	1	1.1337	0.9662	1	1.0029	1.0332	1574.5	8.257	
2200		30	295	163	97	2.50	219.18	1387.2	1	1	1.1337	0.9662	1	1.0029	1.0332	1574.5	8.283	
2300		30	295	164	99	2.50	219.85	1387.2	1	1	1.1337	0.9645	1	1.0029	1.0328	1571.1	8.290	
2400		30	290	166	99	2.50	219.39	1387.2	1	1	1.1337	0.9645	1	1.0030	1.0322	1570.3	8.265	
	19th August 1987																	
0100		30	285	168	99	2.50	218.71	1387.2	1	1	1.1337	0.9645	1	1.0031	1.0316	1569.9	8.239	
0200		30	285	168	99	2.50	218.71	1387.2	1	1	1.1337	0.9645	1	1.0031	1.0316	1569.9	8.239	
0300		30	285	168	99	2.50	218.71	1387.2	1	1	1.1337	0.9645	1	1.0031	1.0313	1569.3	8.233	
0400		30	283	169	99	2.50	218.60	1387.2	1	1	1.1337	0.9636	1	1.0031	1.0314	1567.9	8.254	
0500		30	285	169	100	2.50	219.36	1387.2	1	1	1.1337	0.9636	1	1.0031	1.0314	1567.9	8.254	24 Hr R.463
0600		30	285	169	100	2.50	219.36	1387.2	1	1	1.1337	0.9636	1	1.0032	1.0310	1567.5	8.257	
0700		30	282	171	100	2.50	219.49	1387.2	1	1	1.1337	0.9636	1	1.0032	1.0310	1567.5	8.257	
0800		30	282	171	100	2.50	219.49	1387.2	1	1	1.1337	0.9619	1	1.0028	1.0327	1566.7	8.234	
0900		30	300	160	102	2.50	218.99	1387.2	1	1	1.1337	0.9619	1	1.0026	1.0339	1568.2	8.273	
1000		30	310	156	102	2.50	219.81	1387.2	1	1	1.1337	0.9619	1					

0000021

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{PV}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f X hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{PV}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
1100		30/64	325	149	104	2.50	219.47	1387.2	1	1	1.1337	0.9602	1	1.0024	1.0352	1567.0	8.273	

202000

SANTOS FLUID PRODUCTION SHEETS

WELL KIDMAN NTH #1 Lower

TANK:— CAPACITY 2 x 50 BBLS

SCALE

SANTOS LTD
FLUID PRODUCTION SHEET

DATE 17th August 1986

PAGE No. 1

OPERATOR S. Mayer / S. Coppock

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM.PROD. BBLS	SALINITY PPM	
			MODIFIED ISOCHRONAL TEST									
	RATE #1	900					100					
1400		1210	1.509	36.2	1.509		170	0.440	10.6	0.440	1000	
1500		1550	1.509	36.2	3.018	58.2	270	0.629	15.1	1.069		
	RATE #2											
1800		1900	1.132	27.2	4.150		440	1.069	25.7	2.138	11,000	
1900		2190	1.415	34.0	5.565	56.2	505	0.409	9.8	2.547		
	RATE #3											
2200		2515	1.855	44.5	7.420		535	0.189	4.5	2.736	3000	
2300		2875	1.855	44.5	9.275	54.3	600	0.409	9.8	3.145		
18-8-87	RATE #3A											
0200		3275	1.886	45.3	11.161		700	0.629	15.1	3.774	2500	
0300		3680	1.698	40.8	12.859		835	0.849	20.4	4.623		
	RATE # 4											
0600		4200	1.289	30.9	14.148		1150	1.981	47.5	6.604	4000	
0700		4730	0.629	15.1	14.777	52.0	1580	2.704	64.9	9.308		
	EXTENDED RATE											
0800		5130	0.503	12.1	15.280	50.1	1900	2.013	48.3	11.321	1500	
0900		5620	1.792	43.0	17.072		2105	1.289	30.9	12.610		
1000		6290	2.987	71.7	20.059		2300	1.226	29.4	13.836		

*0/5576

0000 0204 3

WELL KIDMAN NORTH #1 Lower

TANK:— CAPACITY 2 x 50 BBL

SCALE

SANTOS LTD
FLUID PRODUCTION SHEET

DATE 18th August 1987

PAGE No. 2

OPERATOR Mayer/Coppock

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
1100		6680	1.132	27.2	21.191	48.8	2510	1.321	31.7	15.159	1000	
1200		7130	1.572	37.7	22.763		2710	1.256	30.2	16.413		Change tanks
1300		225/780	1.792	43.0	24.555		60/330	1.698	40.8	18.111		
1400		1205	1.069	25.7	25.624		585	1.604	38.5	19.715		
1500		1700	2.232	53.6	27.856	45.8	725	0.881	21.3	20.596	3800	
1600		2145	1.038	24.9	28,894		905	1,761	42.3	22.357		
1700		2560	1,604	38.5	30.498		1065	1.066	24.2	23.363		
1800		2980	1.447	34.7	31.945		1255	1.195	28.7	24.558		
1900		3445	1.887	45.3	33.832		1420	1.038	24.9	25.596		
2000		3825	1.258	30.2	35.090		1600	1.132	27.2	26.728		
2100		4255	1.819	43.7	36.909		1800	1.258	30.2	27.986	2000	
2200		4660	1.541	37.0	38,450		1960	1.006	24.4	28.992		
2300		5075	1,352	32.5	39,802		2160	1.258	30.2	30.250		
2400		5490	1,698	40.8	41.500	47.9	2305	0.912	21,9	31.162		
	19th August											
0100		5895	1.604	38.5	43.104		2455	0.943	22.6	32.105		
0200		6320	1.447	34.7	44,551		2650	1.226	29,4	33.331	2000	
0300		6740	1.447	34.7	45.998		2840	1.195	28.7	34.526		
0400		7170	1.384	33.2	47.382		3050	1.321	31.7	35.847		Change tanks
0500		70/480	1.478	35.4	48,860		70/245	1.101	26.4	36.948		

*0/5576

DD3

000205

WELL KIDMAN NORTH #1 Lower

TANK:— CAPACITY 2 x 50 BBL

SCALE

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 19th August 1987

PAGE No. 3

OPERATOR Mayer / Coppock

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP Litres	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
0600		910	1.541	37.0	50.401	47.8	430	1.352	32.4	38.300	1500	
0700		1260	1.101	26.4	51.502		605	1.101	26.4	39.401		
0800		1655	1.352	32.5	52.854		785	1.132	27.2	40.533		
0900		2060	1.729	41.5	54.613		915	0.818	19.6	41.351		
1000		2460	1.415	34.0	56.028		1090	1.101	26.4	42.452		
1100		2885	1.509	36.2	57.537	47.6	1275	1.164	27.9	43.616	1000	End of test
		Shut in well.										

*0/5576

008206

WELL TEST DATA METRIC SUMMARY SHEETS

WELL: KIDMAN NORTH #1 LOWER

OPERATOR: MODIFIED ISOCHRONAL

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 1

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0600	0	0	2589	17851											
0945			2589	17851				Pressure up Lubricator							
1050			2590	17858				R.I.H with Amerados							
1127			2591	17865				Hang Amerados @ 7100 ft KB.							
1300			2590	17858				Open well for Rate #1 to test separator							
1305			2430	16755	16/64	90	32								
1310			2422	16700		93	34								
1315			2422	16700		94	34					3·58	100·863		
1330			2421	16693		98	37					3·55	100·018		
1345			2420	16686		100	38					3·53	99·454		
1400			2420	16686		101	38	36·2	5·755	10·6	1·685	3·47	97·764	96	17
1415	0	0	2421	16693	16/64	103	39					3·45	97·200		

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

002000

PETENG 007

WELL: KIDMAN NTH #1 LOWER

OPERATOR: MOD 150

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 2

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1430	0	0	2422	16700	16/64	104	40					3·45	97200		
1445			2424	16713		105	41					3·45	97200		
1500			2426	16727	16/64	105	41	36·2	5·755	15·1	2·401	3·45	97200	95	17
1500					S/I			S/I well . End rate # 1							
1505			2596	17899											
1510			2592	17872											
1515			2593	17879											
1530			2594	17886											
1545			2597	17906											
1600			2598	17913											
1615			2598	17913											
1630	0	0	2598	17913	S/I										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000203

WELL: KIOMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 3

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1645	0	0	2597	17906	S/I										
1700			2597	17906				Open well for Rate #2							
1705			2327		20/64	98									
1710			2313			103									
1715			2313			105						5.01		-	
1730			2313			108						4.91			
1745			2318			109						4.87			
1800			2319			111		27.2		25.7		4.81		177	
1815	0	0	2321			112						4.83			
1830	1		2323			114						4.83			
1845	7		2324			115						4.80			
1900	20		2325			116		34.0		9.8		4.81		141	

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000210

PETENG 007

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 4

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1900					S/I			S/I well.	End rate #2						
1905	16		2604												
1910	10		2601												
1915	4		2601												
1930	0	0	2601												
1945			2602												
2000			2603												
2015			2602												
2030			2602												
2045			2602												
2100			2601		S/I			Open well for rate #3							
2105	0	0	2165		26/64	103									

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000211

WELL: KIDMAN NTH #1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 5

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M³/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M³/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M³/M³
2110	0	0	2090		26/64	109									
2115	0	0	2075			113						6.80			
2130	0	0	2081			117						6.60			
2145	16		2084			119						N/A			
2200	75		2086			121		445		4.5					
2215	78		2088			123									
2230	82		2090			125									
2245	82		2092			126									
2300	82		2096		26/64	127		44.5		9.8		N/A			
2300					S/I			S/I well.	End rate	#3					
2305	82		2608		I										
2310	82		2609		S/I										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M³
- MMSCF x 28·174 = 10^3 M³
- Cu/FT PER BBL x 0·1773 = M³/M³
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

000212

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 17/8/87

PAGE No: 6

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
2315	81		2609		S/I										
2330	77		2608												
2345	57		2608												
2400	26		2608												
18/8/87															
0015	8		2608												
0030	3		2607												
0045	0	0	2606												
0100			2606		S/I			Open well for Rate # 3a.							
0105	0	0	2110		26/64										
0110	3		2080		1	117									
0115	9		2080		26/64	119						7.14			

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000213

WELL: WIDMAN NTH #1 : LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 18/8/87

PAGE No: 7

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0130	86		2089		26/64	123						7.03			
0145	152		2089			125						7.14			
0200	248		2091			127		45.3		15.1		7.39		163	
0215	380		2093			128						7.02			
0230	495		2094			129						7.05			
0245	610		2095			131						7.01			
0300	720		2096		26/64	132		40.8		20.4		7.04		173	
0300					S/I			S/I well. End rate #3a							
0305	680		2611												
0310	590		2610												
0315	520		2611												
0330	390		2611		S/I										

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000214

WELL: KIDMAN NTH # 1 . LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 18/8/87

PAGE No: 8

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0345	250		2611		S/I										
0400	150		2611												
0415	68		2610												
0430	40		2610												
0445	15		2609												
0500	8		2608		S/I			Open well for Rate #4							
0505	19		2055		36/64	121									
0510	49		1520			123									
0515	153		1554			127						10.45			
0530	440		1549			130						10.28			
0545	580		1549			133						10.23			
0600	730		1554		36/64	135		45.3		15.1		10.29		227	

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

000215

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 18/8/87

PAGE No: 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M³/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M³/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M³/M³
0615	850		1555		36/64	137						10·31			
0630	920		1555			138						10·28			
0645	1050		1560			140						10·26			
0700	1110		1565		36/64	142		40·8		20·4		10·23		251	
0700					30/64			End of Rate #4 . Start extended flow						-	
0701															
0705															
0710	1210		1894			143									
0715	1220		1901			143						8·57			
0720	1240		1902			144						8·65			
0730	1270		1902			145						8·65			
0745	1320		1902		30/64	145						8·62			

CONVERSION FACTORS: •BBL'S x 0·15899 = M³ •MMSCF x 28·174 = 10^3 M³

•Cu/FT PER BBL x 0·1773 = M³/M³ •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000216

WELL: KOMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 18/8/87

PAGE No: 10

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0800	1365		1903		30/64	145		12.1		48.3		8.63		713	
0815	1405		1904			145						8.66			
0830	1435		1904			146						8.64			
0845	1480		1906			147						8.58			
0900	1510		1906			148		43.0		30.9		8.55		200	
1000	1635		1904			151		71.7		29.4		8.60		120	
1100	1725		1906			153		27.2		31.7		8.57		315	
1200	1810		1907			154		37.7		30.2		8.50		225	
1300	1860		1911			158		43.0		40.8		8.48		197	
1400	1900		1912			160		25.7		38.5		8.45		329	
1500	1950		1913			161		53.6		21.3		8.40		157	
1600	2000		1913		30/64	161		24.9		42.3		8.40		337	

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = 10^3 M^3
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000217

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 18/8/87

PAGE No: 11

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1700	2030		1913		30/64	163		38.5		24.2		8.41		218	
1800	2100		1914			165		34.7		28.7		8.39		242	
1900	2125		1915			166		45.3		24.9		8.41		186	
2000	2150		1917			166		30.2		27.2		8.30		275	
2100	2175		1918			167		43.7		30.2		8.26		189	
2200	2190		1917			168		37.0		24.4		8.28		224	
2300	2210		1917			168		32.5		30.2		8.29		255	
2400	2230		1918			169		40.8		21.9		8.27		203	
19/8/87															
0100	2250		1918			170		38.5		22.6		8.24		214	
0200	2260		1918			170		34.7		29.4		8.24		237	
0300	2275		1919		30/64	171		34.7		28.7		8.24		237	

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000218

PETENG 007

WELL: KIDMAN NTH #1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 19/8/87

PAGE No: 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0400	2290		1919		30/64	171		33.2		31.7		8.23		248	
0500	2300		1921			172		35.4		26.4		8.25		233	
0600	2310		1924			172		37.0		32.4		8.25		223	
0700	2330		1922			172		26.4		26.4		8.26		313	
0800	2340		1922			172		32.5		27.2		8.26		254	
0900	2350		1925			172		41.5		19.6		8.23		198	
1000	2360		1925			172		34.0		26.4		8.27		243	
1100	2380		1925		30/64	173		36.2		27.9		8.27		228	
1100					S/I			S/I well for build up.							
		Total	Gas Production			11.986	MMSCF				Total Flowing Time		38	hours	
		"	Condensate	"		57.54	BBLS								
		"	Water	"		43.62	BBLS								

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000219

WELL: KIDMAN NTH #1 - LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 19/8/87

PAGE No: 13

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1105	2380		2621		S/I										
1110	2280		2623												
1115	2200		2623												
1130	2025		2622												
1145	1810		2624												
1200	1790		2622												
1215	1590		2622												
1230	1485		2621												
1245	1420		2621												
1300	1300		2620												
1400	900		2615												
1500	760		2615		S/I										

CONVERSION FACTORS: •BBL'S x 0·15899 = M^3 •MMSCF x 28·174 = $10^3 M^3$ •Cu/FT PER BBL x 0·1773 = M^3/M^3 •PSI x 6·895 = KPA •°C x 9 ÷ 5 + 32 = °F

000220

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 19/8/87

PAGE No: 14

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1600	550		2612		8/64										
1700	450		2611												
2300	0		2604												
20/8/87															
0500	0		2601												
1100	0		2598												
1700	0		2596												
2300	0		2593												
21/8/87															
0500	0		2592												
1100	0		2592												
1700	0		2591		8/64										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

PETENG 007

000221

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 21/8/87

PAGE No: 15

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
2300	0		2589		S 1/1										
22/8/87															
0500	0		2588												
0700	0		2588					P.O.O.H with Amerados							
0741	0		2589					Amerados in lubricator							
0842	0		2589		S/1			Depressure lubricator							

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000222

SANTOS WIRELINE REPORT

WIRELINE REPORT

000224

WELL: KIDMAN NORTH #1 Lower

DATE: 16th August 1987

PROGRAM: MODIFIED ISOCHRONAL TEST

PURPOSE OF WORK: Dummy Run

REPORT OF WORK PERFORMED:

Rig up swab valve, B.O.P's, and lubricator. Run in hole with 1.603" guage ring Tag bottom @ 7277' K.B. Pull out of hole No restrictions or problems encountered.

OPERATOR'S SIGNATURE

WORK PERFORMED BY: S. Coppock OF Oilserve

WELL DATA:

Tubing Size: 2 7/8 FWHP: SIWHP: 2593 psi

Sub Surface S.V./Landing Nipple @ 7025/7036 S.S.D. @: 6972

"X" Nipple @ "N"/"XN" Nipple @ other

Min I.D. 1.791 " @ 7036' Packer @ 7007'/6488'

Perforated Interval: 7128-7247'

Forward to: **Petroleum Engineering — Adelaide**
Production Department — Moomba

5504

SANTOS LTD.

ISO - CHRONAL AND BUILD-UP SURVEY

000225

Well: KIDMAN NORTH #1 Lower Date: 17-8-87

Lubricator Data:

Pressure with D.W.T. IN/2590 OUT/2589

Time Pressured 0945 17-8-87 Time Depressured 0842 22-8-87

Time Run in Hole 1050 17-8-87 Time off Bottom 0700 22-8-87

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	64773 x 4000 PSI	8571 x 5300 PSI
Recorder No.	12068 x 15 TLS	47407 x 15 TLS
Clock and Lead Screw Data	11889 x 120 HRS	19219 x 120 HRS
Engage Stylus	Date: 17-8-87 Time: 0920	Date: 17-8-87 Time: 0920
Disengage	Date: 22-8-87 Time: 0903	Date: 22-8-87 Time: 0903

Remarks:

Run with RT-7 temperature recorder.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp.	Remarks
17-8-87	1127		2591	0		Recorders on bottom
	1300		2590	0		Begin Rate #1
	1500	-	2426	0	105°F	Shut in well
	1700	2	2597	0		Begin Rate #2
	1900	-	2324	20	116°	Shut in well
	2100	2	2601	0		Begin Rate #3
	2300	-	2096	82	127°	Shut in well
18-8-87	0100	2	2606	0		Begin Rate #3A
	0300	-	2096	720	132	Shut in well
	0500	2	2608	8		Begin Rate #4
	0700		1555	1110	142	Begin Extended Rate
	1100		1906	1725	153	
	2300		1917	2210	168	
19-8-87	1100	0	1923	2380	173	Shut in well
	1200	1	2622	1790		
	1300	2	2620	1300		
	1700	6	2611	450		
	2300	12	2604	0		
20-8-87	1100	24	2598	0		
	2300	36	2593	0		
21-8-87	1100	48	2592	0		
	2300	60	2589	0		
22-8-87	0700	68	2588	0		P.O.C.H with Ameradas
	0842					Depressure lubricator

SANTOS LTD.

000226

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NORTH # 1 Lower Date: 17-8-87

Lubricator Data:

Pressure with D.W.T. IN/2590 OUT/2589

Time Pressured 0945 17-8-87 Time Depressured 0842 22-8-87

Time Run in Hole 1050 Time off Bottom 0700 22-8-87

	Bomb No. 3 Data	Bomb No. 2 Data
Element No. and Range	55573 x 100-400°F	
Recorder No.	57959 x 15 Tcs	
Clock and Lead Screw Data	16591 x 120 hr	
Engage Stylus	Date: 17-8-87 Time: 0920	Date: Time:
Disengage	Date: 22-8-87 Time: 0903	Date: Time:

Remarks:

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp.	Remarks

AMERADA CHARTS

000228

Client SANTOS

Gauge Type GRC RPG 3 Range 4000 PSI

Well Name KIDMAN NTH #1 Lower T.H. Pressure

Date of Run 17-8 19 87 Depth Reached 7100 Feet

Base Line Temperature 70 °F Max. Temperature °F

Pressure Element Serial No. 64773 Clock No. 11889 Hrs 120

Stopped at Clocks not engaged properly

Charts U/S.

Datum

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS

Gauge Type GRC RT-7 Range 100-400°F

Well Name KIDMAN NTH #1 Lower T.H. Pressure

Date of Run 17-8 19 87 Depth Reached 7100 Feet

Base Line Temperature 70 °F Max. Temperature ~~6591~~ °F

~~Pressure~~ Element Serial No. 55573 Clock No. 16591 Hrs 120

Stopped at

Datum

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS LTD

Gauge Type GRC RPG 3 Range 0-5300 PSI

Well Name KIDMAN NTH #1 Lower T.H. Pressure

Date of Run 17-8 19 87 Depth Reached 7100 Feet

Base Line Temperature 70 °F Max. Temperature °F

Pressure Element Serial No. 8571 Clock No. 19219 Hrs 120

~~Stopped~~ at Clock not engaged properly Chart U/S.

Datum

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

OSA PRODUCTION SERVICES

COMPANY SANTOS LTD WELL NO. KIRMAN NORTH #1

FIELD _____ INTERVAL TESTED Patchawarra

COUNTRY AUSTRALIA TECHNICIAN S. Mayer

DATE: 11 Aug 87 CALIBRATION NO. 01108087 DATE OF LAST CALIBRATION: _____

Subsurface Pressure Gauge Calibration Report

PAGE 1 OF 1

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	X	ΔY (5)	Y'	Y P	Calculated Pressure	NON LINEARITY CORRECTION ε = P - Pc	C'
500		0.1865				501.38		
1000		0.3708				997.69		
1500		0.5565				1500.25		
2500		0.9235				2500.81		
3000		1.1055				3000.62		
3500		1.2862				3499.23		
Σ						Σ + = Σ - =		

$A = \frac{\Sigma P}{n} =$

$B = \frac{\Sigma Y}{n} =$

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$

$K = \frac{D - A}{C - B} =$

$a = A - BK =$

$a = D - CK =$

$Q = \frac{\Sigma C^2}{n} =$

"Calibration calculated by quadratic regression analysis"

Calculated Pressure $= ax^2 + bx + c$

OWNER OF GAUGE: OILSERV TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 8531 RANGE: 0-5300 RECORDING SECTION NO. _____

DEADWEIGHT TESTER TYPE AND RANGE: Chandler 10,000 PSI SERIAL NO. _____

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 275 °F CALIBRATION TEMPERATURE = 275

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS + 0.7448

LEVEL DIFFERENCE H = 2 ft.

SPECIFIC GRAVITY OF OIL D = 0.86

p = ☒ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

CALIBRATION RESULTS

a = 36.2008

b = 2672.495

c = 1.6569 + 0.7448 = 2.4017

REMARKS

Calibrated in tandem with P.E. # 64773 x 4000 psi

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p

(2) Do = READING FOR BASE LINE

(3) Dr = READING FOR REFERENCE LINE

(4) y = DEFLECTION ☐ D - Do IF NO REFERENCE LINE ☐ D - DR IF REFERENCE LINE DRAWN

(5) Δ Y = FOR CHECKING

(6) n = NUMBER OF CALIBRATION STEPS

(7) Σ = SUM

(8) Q = STANDARD DEVIATION

00220

OSA PRODUCTION SERVICES

COMPANY SANTOS LTD WELL NO. KIDMAN NORTH #1

FIELD _____ INTERVAL TESTED PATCHAWARRA

COUNTRY AUSTRALIA TECHNICIAN S. Mayer

DATE: 11 Aug 87 CALIBRATION NO. 01108087 DATE OF LAST CALIBRATION: _____

Subsurface Pressure Gauge Calibration Report

PAGE 1 OF 1

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	X	Δ Y (5)	Y'	Y P	Calculated Pressure	NON LINEARITY CORRECTION c = P - Pc	C'
500		0.2385				500.42		
1000		0.4802				998.78		
1500		0.7245				1501.02		
2500		1.2125				2499.77		
3000		1.4580				2999.96		
3500		1.7042				3500.05		
Σ						Σ + = Σ - =		

$A = \frac{\Sigma P}{n} =$

$B = \frac{\Sigma Y}{n} =$ "Calibration calculated by quadratic regression analysis"

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$

$K = \frac{D - A}{C - B} =$ Calculated Pressure $= aX^2 + bX + c$

$a = A - BK =$

$a = D - CK =$

$Q = \frac{\Sigma C'}{n} =$

OWNER OF GAUGE: OILSERV TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 64773 RANGE: 0-4000 RECORDING SECTION NO. _____

DEADWEIGHT TESTER TYPE AND RANGE: Chandler 10 000psi SERIAL NO. _____

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_O = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 275 °F CALIBRATION TEMPERATURE = 275

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☑ WITH A CRANK

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS + 0.7448

LEVEL DIFFERENCE H = 2 ft

SPECIFIC GRAVITY OF OIL D = 0.86 } p = ☑ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p
(2) Do = READING FOR BASE LINE
(3) Dr = READING FOR REFERENCE LINE
(4) y = DEFLECTION ☐ D - Do IF NO REFERENCE LINE ☐ D - DR IF REFERENCE LINE DRAWN
(5) Δ Y = FOR CHECKING
(6) n = NUMBER OF CALIBRATION STEPS
(7) Σ = SUM
(8) Q = STANDARD DEVIATION

CALIBRATION RESULTS

a = -12.53827

b = 2070.9102

c = 7.2231 + 0.7448 = 7.9679

REMARKS

Calibrated in tandem with P.E # 8531 x 5300 PSI

000230

SURFACE SAMPLE REPORT

INSERT THIS COPY WITH WELL TEST DATA

000232

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid GAS Date 19/8/87 Container no. 81A 4517

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1030	13273	32/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test separator

Remarks; Destination.

Sampled by vacuum method

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid GAS Date 19/8/87 Container no. W3A 7761

Formation PATCHAWARRA Perforations 7128-7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1020	13273	32/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test Separator

Remarks; Destination.

Sampled by vacuum method

INSERT THIS COPY WITH WELL TEST DATA

000222

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIOMAN NTH* 1 Fluid CONDENSATE Date 19/8/87 Container no. 099

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1019	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test Separator

Remarks; Destination.

Sampled by MgSO4 displacement

100cc outage

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIOMAN NTH* 1 Fluid CONDENSATE Date 19/8/87 Container no. 001

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1036	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. TEST SEPARATOR

Remarks; Destination.

Sampled by MgSO4 displacement

100cc outage

INSERT THIS COPY WITH WELL TEST DATA

000234

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid WATER Date 19/8/87 Container no.

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1015	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test separator

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. – FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid WATER Date 19/8/87 Container no.

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1010	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test separator

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. - FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid WATER Date 19/8/87 Container no.

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1020	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87 1300 hrs

Sample pt. Test separator

Remarks; Destination

INSERT THIS COPY WITH WELL TEST DATA

SANTOS

SANTOS LTD. - FLUID ANALYSIS

Sample Condition Summary

Well KIDMAN NTH #1 Fluid WATER Date 19/8/87 Container no.

Formation PATCHAWARRA Perforations 7128 - 7269 Sampled by OSA

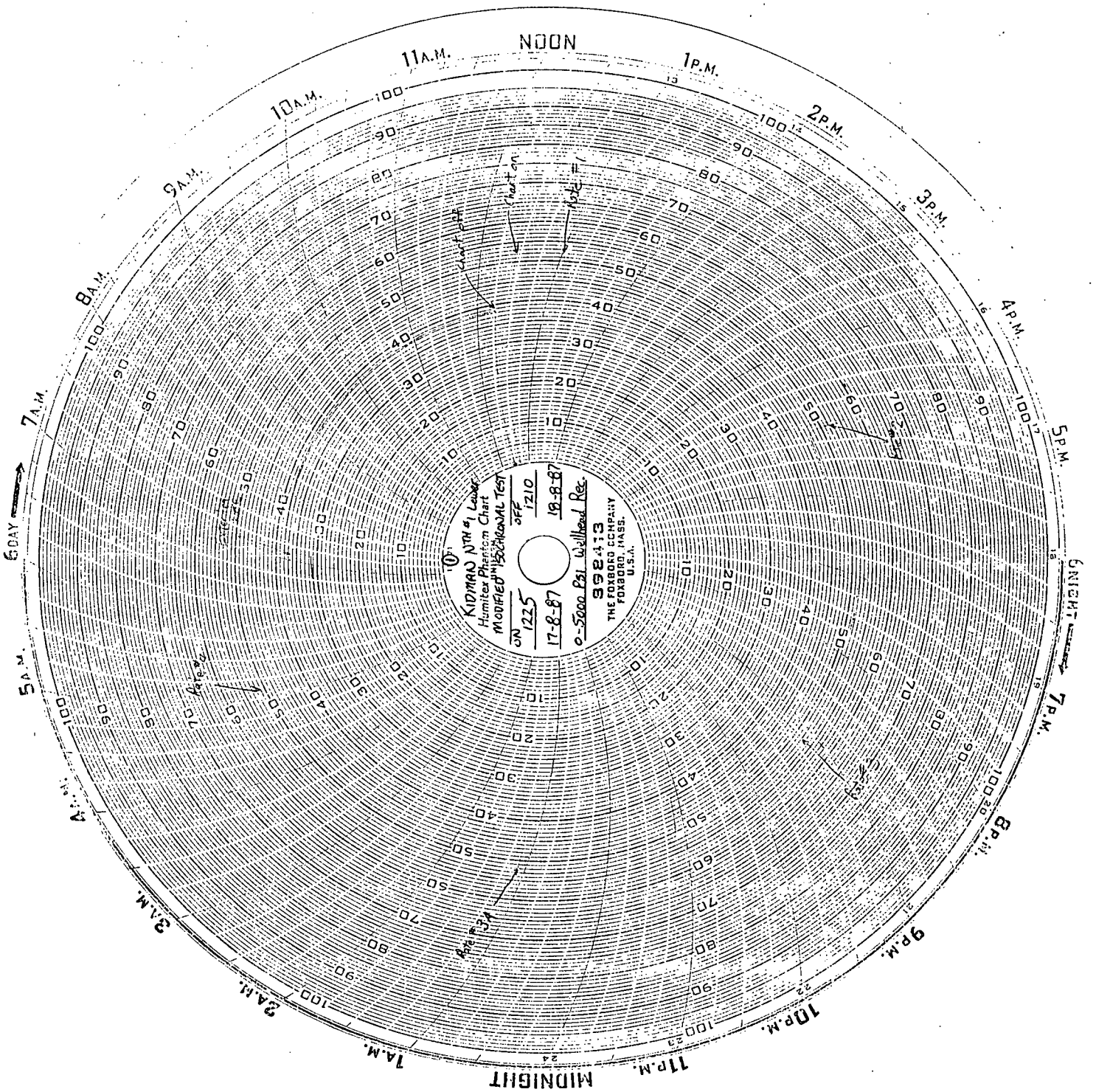
	Wellhead data			Separator data		Rates		
Time	F.T.P. Kpa	Choke size	F.T.T. °C	Press. Kpa	Temp. °C	Gas M^3/Day	Liquid M^3/Day	Water M^3/Day
1030	13273	30/64	78	2137	40	233000	5.76	4.44

S.I.T.P (Kpa) 2590 @ Date / time 17/8/87

Sample pt. Test separator

Remarks; Destination

RECORDER CHARTS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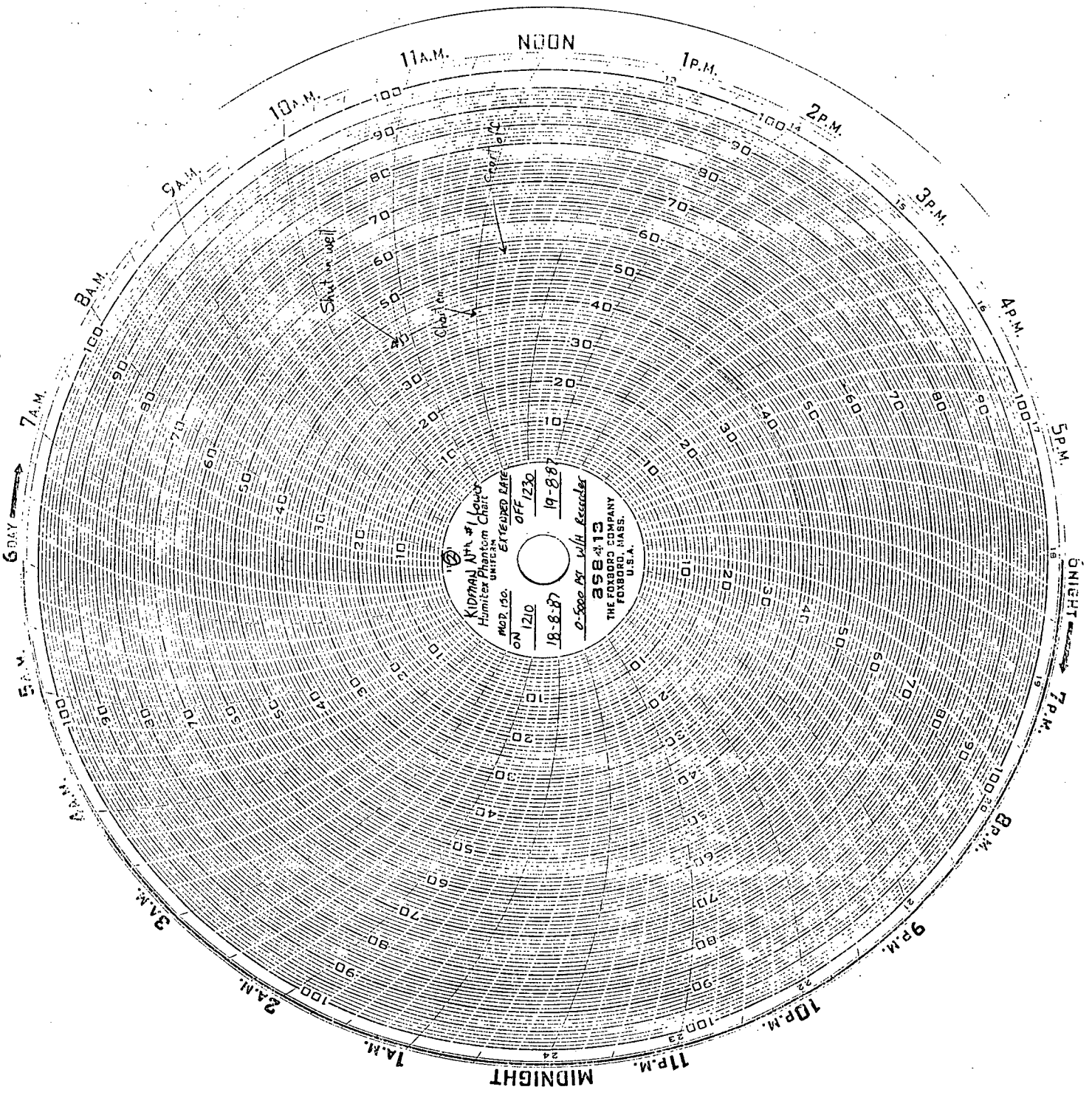
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
6 DAY
NIGHT
KIDMAN NTH #1 Lease
Humiter Phantom Chart
MODIFIED 150 CHANNEL TEST
JN 1225
17-8-87
0-5000 PSI Wellhead Rec.
OFF 1210
18-8-87
398413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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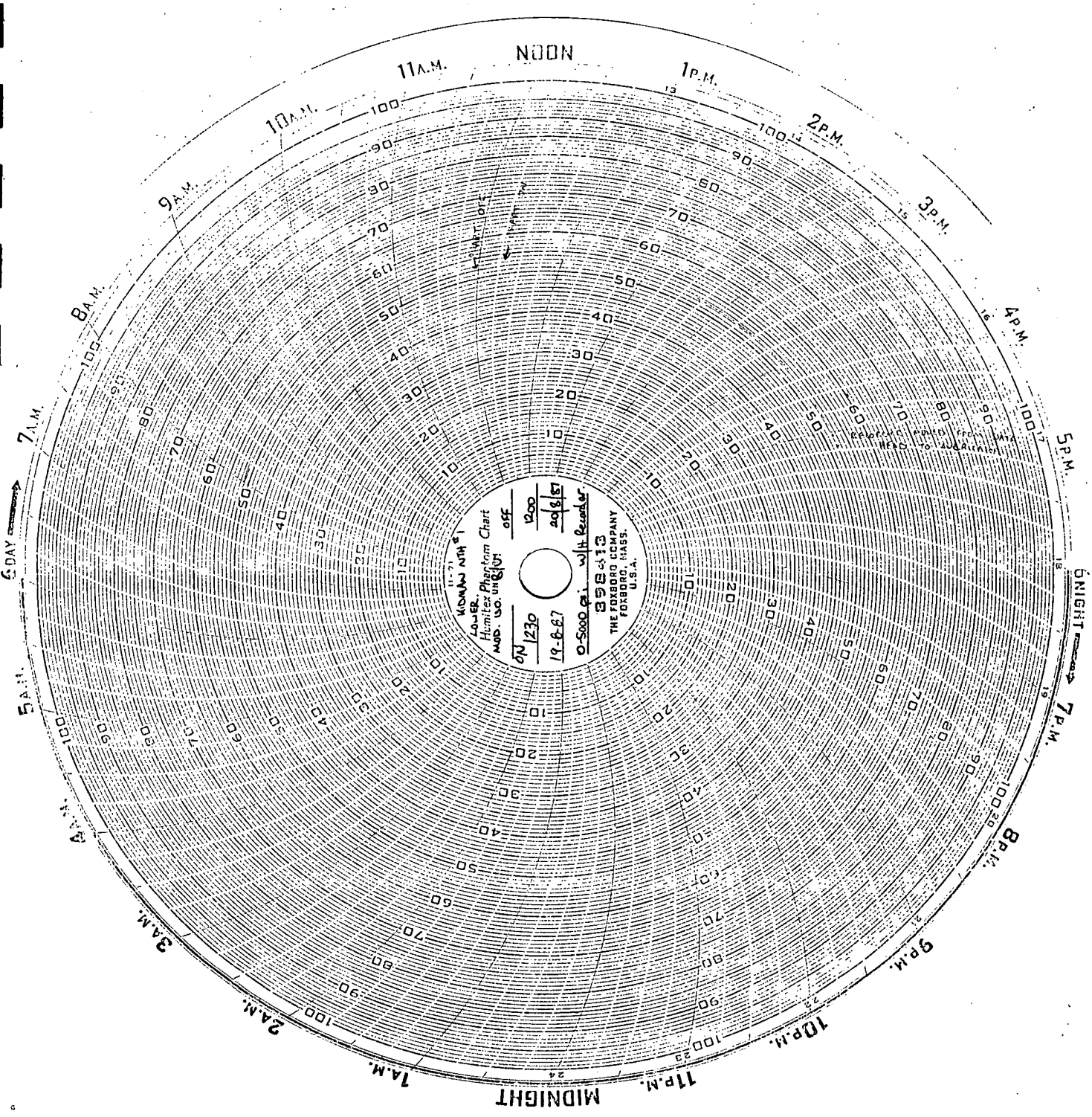
10A.M.
2P.M.
9A.M.
3P.M.
8A.M.
4P.M.
7A.M.
5P.M.
6DAY
6NIGHT
5A.M.
7P.M.
4A.M.
8P.M.
3A.M.
9P.M.
2A.M.
10P.M.
1A.M.
11P.M.
MIDNIGHT
Kidney Mfg. #1 Hour
Humiter Phantom Chart
UNITRAN
MOD. 130.
ON 1210
18-8-87
EXTENDED RATE
OFF 1230
19-8-87
0-500 PSI w/H Recorder
358413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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6NIGHT
7P.M.
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10P.M.
11P.M.
MIDNIGHT
1A.M.
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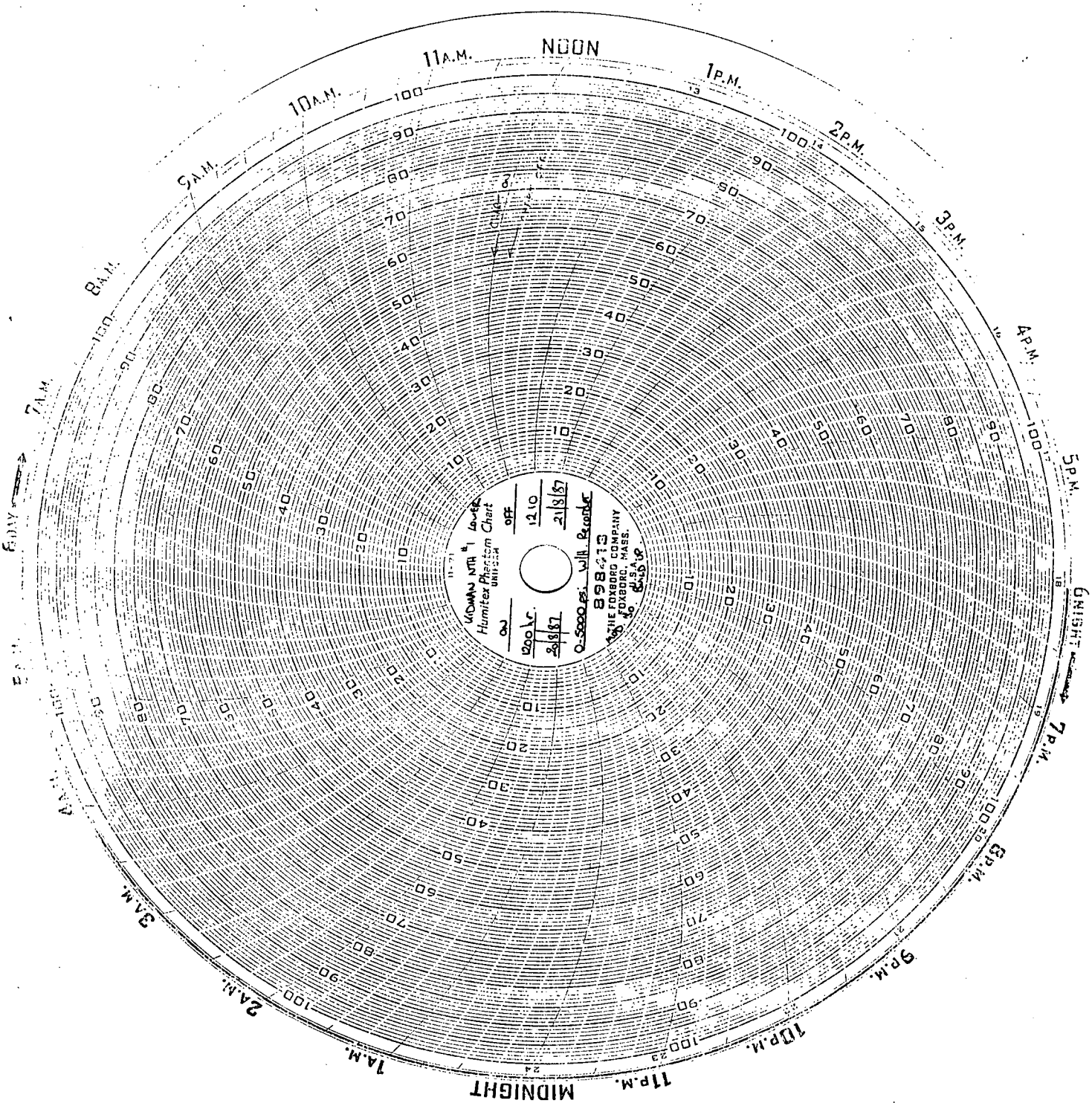
3A.M.
4A.M.
5A.M.
6DAY
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Honeywell
Model 150 Circular
Humitrol Phantom Chart
0-5000 psi w/square root
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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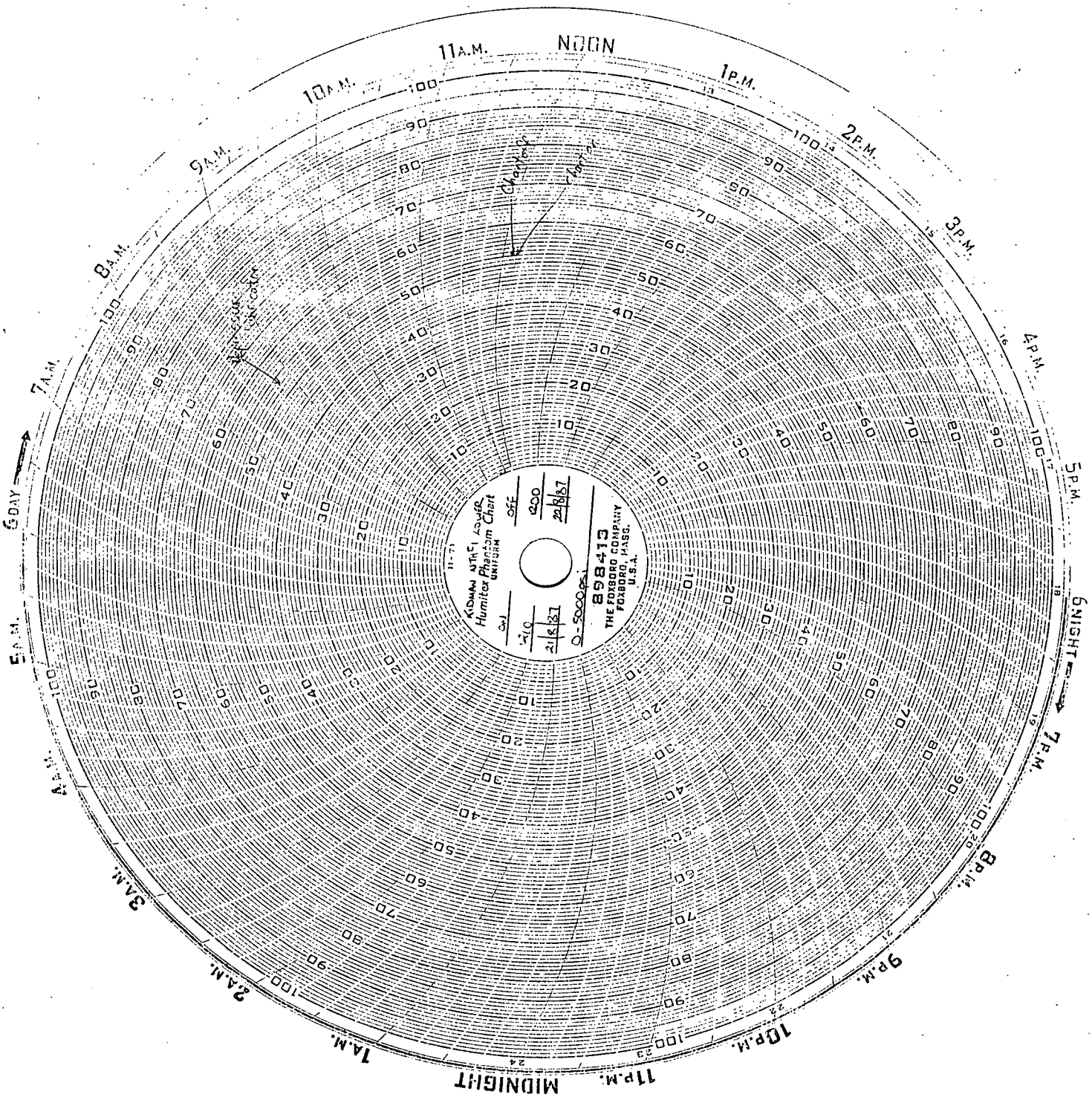
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
Humitex Phantom Chart
FOXBORO, MASS.
U.S.A.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1P.M.
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2P.M.
9A.M.
3P.M.
8A.M.
4P.M.
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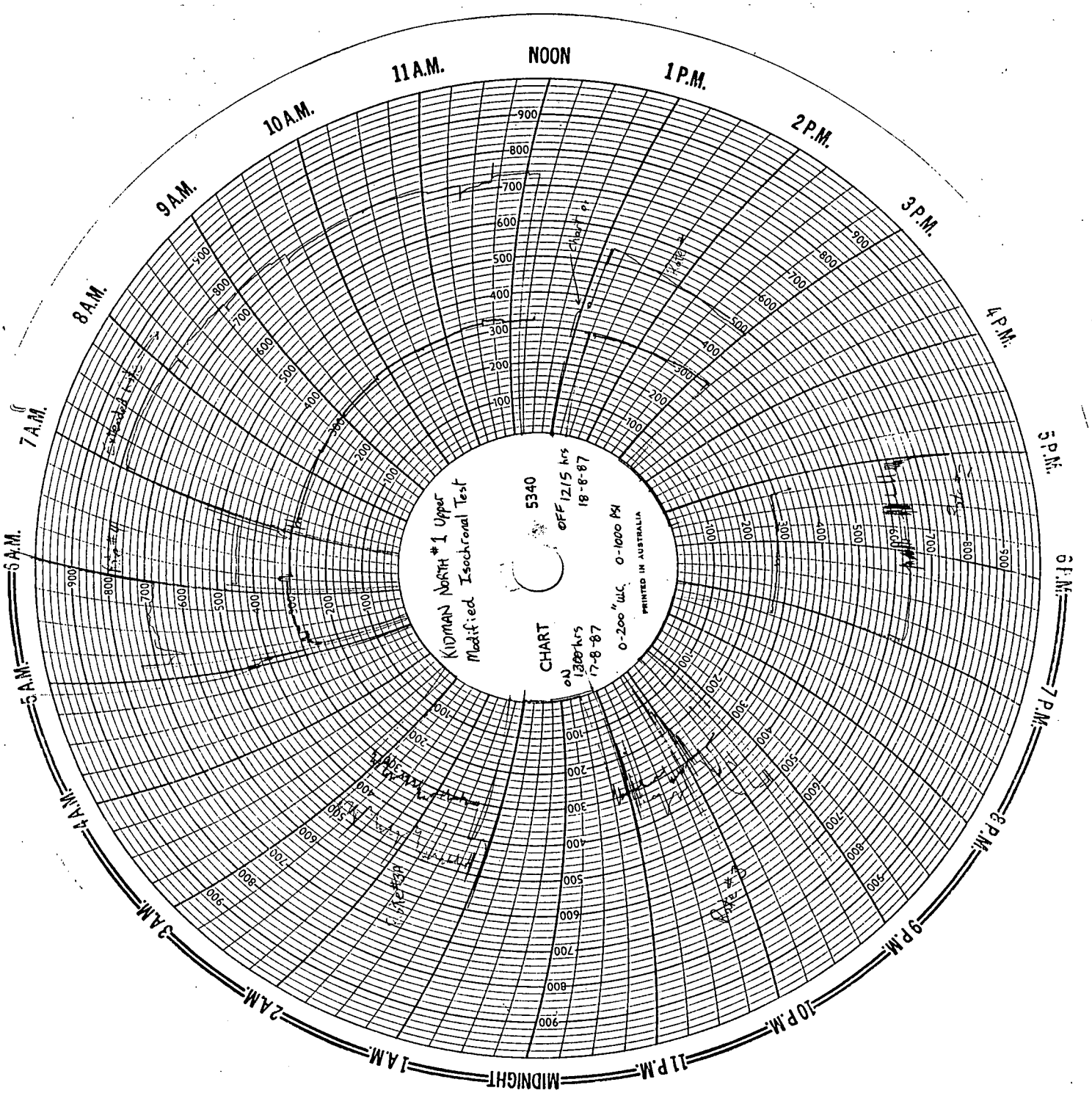
5P.M.
6A.M.
6PM.
5A.M.
7P.M.
4A.M.
8P.M.
3A.M.
9P.M.
2A.M.
10P.M.
1A.M.
11P.M.
MIDNIGHT
6 DAY
Humitex Phantom Chart
898413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


NOON
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2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
KIDMAN NORTH #1 Upper
Modified Isochronal Test
CHART
5340
OFF 1215 hrs
18-8-87
ON 1300 hrs
17-8-87
0-200 "wc
0-1000 PSI
PRINTED IN AUSTRALIA

CALIBRATED CHARTS
Kidman North #1 Lower
Modified Isochron
METER NUMBER
TYPE & ORIF. SIZE
TIME PUT ON
1215 M
DATE PUT ON
18-8-1987
TIME TAKEN OFF
1100 M
DATE TAKEN OFF
19-8-1987
Extended Rate
MW-0-100%
0-100%
SIGNED
1000 Psi Pressure
200"wc Differential
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 MIDNT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.

MODIFIED ISOCHRONAL TEST #2

WELL TEST DATA SHEETS

WELL: KIDMAN NORTH #1 LOWER

TYPE OF TEST: MODIFIED ISOCHRONAL

SANTOS LTD. RETEST
WELL TEST DATA SHEET

DATE: 22/8/87

PAGE No: 1

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
						MODIFIED ISOCHRONAL TEST + A RATE. - RETEST													
1100	0	2589		S/I															
1124	0	2589				Pressure up lubricator													
1228	0	2589				R.I.H with 2x RPG-3 & RT-7													
1310	0	2589				Amerada on bottom. Hang Off @ 7100 ft KB													
1400	0	2589		S/I															
1400				16/64		Open well @ wing valve to test separator for rate #1													
1405	0	2445	96						1.75										Inject methanol
1410	0	2440	100																@ 27 gal/day
1415	0	2438	102			307	96	19							3.37	N/A	N/A		
1430	0	2425	103			305	106	12							3.57				
1445	0	2422	105			295	108	12							3.54				
1500	0	2420	107			295	108	14							3.52				
1515	0	2421	108			295	108	14							3.52				
1530	0	2423	109			300	105	18							3.49				
1545	0	2426	110			303	103	23							3.44				
1600	0	2427	110	16/64		305	103	23	1.75						3.46				
1600				S/I		S/I @ choke for B/U. End rate #1													
1605	0	2589																	
1610	0	2590		S/I															

OPERATOR MAYER / COPPOCK

0002246

WELL: KIDMAN NORTH #1 LOWER

TYPE OF TEST: MOD. ISR.

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 22/8/87

PAGE No: 2

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
1615	0	2591		S/I															
1630	0	2592																	
1645	0	2595																	
1700	0	2597																	
1715	0	2597																	
1730	0	2596																	
1745	0	2595																	
1800	0	2595		S/I															
1800				20/64		Open well @ choke to test separator for rate # 2													
1805	0	2331	105						2.0										Inject Methanol @
1810	0	2324	108																29 gal./day
1815	0	2323	110			310	116	10							5.02				
1830	0	2318	113			315	113	12							4.98				
1845	0	2322	115			318	112	25							4.88				
1900	0	2324	117			320	111	27							4.86	43.75	4.53	48.28	111
1915	7	2326	118			320	110	27							4.84				
1930	17	2328	119			320	112	27							4.88				
1945	36	2329	120			322	109	27							4.83				
2000	58	2330	121	20/64		322	108	25	2.0						4.83	33.19	0	33.19	145
2000				S/I		S/I @ choke for B/U.				End rate #2									

OPERATOR MAYER / COPPOCK

0002477

WELL: KIDMAN NORTH #1. LOWER

TYPE OF TEST: MOD. ISO.

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 22/8/87

PAGE No: 3

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
2005	46	2599		S/I															
2010	35	2601																	
2015	27	2601																	
2030	14	2601																	
2045	5	2602																	
2100	1	2603																	
2115	0	2602																	
2130	0	2602																	
2145	0	2600																	
2200	0	2600		S/I															
2200				26/64		Open well @ choke to test separator for rate #3.													
2205	0	2115	112						2.5								Inject methanol @ 36 gal/day		
2210	0	2088	116																
2215	0	2078	118			315	91	27							7.19				
2230	26	2088	122			319	86	39							6.91				
2245	86	2091	124			319	84	41							6.81				
2300	189	2093	126			318	89	37							7.04	76.19	5.28	81.47	92
2315	320	2095	127			320	86	41							6.90				
2330	410	2098	128			320	89	41							7.02				
2345	470	2098	129	26/64		320	88	43	2.5						6.96				

OPERATOR MAYER / COPPOCK

000248

WELL: KIDMAN NORTH #1. LOWER

TYPE OF TEST: MOD. ISO

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 23/8/87

PAGE No: 4

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
0000	480	2098	131	26/64		320	88	43	2.5						6.96	54.31	3.77	58.08	128
0000				S/I		S/I well @ choke for B/U. Eld rate #3													
0005	485	2609																	
0010	475	2608																	
0015	380	2608																	
0030	225	2607																	
0045	175	2607																	
0100	140	2608																	
0115	19	2608																	
0130	9	2608																	
0145	0	2608																	
0200	0	2605		S/I															
0200				36/64		Open well @ choke to test separator for rate #4													
0205	8	1550	121						3.0										
0210	39	1555	124																
0215	98	1558	125			303	76	59							9.71				
0230	390	1562	128			303	82	63							10.04				
0245	535	1572	131			305	83	66							10.10				
0300	620	1575	134			306	84	72							10.08	49.03	103.35	152.38	206
0315	790	1585	136	36/64		310	84	73	3.0						10.15				

OPERATOR: MAYER / COPPOCK

000219

WELL: KIDMAN NORTH *1 LOWER

TYPE OF TEST: MOD. ISO

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 23/8/87

PAGE No: 5

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
0330	880	1583	137	36/64		310	84	75	3.0						10.13				
0345	1005	1588	139			313	84	81							10.11				
0400	1100	1586	139			313	85	81							10.17	48.28	39.98	88.26	211
0400				30/64					2.5	End of rate #4.			Start extended flow						
0405	1135	1880	140																
0410	1140	1906	140																
0415	1150	1910	141			315	145	70							8.57				
0430	1205	1910	142			315	145	68							8.59				
0445	1260	1912	143			315	145	68							8.59				
0500	1300	1913	145			318	145	70							8.61	40.73	22.63	63.36	211
0515	1345	1914	145			318	145	72							8.59				
0530	1385	1914	146			320	145	73							8.60				
0545	1425	1915	146			320	146	75							8.61				
0600	1450	1915	147			320	145	75							8.58	27.91	22.63	50.54	307
0700	1580	1919	151			320	144	79							8.51	53.56	19.61	73.17	159
0800	1685	1920	153			317	145	81							8.48	36.96	36.96	73.92	229
0900	1760	1920	155			310	148	82							8.46	41.49	24.89	66.38	204
1000	1830	1922	157			307	150	86							8.43	42.24	28.67	70.91	200
1100	1885	1922	159			305	152	88							8.44	39.98	30.17	70.15	211
1200	1920	1923	161	30/64		300	152	90	25						8.35	41.49	25.65	67.14	201

OPERATOR: MAYER | COPPOCK

000256

WELL: KIDMAN NORTH #1 LOWER

TYPE OF TEST: MOD ISO

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 23/8/87

PAGE No: 6

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	Pf PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	10^3 SCF/BBL
1300	1965	1923	161	30/64		300	153	91	2.5						8.37	35.45	25.65	61.1	236
1400	2080	1925	163			307	150	93							8.37	40.73	26.40	67.1	206
1500	2120	1927	164			310	150	95							8.39	36.96	28.67	65.6	227
1600	2155	1927	164			313	150	95							8.40	39.98	27.16	67.2	210
1700	2160	1929	166			310	149	97							8.34	37.72	28.67	66.39	221
1800	2190	1930	166			305	153	99							8.37	36.96	24.14	61.10	227
1900	2210	1930	167			300	156	99							8.38	36.21	25.65	61.86	231
2000	2220	1931	168			300	156	99							8.37	35.45	27.16	62.61	236
2100	2240	1932	169			295	159	100							8.37	31.68	28.67	60.35	264
2200	2250	1931	170			290	160	100							8.33	38.47	24.89	63.36	217
2300	2250	1931	170			290	160	99							8.33	39.23	21.12	60.35	212
2400	2280	1932	171			290	160	100							8.33	35.45	27.91	63.36	235
24/8/87																			
0100	2300	1931	172			285	163	100							8.33	32.44	24.14	56.58	257
0200	2320	1933	172			285	163	102							8.31	30.17	30.17	60.34	275
0300	2325	1933	172			285	163	102		CO_2	19%	H_2S 26ppm			8.31	31.68	28.67	60.35	262
0400	2340	1932	173	30/64		280	165	102	2.50						8.29	34.70	24.14	58.84	239
0400				S/I		S/I @ wing valve for buildup.				End of extended flow test.									
0405	2310	2621																	
0410	2225	2621		S/I															

S/I

OPERATOR MAYER | COPPOCK

000251

WELL: KIDMAN NORTH #1 - LOWER

TYPE OF TEST: MOD. ISO

SANTOS LTD.
WELL TEST DATA SHEET

DATE: 24/8/87

PAGE No: 7

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
															GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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	FLOW RATE BBLS/DAY	SCF/BBL
0415	2155	2622		8/1															
0430	1960	2622																	
0445	1840	2621																	
0500	1700	2621																	
0515	1565	2621																	
0530	1490	2620																	
0545	1380	2619																	
0600	1275	2617																	
0700	1020	2615																	
0800	770	2613																	
0900	560	2611																	
1000	390	2610																	
1600	11	2604																	
2200	0	2599																	
25/8/87																			
0400	0	2595																	
1000	0	2595																	
1600	0	2594																	
2200	0	2592																	
26/8/87				8/1															

OPERATOR MAYER / COPPOCK

2200

WELL: KIDMAN NTH #1 LOWER

TYPE OF TEST: MOD. ISO

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 26/8/87

PAGE No: 8

DATE / TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS.H_2O	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 BBLS/DAY	G.O.R. SCF/BBL
0400	0	2591																	
1000	0	2591																	
1600	0	2591			Pull off bottom with amerados														
1638	0	2590			In lubricator														
1740	0	2590			Depressure lubricator														
	27	August	1987																
0600	0	2589			Prepare for static gradient survey														
0825	0	2588			Pressure up lubricator														
0840	0	2588			Run in hole to conduct static gradient survey.														
1110	0	2587			Depressure lube														
1200		Rig down equipment																	
				End of test															

OPERATOR.....

0002252

SANTOS FLUID PRODUCTION SHEETS

WELL KIDMAN NORTH #1 LOWER

TANK:— CAPACITY 2 × 50 bbls

SCALE

SANTOS LTD RETEST

FLUID PRODUCTION SHEET

DATE 22/8/87

PAGE No. 1

OPERATOR S. Mayer / S. Coppock

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP LTRS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP LTRS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
				MODIFIED	ISOCHRONAL	TEST						
	RATE #1	50					50					
1500		NOT AVAILABLE DUE TO LOW LIQUID LEVELS IN SEPARATOR ∴ DUMP LINES CLOSED.									N/A	
1600		N/A				56.1	N/A					
	RATE #2											
1900		370	1.823	43.75	1.823	56.1	80	0.189	4.53	0.189		
2000		590	1.383	33.19	3.206		80	0	0	0.189	16000	
	RATE #3											
2300		1130	3.175	76.19	6.381	54.0	115	0.220	5.28	0.409	10500	
2400		1515	2.263	54.31	8.644		140	0.157	3.77	0.566		
23/8/87	RATE #4											
0300		2525	2.043	49.03	10.687	49.6	825	4.306	103.35	7.608	4000	
0400		3110	2.012	48.28	12.699		1090	1.666	39.98	9.274		
	EXTENDED	FLOW										
0500		3840	1.697	40.73	14.396		1360	0.943	22.63	10.217		
0600		4175	1.163	27.91	15.559		1510	0.943	22.63	11.16		
0700		4660	2.232	53.56	17.791		1640	0.817	19.61	11.98		
0800		5150	1.540	36.96	19.331	49.0	1885	1.540	36.96	13.52	500	
0900		5590	1.729	41.49	21.060		2050	1.037	24.89	14.56		
1000		6060	1.760	42.24	22.820	48.4	2240	1.194	28.67	15.75		

*0/5576

DD3

000255

WELL KIDMAN NORTH #1. LOWER

TANK:— CAPACITY 2 × 50 bbls

SCALE .....

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 23/8/87

PAGE No. 2

OPERATOR S. Mayer / S. Coppock

DATE / TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP INS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	OIL CONDENSATE GRAVITY °API60F°	TANK DIP INS	TANK PROD. BBLS	FLOWRATE BBLS/D	CUM. PROD. BBLS	SALINITY PPM	
1100		6525	1.666	39.98	24.49		2440	1.257	30.17	17.01		
1200		6970	1.729	41.49	26.22		2610	1.069	25.65	18.08		
1300		7375	1.477	35.45	27.70	48.1	2780	1.069	25.65	19.15	1500	Change Tanks.
1400		495	1.697	40.73	29.40		200	1.100	26.40	20.25		
1500		930	1.540	36.96	30.94		390	1.194	28.67	21.44		
1600		1375	1.666	39.98	32.61		570	1.132	27.16	22.57		
1700		1815	1.572	37.72	34.18		760	1.194	28.67	23.76		
1800		2220	1.540	36.96	35.72		920	1.006	24.14	24.77		
1900		2630	1.509	36.21	37.23		1090	1.069	25.65	25.84		
2000		3045	1.477	35.45	38.71		1270	1.132	27.16	26.97		
2100		3445	1.320	31.68	40.03		1460	1.194	28.67	28.16		
2200		3865	1.603	38.47	41.63	46.8	1625	1.037	24.89	29.20	1000	
2300		4265	1.634	39.23	43.26		1765	0.880	21.12	30.08		
2400	24/8/87	4685	1.477	35.45	44.74		1950	1.163	27.91	31.24		
0100		5060	1.352	32.44	46.09		2110	1.006	24.14	32.25		
0200		5460	1.257	30.17	47.35		2310	1.257	30.17	33.51		
0300		5860	1.320	31.68	48.67	47.3	2500	1.194	28.67	34.70	1000	
0400		6250	1.446	34.70	50.12		2660	1.006	24.14	35.71		
					END OF	TEST						

*0/5576

DD3

000259

OILSERV GAS FLOW RATE CALCULATIONS

FOR 81-15

OSA PRODUCTION SERVICES

DATE: 22 Aug/87

COMPANY SANTOS — WELL NO. RETEST. KIDMAN NORTH #1 LOWER

FIELD PATCHAWARRA — INTERVAL TESTED 7128 - 7269'

COUNTRY AUSTRALIA — TECHNICIAN S. MAYER

BASE CONDITIONS: 14.73 POUNDS PER SQUARE INCH AT 60°F

Gas Flow Rate Calculations

PAGE 1 OF ____

ORIFICE FITTING TYPE: DANIELS SENIOR — ORIFICE FITTING SIZE: 4.026" — ☑ FLANGE TAPS. ☐ PIPE TAPS.

GAS FLOW RECORDER TYPE: BARTON 202A — SER. NO. ____ — PRESSURE RANGE: 0 - 1000 psi — DIFFERENTIAL RANGE: 0-20" W.G.

DATE OF LAST CALIBRATION: 11/8/87 — GAS SPECIFIC GRAVITY AS TESTED — CALIBRATED BY: S. MAYER

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{PV}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f \times hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{PV}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
	RATE #1																	
1415		16	322	96	19	1.75	175.74	634.39	1	1	1.1337	1.0419	1	1.0019	1.0637	798.60	3.368	
1430		"	320	106	12	"	184.10	"	"	"	"	1.0496	"	1.0021	1.0669	807.14	3.566	
1445		"	310	108	12	"	182.90	"	"	"	"	1.0496	"	1.0022	1.0644	805.32	3.535	
1500		"	310	108	14	"	182.90	"	"	"	"	1.0474	"	1.0022	1.0634	802.83	3.524	SG. Gas = 0.778
1515		"	310	108	14	"	182.90	"	"	"	"	1.0474	"	1.0022	1.0634	802.83	3.524	
1530		"	315	105	18	"	181.79	"	"	"	"	1.0430	"	1.0021	1.0625	798.75	3.485	
1545		"	318	103	23	"	180.90	"	"	"	"	1.0376	"	1.0021	1.0607	793.23	3.444	
1600		16	320	103	23	1.75	181.47	634.39	1	1	1.1337	1.0376	1	1.0020	1.0612	793.56	3.456	
	RATE #2																	
1815		20	325	116	10	2.00	194.08	842.12	1	1	1.1345	1.0518	1	1.0022	1.0691	1076.70	5.015	
1830		"	330	113	12	"	193.03	"	"	"	"	1.0496	"	1.0021	1.0693	1074.45	4.978	
1845		"	333	112	25	"	193.04	"	"	"	"	1.0355	"	1.0021	1.0630	1053.65	4.882	
1900		"	335	111	27	"	192.76	"	"	"	"	1.0333	"	1.0020	1.0624	1050.91	4.862	SG. Gas = 0.707
1915		20	335	110	27	2.00	191.89	842.12	1	1	1.1345	1.0333	1	1.0020	1.0624	1050.89	4.840	

0002 CS

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{Pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$								FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f X hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
1930		20	335	112	27	2.00	193.62	842.12	1	1	1.1345	1.0333	1	1.0020	1.0624	1050.93	4.884	
1945		"	337	109	27	"	191.58	"	"	"	"	1.0333	"	1.0020	1.0628	1051.29	4.834	
2000		20	337	108	25	2.00	190.70	842.12	1	1	1.1345	1.0355	1	1.0020	1.0639	1054.44	4.826	0.[illegible]
	RATE	#3																
2215		26	330	91	27	2.50	173.22	1387.18	1	1	1.1345	1.0333	1	1.0014	1.0613	1728.32	7.185	
2230		"	334	86	39	"	169.41	"	"	"	"	1.0208	"	1.0013	1.0566	1699.76	6.911	
2245		"	334	84	41	"	167.43	"	"	"	"	1.0188	"	1.0013	1.0558	1694.94	6.811	
2300		"	333	89	37	"	172.08	"	"	"	"	1.0229	"	1.0014	1.0573	1704.35	7.039	
2315		"	335	86	41	"	169.67	"	"	"	"	1.0188	"	1.0013	1.0560	1695.30	6.903	S.G. Gas = 0.777
2330		"	335	89	41	"	172.60	"	"	"	"	1.0188	"	1.0014	1.0560	1695.38	7.023	
2345		"	335	88	43	"	171.63	"	"	"	"	1.0168	"	1.0014	1.0552	1690.64	6.964	
2400		26	335	88	43	2.50	171.63	1387.18	1	1	1.1345	1.0168	1	1.0014	1.0552	1690.64	6.964	0.52[illegible]
	RATE	#4																
0215		36	318	76	59	3.00	155.40	2189.77	1	1	1.1345	1.0010	1	1.0009	1.0463	2603.95	9.711	
0230		"	318	82	63	"	161.41	"	"	"	"	0.9971	"	1.0010	1.0450	2590.98	10.037	
0245		"	320	83	66	"	162.90	"	"	"	"	0.9943	"	1.0010	1.0444	2582.06	10.095	
0300		"	320	84	72	"	163.88	"	"	"	"	0.9887	"	1.0010	1.0426	2563.08	10.081	
0315		"	325	84	73	"	165.16	"	"	"	"	0.9877	"	1.0010	1.0430	2561.72	10.154	
0330		"	325	84	75	"	165.16	"	"	"	"	0.9859	"	1.0010	1.0424	2555.50	10.130	S.G. Gas 0.777
0345		36	328	84	81	3.00	165.92	2189.77	1	1	1.1345	0.9804	1	1.0009	1.0412	2538.18	10.107	

000259

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f x h w}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
0400		36	328	85	81	3.00	166.90	2189.77	1	1	1.1345	0.9804	1	1.0010	1.0412	2538.21	10.167	
	EXTENDED		FLOW															
0415		30	330	145	70	2.50	218.66	1387.18	1	1	1.1345	0.9905	1	1.0023	1.0447	1632.15	8.565	S.G. Gas = 0.777
0430			330	145	68		218.66					0.9924		1.0023	1.0453	1636.22	8.586	
0445			330	145	68		218.66					0.9924		1.0023	1.0453	1636.22	8.586	
0500			333	145	70		219.65					0.9905		1.0023	1.0451	1632.83	8.608	
0515			333	145	72		219.65					0.9887		1.0023	1.0445	1628.79	8.586	
0530			335	145	73		220.31					0.9877		1.0023	1.0445	1627.23	8.604	
0545			335	146	75		221.07					0.9859		1.0023	1.0439	1623.27	8.612	
0600			335	145	75		220.31					0.9859		1.0023	1.0439	1623.24	8.583	Cum Gas 2.854
0700			335	144	79		219.55					0.9822		1.0023	1.0427	1615.36	8.512	
0800			332	145	81		219.32					0.9804		1.0023	1.0417	1610.91	8.479	
0900			325	148	82		219.23					0.9795		1.0024	1.0405	1607.67	8.459	
1000			322	150	86		219.68					0.9759		1.0024	1.0390	1599.62	8.434	
1100			320	152	88		220.45					0.9741		1.0025	1.0383	1595.59	8.442	
1200			315	152	90		218.72					0.9723		1.0025	1.0371	1591.01	8.352	
1300			315	153	91		219.44					0.9715		1.0026	1.0369	1589.23	8.370	
1400			322	150	93		219.68					0.9697		1.0024	1.0373	1586.80	8.366	
1500			325	150	95		220.70					0.9680		1.0024	1.0372	1583.73	8.389	

000260

FORM NO. 31-16 (2/74)

Gas Flow Rate Calculation Report Continuation Form

TIME DATA		CHOKE	METER RUN DATA					$C' = F_b \times F_{pb} \times F_{Tb} \times F_g \times F_{Tf} \times F_r \times Y \times F_{pv}$									FLOW RATE	REMARKS
DATE & TIME HOURS	ELAPSED TIME HOURS	SIZE 64THS. INCH	PRESS. PSIA	DIFF. INCHES WATER	TEMP. °F	PLATE SIZE INCHES	$\sqrt{P_f x hw}$	F_b	F_{pb}	F_{Tb}	F_g	F_{Tf}	F_r	Y	F_{pv}	C'	$Q = C' \times 24 \times \sqrt{P_f \times hw}$ MMSCF/DAY	
1700		30	325	149	97	2.50	219.97	1387.18	1	1	1.1345	0.9662	1	1.0024	1.0367	1580.14	8.342	
1800			320	153	99		221.18					0.9645		1.0025	1.0356	1575.85	8.365	
1900			315	156	99		221.58				1.1345	0.9645		1.0026	1.0350	1575.08	8.376	
2000			315	156	99		221.58				1.1337	0.9645		1.0026	1.0351	1574.22	8.372	Sp. Gas 0.778
2100			310	159	100		221.92					0.9636		1.0027	1.0343	1571.72	8.371	
2200			305	160	100		220.81					0.9636		1.0028	1.0337	1570.91	8.325	
2300			305	160	99		220.81					0.9645		1.0028	1.0339	1572.64	8.334	
2400			305	160	100		220.81					0.9636		1.0028	1.0337	1570.91	8.325	
24/8/87																		
0100			300	163	100		221.03					0.9636		1.0029	1.0331	1570.17	8.329	
0200			300	163	102		221.03					0.9619		1.0029	1.0327	1566.74	8.311	
0300			300	163	102		221.03					0.9619		1.0029	1.0327	1566.74	8.311	Sp. Gas 0.778
0400		30	295	165	102	2.50	220.52	1387.18	1	1	1.337	0.9619	1	1.0029	1.0321	1565.99	8.290	
						END	OF	TEST										

T92000

WELL TEST DATA METRIC SUMMARY SHEETS

WELL: KIDMAN NORTH #1 : LOWER

OPERATOR:

RETEST

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 22/8/87

PAGE No: 1

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1100	0	0	2589	17851	S/I										
1124			2589	17851				Pressure up Indicator							
1228			2589	17851				R.I.H with Amerada's							
1310			2589	17851				On bottom. Hang Amerada's @ 7100 ft. KB							
1400			2589	17851	S/I			Open well for Rate #1						-	
1405			2445	16858	16/64	96	36								
1410			2440	16824		100	38								
1415			2438	16810		102	39					3.37	94.95		
1430			2425	16720		103	39					3.57	100.58		
1445			2422	16700		105	41					3.54	99.74		
1500			2420	16686		107	42					3.52	99.17		
1515	0	0	2421	16693	16/64	108	42					3.52	99.17		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

WELL: KIDMAN NORTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 22/8/87

PAGE No: 2

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
1530	0	0	2423	16707	16/64	109	43								
1545			2426	16727		110	43								
1600			2427	16734	16/64	110	43								
1600					S/I			S/I well. End rate #1							
1605			2589	17851											
1610			2590	17858											
1615			2591	17865											
1630			2592	17872											
1645			2595	17893											
1700			2597	17906											
1715			2597	17906											
1730	0	0	2596	17899	S/I										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M3
- MMSCF x 28·174 = 10³ M3
- Cu/FT PER BBL x 0·1773 = M3/M3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

WELL: KIDMAN NORTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 22/8/87

PAGE No: 3

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm^3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1745	0	0	2595	17893	S/I										
1800			2595	17893	S/I			Open well for rate #2							
1805			2331	16072	20/64	105	41								
1810			2324	16024		108	42								
1815			2323	16017		110	43					5.02	141.43	-	
1830			2318	15983		113	45					4.98	140.31		
1845			2322	16010		115	46					4.88	137.49		
1900	0	0	2324	16024		117	47	43.75	6.96	4.53	0.72	4.86	136.93	111	20
1915	7	48	2326	16038		118	48					4.84	136.36		
1930	17	117	2328	16052		119	48					4.88	137.49		
1945	36	248	2329	16058		120	49					4.83	136.08		
2000	58	400	2330	16065	20/64	121	49	33.19	5.28	0	0	4.83	136.08	145	26

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000265

PETENG 007

WELL: KIDMAN NORTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 22/8/87

PAGE No: 4

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
2000					S/I			S/I well. End rate #2							
2005	46	317	2599	17920											
2010	35	241	2601	17934											
2015	27	186	2601	17934											
2030	14	97	2601	17934											
2045	5	35	2602	17941											
2100	1	7	2603	17948											
2115	0	0	2602	17941											
2130			2602	17941											
2145			2600	17927											
2200			2600	17927	S/I										
2205	0	0	2115	14583	26/64	112	44	Open well for Rate #3							

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000266

WELL: VIDMAN NORTH #1 - LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 22/8/87

PAGE No: 5

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
2210	0	0	2088	14397	26/64	116	47								
2215	0	0	2078	14328		118	48					7.19	202.57		
2230	26	179	2088	14397		122	50					6.91	194.68		
2245	86	593	2091	14417		124	51					6.81	191.87		
2300	189	1303	2093	14431		126	52	76.19	12.11	5.28	0.84	7.04	198.35	92	16
2315	320	2206	2095	14445		127	53					6.90	194.40		
2330	410	2827	2098	14466		128	53					7.02	197.78		
2345	470	3241	2098	14466		129	54					6.96	196.09		
2400	480	3310	2098	14466	26/64	131	55	54.31	8.64	3.77	0.60	6.96	196.09	128	23
23/8/87															
0000					S/I			S/I well. End rate #3							
0005	485	3344	2609	17989	S/I										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000267

WELL: KIDMAN NORTH # 1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 23/8/87

PAGE No: 6

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0010	475	3275	2608	17982	5/1										
0015	380	2620	2608	17982											
0030	225	1551	2607	17975											
0045	175	1207	2607	17975											
0100	140	965	2608	17982											
0115	19	131	2608	17982											
0130	9	62	2608	17982											
0145	0	0	2608	17982											
0200	0	0	2605	17961	5/1			Open well for rate # 4.							
0205	8	55	1550	10687	36/64	121	49								
0210	39	269	1555	10722		124	51								
0215	98	676	1558	10742	36/64	125	52					9.71	273.57		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000268

PETENG 007

WELL: KIDMAN NORTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 23/8/87

PAGE No: 7

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0230	390	2689	1562	10770	36/64	128	53					10·04	282·87		
0245	535	3689	1572	10839		131	55					10·10	284·56		
0300	620	4275	1575	10860		134	57	49.03	7.80	103·35	16·43	10·08	283·99	206	37
0315	790	5447	1585	10929		136	58					10·15	285·97		
0330	880	6068	1583	10915		137	58								
0345	1005	6930	1588	10949		139	59								
0400	1100	7585	1586	10936		139	59								
0400					30/64			End rate #4. Start extended flow.							
0405	1135	7826	1880	12963		140	60								
0410	1140	7860	1906	13142		140	60								
0415	1150	7929	1910	13170		141	61					8·57	241·45		
0430	1205	8309	1910	13170	30/64	142	61					8·59	242·02		

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000269

WELL: KIDMAN NORTH #1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 23/8/87

PAGE No: 8

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
0445	1260	8688	1912	13183	30/64	143	79					8.59	242.02		
0500	1300	8964	1913	13190		145	81	40.73	6.48	22.63	3.60	8.61	242.58	211	37
0515	1345	9274	1914	13197		145	81					8.59	242.02		
0530	1385	9550	1914	13197		146	81					8.60	242.30		
0545	1425	9825	1915	13204		146	81					8.61	242.58		
0600	1450	9998	1915	13204		147	82	27.91	4.44	22.63	3.60	8.58	241.73	307	54
0700	1580	10894	1919	13232		151	84	53.56	8.52	19.61	3.12	8.51	239.76	159	28
0800	1685	11618	1920	13238		153	85	36.96	5.88	36.96	5.88	8.48	238.92	229	41
0900	1760	12135	1920	13238		155	86	41.49	6.60	24.89	3.96	8.46	238.35	204	36
1000	1830	12618	1922	13252		157	87	42.24	6.72	28.67	4.56	8.43	237.51	200	36
1100	1885	12997	1922	13252		159	88	39.98	6.36	30.17	4.80	8.44	237.79	211	37
1200	1920	13238	1923	13259	30/64	161	72	41.49	6.60	25.65	4.08	8.35	235.25	201	36

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000270

WELL: KIDMAN NTH #1 . LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 23/8/87

PAGE No: 9

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1300	1965	13549	1923	13259	30/64	161	72	35·45	5·64	25·65	4·08	8·37	235·82	236	42
1400	2080	14342	1925	13273		163	73	40·73	6·48	26·40	4·20	8·37	235·82	206	37
1500	2120	14617	1927	13287		164	73	36·96	5·88	28·67	4·56	8·39	236.38	227	40
1600	2155	14859	1927	13287		164	73	39.98	6·36	27.16	4·32	8·40	236.66	210	37
1700	2160	14893	1929	13300		166	74	37·72	6·00	28·67	4·56	8·34	234·97	221	39
1800	2190	15100	1930	13307		166	74	36·96	5·88	24·14	3·84	8·37	235·82	227	40
1900	2210	15238	1930	13307		167	75	36·21	5·76	25·65	4·08	8·38	236.10	231	41
2000	2220	15307	1931	13314		168	76	35·45	5·64	27.16	4·32	8·37	235·82	236	42
2100	2240	15445	1932	13321		169	76	31·68	5·04	28·67	4·56	837	235·82	264	47
2200	2250	15514	1931	13314		170	77	38·47	6·12	24·89	3·96	8·33	234·69	217	39
2300	2250	15514	1931	13314		170	77	39·23	6·24	21·12	3·36	8·33	234·69	212	38
2400	2280	15721	1932	13321	30/64	171	77	35·45	5·64	27·91	4·44	8·33	234·69	235	42

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000271

WELL: KIDMAN NTH #1 LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 24/8/87

PAGE No: 10

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0100	2300	15859	1931	13314	30/64	172	78	32.44	5.16	24.14	3.84	8.33	234.69	257	46
0200	2320	15996	1933	13328	"	172	78	30.17	4.80	30.17	4.80	8.31	234.13	275	49
0300	2325	16031	1933	13328	"	172	78	31.68	5.04	28.67	4.56	8.31	234.13	262	47
0400	2340	16134	1932	13321	30/64	173	78	34.70	5.52	24.14	3.84	8.29	233.56	239	42
0400					S/I			S/I for	building.						
0405	2310	15928	2621	18072	"										
0410	2225	15341	2621	18072	"										
0415	2155	14859	2622	18079	"										
0430	1960	13514	2622	18079	"										
0445	1840	12687	2621	18072	"										
0500	1700	11722	2621	18072	"										
0515	1565	10791	2621	18072	S/I										

CONVERSION FACTORS:

- BBL'S x 0.15899 = M^3
- MMSCF x 28.174 = $10^3 M^3$
- Cu/FT PER BBL x 0.1773 = M^3/M^3
- PSI x 6.895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000272

PETENO 007

WELL: KIDMAN NTH #1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 24/8/87

PAGE No: 11

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
0530	1490	10274	2620	18065	S/I										
0545	1380	9515	2619	18058											
0600	1275	8791	2617	18044											
0700	1020	7033	2615	18030											
0800	770	5309	2613	18017											
0900	560	3861	2611	18003											
1000	390	2689	2610	17996											
1600	11	76	2604	17955											
2200	0	0	2599	17920											
25/8/87															
0400	0	0	2595	17893											
1000	0	0	2595	17893	S/I										

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000273

PETENG 007

WELL: KIDMAN NTH #1. LOWER

OPERATOR:

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 25/8/87

PAGE No: 12

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1600	0	0	2594	17886	8/1										
2200			2592	17872											
26/8/87															
0400			2591	17865											
1000			2591	17865											
1600			2591	17865				P.O.O.H with Amerada							
1638			2590	17858				In lubricator							
1740			2590	17858				Depressure lubricator							
27/8/87															
0600			2589	17851											
0825			2588	17844				Pressure up lubricator							
0840	0	0	2588.	17844	8/1			R.I.H for Static Gradient Survey							

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000274

WELL: KIDMAN NTH #1 . LOWER

OPERATOR: .....

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: 26/8/87

PAGE No: 13

DATE / TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M^3/D	FLOWRATE H20 BBL'S/D	FLOWRATE H20 M^3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M^3/M^3
1110	0	0	2588	17844	S/I			Depressure lubricator							
1200	0	0	2587	17837	S/I			Rig down.							
								End of Test.							

CONVERSION FACTORS:

- BBL'S x 0·15899 = M^3
- MMSCF x 28·174 = $10^3 M^3$
- Cu/FT PER BBL x 0·1773 = M^3/M^3
- PSI x 6·895 = KPA
- °C x 9 ÷ 5 + 32 = °F

000275

SANTOS ISOCHRONAL AND BUILD-UP SURVEY

SANTOS LTD.

ISO - CHRONAL AND BUILD-UP SURVEY

000277

Well: KIDMAN NORTH #1. LOWER RETEST. Date: 22/8/87

Lubricator Data:

Pressure with D.W.T. IN / 2589 OUT /

Time Pressured 1124 22/8/87 Time Depressured

Time Run in Hole 1228 22/8/87 Time off Bottom

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	64773 x 4000 psi.	8571 x 5300 psi.
Recorder No.	12068 x 15 TRNS	47407 x 15 TRNS
Clock and Lead Screw Data	11389 x 120 hrs	19219 x 120 hrs
Engage Stylus	Date: 22/8/87 Time: 1101	Date: 22/8/87 Time: 1101
Disengage	Date: Time:	Date: Time:

Remarks:

Ran in tandem with RT-7 temperature recorder

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp. °F	Remarks
22/8/87	1310		2589	0		Amerada on bottom
	1400		2589	0		Start rate #1
	1600		2427	0	110	S/I. End rate #1
	1800	2	2595	0		Start rate #2
	2000		2330	58	121	S/I. End rate #2
	2200	2	2600	0		Start rate #3
	2400		2098	480	131	S/I. End rate #3
23/8/87	0200	2	2605	0		Start rate #4
	0400		1586	1100	139	Start extended rate
	1200		1923	1920	161	
24/8/87	0400	0	2340	1932	173	Shut in well
	0600	2	2617	1275	-	
	1600	12	2604	11		
25/8/87	0400	24	2595	0		
	1600	36	2594	0		
26/8/87	0400	48	2591	0		
	1600	60	2591	0		Pull out of hole

SANTOS LTD.

ISO - CHRONAL AND BUILD-UP SURVEY

000278

Well: KIDMAN NORTH #1 . LOWER Date: 22/8/87

Lubricator Data:

Pressure with D.W.T. IN / 2589 OUT

Time Pressured 1124 22/8/87 Time Depressured

Time Run in Hole 1228 22/8/87 Time off Bottom

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	55573 x 100-400°F	
Recorder No.	57959 x 15 TRNS	
Clock and Lead Screw Data	657 x 72 hrs	
Engage Stylus	Date: 22/8/87 Time: 1101	Date: Time:
Disengage	Date: Time:	Date: Time:

Remarks:

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp.	Remarks

WELL NAME: KIDMAN NORTH 1 Lower — STATIC GRADIENT SURVEY — DATE: 27th August 1987

BOMB No. 1 DATA

ELEMENT No. 8571 — ELEMENT RANGE: 0-5300 PSI
RECORDER No: 47407 x15TG — CLOCK DATA: A18547 x 3 hr
ENGAGE STYLUS: 0800 hrs — DISENGAGE: 1120 hrs

BOMB No. 2 DATA

ELEMENT No: 64773 — ELEMENT RANGE: 4000
RECORDER No: 12068 — CLOCK DATA: A18548 x3
ENGAGE STYLUS: 0800 hr — DISENGAGE: 1120 hr

LUBRICATOR DATA

PRESSURE WITH D.W.T.: 2588 PSI
TIME PRESSURED: 0825
TIME DEPRESSURED: 1110

DATE	TIME	DEPTH '	DEFLECTION	PRESSURE	GRADIENT psi/ft	DEPTH '	DEFLECTION	PRESSURE	GRADIENT psi/ft	REMARKS
27-8-87	0840	0				0				Run in hole
	0847	1000				1000				5 minute stop
	0857	2000				2000				"
	0907	3000				3000				"
	0917	4000				4000				"
	0927	5000				5000				"
	0938	6000				6000				"
	0947	7000				7000				"
	0955	7199				7199				15 minute stop
	1016	7269				7269				5 minute stop
	1021									Pull off bottom
	1055	0				0				IN Lube

General Comments: Run with RT-7 Temp. Element

000275

WELL NAME: KIDMAN NORTH #1 Lower

STATIC GRADIENT SURVEY

DATE: 27th Aug/87

BOMB No. 1 DATA

ELEMENT No. 55573 ELEMENT RANGE: 100°-400°F

RECORDER No. 57529 x 7½ TCS CLOCK DATA: B6824 x 12 (DPLS)

ENGAGE STYLUS: 0800 hrs DISENGAGE: 1120 hrs

BOMB No. 2 DATA

ELEMENT No: ELEMENT RANGE:

RECORDER No: CLOCK DATA:

ENGAGE STYLUS: DISENGAGE:

LUBRICATOR DATA

PRESSURE WITH D.W.T.: 2588 PSI

TIME PRESSURED: 0825

TIME DEPRESSURED: 1110

DATE	TIME	DEPTH '	DEFLECTION	TEMP.	GRADIENT psi/ft	DEPTH '	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
27-8-87	0840	0								Run in hole
	0847	1000								5 minute stop
	0857	2000								"
	0907	3000								"
	0917	4000								"
	0927	5000								"
	0938	6000								"
	0947	7000								"
	0955	7199								"
	1016	7269								15 minute stop
	1021	.								5 minute stop
	1055	0								Pull off bottom
										IN Lube

General Comments:

Run with tandem pressure recorders.

000280

AMERADA CHARTS

Client: SANTOS

Gauge Type: GRC RPG-3 Range: 0-5300

Well Name: KIDMAN NORTH #1 LOWER T.H. Pressure:

Date of Run: 22-8-1987 Depth Reached: 7100 Feet

Base Line Temperature: 68° °F Max. Temperature: °F

Pressure Element Serial No: 8571 Clock No: 19219 Hrs: 120

Stopped at: 7100

Datum: MODIFIED ISOCHRONAL TEST #2

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client: SANTOS

Gauge Type: GRC RPG-3 Range: 0-4000 PSI

Well Name: KIDMAN NORTH #1 LOWER T.H. Pressure:

Date of Run: 22-8-87 Depth Reached: 7100 Feet

Base Line Temperature: 68 °F Max. Temperature: °F

Pressure Element Serial No: 64773 Clock No: 11869 Hrs: 120

Stopped at: 7100

Datum: MODIFIED ISOCHRONAL TEST #2

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client: SANTOS

Gauge Type: GRC-RT-7 Range: 100°-400° F

Well Name: KIDMAN NORTH #1 LOWER T.H. Pressure:

Date of Run: 22-8 1987 Depth Reached: 7100 Feet

Base Line Temperature: 68° °F Max. Temperature: °F

~~Pressure~~ Temp Element Serial No: 55573 Clock No: 657 Hrs: 72

Stopped at: 7100

Datum: MODIFIED ISOCHRONAL TEST #2

OSA

OILSERV AUSTRALIA

Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS

Gauge Type GRC RPG-3 Range 0-4000 PSI

Well Name KIDMAN NORTH #1 Lower T.H. Pressure 2588 PSI

Date of Run 27-8 1987 Depth Reached 7269 Feet

Base Line Temperature 70 °F Max. Temperature °F

Pressure Element Serial No. 64773 Clock No. A18548 Hrs. 3

Stopped at 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 7199 (mpp), 7269, 0

Datum

OILSERV AUSTRALIA
Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS

Gauge Type GRC RPG-3 Range 0-5300 PSI

Well Name KIDMAN NORTH #1 Lower T.H. Pressure 2588 PSI

Date of Run 27-8 1987 Depth Reached 7269 Feet

Base Line Temperature 70 °F Max. Temperature °F

Pressure Element Serial No. 8571 Clock No. A18547 Hrs. 3

Stopped at 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 7199 (mpp), 7269, 0

Datum

OILSERV AUSTRALIA
Austral House, 16 Essex Street
Fremantle W.A. 6160

Client SANTOS

Gauge Type GRC RT-7 Range 100° - 400° F

Well Name KIDMAN NORTH #1 Lower T.H. Pressure 2588 PSI

Date of Run 27-8 1987 Depth Reached 7269 Feet

Base Line Temperature 70° °F Max. Temperature °F

~~Temp~~ Pressure Element Serial No. 55573 Clock No. B6824 Hrs. 12 x ± (DRS)

Stopped at 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 7199 (mpp), 7269, 0

Datum

OILSERV AUSTRALIA
Austral House, 16 Essex Street
Fremantle W.A. 6160

AMERADA PRESSURE GAUGE CALIBRATION REPORT

OSA PRODUCTION SERVICES

DATE: 11 Aug 87

COMPANY SANTOS LTD — WELL NO. KIDMAN NORTH #1

FIELD — INTERVAL TESTED Patchawarra

COUNTRY AUSTRALIA — TECHNICIAN S. Mayer

CALIBRATION NO. 01108087 — DATE OF LAST CALIBRATION:

Subsurface Pressure Gauge Calibration Report

PAGE 1 OF 1

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	X	Δ Y (5)	Y'	Y P	Calculated Pressure	NON LINEARITY CORRECTION c = P - Pc	C'
500		0.1865				501.38		
1000		0.3708				997.69		
1500		0.5565				1500.25		
2500		0.9235				2500.81		
3000		1.1055				3000.62		
3500		1.2862				3499.23		
Σ						Σ + = Σ - =		

$A = \frac{\Sigma P}{n} =$

$B = \frac{\Sigma Y}{n} =$

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$

$K = \frac{D - A}{C - B} =$

$a = A - BK =$

$a = D - CK =$

$Q = \frac{\Sigma C'}{n} =$

"Calibration calculated by quadratic regression analysis"

Calculated Pressure = $aX^2 + bX + c$

OWNER OF GAUGE: OILSERV — TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 8531 — RANGE: 0-5300 — RECORDING SECTION NO.

DEADWEIGHT TESTER TYPE AND RANGE: Chandler 10,000 psi — SERIAL NO.

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = — TEMPERATURE =

REFERENCE LINE READING D_R = — REFERENCE PRESSURE P_R = — TEMPERATURE =

MAXIMUM TEMPERATURE EXPECTED = 275 °F — CALIBRATION TEMPERATURE = 275

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☑ WITH A CRANK

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS + 0.7448

LEVEL DIFFERENCE H = 2 ft.

SPECIFIC GRAVITY OF OIL D = 0.86

p = ☑ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p
(2) Do = READING FOR BASE LINE
(3) Dr = READING FOR REFERENCE LINE
(4) y = DEFLECTION { ☐ D - Do IF NO REFERENCE LINE ☐ D - DR IF REFERENCE LINE DRAWN
(5) Δ Y = FOR CHECKING
(6) n = NUMBER OF CALIBRATION STEPS
(7) Σ = SUM
(8) Q = STANDARD DEVIATION

CALIBRATION RESULTS

a = 36.2008

b = 2672.495

c = 1.6569 + 0.7448 = 2.4017

REMARKS

Calibrated in tandem with P.E. #64773 x 4000 psi

000285

OSA PRODUCTION SERVICES

COMPANY SANTOS LTD WELL NO. KIDMAN NORTH #1

FIELD _____ INTERVAL TESTED PATCHAWARRA

COUNTRY AUSTRALIA TECHNICIAN S. Mayer

DATE: 11 Aug 87 CALIBRATION NO. 01108087 DATE OF LAST CALIBRATION: _____

Subsurface Pressure Gauge Calibration Report

PAGE 1 OF 1

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	X	Δ Y (5)	Y'	Y P	Calculated Pressure	NON LINEARITY CORRECTION c = P - Pc	C'
500		0.2385				500.42		
1000		0.4802				998.78		
1500		0.7245				1501.02		
2500		1.2125				2499.77		
3000		1.4580				2999.96		
3500		1.7042				3500.05		
Σ						Σ + = Σ - =		

$A = \frac{\Sigma P}{n} =$

$B = \frac{\Sigma Y}{n} =$

$C = \frac{\Sigma (Y)^2}{\Sigma Y} =$

$D = \frac{\Sigma (YP)}{\Sigma Y} =$

$K = \frac{D - A}{C - B} =$

$a = A - BK =$

$a = D - CK =$

$Q = \frac{\Sigma C^2}{n} =$

"Calibration calculated by quadratic regression analysis"

Calculated Pressure $= aX^2 + bX + c$

OWNER OF GAUGE: OILSERV TYPE OF ELEMENT: GRC RPG-3

PRESSURE ELEMENT NO. 64773 RANGE: 0-4000 RECORDING SECTION NO. _____

DEADWEIGHT TESTER TYPE AND RANGE: Chandler 10 000psi SERIAL NO. _____

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 275 °F CALIBRATION TEMPERATURE = 275

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☑ WITH A CRANK _____

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS + 0.7448

LEVEL DIFFERENCE H = 2 ft

SPECIFIC GRAVITY OF OIL D = 0.86

} p = ☑ PLUS IN CASE OF DWT ABOVE THE BELLOWS ☐ MINUS IN CASE OF DWT BENEATH THE BELLOWS

(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p
(2) Do = READING FOR BASE LINE
(3) Dr = READING FOR REFERENCE LINE
(4) y = DEFLECTION { ☐ D - Do IF NO REFERENCE LINE
(5) Δ Y = FOR CHECKING
(6) n = NUMBER OF CALIBRATION STEPS
(7) Σ = SUM
(8) Q = STANDARD DEVIATION

CALIBRATION RESULTS

a = -12.53827

b = 2070.9102

c = 7.2231 + 0.7448 = 7.9679

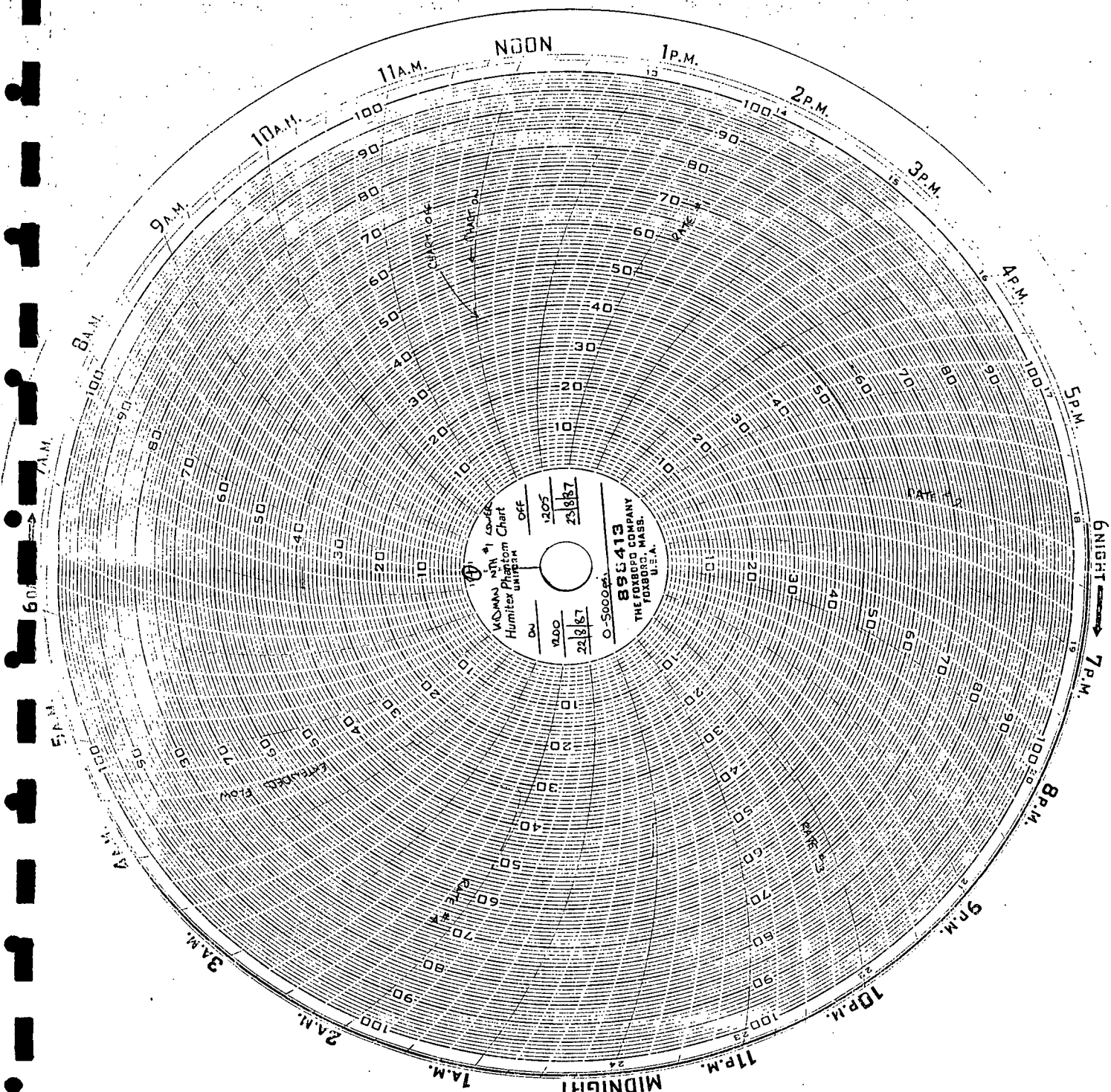
REMARKS

Calibrated in tandem with P.E # 8531 x 5300 PSI

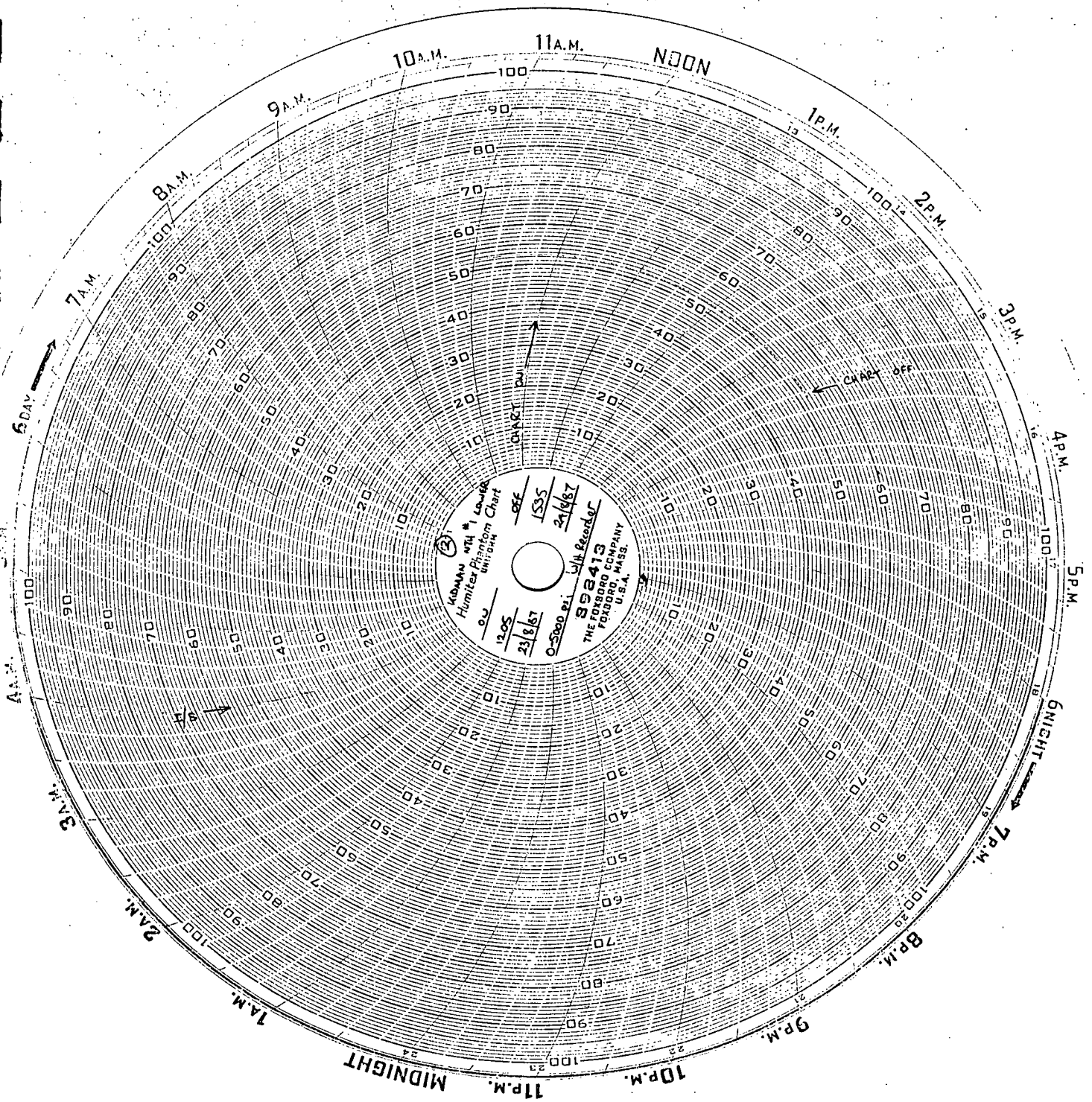
83200

RECORDER CHARTS

000288


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
NIGHT
Humitex Phantom
Chart
off
12.05
23/8/87
12.00
23/8/87
0-5000ft.
89413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
CHART RD
CHART RD
DATE RD
DATE RD

000289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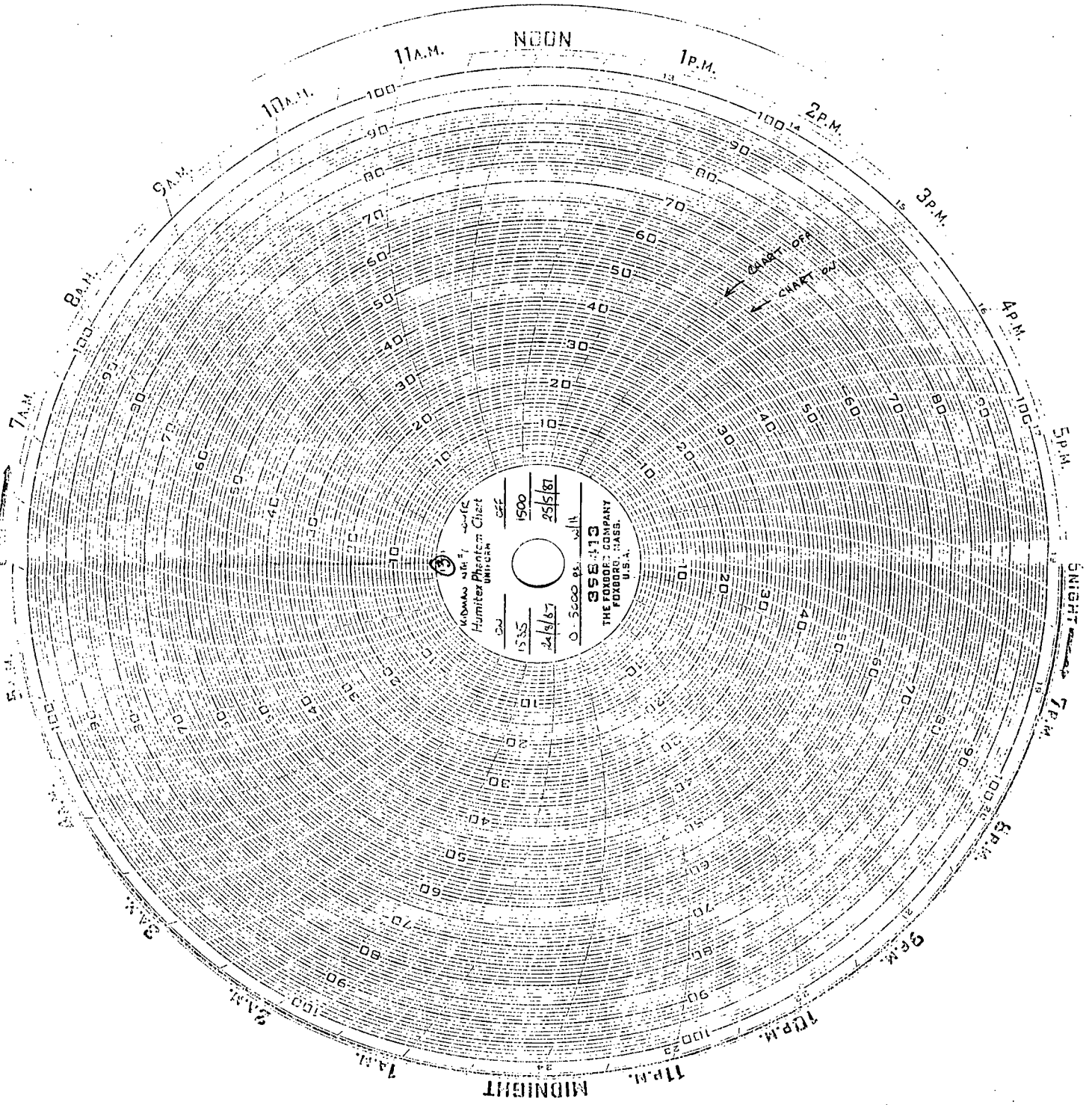
NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
CHART
CHART OFF
Humidiscope Phantom Chart
Humidiscope
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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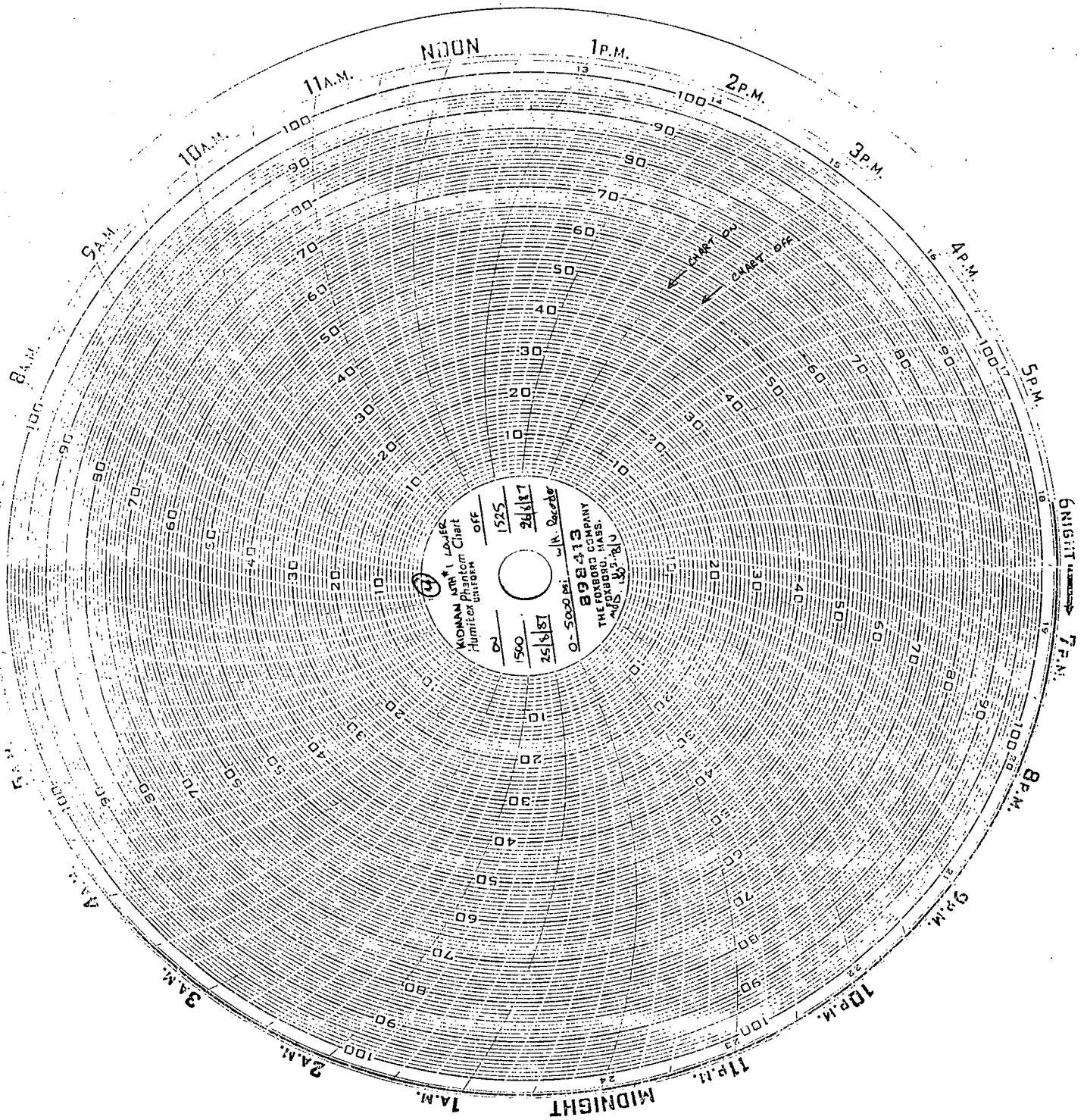
2P.M.
3P.M.
4P.M.
5P.M.
6P.M.
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
CHART OFF
CHART ON
Humiter Phantom Chart
3SE-113
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.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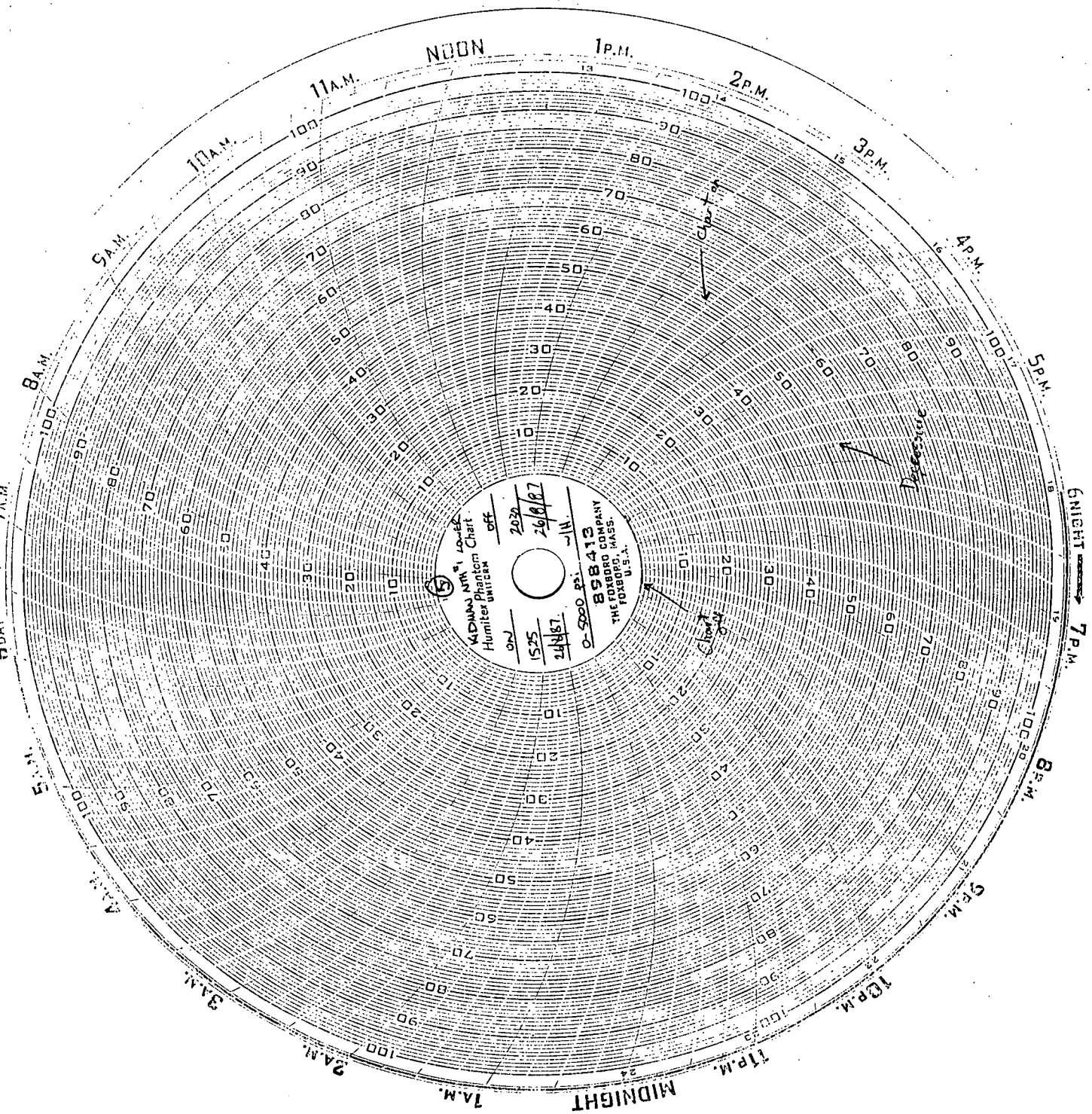
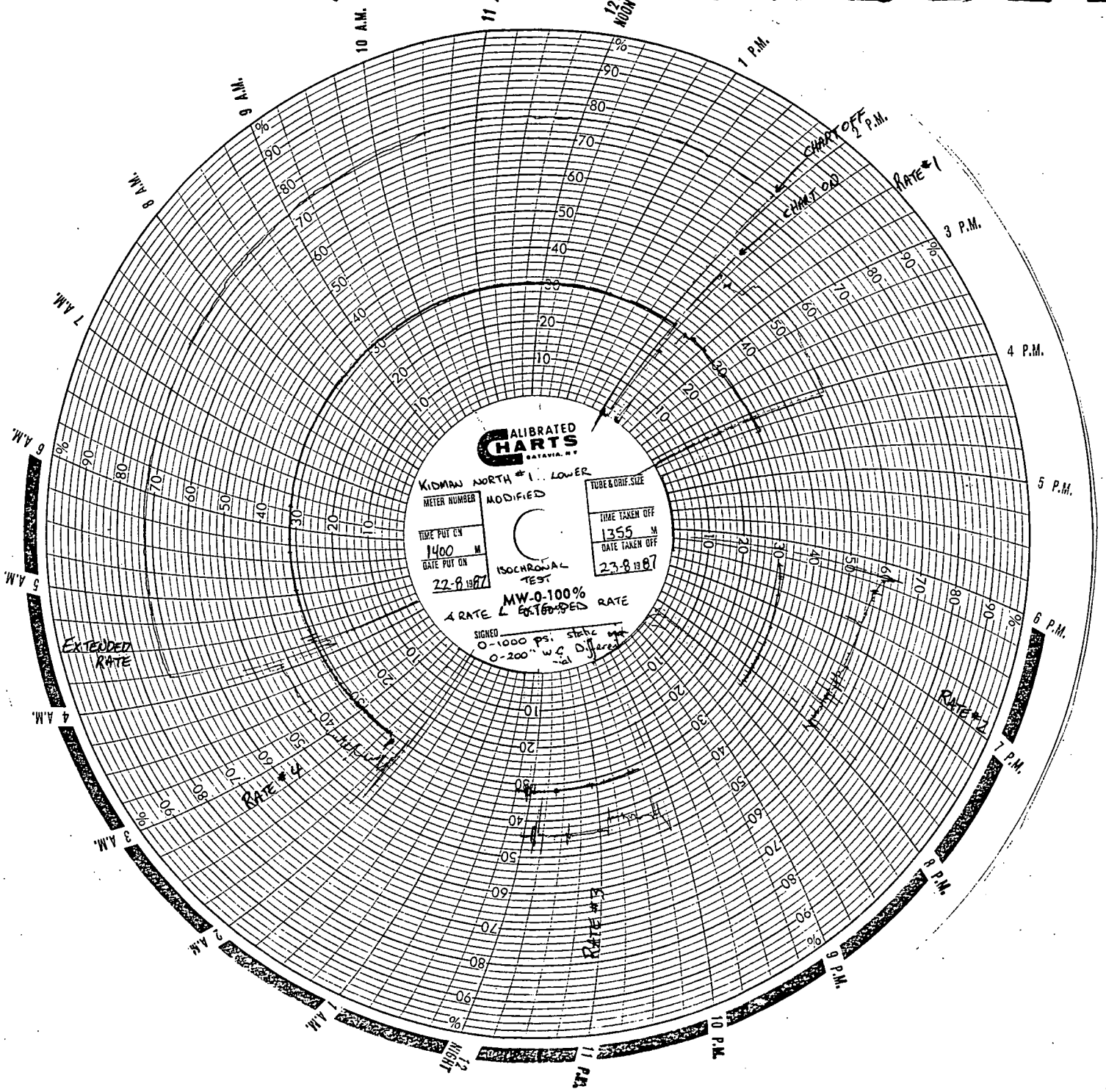
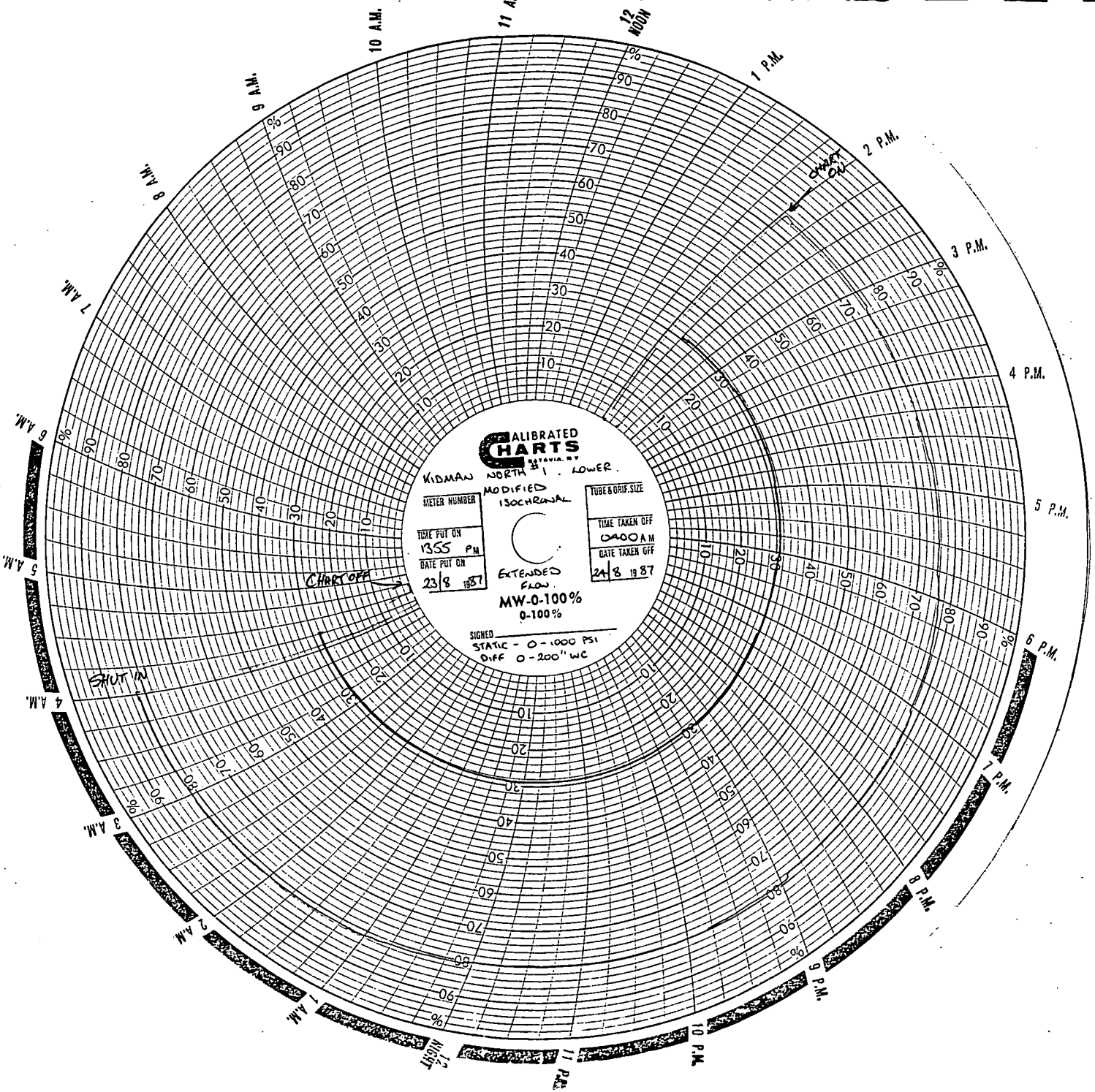
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
CHART ON
CHART OFF
KIDMAN ARM 1 LOWER
Humiter Phantom Chart
UNIFORM
OFF
1525
24/6/87
ON
1560
25/6/87
0 - 5000 psi
WK Recorder
89824-13
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


NOON
1P.M.
2P.M.
3P.M.
4P.M.
5P.M.
6NIGHT
7P.M.
8P.M.
9P.M.
10P.M.
11P.M.
MIDNIGHT
1A.M.
2A.M.
3A.M.
4A.M.
5A.M.
6A.M.
7A.M.
8A.M.
9A.M.
10A.M.
11A.M.
5DAY
Chart #1
Chart #2
Chart #3
Widman Mfg. Inc.
Humiter Phantom Chart
858413
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


CALIBRATED CHARTS
BATAVIA, N.Y.
KIDMAN NORTH #1 LOWER
METER NUMBER
MODIFIED
TUBE & ORIF. SIZE
TIME PUT ON
1400 M
DATE PUT ON
22-8 1987
ISOCHRONAL TEST
TIME TAKEN OFF
1355 M
DATE TAKEN OFF
23-8 1987
MW-0-100%
RATE
EXTENDED RATE
SIGNED
0-1000 PSI Static
0-200" W.C. Differential
CHART OFF
CHART ON
RATE #1
RATE #2
RATE #3
RATE #4
EXTENDED RATE
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11

362000


CALIBRATED CHARTS
BATAVIA, N.Y.
KIDMAN NORTH #1 . LOWER.
MODIFIED ISOCHRONAL
METER NUMBER
TUBE & ORIF. SIZE
TIME PUT ON
1355 PM
DATE PUT ON
23/8 1987
TIME TAKEN OFF
0400 AM
DATE TAKEN OFF
24/8 1987
EXTENDED FLOW.
MW-0-100%
0-100%
SIGNED
STATIC - 0-1000 PSI
DIFF 0-200" WC
CHART ON
CHART OFF
SHUT IN
12 MOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 MIDNIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.

000294

ENVELOPE 7030/2

TENEMENT: PEL 5 and PEL 6, Toolachee Block; Cooper and Eromanga Basins

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

CONTENTS OF VOLUME ONE

		SADME NO.
REPORTS:	**Halliburton Services, 1987.** Formation testing service report - DST 1 (23 March 1987).	**7030/2 R 1** Pgs 36-46
	Halliburton Services, 1987. [redacted] DST 2 (21 April 1987).	**7030/2 R 2** Pgs 3-14
	Halliburton Services, 1987. [redacted] service report - DST 3 (23 March 1987).	**7030/2 R 3** Pgs 15-24
	Halliburton Services, 1987. [redacted] report - DST 4 (23 March 1987).	**7030/2 R 4** Pgs 25-35
	Oilserv Australia Ltd, 1987. Results of Upper (Toolachee Formation) producing zone clean up and modified isochronal test, 3-14 August 1987.	**7030/2 R 5** Pgs 47-146
	Oilserv Australia Ltd, 1987. Results of Lower (Patchawarra Formation) producing zone clean up and modified isochronal test, 18-27 August 1987.	**7030/2 R 6** Pgs 147-294

CONTENTS OF VOLUME TWO

REPORTS:	**Keane, K., and Bond, W., 1988.** Results of Upper (Toolachee) zone reservoir pressure buildup and static (pressure) gradient survey, 19-24 September 1988 (Expertest Pty Ltd).	**7030/2 R 7** Pgs 295-307
	Smith, A., 1988. Results of Lower (Patchawarra) zone reservoir pressure buildup and static (pressure) gradient survey, 24-28 September 1988 (Expertest Pty Ltd).	**7030/2 R 8** Pgs 308-319
	Burdon, A.G., 1989. (Interpretation of) Kidman North #1U modified isochronal (test), 3-14/8/87 (Santos Ltd Petroleum Development Department report no: RE:046/89, July 1989).	**7030/2 R 9** Pgs 320-352
APPENDIX I:	Modified isochronal analysis.	Pgs 328-333
APPENDIX II:	Pressure build-up analysis.	Pgs 334-337
APPENDIX III:	Well test data.	Pgs 338-348
APPENDIX IV:	Compositional data.	Pgs 349-350
APPENDIX V:	Static gradient survey data.	Pgs 351-352

REPORT:	**Burdon, A.G., 1989.** (Interpretation of) Kidman North #1L modified isochronal (test), 19-26/8/87 (Santos Ltd Petroleum Development Department report no: RE:045/89, July 1989).	**7030/2 R 10** Pgs 353-383
APPENDIX I:	Modified isochronal analysis.	Pgs 360-365
APPENDIX II:	Pressure build-up analysis.	Pgs 366-368
APPENDIX III:	Well test data.	Pgs 369-378
APPENDIX IV:	Compositional data.	Pgs 379-380
APPENDIX V:	Static gradient survey data.	Pgs 381-383
REPORTS:	**Smith, A., 1989.** Results of Upper zone reservoir pressure buildup and static (pressure) gradient survey, 8-17 November 1989 (Expertest Pty Ltd).	**7030/2 R 11** Pgs 384-397
	Smith, A., 1989. Results of Lower zone reservoir pressure buildup and static (pressure) gradient survey, 4-8 November 1989 (Expertest Pty Ltd).	**7030/2 R 12** Pgs 398-407
	Mueller, M., and Buckland, R., 1990. Results of Upper zone reservoir buildup and static (pressure) gradient survey, 7-11 June 1990 (Expertest Pty Ltd).	**7030/2 R 13** Pgs 408-420
	Mueller, M., and Buckland, R., 1990. Results of Lower zone reservoir pressure buildup and static (pressure) gradient survey, 7-11 June 1990 (Expertest Pty Ltd).	**7030/2 R 14** Pgs 421-431
	Larkin, R., 1991. Results of liquids evaluation test (LET) and flowing (pressure) gradient survey (FGS), Patchawarra production zone, 2-4 June 1991 (Expertest Pty Ltd).	**7030/2 R 15** Pgs 432-444

END OF CONTENTS

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

WELL: Kidman North # 1 Upper

ORIFICE SIZE: 56.000 mm 2.205 "

LINE SIZE: 73.660 mm 2.900 "

Pf = 9000 kPa

T = 90 °C

Diff = 10.8 kPa

Cumulative Production to end of September = 73.617 $m^3 \times 10^6$ ✓

Number of hours online in September = 631

Production in September = 5.252 $m^3 \times 10^6$

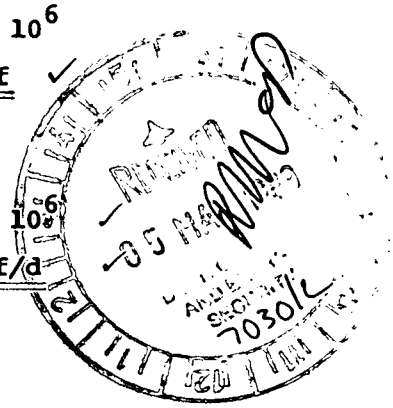
∴ Average flow rate in September = (5.252 / 631) x 24 = 0.200 $m^3 \times 10^6/d$ ✓

Number of days online in September ~~before~~ after Shut In 1800 hrs 20/9/88
= 6.542 days

∴ Production ~~up to~~ after 1800 hrs 20/9/88 = 0.200 x 6.542 = 1.308 $m^3 \times 10^6$

Total cumulative production = 73.617 − 1.308
= 72.309 $m^3 \times 10^6$
= 2566.524 mmscf ✓

Flow rate just prior to Shut In = 0.210 $m^3 \times 10^6$
= 7.464 mmscf/d



SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS
EFF DEPTH
CASING -
LINER -
DATE 880924
ELEVATION
MAX TEMP 251
PERF -
TUBING -
UNITS ENGLISH

RUN 01 FIELD KNORTH
WELL STAT
CASING PRESS
TUBING PRESS
ELEMENT RANGE 0 - 4031
ZONE
PICK-UP
CAL SER NO. 29321

PURPOSE BUILD-UP

WELL 01U
TOOL HUNG 4488'
ON BOTTOM 1400 20/9
OFF BOTTOM 0600 24/9
ZERO POINT
SHUT-IN 1800 20/9
ON-PROD
MPP

SURVEY DATA

CO. SANTOS — RUN 01 FIELD KNORTH — WELL 01U

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
18:00	1527.4	0.0	0.0	19:17	2145.7	616.3	1.3
18:01	1589.7	62.3	.0	19:35	2142.5	615.2	1.6
18:01	1654.9	127.5	.0	20:11	2142.4	615.0	2.2
18:01	1717.8	190.4	.0	22:31	2144.9	617.5	4.5
18:02	1793.8	266.4	.0	1:01	2145.9	618.5	7.0
18:03	1876.2	348.9	.1	4:41	2151.1	623.7	10.7
18:04	1975.7	448.3	.1	9:13	2161.8	634.4	15.2
18:04	2053.2	525.8	.1	14:22	2169.9	642.5	20.4
18:04	2111.7	584.3	.1	19:48	2180.5	653.2	25.8
18:05	2140.4	613.0	.1	2:17	2191.3	663.9	32.3
18:16	2141.7	614.3	.3	8:34	2200.6	673.3	38.6
18:29	2141.7	614.3	.5	15:01	2209.6	682.2	45.0
18:39	2141.6	614.2	.6	22:34	2219.6	692.2	52.6
18:40	2149.1	621.7	.7	5:25	2225.8	698.4	59.4
18:40	2160.0	632.6	.7	14:53	2232.4	705.0	68.9
19:01	2158.1	630.7	1.0	0:24	2238.9	711.5	78.4
19:17	2158.0	630.6	1.3	6:00	2239.6	712.2	84.0

LUB IN DWT = 1306 PSI / OUT = 2012 PSI
LUB IN AMERADA = 1296 PSI / OUT = 2016 PSI

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS
EFF DEPTH
CASING
LINER -
DATE 880924
ELEVATION
MAX TEMP 251
PERF
TUBING -
UNITS ENGLISH -

RUN 02 FIELD KNORTH
WELL STAT
CASING PRESS
TUBING PRESS
ELEMENT RANGE 0 - 4010
ZONE
PICK-UP
CAL SER NO. 29322

WELL 01U
TOOL HUNG 4494'
ON BOTTOM 1400 20/9
OFF BOTTOM 0600 24/9
ZERO POINT
SHUT-IN 1800 20/9
ON-PROD
MPP

PURPOSE BUILD-UP

SURVEY DATA

CO. SANTOS

TIME	P-T	DP-DT
18:00	1521.6	0.0
18:02	1613.5	92.0
18:04	1705.5	184.0
18:05	1815.9	294.4
18:08	1907.6	386.0
18:11	1985.8	464.2
18:16	2034.0	512.5
18:22	2083.5	561.9
18:27	2113.5	591.9
18:31	2129.7	608.2
18:35	2138.1	616.6
18:38	2146.1	624.6
18:41	2152.3	630.8
18:43	2156.9	635.4
18:45	2160.1	638.6
18:49	2156.9	635.3
18:56	2154.1	632.5

RUN 02 FIELD KNORTH
WELL 01U

DTIME	TIME	P-T	DP-DT	DTIME
0.0	19:05	2149.2	627.7	1.1
.0	19:14	2144.4	622.8	1.2
.1	19:28	2138.7	617.2	1.5
.1	19:50	2134.5	612.9	1.8
.1	20:42	2133.1	611.6	2.7
.2	22:41	2135.3	613.8	4.7
.3	1:06	2136.9	615.3	7.1
.4	4:32	2142.2	620.7	10.5
.4	9:26	2152.1	630.6	15.4
.5	15:44	2164.8	643.2	21.7
.6	21:08	2175.0	653.4	27.1
.6	5:19	2189.4	667.9	35.3
.7	18:02	2208.3	686.7	48.0
.7	8:16	2223.4	701.9	62.3
.8	21:59	2232.7	711.1	76.0
.8	6:01	2238.8	717.2	84.0
.9	0:00	0.0	0.0	0.0

LUB IN DWT = 1306 PSI / OUT = 2012 PSI
LUB IN AMERADA = 1287 PSI / OUT = 2014 PSI

SANTOS LTD.

000298

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NORTH #1 UPPER Date: 20-9-88

Lubricator Data: ① 1296/2016 ② 1287/2014 PAGE # 1 OF

Pressure with D.W.T. IN - 9004 KPA (1306) OUT - 13873 KPA (2012)

Time Pressured 1135 20/9/88 Time Depressured 0813 24.9.88

Time Run in Hole 1335 20/9/88 Time off Bottom 0600 —11—

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	29321 × 4000 PSI	29322 × 4000 PSI
Recorder No.	70547 × 15 T.L.S.	14632 × 15 T.L.S.
Clock and Lead Screw Data	29646 × 96 HRS	28647 × 96 HRS
Engage Stylus	Date: 20/9/88 Time: 1123	Date: 20/9/88 Time: 1123
Disengage	Date: 24/9/88 Time: 0821	Date: 24/9/88 Time: 0821

Remarks: NEW HANG DEPTH OF SURVEY 4500' K.B - CORKSCREW TUBING.
TEMP ELEMENT RUN ELEMENT # 63256 × 150°F / 400°F
MAX. BH. Temp: 251°F RECORDER 61275 × 15 TLS CLOCK 28648 × 96 HRS

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
20/9/88	1135	PRESSURE LUBRICATOR.				
	1335		9004	- 0	90	RUN IN HOLE.
	1400					HANG AT 4500' KB
	1400		9011	0	92	START TEST
	1430		8997	0	91	
	1500		9011	0	92	
	1530		9080	0	90	
	1600		9080	0	90	
	1630		9080	0	91	
	1700		9080	0	90	
	1730		9101	0	90	
	1800	0	9101	0	99	SHUT WELL IN.
	1805		12345	0	79	
	1810		12714	0	79	
	1815		12983	0	73	
	1830		13321	0	57	
	1845		13410	0	44	
	1900	1	13355	0	36	
	1915		13307	0	30	
	1930		13272	0	25	
	1945		13252	0	22	
	2000	2	13252	0	20	CONT ON PAGE #2

SANTOS LTD. 000299

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NORTH #1 UPPER Date: 20-9-88

PAGE #2 OF

Lubricator Data:

Pressure with D.W.T.

Time Pressured Time Depressured

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: REFER TO BOMB DATA SHEET #1. FOR ELEMENT, RECORDER - , CHOCK & STYLUS INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
20/9/88	2015		13252	0	17	
	2030		13252	0	15	
	2045		13238	0	14	
	2100	3	13238	0	14	
	2115		13238	0	13	
	2130		13252	0	12	
	2145		13252	0	11	
	2200	4	13259	0	11	
21/9/88						
	0200	8	13272	0	6	
	0600	12	13321	0	8	
	1000	16	13362	0	30	
	1400	20	13418	0	37	
	1800	24	13459	0	25	
	2200	28	13500	0	15	
22/9/88						
	0200	32	13542	0	13	

SANTOS LTD.

000306

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIOMAN NTH #1 UPPER Date: 22-9-88

Lubricator Data:

Pressure with D.W.T.

Time Pressured Time Depressured

Time Run in Hole Time off Bottom

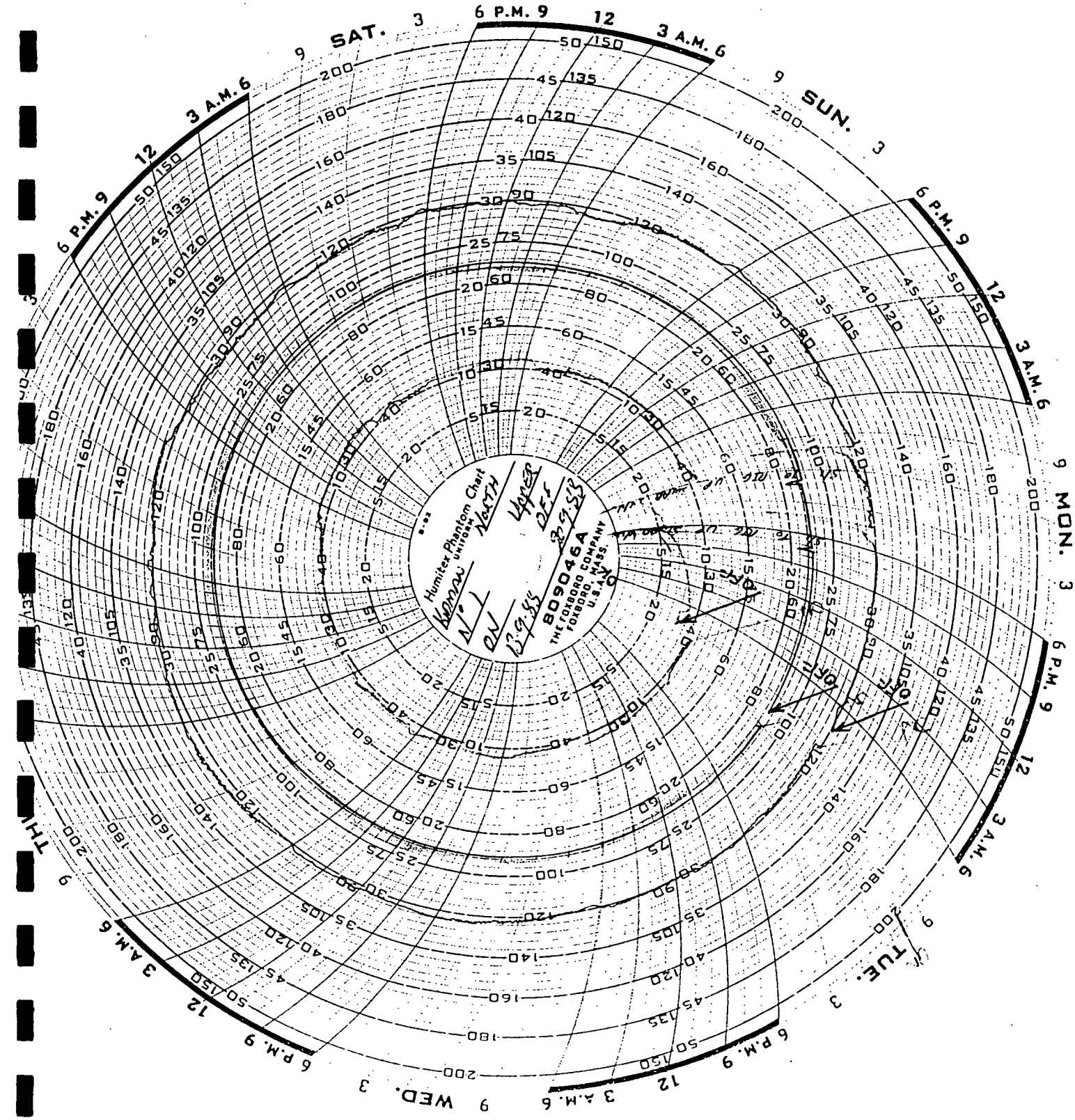
	Bomb No. 1 Data		Bomb No. 2 Data	
Element No. and Range				
Recorder No.				
Clock and Lead Screw Data				
Engage Stylus	Date:	Time:	Date:	Time:
Disengage	Date:	Time:	Date:	Time:

Remarks: REFER TO BOMB DATA SHEET #1. FOR ELEMENT, RECORDER-, CLOCK & STYLUS INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead P.S.I.G.	Casing P.S.I.G.	Wellhead Temp.	Remarks
22ND	SEPTEMBER 1988					
	1000	40	13625	0	25	
	1400		13659		30	
	1800	48	13697		25	
	2200		13721		16	
23RD	SEPTEMBER 1988					
	0200		13755		14	
	0600	60	13790		15	
	1000		13804		26	
	1400		13824		34	
	1800	72	13838		30	
	2200		13852		17	
24TH	SEPTEMBER 1988					
	0200		13866		14	
	0600	84	13873		17	P.O.O.H.
	0613		13873		17	@ LUBRICATOR,
	0813		13873		22	DEPRESSURE.
	0821					DISENGAGE STYLUS-
		- RECOVER CHARTS, RELOAD ELEMENTS WITH 3. HR CLOCKS-				
		- & PERFORM STATIC GRADIENT AS PER PROGRAMME.				
	1100	STATIC GRADIENT COMPLETED, RIG DOWN EQUIPMENT				
		& HAND WELL BACK TO PRODUCTION.				

SANTOS
Water Number
Date
Kinman North
1 Upper
Date 13 5 94
Land
$5,000.00
Improvements
0845
Total
$5,000.00
Crop Setting
Well On Test Yes
Steel Pipe
Steel Tank
Steel Tank
Steel Tank


Humitrer Phantom Chart
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THE FOXBORO COMPANY
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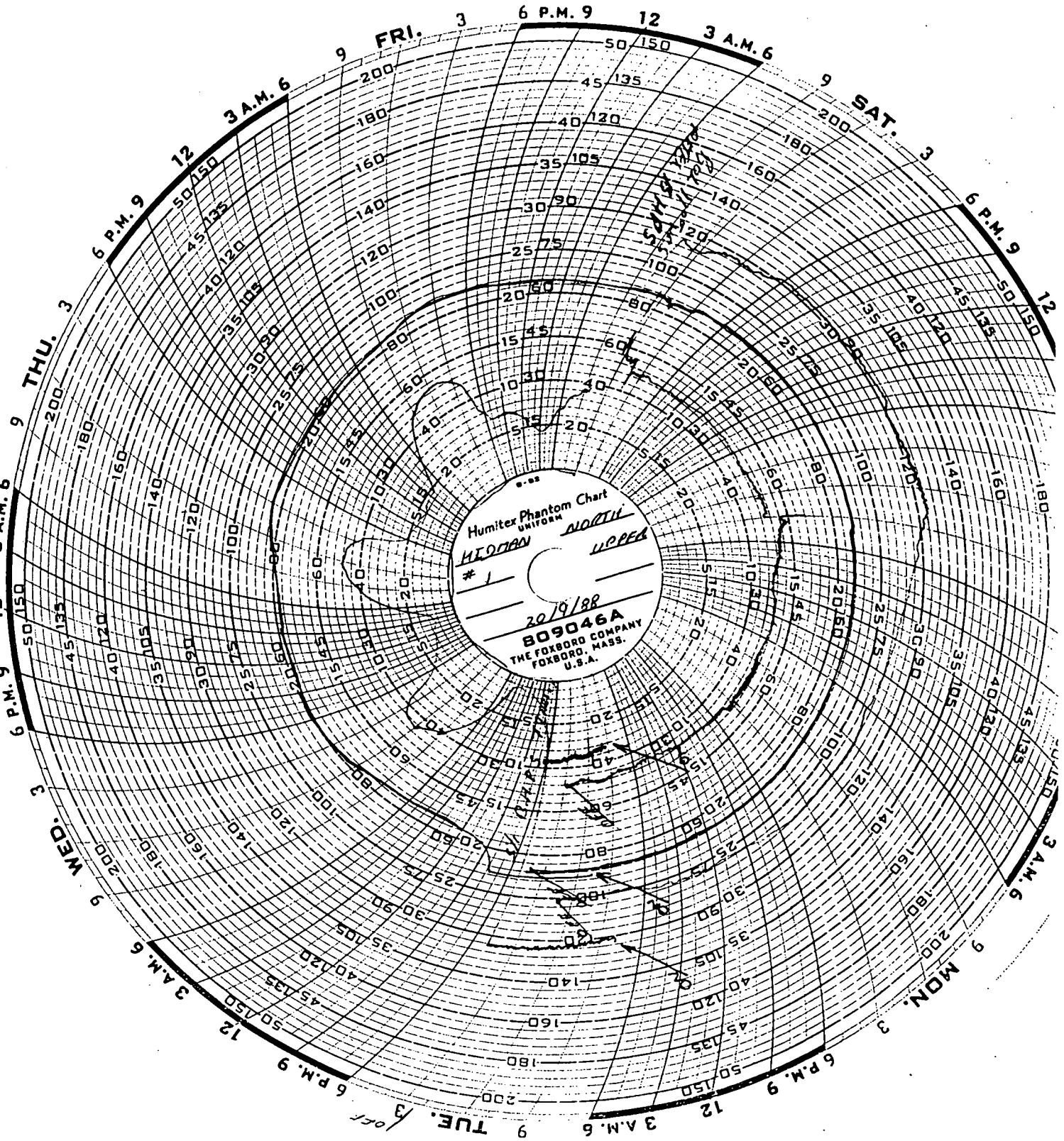
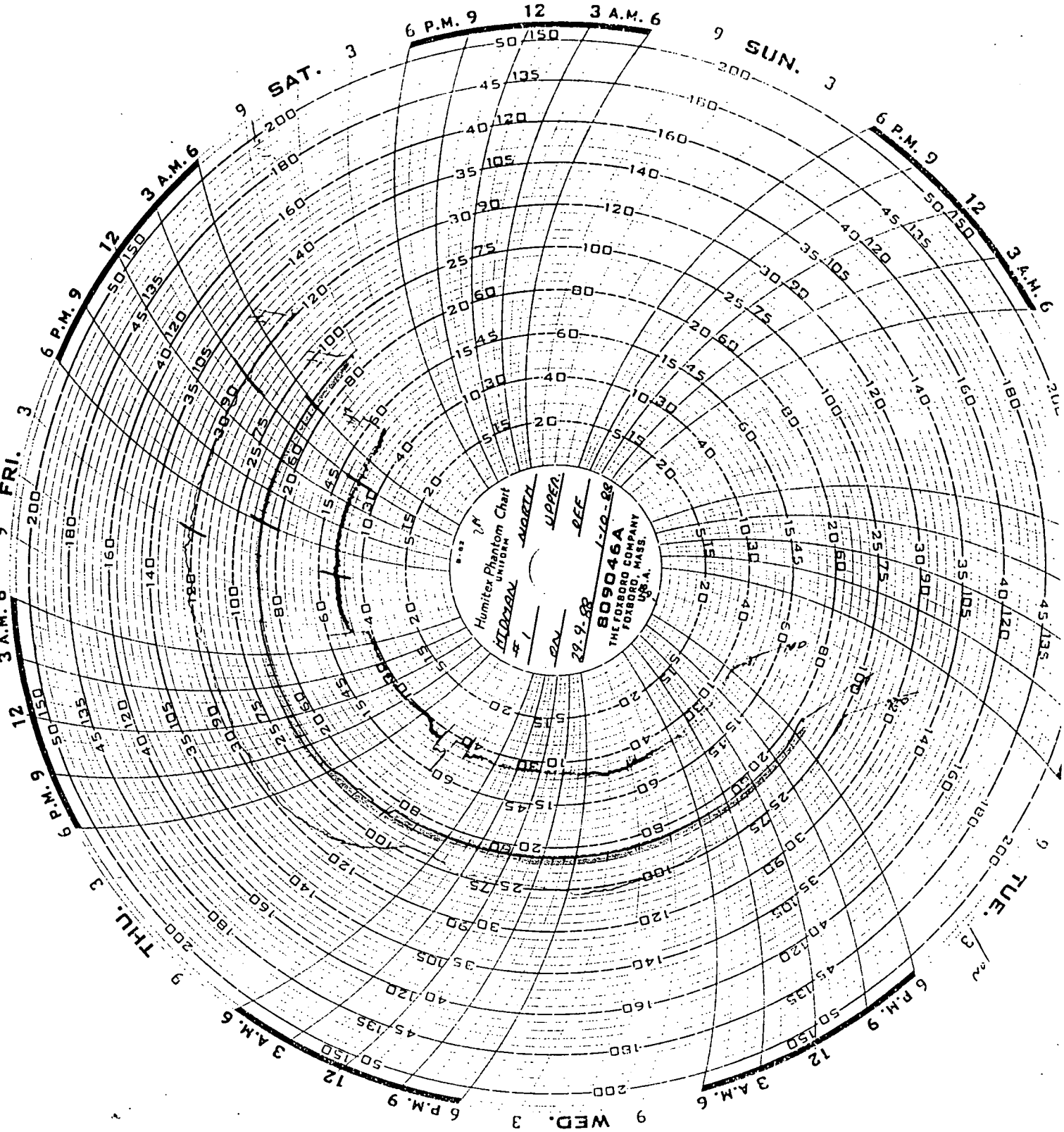


Well was shut in rest of period to 29th inc.


Humitex Phantom Chart
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THE FOXBORO COMPANY
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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

** KIDMAN NORTH #1 UPPER **

STATIC PRESSURE GRADIENT

TEST DATE: 24-9-88

	TOP PRESSURE ELEMENT 29321/4000			BOTTOM PRESSURE ELEMENT 29322/3950		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.9980	2006.7	----	1.0080	2011.2	----
1000	1.0240	2059.2	0.0525	1.0340	2063.3	0.0521
2000	1.0500	2111.7	0.0525	1.0598	2115.0	0.0517
3000	1.0750	2162.2	0.0505	1.0830	2161.5	0.0465
4000	1.1000	2212.7	0.0505	1.1090	2213.6	0.0521
4500	1.1120	2236.9	0.0485	1.1210	2237.7	0.0481
LUB	0.9990	2008.7	----	1.0090	2013.2	----

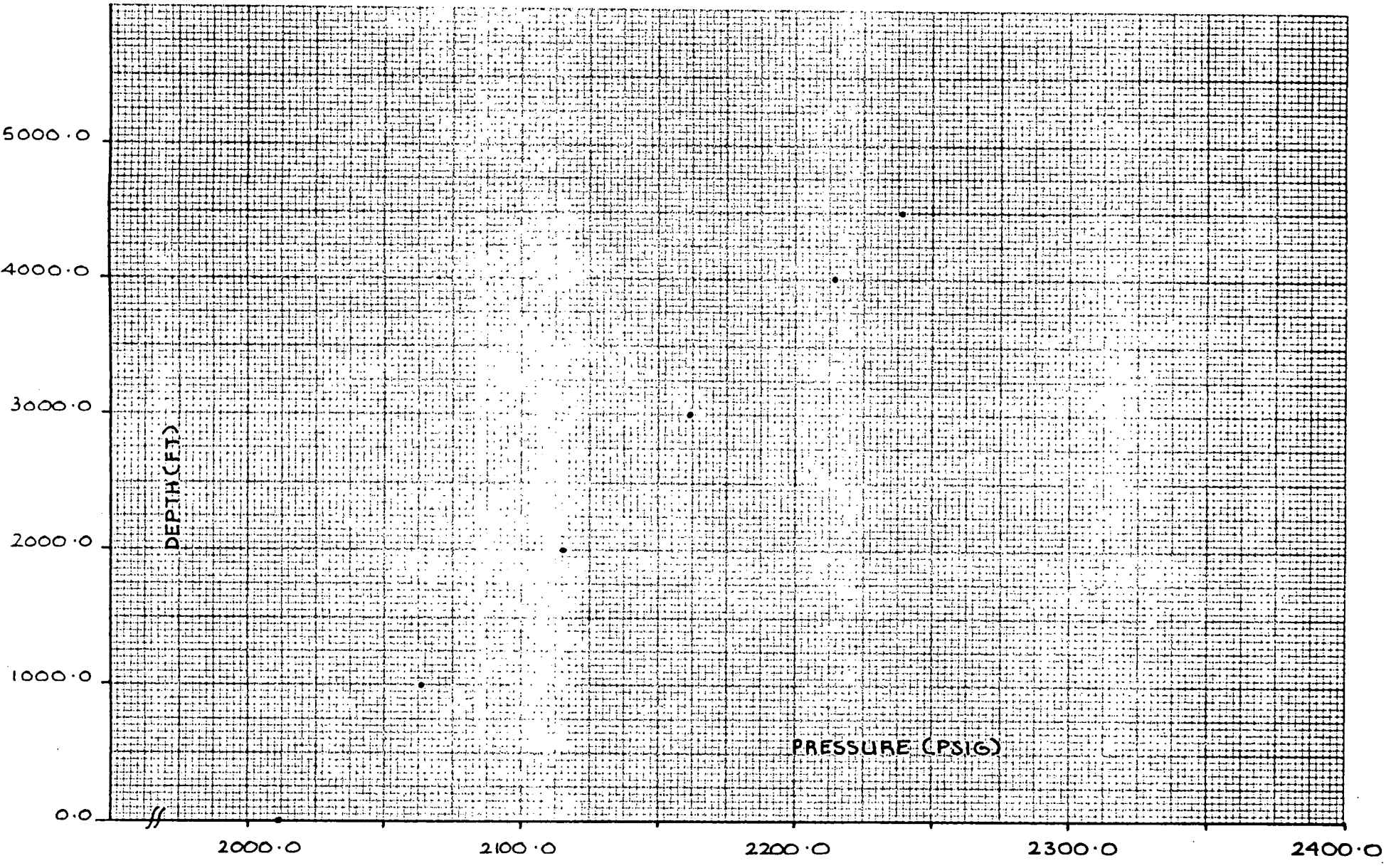
GENERAL REMARKS:

DWT IN: 2012
DWT OUT: 2012
MAX BHT: TEMP ELEMENT RAN 251°F

ELEMENT 29321/4000 CALIBRATED 29.6.88
ELEMENT 29322/3950 CALIBRATED 29.6.88

KIDMAN NORTH # 1 UPPER — STATIC PRESSURE GRADIENT — 24/9/88

ELEMENT # 29322/3950 (BOT)



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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE
TELEPHONE (08) 384 0466 TELEX AA87183
128 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 384 COMANDILLA 5033

WIRELINE REPORT

CLIENT SANTOS LTD. WELL KIDMAN NORTH #1 UPPER.

DATE 19/9/88

PROGRAMME FLOW - BUILD UP SURVEY

PURPOSE OF WORK DUMMY RUN TO CHECK TUBING FOR OBSTRUCTIONS PRIOR TO RUNNING AMERADAS ON SURVEY.

REPORT OF WORK PERFORMED

11:00 SHUT WELL IN TO FIT SWAB VALVE.
11:30 WELL BACK ON LINE - SWAB VALVE NOT FITTED NEEDED EXTRA PUP JOINT.
17:30 S.W.I. TO FIT SWAB VALVE
17:50 WELL BACK ON LINE SWAB VALVE PRESSURE TEST OK.
17:55 R I H WITH 1.750" BLIND BOX. PICKUPS EVERY 500'
18:15 PULLING LARGE AMOUNT OF WEIGHT AT 3000' K.B P.O.O.H.
18:30 ARRIVE LUB. DEPRESSURE SECURE WELL.

20/9/88.

09:28 R.I.H. WITH 1.250" TOOL STRING.

PICKUP DEPTH	WEIGHT INDICATED
2000'	75 LB
3000'	175 LB
3250'	200 LB
3500	250 LB
3750	300 LB
4000	325 LB
4250	425 LB
4500	500 LB.

10:15 P.O.O.H. PREPARE ELEMENTS FOR SURVEY

KK
Operator's Signature

WORKED PERFORMED BY K. KEANE / W. BOND OF EXPERTEST

WELL DATA:

Tubing Size 2 3/8" FWHP 9011 KPA. SIWHP —

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

'X' Nipple @ 6511' 'N'/~~XN~~ Nipple @ 6527 Other — @ —

Min. I.D. 1.791" @ 6527' Packer @ 6491'

Perforated Interval: 6594' - 6796' TOOLACHEE

E1

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

WELL: Kidman North # 1 Lower — Pf = 9000 kPa

ORIFICE SIZE: 34.000 mm 1.339 " — T = 92 °C

LINE SIZE: 73.660 mm 2.900 " — Diff = 15.8 kPa

Cumulative Production to end of September = 26.974 $m^3 \times 10^6$

Number of hours online in September = 627

Production in September = 2.025 $m^3 \times 10^6$

Average flow rate in September = (2.025/627) x 24 = 0.078 $m^3 \times 10^6/d$

Number of days online in September ~~before~~ after Shut In 1430 hrs 25/9/88
= 2.042 days

Production ~~up to~~ after 1430 hrs 25/9/88 = 0.078 x 2.042 = 0.159 $m^3 \times 10^6$

Total cumulative production = 26.974 − 0.159
= 26.815 $m^3 \times 10^6$
= 951.763 mmscf

Flow rate just prior to Shut In = 0.077 $m^3 \times 10^6$
= 2.719 mmscf/d

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO.	SANTOS		RUN 01 FIELD	KNORTH	WELL 01L
EFF DEPTH			WELL STAT		TOOL HUNG 7088' KB
CASING		-	CASING PRESS		ON BOTTOM
LINER		-	TUBING PRESS		OFF BOTTOM
DATE	880925		ELEMENT RANGE	0 - 4010	ZERO POINT
ELEVATION			ZONE		SHUT-IN
MAX TEMP			PICK-UP		ON-PROD
PERF		-	CAL SER NO.	29322	MPP
TUBING		-			
UNITS	ENGLISH		PURPOSE	BUILD-UP	

SURVEY DATA

CO. SANTOS RUN 01 FIELD KNORTH WELL 01L

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
14:30	2144.0	0.0	0.0	15:36	2424.2	280.2	1.1
14:31	2173.6	29.6	.0	16:45	2427.2	283.2	2.2
14:31	2213.1	69.1	.0	20:16	2429.7	285.7	5.8
14:32	2251.6	107.6	.0	1:57	2433.1	289.1	11.4
14:32	2296.7	152.7	.0	6:54	2435.1	291.1	16.4
14:33	2341.6	197.6	.1	12:13	2437.9	294.0	21.7
14:34	2385.7	241.8	.1	18:35	2438.7	294.7	28.1
14:35	2404.0	260.0	.1	2:04	2441.6	297.6	35.6
14:37	2406.8	262.8	.1	8:07	2440.8	296.8	41.6
14:41	2411.4	267.4	.2	16:01	2442.9	298.9	49.5
14:49	2414.7	270.7	.3	22:55	2442.6	298.6	56.4
14:55	2420.6	276.6	.4	5:53	2443.5	299.5	63.4
15:16	2422.4	278.4	.8	12:30	2444.5	300.5	70.0

LUB IN DWT = 1410 PSI / OUT = 2073 PSI
LUB IN AMERADA = 1405 PSI / OUT = 2071 PSI

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO.		RUN 02	FIELD KNORTH		WELL 01L
EFF DEPTH		WELL STAT		TOOL HUNG	7094'
CASING	-	CASING PRESS		ON BOTTOM	
LINER	-	TUBING PRESS		OFF BOTTOM	
DATE	880928	ELEMENT RANGE	0 - 4031	ZERO POINT	
ELEVATION		ZONE		SHUT-IN	
MAX TEMP		PICK-UP		ON-PROD	
PERF	-	CAL SER NO,	29321	MPP	
TUBING	-				
UNITS	ENGLISH	PURPOSE	BUILD-UP		

SURVEY DATA

CO. RUN 02 FIELD KNORTH WELL 01L

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
14:30	2149.8	0.0	0.0	14:46	2425.9	276.1	.3
14:31	2168.6	18.8	.0	14:58	2429.6	279.8	.5
14:31	2223.7	73.9	.0	15:11	2429.5	279.7	.7
14:32	2284.7	134.9	.0	15:34	2432.1	282.3	1.1
14:33	2345.6	195.7	.1	16:42	2433.7	283.8	2.2
14:33	2393.3	243.5	.1	19:24	2435.1	285.3	4.9
14:33	2416.9	267.1	.1	2:19	2440.7	290.9	11.8
14:34	2416.9	267.1	.1	14:09	2441.4	291.6	23.6
14:36	2420.3	270.5	.1	7:17	2443.0	293.2	40.8
14:39	2420.3	270.5	.2	20:30	2443.7	293.9	54.0
14:41	2420.3	270.5	.2	10:56	2443.4	293.6	68.4
14:43	2420.3	270.5	.2	12:30	2444.9	295.1	70.0
14:43	2425.9	276.1	.2	0:00	0.0	0.0	0.0

LUB IN DWT = 1410 PSI / OUT = 2073 PSI
LUB IN AMERADA = 1407 PSI / OUT = 2071 PSI

1509

HIDMAN NORTH
#1 LOWER.

L 96378

0955

20 9 88 34.000 14.31 27 9 88

73.660 mm E.D.
J. POTTE

~~56000~~ mm.

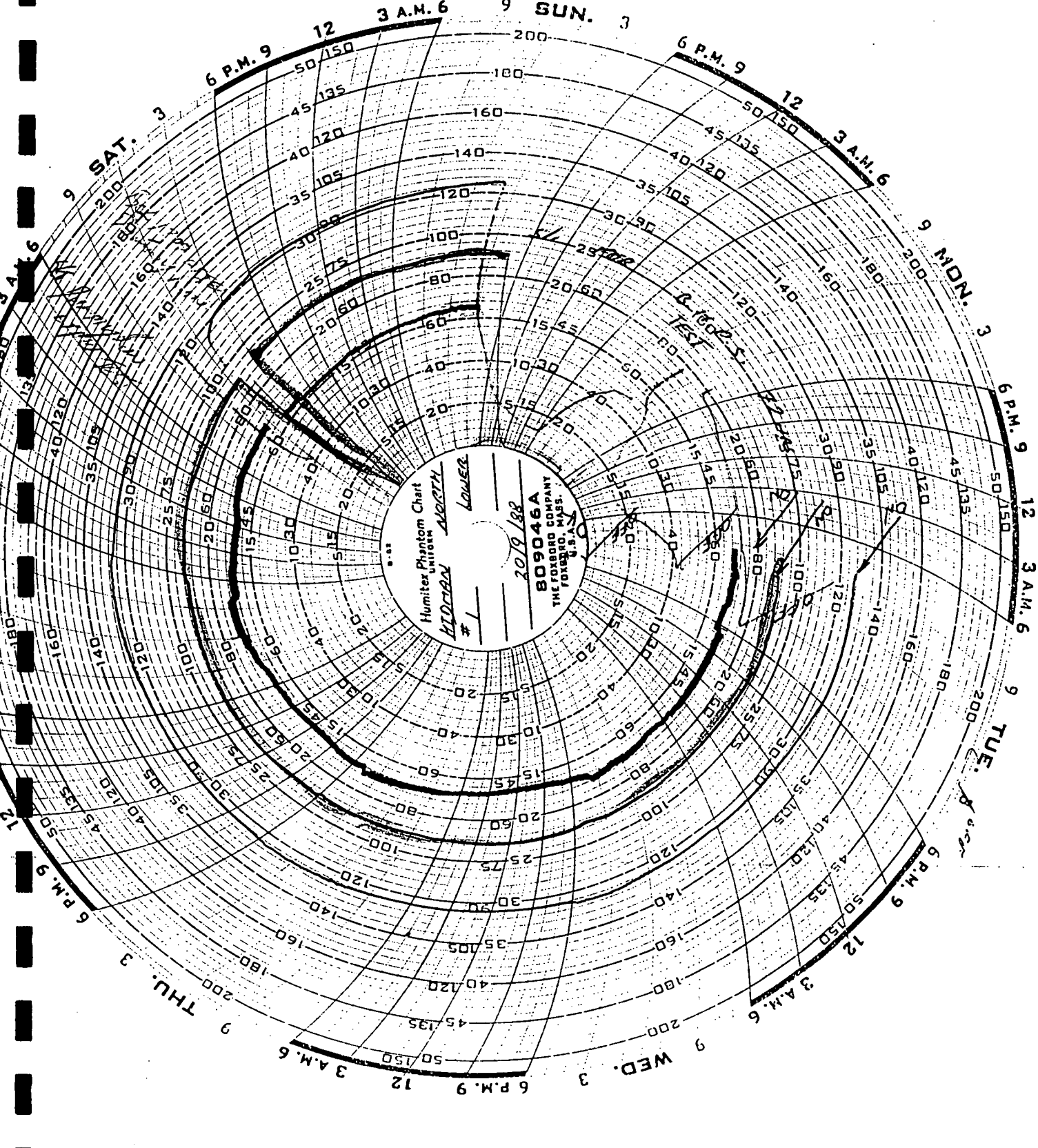
0-20 MPA
0-50 KPA
0-150°C

WELL ON TEST YES

S/I ON B.H.P.S. EXPERTEST.

0%

000311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Humiter Phantom Chart
UNIFORM
LOWER
NORTH
#1
2019 188
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THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.

EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

WIRELINE REPORT

CLIENT SANTOS WELL KIDMAN NTH #1. LOWER

DATE 24-9-88

PROGRAMME BLIND BOX RUN.

PURPOSE OF WORK TO ENSURE TUBING IS FREE OF ANY OBSTRUCTION.

REPORT OF WORK PERFORMED

24TH SEPTEMBER 1988

1100 : S.W.I, RIG UP SWAB VALVE & WIRELINE EQUIPMENT.
1125 : R.I.H WITH 1.75" BLIND BOX.
1140 : @ P.B.T.D 7258' K.B (TUBING CLEAR) P.O.O.H.
1155 : @ LUBRICATOR & HAND WELL BACK TO PRODUCTION.

25TH SEPTEMBER 1988

1005 : R.I.H WITH 2 PRESSURE ELEMENTS & 1 TEMPERATURE ELEMENT FOR B.H.P. SURVEY.
1030 : @ HANG DEPTH 7100' K.B. (WELL FLOWING 100%).
1430 : S.W.I FOR 72HR BUILD UP, (AS PER PROGRAMME).

28TH SEPTEMBER 1988

1230 : BUILD UP COMPLETED. P.O.O.H
1247 : @ LUBRICATOR
1447 : DEPRESSURE LUBRICATOR, RECOVER CHARTS, (GOOD) & RELOAD ELEMENTS WITH 3HR CLOCKS FOR STATIC GRADIE-NT - (AS PER PROGRAMME).
1526 : R.I.H WITH 2 PRESSURE ELEMENTS & 1 TEMPERATURE - ELEMENT FOR STATIC GRADIENT SURVEY.
1730 : GRADIENT COMPLETED (CHARTS GOOD), RIG DOWN EQUIPMENT & HAND WELL BACK TO PRODUCTION.

A. Smith.

Operator's Signature

WORKED PERFORMED BY A. SMITH OF EXPERTEST.

WELL DATA:

Tubing Size 2 7/8" FWHP — SIWHP 14238 KPA

Subsurface S.V./Landing Nipple @ 7037' K.B. S.S.D. @ 6973' K.B

'X' Nipple @ 7025' K.B. 'N'/'XN' Nipple @ Other @

Min. I.D. 1.791" @ 7037' K.B. Packer @ 7008' K.B.

Perforated Interval: PATCHAWARRA F.M 7128' K.B – 7269' K.B

E1

000314

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NTH # 1. LOWER. Date: 25-9-88

Lubricator Data: ① 1405 2071
② 1407 2071

Pressure with D.W.T. IN 9722 KPA (1410) OUT 14293 KPA (2073)

Time Pressured 0805 25-9-88 Time Depressured 1447 28-9-88

Time Run in Hole 1005 —11— Time off Bottom 1230 —11—

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	29322 × 3950 PSI.	29321 × 4000 PSI.
Recorder No.	14632 × 15TLS.	70547 × 15 TLS.
Clock and Lead Screw Data	28648 × 96 HR.	28647 × 96HR.
Engage Stylus	Date: 25.9.88 Time: 0757	Date: 25.9.88 Time: 0757
Disengage	Date: 28.9.88 Time: 1453	Date: 28.9.88 Time: 1453

Remarks: ALSO RAN TEMPERATURE ELEMENT 63256 × 150°F - 400°F
RECORDER 61275 × 15TLS.
Max SIBH Temp: 270°F CLOCK 1016 × 120 HR.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
25TH	SEPTEMBER 1988					
	0757					ENGAGE STYLUS.
	0805					PRESSURE LUBRICATOR.
	1005		9722	0	77	R.I.H WITH ELEMENTS.
	1030		9756		81	@ HANG DEPTH 7100'KB
	1100		9756		75	WELL FLOWING 100%.
	1130		9722		86	
	1200		9722		86	
	1230		9722		86	
	1300		9736		91	
	1330		9736		93	
	1400		9736		90	
	1430		9736		92	S.W.I. FOR 72HR BUILDUP
	1435		14197		86	
	1440		14231		80	
	1445		14231		72	
	1500	.5	14273		55	
	1515				45	
	1530	1			40	
	1545				36	
	1600				34	
	1615				33	
	1630	2	14273	0	31	

000315

ISO - CHRONAL AND BUILD-UP SURVEY

Well: KIDMAN NTH #1. LOWER Date: 25-9-88

Lubricator Data:

Pressure with D.W.T.

Time Pressured. Time Depressured.

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: REFER TO BOMB DATA SHEET #1. FOR ELEMENT, RECORDER-CLOCK & STYLUS INFORMATON.

Max SIBH Temp: 270°F

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
25TH	SEPTEMBER 1988					
	1645		14273	0	30	
	1700				29	
	1715				28	
	1730	3			26	
	1745				24	
	1800				22	
	1815				21	
	1830	4	14273		20	
	2230		14293		15	
26TH	SEPTEMBER					
	0230	12			14	
	0630				13	
	1030				23	
	1430	24			32	
	1830				25	
	2230				17	
27TH	SEPTEMBER 1988					
	0230	36			15	
	0630				19	
	1030				24	
	1430	48			30	
	1830				25	

000316

ISO · CHRONAL AND BUILD-UP SURVEY

Well: KIOMAN NTH #1 LOWER Date: 28-9-88

Lubricator Data:

Pressure with D.W.T.

Time Pressured Time Depressured

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: REFER TO BOMB DATA SHEET #1. FOR ELEMENT, RECORDER - CLOCK & STYLUS INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
28TH	SEPTEMBER 1988					
	0230	60	14293	0	14	
	0630		14293	0	12	
	1030		14293	0	30	
	1230	70	14293	0	34	BUILDUP COMPLETED P.O.O.H
	1247		14293	0	35	@ LUBRICATOR
	1447		14293	0	37	DEPRESSURE LUBRICATOR
	1453					DISENGAGE STYLUS. -
		- RECOVER CHARTS (GOOD), RELOAD WITH 3HR CLOCK & PERFORM				
		STATIC GRADIENT AS PER PROGRAMME.				

EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

** KIDMAN NORTH #1 LOWER **

STATIC PRESSURE GRADIENT

TEST DATE: 28-9-88

	TOP PRESSURE ELEMENT 29322/3950			BOTTOM PRESSURE ELEMENT 29321/4000		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	1.0340	2063.3	----	1.0260	2063.2	----
1000	1.0630	2121.4	0.0581	1.0540	2119.8	0.0565
2000	1.0910	2177.6	0.0561	1.0820	2176.3	0.0565
3000	1.1170	2229.7	0.0521	1.1090	2230.8	0.0545
4000	1.1430	2281.8	0.0522	1.1350	2283.4	0.0525
5000	1.1680	2332.0	0.0502	1.1610	2335.9	0.0525
5500	1.1810	2358.1	0.0522	1.1740	2362.2	0.0525
6000	1.1950	2386.2	0.0562	1.1870	2388.4	0.0525
6500	1.2090	2414.3	0.0562	1.2010	2416.7	0.0566
7000	1.2230	2442.4	0.0562	1.2130	2441.0	0.0485
7199	1.2290	2454.5	0.0605	1.2190	2453.1	0.0609
LUB	1.0390	2073.3	----	1.0300	2071.3	----

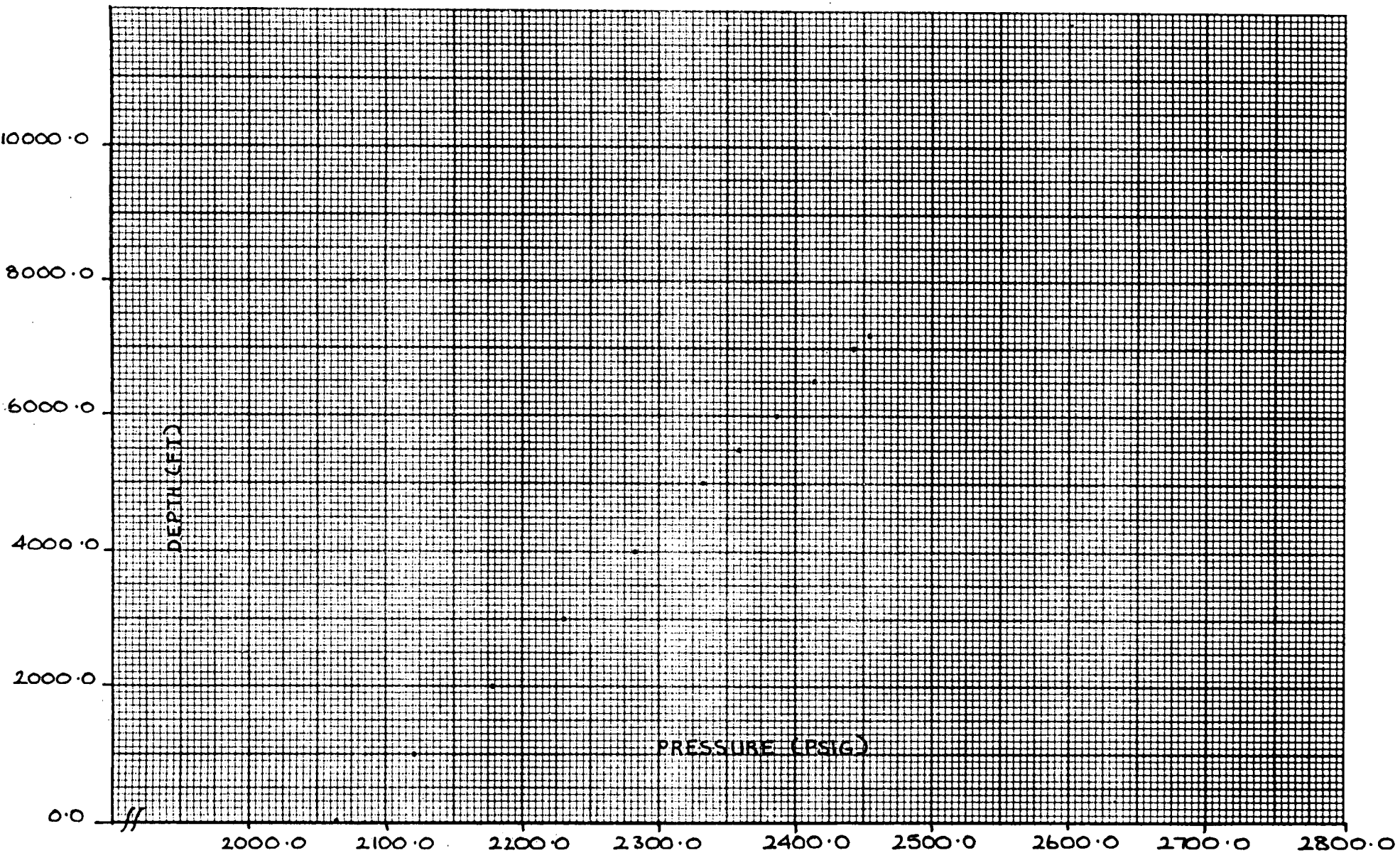
GENERAL REMARKS:

DWT IN: 2073
DWT OUT: 2073
MAX BHT: RAN TEMP ELEMENT 275°F

ELEMENT 29322/3950 CALIBRATED 29.6.88
ELEMENT 29321/4000 CALIBRATED 29.6.88

KIDMAN NORTH # 1 LOWER — STATIC PRESSURE GRADIENT — 28/9/88

ELEMENT # 29322/3950 (TOP)



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Fm 5020

EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

STATIC GRADIENT SURVEY

CLIENT SANTOS

WELL KIOMAN NTH #1 LOWER

OPERATOR A.SMITH

DATE 28·9·88

BOMB No. 1 DATA		BOMB No 2 DATA		DWT IN
ELEMENT No. 29322	ELEMENT RANGE 3950 PSI	ELEMENT No. 29321	ELEMENT RANGE 4000 PSI	14293 KPA
RECORDER No 14632	CLOCK DATA 3HR 2509	RECORDER No 70547	CLOCK DATA 3HR 2279	DWT OUT
ENGAGE STYLUS 1505	DISENGAGE 1722	ENGAGE STYLUS 1505	DISENGAGE 1722	14293 KPA
PRESSURE LUBRICATOR 1511		BLEED LUBRICATOR 1714		

DATE	TIME	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
28TH SEPTEMBER 1988				KPA				KPA		
	1511	LUB	1·034			LUB	1·026			PRESSURE LUBRICATOR.
	1526	R.I.H				R.I.H				RUN IN HOLE
	1529	1000	1·063			1000	1·054			
	1537	2000	1·091			2000	1·082			
	1544	3000	1·117			3000	1·109			
	1551	4000	1·143			4000	1·135			
	1556	5000	1·168			5000	1·161			
	1605	5500	1·181			5500	1·174			
	1611	6000	1·195			6000	1·187			
	1617	6500	1·209			6500	1·201			
	1623	7000	1·223			7000	1·213			
	1629	7199	1·229	16923·7		7199	1·219	16914·1		M.P.P
	1644	P.O.O.H				P.O.O.H				PULL OUT OF HOLE
	1659	LUB	1·039			LUB	1·030			@ LUBRICATOR
	1714	BLEED				BLEED				DEPRESSURE LUBRICATOR

GENERAL REMARKS: ALSO RAN TEMPERATURE ELEMENT 63256 x 150°-400°F
RECORDER 61278 x 15TLS
CLOCK 2180 x 3HR

E4

000319

WP:6294N

000320

SANTOS LIMITED
PETROLEUM DEVELOPMENT DEPARTMENT
KIDMAN NORTH #1U
MODIFIED ISOCHRONAL
3 - 14/8/87

Report No:RE:046/89
Author: A.G. Burdon
Date: July, 1989

RECEIVED
21 AUG 1989
DEPT. OF MINES AND ENERGY
SECURITY
7030/2

C O N T E N T S

		PAGE NO.
1.	INTRODUCTION	1
2.	RESULTS	2
3.	CONCLUSIONS/RECOMMENDATIONS	3
4.	DISCUSSION	4

APPENDICES

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

1. INTRODUCTION

Kidman North #1 was drilled in November 1986 to a total depth of 7590' KB. The well intercepted pay in the Toolachee and Patchawarra formations which proved to be productive in open hole tests. In July 1987, the well was completed as a dual gas producer from the Toolachee and Patchawarra formations.

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

FORMATION	SAND	NET PAY (ft)	PERFORATIONS (ft KB)
Toolachee	64-5	21	6594 - 6604
	66-7	21	6736 - 6746
	67-3	30	6774 - 6796
		72	
Patchawarra	72-3	-	7128 - 7130
			7148 - 7150
	72-5	32	7168 - 7175
			7178 - 7220
	73-1	20	7232 - 7240
			7242 - 7269
		52	

The well was flowed to clean-up over the Toolachee Formation between 3 - 8 August, 1987. Modified Isochronal test was conducted between 11 - 16 August, 1987, to determine the well deliverability and reservoir parameters. The results from the test are presented in this report.

Separator fluid samples were collected during the extended flow of the isochronal testing and these were used to determine a recombined full well stream composition and fluid properties.

2. RESULTS

The following results were obtained from modified isochronal analysis techniques.

Simplified Analysis:

AOF	5.97	MMscfd
c	3.E-5	MMscf/d/psi
n	0.78	

LIT Analysis:

AOF	6.01	MMscfd
a	46.75 E6	$psia^2/cp/MMscfd$
b	5.96	$psia^2/cp/MMscfd^2$
D	2.489	day/MMscf

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

Flow capacity	430 md-ft
Permeability	5.97 md
Apparent Skin	16.2
True Skin	7.0
Extrapolated Pressure	2766.3 psia @ 6544' KB
Flow rate	3.676 MMscfd @ FTHP 1390 psig
Condensate Production	7.92 BBLS/MMscf
Water Production	3.12 BBLS/MMscf

Reservoir Pressure at MPP of 6695' KB

P.B.U.	2775 psia
Static	2752 psia

3. CONCLUSIONS/RECOMMENDATIONS

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1. The modified isochronal test was technically successful.

2. Partially effective completion is indicated by comparison with DST results.

3. Reservoir pressure is indicated to be 2752 psia at MPP datum of 6695' KB as determined by the static pressure gradient survey.

4. Gas and condensate samples were found to lack internal consistency and re-sampling is recommended. However, after manipulation, the recombined full well stream composition given is adequate for fluid property and reserves purposes.

4. DISCUSSION

The modified isochronal analyses were performed without difficulty although data from flow period 1 was discarded from the analyses. The results show the well to have a relatively low potential even though the skin value is not excessive (as has been seen in other wells with limited production history). However, further clean-up may occur with increased production.

The pressure build-up data is quite unusual as an increase in slope of approximately 11 fold is observed. The reason for the increase in slope is a result of multiple boundaries and/or changes in fluid mobility away from the wellbore as would be seen with a gas/water contact, or decrease in reservoir permeability. Since the precise reason for the pressure build-up behaviour can not be established, the only valid parameter that can be derived is the distance to the nearest boundary. This value is calculated at the time the data first deviates from the semi-log straight line. However, the permeability of the system must be known and there is some doubt as to how much of the perforated interval is communicating to the wellbore. Therefore, a range of distance to boundary can be calculated and is found to lie between 122 - 317 feet. The closest assumes the average permeability from the PBU is correct. The furthest assumes the results of DST #1 are representative.

The following table compares the results of the isochronal test with the open hole DST #1 which only covered the upper most (64-5) sand of the 3 individual sands completed in the well. The difference in flow capacity would indicate the completion is only partially effective.

	MOD. ISO.	DST #4
Interval (ft KB)	6594 - 6796	6590 - 6619
kh (md-ft)	430	926
k (md)	5.9	40
s'	16.2	25.2
p* (psia)	2766	2739
Depth (ft KB)	6544	
q (MMscf/d)	3.67	6.5

High pressure gas and liquid samples collected from the separator during the extended flow period were recombined to produce the full well stream composition given in Appendix IV. During quality checking of the laboratory analyses, several corrections were required to both the condensate and gas compositions before a satisfactory recombination could be achieved. The final recombined sample as tabled has been checked by simulating a flash to separator conditions where-upon gas/liquid molar ratios correspond with field observations. However, due to the unusual amount of manipulation of the individual gas and liquid compositions given by the laboratory, the level of confidence in the results must be diminished.

A static pressure gradient was run at the completion of the test which indicates a gas gradient exists to 6550' KB (See Appendix V). Reservoir pressure is determined by extrapolating the gas gradient between 5000' and 6550' KB (0.06 psi/ft) to the mid point perforation datum of 6695' KB.

APPENDIX I

Modified Isochronal Analysis

RUN TYPE : Analysis

PHASE : GAS

NO. OF WELLS : 1

PVT DATA : Reservoir temperature = 263.5 deg F
Standard temperature = 60.0 deg F
Standard pressure = 14.7 psia

Table : Pressure Z-factor Viscosity

psia		cpoise
100.0	0.993	0.01370
500.0	0.967	0.01410
1000.0	0.939	0.01510
1500.0	0.92	0.01590
2000.0	0.91	0.01690
2200.0	0.908	0.01740
2400.0	0.909	0.01790
2600.0	0.91	0.01850
2800.0	0.913	0.01900
3000.0	0.917	0.01960
3200.0	0.922	0.02020
3400.0	0.929	0.02080

WELL DATA : Well radius = 0.354 feet
Formation thickness = 72.0 feet
Porosity = 0.135
Rock compressibility = 4.500E-06 1/psi
Water saturation = 0.389
Water compressibility = 3.600E-06 1/psi

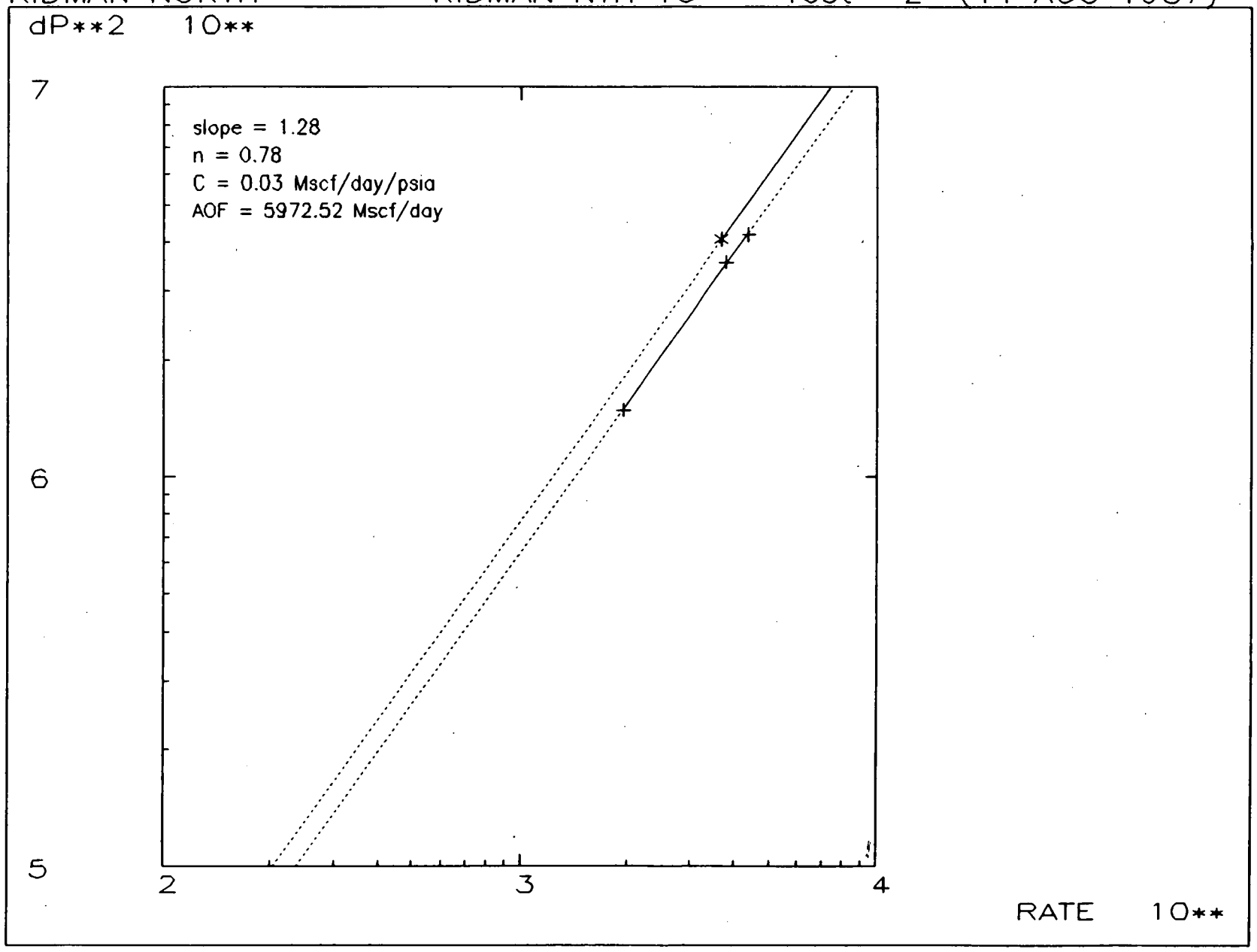
RATE DATA

Time Hours	Rate Mscf/day
0.0	614.0
2.0	0.0
4.0	1939.0
6.0	0.0
8.0	3798.0
10.0	0.0
12.0	4376.0
14.0	3676.0
41.0	0.0

PRESSURE DATA

Time	Pressure
Hours	psia
0.0	2737.9
2.0	2689.6
4.0	2755.1
6.0	2471.0
8.0	2747.4
10.0	1998.9
12.0	2722.1
14.0	1796.3
41.0	1874.4
41.08	2234.55
41.17	2529.15
41.42	2540.15
41.67	2548.05
41.92	2554.15
42.17	2557.75
42.42	2559.75
42.67	2562.35
42.92	2564.75
43.92	2574.55
44.92	2580.45
45.92	2588.15
46.92	2593.15
50.92	2615.45
56.92	2643.95
62.92	2661.35
66.83	2671.75
69.42	2676.15
71.92	2682.65
74.92	2686.25
80.92	2698.25
86.92	2705.45
92.92	2710.65
98.92	2717.25
104.92	2721.45
106.15	2722.55

KIDMAN NORTH KIDMAN NTH 1U Test 2 (11 AUG 1987)



000332

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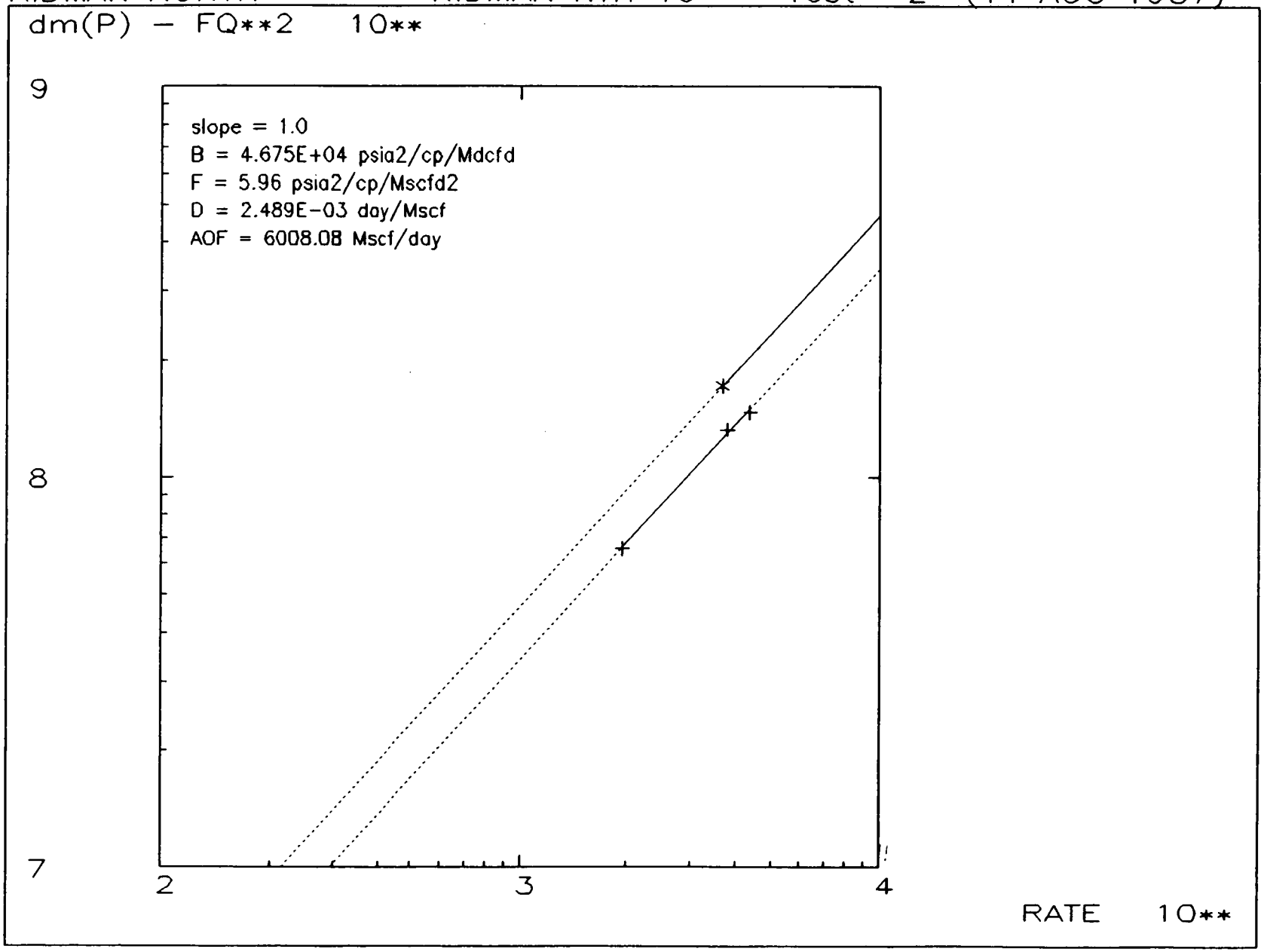

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APPENDIX II

Pressure Build-up Analysis

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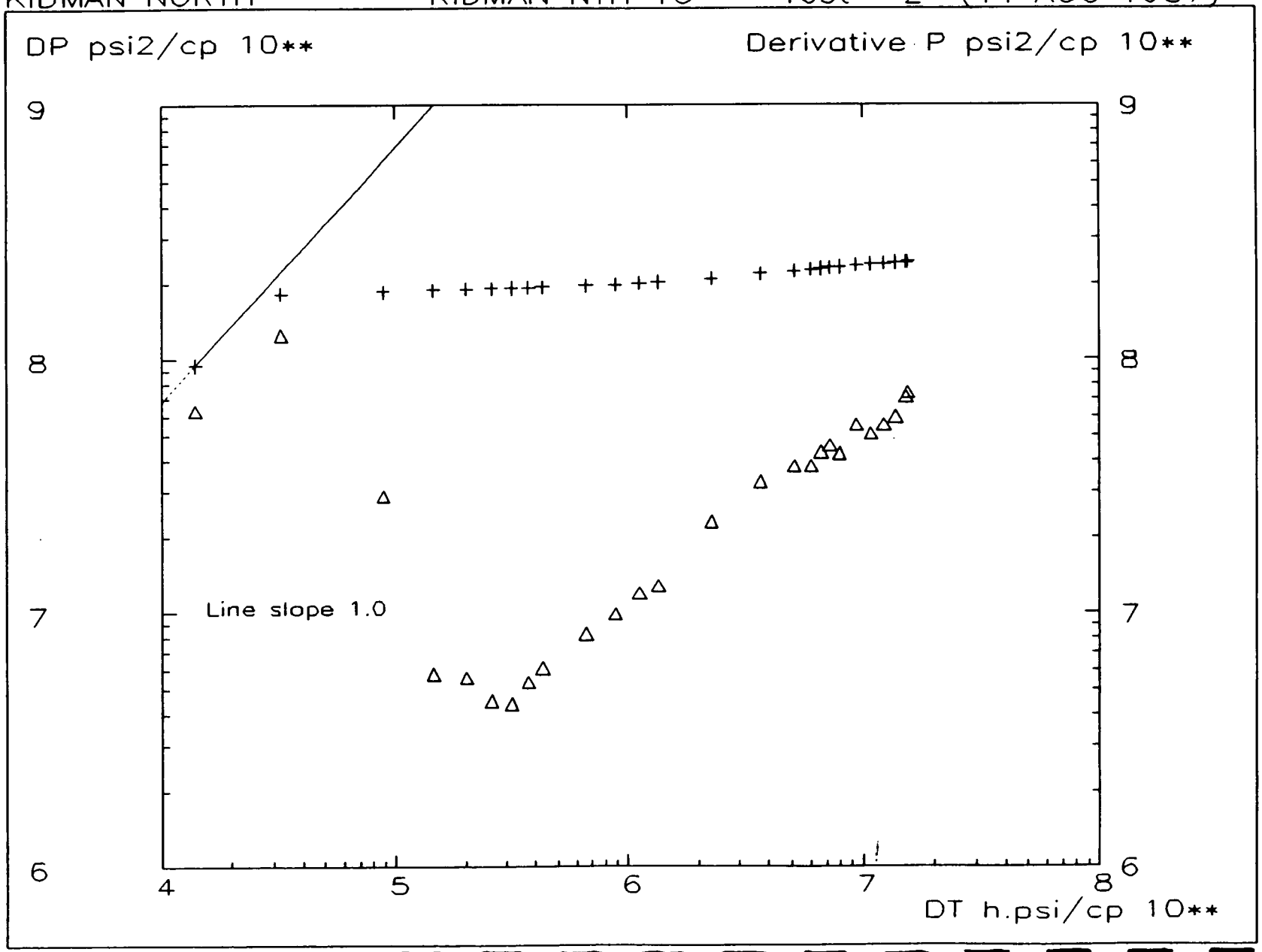

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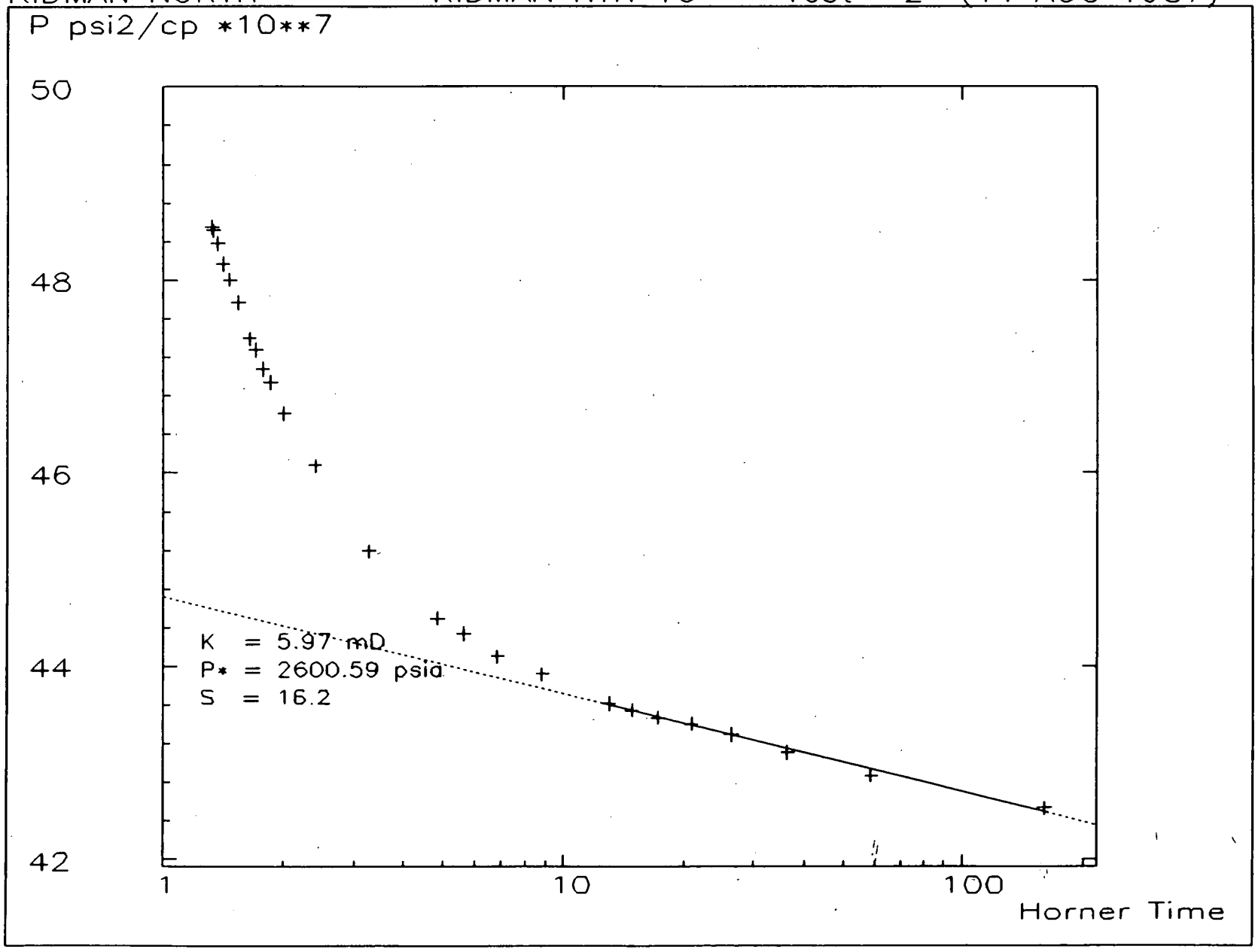

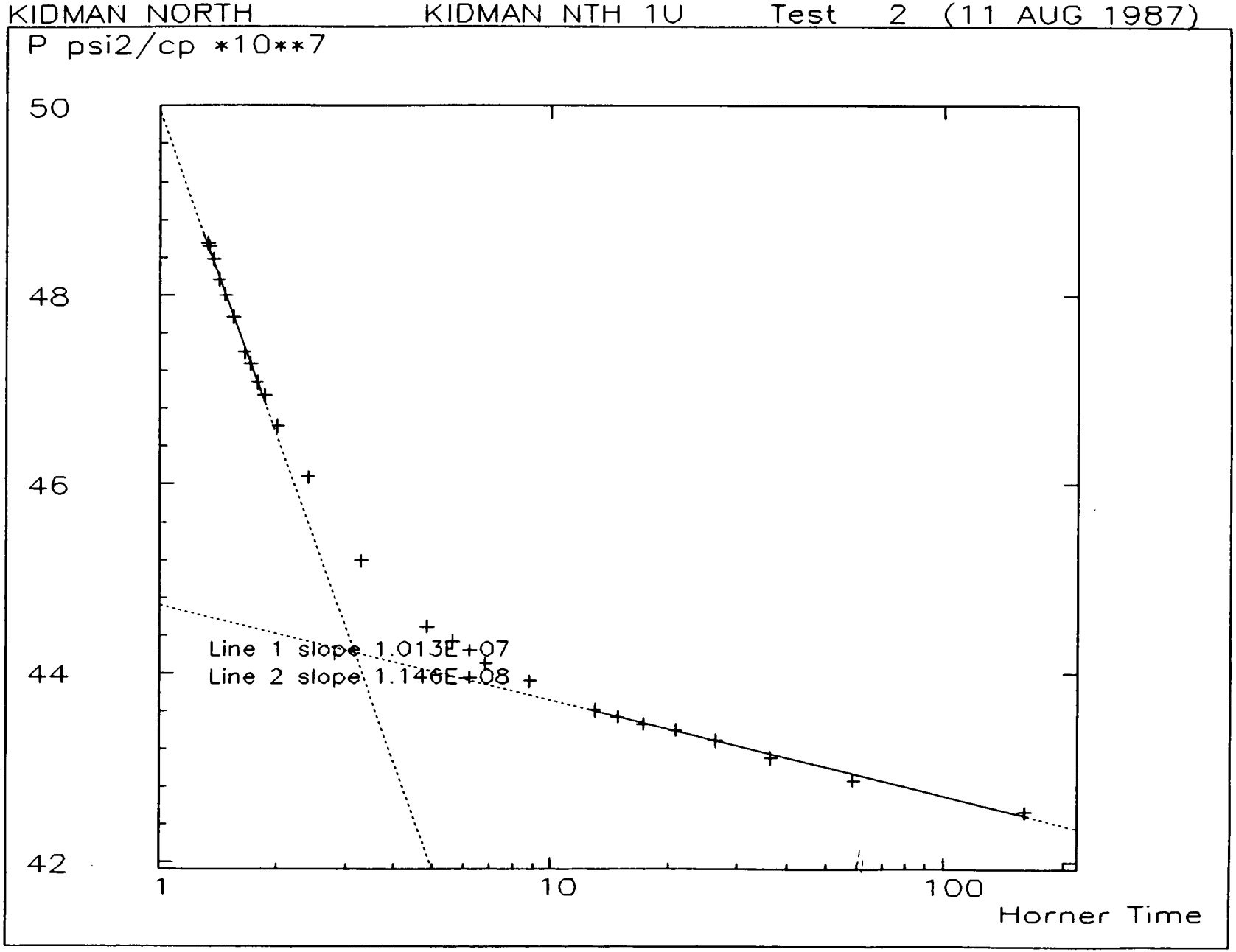
KIDMAN NORTH
KIDMAN NTH 1U
Test 2 (11 AUG 1987)
P psi2/cp *10**7
50
48
46
44
42
1
10
100
Horner Time
Line 1 slope 1.013E+07
Line 2 slope 1.146E+08

000327

APPENDIX III

Welltest Data

SANTOS LTD.
WELL TEST SUMMARY

Lat.: 28° 12' 30.0" S

WELL: Kidman North #1 Upper LOCATION: Long: 140° 48' 36.1" E DATE: 3rd-14th August 1987 FORMATION: Toolachee
TESTED BY: Oilserv PERFORATIONS: 6594 – 6796 ft PRODUCING THROUGH: Tubing
CASING SIZE: 7 ins WEIGHT: 23 & 26 lb/ft GRADE: J55 & N80
TUBING SIZE: 2-3/8 ins WEIGHT: 4.7 lb/ft GRADE: L80 & 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	
8/8/87	1730	0	1552	490	133	Shut well in
11/8/87	2100	75.50	2290	0		Opened well on rate #1

Flow Period

Run No.: 1 Duration of Run: 2 Hours. Orifice Size: * 0.625 ins / 0.750 ins
Flow Well On: 8/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
11/8/87	2100	0	2290	0						
	2115	0.25	2262	0	77	330	90 *	6		
	2130	0.5	2263	0	90	360	150 *	32		
	2145	0.75	2253	0	99	320	106	32		
	2200	1	2252	0	99	300	108	30	6.038	NIL
	2215	1.25	2250	0	100	295	108	25		
	2230	1.5	2248	0	100	295	106	21		
	2245	1.75	2243	0	100	290	107	21		
	2300	2	2240	0	102	290	108	19	3.774	NIL

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SANTOS LTD.

WELL TEST SUMMARY

2nd SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
11/8/87	2300	0	2240	0	102	Shut well in
	2305	0.08	2297	0		
	2310	0.17	2302	0		
	2315	0.25	2302	0		
	2330	0.5	2306	0		
	2345	0.75	2305	0		
	2400	1	2305	0		
12/8/87	0015	1.25	2304	0		
	0030	1.5	2304	0		
	0045	1.75	2303	0		
	0100	2	2303	0		Opened well on mte#2

Flow Period

Run No.: 2 Duration of Run: 2 Hours. Orifice Size: 1.500 ins

Flow Well On: 14/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
12/8/87	0100	0	2303	0						
	0115	0.25	2032	0	106	280	73	19		
	0130	0.5	2028	0	108	350	57	30		
	0145	0.75	2024	0	109	390	48	32		
	0200	1	2023	0	111	300	67	32	40.003	NIL
	0215	1.25	2021	0	113	295	68	32		
	0230	1.5	2019	0	113	290	70	28		
	0245	1.75	2018	0	113	305	66	32		
	0300	2	2016	0	113	300	65	32	30.191	NIL

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3RD SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
12/8/87	0300	0	2016	0	113	Shut well in
	0305	0·08	2267	0		
	0310	0·17	2293	0		
	0315	0·25	2294	0		
	0330	0·5	2298	0		
	0345	0·75	2300	0		
	0400	1	2301	0		
	0415	1·25	2301	0		
	0430	1·5	2301	0		
	0445	1·75	2301	0		
	0500	2	2301	0		Opened well on rate # 3

Flow Period

Run No.: 3 Duration of Run: 2 Hours. Orifice Size: 2.000 ins
Flow Well On: 22/64"Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings Tubing psig	Casing psig	Temp. °F	Meter or Prover Data Pf psig	Hw inches	Temp. °F	Condensate Production Bbls/d	Water Production Bbls/D
12/8/87	0500	0	2301	0						
	0516	0·25	1521	0	113	295	85	45		
	0530	0·5	1507	0	117	300	83	50		
	0545	0·75	1496	0	118	300	83	54		
	0600	1	1487	1	119	300	82	55	54.344	NIL
	0615	1·25	1483	2	120	300	80	59		
	0630	1·5	1480	5	120	330	74	63		
	0645	1·75	1475	13	122	360	68	64		
	0700	2	1473	24	122	300	81	64	33.965	23.398

WP 2548G

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SANTOS LTD.
WELL TEST SUMMARY

4TH SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
12/8/87	0700	0	1473	24	122	Shut well in
	0705	0·08	2180	29		
	0710	0·17	2264	20		
	0715	0·25	2270	12		
	0730	0·5	2274	3		
	0745	0·75	2279	0		
	0800	1	2280	0		
	0815	1·25	2280	0		
	0845	1·75	2281	0		
	0900	2	2281	0		Opened well on rate # 4

Flow Period

Run No.: 4 Duration of Run: 2 Hours.
Flow Well On: 34/64" Choke.

Orifice Size: 2·000 ins
Meter Run: 4·026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
12/8/87	0900	0	2281	0						
	0915	0·25	1198	0	113	290	120	63		
	0930	0·5	1193	0	115	295	118	66		
	0945	0·75	1193	4	115	307	112	75		
	1000	1	1190	11	115	307	112	75	49·060	10·567
	1015	1·25	1187	30	117	313	109	77		
	1030	1·5	1186	48	117	313	109	79		
	1045	1·75	1188	78	119	325	106	81		
	1100	2	1188	102	119	320	105	82	43·022	14·341

WP 2548G

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SANTOS LTD.
WELL TEST SUMMARY
FINAL STABILIZATION FLOW PERIOD

✓

Flow Period

Run No.: 5 Duration of Run: 27 Hours. Orifice Size: 1·750 ins
Flow Well On: 24/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			psig	psig	°F	psig	inches	°F	Bbls/d	Bbls/d
12/8/87	1100	0	1188	102	119					
	1101		cut choke to 28/64"							
	1106		Cut choke to 24/64"							
	1115	0·25	1430	138	122	310	145	73		
	1130	0·5	1432	157	123	307	144	73		
	1145	0·75	1431	176	123	307	144	74		
	1200	1	1431	196	123	307	144	74	29·436	19·624
	1230	1·5	1430	247	125	320	138	76		
	1300	2	1427	268	125	325	136	77	33·210	15·095
	1330	2·5	1428	305	124	320	136	77		
	1400	3	1422	334	123	330	135	77	35·474	6·793
	1500	4	1419	392	126	335	132	80	40·003	9·812
	1600	5	1415	435	123	335	130	81	30·946	17·360
	1700	6	1422	471	125	325	135	81	32·455	11·322
	1800	7	1419	508	122	320	136	81	34·720	13.586
	1900	8	1416	522	122	305	139	81	43·022	16·605
	2000	9	1412	537	122	310	137	81	86·229	11·323
	2100	10	1410	544	124	310	137	81	31·701	10·567
	2200	11	1406	580	127	300	140	81	29·436	9·812
	2300	12	1404	609	129	300	140	82	33·965	13·586
	2400	13	1400	624	129	300	140	82	33·965	11·322
13/8/87	0100	14	1399	631	128	300	140	82	29·436	15·096
	0200	15	1397	638	127	300	140	82	36·984	12·831
	0300	16	1398	645	128	300	141	84	34·720	10·567
	0400	17	1396	653	128	300	141	84	31·701	12·076
	0500	18	1393	667	130	300	141	84	31·701	12·831
	0600	19	1389	682	130	300	142	86	31·701	11·322
	0700	20	1390	689	129	300	142	86	35·474	6·793
	0800	21	1390	696	129	300	142	86	33·965	9·812
	0900	22	1387	703	129	315	138	88	33·965	12·076
	1000	23	1387	711	131	325	133	90	35·475	9·812
	1100	24	1385	718	132	335	129	90	34·720	11·322
	1200	25	1388	722	132	335	129	91	31·701	13·586

000345

[redacted] SAN[redacted] LTD [redacted] ge [redacted]

WELL TEST SUMMARY

FINAL STABILIZATION FLOW PERIOD

Flow Period

Run No.: 5 Duration of Run: 27 Hours. Orifice Size: 1.750 ins

Flow Well On: 24/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings Tubing psig	Casing psig	Temp. °F	Meter or Prover Data Pf psig	Hw inches	Temp. °F	Condensate Production Bbls/d	Water Production Bbls/d
13/8/87	1300	26	1369	729	131	338	128	91	31.701	10.567
	1400	27	1385	732	131	338	126	91	34.720	9.057

WP 2548G

000324

SANTOS LTD.
WELL TEST SUMMARY
FINAL BUILD-UP PERIOD

Date	Time	Shut in Period (Hours)	Tubing Pressure psig	Casing Pressure psig	Wellhead Temp. °F	REMARKS
13/8/87	1405	0				Shut well in
	1410	0·08	2097	722		
	1415	0·17	2140	696		
	1430	0·42	2148	580		
	1445	0·67	2153	493		
	1500	0·92	2158	421		
	1515	1·17	2159	377		
	1530	1·42	2161	319		
	1545	1·67	2162	261		
	1600	1·92	2163	217		
	1700	2·92	2167	62		
	1800	3·92	2171	13		
	1900	4·92	2176	0		
	2000	5·92	2180	0		
	2400	9·92	2196	0		
14/8/87	0600	15·92	2212	0		
	1200	21·92	2229	0		
	1555	25·83	2238	0		Began flowing Lower zone
	1830	28·42	2258	363		S/I Lower zone.
	2100	30·92	2261	0		
	2400	33·92	2261	0		
15/8/87	0600	39·92	2261	0		
	1200	45·92	2265	0		
	1800	51·92	2267	0		
	2400	57·92	2271	0		
16/8/87	0600	63·92	2273	0		
	0714	65·15	2273	0		P.O.O.H.

000343

FINAL BUILD-UP, SUBSURFACE PRESSURES

ELEMENT NO. 56508 (BOT) BOMB DEPTH 6544 'KB DWT IN : 2295 PSI / OUT : 2275 PSI
LUB. IN : 2299 PSI / OUT : 2276 PSI

Date	Time	Shut In Time (Hours)	PRESSURE psig	PRESSURE psig² x10³	T + θ / θ	REMARKS
13/8/87	1405	0	1859.7	3513		Shut well in.
	1410	0.08	2219.9	4993	411.5	
	1415	0.17	2514.5	6397	194.2	
	1430	0.42	2525.5	6452	79.2	
	1445	0.67	2533.4	6493	50.0	
	1500	0.92	2539.5	6524	36.7	
	1515	1.17	2543.1	6542	29.1	
	1530	1.42	2545.1	6552	24.1	
	1545	1.67	2547.7	6566	20.7	
	1600	1.92	2550.1	6578	18.1	
	1700	2.92	2559.9	6628	12.2	T= cum prod / last prod. rate.
	1800	3.92	2565.8	6659	9.4	T=(4.979 / 3.639)x 24
	1900	4.92	2573.5	6699	7.7	T=32.838
	2000	5.92	2578.5	6724	6.5	
	2900	9.92	2600.8	6841	4.3	
14/8/87	0600	15.92	2629.3	6990	3.1	
	1200	21.92	2646.7	7083	2.5	
	1555	25.83	2657.1	7138	2.3	Began flowing lower zone.
	1830	28.42	2661.5	7162	2.2	S/I lower zone.
	2100	30.92	2668.0	7197	2.1	
	2400	33.92	2671.6	7216	2.0	
15/8/87	0600	39.92	2683.6	7281	1.8	
	1200	45.92	2690.8	7319	1.7	
	1800	51.92	2696.0	7348	1.6	
	2400	57.92	2702.6	7383	1.6	
16/8/87	0600	63.92	2706.8	7406	1.5	
	0714	65.15	2707.9	7412	1.5	

WP 2548G

000346

SANTOS LTD.
WELL TEST SUMMARY
CALCULATION SHEET

GAS RATES THROUGH SEPARATOR

Run No.	Hw (inches in water)	Pf (psig)	Size Orifice Plate (inches)	Ft (°F)
1	108	290	0·750	19
2	65	300	1·500	32
3	81	300	2·000	64
4	105	320	2·000	82
5	126	338	1·750	91

Separator Gas Properties

Specific Gravity = 0·775
TC = 400·9°R
PC = 711·1 psia
CO2 CONTENT = 11·53 mole %

Meter Run = 4·026"

GAS RATES THROUGH SEPARATOR / FWS Rate*

Run No.	Q (Mmscfd)		PRODUCTION
1	0·608 / 0·614	✓	0·051
2	1·920 / 1·939	✓	0·160
3	3·760 / 3·798	✓	0·313
4	4·332 / 4·376	✓	0·361
5	3·639 / 3·676	✓	4·094
			4·979 ✓

WP 2548G

* FWS Rate = Separator rate / Gas Molar ratio (=0.990)

000321

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

WELL NAME: Kidman North # 1 upper DATE: 3rd - 14th August '87 ELEMENT NO: 56508 (BOT) DEPTH TESTED: 6544'KB
DWT IN: 2295 PSI OUT: 2275 PSI
LUB IN: 2299 PSI OUT: 2276 PSI

SIMPLIFIED ANALYSIS

	Duration (hours)	Sandface Pressure (psia)	Bottom Hole Temp. (°F)	Meas.	Δp^2 ($\times 10^6$ psia^2)	Flow Rate (Mmscfd)	H/Carbon Prod. (BBLS/D)	Water Prod. (BBLS/D)	REMARKS
Initial Shut In	75.50	2737.9	269.6	✓	—	—	—	—	$q = C(\bar{p}_R^2 - p_{wf}^2)^n$
Flow 1	2	2689.6	267.0	✓	0.2622	0.614	4.906	NIL	slope n =
Shut In	2	2755.1	268.8	✓	—	—	—	—	$\bar{p}_R$ = psia
Flow 2	2	2471.0	265.7	✓	1.4848	1.939	35.097	NIL	$C = \frac{q}{(\bar{p}_R^2 - p_{wf}^2)^n}$
Shut In	2	2747.4	*	✓	—	—	—	—	
Flow 3	2	1998.9	263.0	✓	3.3526	3.798	44.155	11.699	=
Shut In	2	2722.1	265.6	✓	—	—	—	—	AOF (MMscfd)
Flow 4	2	1796.3	259.3	✓	4.1831	4.376	46.041	12.454	=
Extended Flow	27	1874.4	261.4	✓	3.8992	3.676	33.797	12.021	
Final Shut In	65.15	2722.6	264.5	✓	—	—	—	—	
WP 2548G	✓	✓					✓	✓	

* Unable to determine this temperature

000348

APPENDIX IV

Compositional Data

WELL: KIDMAN NORTH #1U FORMATION: TOOLACHEE DATE: 13/8/87

MOLECULAR COMPOSITION OF RESERVOIR FLUID

COMPONENT	RECOMBINED SEPARATOR LIQUID	SEPARATOR GAS	RECOMBINED RESERVOIR FLUID
	Mole (%)	Mole (%)	Mole (%)
NITROGEN	0.02	0.83	0.82
CARBON DIOXIDE	2.48	11.58	11.49
METHANE	8.18	75.23	74.59
ETHANE	3.82	8.36	8.32
PROPANE	3.31	2.39	2.40
i - BUTANE	1.06	0.32	0.33
n - BUTANE	3.06	0.60	0.62
i - PENTANE	2.18	0.19	0.21
n - PENTANE	3.00	0.19	0.22
HEXANES	6.28	0.15	0.21
HEPTANES	12.14	0.11	0.23
OCTANES+	54.46	0.05	0.57
TOTALS	100.00	100.00	100.00
MOLECULAR WT.	101.7	22.41	22.87
SPECIFIC GRAVITY		0.775	0.789
MOLAR RATIO	1.0	99.0	100.00
SPECIFIC GRAVITY OF C8+			0.811
MOLECULAR WEIGHT OF C8+			134.0

REF: AMDEL REPORT # F5036/88 (Corrected by SANTOS)

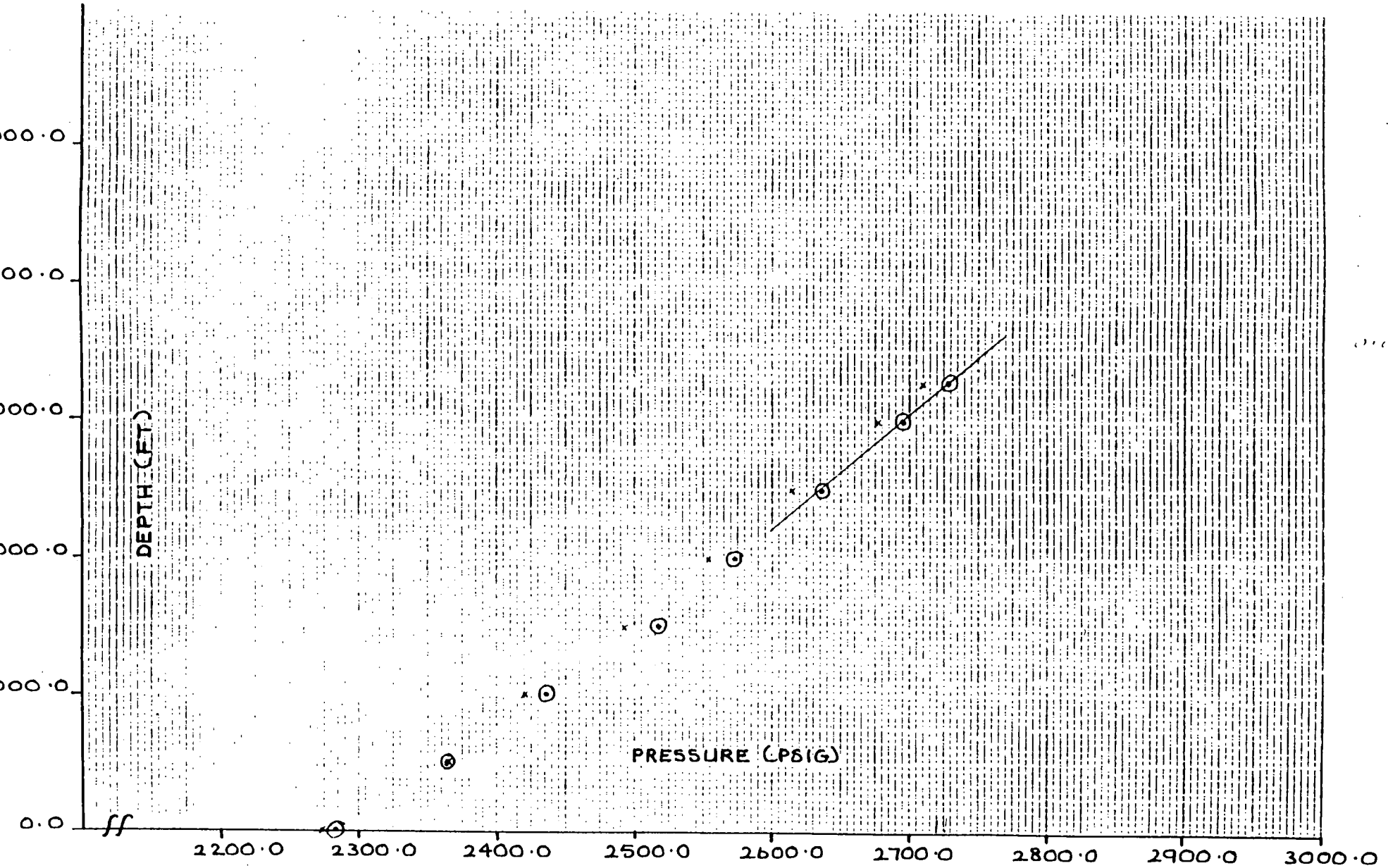
WP:6294N(12)

APPENDIX V

Static Gradient

KIDMAN NORTH # 1 UPPER — STATIC PRESSURE GRADIENT — 16/8/87

ELEMENT # 17788 / 3950 (TOP)



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000353

SANTOS LIMITED
PETROLEUM DEVELOPMENT DEPARTMENT
KIDMAN NORTH #1L
MODIFIED ISOCHRONAL
19-26/8/87

Report No:RE:045/89
Author: A.G. Burdon
Date: July, 1989

RECEIVED
21 AUG 1989
DEPT. OF MINES AND ENERGY SECURITY
7030/2

C O N T E N T S

		PAGE NO.
1.	INTRODUCTION	1
2.	RESULTS	2
3.	CONCLUSIONS/RECOMMENDATIONS	3
4.	DISCUSSION	4

APPENDICES

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

1. INTRODUCTION

Kidman North #1 was drilled in November 1986 to a total depth of 7590' KB. The well intercepted pay in the Toolachee and Patchawarra formations which proved to be productive in open hole tests. In July 1987, the well was completed as a dual gas producer from the Toolachee and Patchawarra formations.

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

FORMATION	SAND	NET PAY (ft)	PERFORATIONS (ft KB)
Toolachee	64-5	21	6594 - 6604
	66-7	21	6736 - 6746
	67-3	30	6774 - 6796
		72	
Patchawarra	72-3	-	7128 - 7130
			7148 - 7150
	72-5	32	7168 - 7175
			7178 - 7220
	73-1	20	7232 - 7240
			7242 - 7269
		52	

The well was flowed to clean-up over the Patchawarra Formation between 8 - 16 August, 1987. A modified isochronal test followed over the period 18 - 22 August. However, the pressure recorders used were found to have failed during the test and a re-test became necessary. Modified Isochronal test #2 was conducted between 23 - 26 August, 1987, to determine the well deliverability and reservoir parameters. The results from the latter test are presented in this report.

Separator fluid samples were collected during the first attempt at isochronal testing and these were used to determine a recombined full well stream composition and fluid properties.

2. **RESULTS**

The following results were obtained from modified isochronal analysis techniques.

Simplified Analysis:

AOF	21.47	MMscfd
c	8.E-5	MMscf/d/psi
n	0.78	

LIT Analysis:

AOF	20.21	MMscfd
a	12.26 E6	$psia^2/cp/MMscfd$
b	0.87	$psia^2/cp/MMscfd^2$
D	3.11	day/MMscf

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

Flow capacity	3751 md-ft
Permeability	72.14 md
Apparent Skin	59.3
True Skin	34.2
Extrapolated Pressure	3127.4 psia @ 7088' KB
Flow rate	8.068 MMscfd @ FTHP 1933 psig
Condensate Production	4.97 BBLS/MMscf
Water Production	3.54 BBLS/MMscf

Reservoir Pressure at MPP of 7218' KB

P.B.U.	3136 psia
Static	3136 psia

3. CONCLUSIONS/RECOMMENDATIONS

1. The modified isochronal test was successful in establishing reservoir parameters in the zone tested.

2. Completion of the well may only be partially effective.

3. A production logging survey should be undertaken in the well to determine the need for re-perforating.

4. High skin value is indicative of completion damage which may reduce with increased producing time.

5. Reservoir pressure is indicated to be 3136 psia at MPP datum of 7218' KB.

6. Gas and condensate samples were found to satisfy quality checks after minor adjustments to the HP gas C6 and C7 components. The full well stream composition derived should be adopted for fluid property and reserves purposes.

4. DISCUSSION

The well is potentially a good producer although there are indicators of significant completion damage.

The simplified isochronal analysis utilizes all of the data acquired. However, the LIT analysis required discarding of flow point 3 to force a unit slope on the back pressure plot. The results obtained are considered to be a good indication of well performance.

The final pressure buildup analysis does not present any difficulties and the results obtained are considered reliable indicators of formation parameters. Approximately 42 percent of the skin value can be attributed to intertial turbulence effects.

Reservoir pressure derived from both the extrapolation of the PBU data and the static pressure survey agree closely and indicate a value of 3136 psia at the mid point perforation datum of 7219' KB.

The following table compares the results of the isochronal test with the earlier DST #4 over the Patchawarra Formation.

	MOD. ISO.	DST #4
Interval (ft KB)	7128 - 7269	7157 - 7209
kh (md-ft)	3751	5197
k (md)	72.1	162
s'	59.3	16.4
p* (psia)	3127	3158
Depth (ft KB)	7088	
q (MMscf/d)	8.07	10.3

Since DST #4 only covered the upper 72-5 sand, the discrepancy between the results of the isochronal test and DST #4 may indicate only partial success in completing the well. Further investigation is warranted to establish the contribution of perforated zones. Running a production logging (PLT) survey would provide sufficient information to evaluate the merits of re-perforating.

High pressure gas and liquid samples collected from the separator during the extended flow period of the first attempt at testing were recombined to produce the full well stream composition given in Appendix IV. During quality checking, the equilibrium ratio of the HP gas C6 and C7 components were found to indicate minor adjustments were required in the gas composition to obtain a satisfactory correlation. This exercise was undertaken before the final recombination was completed.

A static pressure gradient survey was run at the completion of the test which indicates a gas gradient exists to 7268' KB (See Appendix V). Reservoir pressure is determined by extrapolating the gas gradient between 6000' and 7199' KB (0.065 psi/ft) to the MPP datum of 7218' KB.

APPENDIX I

Modified Isochronal Analysis

RUN TYPE : Analysis

PHASE : GAS

NO. OF WELLS : 1

PVT DATA :

Reservoir temperature	=	278.0	deg F
Standard temperature	=	60.0	deg F
Standard pressure	=	14.7	psia

Table :

Pressure	Z-factor	Viscosity
psia		cpoise
100.0	0.994	0.01420
500.0	0.971	0.01460
1000.0	0.965	0.01550
1500.0	0.93	0.01630
2000.0	0.921	0.01730
2200.0	0.92	0.01770
2400.0	0.92	0.01820
2600.0	0.921	0.01870
2700.0	0.922	0.01890
2800.0	0.923	0.01920
2900.0	0.925	0.01940
3000.0	0.927	0.01970
3100.0	0.929	0.02000
3200.0	0.932	0.02020
3300.0	0.934	0.02050
3400.0	0.937	0.02080
3500.0	0.94	0.02110

WELL DATA :

Well radius	=	0.354	feet
Formation thickness	=	52.0	feet
Porosity	=	0.129	
Rock compressibility	=	4.500E-06	1/psi
Water saturation	=	0.138	
Water compressibility	=	3.500E-06	1/psi

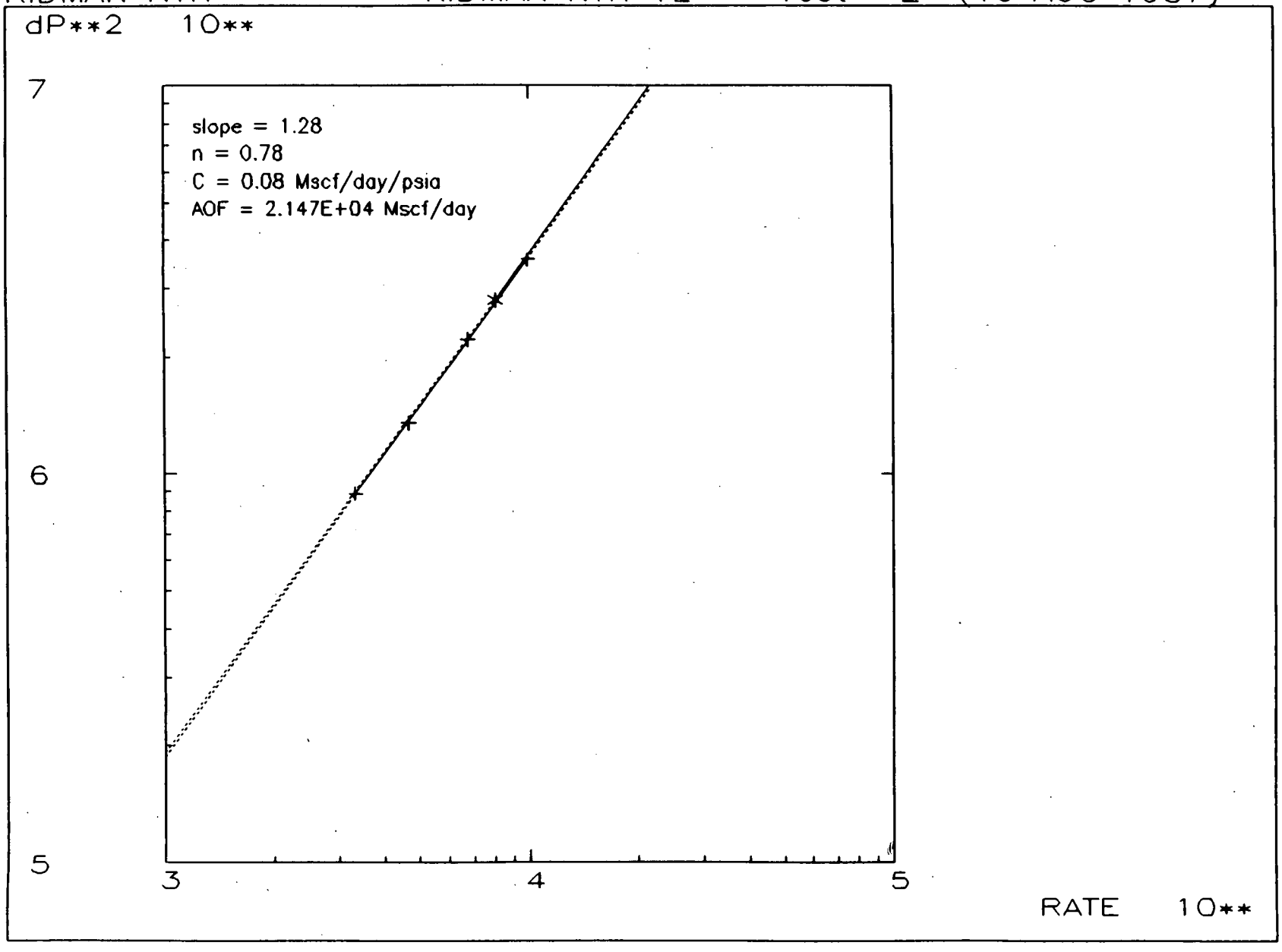
RATE DATA

Time Hours	Rate Mscf/day
0.0	3348.0
2.0	0.0
4.0	4667.0
6.0	0.0
8.0	6761.0
10.0	0.0
12.0	9942.0
14.0	8068.0
38.0	0.0

PRESSURE DATA

Time Hours	Pressure psia
0.0	3137.75
2.0	2993.25
4.0	3134.85
6.0	2912.75
8.0	3133.85
10.0	2759.05
12.0	3133.05
14.0	2500.85
38.0	2654.55
38.08	2944.95
38.17	3109.75
38.25	3111.85
38.5	3114.85
38.75	3116.25
39.0	3117.35
39.25	3117.55
39.5	3118.45
39.75	3118.55
40.0	3118.75
41.0	3120.15
42.0	3119.85
43.0	3121.65
44.0	3122.25
50.0	3124.35
56.0	3124.95
62.0	3124.65
68.0	3125.65
74.0	3126.15
80.0	3125.75
86.0	3126.05
92.0	3123.95
98.0	3125.25

KIDMAN NTH KIDMAN NTH 1L Test 2 (19 AUG 1987)



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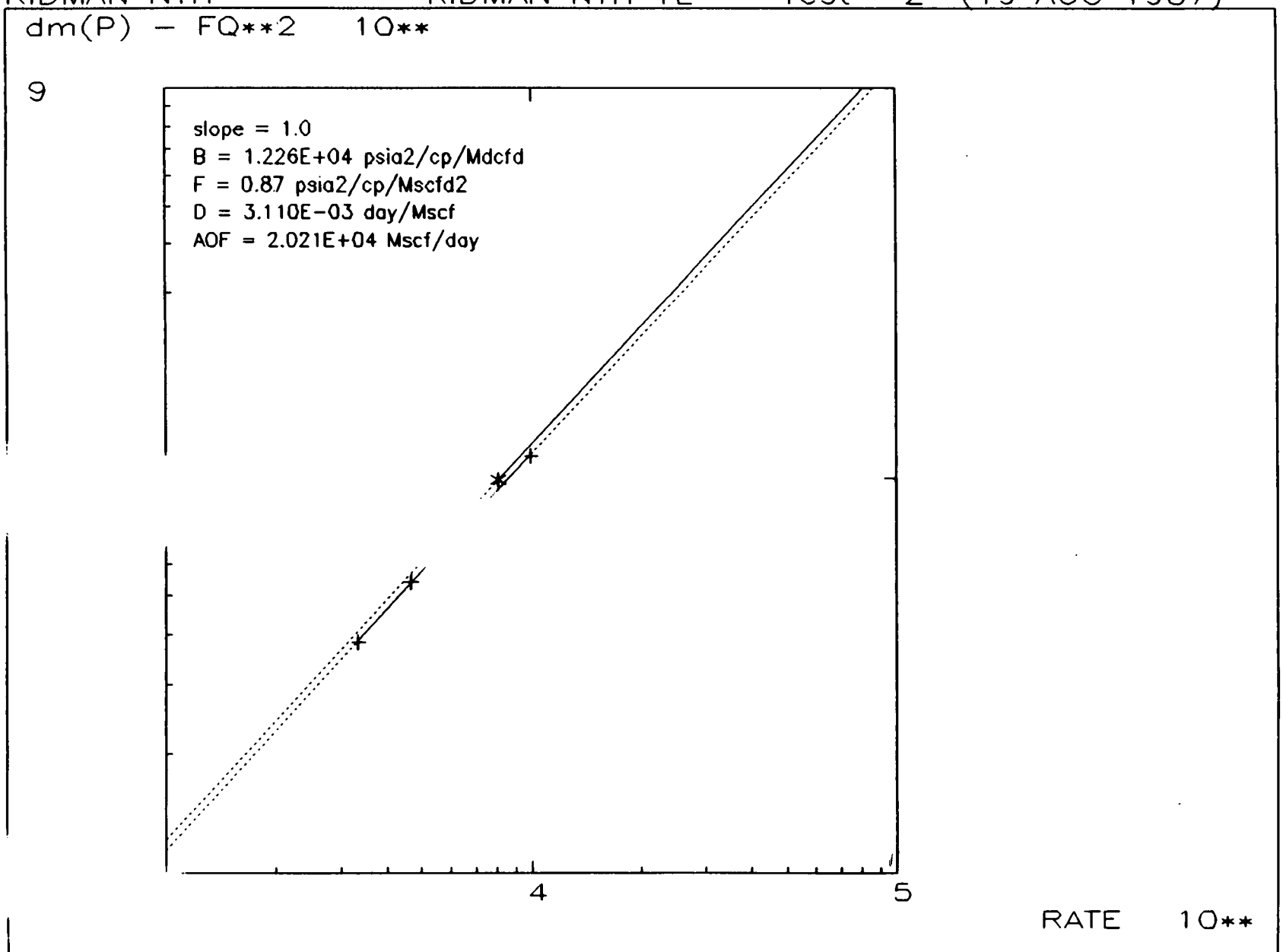

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APPENDIX II

Pressure Build-up Analysis

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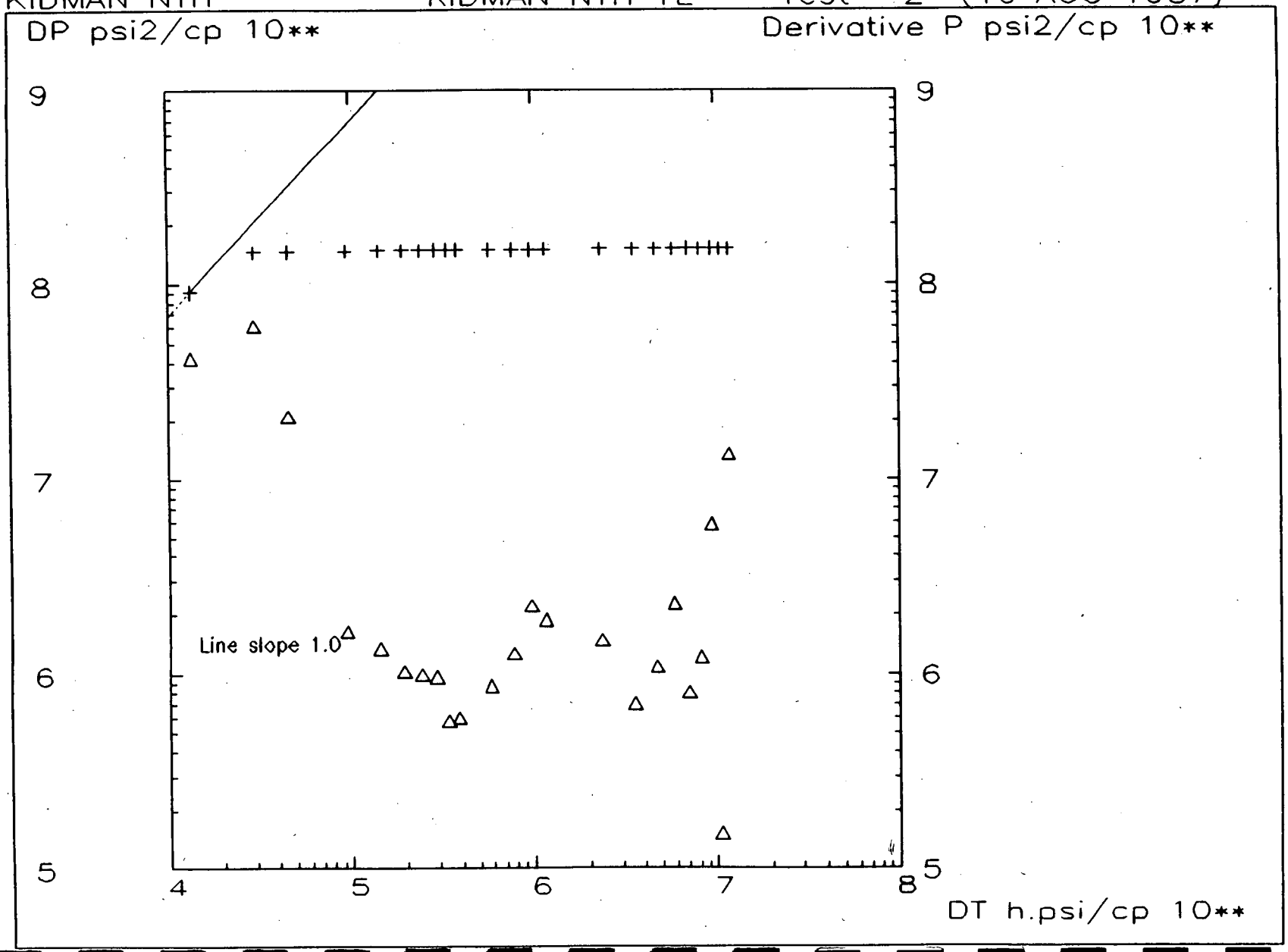
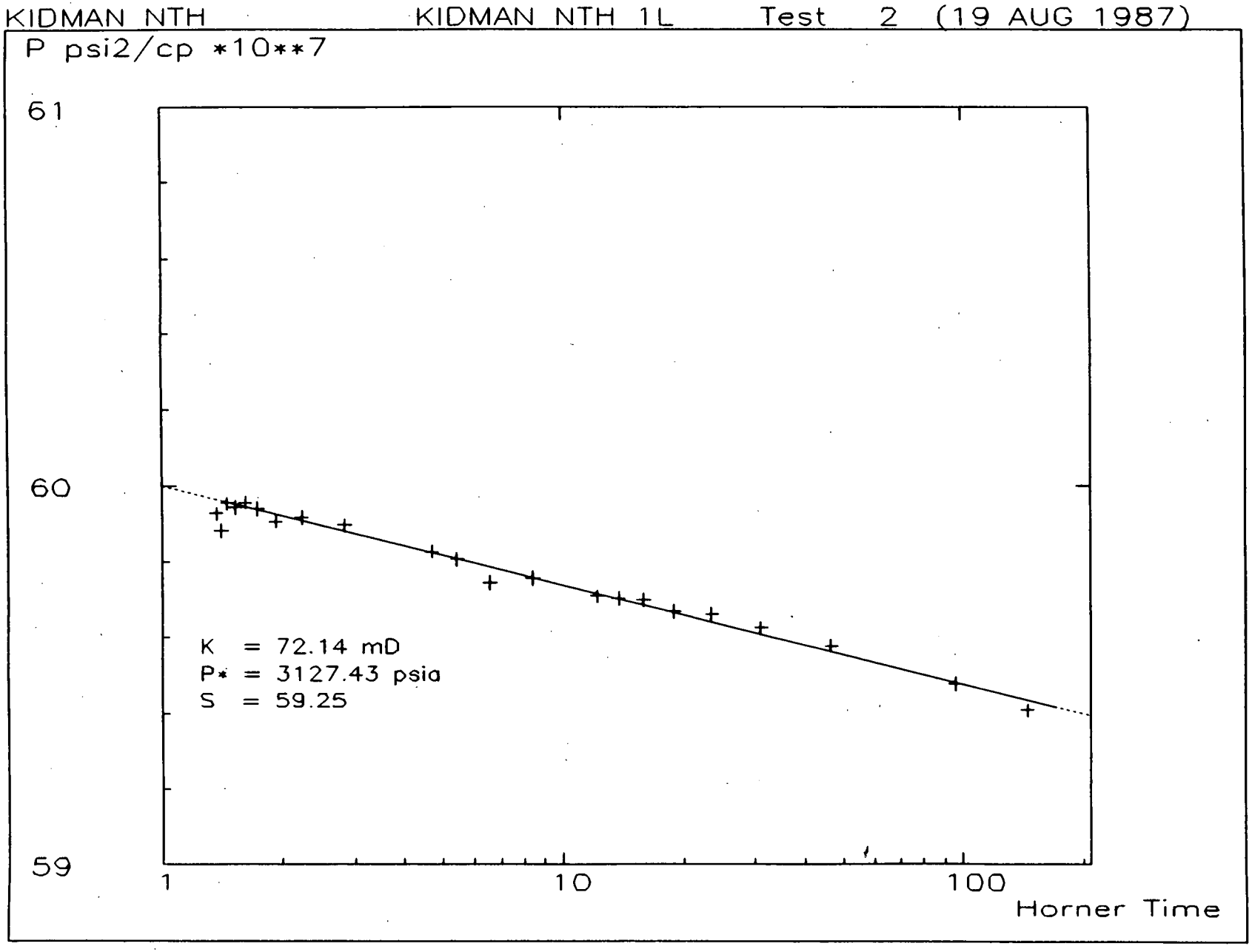


0003677


KIDMAN NTH
KIDMAN NTH 1L Test 2 (19 AUG 1987)
P psi2/cp *10**7
61
60
59
1
10
100
Horner Time
K = 72.14 mD
P* = 3127.43 psia
S = 59.25

000368

APPENDIX III

Welltest Data

SANTOS LTD.
WELL TEST SUMMARY (Retest)

WELL: Kidman North # 1 Lower
LOCATION: Lat.: 28°12'30.0"S Long: 140°48'36.1" E
DATE: 19-26/8/87
FORMATION: Patchawarra
TESTED BY: Oilserv
PERFORATIONS: 7128 - 7269 ft
PRODUCING THROUGH: Tubing
CASING SIZE: 7 ins WEIGHT: 23 & 26 lb/ft GRADE: J55 & N80
TUBING SIZE: 2 7/8 ins WEIGHT: 6.5 & 4.7 lb/ft GRADE: L80 & 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	
19/8/87	1100	0	1925	2380	173	Shut well in
22/8/87	1400	75	2589	0		Opened well on rate # 1

Flow Period

Run No.: 1 Duration of Run: 2 Hours. Orifice Size: 1.750 ins
Flow Well On: 16/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
22/8/87	1400	0	2589	0						
	1415	0.25	2438	0	102	307	96	19		
	1430	0.5	2425	0	103	305	106	12		
	1445	0.75	2422	0	105	295	108	12		
	1500	1	2420	0	107	295	108	14	N/A	N/A
	1515	1.25	2421	0	108	295	108	14		
	1530	1.5	2423	0	109	300	105	18		
	1545	1.75	2426	0	110	303	103	23		
	1600	2	2427	0	110	305	103	23	N/A	N/A

0000370

2nd SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
22/8/87	1600	0	2427	0	110	Shut well in
	1605	0.08	2589	0		
	1610	0.17	2590	0		
	1615	0.25	2591	0		
	1630	0.5	2592	0		
	1645	0.75	2595	0		
	1700	1	2597	0		
	1715	1.25	2597	0		
	1730	1.5	2596	0		
	1745	1.75	2595	0		
	1800	2	2595	0		Opened well on rate # 2

Flow Period

Run No.: 2 Duration of Run: 2 Hours. Orifice Size: 2.000 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	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
22/8/87	1800	0	2595	0						
	1815	0.25	2323	0	110	310	116	10		
	1830	0.5	2318	0	113	315	113	12		
	1845	0.75	2322	0	115	318	112	25		
	1900	1	2324	0	117	320	111	27	43.777	4.529
	1915	1.25	2326	7	118	320	110	27		
	1930	1.5	2328	17	119	320	112	27		
	1945	1.75	2329	36	120	322	109	27		
	2000	2	2330	58	121	322	108	25	33.210	NIL

0003771

3RD SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
22/8/87	2000	0	2330	58	121	Shut well in
	2005	0.08	2599	46		
	2010	0.17	2601	35		
	2015	0.25	2601	27		
	2030	0.5	2601	14		
	2045	0.75	2602	5		
	2100	1	2603	1		
	2115	1.25	2602	0		
	2130	1.5	2602	0		
	2145	1.75	2600	0		
	2200	2	2600	0		Opened well on rate # 3

Flow Period

Run No.: 3 Duration of Run: 2 Hours. Orifice Size: 2.500 ins
Flow Well On: 26/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/D
22/8/87	2300	0	2600	0						
	2215	0.25	2078	0	118	315	91	27		
	2230	0.5	2088	26	122	319	86	39		
	2245	0.75	2091	86	124	319	84	41		
	2300	1	2093	189	126	318	89	37	76.232	5.283
	2315	1.25	2095	320	127	320	86	41		
	2330	1.5	2098	410	128	320	89	41		
	2345	1.75	2098	470	129	320	88	43		
	2400	2	2098	480	131	320	88	43	54.344	3.774

WP 2548G

000372

SANTOS LTD.
WELL TEST SUMMARY

4TH SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing psig	Casing psig	Temp. °F	
22/8/87	2400	0	2098	480	131	Shut well in
23/8/87	0005	0.08	2609	485		
	0010	0.17	2608	475		
	0015	0.25	2608	380		
	0030	0.5	2607	225		
	0045	0.75	2607	175		
	0100	1	2608	140		
	0115	1.25	2608	19		
	0130	1.5	2608	9		
	0145	1.75	2608	0		
	0200	2	2605	0		Opened well on rate # 4

Flow Period

Run No.: 4 Duration of Run: 2 Hours. Orifice Size: 3.000 ins
Flow Well On: 36/64" Choke. Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing psig	Casing psig	Temp. °F	Pf psig	Hw inches	Temp. °F	Bbls/d	Bbls/d
23/8/87	0200	0	2605	0						
	0215	0.25	1558	98	125	303	76	59		
	0230	0.5	1562	390	128	303	82	63		
	0245	0.75	1572	535	131	305	83	66		
	0300	1	1575	620	134	305	84	72	49.060	103.404
	0315	1.25	1585	790	136	310	84	73		
	0330	1.5	1583	880	137	310	84	75		
	0345	1.75	1588	1005	139	313	84	81		
	0400	2	1586	1100	139	313	85	81	48.306	40.003

WP 2548G

000373

SANTOS LTD.
WELL TEST SUMMARY
FINAL STABILIZATION FLOW PERIOD

Flow Period

Run No.: 5 Duration of Run: 24 Hours. Orifice Size: 2·500 ins
Flow Well On: 30/64" Choke. Meter Run: 4·026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production	Water Production
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			psig	psig	°F	psig	inches	°F	Bbls/d	Bbls/d
23/8/87	0400	0	1586	1100	139					
	0415	0·25	1910	1150	141	315	145	70		
	0430	0·5	1910	1205	142	315	145	68		
	0445	0·75	1912	1260	143	315	145	68		
	0500	1	1913	1300	145	318	145	70	69.439	40·758
	0515	1·25	1914	1345	145	318	145	72		
	0530	1·5	1914	1385	146	320	145	73		
	0545	1·75	1915	1425	146	320	146	75		
	0600	2	1915	1450	147	320	145	75	27·927	22·643
	0700	3	1919	1580	151	320	144	79	53·589	19·624
	0800	4	1920	1685	153	317	145	81	36·984	36·984
	0900	5	1920	1760	155	310	148	82	41·512	24·908
	1000	6	1922	1830	157	307	150	86	42·268	28·681
	1100	7	1922	1885	159	305	152	88	40·003	30·191
	1200	8	1923	1920	161	300	152	90	41·513	25·662
	1300	9	1923	1965	161	300	153	91	35·475	25·662
	1400	10	1925	2080	163	307	150	93	40·757	26·417
	1500	11	1927	2120	164	310	150	95	36·985	28·681
	1600	12	1927	2155	164	313	150	95	40·003	27·172
	1700	13	1929	2160	166	310	149	97	37·739	28·681
	1800	14	1930	2190	166	305	153	99	36·984	24·153
	1900	15	1930	2210	167	300	156	99	36·230	25·662
	2000	16	1931	2220	168	300	156	99	35·474	27·172
	2100	17	1932	2240	169	295	159	100	31·701	28·681
	2200	18	1931	2250	170	290	160	100	38·493	24·908
	2300	19	1931	2250	170	290	160	99	39·248	21·134
	2400	20	1932	2280	171	290	160	100	35·474	27·927
24/8/87	0100	21	1931	2300	172	285	163	100	32·455	24·153
	0200	22	1933	2320	172	285	163	102	30·191	30·191
	0300	23	1933	2325	172	285	163	102	31·701	28·681
	0400	24	1932	2340	173	280	165	102	34·720	24·153

000274

WELL TEST SUMMARY

FINAL BUILD-UP PERIOD

Date	Time	Shut in Period (Hours)	Tubing Pressure psig	Casing Pressure psig	Wellhead Temp. °F	REMARKS
24/8/87	0400	0	1932	2340	173	Shut well in
	0405	0.08	2621	2310		
	0410	0.17	2621	2225		
	0415	0.25	2622	2155		
	0430	0.5	2622	1960		
	0445	0.75	2621	1840		
	0500	1	2621	1700		
	0515	1.25	2621	1565		
	0530	1.5	2620	1490		
	0545	1.75	2619	1380		
	0600	2	2617	1275		
	0700	3	2615	1020		
	0800	4	2613	770		
	0900	5	2611	560		
	1000	6	2610	390		
	1600	12	2604	11		
	2200	18	2599	0		
25/8/87	0400	24	2595	0		
	1000	30	2595	0		
	1600	36	2594	0		
	2200	42	2592	0		
26/8/87	0400	48	2591	0		
	1000	54	2591	0		
	1600	60	2591	0		P.O.O.H.

000375

SANTOS LTD.

WELL TEST SUMMARY

FINAL BUILD-UP, SUBSURFACE PRESSURES

ELEMENT NO. 64773 (TOP) BOMB DEPTH 7088 'KB DWT IN: 2589 PSIG / OUT: 2591 PSIG
LUB. IN: 2608 PSIG / OUT: 2607 PSIG

Date	Time	Shut In Time (Hours)	PRESSURE psig	PRESSURE $psig^2 \times 10^3$	$\frac{T+\theta}{\theta}$	REMARKS
24/8/87	0400	0	2639.9	7047		Shut well in
	0405	0.08	2930.3	8673	377.6	
	0410	0.17	3095.1	9671	178.2	
	0415	0.25	3097.2	9684	121.5	
	0430	0.5	3100.2	9702	61.3	
	0445	0.75	3101.6	9709	41.2	
	0500	1	3102.7	9718	31.1	
	0515	1.25	3102.9	9719	25.1	
	0530	1.5	3103.8	9725	21.1	
	0545	1.75	3103.9	9725	18.2	
	0600	2	3104.1	9727	16.1	
	0700	3	3105.5	9735	11.0	T = total production / last production rate = (10.087 / 8.036) x 24 = 30.125
	0800	4	3105.2	9733	8.5	
	0900	5	3107.0	9745	7.0	
	1000	6	3107.6	9748	6.0	
	1600	12	3109.7	9762	3.5	
	2200	18	3110.3	9765	2.7	
25/8/87	0400	24	3110.0	9763	2.3	
	1000	30	3111.0	9770	2.0	
	1600	36	3111.5	9773	1.8	
	2200	42	3111.1	9770	1.7	
26/8/87	0400	48	3111.4	9772	1.6	
	1000	54	3109.3	9759	1.6	
	1600	60	3110.6	9767	1.5	P.O.O.H.

000376

SANTOS LTD.
WELL TEST SUMMARY
CALCULATION SHEET

GAS RATES THROUGH SEPARATOR

Run No.	Hw (inches in water)	Pf (psig)	Size Orifice Plate (inches)	Ft (°F)
1	103	305	1.750	23
2	108	322	2.000	25
3	88	320	2.500	43
4	85	313	3.000	81
5	165	280	2.500	102

Separator Gas Properties

Specific Gravity = 0.797
TC = 402.9 °R
PC = 740.3 psia
CO2 CONTENT = 18.13 mole %

Meter Run = 4.026"

GAS RATES THROUGH SEPARATOR

Run No.	Q / FWS RATE (Mmscfd)		PRODUCTION
1	3.335 / 3.348	✓	0.278
2	4.648 / 4.667	✓	0.387
3	6.734 / 6.761	✓	0.561
4	9.902 / 9.942	✓	0.825
5	8.036 / 8.068	✓	8.036
			10.087 ✓

WP 2548G

FWS RATE = SEPARATOR RATE / GAS MOLAR RATIO (0.996).

000317

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

WELL NAME: Kidman North # 1 Lower DATE: 19-26/8/87

ELEMENT NO: 64773 (TOP) DEPTH TESTED: 7088'kB
DWT IN: 2589 OUT: 2591
LUB IN: 2608 OUT: 2607

SIMPLIFIED ANALYSIS

	Duration (hours)	Sandface Pressure (psia)	Temp. (°F) Bottom-hole	Meas.	Δp^2 ($\times 10^6$ psia^2)	Flow Rate (Mmscfd)	H/Carbon Prod. (BBLS/D)	Water Prod. (BBLS/D)	REMARKS
Initial Shut In	75	3137.75	280.3	✓	–	–	–	–	$q = C(\bar{p}_R^2 - p_{wf}^2)^n$
Flow 1	2	2993.25	280.4	✓	0.886		N/A	N/A	slope n =
Shut In	2	3134.85	279.8	✓	–	–	–	–	$\bar{p}_R$ = psia
Flow 2	2	2912.75	279.0	✓	1.343		38.494	2.264	$C = \frac{q}{(\bar{p}_R^2 - p_{wf}^2)^n}$
Shut In	2	3133.85	279.3	✓	–	–	–	–	
Flow 3	2	2759.05	277.0	✓	2.209		65.288	4.529	=
Shut In	2	3133.05	278.5	✓	–	–	–	–	AOF (MMscfd)
Flow 4	2	2500.85	273.7	✓	3.562		48.684	71.703	=
Extended Flow	24	2654.55	275.7	✓	2.721		38.619	27.204	
Final Shut In	60	3125.25	278.1	✓	–	–	–	–	
WP 2548G	✓	✓			✓		✓	✓	

000372

APPENDIX IV

Compositional Data

WELL: KIDMAN NORTH #1L FORMATION: PATCHAWARRA DATE: 19/9/87

MOLECULAR COMPOSITION OF RESERVOIR FLUID

COMPONENT	RECOMBINED SEPARATOR LIQUID	SEPARATOR GAS	RECOMBINED RESERVOIR FLUID
	Mole (%)	Mole (%)	Mole (%)
NITROGEN	0.25	0.67	0.67
CARBON DIOXIDE	2.87	18.13	18.06
METHANE	5.70	71.79	71.50
ETHANE	2.66	6.94	6.92
PROPANE	2.00	1.58	1.58
i - BUTANE	0.62	0.23	0.23
n - BUTANE	1.52	0.31	0.32
i - PENTANE	1.04	0.10	0.10
n - PENTANE	1.38	0.09	0.10
HEXANES	3.35	0.08	0.09
HEPTANES	8.64	0.07	0.11
OCTANES+	69.97	0.01	0.31
TOTALS	100.00	100.00	100.00
MOLECULAR WT.	117.8	23.06	23.49
SPECIFIC GRAVITY		0.797	0.8110
MOLAR RATIO	0.4	99.6	100.00
SPECIFIC GRAVITY OF C8+			0.817
MOLECULAR WEIGHT OF C8+			142.0

REF: AMDEL REPORT # F5084/88

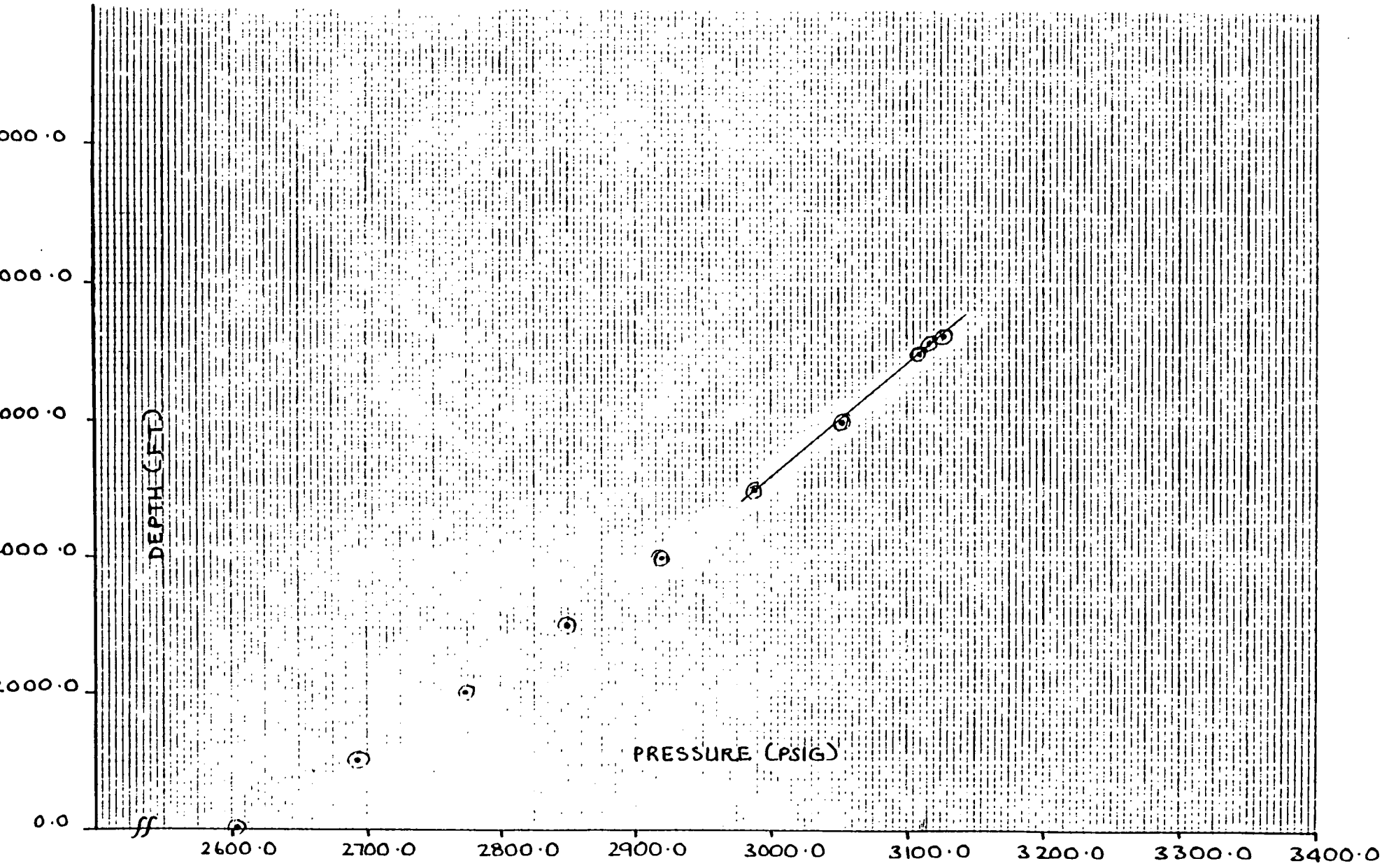
WP:6287N(12)

APPENDIX V

Static Gradient

KIDMAN NORTH # 1 LOWER — STATIC PRESSURE GRADIENT — 27/8/87

ELEMENT # 64773 / 4000 (BOT)



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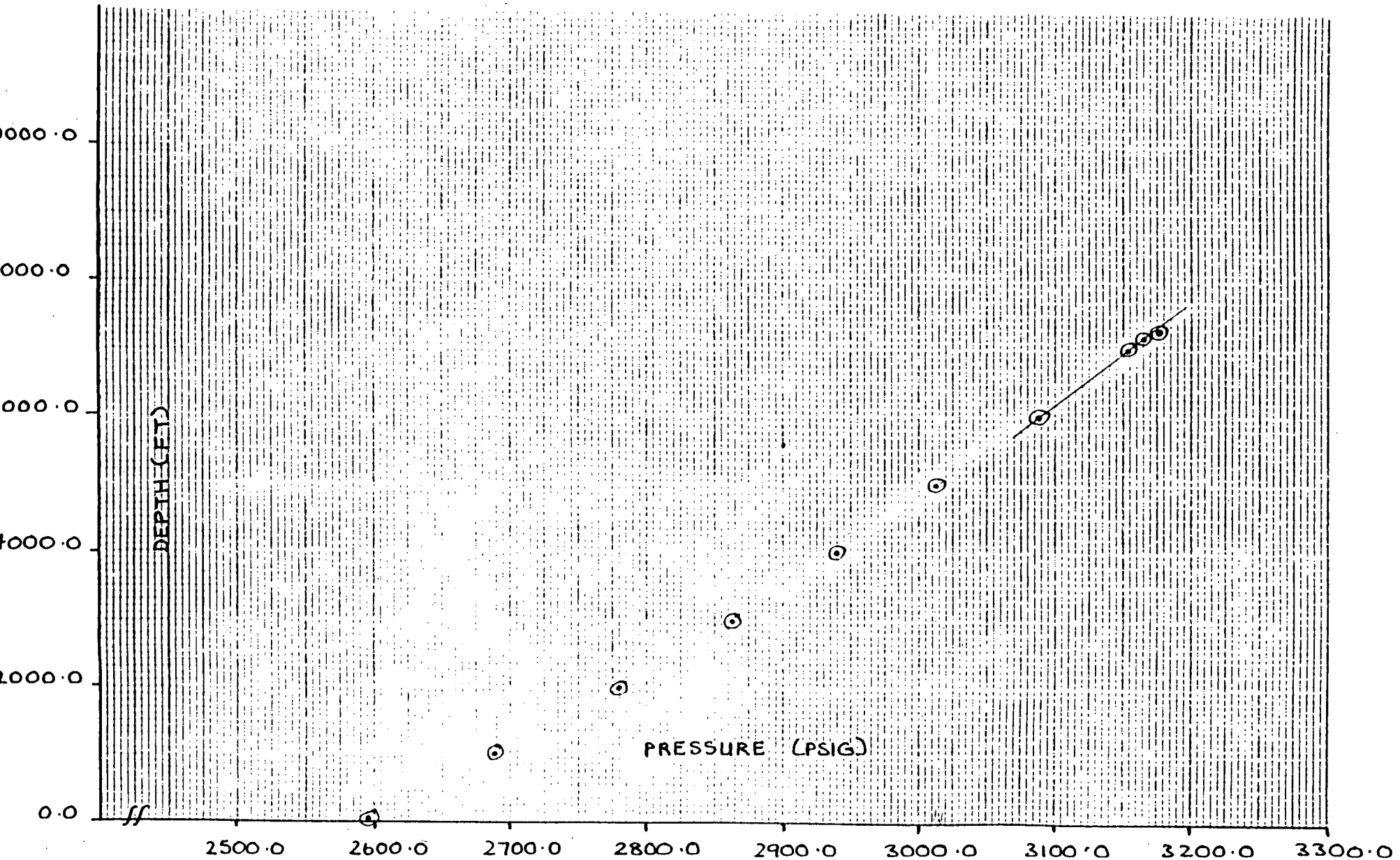
KIDMAN NORTH # 1 LOWER – STATIC PRESSURE GRADIENT – 27/8/87

ELEMENT # 8571/5300 (TOP)



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ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

WELL: Kidman North # 1 Upper — Pf = 8400 kPa

ORIFICE SIZE: 28.000 mm 1.102 " — T = 81 °C

LINE SIZE: 73.660 mm 2.900 " — Diff = 8 kPa

Cumulative Production to end of October = 43.748 $m^3 \times 10^6$

Number of hours online in October = 741

Production in October = 1.197 $m^3 \times 10^6$

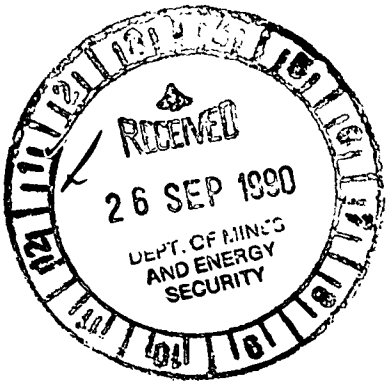
∴ Average flow rate in October = (1.197 / 741) x 24 = 0.039 $m^3 \times 10^6/d$

Number of days online in November before Shut In 0700 hrs 10 / 11 /89
= 9.292 days

∴ Production up to 0700 hrs 10 / 11 /89 = 9.292 x 0.039 = 0.360 $m^3 \times 10^6$

Total cumulative production = 43.748 + 0.360
= 44.108 $m^3 \times 10^6$
= 1565.578 mmscf ✓

Flow rate just prior to Shut In = 0.036 $m^3 \times 10^6$
= 1.285 mmscf/d



WP 2946G(13)
LGA/jfs : 8/12/86

SUB-SURFACE PRESSURE SURVEY

[redacted]		RUN 01 FIELD KNORTH		WELL 01U
F DEPTH		WELL STAT	TOOL HUNG	4988'
SING	-	CASING PRESS	ON BOTTOM	1445 9/11
NE	-	TUBING PRESS	OFF BOTTOM	2000 16/11
TE 891116		ELEVATION RANGE 0 - 3093	ZERO POINT	
EVATION		ZONE	SHUT-IN	0700 10/11
X EMP		PICK-UP	ON-PROD	
ER	-	CAL SER NO. 56429	MPP	
BING	-			
ITS ENGLISH		PURPOSE BUILD-UP		

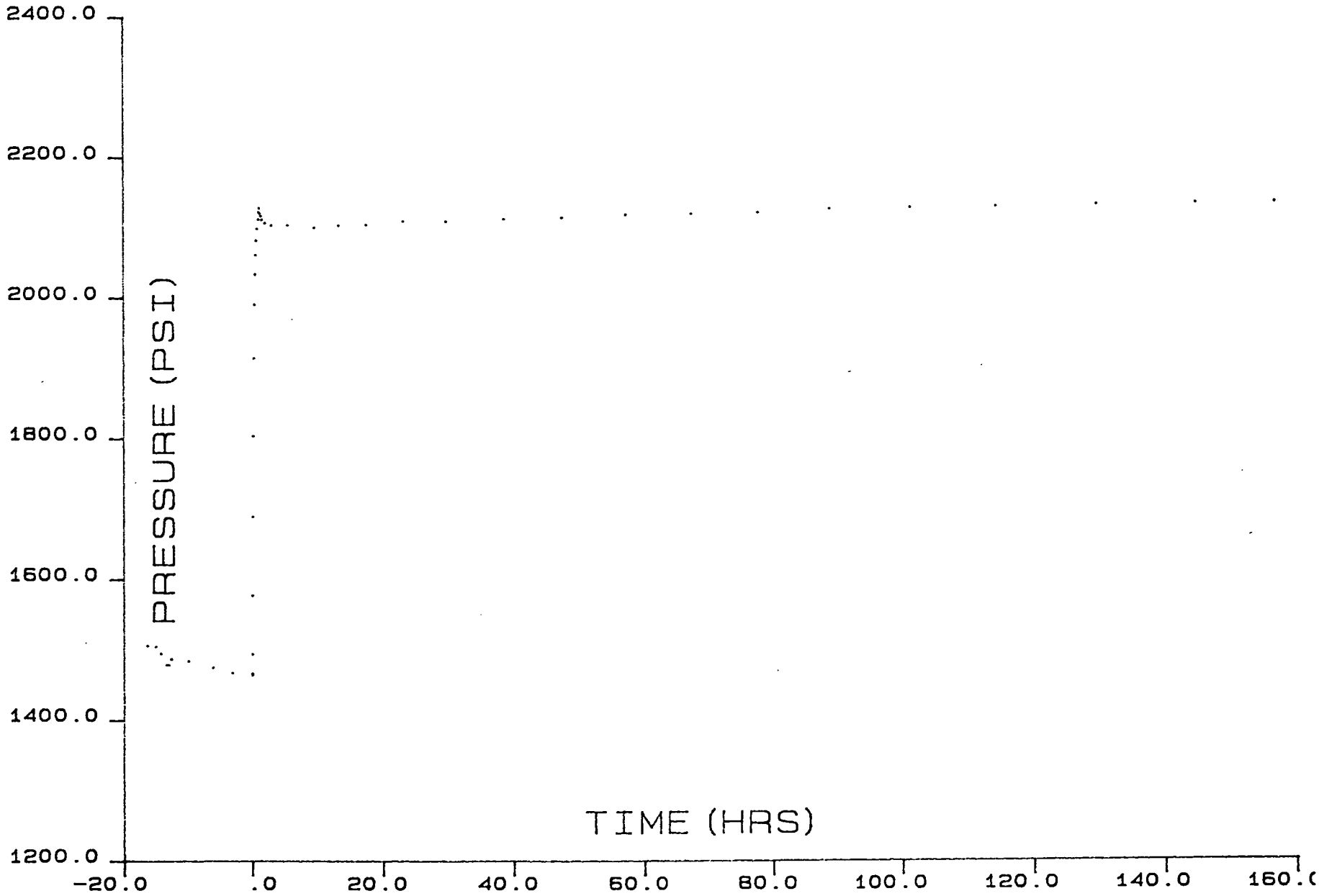
SURVEY DATA

RUN 01 FIELD KNORTH — WELL 01U

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
7:00	1464.6	1464.6	.0	6:16	2108.3	2108.3	23.3
7:01	1494.2	1494.2	.0	12:50	2107.0	2107.0	29.8
7:02	1577.4	1577.4	.0	21:40	2110.8	2110.8	38.7
7:06	1689.3	1689.3	.1	6:35	2112.8	2112.8	47.6
7:11	1803.7	1803.7	.2	16:20	2116.7	2116.7	57.3
7:17	1914.7	1914.7	.3	2:42	2117.8	2117.8	67.7
7:24	1991.1	1991.1	.4	12:58	2118.9	2118.9	78.0
7:31	2034.1	2034.1	.5	0:00	2124.2	2124.2	89.0
7:36	2061.1	2061.1	.6	12:29	2125.5	2125.5	101.5
7:42	2082.0	2082.0	.7	1:34	2127.0	2127.0	114.6
7:50	2098.4	2098.4	.8	16:52	2129.3	2129.3	129.9
8:02	2111.8	2111.8	1.0	7:57	2130.9	2130.9	144.9
8:06	2122.4	2122.4	1.1	20:00	2131.6	2131.6	157.0
8:08	2127.8	2127.8	1.1	- 9:26	1506.5	1506.5	-16.4
8:14	2121.0	2121.0	1.2	- 8:03	1505.1	1505.1	-15.1
8:23	2116.6	2116.6	1.4	- 7:18	1495.1	1495.1	-14.3
8:33	2110.8	2110.8	1.5	- 6:20	1479.4	1479.4	-13.3
9:02	2106.2	2106.2	2.0	- 5:59	1479.4	1479.4	-13.0
10:00	2102.9	2102.9	3.0	- 5:37	1487.2	1487.2	-12.6
12:27	2103.1	2103.1	5.4	- 2:55	1484.3	1484.3	-9.9
16:36	2098.9	2098.9	9.6	0:58	1474.6	1474.6	-6.0
20:18	2102.7	2102.7	13.3	3:56	1467.5	1467.5	-3.1
0:36	2103.5	2103.5	17.6	7:00	1466.1	1466.1	.0

B IN DWT = 1247 PSI / OUT = 1835 PSI
B N AMERADA = 1243 PSI / OUT = 1823 PSI

KIDMAN NORTH #1U NOV 1989
ELEMENT #56429 (TOP) @ 4988'KB



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SUB-SURFACE PRESSURE SURVEY

CO			RUN 02 FIELD KNORTH		WELL 01U
EFF DEPTH			WELL STAT	TOOL HUNG	4994'
CASING		-	CASING PRESS	ON BOTTOM	1445 9/11
LINER		-	TUBING PRESS	OFF BOTTOM	2000 16/11
DATE	891116		ELEMENT RANGE 0 - 3114	ZERO POINT	
ELEVATION			ZONE	SHUT-IN	0700 10/11
MAX TEMP			PICK-UP	ON-PROD	
PERF		-	CAL SER NO. 28515	MPP	
TUBING		-			
UNITS	ENGLISH		PURPOSE BUILD-UP & FLOW		

SURVEY DATA

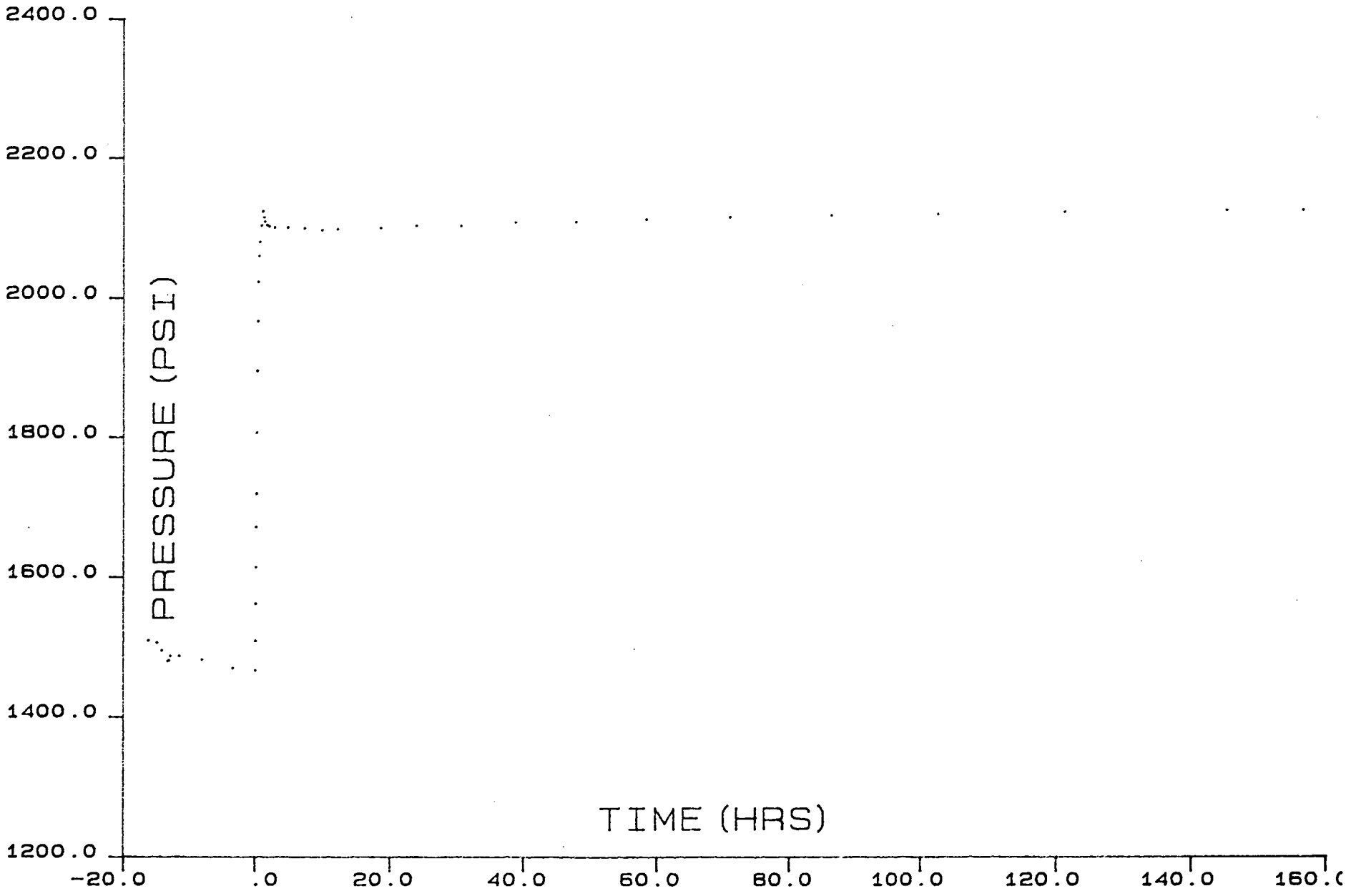
CO RUN 02 FIELD KNORTH WELL 01U

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
7:00	1466.9	1466.9	.0	1:44	2099.8	2099.8	18.7
7:02	1509.0	1509.0	.0	6:59	2102.8	2102.8	24.0
7:03	1562.1	1562.1	.1	13:39	2101.9	2101.9	30.6
7:05	1614.3	1614.3	.1	21:54	2107.6	2107.6	38.9
7:08	1671.9	1671.9	.1	6:59	2107.9	2107.9	48.0
7:11	1719.6	1719.6	.2	17:37	2111.6	2111.6	58.6
7:14	1806.8	1806.8	.2	6:20	2115.1	2115.1	71.3
7:16	1896.0	1896.0	.3	21:34	2117.5	2117.5	86.6
7:24	1966.2	1966.2	.4	13:51	2119.2	2119.2	102.9
7:26	2022.7	2022.7	.4	8:30	2122.4	2122.4	121.5
7:35	2060.1	2060.1	.6	8:35	2124.4	2124.4	145.6
7:41	2079.7	2079.7	.7	20:00	2124.6	2124.6	157.0
7:55	2103.4	2103.4	.9	- 9:20	1509.2	1509.2	-16.3
8:07	2123.5	2123.5	1.1	- 7:58	1506.2	1506.2	-15.0
8:17	2115.0	2115.0	1.3	- 7:12	1495.2	1495.2	-14.2
8:25	2108.9	2108.9	1.4	- 6:16	1479.7	1479.7	-13.3
8:46	2103.7	2103.7	1.8	- 6:03	1481.0	1481.0	-13.1
9:06	2101.4	2101.4	2.1	- 5:51	1487.2	1487.2	-12.8
9:55	2099.8	2099.8	2.9	- 4:30	1487.4	1487.4	-11.5
1:53	2099.9	2099.9	4.9	- 1:06	1481.5	1481.5	-8.1
14:20	2098.4	2098.4	7.3	3:36	1469.6	1469.6	-3.4
17:02	2095.5	2095.5	10.0	7:00	1466.1	1466.1	.0

LUB IN DWT = 1247 PSI / 1835 PSI

LUB IN AMERADA = 1248 PSI / 1821 PSI

KIDMAN NORTH #1U NOV 1989
ELEMENT #28515 (BOT) @ 4994'KB



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EXPERTEST

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 Friday, 17th November 1989.

CLIENT	LOCATION	FORMATION
Santos Ltd.	Kidman Nth 1U	Toolachee

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA

POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	56429	3000	13/10/89
Bottom	28515	3000	13/10/89

WELL DATA

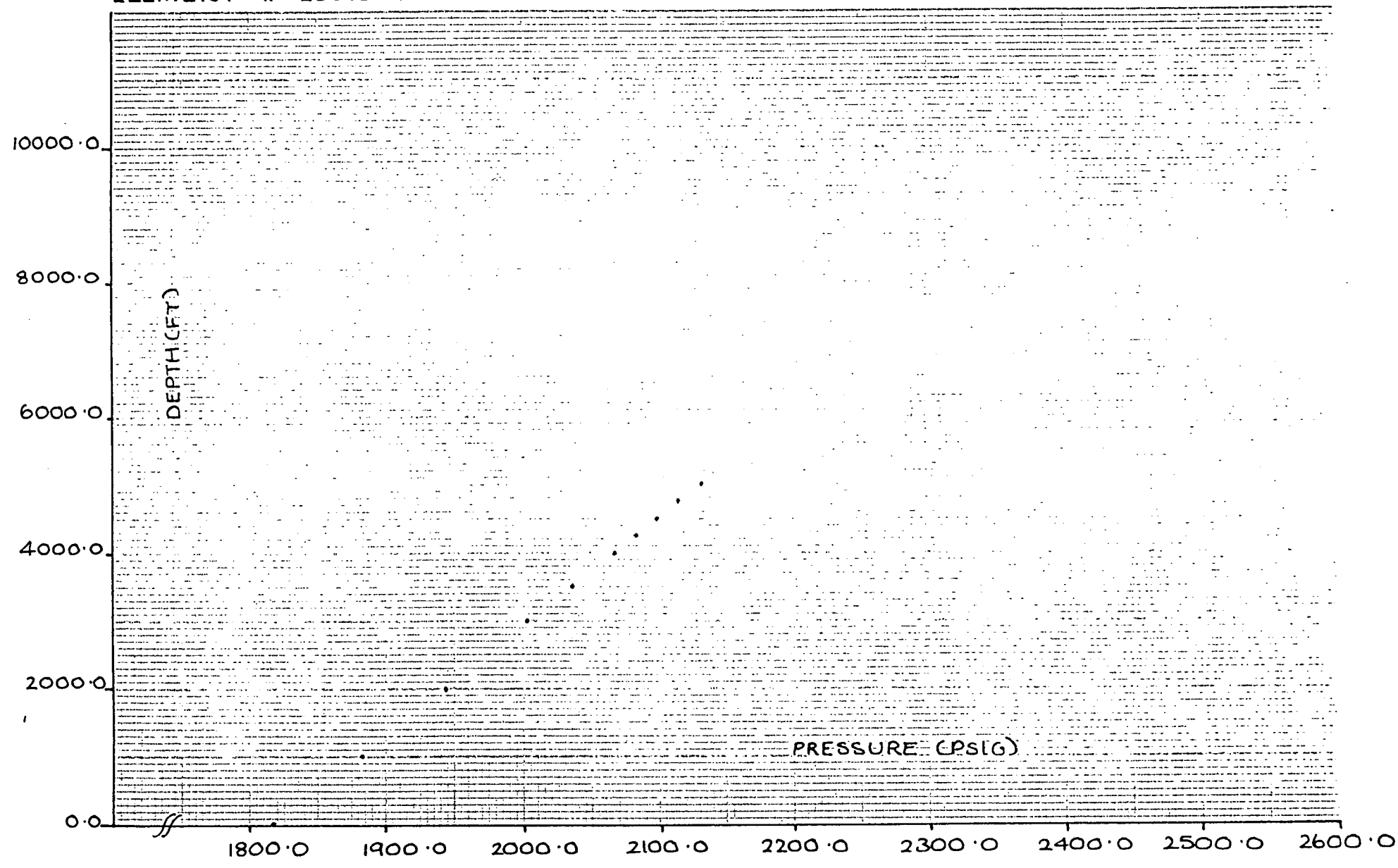
PARAMETER	VALUE
DWT In	12597 kpa 1827
DWT Out	12632 Kpa 1832
Max BHT	252° F

	TOP ELEMENT			BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.1760	1814.4	-----	1.1725	1817.2	-----
1000	1.2170	1878.1	0.064	1.2140	1881.9	0.065
2000	1.2572	1940.5	0.062	1.2530	1942.7	0.061
3000	1.2982	2004.1	0.064	1.2910	2002.0	0.059
3500	1.3190	2036.4	0.065	1.3120	2034.8	0.066
4000	1.3390	2067.5	0.062	1.3320	2066.0	0.062
4250	1.3495	2083.8	0.065	1.3420	2081.6	0.062
4500	1.3595	2099.3	0.062	1.3525	2098.0	0.066
4750	1.3700	2115.6	0.065	1.3625	2113.6	0.062
5000	1.3802	2131.5	0.063	1.3735	2130.7	0.069
LUB.	1.1800	1820.6	-----	1.1770	1824.2	-----

GENERAL REMARKS

Temperature element used

KIDMAN NORTH # 1 UPPER — STATIC PRESSURE GRADIENT — 17/11/89
ELEMENT # 28515/3000 (BOT)



000390

EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE
TELEPHONE (08) 354 0488 TELEX AA87183
138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

STATIC GRADIENT SURVEY

CLIENT SANTOS

WELL KIDMAN NTH #1 UPPER.

OPERATOR R. MOORE

DATE 17/11/89

BOMB No. 1 DATA

ELEMENT No. 56429 ELEMENT RANGE 3000 PSI

RECORDER No 14628 × 15 TLS CLOCK DATA 2518 × 3 HR.

ENGAGE STYLUS 07:10 DISENGAGE 09:27

PRESSURE LUBRICATOR 07:18

BOMB No 2 DATA

ELEMENT No. 28515 ELEMENT RANGE 3000 PSI

RECORDER No 13027 × 15 TLS CLOCK DATA 2530 × 3 HR.

ENGAGE STYLUS 07:10 DISENGAGE 09:27

BLEED LUBRICATOR 09:20

DWT IN 12597 KPA

DWT OUT 12632 KPA

DATE	TIME	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
	07:18	LUB.				LUB.				15 MIN.
	07:33	RIH				RIH.				TUB. 12632 CSG. Ø TEMP. 23
	07:37	1000				1000				5 MIN.
	07:47	2000				2000				
	07:55	3000				3000				
	08:02	3500				3500				
	08:09	4000				4000				
	08:15	4250				4250				
	08:21	4500				4500				
	08:27	4750				4750				5 MIN.
	08:33	5000				5000				15 MIN.
	08:48	POOH				POOH				TUB. 12639 CSG. Ø TEMP. 27
	09:05	LUB.				LUB.				15 MIN.

GENERAL REMARKS: TEMPERATURE ELEMENT RUN: EL. 63256 × 150 → 400°F

REC. 61275 × 15 TLS.

CLOCK. 2360 × 3 HR.

E4

000391

TELEPHONE (08) 354 0488 TELEX AA87183
EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE
138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1 UPPER Date: 9-11-89.

Lubricator Data: ① 1243 / 1823 ② 1248 / 1821

Pressure with D.W.T. In 8598 (1247) KPA Out 12652 (1835) KPA

Operator A.SMITH

Time Pressured 1232 9-11-89 Time Depressured 22:15 16/11/89

Time Run in Hole 1432 —11— Time off Bottom 20:00 —11—

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	56429 x 3000 PSI	28515 x 3000 PSI
Recorder No.	14628 x 15TLS	13027 x 15TLS
Clock and Lead Screw Data	2886 x 180 HR	2871 x 180 HR
Engage Stylus	Date: 9-11-89 Time: 1220	Date: 9-11-89 Time: 1220
Disengage	Date: 16/11/89 Time: 22:25	Date: 16/11/89 Time: 22:15

Remarks: RAN TEMPERATURE ELEMENT 63256 x 150° → 400°F
RECORDER 61275 x 15TLS
CLOCK 2708 x 180 HR

Well-Head Data for Final Build-up SIBH Temp = 251°F

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
9TH	NOVEMBER 1989.					
	1220					ENGAGE STYLUS.
	1232		8515	0	83	PRESSURE LUBRICATOR.
	1432		8598		82	R.I.H
	1445		8598		81	@ B.H.P DEPTH 5000' KB
	1800		8529		82	(WELL FLOWING 100%).
	2200		8495		83	
10TH	NOVEMBER 1989.					
	0200		8453		82	
	0600		8426		83	
	0630		8419		83	
	0700		8412		83	S.W.I FOR 160 HRS
	0705		9894		78	(AS PER PROGRAMME).
	0710		11232		77	
	0715		11735		53	
	0730	.5	12473		34	
	0745		12825		30	
	0800	1	12880		28	
	0815		12845		26	
	0830		12825		25	
	0845		12797		24	
	0900	2	12776		24	
	0915		12776		25	
	0930		12776	0	25	

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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE
138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1 UPPER Date: 10-11-89

Lubricator Data: Operator A.SMITH

Pressure with D.W.T. In ..... Out .....

Time Pressured..... Time Depressured.....

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: REFER TO PAGE #1. FOR ELEMENT INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
10TH	NOVEMBER 1989.					
	0945		12776	0	25	
	1000	3			26	
	1015				27	
	1030				28	
	1045				29	
	1100	4	12776		30	
	1500		12783		35	
	1900	12	12783		27	
	2300		12790		21	
11TH	NOVEMBER 1989.					
	0300		12790		19	
	0700	24	12797		16	
	1100		12811		32	
	1500		12825		40	
	1900	36	12817		30	
	2300		12811		21	
12TH	NOVEMBER 1989.					
	0300		12797		19	
	0700	48	12790		17	
	1100		12804		30	
	1500		12825		39	
	1900	60	12817		31	
	2300		12804	0	23	

000394

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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

136 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIOMAN NTH #1 UPPER Date: 13/11/89

Lubricator Data:

Operator A. SMITH

Pressure with D.W.T. In Out

Time Pressured Time Depressured

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: REFER TO PAGE #1. FOR ELEMENT INFORMATION

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
13TH	NOVEMBER 1989.					
	0300		12790	0	20	
	0700	72	12783		18	
	1100		12790		32	
	1500		12804		42	
	1900	84	12797		33	
	2300		12762		26	
14TH	NOVEMBER 1989.					
	0300		12749		24	
	0700	96	12742		22	
	1100		12755		30	
	1500		12762		43	
	1900	108	12721		36	
	2300		12694		32	
15TH	NOVEMBER 1989.					
	0300		12687		30	
	0700	120	12680		29	
	1100		12639		43	
	1500		12666		45	
	19:00	132	12659		38	
	23:00		12652		33	
16TH	NOVEMBER 1989					
	03:00		12652		30	
	07:00	144	12652	0	28	

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WIRELINE & WELL TESTING SERVICE
138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1 UPPER. Date: 16/11/89.

Lubricator Data: Operator R. MOORE.

Pressure with D.W.T. In ..... Out .....

Time Pressured..... Time Depressured.....

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: REFER TO PAGE #1 FOR ELEMENT DATA.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead KPA.	Casing KPA.	Wellhead Temp. °C	Remarks
16TH	NOVEMBER 1989.					
	11:00		12652	Ø	35	
	15:00		12652		45	
	19:00	156	12652		37	
	20:00		12652		35	PULL OUT OF HOLE.
	20:15		12639		35	@ SURFACE.
	22:15		12652		33	DEPRESSURE LUB.
17TH	NOVEMBER 1989.					
	02:00		12639		24	
	06:00		12632		21	
		PREPARE GAUGES FOR STATIC GRADIENT (AS PER PROGRAMME)				
	07:18		12597		22	PRESSURE LUBRICATOR.
	07:33		12632		23	RUN IN HOLE
	08:33		12639		26	@ 5000' KB.
	08:48		12639		27	PULL OUT OF HOLE
	09:05		12632		27	@ SURFACE.
	09:20		12632	Ø	27	DEPRESSURE LUBRICATOR.
		REFER TO ATTACHED GRADIENT REPORT FOR DETAILS.				

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WIRELINE & WELL TESTING SERVICE
136 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

WIRELINE REPORT

CLIENT SANTOS WELL KIDMAN NTH #1 UPPER

DATE 8-11-89

PROGRAMME DRIFT RUN.

PURPOSE OF WORK TO ENSURE TUBING IS FREE OF ANY OBSTRUCTION FOR B.H.P SURVEY.

REPORT OF WORK PERFORMED 8TH NOVEMBER 1989.

1345 : S.W.I & RIG UP WIRELINE EQUIPMENT.
1430 : R.I.H WITH 1.5 GAUGE RING PERFORMING PICK UPS EVERY 250'. (CORKED SCREWED TUBING). AS PER PROGRAMME.
1440 : @ 5000'KB PULLING MAXIMUM WEIGHT & P.O.O.H
1455 : @ LUBRICATOR & HAND WELL BACK TO PRODUCTION.

9TH NOVEMBER 1989.

0930 : RIG IN WEIGHT INDICATOR TO WIRELINE EQUIPMENT.
0945 : S.W.I, R.I.H WITH 1.5" GAUGE RING PERFORMING PICK UPS & RECORDING WEIGHT PULLED.

DEPTH	WEIGHT PULLED
0957 : @ 3000'	140 lbs
1002 : @ 4000'	300 lbs
1005 : @ 4500'	430 lbs
1008 : @ 5000'	550 lbs (MAXIMUM WEIGHT).

1010 : P.O.O.H.
1020 : @ LUBRICATOR, RIG OUT TOOLSTRING, OPEN WELL 100% & PREPARE ELEMENTS FOR B.H.P SURVEY.
1432 : R.I.H WITH 2 PRESSURE ELEMENTS & 1 TEMPERATURE ELEMENT.
1445 : @ HANG DEPTH 5000'KB. (WELL FLOWING 100%).

10TH NOVEMBER 1989.

0700 : S.W.I FOR 160 HRS. (AS PER PROGRAMME).

Operator's Signature

WORKED PERFORMED BY A. SMITH OF EXPERTEST

WELL DATA:

Tubing Size 2 3/8" FWHP 8425 KPA SIWHP

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

'X' Nipple @ 6510'KB 'N'/'XN' Nipple @ 6527'KB Other @

Min. I.D. 1.791" @ 6 27'KB Packer @ 6492'KB

Perforated Interval: TOOLACHEE F.M 6594' → 6796'KB.

E1

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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

136 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

WIRELINE REPORT

CLIENT SANTOS WELL KIDMAN NTH #1 UPPER.

DATE 16/11/89.

PROGRAMME BOTTOMHOLE PRESSURE SURVEY. (CONT. FROM PAGE #1)

PURPOSE OF WORK

REPORT OF WORK PERFORMED 16TH NOVEMBER 1989.

20:00 PULL OUT OF HOLE.

20:15 @ SURFACE.

22:15 DEPRESSURE LUBRICATOR, RECOVER CHARTS (GOOD RESULTS).

SECURE WELL OVER NIGHT.

17TH NOVEMBER 1989.

06:30 PREPARE GAUGES FOR STATIC GRADIENT (AS PER PROGRAM).

07:18 PRESSURE LUBRICATOR.

07:33 RUN IN HOLE.

08:33 @ BOTTOM STOP (5000' KB).

08:48 PULL OUT OF HOLE.

09:05 @ SURFACE.

09:20 DEPRESSURE LUBRICATOR, RECOVER CHARTS (GOOD RESULTS).

09:30 RIG OUT W/L EQUIPMENT & HAND WELL BACK TO PRODUCTION.

FOR FURTHER DETAILS REFER TO ATTACHED REPORTS.

R. Moore

Operator's Signature

WORKED PERFORMED BY R. MOORE OF EXPERTEST.

WELL DATA:

Tubing Size 2 3/8" FWHP 8425 KPA. SIWHP 12652 KPA.

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

'X' Nipple @ 6510' 'N'/'XN' Nipple @ 6527' Other @

Min. I.D. 1.791" @ 6527' Packer @ 6492'

Perforated Interval: TOOLACHEE: 6594' → 6796'

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

000398

WELL: Kidman North # 1 Lower

ORIFICE SIZE: 56.000 mm 2.205 "

LINE SIZE: 73.660 mm 2.900 "

Pf = 8400 kPa

T = 95 °C

Diff = 8.7 kPa

Cumulative Production to end of October = 174.995 $m^3 \times 10^6$

Number of hours online in October = 737

Production in October = 5.383 $m^3 \times 10^6$

∴ Average flow rate in October = (5.383/737) x 24 = 0.175 $m^3 \times 10^6/d$

Number of days online in November before Shut In 0700 hrs 5 / 11 /89
= 4.292 days

∴ Production up to 0700hrs 5 / 11 /89 = 4.292 x 0.175 = 0.752 $m^3 \times 10^6$

Total cumulative production = 174.995 + 0.752
= 175.747 $m^3 \times 10^6$
= 6237.977 mmscf ✓

Flow rate just prior to Shut In = 0.177 $m^3 \times 10^6$
= 6.291 mmscf/d

WP 2946G(13)
LGA/jfs : 8/12/86

SUB-SURFACE PRESSURE SURVEY

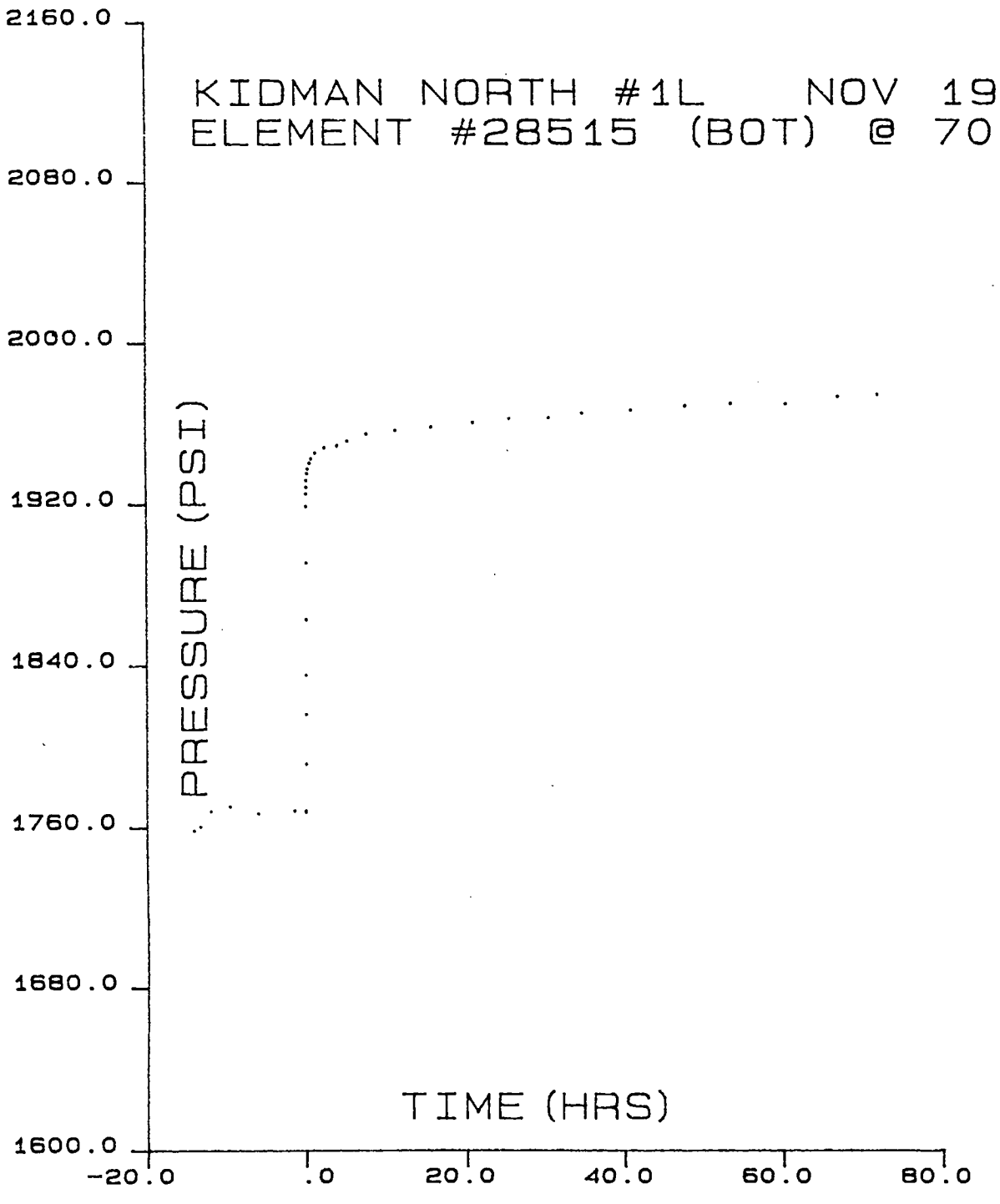
CO.		RUN 01	FIELD KNORTH	WELL 01L	
EFF DEPTH		WELL STAT		TOOL HUNG	7094'
CASING	-	CASING PRESS		ON BOTTOM	1659 4/11
LINER	-	TUBING PRESS		OFF BOTTOM	0700 8/11
DATE	891108	ELEMENT RANGE	0 - 3114	ZERO POINT	
ELEVATION		ZONE		SHUT-IN	0700 5/11
MAX TEMP		PICK-UP		ON-PROD	
PERF	-	CAL SER NO.	28515	MPP	
TUBING	-				
UNITS	ENGLISH	PURPOSE	BUILD-UP & FLOW		

SURVEY DATA

CO. RUN 01 FIELD KNORTH WELL 01L

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
7:00	1768.1	1768.1	.0	18:19	1956.7	1956.7	11.3
7:02	1791.3	1791.3	.0	22:45	1958.4	1958.4	15.8
7:02	1816.0	1816.0	.0	4:01	1960.6	1960.6	21.0
7:03	1835.3	1835.3	.0	8:34	1962.5	1962.5	25.6
7:03	1862.7	1862.7	.1	13:32	1963.0	1963.0	30.5
7:04	1890.6	1890.6	.1	17:48	1965.4	1965.4	34.8
7:05	1918.9	1918.9	.1	0:01	1966.9	1966.9	41.0
7:06	1925.3	1925.3	.1	6:48	1969.0	1969.0	47.8
7:08	1928.5	1928.5	.1	12:35	1970.3	1970.3	53.6
7:09	1931.8	1931.8	.2	19:30	1969.9	1969.9	60.5
7:14	1935.3	1935.3	.2	2:02	1973.6	1973.6	67.0
7:20	1937.5	1937.5	.3	7:00	1974.6	1974.6	72.0
7:33	1940.5	1940.5	.6	- 7:09	1758.3	1758.3	-14.1
7:47	1942.7	1942.7	.8	- 6:17	1760.6	1760.6	-13.3
8:18	1945.5	1945.5	1.3	- 4:55	1767.9	1767.9	-11.9
9:28	1948.3	1948.3	2.5	- 2:29	1770.5	1770.5	-9.5
11:04	1949.2	1949.2	4.1	1:03	1766.8	1766.8	-5.9
12:20	1951.5	1951.5	5.3	5:35	1768.3	1768.3	-1.4
14:42	1955.1	1955.1	7.7	7:00	1767.5	1767.5	.0

LUB IN DWT = 1251 PSI / OUT = 1670 PSI
LUB IN AMERADA = 1239 PSI / OUT = 1671 PSI


KIDMAN NORTH #1L NOV 1989
ELEMENT #28515 (BOT) @ 7094'KB
PRESSURE (PSI)
2160.0
2080.0
2000.0
1920.0
1840.0
1760.0
1680.0
1600.0
TIME (HRS)
-20.0
.0
20.0
40.0
60.0
80.0

EXPERTEST Pty. Ltd.
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 Wednesday, 8th November 1989.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN NTH 1L	PATCHAWARRA

STATIC PRESSURE GRADIENT REPORT

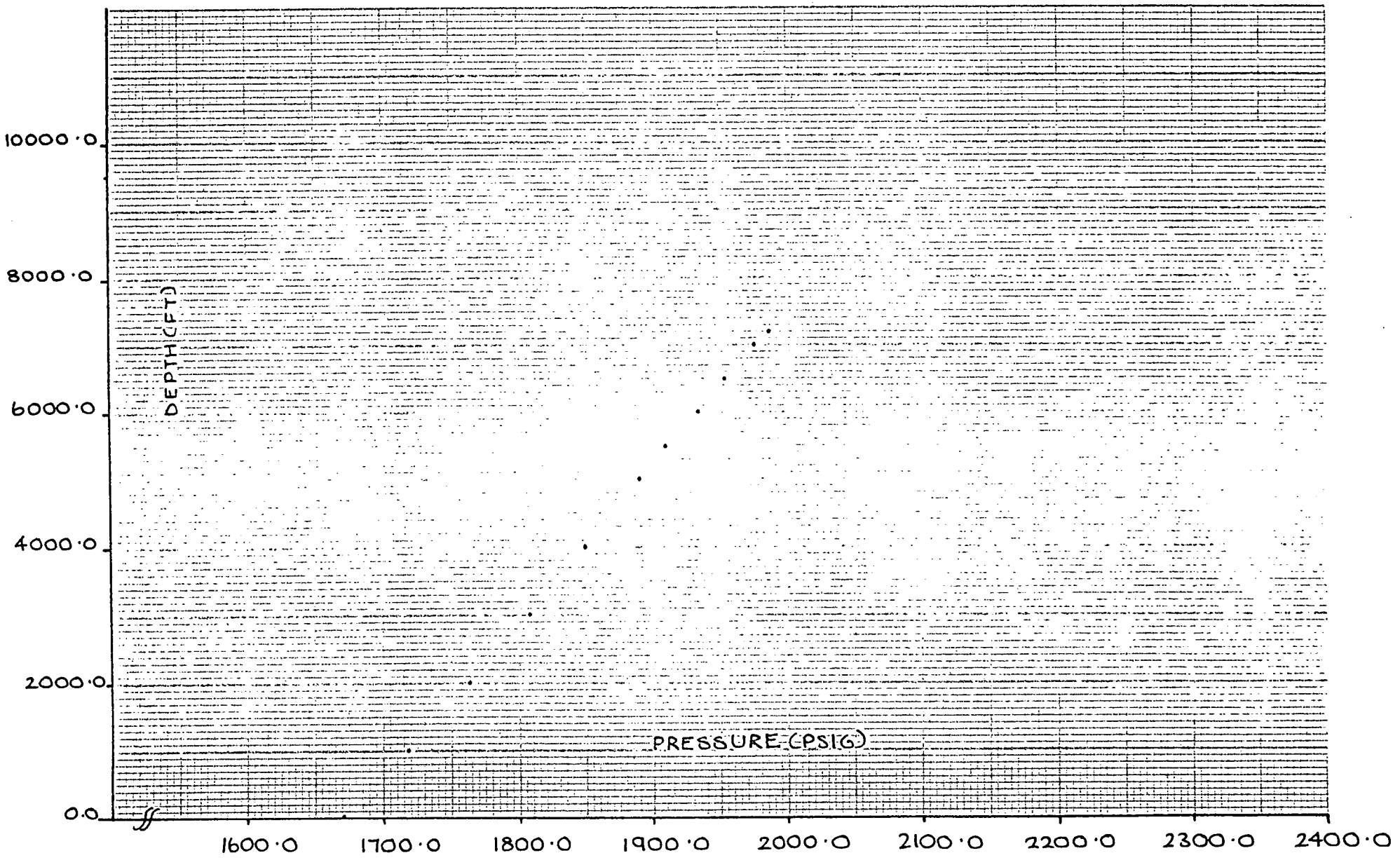
PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	56429	3000	13/10/89
Bottom	28515	3000	13/10/89

WELL DATA	
PARAMETER	VALUE
DWT In	11528 KPA 1672
DWT Out	11556 KPA 1676
Max BHT	TEMP ELE 271°F

	TOP ELEMENT			BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.0820	1668.6	-----	1.0790	1671.4	-----
1000	1.1100	1712.0	0.043	1.1090	1718.1	0.047
2000	1.1390	1757.0	0.045	1.1380	1763.4	0.045
3000	1.1680	1802.0	0.045	1.1660	1807.0	0.044
4000	1.1950	1843.9	0.042	1.1930	1849.1	0.042
5000	1.2230	1887.4	0.044	1.2190	1889.7	0.041
5500	1.2380	1910.7	0.047	1.2320	1910.0	0.041
6000	1.2510	1930.8	0.040	1.2470	1933.4	0.047
6500	1.2650	1952.6	0.044	1.2600	1953.6	0.041
7000	1.2780	1972.8	0.040	1.2740	1975.5	0.044
7200	1.2840	1982.1	0.047	1.2810	1986.4	0.055
LUB.	1.0830	1670.1	-----	1.0820	1676.0	-----

GENERAL REMARKS

KIDMAN NORTH # 1 LOWER — STATIC PRESSURE GRADIENT — 8/11/90
ELEMENT # 28515/3000 (BOT)



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WIRELINE & WELL TESTING SERVICE
138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

WIRELINE REPORT

CLIENT SANTOS WELL KIOMAN NTH #1. LOWER

DATE 4-11-89

PROGRAMME BLIND BOX RUN.

PURPOSE OF WORK TO ENSURE TUBING IS CLEAR OF ANY OBSTRUCTION FOR B.H.P SURVEY.

REPORT OF WORK PERFORMED 4TH NOVEMBER 1989.

1330 : ARRIVE ON LOCATION, S.W.I & RIG UP WIRELINE EQUIPMENT.
1400 : PRESSURE TEST EQUIPMENT & R.I.H WITH 1.75" BLIND BOX.
1415 : @ P.B.T.D 7280' KB (TUBING CLEAR) & P.O.O.H.
1432 : @ SURFACE, RIG OUT TOOLSTRING, BRING WELL BACK ON LINE 100% & PREPARE ELEMENTS FOR B.H.P SURVEY.
1648 : R.I.H WITH 2 PRESSURE ELEMENTS & 1. TEMPERATURE ELEMENT.
1659 : @ B.H.P HANG DEPTH 7100' KB (WELL FLOWING 100%).

5TH NOVEMBER 1989.

0700 : S.W.I FOR 72HR BUILD UP, (AS PER PROGRAMME).

8TH NOVEMBER 1989.

0700 : P.O.O.H. (BUILD UP COMPLETED).
0715 : @ LUBRICATOR.
0915 : DEPRESSURE LUBRICATOR, DISENGAGE STYLUS, RECOVER CHARTS (GOOD) & RELOAD ELEMENTS WITH 3HR CLOCKS FOR STATIC GRADIENT SURVEY.
1032 : R.I.H WITH ELEMENTS FOR STATIC GRADIENT.
1230 : GRADIENT COMPLETET RIG OFF LONG STRING & HAND WELL BACK TO PRODUCTION.

Operator's Signature

WORKED PERFORMED BY A. SMITH OF EXPERTEST.

WELL DATA:

Tubing Size 2 7/8" FWHP 9000 KPA SIWHP –

Subsurface S.V./Landing Nipple @ S.S.D. @ 6973' KB

'X' Nipple @ 7025' KB 'N'/'XN' Nipple @ 7037' KB Other @

Min. I.D. 1.791" @ 7037' KB Packer @ 7007' KB

Perforated Interval: 7128' KB — 7269' KB PATCHAWARRA F.M.

E1

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138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COMANDILLA 5033

STATIC GRADIENT SURVEY

CLIENT SANTOS

WELL KIDMAN NTH #1 LOWER

OPERATOR A.SMITH

DATE 8-11-89

BOMB No. 1 DATA

ELEMENT No. 56429 ELEMENT RANGE 3000PSI
RECORDER No 14628 CLOCK DATA 2530 x 3HR
ENGAGE STYLUS 1010 DISENGAGE 1221
PRESSURE LUBRICATOR 1017

BOMB No 2 DATA

ELEMENT No. 28515 ELEMENT RANGE 3000PSI
RECORDER No 13027 CLOCK DATA 2518 x 3HR
ENGAGE STYLUS 1010 DISENGAGE 1221
BLEED LUBRICATOR 1213

DWT IN 11528 KPA
DWT OUT 11556 KPA

DATE	TIME	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
8TH NOVEMBER 1989.				KPA				KPA		
	1017	LUB	1·082	11505		LUB	1·079	11524		PRESSURE LUBRICATOR.
	1032	R.I.H				R.I.H				RUN IN HOLE.
	1036	1000	1·110			1000	1·109			
	1042	2000	1·139			2000	1·138			
	1049	3000	1·168			3000	1·166			
	1055	4000	1·195			4000	1·193			
	1101	5000	1·223			5000	1·219			
	1107	5500	1·238			5500	1·232			
	1112	6000	1·251			6000	1·247			
	1118	6500	1·265			6500	1·260			
	1124	7000	1·278			7000	1·274			
	1129	7200	1·284	13666		7200	1·281	13696		M.P.P.
	1144	P.O.O.H				P.O.O.H				PULL OUT OF HOLE.
	1158	LUB	1·083	11515		LUB	1·082	11556		@ LUBRICATOR.
	1213	BLEED				BLEED				DEPRESSURE LUBRICATOR.

GENERAL REMARKS: RAN TEMPERATURE ELEMENT 63256 x 150° → 400°F
RECORDER 61275 x 1STLS
CLOCK 2279 x 3HR

E4

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000405

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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1 LOWER Date: 4-11-89

Lubricator Data: ① Clock drive problems
② 1239/1671

Operator A.SMITH

Pressure with D.W.T. In 8626 KPA (1251) Out 11515 (1670) KPA

Time Pressured 1448 4-11-89 Time Depressured 0915 8-11-89

Time Run in Hole 1648 —11— Time off Bottom 0700 —11—

	Bomb No. 1 Data	Bomb No. 2 Data
Element No. and Range	56429 x 3000PSI	28515 x 3000PSI
Recorder No.	14628 x 15TLS	13027 x 15TLS
Clock and Lead Screw Data	28646 x 96 HR	24708 x 96HR
Engage Stylus	Date: 4-11-89 Time: 1439	Date: 4-11-89 Time: 1439
Disengage	Date: 8-11-89 Time: 0920	Date: 8-11-89 Time: 0920

Remarks: RAN TEMPERATURE ELEMENT 63256 x 150°—400°F
RECORDER 61275 x 15TLS
SIBHTemp = 270°F CLOCK 24706 x 96HR

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
4TH	NOVEMBER 1989.					
	1439					ENGAGE STYLUS.
	1448		8619	0	95	PRESSURE LUBRICATOR.
	1648		8626		93	R.I.H.
	1659		8619		95	@HANG DEPTH 7100'KB
	2300		8743		95	(WELL FLOWING 100%).
5TH	NOVEMBER 1989.					
	0300		8729		93	
	0600		8715		93	
	0630		8708		94	
	0700		8688		94	S.WI FOR 72HR BUILDUP.
	0705		11363		87	
	0710		11384		78	
	0715		11404		68	
	0730	.5	11439		47	
	0745		11446		37	
	0800	1	11446		32	
	0815		11453		33	
	0830		11453		33	
	0845		11459		34	
	0900	2	11466		34	
	0915		11466		35	
	0930		11473		35	
	0945		11473	0	36	

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138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1 LOWER Date: 5-11-89

Lubricator Data: Operator A.SMITH.

Pressure with D.W.T. In Out

Time Pressured Time Depressured

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: REFER TO PAGE #1 FOR ELEMENT INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
5TH	NOVEMBER 1989.					
	1000	3	11480	0	37	
	1015		11480		37	
	1030		11487		38	
	1045		11487		38	
	1100	4	11494		38	
	1500		11508		42	
	1900	12	11494		32	
	2300		11480		25	
6TH	NOVEMBER 1989.					
	0300		11473		19	
	0700	24	11466		15	
	1100		11480		25	
	1500		11501		28	
	1900	36	11501		20	
	2300		11487		17	
7TH	NOVEMBER 1989.					
	0300		11480		15	
	0700	48	11473		13	
	1100		11508		28	
	1500		11522		33	
	1900	60	11515		25	
	2300		11508		17	
8TH	0300	NOVEMBER.	11501	0	14	

000407

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EXPERTEST PTY LTD
WIRELINE & WELL TESTING SERVICE

138 RICHMOND ROAD MARLESTON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANDILLA 5033

Well: KIDMAN NTH #1. LOWER Date: 8-11-89

Lubricator Data: Operator A.SMITH

Pressure with D.W.T. In Out

Time Pressured Time Depressured

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: REFER TO PAGE #1 FOR ELEMENT INFORMATION.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	°C Wellhead Temp.	Remarks
8TH	NOVEMBER 1989.					
	0700	72.	11494	0	13	P.O.O.H.
	0715		11494	0	14	@ LUBRICATOR.
	0915		11515	0	20	DEPRESSURE LUBRICATOR,
	0920					DISENGAGE STYLUS,
			RECOVER CHARTS	(GOOD),		RELOAD ELEMENTS
			WITH 3HR CLOCKS & PERFORM STATIC			
			GRADIENT.			
		NOTE:	CLOCK # 28646 x 96 HR ON #1. ELEMENT SLIPPED			
			WHILE RUNNING IN THE HOLE BUT ALL FLOW			
			WAS RECORDED & MOST OF THE BUILD UP.			

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

000408

WELL: Kidman North # 1 Upper Pf = 8300 kPa

ORIFICE SIZE: 28.000 mm 1.102 " T = 80 °C

LINE SIZE: 73.660 mm 2.900 " Diff = 7.5 kPa

Cumulative Production to end of May '90 = 50.0 $m^3 \times 10^6$

Number of hours online in May '90 = 715

Production in May '90 = 0.864 $m^3 \times 10^6$

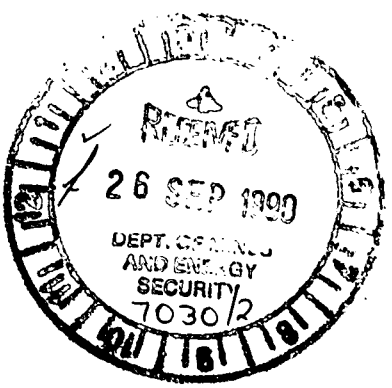
∴ Average flow rate in May '90 = (0.864/715) x 24 = 0.029 $m^3 \times 10^6/d$ ✓

Number of days online in June '90 before Shut In 1230 hrs 8 / 6 /90
= 7.521 days

∴ Production up to 1230 hrs 8 / 6 /90 = 0.029 x 7.521 = 0.218 $m^3 \times 10^6$

Total cumulative production = 50.0 + 0.218
= 50.218 $m^3 \times 10^6$
= 1782.441 mmscf ✓

Flow rate just prior to Shut In = 0.035 $m^3 \times 10^6$
= 1.239 mmscf/d



WP 2946G(13)
LGA/jfs : 8/12/86

SUB-SURFACE PRESSURE SURVEY

C[redacted]			RUN 10 FIELD KNORTH		WELL 01U
E[redacted] DEPTH			WELL STAT	TOOL HUNG	4194'
CASING		-	CASING PRESS	ON BOTTOM	1737 7/6
L[redacted]NER		-	TUBING PRESS	OFF BOTTOM	0615 11/6
D[redacted]TE	900611		ELEMENT RANGE 0 - 4087	ZERO POINT	
ELEVATION			ZONE	SHUT-IN	1230 8/6
MAX TEMP	127 C		PICK-UP	ON-PROD	
P[redacted]RF		-	CAL SER NO. 850207	MPP	
TUBING		-			
UNITS	ENGLISH		PURPOSE BUILD-UP & FLOW		

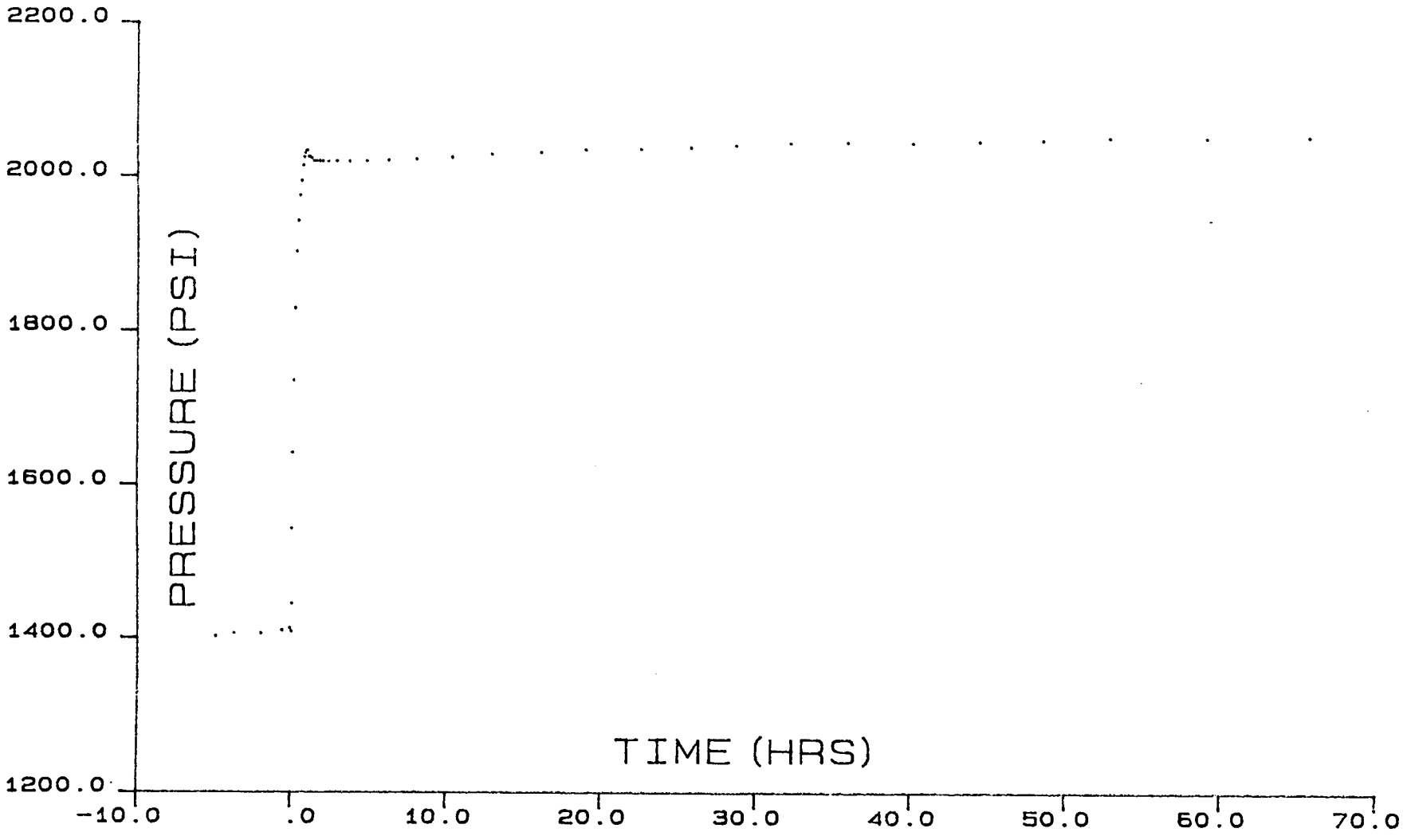
SURVEY DATA

C[redacted] RUN 10 FIELD KNORTH WELL 01U

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
12:30	1408.3	1408.3	.0	17:21	2020.5	2020.5	4.8
12:32	1444.5	1444.5	.0	18:45	2021.7	2021.7	6.3
12:34	1542.7	1542.7	.1	20:34	2023.5	2023.5	8.1
12:36	1642.0	1642.0	.1	22:51	2025.5	2025.5	10.4
12:40	1735.5	1735.5	.2	1:26	2030.1	2030.1	12.9
12:44	1829.7	1829.7	.2	4:37	2032.3	2032.3	16.1
12:50	1902.2	1902.2	.3	7:30	2036.1	2036.1	19.0
12:55	1943.0	1943.0	.4	11:05	2036.9	2036.9	22.6
13:03	1975.9	1975.9	.6	14:17	2038.9	2038.9	25.8
13:10	1994.5	1994.5	.7	17:13	2042.0	2042.0	28.7
13:15	2014.2	2014.2	.7	20:45	2044.9	2044.9	32.3
13:19	2025.2	2025.2	.8	0:25	2045.9	2045.9	35.9
13:22	2030.8	2030.8	.9	4:39	2044.7	2044.7	40.1
13:27	2034.2	2034.2	.9	8:57	2047.4	2047.4	44.4
13:31	2034.2	2034.2	1.0	13:03	2049.0	2049.0	48.5
13:36	2025.7	2025.7	1.1	17:21	2052.4	2052.4	52.9
13:41	2025.7	2025.7	1.2	23:39	2052.3	2052.3	59.1
13:46	2023.6	2023.6	1.3	6:15	2054.2	2054.2	65.8
13:55	2019.8	2019.8	1.4	7:33	1401.7	1401.7	-4.9
14:05	2019.7	2019.7	1.6	8:46	1406.6	1406.6	-3.7
14:17	2019.7	2019.7	1.8	10:32	1405.8	1405.8	-2.0
14:29	2019.6	2019.6	2.0	11:53	1410.3	1410.3	-.6
14:51	2019.4	2019.4	2.4	12:23	1413.5	1413.5	-.1
15:23	2019.8	2019.8	2.9	12:30	1408.3	1408.3	.0
16:14	2019.4	2019.4	3.7	0:00	.0	.0	.0

L[redacted]B IN DWT = 1183 PSI / OUT = 1825 PSI
LUB IN AMERADA = 1182 PSI / OUT = 1830 PSI

KIDMAN NORTH #1U JUNE 1990
ELEMENT #850207 (TOP) @ 4194'KB



000410

SUB-SURFACE PRESSURE SURVEY

C[redacted]			RUN 20 FIELD KNORTH		WELL 01U
E[redacted] DEPTH			WELL STAT		TOOL HUNG 4200'
CASING		-	CASING PRESS		ON BOTTOM 1737 7/6
LINER		-	TUBING PRESS		OFF BOTTOM 0615 11/6
D[redacted]TE	900611		ELEMENT RANGE	0 - 4114	ZERO POINT
ELEVATION			ZONE		SHUT-IN 1230 8/6
MAX TEMP	127 C		PICK-UP		ON-PROD
P[redacted]RF		-	CAL SER NO.	850208	MPP
T[redacted]BING		-			
UNITS	ENGLISH		PURPOSE	BUILD-UP & FLOW	

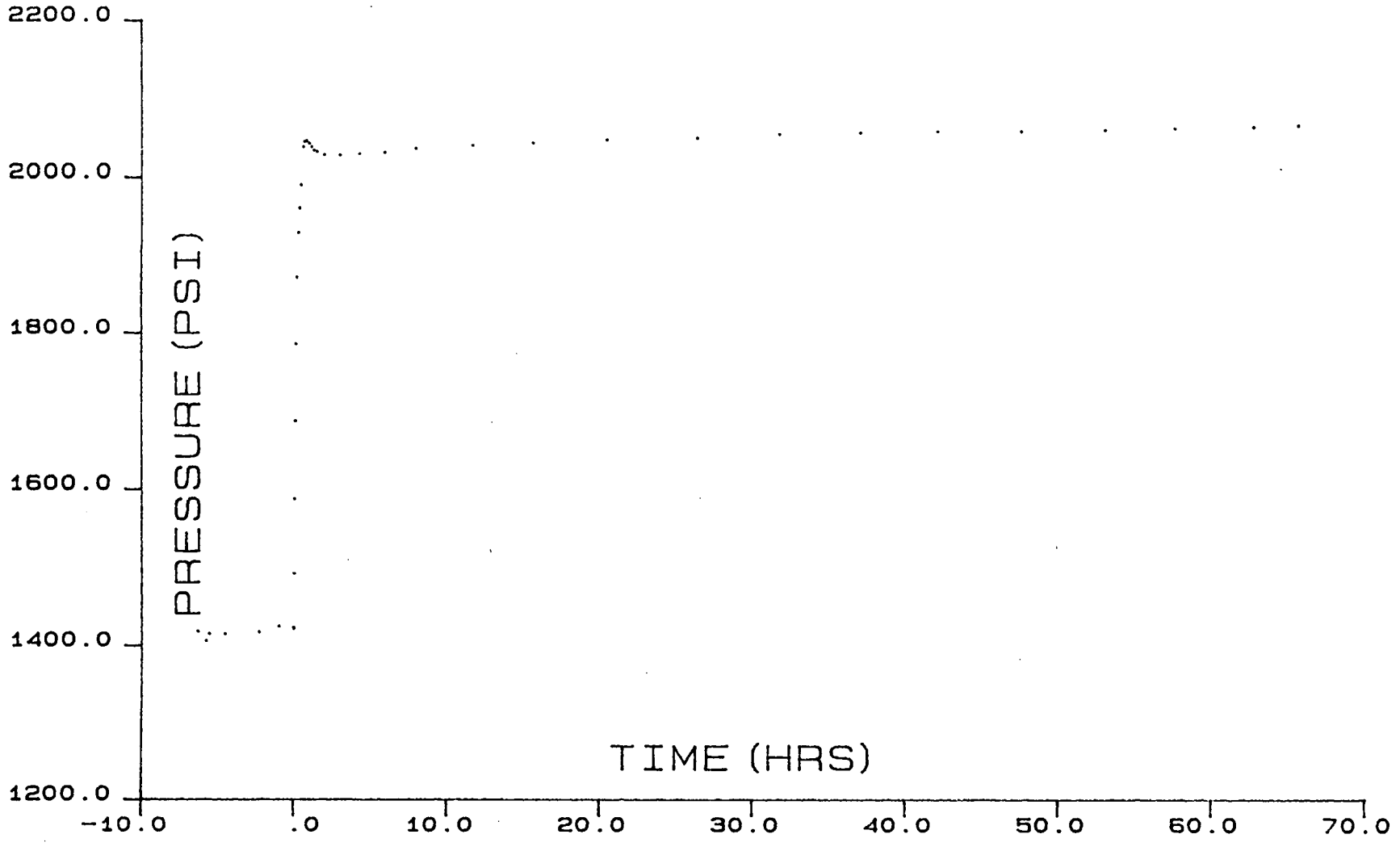
SURVEY DATA

CO[redacted] RUN 20 FIELD KNORTH WELL 01U

TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
[redacted]2:30	1421.9	1421.9	.0	20:28	2037.0	2037.0	8.0
12:32	1492.8	1492.8	.0	0:12	2041.1	2041.1	11.7
[redacted]2:33	1587.4	1587.4	.1	4:10	2044.0	2044.0	15.7
[redacted]2:36	1685.9	1685.9	.1	8:59	2047.8	2047.8	20.5
12:39	1786.0	1786.0	.2	14:54	2050.2	2050.2	26.4
[redacted]2:43	1871.8	1871.8	.2	20:18	2055.2	2055.2	31.8
[redacted]2:48	1929.7	1929.7	.3	1:36	2057.4	2057.4	37.1
12:53	1961.5	1961.5	.4	6:41	2058.9	2058.9	42.2
[redacted]2:59	1991.1	1991.1	.5	12:08	2058.9	2058.9	47.6
[redacted]3:08	2038.5	2038.5	.6	17:38	2060.6	2060.6	53.1
[redacted]3:12	2045.1	2045.1	.7	22:12	2062.7	2062.7	57.7
13:20	2046.5	2046.5	.8	3:20	2064.6	2064.6	62.8
[redacted]3:30	2042.5	2042.5	1.0	6:15	2066.5	2066.5	65.8
[redacted]3:39	2038.3	2038.3	1.2	6:10	1418.1	1418.1	-6.3
13:48	2034.1	2034.1	1.3	6:45	1406.3	1406.3	-5.8
[redacted]3:59	2032.2	2032.2	1.5	6:57	1415.1	1415.1	-5.5
[redacted]4:28	2028.1	2028.1	2.0	8:00	1414.7	1414.7	-4.5
15:30	2027.5	2027.5	3.0	10:14	1417.9	1417.9	-2.3
[redacted]6:47	2030.3	2030.3	4.3	11:33	1425.1	1425.1	-1.0
[redacted]8:26	2032.1	2032.1	5.9	12:30	1423.5	1423.5	.0

LUB IN DWT = 1183 PSI / OUT = 1825 PSI
L[redacted]B IN AMERADA = 1190 PSI / OUT = 1841 PSI

KIDMAN NORTH #1U JUNE 1990
ELEMENT #850208 (BOT) @ 4200'KB



000412

EXPERTEST
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

000413

Tested Monday, 11th June 1990.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN NIU	TOOLACHE

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA

POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	850207	4075	27/ 3/90
Bottom	850208	4100	27/ 3/90

WELL DATA

PARAMETER	VALUE
DWT In	1829
DWT Out	1829
Max BHT	260.6

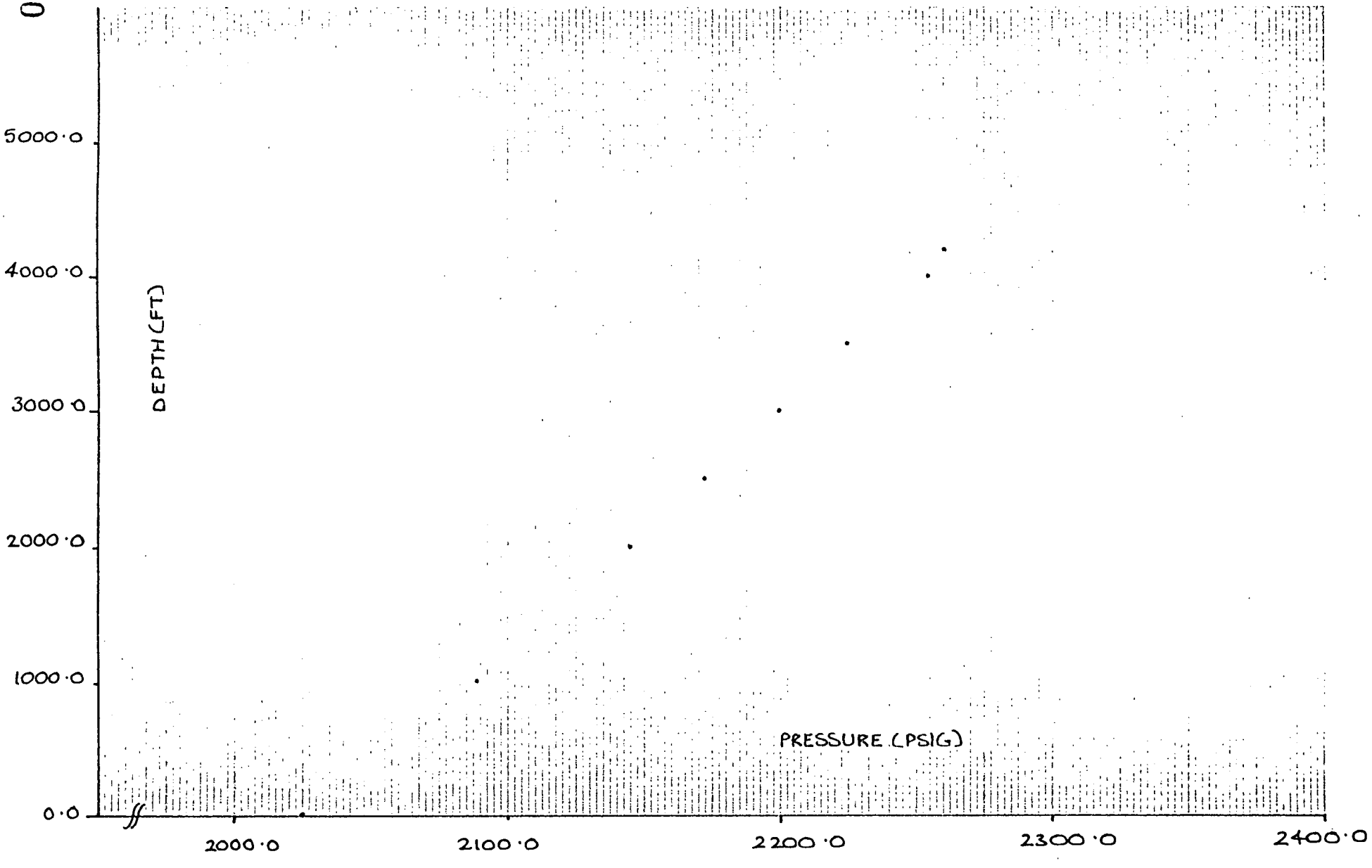
	TOP ELEMENT			BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.9980	2025.1	-----	0.9940	2045.3	----
1000	1.0290	2088.5	0.063	1.0210	2100.8	0.056
2000	1.0560	2143.8	0.055	1.0490	2158.4	0.058
2500	1.0700	2172.4	0.057	1.0630	2187.2	0.058
3000	1.0830	2199.0	0.053	1.0770	2216.0	0.058
3500	1.0950	2223.6	0.049	1.0890	2240.7	0.049
4000	1.1100	2254.3	0.061	1.1000	2263.3	0.045
4200	1.1130	2260.4	0.031	1.1060	2275.6	0.062
LUB.	1.0030	2035.4	-----	0.9960	2049.4	----

GENERAL REMARKS

000414

KIDMAN NORTH # 1 UPPER — STATIC PRESSURE GRADIENT — 11/6/90

ELEMENT # 850207/4075 (TOP)



Fm 5030

EXPERTEST PTY. LTD.

SEQUENCE OF EVENTS

CUSTOMER :	SANTOS	PERFORATIONS:	6594 - 6796'
WELL NAME:	KIDMAN NTH 1 U.	FORMATION :	TOOLACHEE.
TEST TYPE :	BHPS. FRBU	COST CODE:	605·3918·813·

PAGE: 1 OF 1
DATE: 27·5·90
OPR : M MUELLER.
R. BUCKLAND

DATE/TIME	DESCRIPTION OF EVENTS
27·5·90	
1500	SHUT WELL IN & FIT SWAB VALVE
1517	WELL BACK ON LINE. RIG UP WIRELINE UNIT.
1542	RUN IN HOLE WITH 1.5" TOOL STRING. TO A DEPTH OF 4300' KB UNIT ONLY JUST ABLE
	TO PULL OUT OF THE HOLE AT THAT DEPTH. POSSIBLY CORK SCREW TUBING.
	*NOTE PROGRAM ASKED TO RUN INTO 5000'
1612	PULL OUT OF HOLE.
1625	IN LUB RIG DOWN.
7·6·90.	
1500	RIG UP WIRELINE EQUIPMENT, PREPARE PRESSURE ELEMENTS AND MAXIMUM TEMP THERMOMETER
	(SHUT WELL IN AT 1500HR, RE OPEN @ 100% AT 1510 TO INSTALL SWAB VALVE.)
1530	PRESURE UP LUBRICATOR
1730	R.I.H. WITH BOMBS TO HANGING DEPTH OF 4200' KB
	ARRIVE HANGING DEPTH. - OBSERVE WELL HEAD PRESSURES AND TEMPERATURES.
8·6·90	
1230	S.W.I
↓	
11·6·90	
0615	PULL BOMBS OUT OF HOLE.
0628	IN LUBRICATOR.
0828	DEPRESSURE END BUILD UP.
0905	RUN STATIC GRADIENT SEE ATTACHED REPORT.
1030	END SURVEY RIG OFF.

ET 102

000411 CM

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS
WELL NAME: KIDMAN #1 UPPER
TEST TYPE : BHP FBU

PERFORATIONS: 6594' - 6795'
FORMATION : TOOLACHEE
COST CODE: 605 · 3918 · 813 ·

PAGE: 1 OF 1
DATE: 7·6·90
OPR : R BUCKLAND

GAUGE DATA	UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE
ELEMENT SERIAL NO.	850207	850208	N/A
ELEMENT RANGE	4075	4100	
RECORDING SECTION SERIAL NO.	K3433	K3434	
DATE OF CALIBRATION:	27·3·90	27·3·90	
CLOCK SERIAL NO.	F·15309	F·15682	
CLOCK RANGE	120	120	
LEAD SCREW TYPE	15 TLS	15 TLS	
ENGAGE STYLUS DATE 7·6·90 TIME	1518	1518	
DISENGAGE STYLUS DATE 11·6·90 TIME	0842	0842	

RUN DATA	TIME (HOURS)	TUBING PRESSURE (/KPa)	ANNULUS PRESSURE /KPa)
DATE : 7·6·90			
PRESSURE LUBRICATOR :	1530	8156 / 1183	0
RUN IN HOLE :	1730	8163 / 1184	0
ON DEPTH AT : 4200 FT/M	1737		
Shut In 8/6/90	1230		
DATE : 11·6·90			
PULL OUT OF HOLE :	0615	12583	0
AT SURFACE :	0628	12583 / 1825	0
DEPRESSURE LUBRICATOR :	0828	12583	0

MAXIMUM BHT AT 4200 FT/M = 127 °F/C

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

DATE	TIME	REMARKS
		NO TEMPERATURE ELEMENT AVAILABLE.

IN / OUT
① 1182 / 1830
② 1190 / 1841

000416

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS LTD.
PERFORATIONS: 6594 - 6795
PAGE: 1 OF 3
WELL NAME: KIDMAN N#1 UPPER
FORMATION : TOOLACHEE
DATE: 7·6·90
TEST TYPE : BHP's F & B.U.
COST CODE: 605. 3918 - 813
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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
7·6·90															
1530		8156	0	60°	100%			Pressure Lubricator.							
1730		8164	0	60°				Run in Hole.							
1737		8184	0	60°				Arrive on Depth.							
1800		8211	0	60°											
1830	1	8240	0	60°											
1900		8267	0	60°											
1930	2	8308	0	60°											
2000		8342	0	67°											
2030	3	8336	0	68											
2100		8349	0	69											
2130	4	8308	0	70											
2200		8294	0	71											
2230	5	8287	0	72											
2300		8294	0	73											
2330	6	8294		72											
2400		8287		72											
8·6·90					↓										
0030	0	8274	0	72				SHUT WELL IN, OBSERVE BUILD UP.							
0045	·25	11218	0	-	0%										
0100	·5	12108	0	-	"										

ET 104

000117

EXPERTEST PTY. LTD.

FIELD READINGS

CUSTOMER : SANTOS LTD | PERFORATIONS: 6594 - 6795 | PAGE: 2 OF 3.

WELL NAME: KIDMAN NORTH #1 UPPER. | FORMATION : TOOLACHEE | DATE: 8·6·90

TEST TYPE : BHP's F&BU | COST CODE: 605·3918·813 | OPR : R BUCKLAND

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/CM)	OIL (IN/CM)	OIL API GRAVITY @ 60°F	WATER (IN/CM)	
8.6.90	Continued.														
0115	·75	12479	0	-	-										
0130	1	12622													
0145	1·25	12583													
0200	1·5	12569													
0215	1·75	12569													
0230	2	12549													
0245	2·25	12535													
0300	2·5	12514													
0315	2·75	12514													
0330	3	12501													
0345	3·25	↑													
0400	3·5														
0415	3·75	↓													
0430	4	12501													
0830	8	12507													
1230	12	12521													
1630	16	12528													
2030	20	12535													
9TH MAY 1990.															
0030	24	12549													
0430	28	12556													

00418

ET 103

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS	PERFORATIONS: 6594 – 6795	PAGE: 3 OF 3
WELL NAME: KIDMAN NTH / UPPER.	FORMATION : TOOLACHEE	DATE: 9.6.90
TEST TYPE : BHPS.		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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
9.6.90															
0830	32	12583	ø												
1230	36	12583	"												
1630	40	12583	"												
2030	44	12583	"												
10.6.90															
0030	48	12583	"												
0430	52	12583	"												
0830	56	↕	"												
1230	60		"												
1630	64		"												
2030	68		"												
11-6-90															
0430	76		"												
0615		↕	"	P.O.O.H											
0628	78	12583	ø	@ SURFACE											
0828		12583	ø	DEPRESSURE LUBRICATOR. END BUILD UP.											
0905				RUN STATIC GRADIENT SEE ATTACHED GRADIENT REPORT											
1030				END SURVEY RIG OFF.											

000419

ET 10-4

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

WELL NAME: KIDMAN N^TH 1 UPPER.

TEST TYPE : STATIC GRADIENT.

PERFORATIONS: 6594' - 6795'

FORMATION : TOOLACHEE

PAGE: 1 OF 1

DATE: 11.6.90

OPR : M MUELLER

GAUGE DATA	UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE
ELEMENT SERIAL NO.	850207	850208	N/A.
ELEMENT RANGE	4075 PSI	4100 PSI	
RECORDING SECTION SERIAL NO.	K3433	K3434	
DATE OF CALIBRATION:	27.3.90	27.3.90	
CLOCK SERIAL NO.	A16080	A16086	
CLOCK RANGE	3HR	3HR	
LEAD SCREW TYPE	15 TLS	15 TLS	
ENGAGE STYLUS DATE 11.6.90 TIME	0847	0847	
DISENGAGE STYLUS DATE 11.6.90 TIME	1028	1028	

RUN DATA		TIME (HOURS)	TUBING PRESSURE (PSI/~~KPa~~)	ANNULUS PRESSURE (PSI/~~KPa~~)
DATE	: 11.6.90			
PRESSURE LUBRICATOR	:	0850	1829	ø
RUN IN HOLE	:	0905	1829	ø
ON DEPTH AT	: 4200 FT/M	0943	1829	ø
DATE	: 11.6.90			
PULL OUT OF HOLE	:	0958	1829	ø
AT SURFACE	:	1007	1829	ø
DEPRESSURE LUBRICATOR	:	1023	1829	ø

MAXIMUM BHT AT 4200 FT/M = 127 °F/C

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

DATE	TIME	REMARKS

000420

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

000421

WELL: Kidman North # 1Lower

ORIFICE SIZE: 56.000 mm 2.205 "

LINE SIZE: 73.660 mm 2.900 "

Pf = 8200 kPa

T = 86 °C

Diff = 3.3 kPa

Cumulative Production to end of May '90 = 204.2 $m^3 \times 10^6$

Number of hours online in May '90 = 732

Production in May '90 = 3.569 $m^3 \times 10^6$

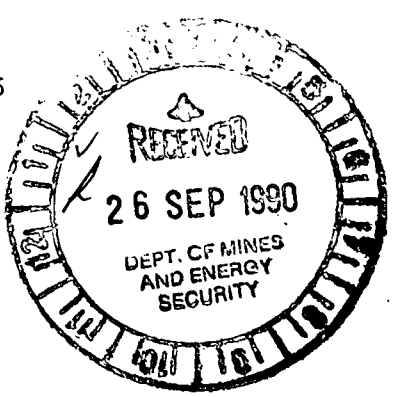
∴ Average flow rate in May '90 = (3.569/732) x 24 = 0.117 $m^3 \times 10^6/d$ ✓

Number of days online in June '90 before Shut In 0030 hrs 8 / 6 /90
= 7.021 days

∴ Production up to 0030 hrs 8 / 6 /90 = 7.021 x 0.117 = 0.822 $m^3 \times 10^6$

Total cumulative production = 204.2 + 0.822
= 205.022 $m^3 \times 10^6$
= 7277.036 mmscf ✓

Flow rate just prior to Shut In = 0.110 $m^3 \times 10^6$
= 3.894 mmscf/d



WP 2946G(13)
LGA/jfs : 8/12/86

EXPERTEST
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

000422

Tested Monday, 11th June 1990.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN NIL	PATCHAWARRA

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA

POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	850207	4075	27/ 3/90
Bottom	850208	4100	27/ 3/90

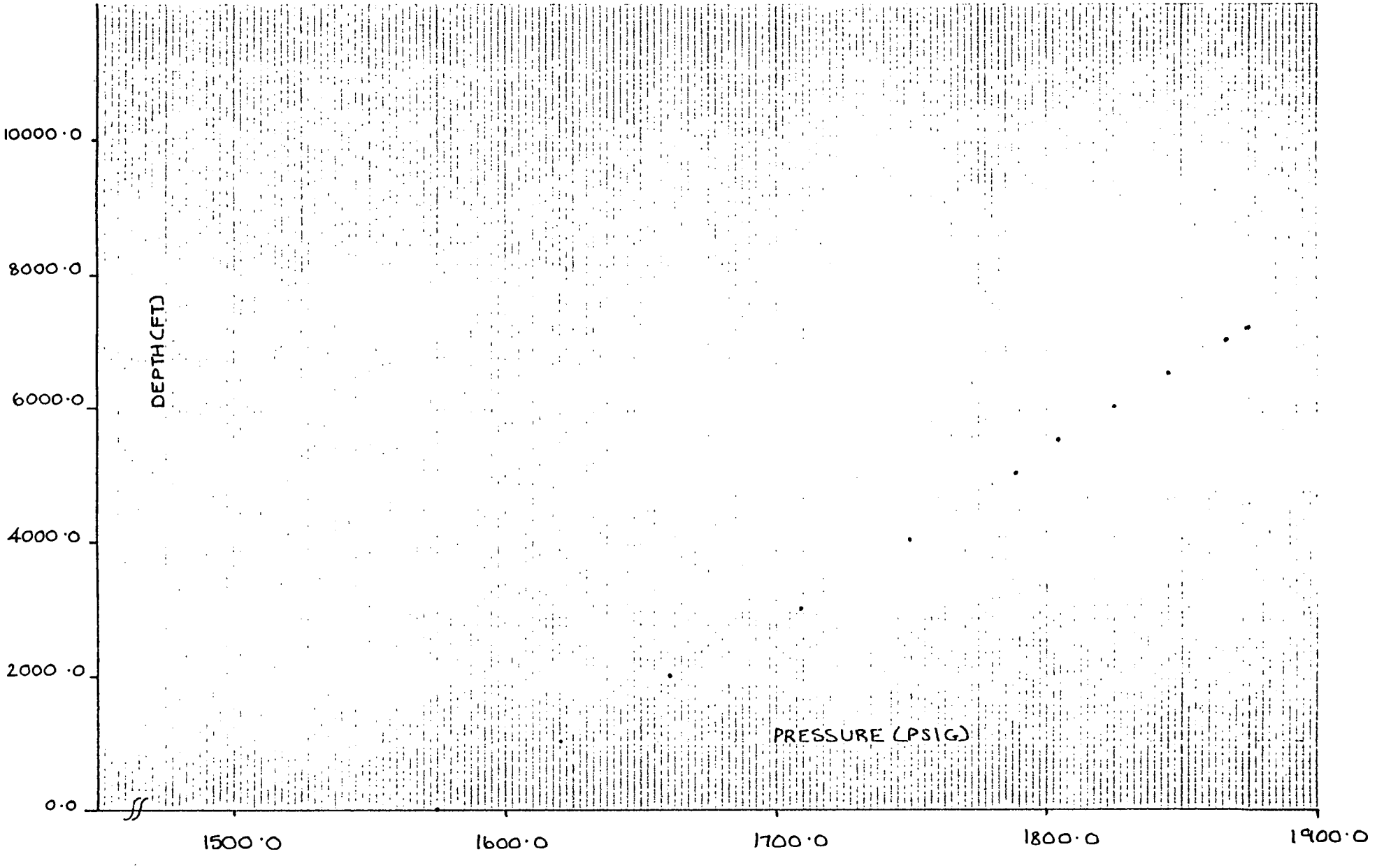
WELL DATA

PARAMETER	VALUE
DWT In	1573
DWT Out	1576
Max BHT	282.2

	TOP ELEMENT			BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.7780	1575.4	-----	0.7720	1588.7	-----
1000	0.8000	1620.4	0.045	0.7920	1629.9	0.041
2000	0.8200	1661.2	0.041	0.8130	1673.1	0.043
3000	0.8430	1708.2	0.047	0.8360	1720.4	0.047
4000	0.8630	1749.1	0.041	0.8560	1761.5	0.041
5000	0.8820	1788.0	0.039	0.8740	1798.5	0.037
5500	0.8900	1804.3	0.033	0.8830	1817.0	0.037
6000	0.9000	1824.8	0.041	0.8930	1837.6	0.041
6500	0.9100	1845.2	0.041	0.9010	1854.0	0.033
7000	0.9200	1865.6	0.041	0.9120	1876.7	0.045
7199	0.9240	1873.8	0.041	0.9160	1884.9	0.041
LUB.	0.7800	1579.5	-----	0.7740	1592.8	-----

GENERAL REMARKS

KIDMAN NORTH # 1 LOWER — STATIC PRESSURE GRADIENT — 11/6/90
ELEMENT # 850207/4075 (TOP)



000423

Fm 5030

EXPERTEST PTY. LTD.

SEQUENCE OF EVENTS

CUSTOMER :	SANTOS	PERFORATIONS:	7128 - 7269	PAGE:	1 OF 2
WELL NAME:	KIDMAN NTH 1 L	FORMATION :	PATCHAWARRA	DATE:	28.5.90
TEST TYPE :	B.H.P.S F&BU	COST CODE:	605. 3918. 813.	OPR :	M MUELLER. R. BUCKLAND

DATE/TIME	DESCRIPTION OF EVENTS
28.5.90	
0810	SHUT WELL IN & FIT SWAB VALVE.
0832	WELL BACK ON LINE RIG UP WIRELINE UNIT.
0914	RUN IN HOLE WITH 1.84" BLIND BOX
0938	SIT DOWN ON 2 7/8 - 2 3/8 X OVER @ 6488' KB CHOKE WELL BACK & CONTINUE IN HOLE.
0954	TAG N NIPPLE @ 7036' KB.
0956	PULL OUT OF HOLE.
1015	BACK IN LUBRICATOR SECURE WELL.
7.6.90.	
1120	RIG UP WIRELINE UNIT, PREPARE PRESSURE PRESSURE ELEMENTS AND MAXIMUM TEMPERATURE
	READING THERMOMETER FOR BUILD UP SURVEY WHEN KIDMAN SATELLITE SHUTS DOWN.
1210	PRESSURE UP LUBRICHTOR.
1410	RUN IN HOLE WITH BOMBS.
1430	CHOKE WELL BACK TO ALLOW BOMBS TO PASS THROUGH 2 7/8 → 2 7/8 CROSSOVER.
1434	SET BOMBS IN XN NIPPLE FOUND AT 7032 KB.
1450	SHUT WELL IN, REMOVE SWAB VALVE, REPLACE WELL HEAD CAP.
1510	WELL BACK ON LINE ON 100% CHOKE. — OBSERVE WELL HEAD PRESSURES AND TEMPERATURE.
8.6.90	
0030	SHUT WELL IN, OBSERVE BUILD UP.
11.6.90	
1050	RUN IN HOLE WITH 2" SB PULLING TOOL TO RETRIEVE ELEMENTS
1105	LATCH ELEMENTS & PULL OUT OF HOLE.

000424

ET 102

EXPERTEST PTY. LTD.

SEQUENCE OF EVENTS

CUSTOMER :	SANTOS	PERFORATIONS:	7128 - 7269	PAGE:	2 OF 2
WELL NAME:	KIDMAN NTH 1	FORMATION :	PATCHAWARRA	DATE:	11. 6. 90
TEST TYPE :	BHPS			OPR :	M MUELLER.

DATE/TIME	DESCRIPTION OF EVENTS
11.6.90	
1120	BACK AT SURFACE.
1320	BLEED LUBRICATOR.
1353	RUN STATIC GRADIENT SEE ATTACHED REPORT.
1545	RIG DOWN END SURVEY.
	* NOTE: WHILE FLOWING THE WELL PRIOR TO BUILD UP THE BOMBS LIFTED FROM THE N NIPPLE. WHEN THE WELL WAS SHUT IN THE BOMBS FELL TO THE NIPPLE. & DAMAGED THE ELEMENTS. NO BUILD UP RECORDED ON CHARTS.

000425

ET 102

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER :	SANTOS	PERFORATIONS:	7128' – 7269'
WELL NAME:	KIDMAN NTH 1 L	FORMATION :	PATCHAWARRA
TEST TYPE :	B.H.P - FLOW & BUILD UP.	COST CODE:	605·3918·813.

PAGE: 1 OF 1
DATE: 7·6·90
OPR : R. BUCKLAND

GAUGE DATA	UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE
ELEMENT SERIAL NO.	21374	22410	N/A
ELEMENT RANGE	4075 PSI	4100 PSI	
RECORDING SECTION SERIAL NO.	14623	14627	
DATE OF CALIBRATION:	26·11·89	26·11·89	
CLOCK SERIAL NO.	F15306	F15685	
CLOCK RANGE	120 HR	120 HR	
LEAD SCREW TYPE	15 TLS	15 TLS	
ENGAGE STYLUS DATE, 7·6·90 TIME	1157	1157	
DISENGAGE STYLUS DATE 11·6·90 TIME	1339	1339	

RUN DATA	TIME (HOURS)	TUBING PRESSURE (~~PSI~~/KPa)	ANNULUS PRESSURE (~~PSI~~/KPa)
DATE : 7·6·90			
PRESSURE LUBRICATOR :	1210	8218	Ø
RUN IN HOLE :	1410	8225	Ø
ON DEPTH AT : 7036 ~~FT~~M	1434		Ø
DATE : 11·6·90			
PULL OUT OF HOLE :	1105	10846	Ø
AT SURFACE :	1120	10846	Ø
DEPRESSURE LUBRICATOR :	1320	10846	Ø

MAXIMUM BHT AT 7036 ~~FT~~M = 138 ~~°F~~C

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

DATE	TIME	REMARKS
	* NOTE	WHILE WELL FLOWING THE BOMBS LIFTED FROM THE NIPPLE. WHEN THE WELL WAS SHUT
		IN THE BOMBS FELL TO THE N NIPPLE & DAMAGED THE BOMBS.
		NO BUILD UP RECORDED ON CHARTS.

000426

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS LTD
WELL NAME: KIOMAN NORTH #1 LOWER
TEST TYPE : BHPs - FLOW & BUILD UP.

PERFORATIONS: 7128 - 7269'
FORMATION : PATCHAWARRA
COST CODE: 605 · 3918 · 813

PAGE: 1 OF 4
DATE: 7·6·90
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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
7·6·90															
1210		8219	0	62°	100%			Pressure Lubricator							
1410		8226	0	62°				Run in Hole.							
1434		8226	0	58°				On Depth.							
1500		8219	0	58°											
1530	1	8219	0	60											
1600		8226	0	60											
1630	2	8240	0	60											
1700		8240	0	60											
1730	3	8254	0	61											
1800		8254	0	62											
1830	4	8261	0	63											
1900		8267	0	65											
1930	5	8267	0	66											
2000		8274	0	67°											
2030	6	8308	0	68°											
2100		8322	0	69°											
2130	7	8343	0	70°											
2200		8349	0	71°											
2230	8	8357	0	72°											
2300		8363	0	73°											

000427

ET 104

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS LTD
WELL NAME: KIOMAN NORTH #1 LOWER
TEST TYPE : BHPs F & BU

PERFORATIONS: 7128 - 7269
FORMATION : PATCHAWARRA
COST CODE: 605 · 3918 · 813.

PAGE: 2 OF 4
DATE: 7·6·90
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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
7·6·90															
23·30		8370	0	72	100%										
2400		8370		72											
8·6·90															
0030		8370		72				SHUT WELL IN, OBSERVE BUILD UP.							
0045	·25	10825		-	0%										
0100	·5	10839													
0115	·75	10867													
0130	1	10867													
0145	1·25	10867													
0200	1·5	10859													
0215	1·75	10859													
0230	2	10859													
0245	2·25	10853													
0300	2·5	10846													
0315	2·75	10839													
0330	3	10839													
0345	3·25	10839													
0400	3·5	10839													
0415	3·75	10839													
0430	4	10839													
0830	8	10832													

000428

ET 104

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS

WELL NAME: KIDMAN NTH 1 LOWER

TEST TYPE : BHPS

PERFORATIONS: 7128 - 7269

FORMATION : PATCHAWARRA

PAGE: 3 OF 4

DATE: 8·6·90

OPR :

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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
8·6·90															
1230	12	10832	ø												
1630	16	10825	"												
2030	20	10825													
9-6-30															
0030	24	10825													
0430	28	10825													
0830	32	10832													
1230	36	10839													
1630	40	10839													
2030	44	10832													
10·6·90															
0030	48	10818													
0430	52	10818													
0830	56	10825													
1230	60	10825													
1630	64	10825													
2030	68	10825													
11-6-90															
0030	72	10825													
0430	74	10825	ø												

004229

ET 104

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER :	SANTOS	PERFORATIONS:	7128 - 7269'
WELL NAME:	KIDMAN NTH 1 LOWER.	FORMATION :	PATCHAWARRA
TEST TYPE :	BHPS.		

PAGE: 4 OF 4

DATE: 11.6.90

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 $m^3 10^3/D$	OIL BPD m^3/D	WATER BPD m^3/D	GAS MMSCF $m^3 10^3$	OIL BBLS m^3	WATER BBLS m^3		
11.6.90															
0830	78	10825	Ø												
1050				RUN IN HOLE WITH 2" SB PULLING TOOL.											
1105				LATCH ELEMENTS & PULL OUT OF HOLE.											
1120	81	10846	Ø	IN LUBRICATOR.											
1320				BLEED LUBRICATOR END BUILD UP.											
1353				RUN STATIC GRADIENT SEE ATTACHED REPORT.											
1545				RIG DOWN END SURVEY.											

000430

ET 104

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS
WELL NAME: KIDMAN N^TH / LOWER
TEST TYPE : STATIC GRADIENT

PERFORATIONS: 7128 - 7269'
FORMATION : PATCHAWARRA.

PAGE: 1 OF 1
DATE: 11.6.90
OPR : M MUELLER.

GAUGE DATA	UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE
ELEMENT SERIAL NO.	850207	850208	N/A.
ELEMENT RANGE	4075 PSI	4100 PSI	
RECORDING SECTION SERIAL NO.	K 3433	K 3434	
DATE OF CALIBRATION:	27.3.90	27.3.90	
CLOCK SERIAL NO.	A16080	A16086	
CLOCK RANGE	3 HR	3 HR	
LEAD SCREW TYPE	15TLS	15TLS	
ENGAGE STYLUS DATE 11.6.90 TIME	1330	1330	
DISENGAGE STYLUS DATE 11.6.90 TIME	1539	1539	

RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/~~KPa~~)	ANNULUS PRESSURE (PSI/~~KPa~~)
DATE : 11.6.90			
PRESSURE LUBRICATOR :	1338	1573	Ø
RUN IN HOLE :	1353	1573	Ø
ON DEPTH AT : 7199 FT/M	1447	1573	Ø
DATE : 11.6.90			
PULL OUT OF HOLE :	1502	1573	Ø
AT SURFACE :	1518	1576	Ø
DEPRESSURE LUBRICATOR :	1533	1576	Ø
MAXIMUM BHT AT 7199 FT/M = 139 ~~DEG~~ C			
N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

DATE	TIME	REMARKS

000431

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS
WELL NAME : KIDMAN NTH # 1-2
TEST TYPE : LET / FGS

PERFORATIONS: 7128' - 7269'
FORMATION : PATCHAWARRA

DATE : 2.6.91
OPR : R. LARKIN

TIME		WELLHEAD DATA				SEP.		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~~ $m^3 10^3/D$	OIL ~~BPD~~ m^3/D	WATER ~~BPD~~ m^3/D	GAS ~~MMSCF~~ $m^3 10^3$	OIL ~~BBLS~~ m^3	WATER ~~BBLS~~ m^3	LGR $M^3/10^6 M^3$
June 2/91														
1600	0	4820	400		100%	TRIM Flow through sep. START L.E.T.								
1800	2	5240	407	89	"	4792	95	92.7	-	44.86		-	3.738	484
2000	4	5584	407	87	"	5309	94	86.01	-	44.86		-	7.476	522
2200	6	5550	407	85	"	5275	92	86.97	-	48.06		-	11.481	553
June 3/91														
0200	10	5599	421	88	"	5275	93	86.9	-	43.25		-	18.690	498
0600	14	5585	414	88	"	5378	95	86.4	-	44.86	52.01	-	26.168	519
0800	16	5357	414	88	"	5102	94	91.7	-	36.85		-	29.239	402
1000	18	5205	407	87	"	4827	93	92.6	-	44.86		-	32.977	489
1200	20	5171	414	85	"	4792	93	94.8	-	41.65		-	36.448	439
1400	22	5123	407	87	"	4689	95	95.7	-	46.46		-	40.320	485
1600	24	5089	407	85	"	4689	94	95.9	-	48.06		-	44.325	501
1800	26	5033	414	85	"	4617	94	97.4	-	44.86		-	48.063	461
2000	28	5020	414	84	"	4617	95	97.23	-	52.87		-	52.469	544
2200	30	5027	414	83	"	4585	94	97.04	-	46.46		-	56.341	479
June 4/91														
0200	34	5033	414	85	"	4585	96	98.25	-	46.46		-	64.084	473
0600	38	4951	407	84	"	4585	95	98.35	-	46.46	148.31	-	71.827	472
0800	40	4978	407	84	"	4516	95	100.23	-	40.06		-	75.165	400
0900		PREPARE PRES. ELEMENTS FOR F.G.S.										Qg :	94.370	E3 m3/d ✓
0932			PRES. Lub.									H/C :	NIL	m3/d ✓
												H2O :	45.283	m3/d ✓

ET 104

7030/2

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS
WELL NAME: KIDMAN NTH #1-L
TEST TYPE : LET/FGS

PERFORATIONS: 7128'- 7269'
FORMATION : PATCH.

PAGE: 2 OF 8
DATE: 4·6·91
OPR : R. LARKIN

TIME		WELLHEAD DATA				Sep.		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~~ $m^3 10^3/D$	OIL ~~BPD~~ m^3/D	WATER ~~BPD~~ m^3/D	GAS ~~MMSCF~~ $m^3 10^3$	OIL ~~BBLS~~ m^3	WATER ~~BBLS~~ m^3	L.G.R. $M^3/10^6 M^3$	
June 4/91					100%						148.31	–	75.165		
0944		4999	414			Dep. Lub.									
0950						PRES. Lub									
0951						R.I.H.									
1000	42	4978	414	83	100%	4551	93	98.4	–	44.86		–	78.903	456	
1048						Bottom Stop at 6470' KB.									
1058		5006	407			POOH									
1113						IN Lub									
1129		5020	407			Dep. Lub			Charts good						
1200	44	5013	407	86	100%	4585	94	98.5	–	48.06		–	82.908	488	
1300	45	5068	407	88	"	4620	95	97.99	–	48.07	177.154	–	84.911	490	
		END OF Test.				Divert Flow		Direct down Line.							
1325				Shut		IN to R.I.H. 1.75" L.I.B.									
1345				PASS		Through obstruction. Right out of									
				Tubing.		POOH.									
1400						L.I.B. No MARKS.									
						wait on ORDERS.									
1500						Secure well									
1530						Back on Line 100% Choke									
						Return to Moomba.									

ET 104

EXPERTEST PTY. LTD.

FIELD READINGS

CUSTOMER : SANTOS | PERFORATIONS: 7128'- 7269' | PAGE: 1 OF 2

WELL NAME: KIDMAN Nth A 1-L | FORMATION : PATCHAWARRA | DATE: 2·6·91

TEST TYPE : LET / FGS | OPR : R. LARKIN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE / TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE PSI (~~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/~~CM~~)	OIL (IN/~~CM~~)	OIL API GRAVITY @ 60°F	WATER (IN/~~CM~~)	
June 2/91											4	4		0	
1600	0	699	58		100%	START L.E.T.			TRIM	Flow	through	Sep.			
1800	2	760	59	89	100%	-	1.75	695	56	203	18	4		14	
2000	4	810	59	87	"	-	"	770	43	201	32	4		28	
2200	6	805	59	85	"	-	"	765	44	198	47	4		43	
June 3/91															
0200	10	812	61	88	"	-	1.75	765	44	199	74	4		70	
0600	14	810	60	88	"	-	"	780	43	203	102	4		98	
0800	16	777	60	88	"	-	"	740	51	201	113.5	4		109.5	
1000	18	755	59	87	"	-	"	700	55	199	127.5	4		123.5	
1200	20	750	60	85	"	-	"	695	58	199	140.5	4		136.5	
1400	22	743	59	87	"	-	"	680	61	203	155	4		151	
1600	24	738	59	85	"	-	"	680	61	201	170	4		166	
1800	26	730	60	85	"	-	"	670	64	201	184	4		180	
	change	TANK				opening	rate				2.5	2.5		0	
2000	28	728	60	84	"	-	1.75	670	64	203	19	2.5		16.5	
2200	30	729	60	83	"	-	"	665	64	201	33.5	2.5		31	
June 4/91							"								
0200	34	730	60	85	"	-	"	665	66	204	62.5	2.5		60	
0600	38	718	59	84	"	-	"	665	66	203	91.5	2.5		89	
0800	40	722	59	84	"	-	"	655	68	203	104	2.5		101.5	
1000	42	722	60	83	"	-	"	660	66	199	118	2.5		115.5	

EXPERTEST PTY. LTD.

FIELD READINGS

CUSTOMER : SANTOS
WELL NAME: KIDMAN Nth #1-L
TEST TYPE : LET / FGS

PERFORATIONS: 7128' - 7269'
FORMATION : PatchAWARRA

PAGE: 2 OF 6
DATE: 4.6.91
OPR : R. LARKIN

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/~~CM~~)	OIL (IN/~~GM~~)	OIL API GRAVITY @ 60°F	WATER (IN/~~GM~~)	
June 4/91											118	2.5		115.5	
1200	44	727	59	86	100%	-	1.75	665	66	201	133	2.5		130.5	
1300	45	735	59	88	..	-	..	670	65	203	140.5	2.5		138	
		By PASS Sep.				END test.									

ET 103

EXPERTEST PTY. LTD.

GAS FLOW CALCULATIONS

CUSTOMER : SANTOS
WELL NAME: KIDMAN Nth # 1-2
TEST TYPE : LET/FGS

PERFORATIONS: 7128'- 7269'
FORMATION : PATCHAWARRA

PAGE: 1 OF 5
DATE: 2·6·91
OPR : R. LARKIN

ORIFICE METER TYPE: DANIELS
METER RUN SIZE : 3.068"
SEPARATOR NO : 459

STATIC PRESSURE RANGE : 0 - 1500 PSIG
DIFFERENTIAL PRESS. RANGE: 0 - 200 IN WC
STANDARD CONDITIONS : 14.73 PSI @ 60°F

GAS SPECIFIC GRAVITY (SG) = .799
FG $\sqrt{(1/SG)}$ (= 1.1187
C_2 (FU × FG) = 26.8488

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)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				C_1	C ($C = C_1 \times C_2$)	GAS FLOW RATE $Q = \sqrt{(P_F \times H_W)} \times C$ E3	
								F_B	F_{TF}	F_{PV}	Y_2			(MMSCFD)	($m^3 10^3$/D)
June 2/91															
1600	0		START L.E.T.												
1800	2	100%	710	56	203	1.75	199.36	663.42	.8856	1.0461	1.0004	614.90	16509.82	3.291	92.733
2000	4	"	785	43	201	"	183.70	"	.8870	1.0515	1.0003	618.94	16618.24	3.053	86.006
2200	6	"	780	44	198	"	185.22	"	.8890	1.0522	1.0003	620.71	16665.91	3.087	86.971
June 3/91															
0200	10	100%	780	44	199	1.75	185.22	663.42	.8883	1.0518	1.0003	620.06	16648.30	3.084	86.879
0600	14	"	795	43	203	"	184.86	"	.8856	1.0516	1.0003	618.01	16593.41	3.067	86.403
0800	16	"	755	51	201	"	196.19	"	.8870	1.0496	1.0004	617.84	16588.75	3.255	91.694
1000	18	"	715	55	199	"	198.27	"	.8883	1.0476	1.0004	617.60	16582.45	3.288	92.630
1200	20	"	710	58	199	"	202.89	"	.8883	1.0472	1.0005	617.43	16577.66	3.363	94.762
1500	22	"	695	61	203	"	205.86	"	.8856	1.0452	1.0005	614.37	16495.49	3.396	95.672
1600	24	"	695	61	201	"	205.86	"	.8870	1.0457	1.0005	615.61	16528.86	3.403	95.866
1800	26	"	685	64	201	"	209.34	"	.8870	1.0450	1.0005	615.24	16519.04	3.458	97.428
2000	28	"	685	64	203	"	209.34	"	.8856	1.0445	1.0005	614.01	16485.83	3.451	97.232
2200	30	"	680	64	201	"	208.57	"	.8870	1.0447	1.0005	615.05	16513.93	3.444	97.041
June 4/91															
0200	34	"	680	66	204	"	211.81	"	.8849	1.0439	1.0005	613.22	16464.60	3.487	98.252
0600	38	"	680	66	203	"	211.81	"	.8856	1.0442	1.0005	613.83	16481.07	3.491	98.350
0800	40	"	670	68	203	"	215.78	"	.8856	1.0445	1.0006	614.03	16486.38	3.557	100.228

EXPERTEST PTY. LTD.

GAS FLOW CALCULATIONS

CUSTOMER : SANTOS	PERFORATIONS: 7128'- 7269'	PAGE: 2 OF 0
WELL NAME: KIDMAN NTH # 1-L	FORMATION : Patch.	DATE: 4 · 6 · 91
TEST TYPE : LET/FGS		OPR : R. LARKIN

ORIFICE METER TYPE: DANIELS	STATIC PRESSURE RANGE : 0 -1500 PSIG	GAS SPECIFIC GRAVITY (SG) = .799
METER RUN SIZE : 3.068"	DIFFERENTIAL PRESS. RANGE: 0-200 IN WC	FG $\sqrt{(1/SG)}$ = 1.1187
SEPARATOR NO : 459	STANDARD CONDITIONS : 14.73 PSI @ 60°F	C_2 (FU × FG) = 26.8488

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)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				C_1	C ($C = C_1 \times C_2$)	GAS FLOW RATE $Q = \sqrt{(P_F \times H_W)} \times C$	
								F_B	F_{TF}	F_{PV}	Y_2			(MMSCFD)	($m^3 10^3/D$)
June 4/91															
1000	42	100%	675	66	199	1.75	211.03	663.42	.8883	1.0449	1.0006	616.11	16542.41	3.491	98.352
1200	44	"	680	66	201	1.75	211.81	"	.8870	1.0447	1.0005	615.06	16514.21	3.498	98.548
1300	45	"	685	65	203	1.75	210.97	"	.8856	1.0445	1.0005	614.01	16485.97	3.478	97.989
			End of test.												
													ave:	3.350	94.370 ✓

ET 106

EXPERTEST PTY. LTD.

LIQUID PRODUCTION

CUSTOMER : SANTOS
WELL NAME: KIDMAN Nth # 1-L
TEST TYPE : LET / FGS

PERFORATIONS: 7128-7269'
FORMATION : PATCHAWARRA

PAGE: 1 OF 5
DATE: 2·6·91
OPR : R. LARKIN

TANK NUMBER		TANK CAPACITY		TANK SCALE		OIL API GRAVITY = @ 60°F
	#1 = 51		#1 = 56.6 M^3 ~~bbls/m³~~		#1 = .267 M^3/INCH ~~bbls/in - m³/cm~~	
	#2 = 55		#2 = 56.6 M^3 ~~bbls/m³~~		#2 = .267 M^3/INCH ~~bbls/in - m³/cm~~	

DATE / TIME	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP (IN/~~CM~~)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (IN/~~CM~~)	TANK PRODUCTION (~~BBLS~~/m³)	FLOW RATE (~~BPD~~/m³D)	CUMULATIVE PRODUCTION (~~BBLS~~/m³)	TANK DIP (IN/~~CM~~)	TANK PRODUCTION (~~BBLS~~/m³)	FLOW RATE (~~BPD~~/m³D)	CUMULATIVE PRODUCTION (~~BBLS~~/m³)
June 2/91		51									
1600	0		4	4	START	TEST	0	0			0
1800	2		18	4	-	-	-	14	3.738	44.86	3.738
2000	4		32	4	-	-	-	28	3.738	44.86	7.476
2200	6		47	4	-	-	-	43	4.005	48.06	11.481
June 3/91											
0200	10		74	4	-	-	-	70	7.209	43.25	18.690
0600	14		102	4	-	-	-	98	7.476	44.86	26.168
0800	16		113.5	4	-	-	-	109.5	3.071	36.85	29.239
1000	18		127.5	4	-	-	-	123.5	3.738	44.86	32.977
1200	20		140.5	4	-	-	-	136.5	3.471	41.65	36.448
1400	22		155	4	-	-	-	151	3.872	46.46	40.320
1600	24		170	4	-	-	-	166	4.005	48.06	44.325
1800	26		184	4	-	-	-	180	3.738	44.86	48.063
change to tk # 55			2.5	2.5				0			
2000	28		19	2.5	-	-	-	16.5	4.406	52.87	52.469
2200	30		33.5	2.5	-	-	-	31	3.872	46.46	56.341
June 4/91											
0200	34		62.5	2.5	-	-	-	60	7.743	46.46	64.084
0600	38		91.5	2.5	-	-	-	89	7.743	46.46	71.827
0800	40		104	2.5	-	-	-	101.5	3.338	40.06	75.165

EXPERTEST PTY. LTD.

LIQUID PRODUCTION

CUSTOMER : SANTOS
WELL NAME: KIDMAN Nth #1-L
TEST TYPE : LET/FGS

PERFORATIONS: 7128'- 7269'
FORMATION : Patch.

PAGE: 2 OF E
DATE: 4 · 6 · 91
OPR : R. LARKIN

TANK NUMBER	TANK CAPACITY	TANK SCALE	OIL API GRAVITY = @ 60°F
#1 = 51	#1 = 56.6 M³ ~~bbls/m³~~	#1 = .267 M³/IN bbls/in - m³/cm	
#2 = 55	#2 = 56.6 M³ ~~bbls/m³~~	#2 = " " bbls/in - m³/cm	

DATE / TIME	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP (IN/~~CM~~)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (IN/~~CM~~)	TANK PRODUCTION (~~BBLS~~/m³)	FLOW RATE (~~BPD~~/m³D)	CUMULATIVE PRODUCTION (~~BBLS~~/m³)	TANK DIP (IN/~~CM~~)	TANK PRODUCTION (~~BBLS~~/m³)	FLOW RATE (~~BPD~~/m³D)	CUMULATIVE PRODUCTION (~~BBLS~~/m³)
June 4/9/			104	2.5			-	101.5			75.165
1000	42	55	118	2.5	-	-	-	115.5	3.738	44.86	78.903
1200	44		133	2.5	-	-	-	130.5	4.005	48.06	82.908
1300	45		140.5	2.5	-	-	-	138	2.003	48.07	84.911
		END	of test.								

ET 105

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS
WELL NAME: KIDMAN Nth # 1~2
TEST TYPE : L.E.T / F.G.S.

PERFORATIONS: 7128'- 7269'
FORMATION : Patch.

PAGE: 1 OF
DATE: 4 · 6 · 91
OPR : R. LARKIN

GAUGE DATA	UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE
ELEMENT SERIAL NO.	28515	62039	
ELEMENT RANGE PSI	3000	3000	
RECORDING SECTION SERIAL NO.	13027	34083	
DATE OF CALIBRATION: @ 290°F.	20·5·91	20·5·91	
CLOCK SERIAL NO.	A-15012	A-15014	
CLOCK RANGE	3 HR	3 HR	
LEAD SCREW TYPE	15 TLS	15 TLS	
ENGAGE STYLUS DATE 4·6·91 TIME	0918	0918	
DISENGAGE STYLUS DATE · · TIME	1133	1133	

RUN DATA	TIME (HOURS)	TUBING PRESSURE (~~PSI~~/KPa)	ANNULUS PRESSURE (~~PSI~~/KPa)
DATE : 4·6·91			
PRESSURE LUBRICATOR :	0932		
RUN IN HOLE :	0951	4999	414
ON DEPTH AT : 6470 FT/~~M~~			
DATE : 4·6·91			
PULL OUT OF HOLE :	1058	5006	407
AT SURFACE :	1113		
DEPRESSURE LUBRICATOR :	1129	5020	407

MAXIMUM BHT AT 6470 FT/~~M~~ = 260 °F/~~C~~

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

DATE	TIME	REMARKS
		June 4/91
	0932	Pres. Lub.
	0944	Dep. Lub.
	0950	Pres. Lub
	0951	R. I. H.
	1048	On Bottom Stop at 6470' KB. (Refer to w/l Report)
	1058	POOH
	1113	In. Lub.
	1114	Dep. Lub.
	1119	Pres. Lub.
	1129	Dep. Lub. Charts good.
		Flowing on test through Sep.

ET 108

EXPERTEST

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 Tuesday, 4th June 1991.

CLIENT	LOCATION	FORMATION
Santos Ltd.	KIDMAN NTH 1-L	PATCHAWARRA

FLOWING PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA

POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	28515	3000	20/ 5/91
Bottom	62039	3000	20/ 5/91

WELL DATA

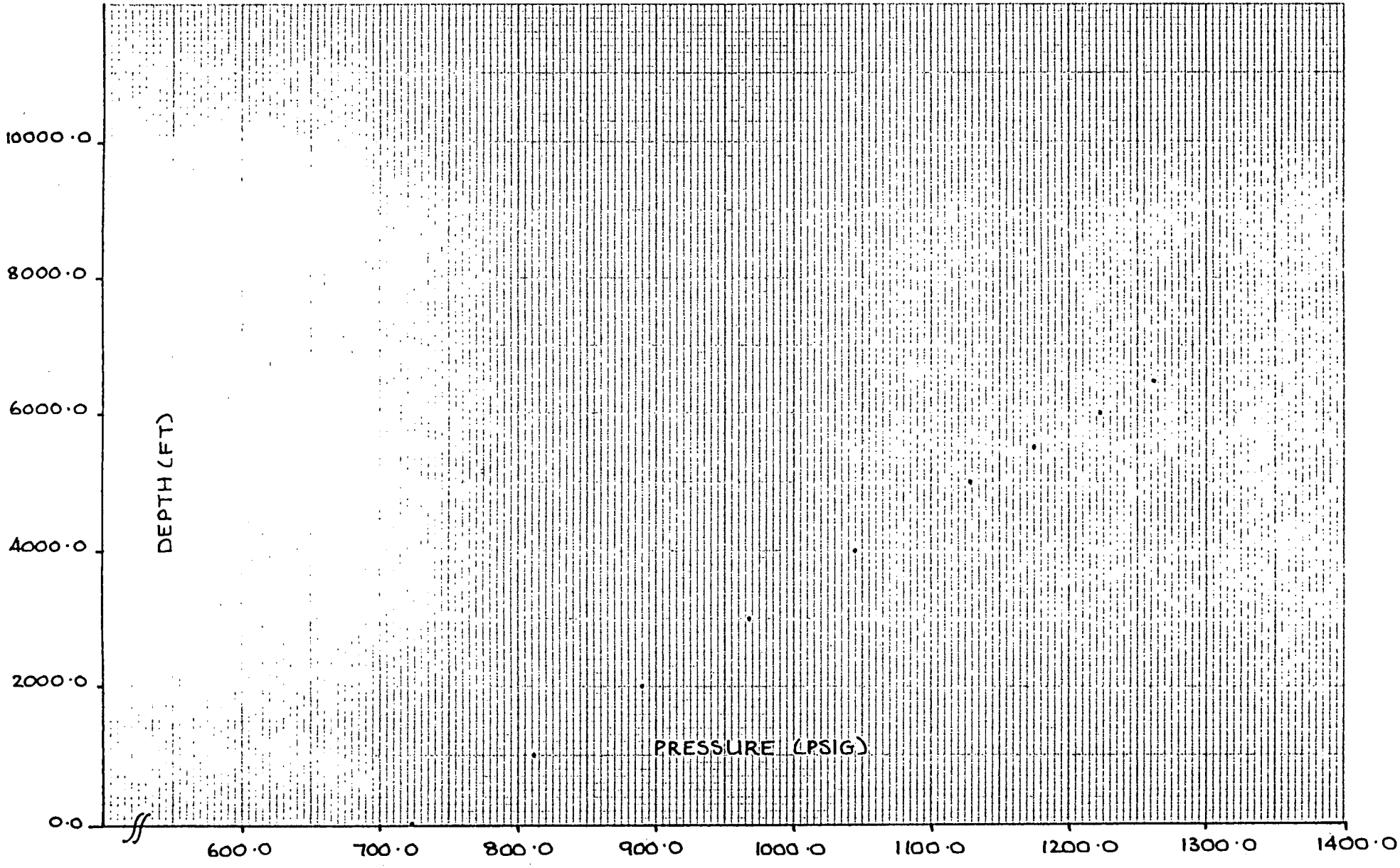
PARAMETER	VALUE
DWT In	725 PSIG
DWT Out	728 PSIG
Max BHT	260 F

	TOP ELEMENT			BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.4600	722.6	-----	0.4480	719.1	-----
1000	0.5170	811.1	0.089	0.5030	807.5	0.088
2000	0.5680	890.4	0.079	0.5540	889.5	0.082
3000	0.6175	967.4	0.077	0.6020	966.6	0.077
4000	0.6670	1044.4	0.077	0.6500	1043.7	0.077
5000	0.7210	1128.4	0.084	0.7030	1128.9	0.085
5500	0.7510	1175.1	0.093	0.7320	1175.5	0.093
6000	0.7810	1221.8	0.093	0.7610	1222.1	0.093
6470	0.8070	1262.3	0.086	0.7860	1262.3	0.086
LUB.	0.4680	735.0	-----	0.4500	722.3	-----

GENERAL REMARKS

ON TEST THROUGH SEP.

KIDMAN NORTH # 1 LOWER — FLOWING PRESSURE GRADIENT — 4/6/91
ELEMENT # 28515/3000 (TOP)



000442

Fm 5030

000443

DOWNHOLE INSTALLATION

Well KIDMAN NORTH 1 L

K.B. to top of tubing head spool 20·70'

PERFORATIONS

TOOLACHEE

64-5 6594'-6604'
66-7 6736'-6746'
67-3 6774'-6796'
} 4" csg guns, 4spf Hyperjet II

PATCHAWARRA

72-3 7128'-7130'
7148'-7150'
72-5 7168'-7175'
7178'-7220'
73-1 7232'-7240'
7242'-7247'
7252'-7269'

4" csg guns, 4 spf, Hyperjet II

REMARKS

1. Annulus fluid: 9·5 #/gal 2% KCL Inhibited brine (1 drum applied 2100)
2. Indicated string weight: 42000 #
   Calculated string weight: 40000 #
3. Slack-off weight: 5000 #

	(Inside Dia.)
20·70'	
21·37'	(2·347") — C.I.W. 2⅞" split hanger segment c/w 2⅞" ABDSS box down & 2⅞" CS hydril box up
21·71'	(2·347") — 2⅞" ABDSS L80 pin x pin nipple
50·46'	(2·347") — 1 joint 2⅞" L80 6·5# ABDSS tubing
60·46'	(2·347") — 10' x 2⅞" L80 6·5# ABDSS pup joint
	(2·347") — 205 jts 2⅞" L80 6·5# ABDSS tubing
6487·77'	
6488·60'	(1·901") — X-over 2⅞" ABDSS box x 2⅜" EUE pin L80
	(1·937") — Baker 7" A-5 dual packer size 47C2
6498·41'	
6500·52'	(1·901") — 2' x 2⅜" 4·7# J55 EUE pup joint
6501·28'	(1·901") — X-over 2⅜" EUE box x 2⅞" EUE pin
	(2·347") — 2 jts 2⅞" 6·5# J55 EUE tubing
6564·33'	(2·347") — 2 x 10' 2⅞" 6·5# J55 EUE pup joints
6584·37'	(2·347") — 3 x 10' 2⅞" EUE blast joints
6613·65'	(2·347") — 1 x 12' & 1 x 6' 2⅞" 6·5# J55 EUE pup joints
6631·84'	
	(2·347") — 3 jts 2⅞" 6·5# J55 EUE tubing
6725·63'	
	(2·347") — 4 x 20' 2⅞" EUE blast joints
6806·00'	
6814·09'	(2·347") — 8' x 2⅞" 6·5# J55 EUE pup joint
	(2·347") — 5 jts 2⅞" 6·5# J55 EUE tubing
6971·46'	
6972·56'	(1·901") — X-over 2⅞" EUE box x 2⅜" EUE pin
6975·45'	(1·880") — 2⅜" otis 121 x 01 SSD
7006·73'	(1·901") — 1 jt 2⅜" 4·7# J55 EUE tubing
7007·75'	(1·990") — Baker G-22 locator seal assembly size 81-32 c/w 2⅜" EUE box up
7011·66'	(3·250") — Baker 7" DB 84-32 packer c/w 4½" LT&C box down
7017·22'	(3·964") — Milllout extension 4½" LT&C pin x pin
7017·88'	(2·435") — X-over 4½" LT&C box x 2⅞" EUE pin
7018·98'	(1·985") — X-over 2⅞" EUE box x 2⅜" EUE pin
	(1·901") — 1 x 2' & 1 x 4' 2⅜" 4·7# J55 EUE pup joints
7025·26'	
7026·47'	(1·875") — Otis 2⅜" EUE II x I landing nipple
7036·57'	(1·901") — 10' x 2⅜" 4·7# J55 EUE perf. pup joint
7037·61'	(1·791") — Otis 2⅜" EUE II N12 landing nipple
7038·85'	(1·901") — Re-entry guide 2⅜" EUE box x 2⅞" EUE pin
	Top of cement plug
	7" EZSU c/w bridging plug

P.B.T.D. 7279'

PROPOSED RE/COMPLETION	
COMPLETION AS RUN	✓
NOT TO SCALE	

DESIGNED	W. Baer
DRAFTED	U. Lenartowicz
DATE	13/7/1987
REVISED	

EXPERTEST PTY. LTD.

SEQUENCE OF EVENTS

CUSTOMER : SANTOS	PERFORATIONS: 7128' - 7269'	PAGE: 1 OF 4
WELL NAME: KIDMAN NTH # 1	FORMATION : PATCHAWARRA	DATE: 2 · 6 · 91
TEST TYPE : L.E.T. / F.G.S.		OPR : R. LARKEN

DATE/TIME	DESCRIPTION OF EVENTS
June 2/91	
1000	ON location : spot c/van, swl unit.
1015	Shut IN to Fit swab valve.
1035	Back ON line. 100% choke.
	Rig IN test FLANGES, Sep. tANK, W/L unit.
1355	R.I.H. 1.75" BLINDBox to tAG PBTD. Tub-4771 KBA.
1410	HANG up at 6493' K.B. tRy SEVERAL times. CANNOT
1415	Pass. POOH.
1440	R. I. H. 1.5" stem.
1500	HANG up at 6504' KB. CANNOT Pass. POOH.
1520	Secure w/L unit.
1600	TRIM Flow through sep. START L.E.T. REFER to test DATA.
June 6/91	
0900	PREPARE PRES. ELEMENTS FOR F.G.S.
1230	F.G.S. COMPLETED. CONTINUE to MONITOR FLOW.
1300	By PASS SEP. END OF TEST.
1325	R.I.H 1.75" BLIND Box (WELL Shut IN)
1345	Pass through obstruction. out through END OF
1350	Tubing. POOH
1500	Secure WELL.
1530	WELL Back ON Line By Pass Sep.

00044A

ET 102