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NUMBER 1927

PEL 5 AND PEL 6, PATCHAWARRA CENTRAL BLOCK

COOPER BASIN

BROLGA 1

TEST REPORTS

Submitted by

**Delhi International Oil Corp., CSIRO and Santos Ltd
1993**

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MINES AND ENERGY
SOUTH AUSTRALIA



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ENVELOPE 1927

TENEMENT: PEL 5 and PEL 6, Patchawarra Central Block; Cooper Basin

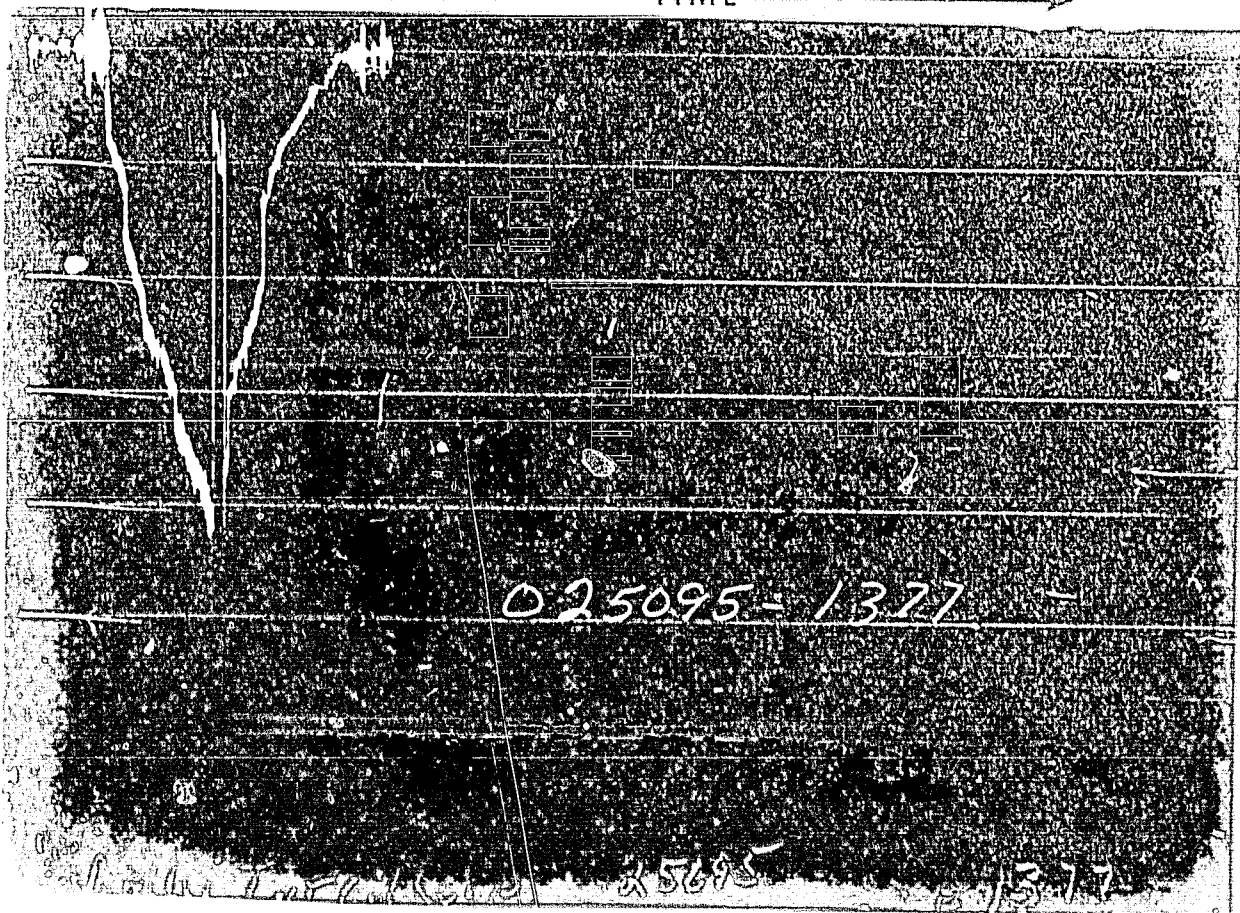
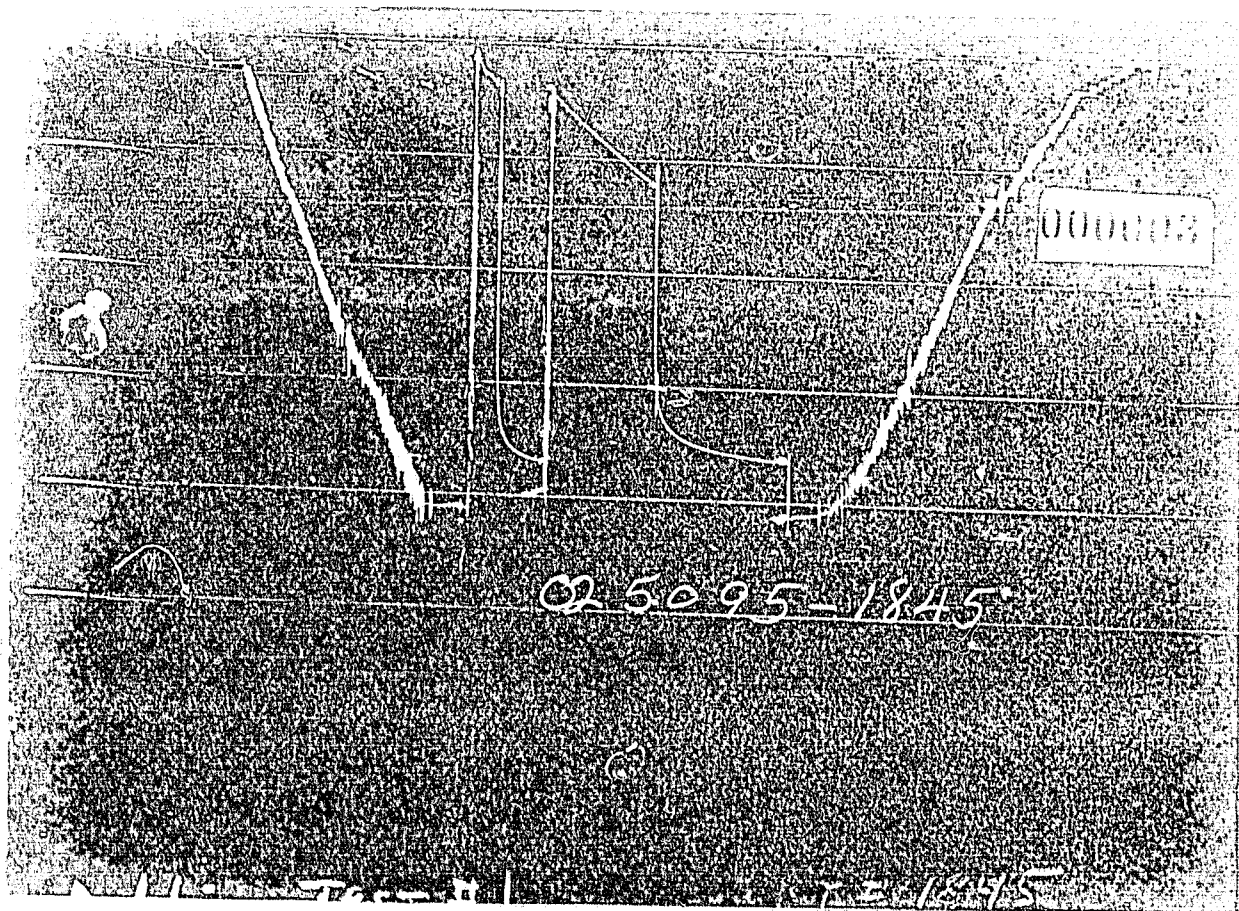
TENEMENT HOLDER: Delhi International Oil Corp. (operator), Santos Ltd, Vamgas NL, Bridge Oil NL, Reef Oil NL and Basin Oil NL

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	MESA NO.
REPORTS: Halliburton Services, 1972. Formation testing service report, DST 1 (6/5/72).	1927 R 1 Pgs 3-6
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Halliburton Services, 1972. Formation testing service report, DST 3 (12/5/72).	1927 R 3 Pgs 12-16
Halliburton Services, 1972. Formation testing service report, DST 4 (15/5/72).	1927 R 4 Pgs 17-22
Halliburton Services, 1972. Formation testing service report, DST 5 (17/5/72).	1927 R 5 Pgs 23-27
Halliburton Services, 1972. Formation testing service report, DST 6 (19/5/72).	1927 R 6 Pgs 28-31
Halliburton Services, 1972. Formation testing service report, DST 7 (20/5/72).	1927 R 7 Pgs 32-36
Halliburton Services, 1972. Formation testing service report, DST 8 (23/5/72).	1927 R 8 Pgs 37-41
Horvath, Z., 1972. Analytical contractor's results of DST gas sample analyses, for DSTs 2 through 7, and of water sample analyses for DSTs 1 through 4 and DST 8 (BMR, 5/6/72).	1927 R 9 Pgs 42-44
Analytical contractor's results of drill core sample analyses for 64 selected plug samples taken from cores 1 through 6 over the depth interval 8937-9667 feet KB (BMR Petroleum Technology Laboratory, 19/7/72).	1927 R 10 Pgs 45-52
Smyth, M., 1975. The petrography of some coals and other sediments from Brolga 1 well, Cooper Basin (CSIRO Division of Mineralogy, Minerals Research Laboratories, Restricted Investigation Report no. 723R for Delhi, August 1975).	1927 R 11 Pgs 53-85
Christison, B. and Temmers, B., 1976. Results of petrographic, clay mineralogy and source rock maceral analyses of 12 selected drill core samples from cores 2 through 6 (SOEKOR, Johannesburg, South Africa, analytical contractor's report for Societe Nationale des Petroles d'Aquitaine, 2/3/76).	1927 R 12 Pgs 86-100

REPORTS:		Smyth, M., 1976. Fluorescent light observations of dispersed organic matter in sediments from Brolga 1 well, Cooper Basin (CSIRO Division of Mineralogy, Minerals Research Laboratories, Restricted Investigation Report no. 798R for Delhi, July 1976).	MESA NO. 1927 R 13 Pgs 101-113
		Coment Computer Enterprises Ltd, 1982. Log analysis report (consultant's report for Delhi, 4/6/82).	1927 R 14 Pgs 114-170
PLANS	Scale		
Encl.	Computerised log interpretation poro/perm. plot, depth interval 8900-9680 feet KB.	1:240	1927-1 >A0
Encl.	Computerised log interpretation S_w /bulk volume plot, depth interval 8645-9680 feet KB.	1:240	1927-2 >A0
REPORTS:		Challenger Geological Services, 1984. Album of colour core photographs, cores 1 through 6 (contractor's report for Delhi, February 1984).	1927 R 15 Pgs 171-193
		Campbell, R., 1986. Field maintenance contractor's results of the flowing pressure gradient survey of the Patchawarra Formation gas reservoir perforated interval 9514-9580 feet depth KB (the Lower producing zone), conducted over the period 30/3-1/4/86 (Expertest Pty Ltd).	1927 R 16 Pgs 194-202
		Hay, N., 1987. Field maintenance contractor's results of the static pressure gradient survey of the Patchawarra Formation gas reservoir perforated interval 9267-9294 feet depth KB (part of the Upper producing zone), conducted on 10/4/87 (Expertest Pty Ltd).	1927 R 17 Pgs 203-206
		Dove, K. and Gulbransen, S., 1987. Field maintenance contractor's results of the static pressure gradient survey of the Patchawarra Formation gas reservoir perforated intervals 9042-9057 and 9267-9294 feet depth KB (the Upper producing zone), conducted on 11/12/87 (Expertest Pty Ltd).	1927 R 18 Pgs 207-209
		Dove, K., 1988. Field maintenance contractor's results of the static pressure gradient survey of the Upper producing zone, conducted on 11/1/88 (Expertest Pty Ltd).	1927 R 19 Pgs 210-212
		Smith, A., 1988. Field maintenance contractor's results of the static pressure gradient survey of the Upper producing zone, conducted on 6/2/88 (Expertest Pty Ltd).	1927 R 20 Pgs 213-215
		Kurasiak, I. and Campbell, R., 1988. Field maintenance contractor's results of the flowing bottomhole pressure, 96 hour reservoir pressure buildup and static pressure gradient surveys of the Upper producing zone, conducted over the period 29/6-3/7/88 (Expertest Pty Ltd).	1927 R 21 Pgs 216-227
		Larkin, R., 1990. Field maintenance contractor's results of the static pressure gradient survey of the Upper producing zone, conducted on 14/4/90 (Expertest Pty Ltd).	1927 R 22 Pgs 228-232
		Black, P., 1993. Field maintenance contractor's results of the static pressure gradient survey of the Upper producing zone, conducted on 3/6/93 (Expertest Pty Ltd).	1927 R 23 Pgs 233-236

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000004

FLUID SAMPLE DATA				Date 5-6-72		Ticket Number 025095	
Sampler Pressure _____ P.S.I.G. at Surface Recovery Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester MR. FALLIS		Witness MR. LICKLITTER	
				Drilling Contractor O.D.E. # 9		DR S	
EQUIPMENT & HOLE DATA							
				Formation Tested Upper Gidgealpa			
				Elevation 130' KB Ft.			
				Net Productive Interval 40' Ft.			
				All Depths Measured From Kelly Bushing			
				Total Depth 8832' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 533.67' I.D. 2 5/16"			
				Drill Pipe Length 8160' I.D. 4.276"			
				Packer Depth(s) 8715'-8724' Ft.			
				Depth Tester Valve 8698' Ft.			
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke 1/4-7/16" Bottom Choke 5/8"	
Cushion							
Recovered		2760 Feet of gas cut salt water					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Opened tool for 15 minute first flow with a weak to a good blow, bottom of bucket in 9 minutes. Closed tool for 30 minute first closed in pressure. Reopened tool for 63 minute second flow with a good blow. Closed tool for 82 minute second closed in pressure.							
* TIME GIVEN AND RECORDED DOES NOT AGREE.							
TEMPERATURE		Gauge No. 1845		Gauge No. 1377		Gauge No.	
		Depth 8700 Ft.		Depth 8829 Ft.		Depth Ft.	
		12 Hour Clock		12 Hour Clock		Hour Clock	
Est		Blanked Off No		Blanked Off Yes		Blanked Off	
Actual 250 °F.		Pressures		Pressures		Pressures	
		Field Office		Field Office		Field Office	
Initial Hydrostatic		4134 4118		4231 4213 Q			
Flow Initial		91 75		547			
Flow Final		342 389		CLOCK STOPPED 703.			
Closed in		3679 3698		AFTER APPROXIMATELY			
Flow Initial		365 456		6 MINUTES.			
Flow Final		1229 1230					
Closed in		3611 3641					
Flow Initial							
Flow Final							
Closed in							
Final Hydrostatic		4111 4102					
Q = Questionable							

LEGAL JACOBSON
 Sec. - Twp. - Rng.
 Lease Name
 Well No. 1
 Test No. 1
 Field Area
 COOPER BASIN
 County
 SOUTH AUSTRALIA
 8724'-8832'
 Tested Interval VANGAS N.T.-BRIDGE OIL N.T.
 Lease Owner/Company Name
 DELHI INTERNATIONAL OIL CORPORATION-SANTOS LTD.

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Gauge No. 1845		Depth 8700'		Clock No. 7588		12 hour		Ticket No. 025095					
First Flow Period		First Closed In Pressure		Second Flow Period		Second Closed In Pressure		Third Flow Period		Third Closed In Pressure			
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0 .000	75	.000		389	.000	456		1230					
1 .0202	216	.0203		3373	.0856	620 *		3398**					
2 .0404	273	.0406		3502	.1515	759		3457					
3 .0606	314	.0609		3564	.2174	864		3495					
4 .0808	371	.0812		3605	.2833	1005		3523					
5 .1010	389	.1015		3632	.3492	1125		3545					
6		.1218		3652	.4150	1230		3564					
7		.1421		3691				3580					
8		.1624		3680				3591					
9		.1827		3691				3604					
10		.2030		3698				3611					
11								3620					
12								3630					
13								3636					
14								3639					
15								3641					

Gauge No. 1377		Depth 8829'		Clock No. 7368		12 hour	
0 .000							
1 .043							
2							
3	CLOCK STOPPED						
4	AFTER APPROXIMATELY						
5	6 MINUTES.						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Reading Interval 3	3	10	5	Minutes
REMARKS: * First interval equal to 13 minutes ** -12 minutes.				

500005

025095

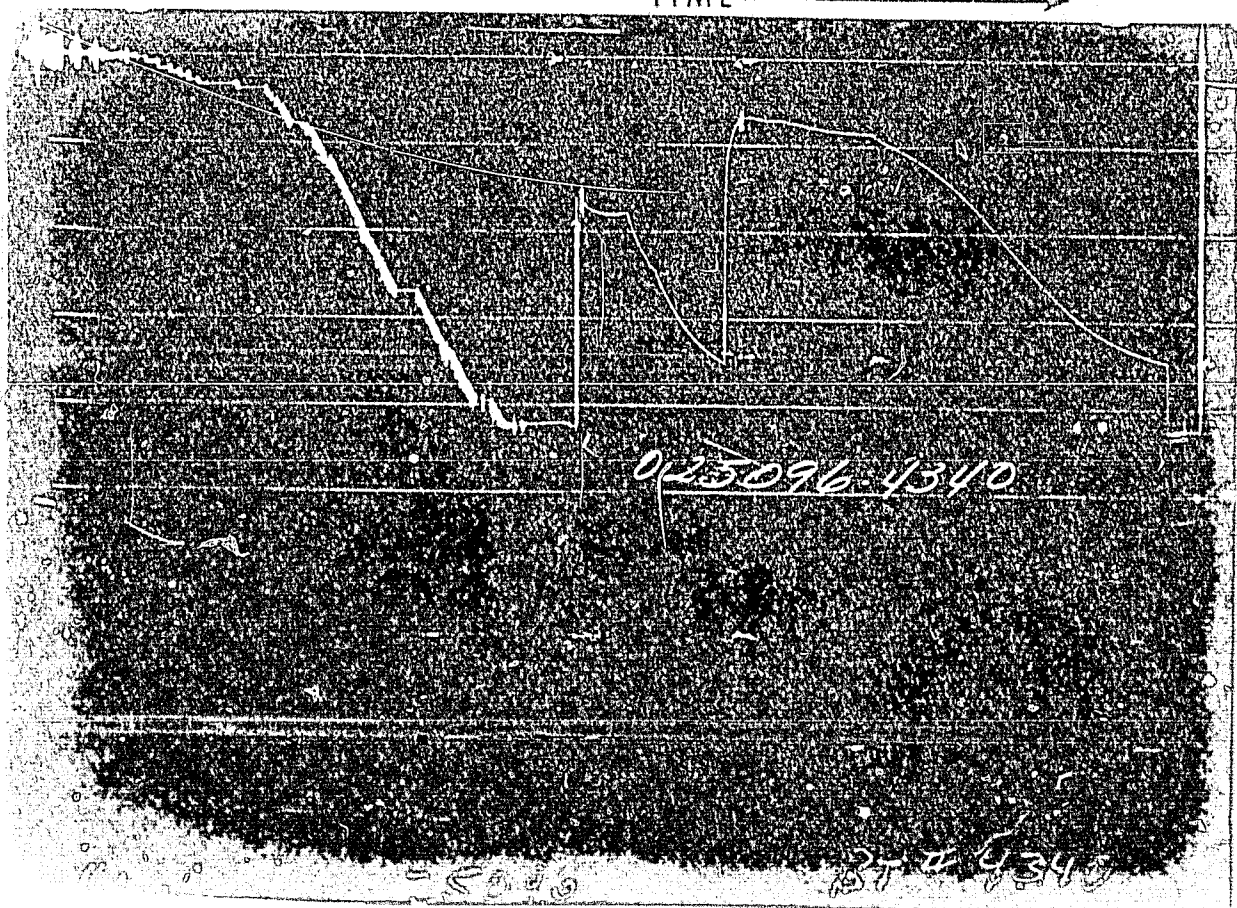
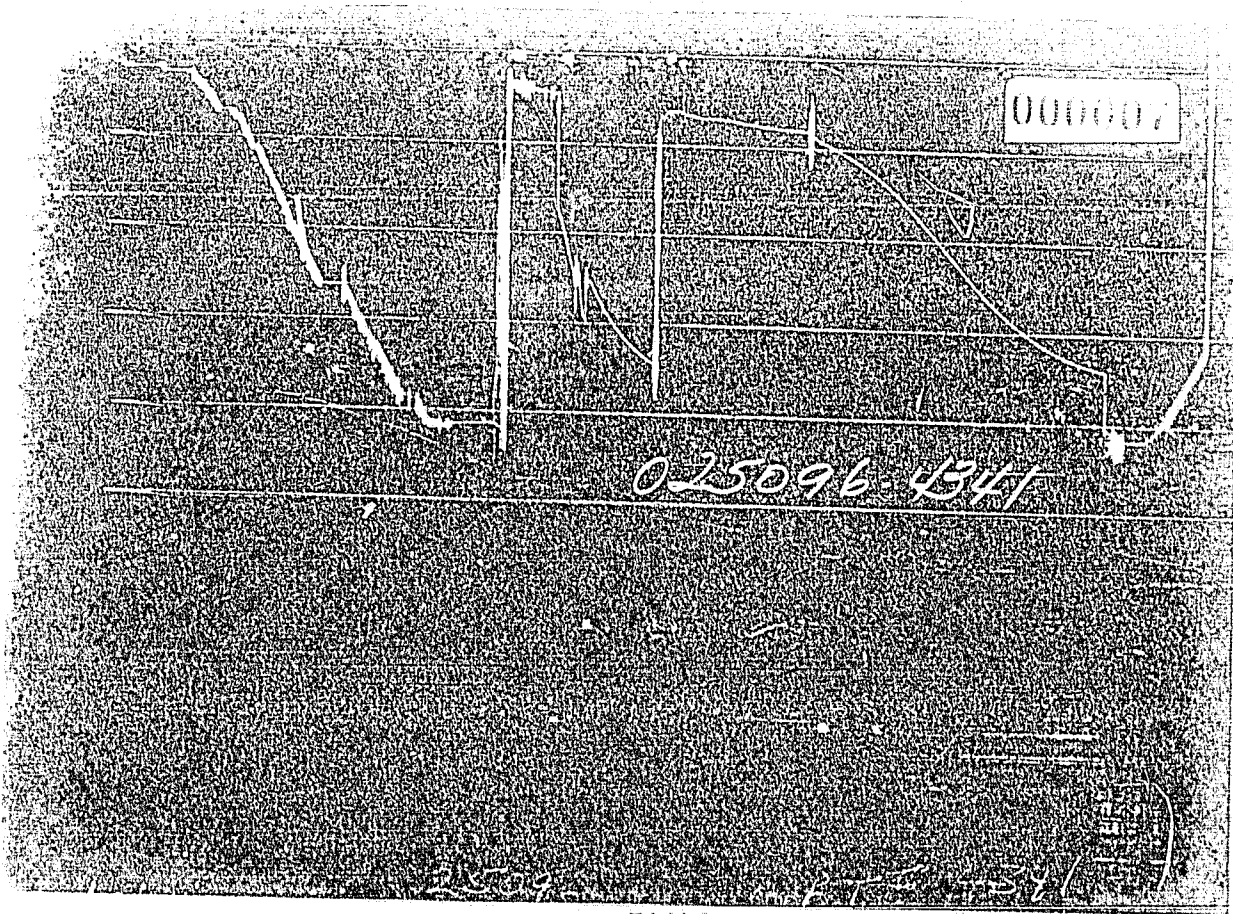
	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3.00"	1.00'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8160'	000006
Drill Collars	6½"	2 5/16"	533.67'	
Handling Sub & Choke Assembly	5.87"	5/8"	2.63'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler	5"	.87"	5.02'	8698'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"		4.13'	8700'
Hydraulic Jar	5"	.87"	3.28'	
VR Safety Joint	5"	1.00"	2.23'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.68"	6.12'	8715'
Distributor	5"	1.68"	2.00'	
Packer Assembly	7 3/4"	1.68"	6.18'	8724'
Flush Joint Anchor C.O. sub	6"	3.00"	.75'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6½"	2 5/16"	89.21'	
Flush Joint Anchor	5"	2.37"	12.00'	
Blanked-Off B.T. Running Case	5"		4.05'	8829'

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EQUIPMENT DATA

LITTON 50216 SM 3/72

108



000008

FLUID SAMPLE DATA				Date 5-9-72		Ticket Number 025096	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
Recovery: Cu. Ft. Gas _____				Tester MR. FALLIS		Witness I. LICKLITTER	
cc. Oil _____				Drilling Contractor O D & E # 9		sm S	
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Gidgealpa			
Tot. Liquid cc. _____				Elevation 130' KB			
Gravity _____ ° API @ _____ °F.				Net Productive Interval 6' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 9072' Ft.			
Recovery Water @ _____ °F. _____ ppm				Main Hole/Casing Size 8 1/2"			
Recovery Mud @ _____ °F. _____ ppm				Drill Collar Length 533.67' I.D. 2 5/16"			
Recovery Mud Filtrate @ _____ °F. _____ ppm				Drill Pipe Length 8550' I.D. 4.276"			
Mud Pit Sample @ _____ °F. _____ ppm				Packer Depth(s) 8911-8920' Ft.			
Mud Pit Sample Filtrate @ _____ °F. _____ ppm				Depth Tester Valve 8894' Ft.			
Mud Weight Brine 9.4 vis 29 cp							
TYPE		AMOUNT		Depth Back		Surface	
Cushion				Ft. Pres. Valve		Choke 1/4 - 7/16" Bottom Choke 5/8"	
Recovered 1800		Feet of salt water gas cut		Med. From Tester Valve			
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Tool opened for 30 minute first flow with no bubble. Closed for 60 minute first closed in pressure with bubble to surface after closing in. Tool reopened for 90 minute second flow with gas to the surface in 21 minutes, stabilized at 10 PSI. Closed for 180 minute second closed in pressure. CHARTS INDICATE PARTIAL PLUGGING OF ANCHOR PERFORATIONS DURING FIRST FLOW. INITIAL CLOSED IN PRESSURE ON TOP GAUGE QUESTIONABLE. Slid 28' before opening							
TEMPERATURE		Gauge No. 4341		Gauge No. 4340		Gauge No. tool.	
Depth: 8896 Ft.		Depth: 9069 Ft.		Depth: Ft.		TIME	
12 Hour Clock		12 Hour Clock		Hour Clock		Tool A.M.	
Est. F. Blanked Off no		Blanked Off yes		Blanked Off		Opened 0623 P.M.	
Actual 255 °F.		Pressures		Pressures		Tool A.M.	
		Pressures		Pressures		Closed 1223 P.M.	
		Field Office		Field Office		Reported Computed	
Initial Hydrostatic		4137 4180		4211 4247		Minutes Minutes	
Flow Initial		272 329		1521 1518			
Flow Final		435 457		1745 1793		30 30	
Closed in		3401 3452		3482 3510		60 60	
Flow Initial		652 668		678 704			
Flow Final		215 815		848 862		90 90	
Closed in		3373 3422		3425 3462		180 180	
Flow Initial							
Flow Final							
Closed in							
Final Hydrostatic		4109 4191		4183 4264			

Legal Location
Sec. - Twp. - Rng.BROLGA #1
Lease Name1
Well No.2
Test No.8920' - 9072'
Tested IntervalDELT INTERNATIONAL OIL CORPORATION
SANTOS LIMITED-VAKGAS N.L.-BRIDGE OIL N.L.

COOPER BASIN

County

State

SOUTH AUSTRALIA

FORMATION TEST DATA

LITTLE'S

10

000009

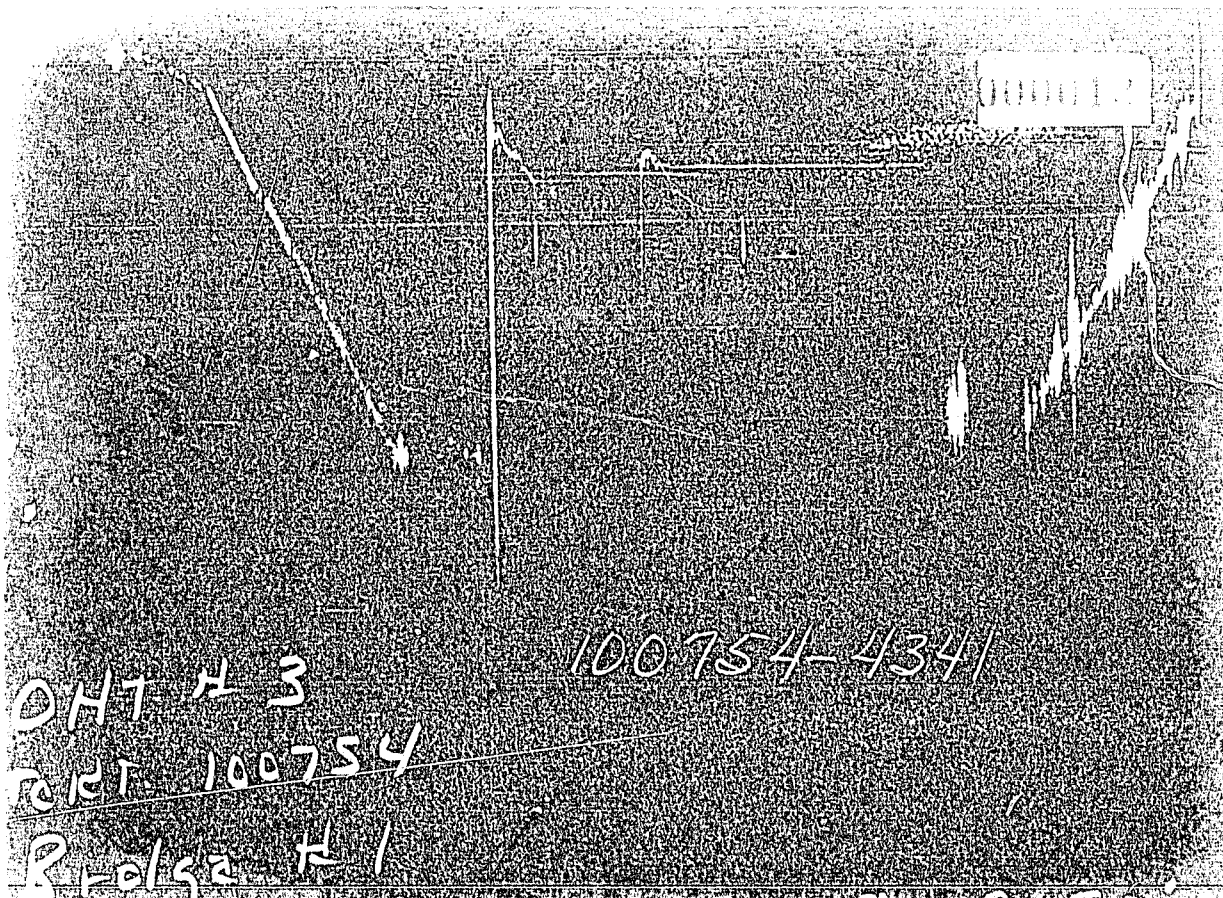
Casing perms. _____		Bottom choke <u>5/8"</u>		Surf. temp. _____ °F		Ticket No. <u>025096</u>	
Gas gravity _____		Oil gravity _____		GOR _____			
Spec. gravity _____		Chlorides _____ ppm		Res. _____ @ _____ °F			
Date Time	<u>5-9-72</u> a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks	
	0132					Engaged stylus on BT 4340	
	0230					Engaged stylus on BT 4341	
	0623	1/4"	0	0		Opened for first flow-slid 28' to bottom.	
	0653					Closed for first CIP period.	
	0753	7/16"	0	0		Opened for second flow.	
	0800	7/16"	0	0			
	0805	"	10	83			
	0810	"	15	96			
	0814	"	15	96		Gas to the surface.	
	0817	"	20	116			
	0820	"	25	133			
	0825	"	25	133			
	0830	"	20	116			
	0835	"	15	96			
	0840	"	15	96			
	0845	"	15	96			
	0850	"	15	96			
	0855	"	10	83			
	0900	"	10	83			
	0910	"	10	83			
	0915	"	10	83			
	0920	"	10	83			
	0923					Closed for second CIP.	
	1223					Off bottom with tools.	
						Hit jars 6 times.	

Gauge No. 4341		Depth 8896'		Clock No. 7902		12 hour	Ticket No. 025096	
First Flow Period		First Closed In Pressure		Second Flow Period		Second Closed In Pressure		Third Flow Period
Time Defl. 0.00"	PSIG Temp. Corr.	Time Defl. 0.00"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. 0.00"	PSIG Temp. Corr.	Time Defl. 0.00"	PSIG Temp. Corr.
0 .0000	329	.0000		457	.0000	668	.0000	815
1 .0340	342	.0413		2128	.1052	639	.1241	1033
2 .0680	378	.0826		Plugging	.2104	698	.2482	1236
3 .1020	402	.1239		2474	.3156	717	.3723	1519
4 .1360	421	.1652		2689	.4208	769	.4964	1878
5 .1700	443	.2065		2894	.5260	796	.6205	2264
6 .2040	457	.2478		3057	.6310	815	.7446	2632
7		.2891		3191			.8687	2935
8		.3304		3300			.9928	3158
9		.3717		3381			1.1169	3308
10		.4130		3452			1.2410	3422
11								
12								
13								
14								
15								

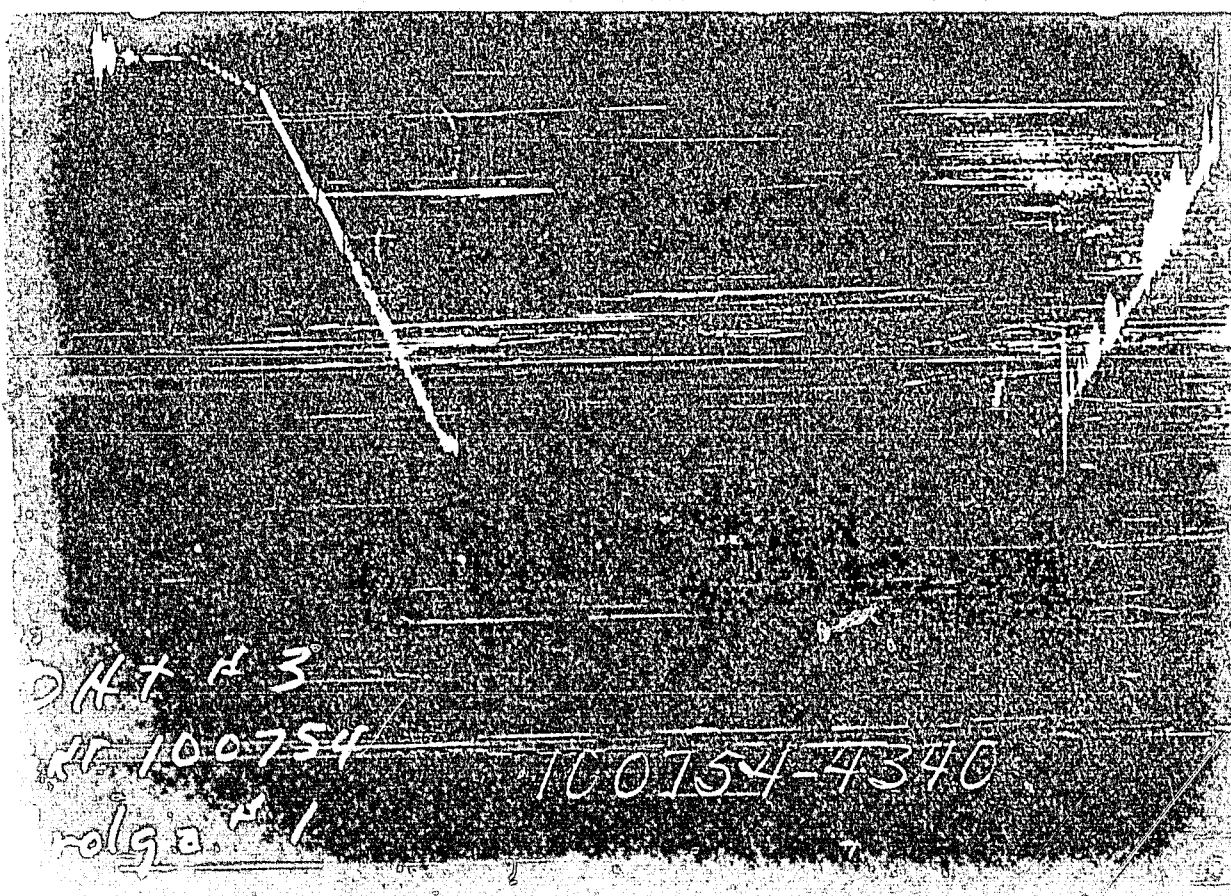
Gauge No.		4340		Depth		9069'		Clock No.		7588		12		hour	
C	.0000	1518	.0000		1793	.0000	704	.0000			862				
1	.0342	1714	.0405		2106	.1022	675	.1227			1062				
2	.0684	1776	.0810		2317	.2044	712	.2454			1269				
3	.1026	1801	.1215		2493	.3066	757	.3681			1558				
4	.1368	1810	.1620		2737	.4088	814	.4908			1910				
5	.1710	1804	.2025		2938	.5110	847	.6135			2308				
6	.2050	1793	.2430		3109	.6130	862	.7362			2678				
7			.2835		3241			.8589			2986				
8			.3240		3353			.9816			3213				
9			.3645		3437			1.1043			3359				
10			.4050		3510			1.2270			3462				
11															
12															
13															
14															
15															
Reading Interval		5	6		15		18								
REMARKS:															Minutes

025096

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8550'	000011
Drill Collars	6 1/2"	2 5/16"	533.67'	
Handling Sub & Choke Assembly	5.87"	5/8"	2.63'	
Dual CIP Valve	5"	.87"	4'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.87"	5.02'	8894'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"		4.13'	8896'
Hydraulic Jar Halliburton	5"	.87"	3.28'	
VR Safety Joint	5"	1"	2.23'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.68"	6.12'	8911'
Distributor	5"	1.68"	2'	
Packer Assembly	7 3/4"	1.68"	6.18'	8920'
Flush Joint Anchor C O Sub	6"	3"	.75'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Side Wall Anchor				
Drill Collars	6 1/2"	2 5/16"	118.97'	
Flush Joint Anchor	5"	2.37"		
Blanked-Off B.T. Running Case	5"		4.05'	9069'



TIME



000013

FLUID SAMPLE DATA				Date 5-12-72		Ticket Number 100754	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
Recovery: Cu, Ft, Gas _____				Tester MR. HARRIS		Witness MR. LICKLITTER	
cc. Oil _____				Drilling Contractor O. D. AND E. #9		BC S	
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Gidgealpa			
Tot. Liquid cc. _____				Elevation 130' KB			
Gravity _____ ° API @ _____ ° F.				Net Productive Interval 20' _____ Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 9180' _____ Ft.			
Recovery Water _____ @ _____ ° F. _____ ppm				Main Hole/Casing Size 8 1/2"			
Recovery Mud _____ @ _____ ° F. _____ ppm				Drill Collar Length 118.71' I.D. 2 5/16"			
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm				Drill Pipe Length 8491.56' I.D. 4.276"			
Mud Pit Sample _____ @ _____ ° F. _____ ppm				Packer Depth(s) 9085' _____ Ft.			
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm				Depth Tester Valve 9070' _____ Ft.			
Mud Weight 9.3 vis 34 cp							
TYPE		AMOUNT		Depth Back		Surface	
Cushion				Ft. Pres. Valve		Choke 3/4" - 7/61" Bottom Choke 5/8"	
Recovered	355	Feet of	Condensate				
Recovered	950	Feet of	Gas cut water				
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks See production test data sheet.							
CHARTS INDICATE PARTIAL PLUGGING OF TOOLS DURING BOTH FLOW PERIODS.							
TEMPERATURE		Gauge No. 4341		Gauge No. 4340		Gauge No.	
Depth: 9072' Ft.		Depth: 9176' Ft.		Depth: _____ Ft.		TIME	
12 Hour Clock		12 Hour Clock		Hour Clock		Tool	
Blanked Off No		Blanked Off Yes		Blanked Off		Opened 1843 A.M.	
Actual 236 ° F.		Pressures		Pressures		Tool	
		Pressures		Pressures		Closed 2311 P.M.	
Field		Office		Field		Office	
Initial Hydrostatic 4235		4298		4340		4351	
Initial 902		739		1661		17140	
Flow Initial 1402		1383		1902		1905	
Flow Final 3924		3924		3941		3938	
Closed In 1158		1160		1476		1457	
Flow Initial 1755		1804		1986		1997	
Flow Final 3918		3902		4003		3922	
Closed In							
Flow Initial							
Flow Final							
Closed In							
Final Hydrostatic 4290		4298		4345		4351	
		η = Questionable					

Legal Location
Sec. - Twp. - Rng.BROUGA #1
Lease Name1
Well No.3
Test No.9085' - 9180'
Tested IntervalDEIHI INTERNATIONAL OIL CORPORATION-VANGAS N.I.
SANTOS, LIMITED-BRENDER OF SPRING NAME

Field Area

COOPER BASIN

County

State SOUTH AUSTRALIA

000014

[illegible]

Gauge No. 4341				Depth 9072'			Clock No. 7902			12 hour	Ticket No. 100754				
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure			
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	
C	.0000 739	.0000		1383	.0000	1160	.0000		1804						
1	.1820 1383	.0557		3839*	.4160	1804	.0838		3820						
2		.0975		3877			.1676		3847						
3		.1393		3891			.2514		3861						
4	PLUGGING	.1811		3902	PLUGGING		.3352		3872						
5		.2229		3907			.4190		3880						
6		.2647		3913			.5028		3886						
7		.3065		3916			.5866		3891						
8		.3483		3921			.6704		3896						
9		.3901		3924			.7542		3899						
10		.4320		3924			.8380		3902						
11															
12															
13															
14															
15															

Gauge No. 4340			Depth 9176'		Clock No. 7588		12 hour							
C	.0000	1714Q	.0000	1905	.0000	1457	.0000		1997					
1	.1780	1905	.0548	3849*	.4100	1997	.0823		3835					
2			.0959	3888			.1646		3863					
3	PLUGGING		.1370	3905	PLUGGING		.2469		3877					
4			.1781	3913			.3292		3885					
5			.2192	3922			.4115		3894					
6			.2603	3924			.4938		3902					
7			.3014	3930			.5761		3908					
8			.3425	3933			.6584		3913					
9			.3836	3936			.7407		3916					
10			.4250	3938			.8230		3922					
11														
12														
13														
14														
15														
Reading Interval			6						12					

REMARKS:

*Interval = 8 minutes Q = Questionable

Minutes

100754

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8491.56'	000016
Drill Collars	6 1/2"	2 5/16"	118.71'	
Double Pin Sub	6 1/2"	-	2.32'	
Handling Sub & Choke Assembly	5.87"	5/8"	2.63'	
Dual CIP Valve	5"	.87"	4'	
Dual CIP Sampler	5"	.87"	5.02'	9070'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"		4.13'	9072'
Hydraulic Jar	5"	.87"	3.28'	
VR Safety Joint	5"	1"	2.23'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.68"	6.12'	9085'
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Side Wall Anchor			1'	
X Over Sub				
Drill Collars	6 1/2"	2 5/16"	59'	
X Over Sub	5"	2.37"	1'	
Flush Joint Anchor			25'	
Blanked-Off B.T. Running Case	5"	-	4.05'	9176'

000017

100779 3427

TIME

100779-1905

000018

FLUID SAMPLE DATA				Date 5-15-72		Ticket Number 100779	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
Recovery: Cu. Ft. Gas _____				Tester W. LOVELL		Witness IKE LICKLITTER	
cc. Oil _____				Drilling Contractor O D & E RIG # 9 sm S			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested _____			
Tot. Liquid cc. _____				Elevation 111.9' Ft.			
Gravity _____ ° API @ _____ ° F.				Net Productive Interval 24' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 9362' Ft.			
Recovery Water @ _____ ° F. _____ ppm				Main Hole/Casing Size 8 1/2"			
Recovery Mud @ _____ ° F. _____ ppm				Drill Collar Length 504.20' I.D. 2 5/16"			
Recovery Mud Filtrate @ _____ ° F. _____ ppm				Drill Pipe Length 8722.48' I.D. 4.276"			
Mud Pit Sample @ _____ ° F. _____ ppm				Packer Depth(s) 9239' Ft.			
Mud Pit Sample Filtrate @ _____ ° F. _____ ppm				Depth Tester Valve 9219' Ft.			
Mud Weight 9.3 vis 36 cp				Surface Choke 1/4 7/16" Bottom Choke 5/8"			
Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve				Recovered 270 Feet of condensate			
Recovered 504 Feet of mud cut condensate and water				Recovered _____ Feet of (180' water RW 0.30 @ 76°F)			
Recovered _____ Feet of				Recovered _____ Feet of			
Recovered _____ Feet of				Remarks SEE PRODUCTION TEST DATA SHEET			
TEMPERATURE Gauge No. 3427 Gauge No. 1905 Gauge No. _____ TIME				Depth: 9224 Ft. Depth: 9358 Ft. Depth: _____ Hour Clock			
Est _____ ° F. Blanked Off no Blanked Off yes Blanked Off				Tool Opened 8:11 P.M.			
Actual 230 ° F. Pressures Pressures Pressures				Tool Closed 2:13 P.M.			
Field Office Field Office Field Office				Reported Computed			
Initial Hydrostatic 4418 4318 4486 4377				Minutes Minutes			
Flow Initial 1268 1503 1545 1807				32 31			
Flow Final 2016 1993 2136 2150				60 60			
Closed in 4002 4015 4023 4029				90 90			
Flow Initial 1384 1406 1513 1625				180 181			
Flow Final 2200 2211 2249 2272							
Closed in 3952 3985 3959 3982							
Flow Initial _____							
Flow Final _____							
Closed in _____							
Final Hydrostatic 4352 4318 4572 4377							

Legal Location
Sec. - Twp. - Rng.BROGGA
Lease Name1
Well No.4
Test No.

Field Area

COOPER BASIN

County

State

SOUTH AUSTRALIA

9239 - 9362'
Tested IntervalDELHI INTERNATIONAL OIL CORPORATION
SANTOS LIMITED - VARIOUS COMPANIES
BRIDGE OIL N.L.

FORMATION TEST DATA

LITTLE'S

9

000019

Date		Choke	Surface	Gas	Liquid	Remarks
Time	a.m. p.m.	Size	Pressure psi	Rate MCF	Rate BPD	
3:54	AM					Engaged bottom stylus
3:57						Started to make up tools.
4:38						Engaged top stylus
4:55						Tools through table
8:05						Tools on bottom
8:11		1/4"	100			Hydrospring opened with strong blow.
8:17		"	300	315		Gas to the surface
8:20		"	400	420		Read PSI.
8:23		"	550	578		"
8:26		"	675	710		"
8:29		"	800	840		"
8:32		"	875	912		"
8:35		"	925	973		"
8:38		"	925	973		"
8:41		"	925	973		"
8:43		"	1000	1,056		Closed for first CIP
9:43		7/16"	200	675		Opened for second flow
9:48		"	400	1,351		Read PSI
9:53		"	600	2,026		"
9:58		"	690	2,330		"
10:03		"	710	2,398		"
10:08		"	750	2,573		"
10:13		"	775	2,697		"
10:18		"	800	2,702		"
10:23		"	800	2,702		"
10:28		"	840	2,837		"

000020

[illegible]

7

Gauge No. 3427			Depth 9224'			Clock No. 7588			12hour		Ticket No. 100779			
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
Time Defl. .003"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.0000 1503	.0000		1993	.0000	1406	.0000		2211					
1	.0412* 1276	.0402		3809	.1028	1617	.0886**		3723					
2	.0756 1298	.0804		3890	.2056	1933	.1704		3791					
3	.1100 1467	.1206		3930	.3084	2074	.2522		3831					
4	.1444 1660	.1608		3952	.4112	2154	.3340		3859					
5	.1788 1837	.2010		3968	.5140	2199	.4158		3879					
6	.2130 1993	.2412		3982	.6170	2211	.4976		3899					
7		.2814		3993			.5794		3914					
8		.3216		4000			.6612		3927					
9		.3618		4008			.7430		3939					
10		.4020		4015			.8248		3948					
11							.9066		3957					
12							.9884		3967					
13							1.0702		3972					
14							1.1520		3978					
15							1.2340		3985					

Gauge No. 1905			Depth 9358'			Clock No. 7902			12 hour	
Time Defl. .003"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Minutes
0	.0000 1807	.0000		2150	.0000	1625	.0000		2272	
1	.0410* 1558	.0411		3809	.1038	1736	.0902**		3725	
2	.0752 1661	.0822		3900	.2076	2030	.1735		3793	
3	.1094 1746	.1233		3941	.3114	2153	.2568		3834	
4	.1436 1896	.1644		965	.4152	2222	.3401		3861	
5	.1778 2027	.2055		3981	.5190	2262	.4234		3884	
6	.2120 2150	.2466		3995	.6230	2272	.5067		3903	
7		.2877		4006			.5900		3917	
8		.3288		4016			.6733		3930	
9		.3699		4022			.7566		3941	
10		.4110		4029			.8399		3951	
11							.9232		3959	
12							1.0065		3965	
13							1.0898		3971	
14							1.1731		3978	
15							1.2560		3982	

Reading Interval 5 6 15 12 Minutes

REMARKS: *First interval is equal to 6 minutes. **13 minutes.

000021

100779

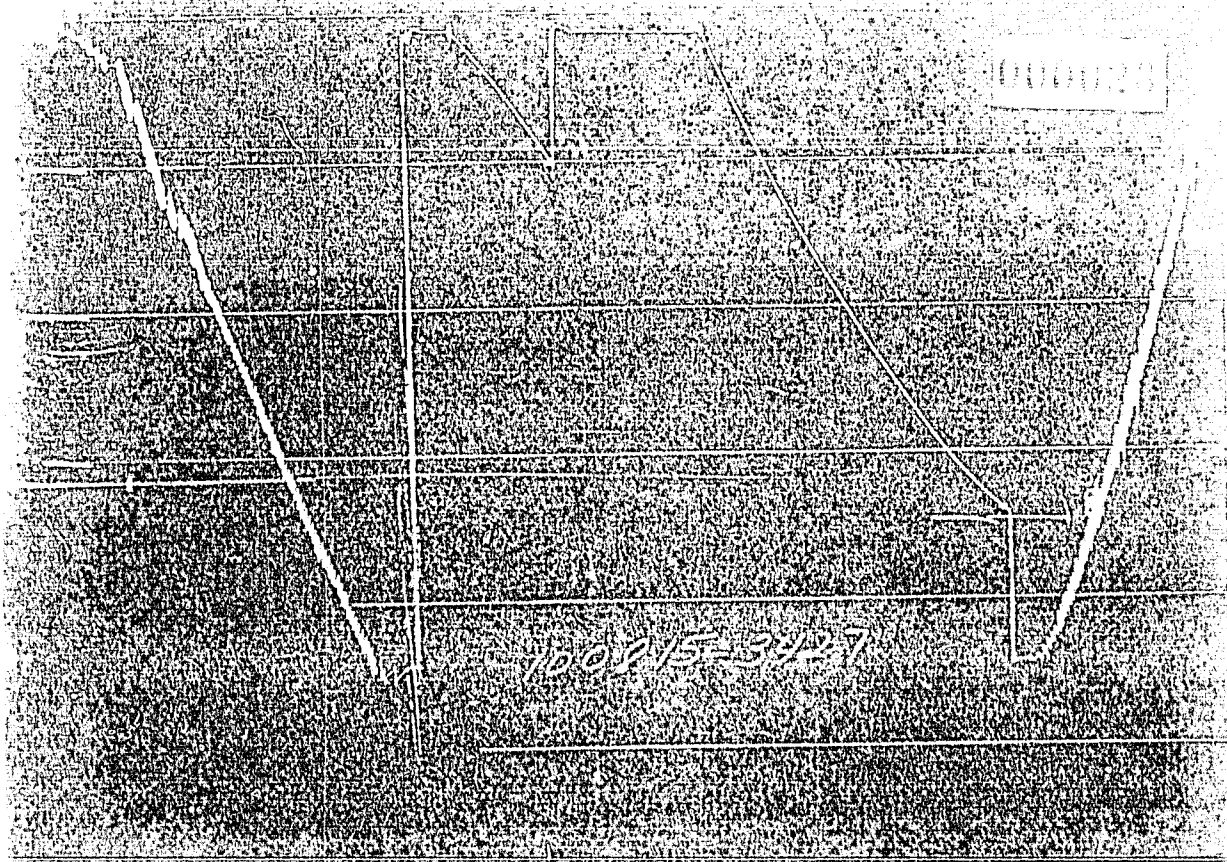
	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8722.48'	000022
Drill Collars	6½"	2 5/16"	504.20'	
Handling Sub & Choke Assembly	5.87"	2.58"	2.65'	
Dual CIP Valve	5"	.87"	3.88'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	4.97'	9219'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4.13'	9224'
Hydraulic Jar	5"	1"	3.23'	
VR Safety Joint	5"	1"	2.27'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.25'	9239'
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Side Wall Anchor				
Cross over sub	6"	2"	.60'	
Drill Collars	6½"	2 5/16"	89.27'	
Cross over sub	5.75"	2.25"	.75'	
Flush Joint Anchor	5"	2.37"	23'	
Blanked-Off B.T. Running Case	5"	2.75"	4'	9358'

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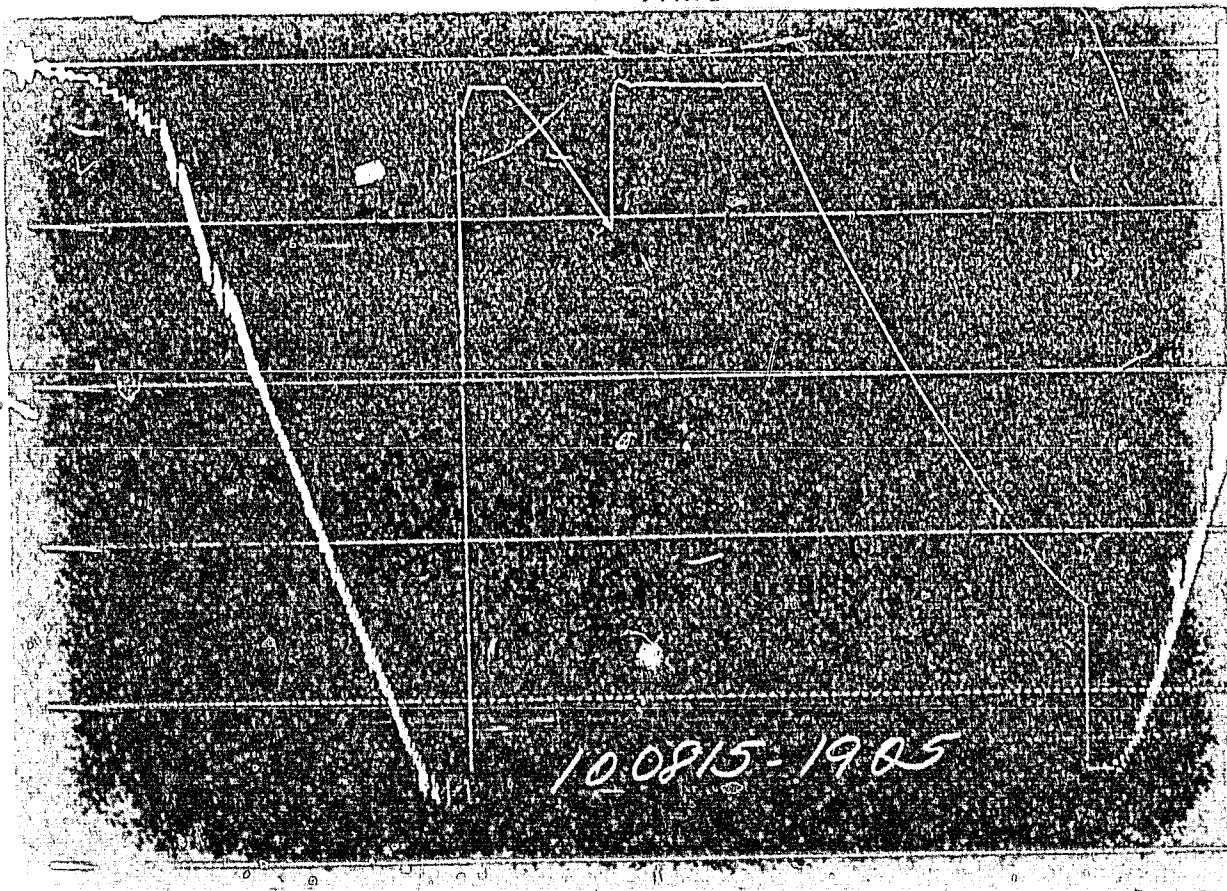
EQUIPMENT DATA

LITTLE B 90218 SM 2/72

9



TIME



000024

FLUID SAMPLE DATA				Date 5-17-72		Ticket Number 100815	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester L. D. PHILLIPS		Witness I. LICKLETTER	
				Drilling Contractor O D & E RIG # 9		sm S	
EQUIPMENT & HOLE DATA							
				Formation Tested Lower Member of Gidgealpa			
				Elevation 130' Ft.			
				Net Productive Interval 20' Ft.			
				All Depths Measured From Kelly bushing			
				Total Depth 9510' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 533.65' I.D. 2 5/16"			
				Drill Pipe Length 8807' I.D. 4.276"			
				Packer Depth(s) 9353-9362' Ft.			
				Depth Tester Valve 9334.20' Ft.			
RESISTIVITY		CHLORIDE CONTENT					
Recovery Water	_____ @ _____ °F.	_____ ppm					
Recovery Mud	_____ @ _____ °F.	_____ ppm					
Recovery Mud Filtrate	_____ @ _____ °F.	_____ ppm					
Mud Pit Sample	_____ @ _____ °F.	_____ ppm					
Mud Pit Sample Filtrate	_____ @ _____ °F.	_____ ppm					
Mud Weight	9.1 vis	_____ cp					
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke 1/4 7/16" Bottom Choke 5/8"	
Cushion							
Recovered	353	Feet of	gas cut mud				
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Tool opened for 29 minute first flow with very weak blow which increased to a weak blow in 3 minutes, no PSI on first flow. Closed tool for 59 minute first closed in pressure. Tool reopened for 91 minute second flow with fair blow, gas to the surface in 96 minutes, no PSI on second flow. Closed tool for 181 minute second closed in pressure.							
TEMPERATURE		Gauge No. 3427		Gauge No. 1905		Gauge No.	
Depth: 9339 Ft.		Depth: 9506 Ft.		Depth:		TIME	
12 Hour Clock		12 Hour Clock		Hour Clock			
Blanked Off no		Blanked Off yes		Blanked Off		Tool Opened 9:24 A.M.	
Actual 240 °F.		Pressures		Pressures		Tool Closed 3:22 P.M.	
		Field Office		Field Office		Reported Computed	
Initial Hydrostatic		4502 4433		4521 4680			
Flow Initial		167 140		345 411		Minutes Minutes	
Flow Final		133 122		162 185			
Closed in		1667 1025		1098 1078		31 29	
Flow Initial		133 133		162 165		60 59	
Flow Final		167 132		194 186			
Closed in		3404 3421		3306 3465		90 91	
Flow Initial						180 181	
Flow Final							
Closed in							
Final Hydrostatic		4469 4433		4489 4680			

FORMATION TEST DATA

LITTLE B

BROGA

Lease Name

Well No.

Test No.

9362' - 9510'

Tested Interval

County

State

LIMITED-VANGAS N. L. - BRIDGE OIL N. L.

DEIHI INTERNATIONAL OIL CORPORATION - SANTOS

000025

[illegible]

Gauge No. 3427			Depth 9339'			Clock No. 7902			12 hour			Ticket No. 100815		
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000 140	.000		122	.0000	133	.0000		132					
1	.196 122	.414		1025	.1034	125	.0893**		480					
2					.2068	125	.1717		763					
3					.3102	133	.2541		1040					
4					.4136	137	.3365		1387					
5					.5170	133	.4189		1547					
6					.6270*	132	.5013		1785					
7							.5837		2013					
8							.6661		2237					
9							.7485		2443					
10							.8309		2640					
11							.9133		2835					
12							.9957		3013					
13							1.0781		3172					
14							1.1605		3306					
15							1.2430		3421					

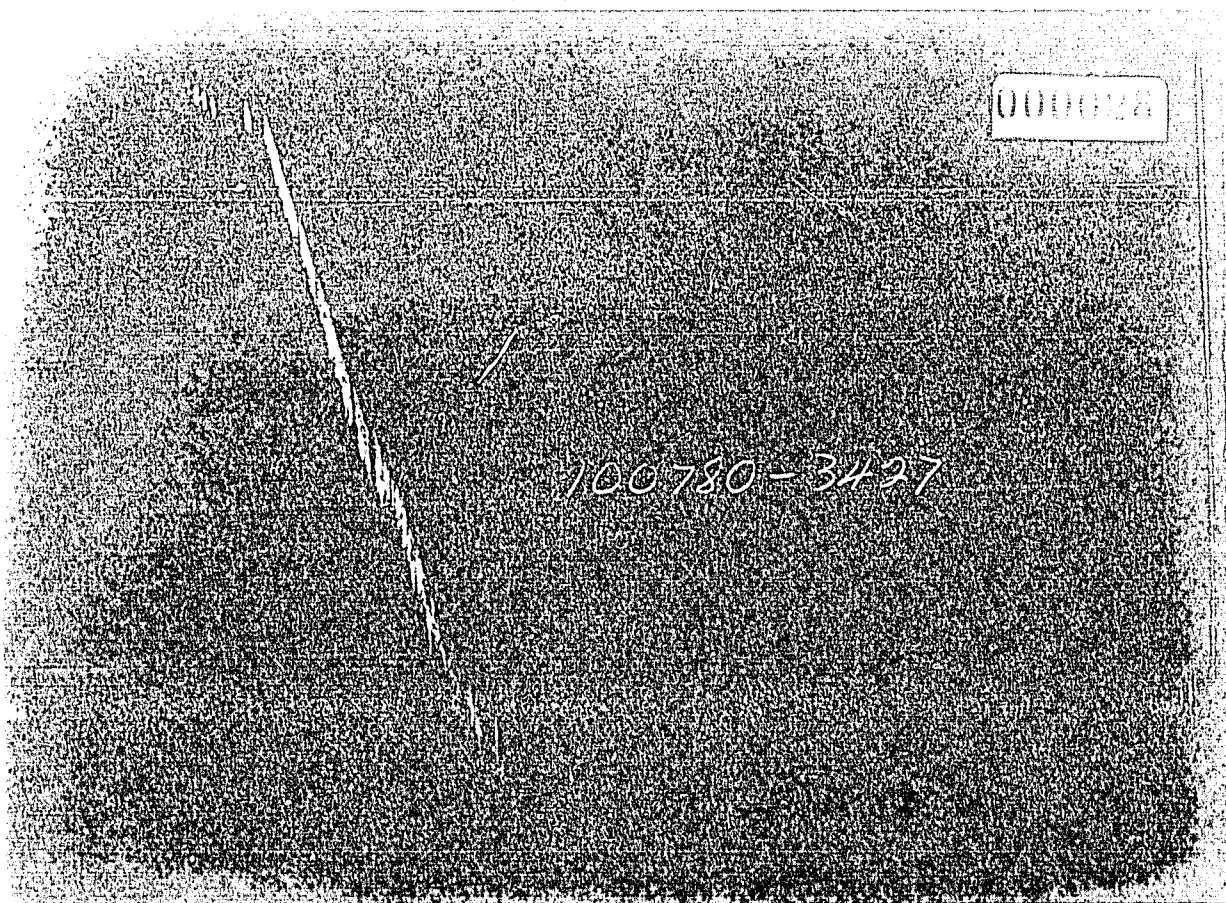
Gauge No. 1905			Depth 9506'			Clock No. 7588			12 hour		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.
0	.000 411	.000		183	.0000	165	.0000		186		
1	.193 183	.402		1078	.1017	181	.0881**		532		
2					.2034	178	.1694		830		
3					.3051	184	.2507		1099		
4					.4068	188	.3320		1361		
5					.5085	186	.4133		1612		
6					.6170*	186	.4946		1855		
7							.5759		2080		
8							.6572		2296		
9							.7385		2498		
10							.8198		2696		
11							.9011		2888		
12							.9824		3062		
13							1.0637		3217		
14							1.1450		3355		
15							1.2260		3465		
Reading Interval -		-		15		12		Minutes			
REMARKS: *Last interval is equal to 16 minutes. **Unequal interval - equal to 13 minutes.											

000026

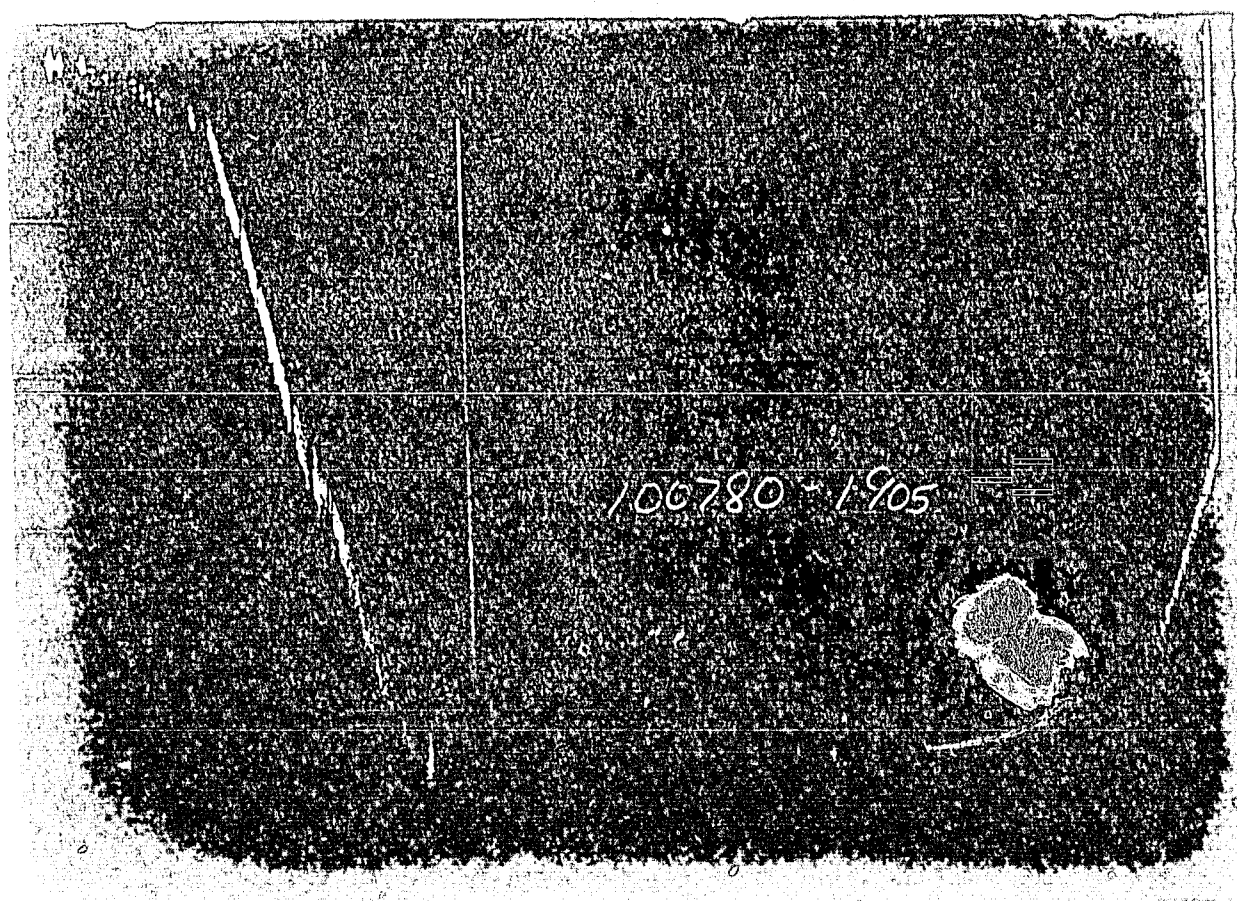
100815

000027

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6"	3"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8807'	
Drill Collars	6 1/2"	2 5/16"	533.65'	
X over	6 7/16"	?	2.31"	
Handling Sub & Choke Assembly	5.87"	2.58"	2.65"	
Dual CIP Valve	5"	.87"	3.88"	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	4.97'	9334.20'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4.13'	9339.17'
Hydraulic Jar	5"	1"	3.23'	
VR Safety Joint	5"	1"	2.27'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	72"	9353'
Distributor	5"	1.68"	24"	
Packer Assembly	7 3/4"	1.75 "	72"	9362'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Side Wall Anchor				
Cross over	6"	2"	.60'	
Drill Collars	6 1/2"	2 5/16"	119.02'	
Cross over	5.75"	2.25"	.75'	
Flush Joint Anchor	5"	2.37"	19'	
Blanked-Off B.T. Running Case	5"	3"	4'	9506'



TIME →



000029

FLUID SAMPLE DATA				Date 5-19-72		Ticket Number 100780	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
Recovery: Cu. Ft. Gas _____				MR. MUNDEN		Tester MR. PRESL	
cc. Oil _____				MR. PRESL		Witness MR. KEMP	
cc. Water _____				Drilling Contractor O.D. & E. RIG # 9 DR S			
cc. Mud _____				EQUIPMENT & HOLE DATA			
Tot. Liquid cc. _____				Formation Tested Gidgealpa			
Gravity _____ ° API @ _____ ° F.				Elevation 130' _____ Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				Net Productive Interval _____ Ft.			
RESISTIVITY _____ CHLORIDE CONTENT _____				All Depths Measured From Kelly Bushing			
Recovery Water _____ @ _____ ° F. _____ ppm				Total Depth 9576' _____ Ft.			
Recovery Mud _____ @ _____ ° F. _____ ppm				Main Hole/Casing Size 8 1/2"			
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm				Drill Collar Length 542.30' I.D. 2 5/16"			
Mud Pit Sample _____ @ _____ ° F. _____ ppm				Drill Pipe Length 8927.40' I.D. 4.276"			
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm				Packer Depth(s) 9498'-9505' _____ Ft.			
Mud Weight _____ vis _____ cp				Depth Tester Valve 9477' _____ Ft.			
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke	
Cushion				Ft.		Bottom Choke	
Recovered		30 Feet of muddy water				1/4-7/16" 5/8"	
Recovered		390 Feet of gas cut mud					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Opened tool for 27 minute first flow with a very weak blow, increasing to a strong blow in 15 minutes. Closed tool for 64 minute first closed in pressure. Reopened tool for 87 minute second flow with a weak blow increasing to a strong blow, gas to surface after 5 minutes. No surface pressure. Gas flow too small to measure. Closed tool for 182 minute second closed in pressure.							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.	
Depth		9482 Ft.		9572 Ft.		TIME	
12 Hour Clock		12 Hour Clock		12 Hour Clock		Tool A.M.	
Blanked Off No		Blanked Off Yes		Blanked Off		Opened 6:48- P.M.	
Actual 240°F.		Pressures		Pressures		Tool A.M.	
		Pressures		Pressures		Closed 12:48 P.M.	
		Field Office		Field Office		Reported Computed	
Initial Hydrostatic		4479 4554		4565 4616		Minutes Minutes	
Flow Initial		129 142		183 230			
Flow Final		113 107		133 133		30 27	
Closed in		1414 1439		1464 1460		60 64	
Flow Initial		65 97		83 115			
Flow Final		97 108		117 132		90 87	
Closed in		3649 3676		3692 3714		180 182	
Flow Initial							
Flow Final							
Closed in							
Final Hydrostatic		4495 4473		4515 4503			

Legal Location
Sec. - Twp. - Rng.

BROILCA

Lease Name

1 Well No.

6 Test No.

Field Area
COOPER BASIN

County

9505'-9576'
Tested Interval SANTOS LTD.DELHI INTERNATIONAL OIL CORPORATION-
VAM AS N.T.L. - BRIDGE OIL N.T.L.

State SOUTH AUSTRALIA

Gauge No. 1905		Depth 9482'		Clock No. 7588		12 hour Ticket No. 100780						
First Flow Period		First Closed In Pressure		Second Flow Period		Second Closed In Pressure		Third Flow Period		Third Closed In Pressure		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0 .000	142	.000		107	.000	97	.000	108				
1 .0343	256	.441		1439	.0829	68**	.0894	571				
2 .0686	133				.1865	70	.1788	958				
3 .1029	97				.2901	71	.2682	1316				
4 .1372	120				.3937	94	.3576	1639				
5 .1715	113				.4973	104	.4470	1949				
6 .1850	107*				.6010	108	.5364	2260				
7							.6258	2562				
8							.7152	2698				
9							.8046	3101				
10							.8940	3289				
11							.9834	3430				
12							1.0728	3535				
13							1.1622	3615				
14							1.2520	3676				
15												

Gauge No. 3427		Depth 9572'		Clock No. 7902		12 hour		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	
0 .000	230	.000		133	.000	115	.000	132
1 .0348	305	.451		1460	.0836	90**	.0908	573
2 .0696	240				.1881	90	.1816	957
3 .1044	135				.2926	93	.2724	1311
4 .1392	143				.3971	110	.3632	1643
5 .1740	137				.5016	123	.4540	1968
6 .1880	133*				.6060	132	.5448	2284
7							.6356	2587
8							.7264	2880
9							.8172	3130
10							.9080	3323
11							.9988	3467
12							1.0896	3571
13							1.1804	3653
14							1.2710	3714
15								

Reading Interval 5 15 13 Minutes

REMARKS: * Last interval equal to 2 minutes **- First interval equal to 12 minutes.

SPECIAL PRESSURE DATA

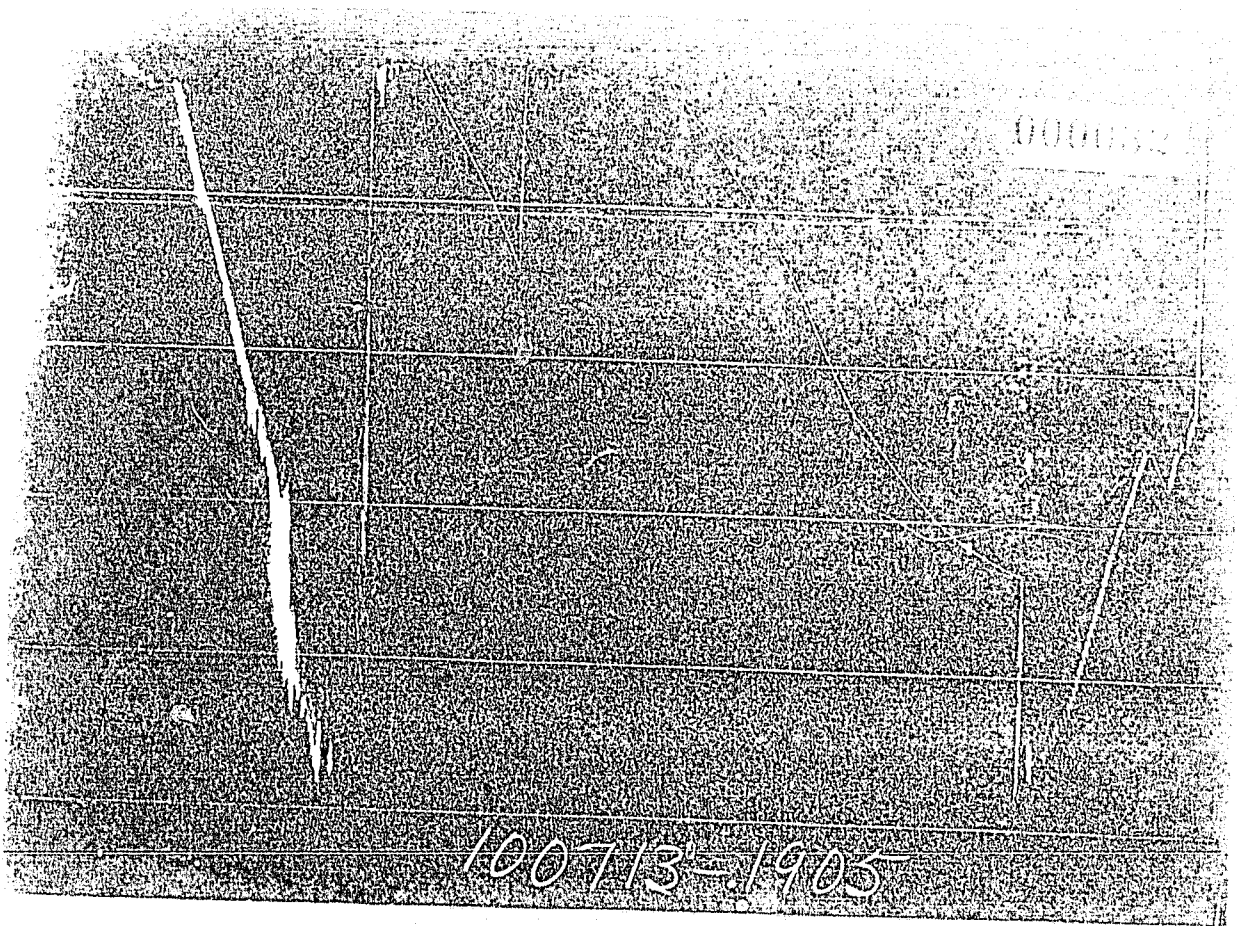
LITTLE'S

000030

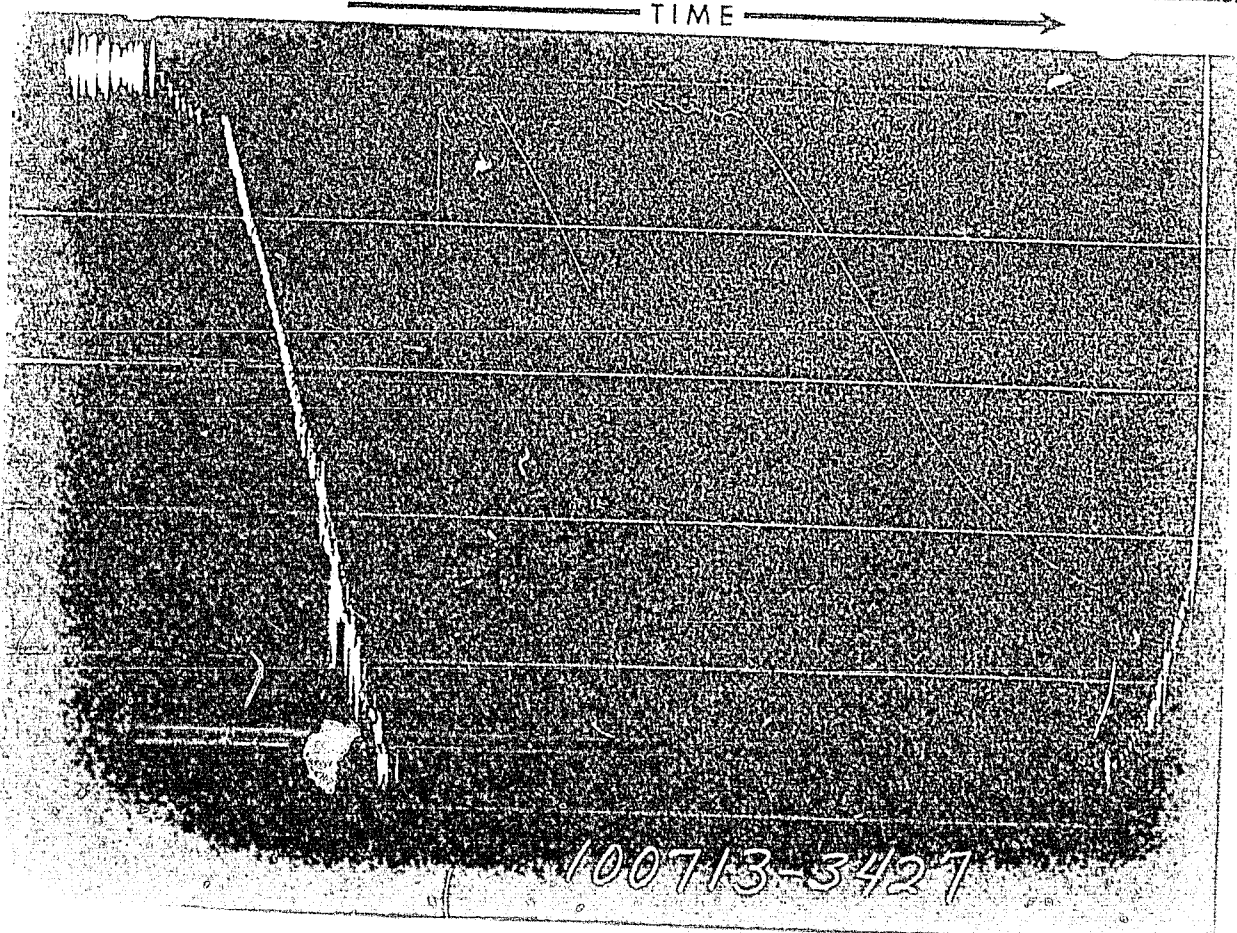
000031

100780

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5.00"	2.50"	1.00'	
Water Cushion Valve				
Drill Pipe	4"	4.276"	8927.40'	
Drill Collars		2 5/16"	542.30'	
Cross-over	5.00"	2.50"	.70'	
Handling Sub & Choke Assembly	5.87"	.62"	2.60'	
Dual CIP Valve	5.00"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5.00"	.75"	5.00'	9477'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5.00"	3.06"	4.20'	9482'
Hydraulic Jar	5.00"	1.00"	3.40'	
VR Safety Joint	5.00"	1.00"	2.30'	
Pressure Equalizing Crossover				
Packer Assembly	7.75"	1.50"	6.10'	9498'
Distributor	5.00"	1.68"	2.00'	
Packer Assembly	7.75"	1.50"	5.10'	9505'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint	5.00"	1.50"	4.00'	
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Cross over	5.00"	1.50"	.70'	
Drill Collars	6 1/2"	2 5/16"	29.73'	
Cross over	4.75"	1.90"	.70'	
Flush Joint Anchor	5.00"	2.37"	30.00'	
Blanked-Off B.T. Running Case	5.00"		4.10'	9572'



TIME →



000033

FLUID SAMPLE DATA						Date	Ticket Number
Sampler Pressure _____ P.S.I.G. at Surface						5-20-72	100713
Recovery: Cu. Ft. Gas _____						Kind of Job	Halliburton District
cc. Oil _____						OPEN HOLE	MOOMBA
cc. Water _____						Tester	Witness
cc. Mud _____						MR. MUNDEN	MR. KEMP
Tot. Liquid cc. _____						Drilling Contractor	
						O.D. AND E. RIG #9	BC S
EQUIPMENT & HOLE DATA							
Gravity _____ ° API @ _____ ° F.						Formation Tested	Gidgealpa
Gas/Oil Ratio _____ cu. ft./bbl.						Elevation	130' _____ Ft.
RESISTIVITY _____ CHLORIDE CONTENT _____						Net Productive Interval	_____ Ft.
Recovery Water _____ @ _____ ° F. _____ ppm						All Depths Measured From	Kelly Bushing _____ Ft.
Recovery Mud _____ @ _____ ° F. _____ ppm						Total Depth	9634' _____ Ft.
Mud Pit Sample _____ @ _____ ° F. _____ ppm						Main Hole/Casing Size	8 1/2"
Mud Pit Sample Filtrate _____ @ _____ ° F. _____ ppm						Drill Collar Length	622.92' I.D. 2 5/16"
Mud Weight _____ vis _____ cp						Drill Pipe Length	8946.59' I.D. 4.276"
						Packer Depth(s)	9560' - 9567' _____ Ft.
						Depth Tester Valve	9539' _____ Ft.
TYPE AMOUNT						Surface Choke	Bottom Choke
Cushion						1" - 7/16"	3/4"
Recovered	Feet of	REVERSED RECOVERY --NOT MEASURED					
Recovered	Feet of						
Recovered	Feet of						
Recovered	Feet of						
Recovered	Feet of						
Remarks See production test data sheet.							
TEMPERATURE		Gauge No. 1905 Depth: 9544' Ft.	Gauge No. 3427 Depth: 9630' Ft.	Gauge No. Depth:	Ft.	TIME	
Calc. 12 Hour Clock		12 Hour Clock		Hour Clock		Tool Opened 1:40 P.M.	
Est 200 °F. Blanked Off No		Blanked Off Yes		Blanked Off		Tool Closed 8:20 P.M.	
Actual °F.	Pressures		Pressures		Pressures		
	Field	Office	Field	Office	Field	Office	
Initial Hydrostatic	4559	4545	4614	4581			
Flow Initial	97	1020	200	2150			
	Final	129	117	183	177		
	Closed in	1395	1411	1430	1440		
Flow Initial	113	970	150	1620			
	Final	178	172	183	200		
	Closed in	3343	3335	3342	3363		
Flow Initial							
	Final						
	Closed in						
Final Hydrostatic	4543	4545	4581	4581			
Q = Questionable							

Gauge No 1905					Depth 9544'		Clock No. 7588			12 hour	Ticket No. 100713			
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
c .0000	102 Q	.0000		117	.0000	97 Q	.0000		172					
1 .2180	117	.0279		238 *	.6180	172	.0690		333**					
2		.0697		359			.1725		554					
3		.1115		477			.2760		795					
4 PLUGGING		.1533		591	PLUGGING		.3795		1048					
5		.1951		713			.4830		1321					
6		.2369		840			.5865		1618					
7		.2787		971			.6900		1968					
8		.3205		1113			.7935		2304					
9		.3623		1260			.8970		2516					
10		.4040		1411			1.0005		2727					
11							1.1040		2909					
12							1.2075		3064					
13							1.3110		3179					
14							1.4145		3267					
15							1.5180		3335					

Gauge No. 3427			Depth 9630'			Clock No. 7902			12 hour				
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.				
c .0000	215 Q	.0000		177	.0000	162 Q	.0000		200				
1 .2210	177	.0286		258*	.6270	200	.0699		355**				
2		.0715		377			.1748		582				
3		.1144		495			.2797		820				
4 PLUGGING		.1573		615	PLUGGING		.3846		1068				
5		.2002		742			.4895		1344				
6		.2431		872			.5944		1640				
7		.2860		1007			.6993		1988				
8		.3289		1142			.8042		2331				
9		.3718		1286			.9091		2548				
10		.4150		1440			1.0140		2757				
11							1.1189		2937				
12							1.2238		3095				
13							1.3287		3206				
14							1.4336		3296				
15							1.5380		3363				

Reading Interval 6 15 Minutes

REMARKS: *Interval = 4 minutes **Interval = 10 minutes Q = Questionable

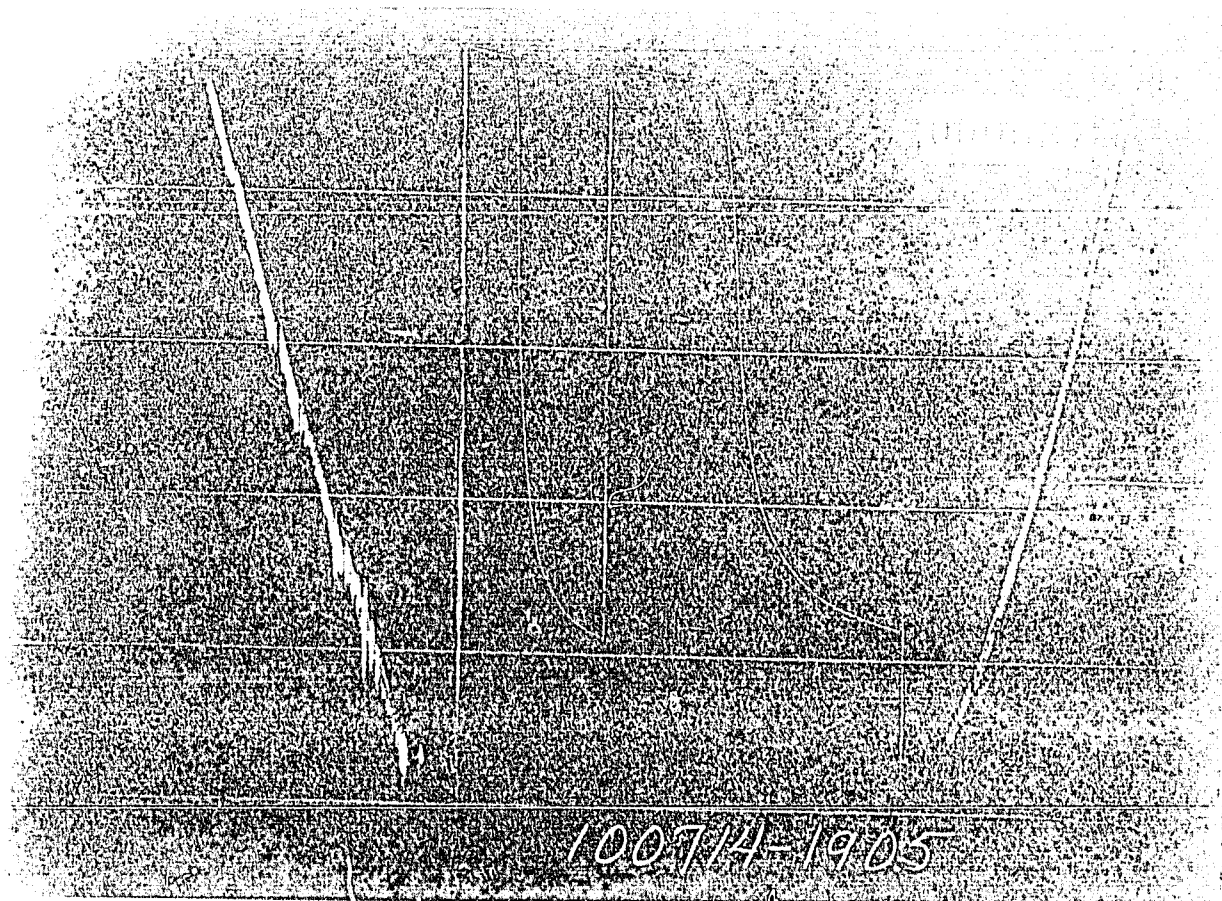
SPECIAL PRESSURE DATA

LITTLE'S

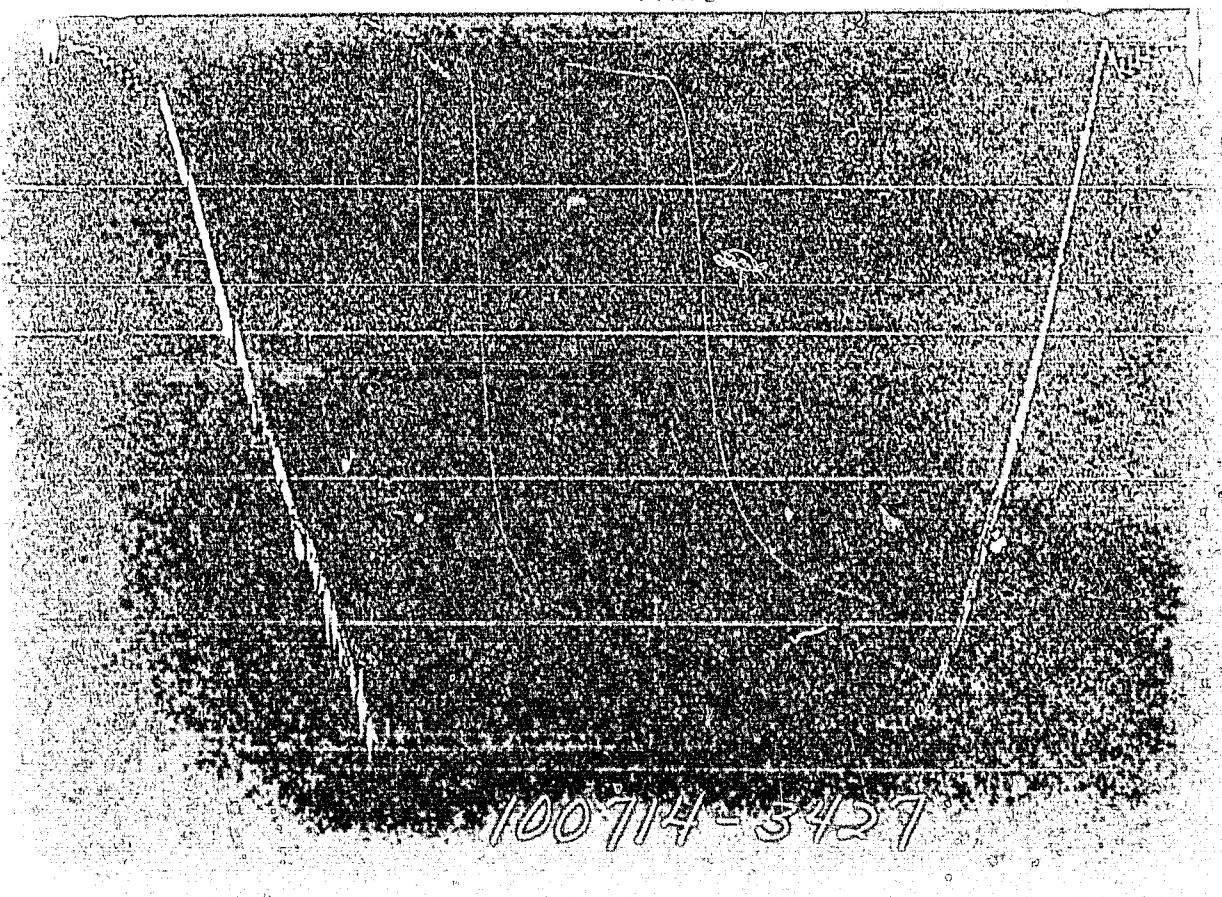
000035

100713

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5"	2.50"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8946.59'	000036
Drill Collars	6 1/2"	2 5/16"	622.92'	
X Over	5"	2.50"	.70'	
Handling Sub & Choke Assembly	5.87"	.62"	2.60'	
Dual CIP Valve	5"	.87"	4'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	9539'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4.20'	9544'
Hydraulic Jar	5"	1"	3.40'	
VR Safety Joint	5"	1"	2.30'	
Pressure Equalizing Crossover				
Packer Assembly	7.75"	1.50"	6.10'	9560'
Distributor	5"	1.68"	2'	
Packer Assembly	7.75"	1.50"	5.10'	9567'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
X Over	5"	1.50"	.70'	
Drill Collars	6 1/2"	2 5/16"	29.73'	
X Over	4.75"	1.90"	.70'	
Flush Joint Anchor	5"	2.37"	30'	
Blanked Off B.T. Running Case	5"	3.06"	4.10'	9630'



TIME



000038

FLUID SAMPLE DATA				Date		Ticket Number			
Sampler Pressure _____ P.S.I.G. at Surface				5-23-72		100714			
Recovery: Cu. Ft. Gas _____				Kind of Job		Halliburton District			
cc. Oil _____				OPEN HOLE		MOOMBA			
cc. Water _____				Tester		Witness			
cc. Mud _____				MR. MUNDEN		MR. LICKLITTER			
Tot. Liquid cc. _____				Drilling Contractor		BC S			
Gravity _____ ° API @ _____ ° F.				O.D. AND E. RIG #9					
Gas/Oil Ratio _____ cu. ft./bbl.				EQUIPMENT & HOLE DATA					
				Formation Tested					
				Gidgealpa					
				Elevation _____ Ft.					
				130'					
				Net Productive Interval _____ Ft.					
				All Depths Measured From					
				Kelly Bushing					
				Total Depth _____ Ft.					
				9685'					
				Main Hole/Casing Size _____					
				8 1/2"					
				Drill Collar Length _____					
				593.47' I.D. 2 5/16"					
				Drill Pipe Length _____					
				9017.25' I.D. 4.276"					
				Packer Depth(s) _____ Ft.					
				9625' - 9633'					
				Depth Tester Valve _____ Ft.					
				9609'					
TYPE		AMOUNT		Depth Back		Surface		Bottom	
Cushion				Ft. Pres. Valve		Choke		Choke	
Recovered		510 Feet of		Mud and watery mud (RW 0.30 @ 74°F)					
Recovered		Feet of							
Recovered		Feet of							
Recovered		Feet of							
Recovered		Feet of							
Remarks See production test data sheet.									
CHARTS INDICATE PARTIAL PLUGGING OF ANCHOR PERFORATION DURING THE FIRST FLOW.									
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.		TIME	
		Depth: 9613' Ft.		Depth: 9681' Ft.		Depth: Ft.			
Est °F.		12 Hour Clock		12 Hour Clock		Hour Clock		Tool A.M.	
		Blanked Off No		Blanked Off Yes		Blanked Off		Opened 7:35 P.M.	
Actual 247 °F.		Pressures		Pressures		Pressures		Tool A.M.	
		Field Office		Field Office		Field Office		Closed 12:05 P.M.	
Initial Hydrostatic		4686 4702		4714 4733				Reported Computed	
								Minutes Minutes	
Flow	Initial	32	31	50	67				
	Final	81	97	133	145			30	28
	Closed in	3888	3901	3915	3930			60	60
Flow	Initial	97	118	167	162				
	Final	210	228	250	260			60	61
	Closed in	3793	3814	3821	3836			120	121
Flow	Initial								
	Final								
	Closed in								
Final Hydrostatic		4686 4686		4707 4709					

Gauge No. 1905			Depth 9613'			Clock No. 7588			12 hour	Ticket No. 100714				
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
Time Defl. 000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. 000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0 .0000	31	.0000		97	.0000	118	.0000		228					
1 .0274	37	.407		1810	.0746	144*	.0890		708**					
2 .0549	50	.0814		2853	.1424	165	.1711		2478					
3 .0823	58	.1221		3316	.2102	183	.2532		3093					
4 .1097	71	.1628		3519	.2780	199	.3353		3359					
5 .1372	81	.2035		3632	.3458	214	.4174		3516					
6 .1646	89	.2442		3731	.4140	228	.4995		3616					
7 .1920	97	.2849		3791			.5816		3686					
8		.3256		3838			.6637		3739					
9		.3663		3873			.7458		3782					
10		.4070		3901			.8280		3814					
11														
12														
13														
14														
15														

Gauge No. 3427			Depth 9681'			Clock No. 7902			12 hour			
0	.0000	67	.0000		145	.0000	162		.0000		260	
1	.0279	115	.0416		1688	.0757	180*		.0908		725**	
2	.0557	180	.0832		2853	.1446	200		.1746		2441	
3	.0836	208	.1248		3308	.2135	215		.2584		3112	
4	.1114	208	.1664		3543	.2824	230		.3422		3381	
5	.1393	133	.2080		3658	.3513	245		.4260		3537	
6	.1672	135	.2496		3756	.4200	260		.5098		3638	
7	.1950	145	.2912		3819				.5936		3708	
8			.3328		3862				.6774		3764	
9	PLUGGING...		.3744		3900				.7612		3806	
10			.4169		3930				.8450		3836	
11												
12												
13												
14												
15												
Reading Interval 4			6		10		12					
REMARKS: *Interval = 11 minutes **Interval = 13 minutes												

100714

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5"	2.50"	1'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	9017.25'	000041
Drill Collars	6.50"	2 5/16"	593.47'	
X Over	5"	2.50"	.70'	
Handling Sub & Choke Assembly	5.87"	.62"	2.60'	
Dual CIP Valve	5"	.87"	4'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	9609.67'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4.20'	9613.87'
Hydraulic Jar	5"	1"	3.40'	
VR Safety Joint	5"	1"	2.30'	
Pressure Equalizing Crossover				
Packer Assembly	7.75"	1.50"	6.10'	9625.67'
Distributor	5"	1.68"	2'	
Packer Assembly	7.75"	1.50"	5.10'	9632.77'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint	5"	1.50"	4'	
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
X Over	5"	1.50"	.70'	
Drill Collars	6.50"	2 5/16"	29.73'	
X Over	4.75"	1.90"	.70'	
Flush Joint Anchor	5"	2.37"	13'	
Blanked-Off B.T. Running Case	5"	3.06"	4.10'	9681'

GAS ANALYSIS: BROLGA NO. 1

000042

DST 2 DST 3 DST 4
Interval 8,920-9,072' Interval 9,085-9,180' Interval 9,232-9,362'

<u>Component</u>	<u>Mole %</u>	<u>Mole %</u>	<u>mole %</u>
Methane	41.7	46.3	46.4
Ethane	5.7	10.6	11.7
Propane	4.3	8.2	9.1
Isobutane	0.99	1.7	1.7
n-Butane	0.57	1.9	2.2
Isopentane	0.04	0.41	0.36
n-Pentane	0.03	0.52	0.52
Hexanes and higher hydrocarbons	21.1	3.3	0.85
Oxygen	trace	trace	n.d.
Nitrogen	1.0	2.2	2.9
Carbon dioxide	24.5	24.7	24.2

n.d. = none detected

Analyst : Z. Horvath

Officer-in-charge: B.M. McKirdy

Date of analysis : 5/6/72



000043

GAS ANALYSIS: BROLGA NO.1

DST 5 DST 6 DST 7
Interval 9,362-9,510' Interval 9,505-9,576' Interval 9,570-9,634'

<u>Component</u>	<u>Mole %</u>	<u>Mole %</u>	<u>Mole %</u>
Methane	35.9	31.8	38.8
Ethane	12.0	13.1	12.2
Propane	12.0	14.4	12.8
Isobutane	2.4	3.0	3.1
n-Butane	4.2	5.2	4.8
Isopentane	1.1	1.4	1.7
n-Pentane	1.8	2.1	2.2
Hexanes and higher hydrocarbons	12.5	9.7	5.0
Oxygen	n.d.	0.06	n.d.
Nitrogen	1.3	1.6	1.3
Carbon dioxide	16.8	17.6	18.1

n.d. = none detected

Analyst : Z. Horvath

Officer-in-charge : D.M. McKirdy

Date of analysis : 5/6/72

000044

WATER ANALYSIS - BROLGA NO. 1

2760' gcsr

1800' gcsr

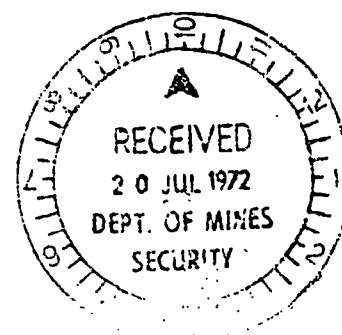
950' gcsr

1100V

1000V

Test Number	DST NO.1	DST NO.2	DST NO.3	DST NO.4	DST NO.8
Depth (feet)	8724- 8832 U. Gidge (Toon)	8920- 9072 L. Gidge (Patin)	9085- 9180 (Patin) L. Gidge	9239- 9362	9633- 9685
Total dissolved solids (ppm)	11,350	83,050	20,600	23,900	30,850
Sodium Na+ (ppm)	4,190	29,600	7,280	8,000	9,440
Calcium Ca++ (ppm)	78	210	98	195	190
Magnesium Mg++ (ppm)	24	124	70	96	89
Chloride Cl- (ppm)	5,715	42,500	10,000	10,650	11,450
Sulphate SO ₄ = (ppm)	25	3,855	865	2,010	3,550
Bicarbonate HCO ₃ - (ppm)	1,895	3,005	2,270	1,550	2,095
Fluoride F- (ppm)	1.6	0.6	0.8	0.4	0.8
Nitrate NO ₃ - (ppm)	0.5	0.7	0.1	0.5	0.8
Hardness as CaCO ₃ (ppm)	295	1,030	535	885	840
Alkalinity as CaCO ₃ (ppm)	1,555	2,465	1,860	1,270	1,720
pH	7.0	7.5	7.0	6.5	7.0
Resistivity at 20°C ohm-metres	0.600	0.110	0.336	0.314	0.278

Note: The "total dissolved solids" is significantly higher than the summation of the individual radicles in some samples due to the presence of organic matter.



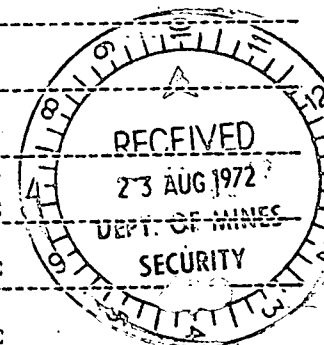
CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
1	8937'0"	8937'4"	Sst; f.gr carb.	10.4	0.55	1.2	2.36	2.64	42	8.5	N.D.	Fair	Even dull yellow	TRACE
1	8939'0"	8939'4"	Sst; f.gr	11.4	1.5	3.7	2.34	2.64	45	5.4	1384	Trace	"	TRACE
1	8941'0"	8941'5"	Sst; f.gr to m.gr.	13.7	2.3	6.0	2.28	2.64	40	2.7	N.D.	Trace	Bright yellow spotted	TRACE
2	9266'0"	9266'4"	Sst; f.gr to m.gr.	11.1	4.1	N.D.	2.39	2.69	9.6	2.4	N.D.	Trace	Even yellow spotted	TRACE
2	9292'0"	9292'4"	Sst; vf.gr. to fgr. slty	7.0	0.17	0.21	2.47	2.65	28	4.3	418	Trace	Bright even yellow spotted	TRACE
2	9300'0"	9300'4"	as above	10.4	0.68	0.54	2.38	2.65	39	2.8	N.D.	Trace	Dull yellow spotted	TRACE
3	9302'0"	9302'4"	Sst; f.gr. to m.gr.	13.8	6.0	8.6	2.28	2.64	49	3.1	N.D.	Trace	Nil	TRACE
3	9304'0"	9304'4"	as above	14.2	9.2	9.3	2.27	2.64	38	0.6	N.D.	Neg.	Blue-white spotted	TRACE



Remarks: -

General File No. 69/1414

Well File No. 72/1018

000045

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparatus Grain	Water	Oil				
3	9306'0"	9306'4"	Sst; f.gr.	14.3	4.7	8.2	2.26	2.64	34	0.9	N.D.	Neg.	Irregular blue spotted	TRACE
3	9308'0"	9308'4"	as above	16.6	21	27	2.20	2.64	35	0.6	N.D.	Neg.	Dull blue spotted	TRACE
3	9310'0"	9310'4"	as above	14.9	13	22	2.24	2.64	39	0.7	636	Neg.	Nil	Fair
3	9312'0"	9312'3"	as above	14.5	10	20	2.26	2.64	30	1.3	N.D.	Neg.	Nil	TRACE
3	9314'0"	9314'3"	as above	13.8	4.2	4.5	2.28	2.65	38	0.50	N.D.	Neg.	Nil	TRACE
3	9316'0"	9316'4"	as above	11.3	7.7	9.1	2.35	2.65	29	1.1	N.D.	Neg.	Dull irregular blue spotted	TRACE
3	9318'0"	9318'3"	Sst; v.f.gr. to f.gr. sl. carb.	8.6	0.95	1.2	2.42	2.65	47	2.7	N.D.	Neg.	Dull yellow spotted	TRACE
3	9320'0"	9320'4"	Sst; f.gr. silty shylam.	7.0	0.38	0.38	2.48	2.65	43	1.3	N.D.	Neg.	"	TRACE

Remarks: -

General File No. 69/444

Well File No. 72/1018

000046

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
3	9322'0"	9322'3"	Sst; f.gr. sl. carb.	9.2	N.D.	0.39	2.40	2.64	21	1.9	N.D.	Trace	Bright orange spotted	Fair
3	9324'0"	9324'4"	Sst; f.gr.	12.0	1.2	2.0	2.33	2.64	23	Trace	461	Neg.	Nil	Trace
3	9342'0"	9342'2"	Sst; v.fgr. slty.	9.4	0.24	0.41	2.50	2.75	50	2.7	N.D.	Trace	Dull even yellow spotted	Fair
3	9344'0"	9344'3"	Sst; f.gr.	10.4	0.38	0.42	2.39	2.66	12	Trace	N.D.	Neg.	Blue spotted	Trace
3	9350'0"	9350'3"	Sst; shly lam.	6.5	0.13	0.12	2.60	2.77	100	Trace	283	Neg.	Bright orange spotted	Fair
4	9534'0"	9534'3"	Sst; f.gr. to m.gr. carb	8.8	0.25	0.35	2.42	2.65	71	1.2	458	Neg.	Blue spotted	Fair
4	9536'0"	9536'3"	Sst; v.fgr. to f.gr.	7.8	0.22	0.26	2.43	2.64	64	1.5	N.D.	Neg.	Even blue	Fair
4	9538'0"	9538'4"	Sst; f.gr. to m.gr. carb shly lam.	7.5	0.25	0.20	2.46	2.65	57	2.0	N.D.	Trace	Dull irregular yellow	Trace

Remarks: -

General File No. 69/1414
Well File No. 72/1018

000047

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
4	9540'0"	9540'4"	Sst; v.f.gr Shly carb. lam.	5.7	0.12	0.11	2.49	2.64	53	3.5	N.D.	Trace	Dull irreg. yellow	Trace
4	9542'0"	9542'2"	Sst; f.gr	12.2	0.81	1.2	2.32	2.64	45	0.7	N.D.	Trace	Bright even yellow	Trace
4	9544'0"	9544'3"	As above	9.1	0.41	0.72	2.41	2.65	57	1.1	N.D.	Neg.	"	Trace
4	9546'0"	9546'5"	Sst; f.gr	9.3	0.46	0.83	2.40	2.64	57	1.1	718	Neg.	Bright irreg. yellow	Trace
4	9548'0"	9548'3"	As above	9.3	0.46	0.54	2.41	2.65	55	2.1	N.D.	Neg.	irreg. blue-yellow	Trace
4	9552'0"	9552'3"	Sst; v.f.gr. to f.gr.	9.2	0.24	0.33	2.42	2.66	49	0.8	N.D.	Neg.	"	Nil
4	9552'3"	9552'6"	Sst; v.f.gr. shly lam	3.4	N.D.	0.57	2.55	2.64	10	Trace	N.D.	Neg.	"	Nil
4	9554'0"	9554'5"	Sh; slty	0.9	<0.1	5.7*	2.60	2.62	100	Trace	N.D.	Neg.	Nil	Nil

Remarks: - *Fractured

General File No. 69/1414
Well File No. 72/1018

000048

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
4	9556'0"	9556'5"	Sst; m.gr. slty	6.6	0.13	0.60	2.48	2.66	53	Trace	N.D.	Neg.	Dull blue-yellow	Trace
4	9558'0"	9558'3"	Sst; f.gr.	5.0	N.D.	0.13	2.52	2.65	93	Trace	280	Trace	Dull yellow	Trace
5	9576'0"	9576'3"	Sst; f.gr. to m.gr.	8.6	0.19	0.23	2.43	2.65	54	Trace	N.D.	Neg.	"	Nil
5	9578'0"	9578'5"	As above	10.1	0.17	0.40	2.39	2.67	47	1.1	N.D.	Neg.	Irregular blue	Trace
5	9580'0"	9580'3"	As above	12.2	2.5	2.7	2.32	2.65	41	Trace	N.D.	Tr	Bright even blue spotted	Fair
5	9582'0"	9582'3"	As above sl. carb	11.4	0.96	1.1	2.35	2.65	53	2.4	N.D.	Trace	"	Trace
5	9584'0"	9584'5"	Sst; f.gr. to m.gr.	8.6	0.14	0.43	2.45	2.67	68	1.2	353	Neg.	"	Trace
5	9586'0"	9586'3"	As above	11.5	0.87	1.0	2.36	2.66	49	0.7	N.D.	Neg.	"	Trace

Remarks: -

General File No. 69/1414

Well File No. 72/1018

000049

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
5	9588'0"	9588'5"	Sst; f.gr. to m.gr.	10.9	1.1	1.0	2.36	2.66	40	0.8	N.D.	Trace	bright even blue spotted	Trace
5	9606'0"	9606'4"	Slst; shly	6.2	0.09	0.11	2.49	2.66	21	1.6	N.D.	Trace	Nil	Trace
5	9608'0"	9608'3"	Sst; m.gr. coaly	9.0	0.27	8.3*	2.25	2.46	43	3.3	N.D.	Fair	Bright even blue spotted	Fair
5	9610'0"	9610'4"	Sst; m.gr.	10.3	0.64	2.8	2.38	2.65	53	1.3	N.D.	Trace	"	Trace
5	9612'0"	9612'2"	Sst; f.gr. to m.gr.	10.4	N.D.	0.69	2.38	2.65	44	1.3	N.D.	Trace	"	Fair
5	9614'0"	9614'3"	Sst; f.gr. to c.gr. carb	8.5	N.D.	0.17	2.44	2.66	30	0.9	N.D.	Neg.	Irreg. yellow spotted	Trace
5	9616'0"	9616'4"	Sst; m.gr. to c.gr. coaly	8.2	N.D.	1.1	2.43	2.64	49	2.2	N.D.	Neg.	Dull yellow spotted	Trace
5	9618'0"	9618'2"	Sst; m.gr.	8.2	0.26	0.34	2.43	2.65	45	0.9	N.D.	Neg.	Dull blue spotted	Trace

Remarks: - *Fractured.

General File No. 69/1414
Well File No. 72/1018

000050

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
5	9620'0"	9620'3"	Sst; m.gr. to c.gr. carb	12.5	0.94	2.3	2.32	2.65	34	3.5	665	Fair	Bright even blue spotted	Fair
5	9626'0"	9626'5"	Sst; f.gr to m.gr.	11.1	0.51	1.3	2.37	2.66	40	Trace	N.D	Neg.	Dull even blue	Trace
5	9628'0"	9628'3"	Sst; f.gr.	9.4	N.D.	1.3	2.40	2.65	46	2.8	N.D.	Neg.	Bright blue spotted	Trace
6	9643'0"	9643'3"	Sst; m.gr. to c.gr.	7.7	0.30	25*	2.64	2.85	53	Trace	N.D.	Neg.	Irreg. dull blue spotted	Trace
6	9645'0"	9645'3"	As above	12.5	2.3	51*	2.31	2.66	59	Trace	N.D.	Neg.	Dull blue spotted	Trace
6	9647'0"	9647'3"	Sst; m.gr. sl. carb.	9.7	0.80	0.54	2.40	2.66	49	Trace	379	Neg.	Irregular blue spotted	Trace
6	9649'0"	9649'4"	Sst; f.gr. to m.gr	11.0	1.1	4.9	2.36	2.66	70	Trace	N.D.	Neg.	"	Trace
6	9651'0"	9651'4"	As above	10.4	0.88	0.62	2.38	2.65	58	Trace	N.D.	Neg.	Dull irregular blue spotted	Trace

Remarks: - * Fractured

General File No. 69/1414
Well File No. 72/1018

000051

CORE ANALYSIS RESULTS

NOTE: (i) Unless otherwise stated, porosities and permeabilities were determined on two plugs (V&H) cut vertically and horizontally to the axis of the core. Ruska porosimeter and permeameter were used with air and dry nitrogen as the saturating and flowing media respectively. (ii) Oil and water saturations were determined using Soxhlet type apparatus. (iii) Acetone test precipitates are recorded as Neg., Trace, Fair, Strong or Very Strong.

WELL NAME AND NO. Brolga No. 1

DATE ANALYSIS COMPLETED July 19, 1972

Core No.	Sample Depth		Lithology	Average Effective Porosity two plugs (% Bulk Vol.)	Absolute Permeability (Millidarcy)		Average Density (gm/cc.)		Fluid Saturation (% pore space)		Core Water Salinity (p.p.m. NaCl)	Acetone Test	Fluorescence of freshly broken core	Fluorescence of sample "cut" in tetrachlorethylene
	From	To			V	H	Dry Bulk	Apparent Grain	Water	Oil				
6	9653'0"	9653'3"	Sst; m.gr. to c.gr.	10.8	1.2	2.6	2.37	2.66	67	Trace	N.D.	Neg.	Dull irregular blue spotted	Trace
6	9655'0"	9655'4"	Sst; m.gr.	11.4	1.2	2.0	2.36	2.66	56	Trace	N.D.	Neg.	"	Trace
6	9657'0"	9657'3"	As above	12.2	2.6	12	2.34	2.66	63	Trace	N.D.	Neg.	"	Trace
6	9659'0"	9659'2"	Sst; f.gr. to m.gr.	10.1	0.61	0.85	2.39	2.66	67	Trace	N.D.	Neg.	Dull blue spotted	Trace
6	9661'0"	9661'3"	Sst; m.gr.	2.8	0.1	0.1	2.58	2.66	72	Trace	N.D.	Neg.	Very bright orange spotted	Trace
6	9663'0"	9663'3"	Sst; f.gr. to m.gr.	7.1	0.22	0.36	2.47	2.66	94	Trace	N.D.	Neg.	Dull even blue spotted	Trace
6	9665'0"	9665'4"	Sst; f.gr.	7.9	0.14	0.25	2.46	2.67	75	Trace	262	Neg.	"	Trace
6	9667'0"	9667'5"	Sst; v.fgr. to f.gr.	8.5	0.23	0.27	2.44	2.67	69	Trace	N.D.	Neg.	"	Trace

Remarks: -

General File No. 69/1414

Well File No. 72/1018

000052

RESTRICTED INVESTIGATION
REPORT 723R

CSIRO

MINERALS RESEARCH LABORATORIES
DIVISION OF MINERALOGY

THE PETROGRAPHY OF SOME COALS AND OTHER

SEDIMENTS FROM BROLGA NO.1 WELL

COOPER BASIN

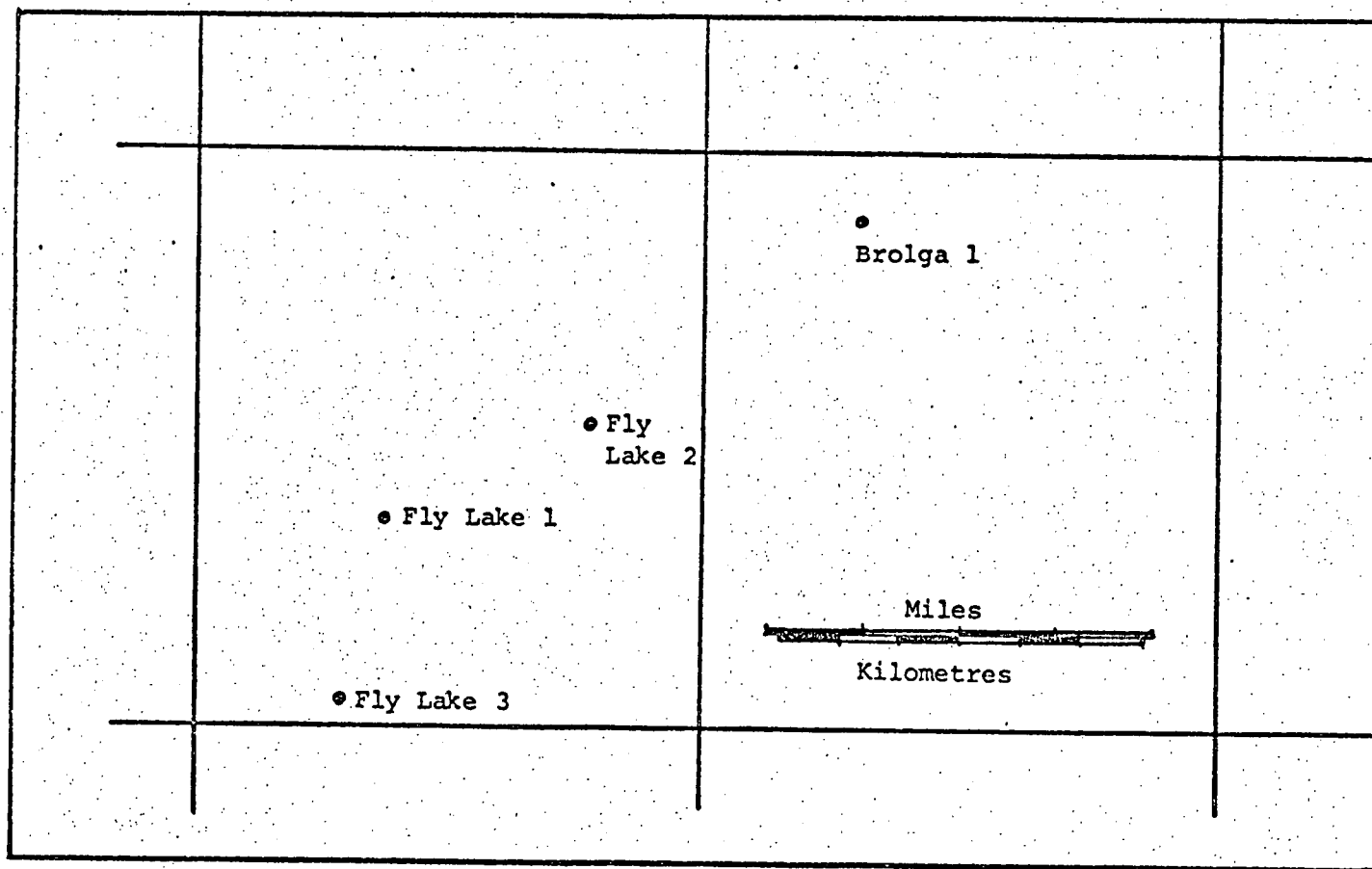
MICHELLE SMYTH

CSIRO DIVISION OF MINERALOGY
P.O. BOX 136
NORTH RYDE N.S.W. 2113
AUSTRALIA



AUGUST 1975

SCANNED



Location Map. Taken from "Oil and Gas Fields of Australia, Papua New Guinea and New Zealand",
compiled and edited by Leslie R. Beddoes, Jr. 1973.

INTRODUCTION

Samples of coals and interseam sediments from the Permian Gidgealpa Group, Brolga No.1 well, have been supplied by Delhi Oil Company. Also supplied was a data log of the Gidgealpa Group and a core description of most of the Patchawarra Formation.

The material provided includes multiple samples of the thicker seams, to determine any variation in petrographic composition through the seam and also the reliability of taking just one sample to represent a seam.

The ultimate aim of analysing the Cooper Basin coals, is to relate coal type to depositional environment. Unfortunately environments were not included on the log of Brolga No.1. However, where possible, results obtained from Moomba No.6 well have been applied to the coals from Brolga No.1 well.

The interseam sediments were examined for dispersed organic material which might produce hydrocarbons.

Finally, an attempt has been made to correlate seams from Brolga No.1, Fly Lake No.2, Fly Lake No.1 and Fly Lake No.3 wells.

ANALYSES

Maceral and microlithotype analyses have been carried out on 26 samples of coal. These represent 11 different seams in the Patchawarra Formation.

Thin sections of 29 sediments have been examined for dispersed organic material. This material has been described as either transparent or opaque. Transparent matter is usually exinite-type and/or vitrinite-type, and is generally held to be the most suitable material for the generation of hydrocarbons. Opaque matter is inertinite-type and/or vitrinite type, as vitrinite becomes more opaque as diagenesis proceeds.

RESULTS

Coals

Results of maceral analyses are given in Table 1 and Fig.1, which shows whole seam compositions. Fig.2 shows the scatter of coal types found in the multiple samples of two thick seams.

Microolithotype analyses results are given in Table 2 and Fig.3, which shows whole seam compositions. Fig.4 shows the scatter of coal types in the multiple samples of the two seams.

Interseam sediments

A summary of the data on the dispersed organic matter found in the sediments is given in Table 3.

The first really significant finding as far as source rocks are concerned has been made amongst these sediments from Brolga No.1 well. The carbonaceous shale sample from 8975 feet (2735.6m) contains abundant algal remains, about 5% of the rock. This is the first sediment examined at CSIRO Minerals Research Laboratories from the Cooper Basin which is probably suitable for the generation of liquid hydrocarbons.

The remaining 28 sediments examined have a wide range of organic contents, but the carbonaceous material is predominantly opaque in most of them, and is fragmentary. The transparent material which is fragmentary, is of a vitrinite-type. (See appendix).

DISCUSSION

Coals

There is a wide variation in the vitrinite content of the coals (Fig.1), from low to very high (the exinite content is generally 5% or less). The vitrite plus clarite content is however predominantly low, indicating that the variation in

vitroinite content is due to the wide range of the intermediates content.

From Figs.2 and 4, the scatter of compositions of the multiple samples from the two thick seams is as great as that amongst all the seams. This gives a clear indication of the possible large error in determining the composition of a non-homogeneous thick seam, from only one sample.

Very few of the Brolga No.1 coals fall into the areas of specific sedimentary environments delineated for the Moomba No.6 coals. A few tentative environments have been shown on Figs.1 and 3.

It would be particularly helpful to this study if Delhi geologists could give information on depositional environments for Brolga No.1 well; not necessarily for the whole of the Gidgealpa Group, but for the intervals containing the coals which have been analysed. If a reliable correlation can be established between coal type and depositional environment now, the time-consuming work of examining many metres of core may be greatly curtailed in the future.

Interseam sediments

The algal shale from 8975 feet (2735.6m) has excellent potential for the generation of liquid hydrocarbons at a suitable depth. Algal-rich sediments are rich in aliphatic compounds, able to generate oil (Tissot et al, 1974). The value of this sediment as a hydrocarbon producer would depend on its thickness and continuity. The algae are not present in rocks 5 feet above and 5 feet below 8975 feet. The shale would appear not to be very thick. Further samples 2 - 3 feet above and below the algal shale have been requested.

Sediments from 8933 feet (2722.8m) and 9335 feet (2845.6m) contain large proportions of organic matter, of which about half is transparent. Although the transparent matter is of a vitroinite type, these rocks may be suitable for the generation of gaseous hydrocarbons.

CORRELATION OF WELLS

A theoretical correlation of some of the coal seams from the wells in the order Brolga No.1, Fly Lake No.2, Fly Lake No.1 and Fly Lake No.3 has been attempted. The method used is similar to that described by Odell (1975). The absolute thicknesses of the Gidgealpa Group of each two adjacent wells have been plotted as the sides of a rectangle, the diagonal of which is taken to represent the plot of equivalent strata between the base and the top of the group. (See Figs.5, 6, 7).

The actual positions of points known to be equivalent, such as the base of the Toolachee Formation and top of the Patchawarra Formation have been plotted (points B and C respectively). Coal seams have been equated by taking those two seams which gave a point closest to the diagonal. These correlations are purely theoretical and should be checked by comparing analyses of the seams.

Unfortunately at present only one correlation was able to be checked by petrographic analysis. The seams at 9520 feet (2901.7m) in Fly Lake No.2 and at 9325 feet (2842.3m) in Fly Lake No.1 have vitrite plus clarite contents (m.m.f.) of 4% and 3% respectively (point H). (Restricted Investigation Reports 658R and 652R).

Further petrographic analyses of the coals should support or negate the proposed correlations, which are shown in Fig.8.

CONCLUSIONS

The vitrinite content of the coal seams analysed varies from low to very high. However the vitrite plus clarite content of the seams is low.

The petrographic compositions of the multiple samples from two seams varies as much as the compositions of all the seams.

Large errors could arise from assuming one sample from a thick seam has a composition representative of the seam.

Very few of the coals fall into the depositional environments delineated for coals from Moomba No.6. These coal analyses will remain of academic interest only, if they cannot be compared with environments which have been proposed from study of the surrounding sediments.

A most significant shale containing algae occurs at 8975 feet (2735.6m). This rock should be capable of generating liquid hydrocarbons if it extends to suitable depths.

A theoretical correlation of some seams from Brolga No.1, Fly Lake No.2, Fly Lake No.1 and Fly Lake No.3 has been proposed. It is hoped that at least some of these correlations can be checked by petrographic analyses of the coal.

.. .. .

REFERENCES

1. Tissot, B., Durand, B., Espitalie, J., and Combaz, A., 1974. "Influence of Nature and Diagenesis of Organic Matter in Formation of Petroleum". A.A.P.G. Bull. 58, No.3. pp 499-506.
2. Odell, John, 1975: "Error Estimation in Stratigraphic Correlation". Mathematical Geology 7, No.2, pp 167-182.

BROLGA NO. 1APPENDIX

LN 47150 8933' 2722.8m

Black carbonaceous shale.

Approximately 40% of the rock is carbonaceous material of which half is transparent, half opaque. Both the transparent and opaque material occur as fragments from a few microns to tens of microns. The transparent material looks to be botanically of a vitrinite-type, rather than exinite-type.

This appears to be potentially a good source rock, probably for gaseous rather than liquid hydrocarbons.

LN 47152 8943'6" 2726.0m

Grey carbonaceous shale with abundant fossil plant fragments.

This rock contains about 10% carbonaceous material, the coarse fraction of which occurs more as thin streaks than fragments. There are abundant small fragments of a few microns size scattered uniformly through the groundmass. Much of the fine material is opaque; the coarser streaks and fragments are half transparent, half opaque. The transparent streaks may be cuticles of fossil leaves, which is generally exinite-type organic matter.

LN 47153 8950' 2728.0m

Very fine-grained sandstone with carbonaceous laminations.

The rock contains <1% carbonaceous matter, which occurs mostly as elongated opaque fragments.

LN 47154 8957' 2730.1m

Carbonaceous siltstone.

This rock contains about 10% carbonaceous material which occurs as fragments, generally showing orientation parallel to the bedding. The fragments are predominantly opaque with rare transparent pieces. These are probably of a vitrinite-type. The fragments are from a few microns, to tens of microns, 10 - 20 microns being common.

LN 47155 8970' 2734.1m

Carbonaceous siltstone.

Approximately 40% of the rock is organic matter, most of which is opaque fragments, about 10 - 20 microns. Very rare transparent spores and fragments.

LN 47156 8975' 2735.6m

Black carbonaceous shale.

About 30% of the rock is carbonaceous material, 60% transparent; 40% opaque. The transparent material occurs as fragments and as oval or round bodies which are algae. This rock has excellent potential as a source rock for hydrocarbons, even liquid hydrocarbons. This is the first sediment examined from the Cooper Basin which contains algae. Algae form about 5% of the rock. The algal bodies have an average size of about 100 microns. The fragments average 50 to 100 microns size.

LN 47157 8979'6" 2737.0m

Siltstone with coaly lenses.

The rock contains many macroscopically visible streaks of carbonaceous material which is opaque. Between these bands are much thinner streaks and small fragments of organic material (50 - 100 microns), probably 10 - 15% of the rock, much of which is also

opaque. The transparent material is fragmentary, of a vitrinite-type.

LN 47158 8985'6" 2738.8m

Laminated siltstone, carbonaceous.

This rock contains about 5% organic material which occurs as streaks and fragments, most of which are opaque. The transparent streaks and fragments are of a vitrinite-type. Fragments are about 100 microns.

LN 47165 9253' 2820.3m

Carbonaceous shale.

Carbonaceous matter makes up about 10% of this rock, occurring as either small fragments 10 - 20 microns, or macroscopically visible streaks. The coarse material is generally opaque. The fine fragments are 90% opaque, 10% transparent. The transparent material is of a vitrinite-type.

LN 47167 9263' 2823.4m

Dark grey carbonaceous siltstone.

10% of the rock is carbonaceous matter, in fragments from a few microns in size to macroscopically visible streaks. Most fragments are 50 - 200 microns and are virtually all opaque.

LN 47169 9270' 2825.5m

Sandstone with carbonaceous streaks.

This rock contains ~1% carbonaceous material, most of which occurs in macroscopically visible streaks, which are opaque.

LN 47180 9296' 2833.4m

Fine-grained micaceous sandstone.

2 - 3% carbonaceous material which occurs in fragments from about 50 to 200 microns in size. These fragments are virtually all opaque.

LN 47181 9318' 2840.1m

Sandstone.

This rock contains less than 1% carbonaceous matter, which occurs as small opaque fragments of about 10 microns size.

LN 47184 9334' 2845m

Dark grey carbonaceous siltstone.

Carbonaceous material forms about 10% of the rock, and occurs as fragments of 20 to 100 microns average size. The fragments are predominantly opaque. Transparent fragments are of a vitrinite-type.

LN 47185 9336' 2845.6m

Black carbonaceous shale.

About 30% of the rock is organic matter, occurring mostly as fragments 20 to 100 microns in size. The proportions of opaque and transparent material are roughly equal. The transparent fragments are of a vitrinite-type.

LN 47186 9346' 2848.7m

Black carbonaceous shale.

This rock contains about 5% organic matter, which occurs as small fragments and stringers, generally 10 - 50 microns in size. Most of the material is opaque. The transparent material is of a 'vitrinite' type.

LN 47188 9357'6" 2852.2m

Grey carbonaceous siltstone.

Carbonaceous matter forms 5% of the rock. It occurs as fragments from about 20 to 100 microns in size, which are virtually all opaque.

LN 47189 9525' 2903.2m

Dark grey carbonaceous silty shale.

The rock contains about 10% carbonaceous material, which occurs in fragments generally of 10 to 50 microns in size. Virtually all fragments are opaque.

LN 47190 9537' 2906.88m

Sandstone with carbonaceous patches.

The thin section contains no organic matter.

LN 47191 9552' 2911.5m

Grey siltstone.

This rock contains 5 - 10% carbonaceous material, which occurs as fragments generally 5 to 100 microns in size. The fragments are both opaque and transparent. The transparent material is of a vitrinite type.

LN 47192 9563.5' 2915m

Siderite band.

This sideritic band contains approximately 15% organic matter which occurs squeezed between the siderite nodules. It is mostly opaque, but some of it is transparent on thin edges, so it is possibly of a vitrinite type.

LN 47193 9572' 2917.5m

Fossiliferous black shale.

Carbonaceous matter is about 10% of the rock. It occurs predominantly as very fine fragments (5 to 20 microns) dispersed through the groundmass. Larger fragments up to several hundred microns are irregularly distributed through the rock. Fragments are both opaque and transparent. The transparent matter is mostly vitrinite-type, with very rarely spores (exinite-type).

LN 47195 9591' 2923.3m

Slightly carbonaceous fine-grained sandstone. 1 - 2% carbonaceous matter, in fragments 20 to 100 microns, virtually all opaque.

LN 47196 9593' 2923.9m

Interbanded coal and carbonaceous shale.

There is about 15% carbonaceous matter in the shale and it occurs as very fine fragments, generally 10 - 20 microns, stringers up to several hundred microns long or as macroscopically visible streaks. The fine fragments and coarse streaks are virtually all opaque, but some of the stringers are transparent, of a vitrinite type.

LN 47197 9597' 2925.2m

Dark grey shale.

About 10% carbonaceous matter, which occurs as fragments and stringers, generally 50 to 100 microns in size. The organic matter is virtually all opaque.

LN 47199 9600' 2926.1m

Carbonaceous siltstone.

The rock contains 5 - 10% organic matter which occurs in macroscopically visible streaks millimetres long and as fragments

generally up to approximately 50 microns in size. The organic material is mostly opaque and the transparent portion is of a vitrinite-type.

LN 47201 9606' 2927.9m

Laminated carbonaceous shale/siltstone.

The pale layers contain about 5% carbonaceous material as small fragments, 20 to 50 microns in size, and which are virtually all opaque. The darker layers contain about 20% carbonaceous matter, also as fine fragments but also stringers 100 - 200 microns long. This material also is mostly opaque.

LN 47203 9623'6" 2933.2m

Dark grey shale.

2 - 3% carbonaceous material, occurring as fragments 20 - 100 microns in size, and also rarely as stringers, some hundreds of microns long. Virtually all of the organic material is opaque.

LN 47204 9630' 2935.2m

Carbonaceous lithic sandstone.

This sample shows the junction between coal and sandstone. The contact is very sharp, and the coal adjacent to the sandstone is vitrinite. The sandstone is lithic in that it has what appear to be grains of shaly coal (~200 microns) as well as quartz and other rock fragments in it. There is also carbonaceous matter wrapped around the quartz grains. Overall there is about 5% of this coaly material in the rock, most of it opaque, or semi-opaque.

LN 47205 9660' 2944.4m

Fairly coarse grained lithic sandstone.

This rock contains virtually no carbonaceous material.

LN 47206 9682' 2951.1m

Grey mudstone with conchoidal fracture.

The rock contains <1% carbonaceous matter, which occurs as mostly opaque fragments 10 - 20 microns in size.

TABLE 1

Maceral Analyses of Coals from Brolga No.1 WellCooper Basin

Lab. No.	Depth (ft)	Depth (m)	Vitrinite	Exinite	Micrinite	Semi-fusinite	Fusinite	Mineral Matter					Reflectance %
								Cy	Cb	Py	Q	Oth.	
47151	8937	2724.0	83	8	3	4	1	1	-	tr	-	-	0.78 1.
47159	9243	2817.3	10	tr	49	35	3	2	-	-	1	-	1.19
47160	9244.5	2817.7	7	3	50	31	2	5	-	-	2	-	
47161	9246	2818.2	44	1	19	34	1	1	tr	tr	tr	-	
47187	9247.5	2818.6	27	3	12	30	4	22	-	-	2	-	
47162	9249	2819.0	16	1	34	44	2	3	-	-	tr	-	
47163	9250	2819.4	25	2	16	50	3	4	-	tr	-	-	1.09
47164	9251	2819.7	31	1	17	45	4	2	-	-	-	-	2.
	Seam average		23	2	28	38	3	5	tr	tr	1	-	
47166	9258	2821.8	31	5	23	37	3	1	-	-	-	-	3.
47170	9274	2826.7	9	2	49	34	3	2	-	-	1	-	*
47171	9275	2827.0	12	1	36	45	3	3	-	tr	tr	-	
47172	9277	2827.6	3	3	63	22	3	2	-	-	4	-	
47173	9278	2827.9	26	2	29	39	2	1	-	-	1	-	
47174	9280	2828.5	12	1	16	68	1	1	-	-	1	-	
47175	9281	2828.8	33	1	6	10	3	44	-	-	3	-	

Cy - Clay
 Cb - Carbonate
 Py - Pyrite
 Q - Quartz
 Oth - Other minerals

M - Major constituent
 m - Minor constituent
 tr - Trace
 * - Dirt band

TABLE 1 (cont). Maceral Analyses of Coals from Brolga No.1 Well

Cooper Basin

Lab. No.	Depth (ft)	Depth (m)	Vitrinite	Exinite	Micrinite	Semi-fusinite	Fusinite	Mineral Matter					
								Cy	Cb	Py	Q	Oth	
47176	9283	2829.5	14	1	13	27	7	34	-	tr	4	-	
47177	9284	2829.8	60	3	7	23	6	1	-	tr	tr	-	
47178	9286	2830.4	15	3	34	23	1	23	-	-	1	-	
†	Seam average		21	2	28	32	3	12	-	tr	2	-	4.
†	Clean coal composite excluding 9681'		19	2	31	35	3	8	-	tr	2	-	
47179	9290.5	2831.7	45	1	17	6	4	26	-	tr	1	-	5.
47182	9327	2842.9	32	3	12	44	6	3	-	tr	tr	-	6.
47183	9331	2844.1	16	2	37	36	5	4	-	tr	tr	-	7.
47194	9573	2917.9	46	1	27	16	4	4	-	-	2	-	8.
47198	9598	2925.5	26	1	34	24	7	6	-	-	2	tr†	
47200	9602.5	2926.8	38	-	-	2	tr	59	tr	1	-	-	*
∅	Seam average		32	tr	17	13	4	33	tr	tr	1	tr	9.
∅	Clean coal composite excluding 9602.5'		26	1	34	24	7	6	-	-	2	tr	
47202	9621.75	2932.7	22	1	32	13	3	25	tr	tr	4	-	10.
47204	9630	2935.2	57	1	4	21	6	10	-	-	1	-	11.

Cy - Clay
 Cb - Carbonate
 Py - Pyrite
 Q - Quartz
 Oth - Other minerals

M - Major constituent
 m - Minor constituent
 tr - Trace
 * - High mineral content
 † - Sphalerite

TABLE 2

Microlithotype Analyses of Coals from Brolga No.1 WellCooper Basin

Lab. No.	Depth (ft)	Depth (m)	Vitr-ite	Clar-ite	Inter-med-iates	Dur-ite	Fus-ite	Shaly Coal	Mineral Matter					
									Cy	Cb	Py	Q	Oth	
47151	8937	2724.0	62	25	9	-	4	-	-	-	tr	-	-	1.
47159	9243	2817.3	tr	-	27	42	28	1	2	-	-	-	-	*
47160	9244.5	2817.7	tr	-	24	45	27	2	1	-	tr	1	-	
47161	9246	2818.2	31	1	28	7	32	tr	1	-	-	-	-	
47187	9247.5	2818.6	9	1	26	1	25	18	16	-	-	4	-	
47162	9249	2819.0	6	-	35	27	31	1	tr	tr	-	tr	-	
47163	9250	2819.4	6	tr	51	2	39	1	1	-	tr	tr	-	
47164	9251	2819.7	7	tr	49	5	38	1	tr	-	-	-	-	
	Seam average		8	tr	35	19	31	3	3	tr	tr	1	-	2.
47166	9258	2821.8	11	1	51	3	34	tr	tr	-	tr	tr	-	3.
47170	9274	2826.7	2	-	15	50	29	2	2	-	-	tr	-	*
47171	9275	2827.0	3	-	29	22	46	-	tr	-	-	tr	-	
47172	9277	2827.6	tr	-	6	67	23	3	tr	-	-	1	-	
47173	9278	2827.9	13	1	34	14	38	-	-	-	-	-	-	
47174	9280	2828.5	1	tr	19	10	69	1	tr	-	-	tr	-	
47175	9281	2828.8	20	-	5	1	13	32	29	-	tr	tr	-	

Cy - Clay

Cb - Carbonate

Py - Pyrite

Q - Quartz

Oth - Other minerals

M - Major constituent

m - Minor constituent

tr - Trace

* - High mineral matter

TABLE 2 (cont) Microolithotype Analyses of Coals from Brolga No.1 WellCooper Basin

Lab. No.	Depth (ft)	Depth (m)	Vitr-ite	Clar-ite	Inter-med-iates	Dur-ite	Fus-ite	Shaly Coal	Mineral Matter					
									Cy	Cb	Py	Q	Oth	
47176	9283	2829.5	10	-	12	4	38	9	27	-	tr	tr	-	
47177	9284	2829.8	43	7	25	-	25	tr	tr	-	tr	tr	-	
47178	9286	2830.4	3	-	22	28	22	15	9	-	-	1	-	
†	Seam average		11	1	18	22	34	7	7	-	tr	tr	-	4.
†	Clean coal composite excluding 9281'		9	1	20	25	36	4	5	-	tr	tr	-	4.
47179	9290.5	2831.7	13	1	62	-	8	15	1	-	tr	tr	-	5.
47182	9327	2842.9	16	6	28	1	47	1	1	-	-	-	-	6.
47183	9331	2844.1	7	-	24	36	31	1	tr	-	tr	1	-	7.
47194	9573	2917.9	20	tr	58	1	14	5	1	-	-	1	-	8.
47198	9598	2925.5	1	-	70	2	20	4	1	-	-	2	-	
47200	9602.5	2926.8	32	-	-	-	1	2	65	tr	tr	-	-	*
∅	Seam average		17	-	35	1	10	3	33	tr	tr	1	-	9.
∅	Clean coal composite excluding 9602.5'		1	-	70	2	20	4	1	-	-	2	-	9.
47202	9621.75	2932.7	1	-	58	1	7	21	11	-	tr	1	-	10.
47204	9630	2935.2	47	2	21	-	21	8	1	-	-	-	-	11.

Cy - Clay

Cb - Carbonate

Py - Pyrite

Q - Quartz

Oth - Other minerals

M - Major constituent

m - Minor constituent

tr - Trace

* - High mineral matter

TABLE 3

Summary of data on dispersed organic matter
in sediments from Brolga No.1 Well

Depth (ft)	Depth (m)	% (vol) carbonaceous matter	Form of organic matter	Type of transparent organic matter	Size of organic matter	% of opaque and transparent matter
8933	2722.8	40	Fragments	vitronite	5 - 50 microns	O : 50 T : 50
8943.6	2726.0	10	Streaks (coarse) Fragments (fine)	vitronite exinite(?)	cm 5 - 10 microns	O : 50 T : 50 O : 100
8950	2728.0	<1	Fragments	vitronite	mm	O : 95 T : 5
8957	2730.1	10	Fragments	vitronite	10 - 20 microns	O : 99 T : 1
8970	2734.1	40	Fragments	vitronite	10 - 20 microns	O : 99 T : 1
8975 NB	2735.6	30	Fragments (O) ALGAE (T) Fragments (T)	exinite vitronite	50 - 100 100 50 - 100 microns	O : 40 T : 60
8979.5	2737.0	10 - 15	Streaks Fragments	vitronite	cm 50 - 100 microns	O : 80 T : 20
8985.5	2738.8	5	Streaks Fragments	vitronite	mm 100 microns	O : 95 T : 5
9253	2820.3	10	Fragments Streaks (O)	vitronite	10 - 20 microns cm	O : 90 T : 10
9263	2823.4	10	Fragments	-	5 microns to mm	O : 100
9270	2825.5	1	Streaks	-	mm	O : 100
9296	2833.4	2 - 3	Fragments	-	5 to 200 microns	O : 100

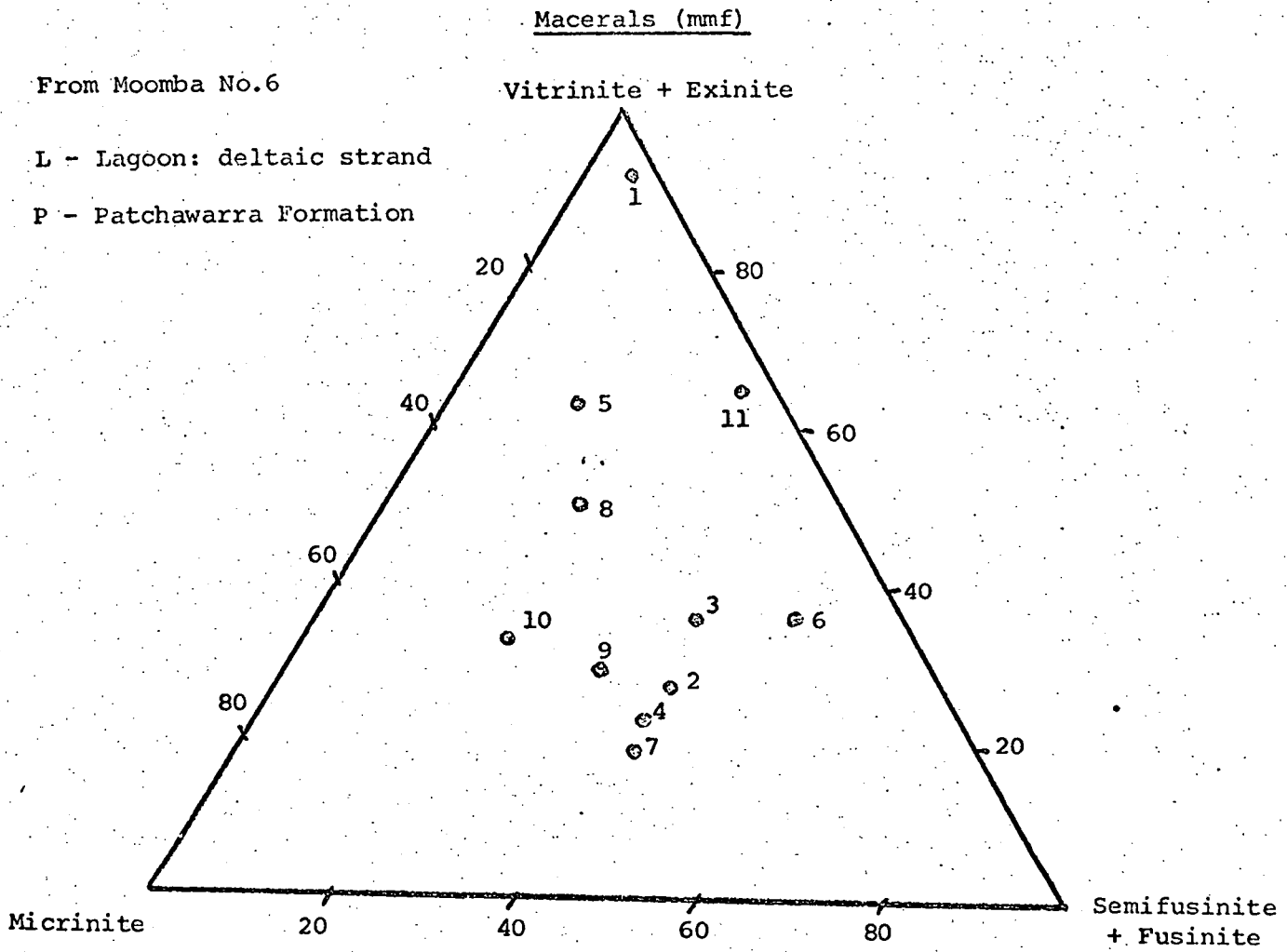
TABLE 3 (cont)

Depth (ft)	Depth (m)	% (vol) carbonaceous matter	Form of organic matter	Type of transparent organic matter	Size of organic matter	% of opaque and trans- parent matter
9318	2840.1	<1	Fragments	-	10 microns	O : 100
9334	2845	10	Fragments	vitrinite	20 - 100 microns	O : 95 T : 5
9336	2845.6	30	Fragments	vitrinite	20 - 100 microns	O : 50 T : 50
9346	2848.7	5	Fragments Stringers	vitrinite	10 - 50 microns	O : 90 T : 10
9525	2903.2	10	Fragments	-	10 - 50 microns	O : 100
9552	2911.5	5 - 10	Fragments	vitrinite	5 to 200 microns	O : 70 T : 30
9563.5	2915.0	15	Stringers	vitrinite	variable	O : 95 T : 5
9572	2917.5	10	Fragments (fine) Fragments (coarse)	vitrinite	5 - 20 200 - 500 microns	O : 60 T : 40
9591	2923.3	1 - 2	Fragments	-	20 - 100 microns	O : 100
9593	2923.9	15	Fragments Stringers Streaks	vitrinite	10 - 20 100's microns cm	O : 99 T : 1
9597	2925.2	10	Fragments Stringers	-	5 - 100 microns	O : 100
9600	2926.1	5 - 10	Streaks Fragments	vitrinite	mm 50 microns	O : 90 T : 10
9606	2927.9	5, 20	Fragments Stringers	vitrinite	20 - 50 100 - 200 microns	O : 95 T : 5

TABLE 3 (cont)

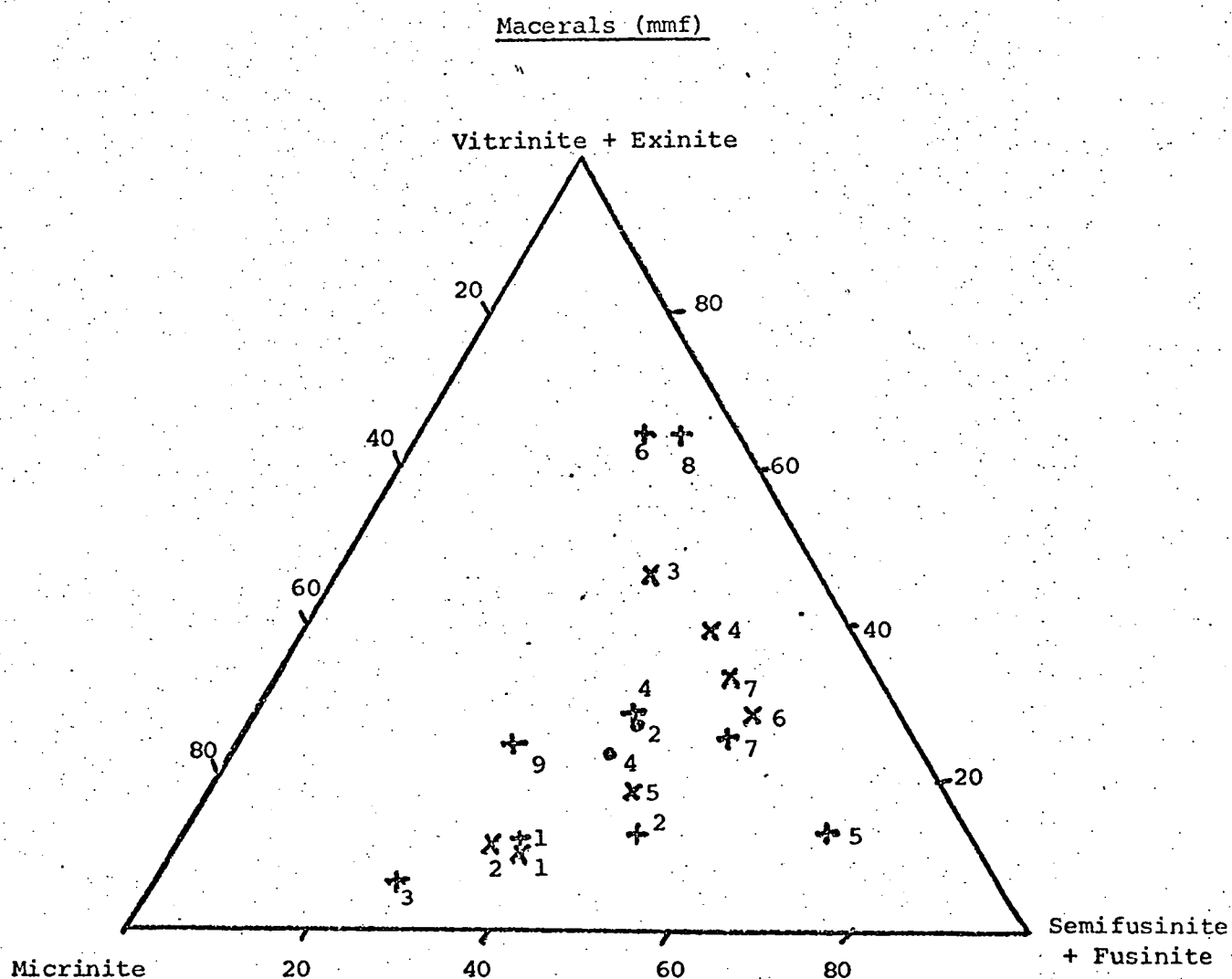
Depth (ft)	Depth (m)	% (vol) carbonaceous matter	Form of organic matter	Type of transparent organic matter	Size of organic matter	% of opaque and trans- parent matter
9623.5	2933.2	2 - 3	Fragments Stringers	-	20 - 100 100's microns	O : 100
9630	2935.2	5	Grains of shaly coal	-	200 microns	O : 100
9660	2944.4	-	-	-	-	-
9682	2951.1	<1	Fragments	vitroinite	10 - 20 microns	O : 99 T : 1

FIGURE 1. Maceral compositions (mineral-matter-free) of seams from Brolga No.1 well.



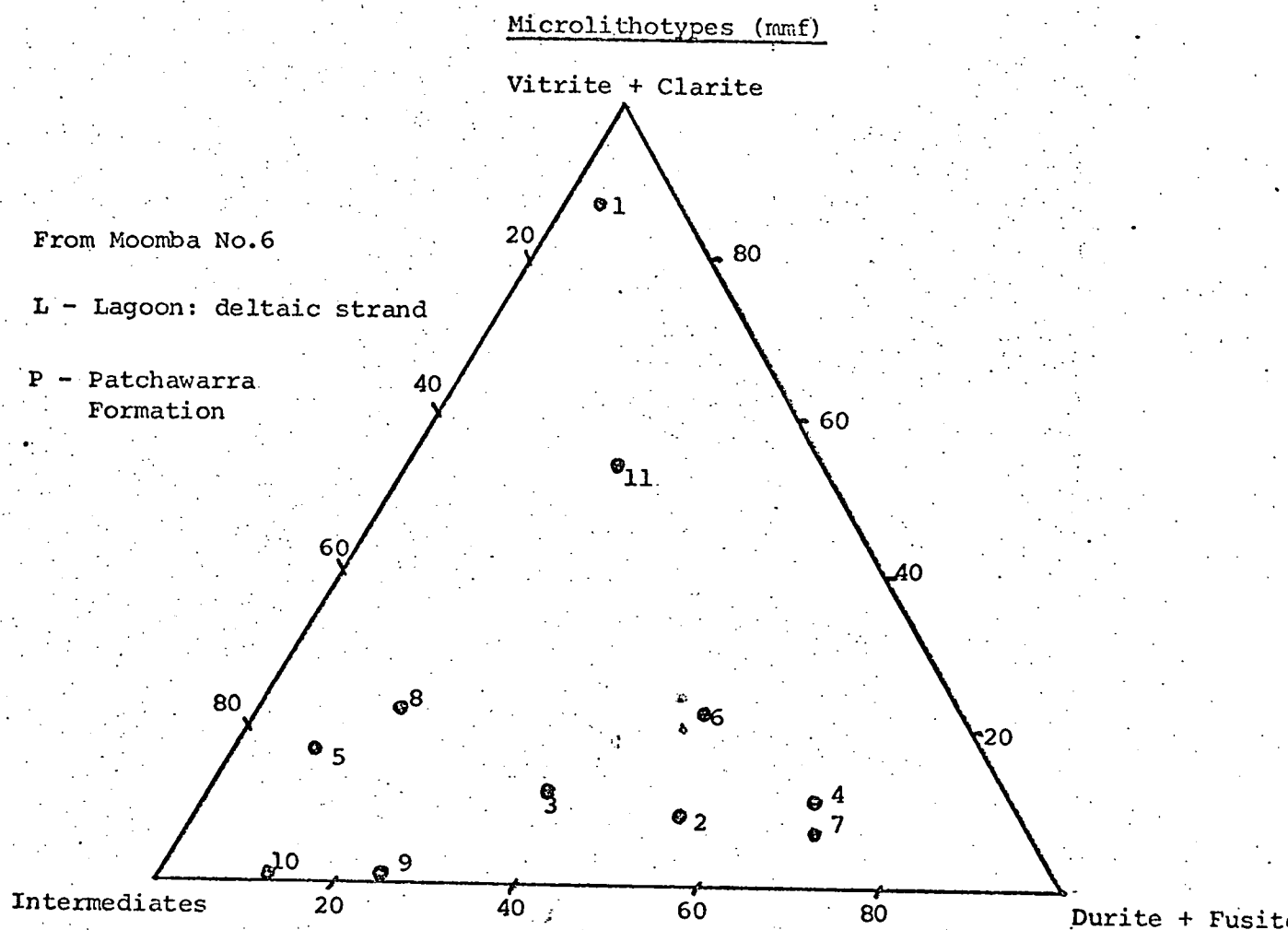
Feet	Metres		Feet	Metres		Feet	Metres	
8937	2724	P • 1	9258	2821.8	P • 3	9290'6"	2831.7	P • 5 (L)
9243	2817.3	P • 2	9274	2826.7	P • 4 (excl. 9281')	9327	2842.9	P • 6
9244'6"	2817.7		9275	2827.0		9331	2844.1	P • 7
9246	2818.2		9277	2827.6		9573	2917.9	P • 8 (L)
9247'6"	2818.6		9278	2827.9		9598	2925.5	P • 9
9249	2819		9280	2828.5		9621'6"	2932.7	P • 10
9250	2819.4		9281	2828.8		9630	2935.2	P • 11
9251	2819.7		9283	2829.5				
			9284	2829.8				
			9286	2830.4				

FIGURE 2. Maceral compositions (mineral-matter-free) of multiple samples within two seams from Brolga No.1 well.



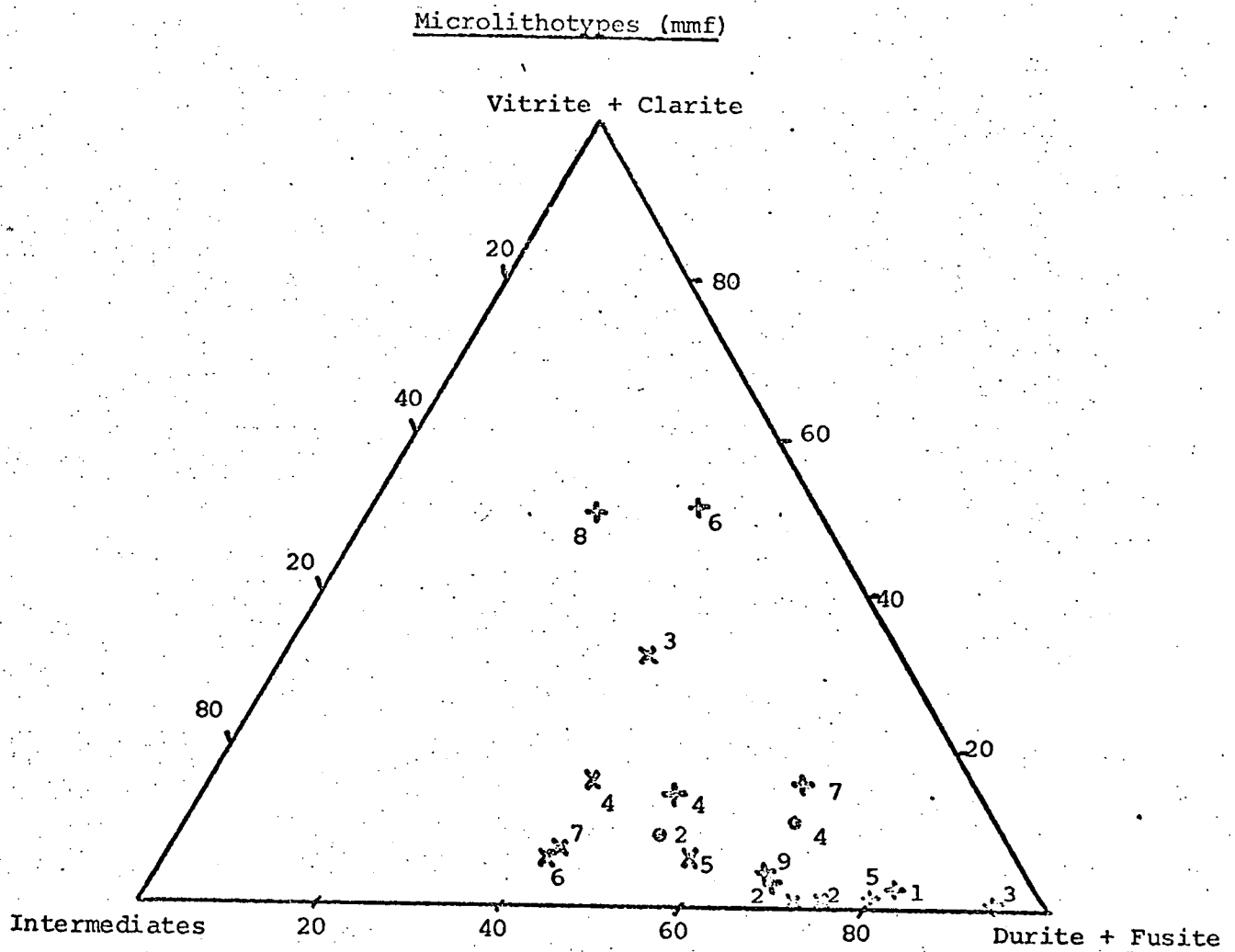
<u>Feet</u>	<u>Metres</u>		<u>Feet</u>	<u>Metres</u>	
9243	2817.3	X 1	9247	2826.7	+ 1
9244.5	2817.7	X 2	9275	2827.0	+ 2
9246	2818.2	X 3	9277	2827.6	+ 3
9247.5	2818.6	X 4	9278	2827.9	+ 4
9249	2819.0	X 5	9280	2828.5	+ 5
9250	2819.4	X 6	9281	2828.8	+ 6
9251	2819.7	X 7	9283	2829.5	+ 7
Seam average		• 2	9284	2829.8	+ 8
			9286	2830.4	+ 9
			Seam average		• 4

FIGURE 3. Microlithotype compositions (mineral-matter-free) of seams from Brolga No.1 well

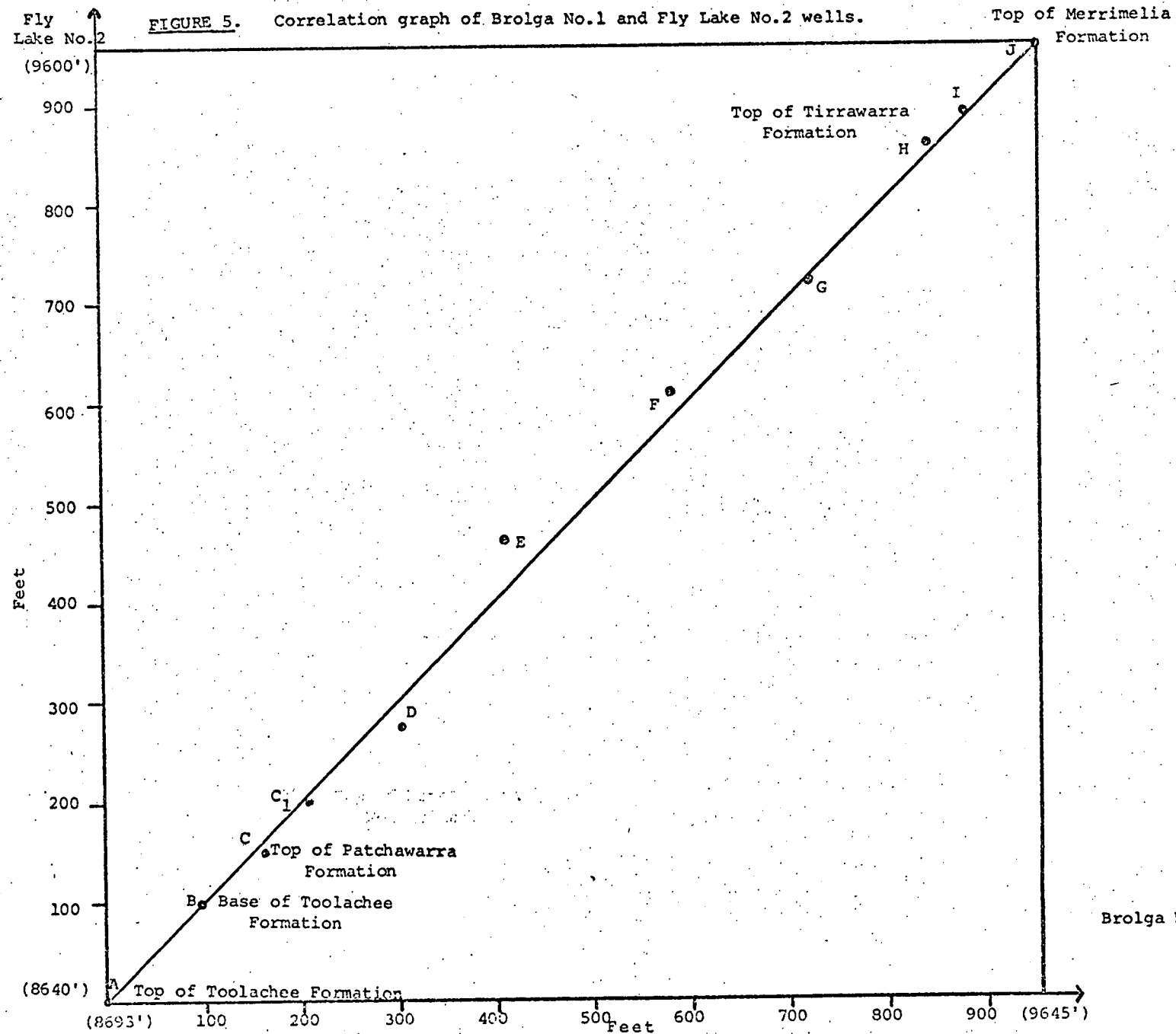


<u>Feet</u>	<u>Metres</u>		<u>Feet</u>	<u>Metres</u>		<u>Feet</u>	<u>Metres</u>	
8937	2724.0	P 1	9274	2826.7	P 4 (excl. 9281')	9331	2844.1	P 7
9243	2817.3	P 2	9275	2827.0		9573	2917.9	P 8 (L)
9244'6"	2817.7		9277	2827.6		9598	2925.5	P 9
9246	2818.2		9278	2827.9		9621'9"	2932.7	P 10
9247'6"	2818.6		9280	2828.5		9630	2935.2	11
9249	2819.0		9281	2828.8				
9250	2819.4		9283	2829.5				
9251	2819.7		9284	2829.8				
9258	2821.8	P 3	9286	2830.4				
			9290'6"	2831.7	P 5 (L)			
			9327	2842.9	P 6			

FIGURE 4. Microlithotype compositions (mineral-matter-free) of multiple samples within two seams from Brolga No.1 well

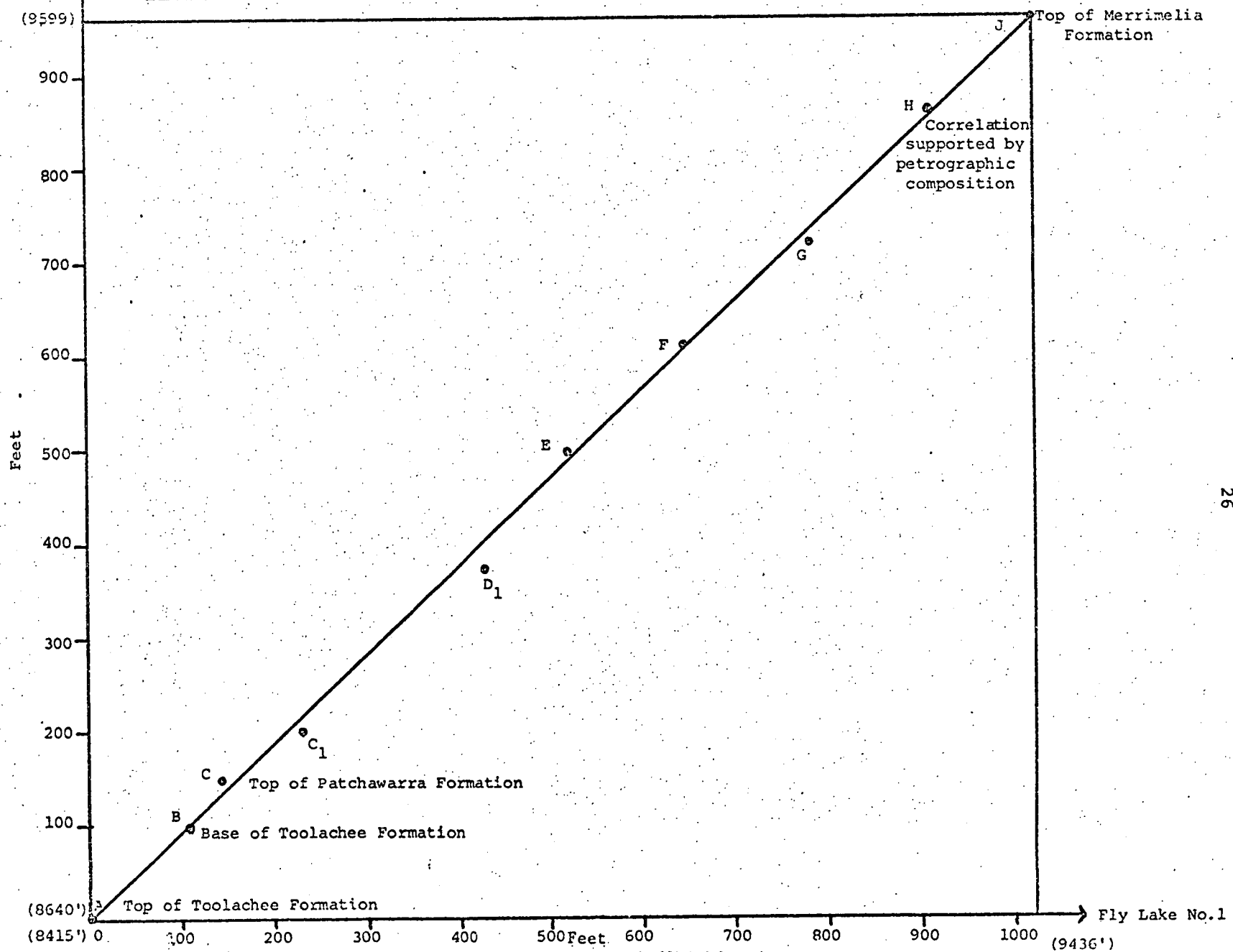


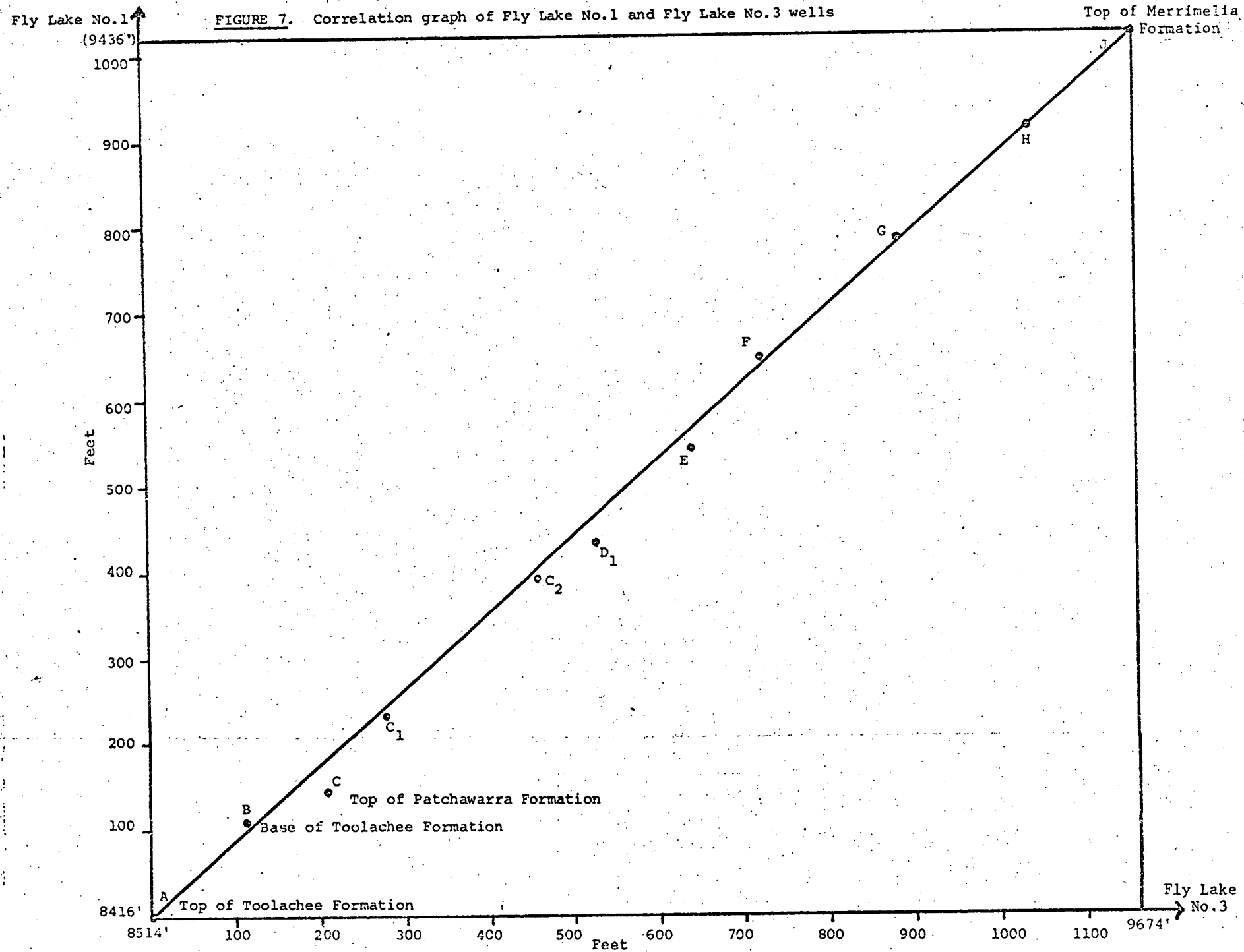
<u>Feet</u>	<u>Metres</u>		<u>Feet</u>	<u>Metres</u>	
9243	2817.3	x 1	9274	2826.7	+ 1
9244.5	2817.7	x 2	9275	2827.0	+ 2
9246	2818.2	x 3	9277	2827.6	+ 3
9247.5	2818.6	x 4	9278	2827.9	+ 4
9249	2819.0	x 5	9280	2828.5	+ 5
9250	2819.4	x 6	9281	2828.8	+ 6
9251	2819.7	x 7	9283	2829.5	+ 7
Seam average		o 2	9284	2829.8	+ 8
			9286	2830.4	+ 9
			Seam average		o 4



Fly Lake No. 2

FIGURE 6. Correlation graph of Fly Lake No.2 and Fly Lake No.1 wells





000081

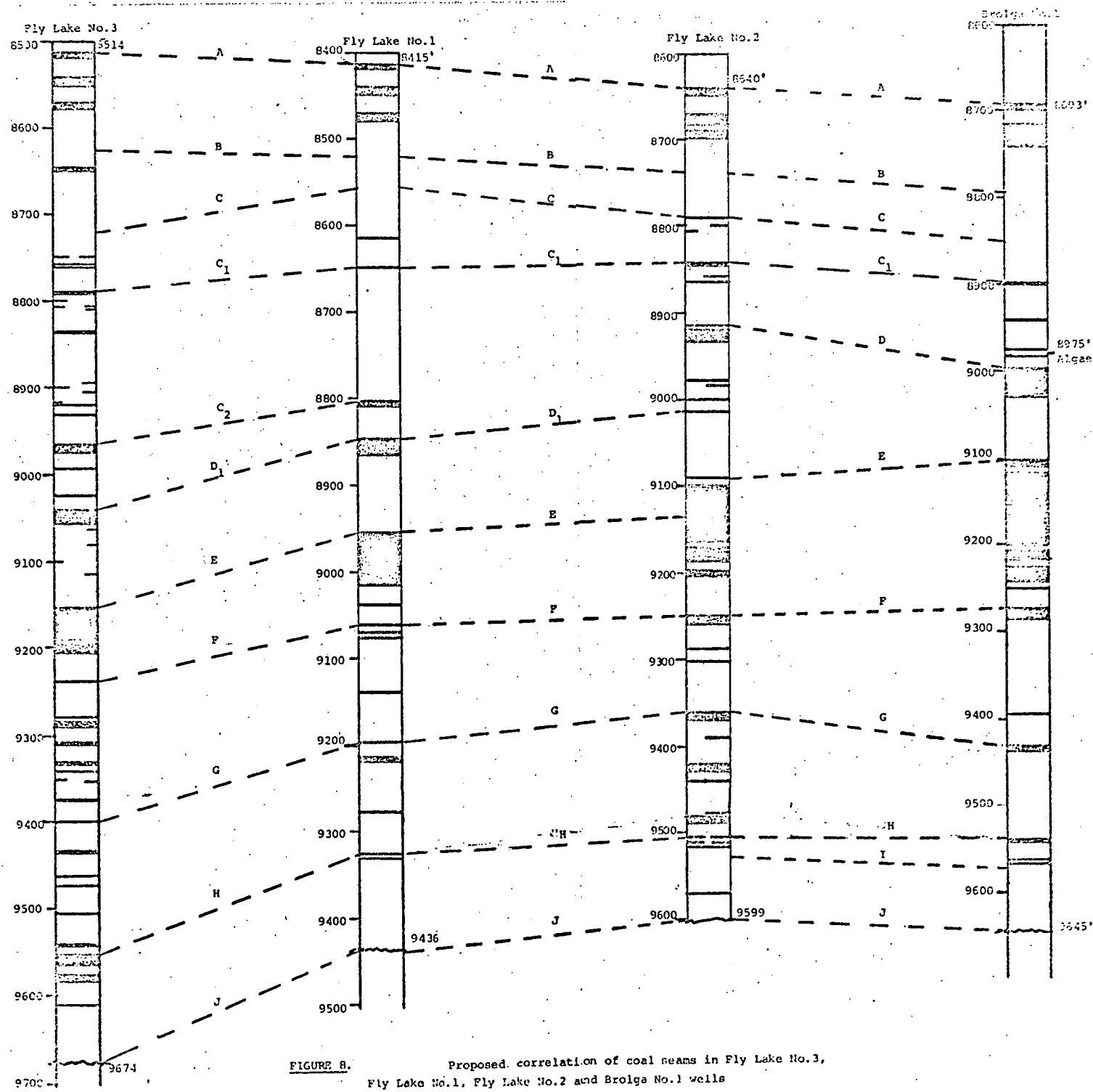


FIGURE 8.

Proposed correlation of coal seams in Fly Lake No. 3, Fly Lake No. 1, Fly Lake No. 2 and Broilga No. 1 wells

000082

PHOTOGRAPHS - BROLGA NO.1

Reflected plane polarised light, oil immersion. Magnification X 300



1. Clarite (vitrinite, exinite), intermediates (vitrinite, inertinite) and semifusinite.
9250 feet 2819.4 m

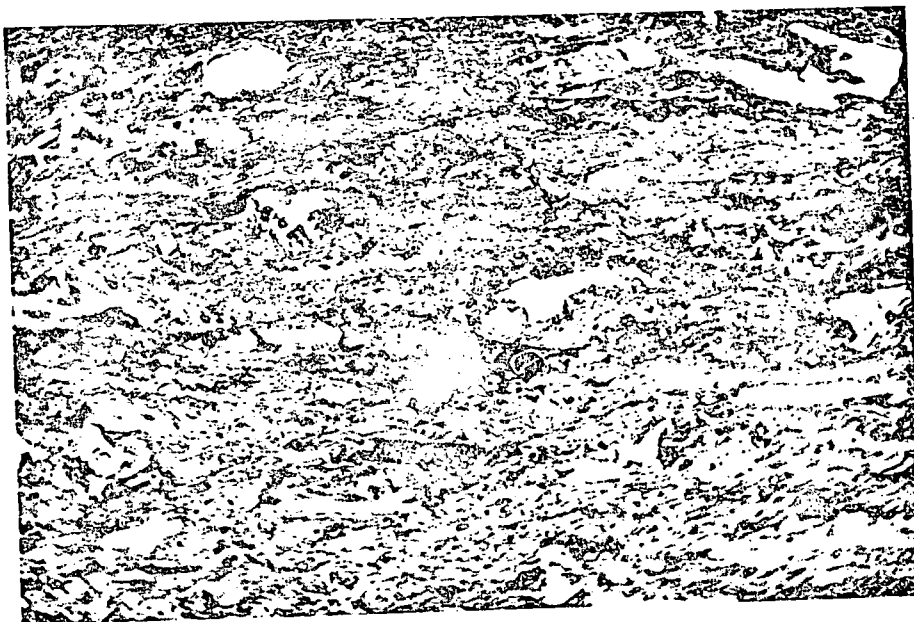


2. Fusinite (centre) in semifusinite, intermediates (vitrinite, exinite, inertinite).
9258 feet 2821.8 m



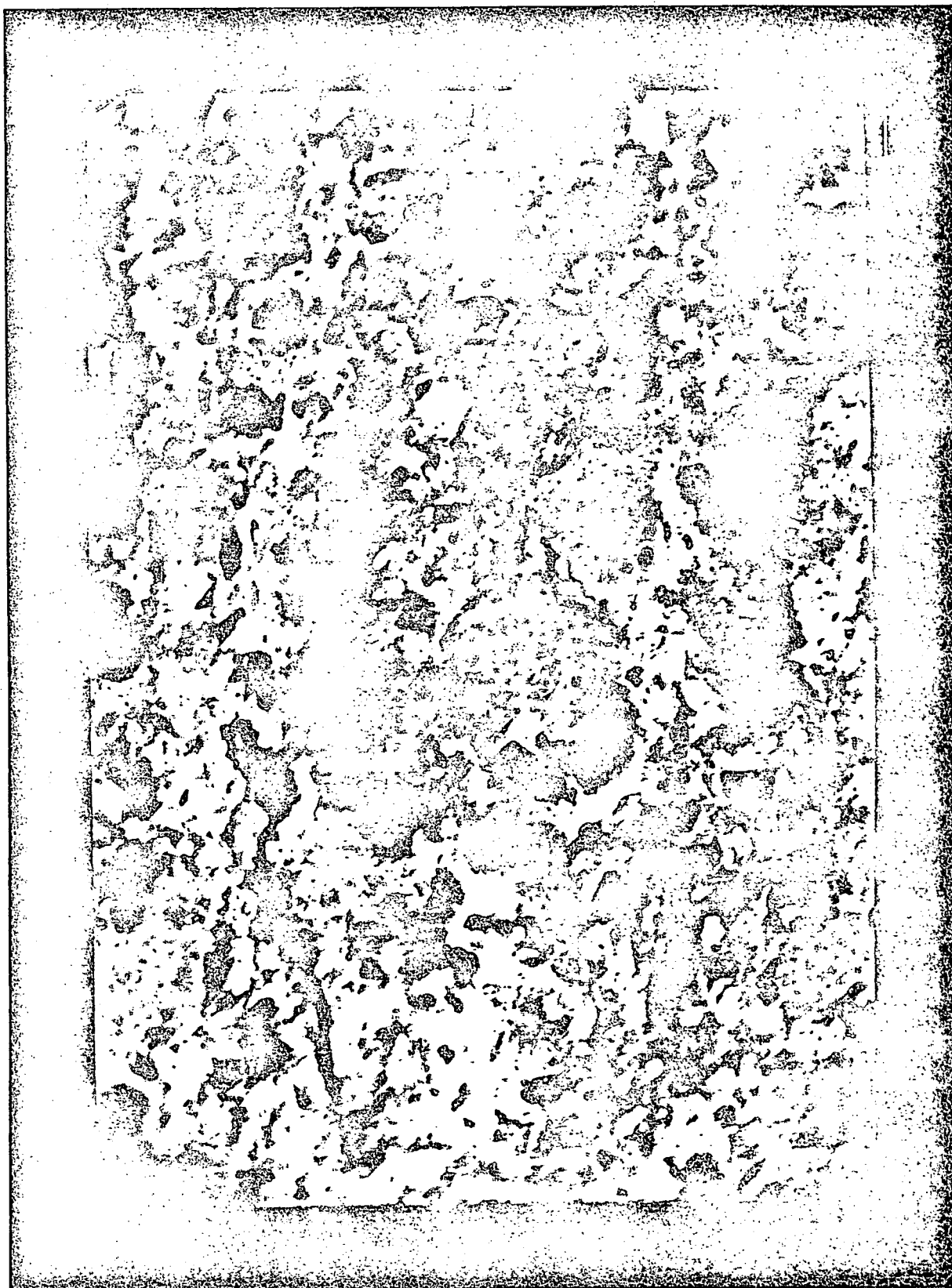
3. Durite (fragmental inertinite), intermediates (vitrinite, inertinite).

9275 feet 2827.0 m



4. Shaly coal (coal plus clay and quartz)

9290.5 feet 2831.7 m



5. Transmitted unpolarized light.

Algal bodies, approximately 100 microns in size (orange)
and opaque fragmental organic matter (black).

8975 feet 2735.6 m

LOCATION AUSTRALIA

B. TEMMER

5 0 100

[illegible]

CORE.DEPTH.DESCRIPTION.

2

9291'2" - 9291'4"

Fine - medium grained white/grey.
sandstone.

2.

9301'10" - 9302.

Fine grained dark grey sandstone
with carbonaceous bands.

3.

9312'8" - 9312'10"

Fine grained grey sandstone with
carbonaceous streaks.

3.

9314'8" - 9314'11"

Fine grained light grey sandstone
with dark grey carbonaceous
streaks.

4.

9529'10" - 9530'

Fine grained white/grey sandstone

4.

9538 - 9538'2".

Fine grained grey sandstone
with carbonaceous streaks.

4.

4.

9540'10" - 9541'

Fine grained dark grey sandstone

4.

9545'8" - 9545'10".

Fine grained grey sandstone.

4.

9554' - 9554'2"

Fine grained light grey sandstone

4.

9558'5" - 9558'7".

Fine grained grey sandstone with
carbonaceous streaks.

6.

9643'11" - 9644'

Medium grained white/grey
sandstone.

6.

9652'10" - 9654'

Medium grained white/grey
sandstone with dark
carbonaceous streaks.

SOCIÉTÉ NATIONALE DES PÉTROLES D'AQUITAINE

SOCIÉTÉ ANONYME AU CAPITAL DE 411.717.000 FRANCS

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LAB/11/C III-139
LAB/11/E-27
V/R&I of 16th May, 1975
N/R&I R/GEO n° 1552.75

OBJET BROLGA-1 samples

The Technical Manager
SOEKOR
Rennie House
Cor. Jorissen & Melle Str.
P.O. Box 3087
JOHANNESBURG 2000
AFRIQUE DU SUD

000088

PAU, 2 October 2, 1975

For the attention of Mrs ROWSELL

Dear Dairne,

Please find enclosed analytical results concerning australian shales from BROLGA-1 well.

The crystallinity of the illite seems to indicate the anchimetamorphic stage, but the optical study of the organic matter and the yield of the soluble O.M. indicate the oil diagenetic zone. Illite must thus be interpreted as detrital, which can also be deducted from the shape of the X-ray patterns.

In the last sample (9559') the too small size of the particles did not allow a correct measurement of the carbon reflectance.

C. Bollenhagen & A.M. Caszou.

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without their & our
permission please.*

DurRowell.

SOEKOR - BROLGA 1
Cooper Basin (Australia)

MINERALOGY OF THE CLAY FRACTION

ILLITE CRYSTALLINITY

C.R.P.	Number	DEPTH	FORMATION	Illite	Chlorite	Montmor.	Kaol	Peak width	002 001	Interpretation	INSOLUBLE RESIDUE in HCl	ORGANIC CARBON TO TOTAL ROCK	* CR/CT	SAMPLE D.N.	
														\$ to TOTAL ROCK	\$ to ORGANIC MATTER
638	200	9538'2"	Sandstone	25			75	3.4	0.35	Detrital anchimeta- morphic illites					
638	201	9540'8"		60			40	4.2	0.23		98.80	1.85	0.91	0.069	3.7
638	202	9549'11"	shale	64	10		26	3.3	0.26		98.57	1.90	0.90	0.028	1.6
638	203	9559'9"		60			40	3.6	0.24		98.32	2.63	0.90	0.123	4.7

*CR/CT = ratio residual / total carbon
after pyrolysis.

AFRIQUE SUD SOEKOR BROLGA 1

52621 R161 22P775 BOLTENHAGE

PAGE NO. 2

"CONSTITUTIONS - EXTRACTIONS"

Composition of extract (soluble organic matter)

---> LES ETOILES CORRESPONDENT A UNE ERREUR DES DONNEES OU A UNE IMPOSSIBILITE DE CALCUL.

NUMERO ECH.	DATE	EXTRAIT ORG. %	C O N S T I T U T I O N : %				RESINES ELUEES, %	A/S	A+S	NUMERO ECH.
			SATURES	AROMATIQUES	RESINES	ASPHALTENES				
638201	2255	0.0694	1.5	14.6	51.2	32.7	41.7	9.65	16.1	638201
638202	2255	0.0286	12.2	32.8	47.1	8.0	35.4	2.70	45.0	638202
638203	2255	0.1213	3.4	14.5	44.9	37.2	40.1	4.29	17.9	638203

680000

Results of optical study of the C-17
RESULTATS DE L'ETUDE OPTIQUE DE LA MATIERE ORGANIQUE

SOEKOR - BROLGA 1

ECHANTILLONS		Matière organique récupérée %	NATURE						MATURATION						
			Lumière transmise					Lumière réfléchie	Lum.transmise		Lumière réfléchie				
			MOL	MOT	MOV	MOC	UP-CH	Fluorescence	Absorption lumineuse	Etat de conserva- tion	Fluores- cence	POUVOIR REFLECTEUR			
								Exinite				Vitrinite	Inertinite	Exinite	Vitrinite
638 200	9538'	0.97	F	-	F	R	II			3,5/3,25	1,00		1,29	2,08	
638 201	9540'	1.67	A	-	Q	-	I _B			3,25	1,00			2,28	
638 202	9549'	1.67	A	Q ^a C	C	-	I _B -II _A			3,25/3,5	1,00		1,27	2,19	
638 203	9559'	2.84	F	C	A	R	II			3,25/3,5	1,00	(too small particles)			

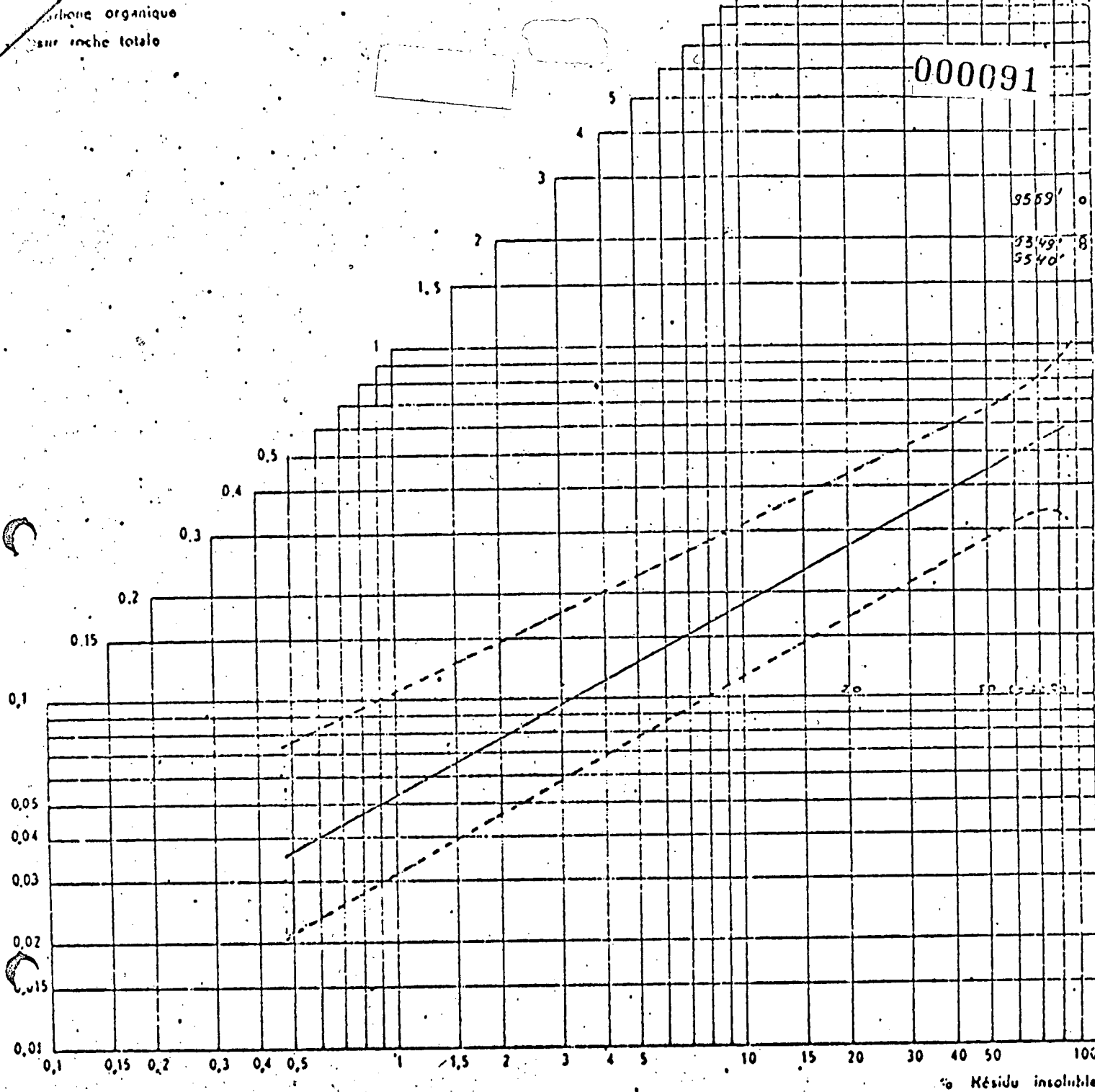
A = Abondant
 F = Fréquent
 C = Commun
 Q = Quelques
 R = Rare

MOL = ligneux
 MOT = trachéides
 MOV = débris végétaux
 MOC = colloïdal
 UP-CH = unités palyno.

060000

Carbone organique
dans roche totale

000091

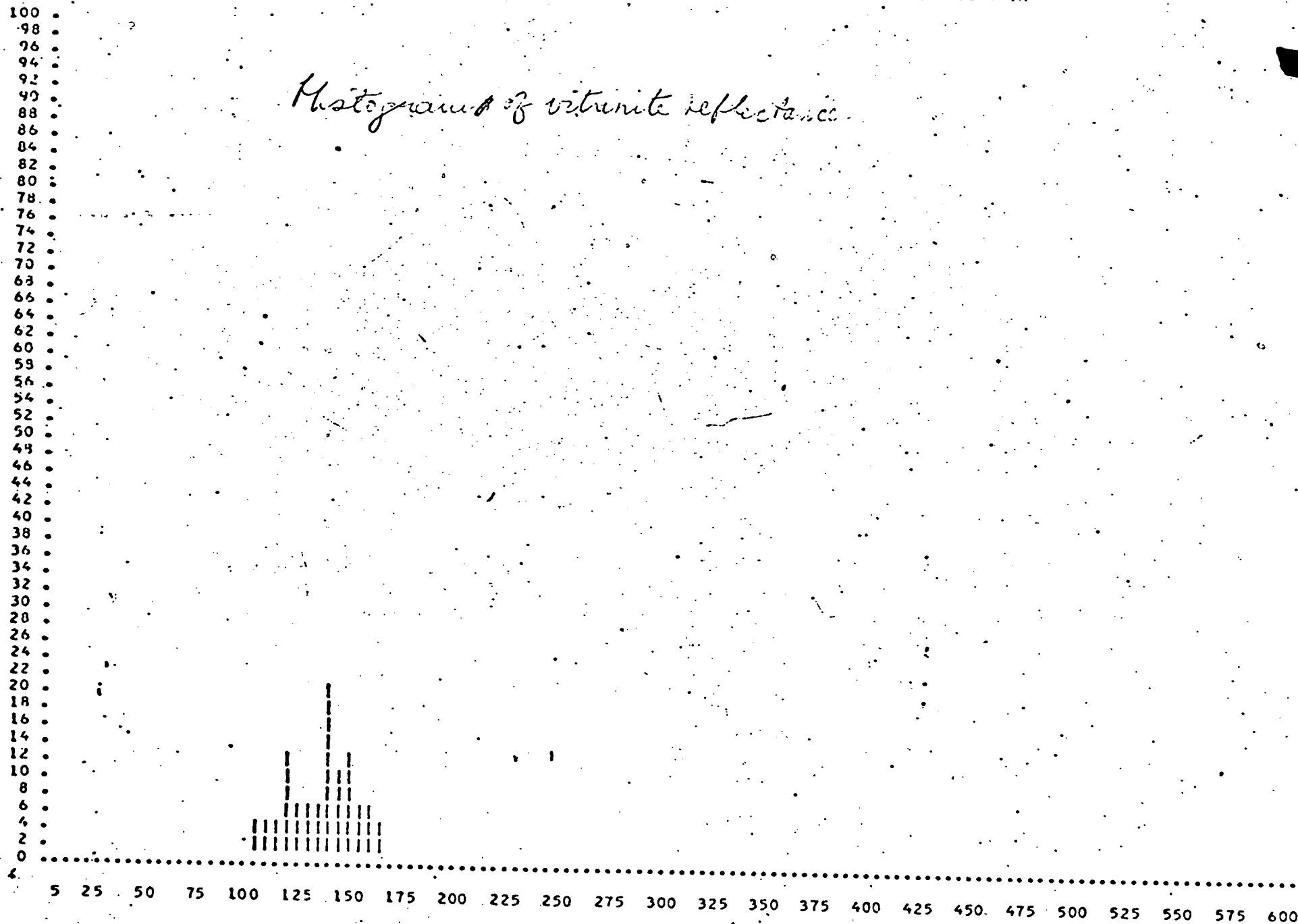


BROLGA 1

SCEKOR

BROLGA.1 9538 2-07-75 MPM.2 A.CASSOU
 ECHANTILLON NO. : 638200 - PREPARATION : A1 - TYPE DE M.O. : VA

Histogramme of vitranite reflectance

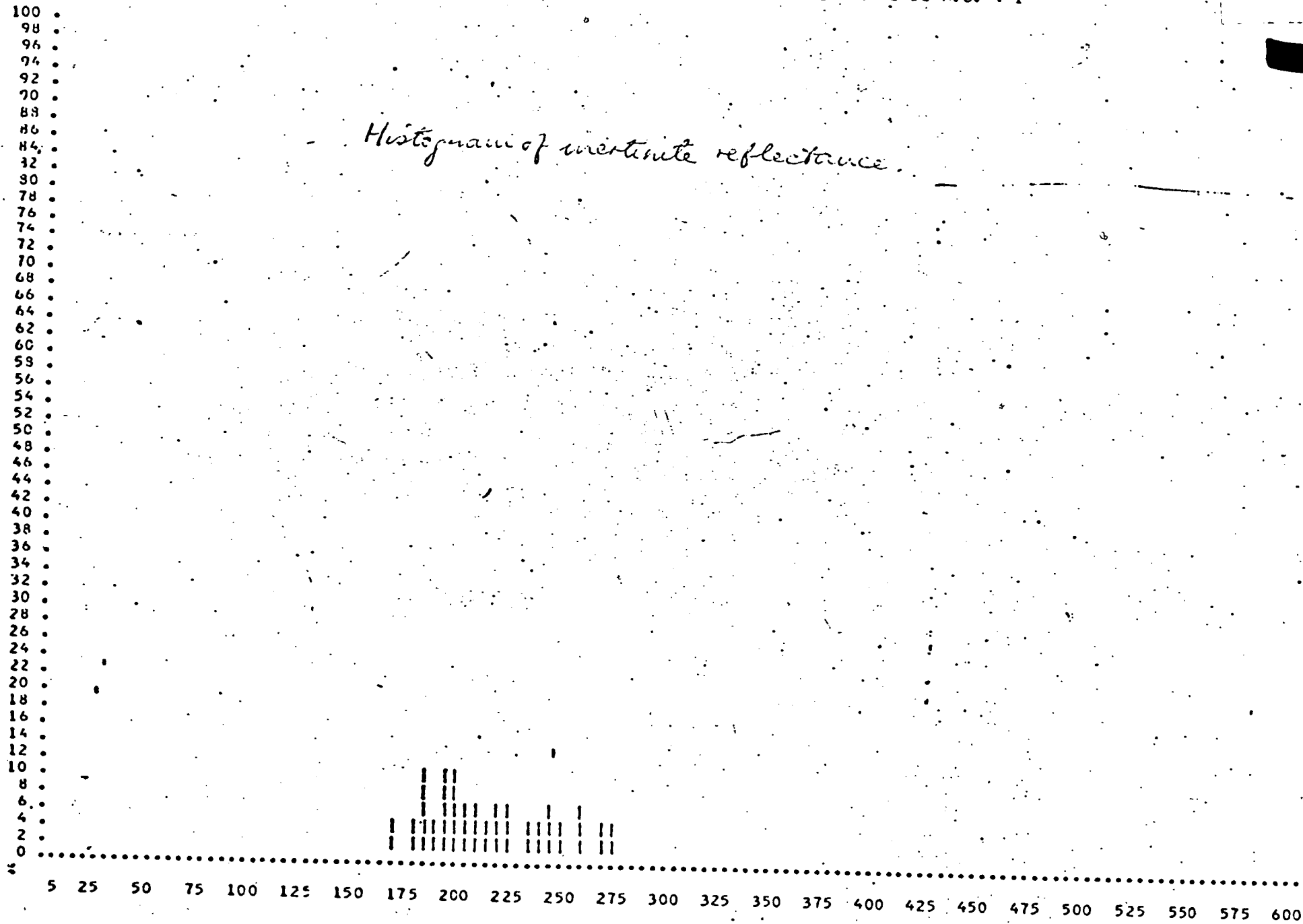


000092

SOEKOR

BROLGA.1 95381 2-07-75 MPM.2 A.CASSOU
ECHANTILLON NO. : 638200 - PREPARATION : A1 - TYPE DE M.O. : I

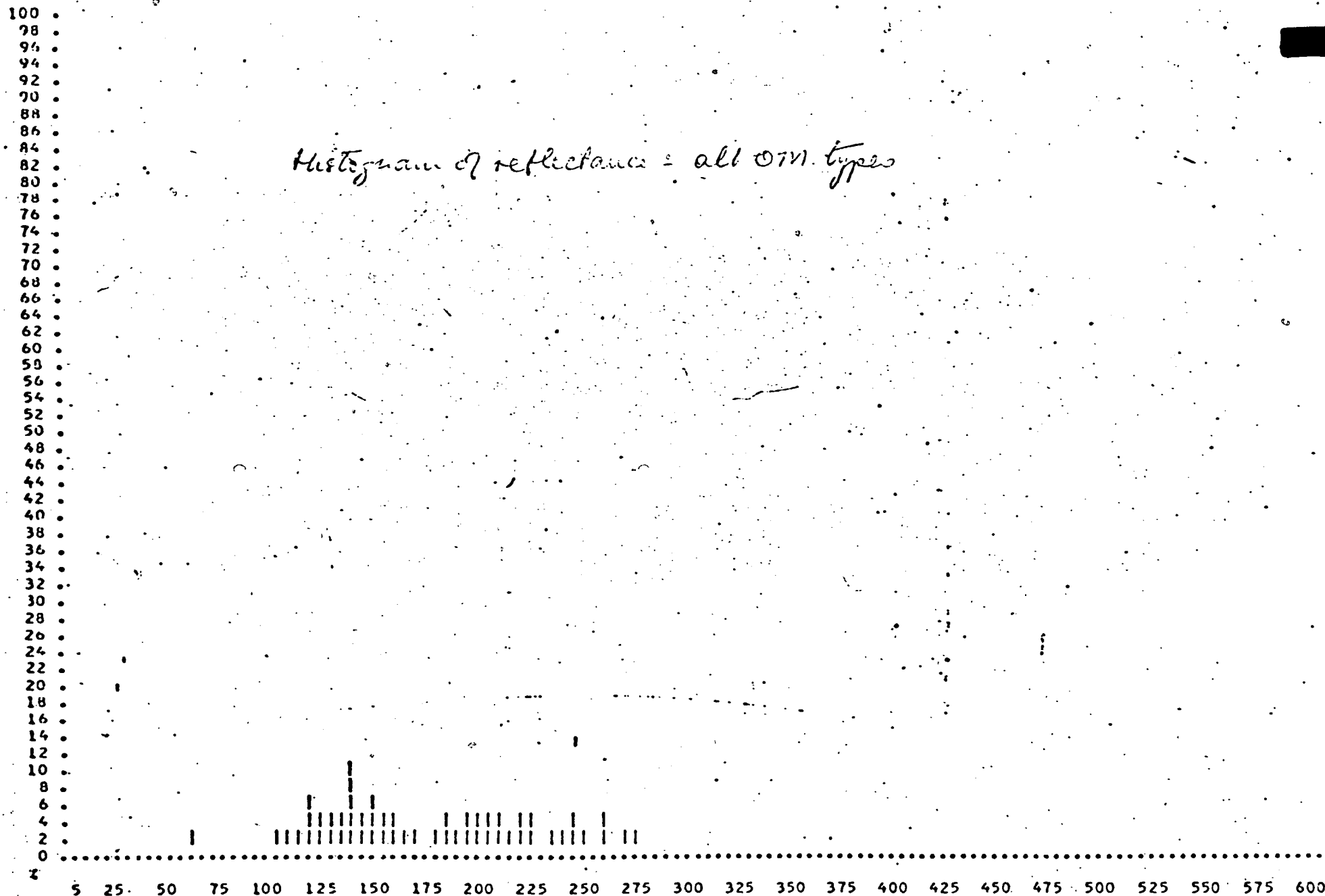
Histogram of invertebrate reflectance



000093

SOEKOR

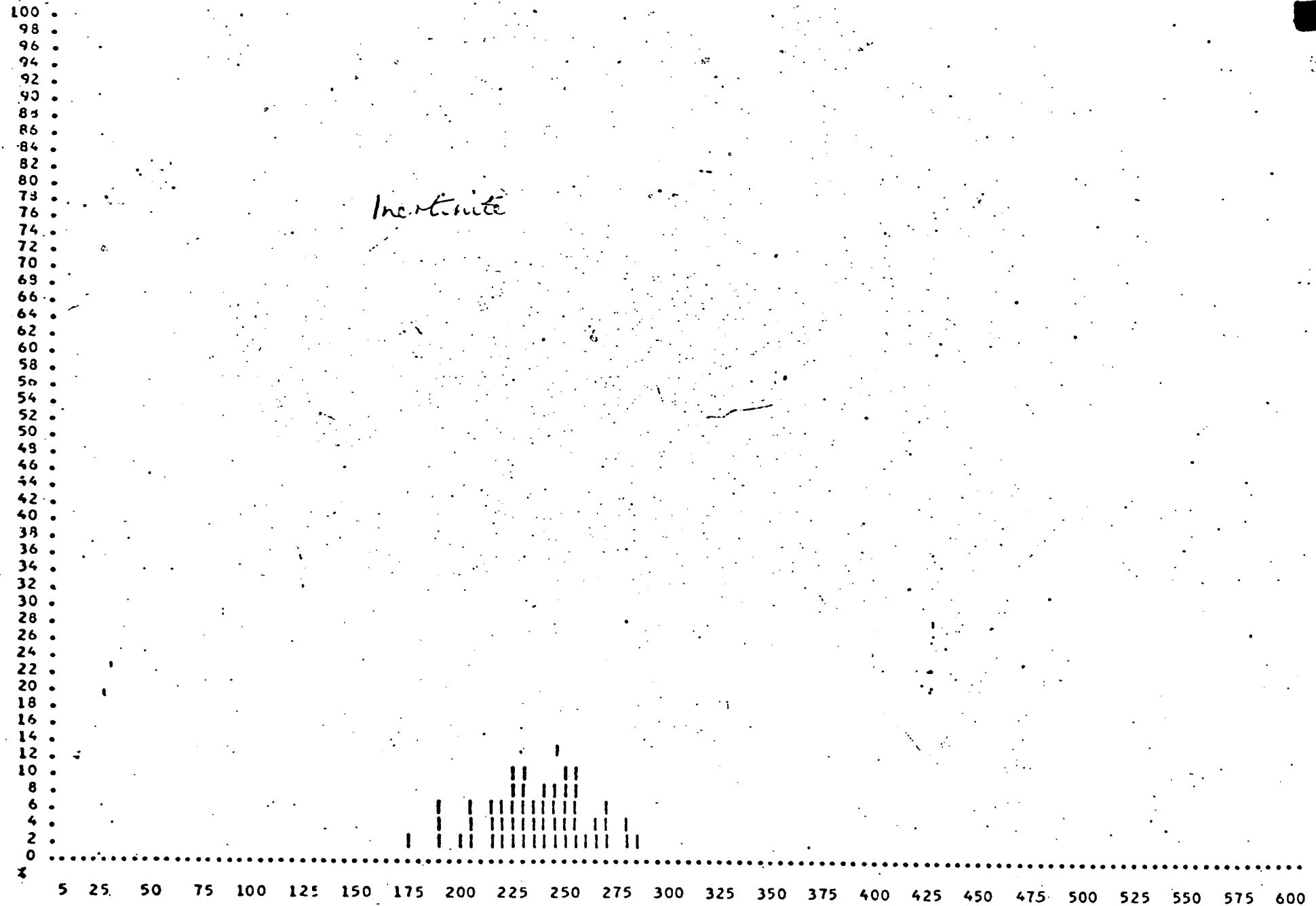
BPO LGA.1 95381 2-C7-75 MPH.2 A.CASSOU
ECHANTILLON NO. : 638200 - ENSEMBLE DES VALEURS



000094

SOEKOR

BRCLGA.1 9540. 2-07-75 MPH.2 A.CASSOU
ECHANTILLON NO. : 638201 - PREPARATION : A1 - TYPE DE M.O. : I



000095

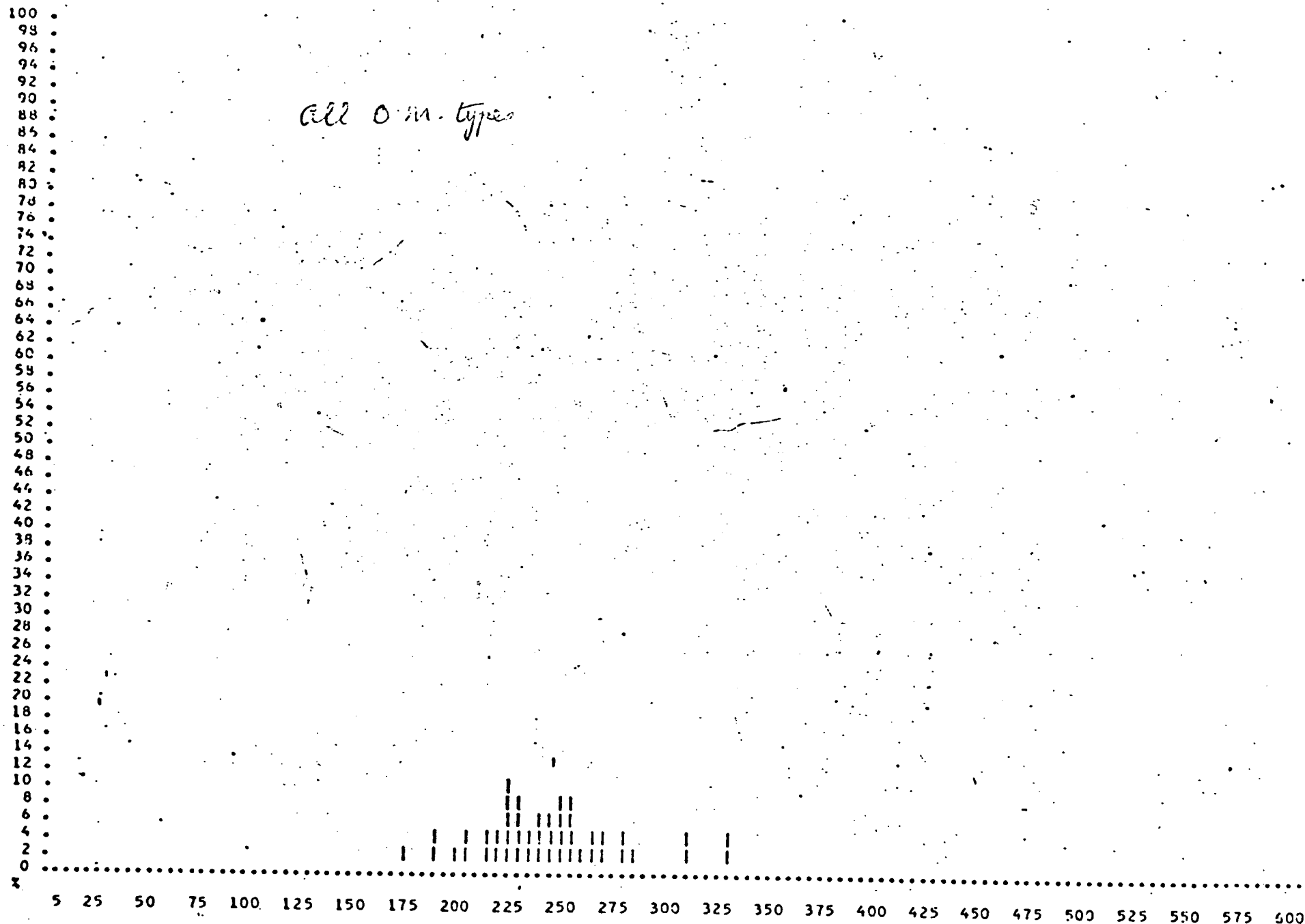
*** HISTOGRAMME DES MESURES DE POUVOIR REFLECTEUR ***

PA NO. 12

SOEKOR

BPOLGA.1 9540! 2-07-75 MPH.2. A.CASSOU
ECHANTILLON NO. : 638201 - ENSEMBLE DES VALEURS

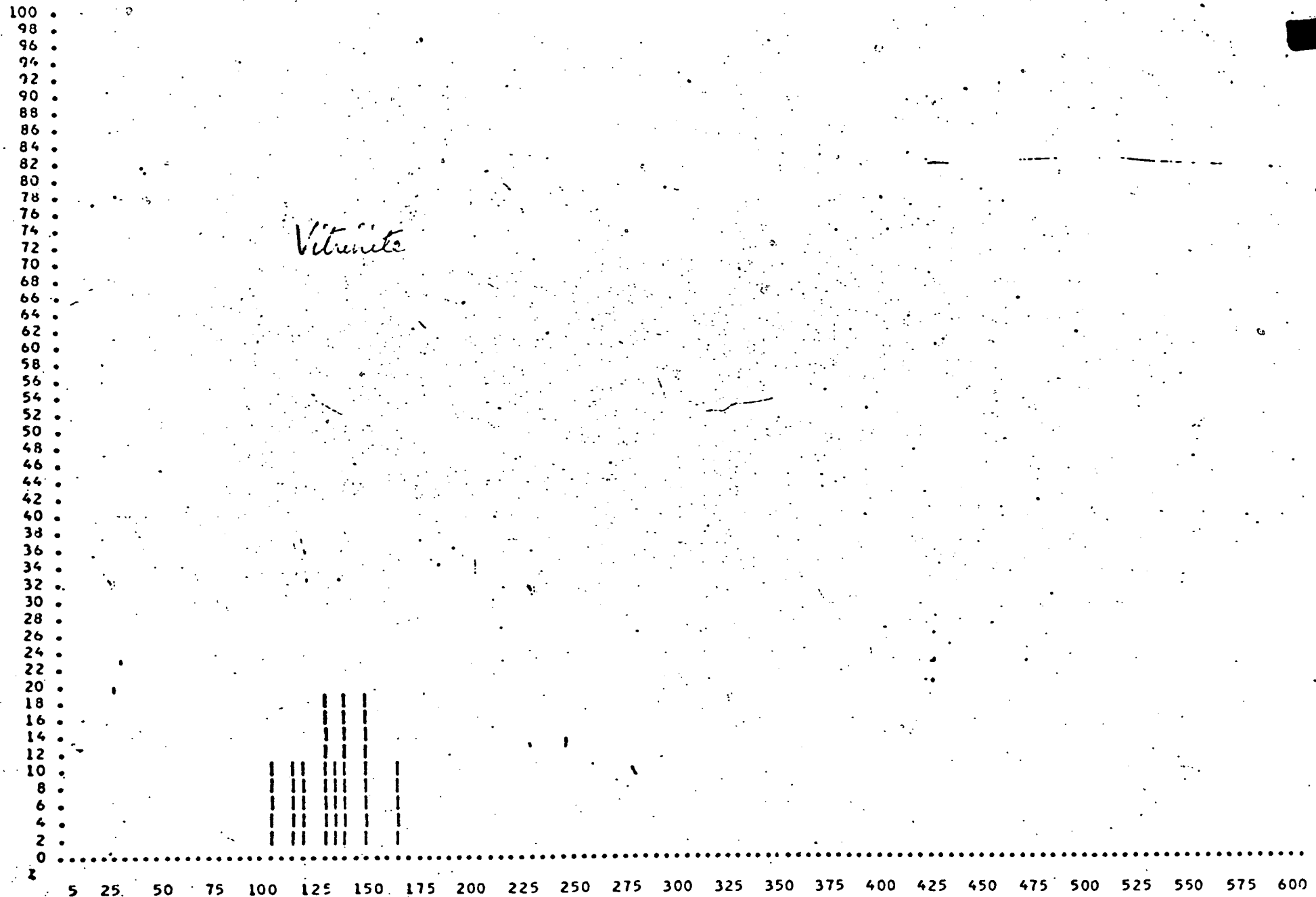
all 0 m. types



960000

SOEKOR

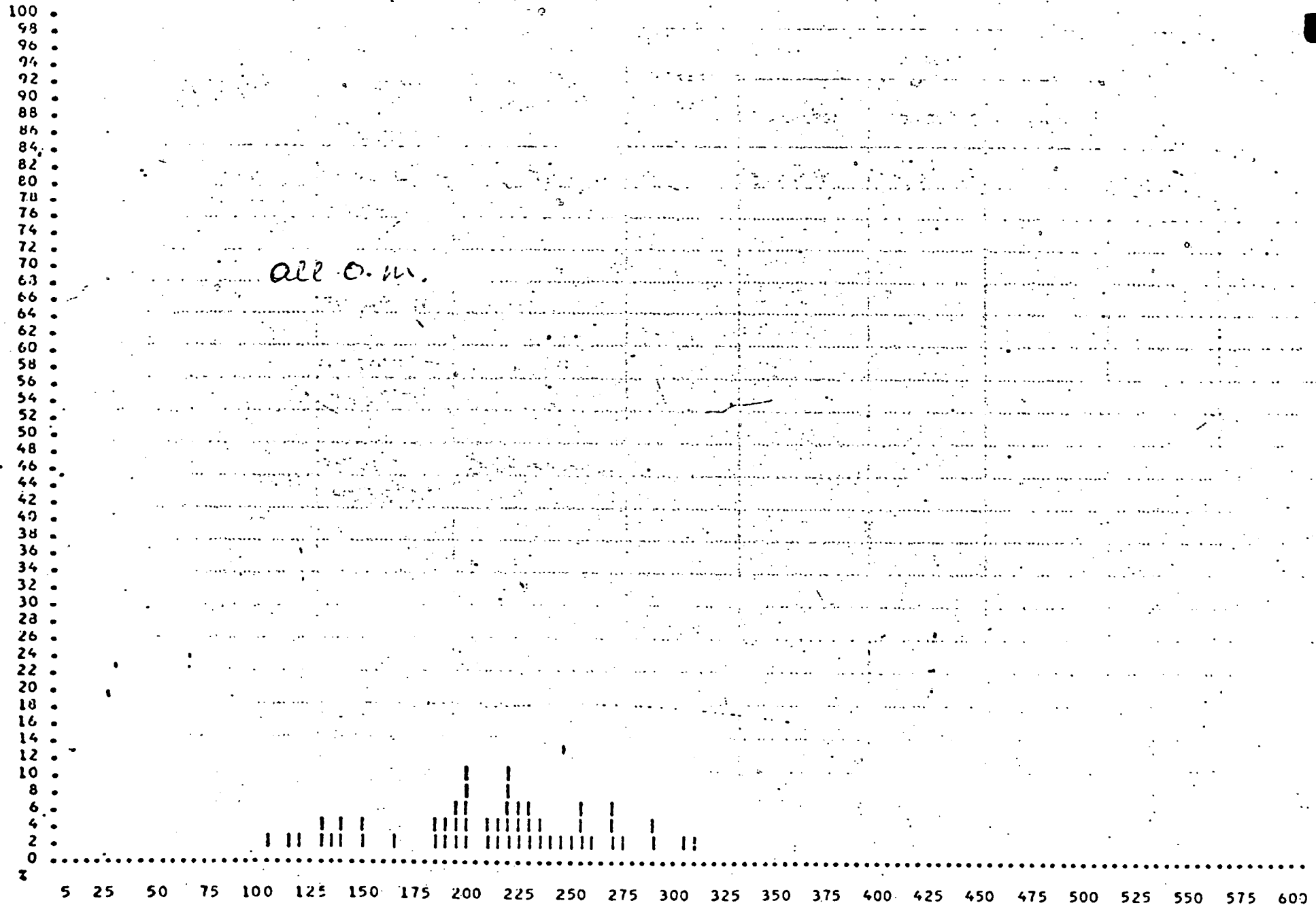
BRCLGA.1 9549 2-07-75 MPM.2 A.CASSOU
 ECHANTILLON NO. : 638202 - PREPARATION : A1 - TYPE DE M.O. : VA



000097

SOEKOR

BROLGA.1 95-2 2-07-75 MPH.2 A.CASSOU
ECHANTILLON NO. : 638202 - ENSEMBLE DES VALEURS



860000

Samples for: Gorg, CR/CT, clay mineralogy, illite crystallinity, extract, characterisation
of extract & carbon reflectance

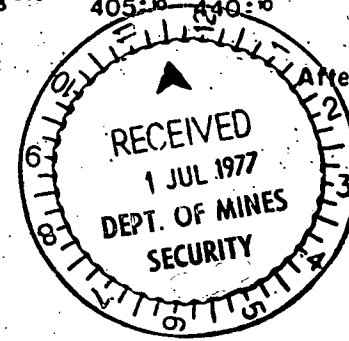
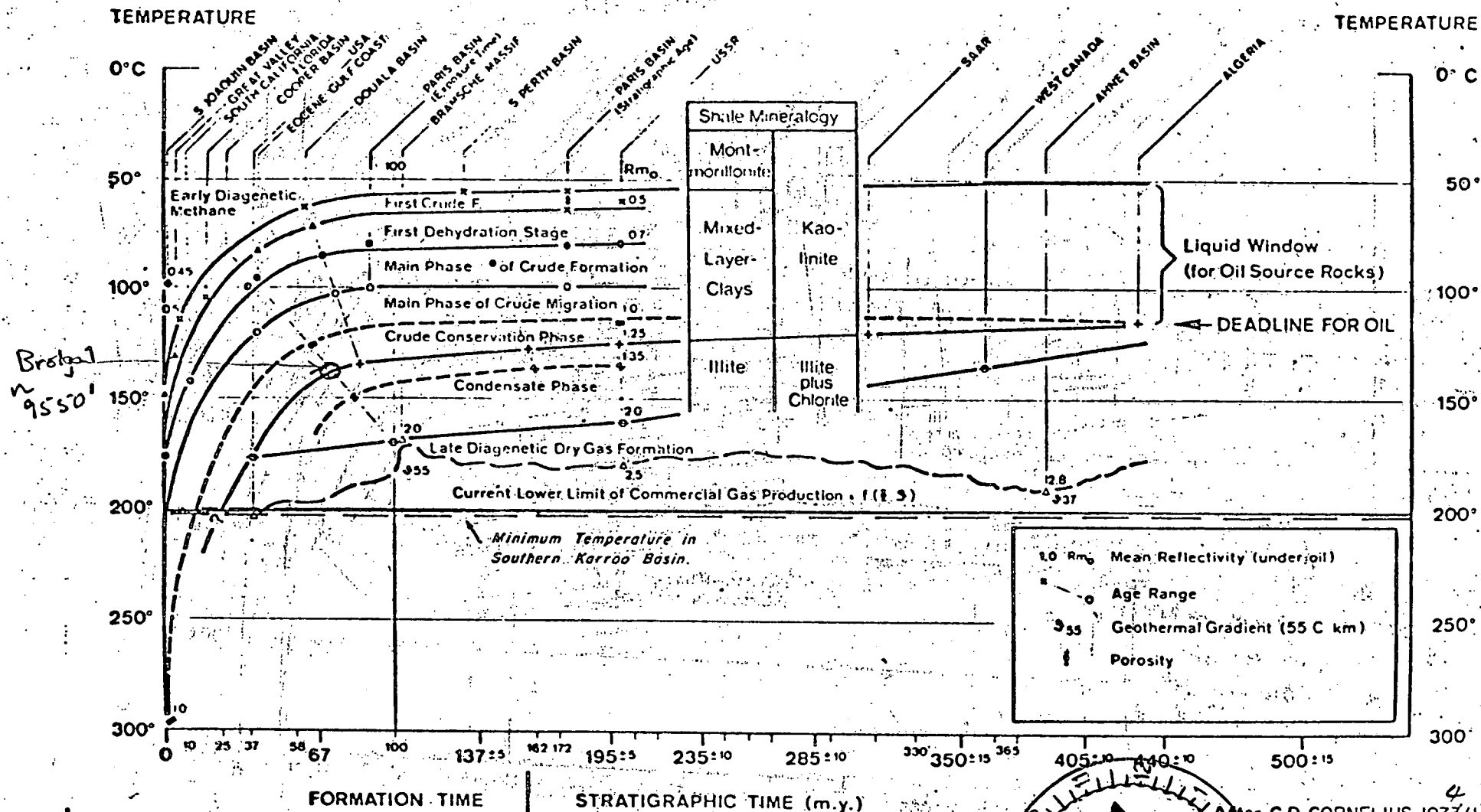
BOREHOLE OR SAMPLE No.	DATE TAKEN	LOCALITY	DEPTH Feet	ROCK NAME FORMATION	TAKEN BY	ANALYSIS			FILE	REMARKS ON REPORT
						ANALYST	DA. OUT	DA. IN		
<u>Brakja</u> <u># 1</u>		<u>Australia</u>	<u>9540' 6" -</u> <u>9540' 8"</u>	<u>Shale</u>		<u>S.D.P.A</u>	<u>13/5/75</u>		<u>LAB/11/CF</u> <u>LAB/11/E</u>	
			<u>9549' 9" -</u> <u>9549' 11"</u>	<u>"</u>						
			<u>9559' 7" -</u> <u>9559' 9"</u>	<u>"</u>						
			<u>9538' -</u> <u>9538' 2"</u>	<u>Sandstone</u>						<u>Do only carbon</u> <u>reflectance,</u> <u>clay mineralogy,</u> <u>illite crystallinity</u> <u>please.</u>

660000

FIG. 3 Thermal Alteration of Hydrocarbons

(Third Statistical Approach: Formation time and age range corrected)

0058



After C.D. CORNELIUS 1973/HERR

11 D 112c

000100

FILE 000101

RESTRICTED INVESTIGATION

REPORT 798R

RESTRICTED
CIRCULATION

CSIRO

MINERALS RESEARCH LABORATORIES

DIVISION OF MINERALOGY

FLUORESCENT LIGHT OBSERVATIONS OF DISPERSED ORGANIC MATTER

IN SEDIMENTS FROM BROLGA No.1 WELL, COOPER BASIN

MICHELLE SMYTH

CSIRO Division of Mineralogy
P.O. Box 136, North Ryde
N.S.W., Australia, 2113

JULY 1976

Introduction

Interseam sediments from Brolga No.1 well, Cooper Basin, have been examined in thin sections by transmitted light and reported on in IR 723R. Transmitted light examination shows the proportion (by volume) of dispersed organic matter in a rock, and whether this organic matter is opaque or transparent. However, it is usually difficult to be certain as to whether the transparent material is of an exinite or vitrinite type.

As it is thought that exinite is the organic matter most likely to produce liquid hydrocarbons (Tissot *et. al.*, 1974) and vitrinite to produce gaseous ones, it is important to distinguish between them. Distinction between exinite and vitrinite is easy if reflected blue light (510 nm) is used to excite organic matter and produce fluorescence on the polished surface of a sediment.

The exinite macerals fluoresce yellow in blue light and so are easily detected. This applies to immature exinites only, where the associated vitrinite has a reflectivity of less than 1.1% or 1.2%.

Observations

Polished blocks of all the sediments described in the appendix of IR 723R were excited under oil immersion in reflected blue light (510 nm). Also observed by transmitted and blue reflected light were several samples from around the algal shale previously found.

Results

Descriptions of the total dispersed organic matter have not been repeated: the characteristics of the organic matter are however summarized in Table 1 and brief descriptions of any exinite are in the appendix. The samples from around the algal shale have been described in the appendix and their characteristics listed in Table 2.

The positions of coals analysed (numbered), sediments examined and rocks potentially favourable for either liquid or gaseous hydrocarbons (Tissot *et. al.*, 1974) are shown in Fig.1. The lettering down the column in Fig.1 corresponds with the correlations proposed in IR 723R, Fig. 8.

Discussion

Of the many samples examined, few would seem suitable for the generation of either liquid or gaseous hydrocarbons. As shown in Fig.1, the rocks containing $\geq 1\%$ exinite material which may be suitable for oil generation occur towards the top of the Patchawarra Formation (C of Fig.1), whilst those suitable for generation of gaseous hydrocarbons occur near its base.

Conclusions

It is essential to observe interseam sediments under a fluorescent microscope to make reliable estimates of their exinite contents.

Exinite-rich sediments appear at the moment to be predominant at the top section of the Patchawarra Formation in Brolga No.1 well.

Reference

- Tissot, B., Durand, B., Espitalié, J. and Combaz, A., 1974.
Influence of Nature and Diagenesis of Organic Matter
in Formation of Petroleum, AAPG Bull. 58 No.3,
p. 499-506.

APPENDIXDESCRIPTIONS OF DISPERSED ORGANIC MATTER IN SEDIMENTSFROM BROLGA No.1 WELL, COOPER BASIN

Viewed by reflected blue (510 nm) light

(To supplement descriptions of these same sediments viewed by transmitted light, and reported in the Appendix of Restricted Investigation Report 723R)

Top Palawan 8958'

LN 47150

8933 feet

2722.8 metres

Palat

Microspores are scattered fairly evenly all through the rock, forming about 1% of it. Occurrences of algae and cuticle are very rare.

LN 47152

8943.5 feet

2726.0 metres

Microspores are scattered sparsely through the rock, forming < 1% of it. Cuticle is very rare.

LN 47153

8950 feet

2728.0 metres

Microspores and algae are plentiful in the finer grained lenses, but these form only a small part of the rock. The algae are of various sizes, from about 15 to 100 microns. The overall exinite content of the rock would be low.

LN 47154

8957 feet

2730.1 metres

Microspores occur sparsely through most of the rock, a little more abundantly in the finer grained lenses. There are rare occurrences of cuticle and sparse algae. Most algae are fairly large, about 100 microns. The overall exinite content is < 1%.

LN 47155

8950 feet

2734.1 metres

Microspores are scattered through the rock, about 1% of it. There are rare small algae, 10-50 microns.

LN 47156

8975 feet

2735.6 metres

Patz

Algae are abundant throughout the rock, and are of various sizes from about 10 to 200 microns. Microspores are plentiful in lenses through the rock, cuticle is rare. The overall exinite content is probably 5-10%.

LN 47157

8979.5 feet

2737.0 metres

Microspores and cuticles occur abundantly in the carbonaceous lenses of the rock. Elsewhere only microspores occur rarely. The overall exinite content is < 1%.

LN 47158

8985.5 feet

2738.8 metres

There are sparse cuticles and microspores, usually confined to the carbonaceous lenses.

LN 47165

9253 feet

2820.3 metres

Extremely rare microspores and megaspores.

LN 47167

9263 feet

2823.4 metres

No exinite apparent.

LN 47169

9270 feet

2825.5 metres

Extremely rare microspores associated with carbonaceous streaks.

LN 47180

9296 feet

2833.4 metres

No exinite apparent.

LN 47181

9318 feet

2840.1 metres

No exinite apparent.

LN 47184

9334 feet

2845.0 metres

No exinite apparent.

LN 47185

9336 feet

2845.6 metres

No exinite apparent.

LN 47186 9346 feet 2848.7 metres

No exinite apparent.

LN 47188 9357.5 feet 2852.2 metres

No exinite apparent.

LN 47189 9525 feet 2903.2 metres

No exinite apparent.

LN 47190 9537 feet 2906.9 metres

No exinite apparent.

LN 47191 9552 feet 2911.5 metres

No exinite apparent.

LN 47192 9563.5 feet 2915.0 metres

Rare microspores in shaly lenses between nodules.

LN 47193 9572 feet 2917.5 metres

No exinite apparent.

*Top, Timawana
9574*

LN 47195 9591 feet 2923.3 metres

No exinite apparent.

LN 47196 9593 feet 2923.9 metres

Rare microspores in coaly bands: very rare cuticles.

LN 47197 9597 feet 2925.2 metres

No exinite apparent.

LN 47199 9600 feet 2926.1 metres

No exinite apparent.

LN 47201 9606 feet 2927.9 metres

No exinite apparent.

LN 47203 9623.5 feet 2933.2 metres

No exinite apparent.

LN 47204 9630 feet 2935.2 metres

No exinite in sandstone.

LN 47205 9660 feet 2944.4 metres

No exinite apparent.

LN 47206 9682 feet 2911.1 metres

Microspores and cuticles associated with coaly bands: also rare megaspores. This must have been a heterogeneous sample, as no coaly bands were noted with the thin section. As the exinite in coals is not considered as hydrocarbon producing material, this does not really constitute a potential source rock.

SAMPLES FROM AROUND THE ALGAL SHALE FOUND IN
BROLGA No.1 WELL, COOPER BASIN

LN 50019 8971 feet 2734.4 metres

Patd

Carbonaceous sandstone/siltstone

Transmitted light: Organic matter forms about 5% of the rock occurring mainly as stringers, and lenses, up to macroscopically visible size. Some of these stringers show transparent sections, but appear to be of a vitrinitic type.

Fluorescent light: Cuticles and microspores are very rare: most of the organic matter appears dark brown (vitrinite) or red (inertinite). Exinitic matter < 1%.

LN 50020 8972 feet 2734.7 metres

Patd

Carbonaceous siltstone/sandstone

Transmitted light: Organic matter forms 5 - 10% of the rock, as stringers in between the inorganic grains mostly, and as fragments from a few microns to 200 microns. Most of the material is opaque, but a few stringers are transparent. Most of these are of a vitrinite type.

Fluorescent light: Microspores are extremely rare. Exinite <1%.

LN 50021

8973 feet

2735.0 metres

Carbonaceous shale with silty lenses.

Transmitted light: The organic matter occurs in layers forming about 50% of some ($\frac{1}{3}$) and 1-2% of others ($\frac{2}{3}$). Transparent and opaque matter (fragments) occur in approximately equal proportions. The transparent matter appears to be microspores and rare algae. This would make microspores about 10% of the rock.

Fluorescent light: Microspores are abundant in certain layers, about 5% of the lenses. These are the finer bands of the rock, and constitute about half of it. The microspores therefore form about 2-3% of the whole and are generally only faintly fluorescent. There are very rare algae.

LN 50022

8974 feet

2735.3 metres

Black carbonaceous shale with pale silty lenses.

Transmitted light: The organic matter occurs in irregularly shaped, macroscopically visible patches. These are composed of fragments, sometimes up to 80% of the area. Some organic areas are composed of extremely fine fragments all < 5 microns, in others the fragments are 50-200 microns. Much of the organic matter is transparent, but is of fragmental shape, so is probably vitrinitic. It is difficult to detect spore or algal shapes in the mass of organic debris. In the areas of little organic matter the fragments are mostly opaque. The overall dispersed organic matter content is about 40%.

Fluorescent light: Microspores are scattered pretty evenly through most of the rock, except for the coarser grained lenses. They are weakly fluorescent, and probably form about 2-3% of the rock. There are very rare algae which are not usually associated with the spores, but occur in the other coarser part of the rock, and most often singly. Cuticle is very rare.

LN 50023

8974.5 feet

2735.4 metres

Black carbonaceous shale with some silty lenses.

Transmitted light: The organic matter occurs in lenses only

100's of microns thick, and some of the rock contains virtually no dispersed organic matter. Elsewhere it forms 60-70%. Most of it is transparent, but has fragmental shapes, so is probably vitrinite. It is difficult to distinguish any exinitic forms.

Fluorescent light: Microspores are abundant; algae are fairly sparse and of different sizes (20-100 microns), occurring singly for the most part. Microspores form 4-5% of the rock.

LN 50025

8977 feet

2736.2 metres

Grey carbonaceous siltstone

Transmitted light: Organic matter forms about 15% of the rock, mostly as fine stringers, although some of them are centimeters long. Most of the dispersed organic matter is opaque, although there are a few transparent pieces which appear to be spores.

Fluorescent light: There are very rare microspores and algae. Exinite content < 1%.

LN 50026

8978 feet

2736.5 metres

Carbonaceous siltstone

Transmitted light: About 40% of the rock is carbonaceous matter, as fragments up to 200 microns, both transparent and opaque. The transparent material seems to be mostly of a vitrinitic type, but there are a few spores and possibly algae.

Fluorescent light: Microspores and algae are rare, except for a few lenses where microspores form 2-3%. Exinitic material is $\leq$ 1% of the rock.

TABLE 1. CHARACTERISTIC OF DISPERSED ORGANIC MATTER IN SEDIMENTS

FROM BROLGA No.1 WELL, COOPER BASIN

Lab. No.	Depth Feet	Depth Metres	Easy detectability of exinite in T.L.	Form of d.o.m. in T.L.	Form of exinitic d.o.m. in F.L.	Relative abundance of exinite	Rock/ % d.o.m. (by volume)	Ratio opaque: transparent d.o.m.
47150	8933	2722.8	no	Fragments	microspores algae cuticle	plentiful very rare very rare	Shale 40	0:50 T:50
47152	8943.5	2726.0	no	Streaks (coarse) Fragments (fine)	microspores cuticle	sparse very rare	Shale 10	0:50 T:50 0:100 T:0
47153	8950	2728.0	no	Fragments	microspores algae	rare rare	Sandstone < 1%	0:95 T:5
47154	8957	2730.1	no	Fragments	microspores algae cuticle	sparse sparse rare	Siltstone 10	0:99 T:1
47155	8970	2734.1	yes	Fragments spores	microspores algae	plentiful rare	Siltstone 40	0:99 T:1
47156	8975	2735.6	yes	Fragments (O) ALGAE (T) Fragments (T)	algae microspores cuticle	abundant plentiful rare	Shale 30	0:40 T:60
47157	8979.5	2737.0	no	Streaks Fragments	microspores cuticles	sparse sparse	Siltstone 10-15	0:80 T:20
47158	8985.5	2738.8	no	Streaks Fragments	cuticles microspores	rare rare	Siltstone 5	0:95 T:5
47165	9253	2820.3	no	Fragments Streaks (O)	microspores megaspores	very rare very rare	Shale 10	0:90 T:10
47167	9263	2823.4	yes	Fragments	-	-	Siltstone 10	0:100
47169	9270	2825.5	no	Streaks	microspores	very rare	Sandstone 1	0:100
47180	9296	2833.4	yes	Fragments	-	-	Sandstone 2-3	0:100
47181	9318	2840.1	yes	Fragments	-	-	Sandstone < 1	0:100

TABLE 1 (Cont.)

47184	9334	2845.0	yes	Fragments	-	-	Siltstone 10	0:95 T:5
47185	9336	2845.6	yes	Fragments	-	-	Shale 30	0:50 T:50
47186	9346	2848.7	yes	Fragments Stringers	-	-	Shale 5	0:90 T:10
47188	9357.5	2852.2	yes	Fragments	-	-	Siltstone 5	0:100
47189	9525	2903.2	yes	Fragments	-	-	Shale 10	0:100
47190	9537	2906.9	yes	-	-	-	Sandstone	-
47191	9552	2911.5	yes	Fragments	-	-	Siltstone 5-10	0:70 T:30
47192	9563.5	2915.0	no	Stringers	microspores	very rare	Siderite band 15	0:95 T:5
47193	9572	2917.5	no	Fragments	-	-	Shale 10	0:60 T:40
47195	9591	2923.3	yes	Fragments	-	-	Sandstone 1-2	0:100
47196	9593	2923.9	no	Fragments Stringers Streaks	microspores cuticles	rare very rare	Coal/shale 15	0:99 T:1
47197	9597	2925.2	yes	Fragments Stringers	-	-	Shale 10	0:100
47199	9600	2926.1	yes	Streaks Fragments	-	-	Siltstone 5-10	0:90 T:10
47201	9606	2927.9	yes	Fragments Stringers	-	-	Shale/ siltstone 5/20	0:95 T:5
47203	9623.5	2933.2	yes	Fragments Stringers	-	-	Shale 2-3	0:100
47204	9630	2935.2	yes	Grains of shaly coal	-	-	Sandstone 5	0:100
47205	9660	2944.4	yes	-	-	-	Sandstone -	-
47206	9682	2951.1	no	Fragments	microspores cuticles megaspores	plentiful plentiful rare	Mudstone < 1	0:99 T:1

T.L. = Transmitted light
 F.L. = Fluorescent light
 d.o.m. = dispersed organic matter.

TABLE 2. CHARACTERISTICS OF DISPERSED ORGANIC MATTER IN SEDIMENTS FROM
BROLGA No.1 WELL, COOPER BASIN, ABOVE AND BELOW THE ALGAL SHALE
REPORTED IN IR 723R

Lab. No.	Depth Feet	Depth Metres	Easy detect-ability of exinite in T.L.	Form of d.o.m. in T.L.	Form of exinitic d.o.m. in F.L.	Relative abundance of exinite	Rock/ % d.o.m. (by volume)	Ratio opaque: trans- parent d.o.m.
50019	8971	2734.4	yes	Stringers Lenses	cuticles microspores	very rare very rare	Sandstone/ siltstone 5	0:95 T:5
50020	8972	2734.7	yes	Stringers Fragments	microspores	very rare	Siltstone/ sandstone 5-10	0:99 T:1
50021	8973	2735.0	yes	Fragments Microspores Algae	microspores algae	plentiful very rare	Shale/ silty 25	0:50 T:50
50022	8974	2735.3	no	Fragments	microspores algae cuticle	plentiful very rare very rare	Shale/ silty 40	0:40 T:60
50023	8974.5	2735.4	no	Fragments	microspores algae	plentiful sparse	Shale/ silty 10	0:20 T:80
50025	8977	2736.2	yes	Stringers	microspores algae	very rare very rare	Siltstone 15	0:99 T:1
50026	8978	2736.5	yes	Fragments	microspores algae	rare rare	Siltstone 40	0:60 T:40

Brolga No.1 well, Cooper Basin.
Composition of coals (microlithotypes, mineral matter free) and position of rocks with some potential for the generation of hydrocarbon.

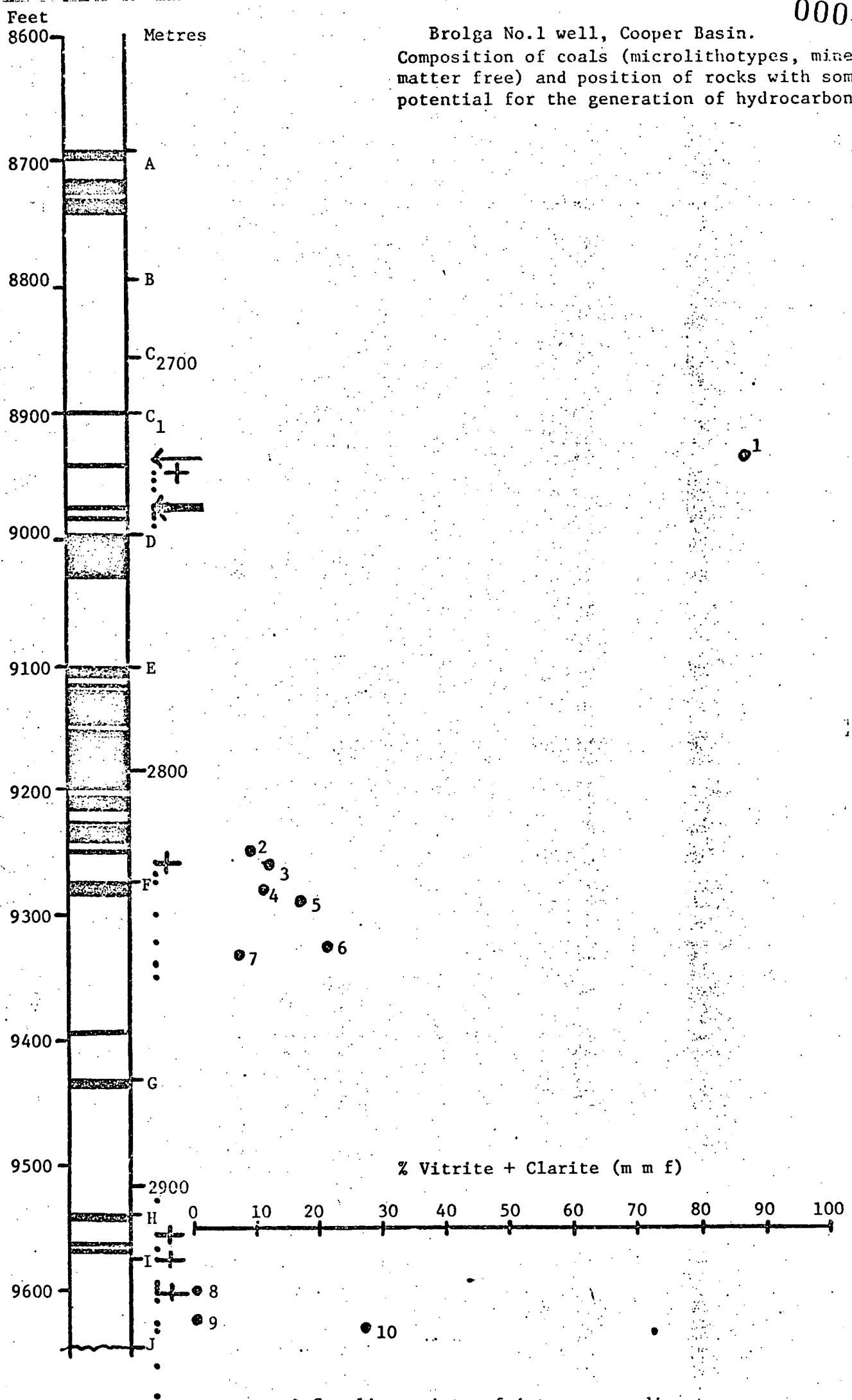


FIG. 1

- Sampling points of interseam sediments
- ← Potential source rocks for liquid hydrocarbons
- + Potential source rocks for gaseous hydrocarbons

000114

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04/06/82

LOG ANALYSIS REPORT
FOR

BROLGA-1
SOUTH AUSTRALIA

Mines & Energy SA

R95/03263



00126348

Coment Ltd.

LOG ANALYSIS Parameters

Sandstone Analysis Program (SANDAN)

Explanation of the parameter names and their values.

A - Formation Factor Coefficient

M - Formation Factor Cementation Exponent

N - Saturation exponent in formation factor equation.

R_w - Formation water resistivity at formation temperature (TEMP)

TEMP - Formation temperature at Top of analysis interval This value and R_w are corrected for depth using the formation temperature gradient (GRAD).

GRAD - The geothermal gradient in degrees/ 100 feet (Imperial) or degrees/ metre (S.I.)

GMAX - The Maximum Gamma Ray. The gamma ray reading at the point where the lithology changes from grain supported to mud supported rock (The shale boundary)

GMIN - The Minimum Gamma Ray. The lowest gamma ray in a clean sand section. May also be projected from cross-plots.

R_{sh} - The resistivity of the shales, using the deep resistivity log.

Corr C Q I - Log Correction codes: (1 = used, 2 = not used)

C - Caliper correction. Bore hole effects on the density and gamma-ray logs are corrected.

Q - Gas correction. Corrections applied to the neutron and density logs for gas effects and rough hole effects.

1=Prime log is Neutron

2=Prime log is density

3=No gas corrections.

I - Invasion Corrections applied to the Deep resistivity.

RhoG - Grain Density

RhoS - Shale Density (derived from the cross-plots)

PhiS - Neutron shale porosity (derived from the cross-plots)

PhiC - Neutron clay porosity (usually 24 but may be changed)

LOG ANALYSIS Parameters

General Log Analysis program (CARBAN)

Explanation of the parameter names and their values.

A - Formation Factor Coefficient

M - Formation Factor Cementation Exponent

N - Saturation exponent in formation factor equation.

R_w - Formation water resistivity at formation temperature (TEMP)

TEMP - Formation temperature at Top of analysis interval. This value and R_w are corrected for depth using the formation temperature gradient (GRAD).

GRAD - The geothermal gradient in degrees per 100 feet (Imperial) or degrees per meter (S.I.).

GMAX - The Maximum Gamma ray. The gamma ray reading at the point where all of the rock is considered to be shale.

GMIN - The Minimum Gamma ray. This value is biased upwards from the 'minimum' to include all 'clean' carbonate rocks. That is all points below this value are considered clean.

R_{sh} - The resistivity of the shales, using the deep resistivity log.

Corr C Q I - Log Correction codes: (1 = used, 2 = not used)

C - Caliper correction. Bore hole effects on the density and gamma-ray logs are corrected.

Q - Gas corrections. This allows for correction of gas effect on the neutron and density logs.

I - Invasion correction applied to the Deep resistivity.

PTYP - Porosity type used in the analysis:

1=Acoustic log

2=Neutron log

3=Density log

4=Neutron/density cross-plot

5=Acoustic/neutron cross-plot

6=M*N Porosity

7=Core porosity

MAT - Matrix value used in single log porosity calculation.

FLD - Fluid value used in single log porosity calculation. (Ptyp 1 to 3)

RhoS - Shale density.

PhiS - Neutron Shale porosity

DTSH - Acoustic transit time of Shale

Well name = BRDLGA #1

Location = 27-35-36S/140-01-28E

Page 1

Zone Name = TF-2

Top = 8694.00 Base = 8732.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 12.50 Sand Thickness = 5.50 Sand > por. Cutoff = 1.50

Average Porosity = 10.97 Average water saturation = 35.42 Net thickness = 1.50

RhoG Min = 0.00 RhoG Max = 0.00

000117

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 2

Zone Name = TF-1

Top = 8733.00 Base = 8789.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 39.00 Sand Thickness = 32.50 Sand > por. Cutoff = 20.00

Average Porosity = 10.52 Average water saturation = 49.93 Net thickness = 0.50
RhoG Min = 0.00 RhoG Max = 0.00

000118

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 3

Zone Name = EPSILON

Top = 8790.00 Base = 8827.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 26.00 Sand Thickness = 20.00 Sand > por. Cutoff = 16.50

Average Porosity = 0.00 Average water saturation = 0.00 Net thickness = 0.00
RhoG Min = 0.00 RhoG Max = 0.00

000119

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 4

Zone Name = MURTREE

Top = 8828.00 Base = 8857.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 0.00 Sand Thickness = 0.00 Sand > por. Cutoff = 0.00

Average Porosity = 0.00 Average water saturation = 0.00 Net thickness = 0.00

RhoG Min = 0.00 RhoG Max = 0.00

000120

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 5

Zone Name = PF-7

Top = 8858.00 Base = 9028.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 12.00 Sand Thickness = 6.50 Sand > por. Cutoff = 4.00

Average Porosity = 12.32 Average water saturation = 30.68 Net thickness = 2.50

RhoG Min = 0.00 RhoG Max = 0.00

000121

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 6

Zone Name = PF-5

Top = 9029.00 Base = 9101.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 52.00 Sand Thickness = 32.00 Sand > por. Cutoff = 26.50

Average Porosity = 12.56 Average water saturation = 45.43 Net thickness = 10.00

RhoG Min = 0.00 RhoG Max = 0.00

000122

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 7

Zone Name = PF-4

Top = 9102.00 Base = 9192.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 2.00 Sand Thickness = 0.00 Sand > por. Cutoff = 0.00

Average Porosity = 0.00 Average water saturation = 0.00 Net thickness = 0.00

RhoG Min = 0.00 RhoG Max = 0.00

000123

Well name = BRDLGA #1

Location = 27-35-36S/140-01-28E

Page 8

Zone Name = PF-3

Top = 9193.00 Base = 9251.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 0.00 Sand Thickness = 0.00 Sand > por. Cutoff = 0.00

Average Porosity = 0.00 Average water saturation = 0.00 Net thickness = 0.00

RhoG Min = 0.00 RhoG Max = 0.00

000124

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 9

Zone Name = PF-2

Top = 9252.00 Base = 9395.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 47.50 Sand Thickness = 26.50 Sand > por. Cutoff = 24.00

Average Porosity = 12.40 Average water saturation = 26.71 Net thickness = 23.50

RhoG Min = 0.00 RhoG Max = 0.00

000125

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 10

Zone Name = PF-1

Top = 9396.00 Base = 9573.50 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 45.50 Sand Thickness = 22.00 Sand > por. Cutoff = 14.50

Average Porosity = 11.28 Average water saturation = 30.67 Net thickness = 14.50

RhoG Min = 0.00 RhoG Max = 0.00

000126

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page 11

Zone Name = TIRRAWARRA Top = 9574.00 Base = 9625.00 Date = 03/06/82

Caliper Cutoff = ***** Permeability Cutoff = 0.00
Gross Shale Cutoff = 50.00 Shale Cutoff = 30.00

Porosity*Sw cutoff = 0.0 Porosity cutoff = 10.0 Saturation cutoff = 50.0

Gross Thickness = 36.00 Sand Thickness = 26.50 Sand > por. Cutoff = 16.50

Average Porosity = 13.40 Average water saturation = 31.58 Net thickness = 6.50

RhoG Min = 0.00 RhoG Max = 0.00

000127

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 1

Porosity cutoff = 10.0 Saturation cutoff = 50.0 Caliper cutoff = bit size +***** Shale Cutoff = 30.

TOP	BASE	A	M	N	RW	TEMP	GRAD										
8640.00	8830.00	1.00	2.00	2.00	0.180	229.0	1.730										
GRMAX	GRMIN	RSH	COR	C	G	I	PTYP	RHOS	PHIS	DTSH	MAT	FLD					
128.0	24.0	18.0		2	2	2	1	-0.000	0.000	64.0	51.0	250.0					
Porosity derived from Acoustic log																	
TOP	BASE	A	M	N	RW	TEMP	GRAD										
8830.00	9574.00	1.00	2.00	2.00	0.130	233.0	1.730										
GRMAX	GRMIN	RSH	COR	C	G	I	PTYP	RHOS	PHIS	DTSH	MAT	FLD					
128.0	16.0	100.0		2	2	2	1	-0.000	0.000	64.0	51.0	250.0					
Porosity derived from Acoustic log																	
TOP	BASE	A	M	N	RW	TEMP	GRAD										
9574.00	9680.00	1.00	2.00	2.00	0.120	246.0	1.730										
GRMAX	GRMIN	RSH	COR	C	G	I	PTYP	RHOS	PHIS	DTSH	MAT	FLD					
92.0	28.0	28.0		2	2	2	1	-0.000	0.000	64.0	51.0	250.0					
Porosity derived from Acoustic log																	

000128

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 2

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8640.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8640.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8641.00	96.32	51.00	0.01	-0.00	0.59	38.98	23.17			
8641.50	96.52	51.00	0.01	-0.00	0.97	39.27	38.05			
8642.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8642.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8643.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8643.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8644.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8644.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8645.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8645.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8646.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8646.50	96.13	51.00	0.01	-0.00	0.61	49.79	30.31			
8647.00	91.65	51.00	0.01	-0.00	0.86	49.98	43.10			
8647.50	87.68	51.00	0.01	-0.00	1.11	52.29	57.80			
8648.00	89.84	51.00	0.01	-0.00	0.89	52.27	46.63			
8648.50	92.98	51.00	0.01	-0.00	0.65	51.67	33.49			
8649.00	96.91	51.00	0.01	-0.00	0.48	52.93	25.28			
8649.50	98.85	51.00	0.01	-0.00	0.46	53.59	24.71			
8650.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8650.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8651.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8651.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8652.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8652.50	96.53	51.00	0.01	-0.00	1.39	46.92	65.07			
8653.00	84.79	51.00	0.01	-0.00	2.33	56.97	132.79			
8653.50	75.05	51.00	0.02	-0.00	2.83	60.36	170.90			
8654.00	67.38	51.00	0.01	-0.00	3.05	65.07	198.26			
8654.50	61.98	51.00	0.05	-0.00	4.09	61.56	251.49			
8655.00	60.26	51.00	0.08	-0.00	4.47	59.85	267.73			
8655.50	84.95	51.00	0.06	-0.00	2.98	49.18	146.35			
8656.00	89.90	51.00	0.18	-0.00	3.67	45.16	165.89			
8656.50	87.25	51.00	0.11	-0.00	3.60	49.35	177.81			
8657.00	90.78	51.00	0.08	-0.00	2.88	45.60	131.39			
8657.50	98.86	51.00	0.01	-0.00	0.46	49.67	22.71			
8658.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8658.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8659.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8659.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8660.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8660.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8661.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8661.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8662.00	99.55	51.00	0.01	-0.00	0.18	60.62	10.86			
8662.50	99.69	51.00	0.01	-0.00	0.12	57.39	7.10			
8663.00	90.71	51.00	0.01	-0.00	2.12	52.58	111.62			
8663.50	93.74	51.00	0.03	-0.00	2.30	48.96	112.43			
8664.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8664.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000129

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 3

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8665.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8665.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8666.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8666.50	99.64	51.00	0.01	-0.00	0.14	77.61	11.04			
8667.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8667.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8668.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8668.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8669.00	96.46	51.00	0.01	-0.00	1.42	42.67	60.42			
8669.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8670.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8670.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8671.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8671.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8672.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8672.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8673.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8673.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8674.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8674.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8675.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8675.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8676.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8676.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8677.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8677.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8678.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8678.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8679.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8679.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8680.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8680.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8681.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8681.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8682.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8682.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8683.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8683.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8684.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8684.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8685.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8685.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8686.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8686.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8687.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8687.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8688.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8688.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8689.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8689.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000130

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 4

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8690.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8690.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8691.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8691.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8692.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8692.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8693.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8693.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8694.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8694.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8695.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8695.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8696.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8696.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8697.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8697.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8698.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8698.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8699.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8699.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8700.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8700.50		82.43	51.00	47.07	-0.00	7.03	9.77	68.63		
8701.00		81.73	51.00	4.55	-0.00	3.92	13.75	53.83		
8701.50		78.99	51.00	3.74	-0.00	3.98	16.37	65.22		
8702.00		76.40	51.00	3.12	-0.00	4.09	19.17	78.39		
8702.50		73.97	51.00	2.94	-0.00	4.22	20.87	88.03		
8703.00		68.01	51.00	4.06	-0.00	4.72	21.45	101.34		
8703.50		62.66	51.00	13.77	-0.00	6.52	19.98	130.31		
8704.00		56.40	51.00	13.10	-0.00	7.21	23.97	172.76		
8704.50		48.24	51.00	13.47	-0.00	8.17	28.04	228.99		
8705.00		39.03	51.00	8.81	-0.00	8.43	33.57	283.08		
8705.50		31.45	51.00	5.48	-0.00	8.30	37.96	314.98		
8706.00		26.52	51.00	6.07	-0.00	8.83	39.07	345.18		
8706.50		25.18	51.00	8.67	-0.00	9.49	37.84	358.91		
8707.00		24.22	51.00	9.44	-0.00	9.71	37.78	366.90		
8707.50		25.02	51.00	7.31	-0.00	9.28	38.87	360.87		
8708.00		26.52	51.00	5.39	-0.00	8.75	39.99	349.93		
8708.50		30.88	51.00	4.54	-0.00	8.21	39.55	324.63		
8709.00		33.91	51.00	6.33	-0.00	8.70	38.10	331.36		
8709.50		34.75	51.00	7.42	-0.00	9.23	38.53	355.78		
8710.00		35.13	51.00	9.49	-0.00	9.75	37.84	368.82		
8710.50		27.84	51.00	10.55	-0.00	10.55	39.51	416.93	0.05	
8711.00		26.97	51.00	12.37	-0.00	10.88	38.91	423.37	0.11	0.03
8711.50		25.39	51.00	7.74	-0.00	9.91	40.57	402.20		0.50
8712.00		26.20	51.00	4.72	-0.00	9.15	42.90	392.38		
8712.50		33.10	51.00	6.83	-0.00	9.38	39.95	374.77		
8713.00		35.44	51.00	7.25	-0.00	9.41	39.42	370.98		
8713.50		33.97	51.00	6.58	-0.00	9.25	39.83	368.34		
8714.00		30.24	51.00	16.22	-0.00	12.19	30.50	371.75		
8714.50		33.19	51.00	24.47	-0.00	12.91	24.71	319.03		

000131

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8715.00		29.91	51.00	15.41	-0.00	8.46	27.87	235.86			
8715.50		31.88	51.00	11.93	-0.00	9.47	20.43	193.48			
8716.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8716.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8717.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8717.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8718.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8718.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8719.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8719.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8720.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8720.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8721.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8721.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8722.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8722.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8723.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8723.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8724.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8724.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8725.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8725.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8726.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8726.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8727.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8727.50		63.14	51.00	33.94	-0.00	12.40	13.62	168.98			
8728.00		60.83	51.00	1.62	-0.00	4.26	27.39	116.62			
8728.50		38.07	51.00	0.76	-0.00	5.01	40.97	205.36			
8729.00		26.84	51.00	14.94	-0.00	11.47	28.34	325.05	0.16	0.11	1.50
8729.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8730.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8730.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8731.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8731.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8732.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8732.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8733.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8733.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8734.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8734.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8735.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8735.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8736.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8736.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8737.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8737.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8738.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8738.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8739.00	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		
8739.50	C	O A L		C O A L		C O A L	C O A L	C O A L	O A L		

000132

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8740.00	C O A L		C O A L		C O A L		C O A L			
8740.50	C O A L		C O A L		C O A L		C O A L			
8741.00	C O A L		C O A L		C O A L		C O A L			
8741.50	C O A L		C O A L		C O A L		C O A L			
8742.00	C O A L		C O A L		C O A L		C O A L			
8742.50	56.11	51.00	19.51	-0.00	11.39	20.69	235.60			
8743.00	60.85	51.00	7.84	-0.00	7.65	31.40	240.14			
8743.50	55.07	51.00	2.79	-0.00	7.03	39.23	275.89			
8744.00	44.80	51.00	4.56	-0.00	8.73	41.64	363.35			
8744.50	44.31	51.00	6.67	-0.00	9.47	40.52	383.82			
8745.00	35.42	51.00	3.37	-0.00	9.29	46.96	436.43			
8745.50	28.19	51.00	1.72	-0.00	9.04	53.02	479.17			
8746.00	26.69	51.00	2.06	-0.00	9.17	51.65	473.75			
8746.50	31.57	51.00	3.41	-0.00	9.15	46.31	423.74			
8747.00	40.51	51.00	12.06	-0.00	11.31	33.06	373.91			
8747.50	50.59	51.00	18.49	-0.00	11.83	25.05	296.46			
8748.00	63.43	51.00	21.17	-0.00	11.50	19.29	221.84			
8748.50	71.93	51.00	16.90	-0.00	10.47	17.88	187.12			
8749.00	75.38	51.00	26.94	-0.00	8.99	24.15	217.03			
8749.50	67.90	51.00	1.94	-0.00	6.86	42.15	289.05			
8750.00	56.51	51.00	0.14	-0.00	5.88	64.44	378.85			
8750.50	31.78	51.00	0.01	-0.00	6.33	96.53	610.70			
8751.00	22.11	51.00	0.02	-0.00	8.40	96.23	808.70			
8751.50	14.12	51.00	0.02	-0.00	9.31	100.00	930.76			
8752.00	10.91	51.00	0.03	-0.00	10.26	100.00	1026.33			
8752.50	9.34	51.00	0.05	-0.00	11.92	100.00	1191.62			
8753.00	8.09	51.00	0.06	-0.00	12.91	100.00	1291.07			
8753.50	7.19	51.00	0.08	-0.00	13.77	100.00	1376.93			
8754.00	6.59	51.00	0.20	-0.00	14.38	91.56	1316.90			
8754.50	9.97	51.00	0.61	-0.00	13.74	78.40	1077.22			
8755.00	19.83	51.00	1.84	-0.00	12.29	63.04	775.03			
8755.50	29.76	51.00	3.85	-0.00	10.52	49.93	525.38	0.22	0.13	2.00
8756.00	46.28	51.00	4.58	-0.00	8.29	39.80	329.98			
8756.50	53.23	51.00	1.57	-0.00	6.92	44.63	308.83			
8757.00	56.12	51.00	0.86	-0.00	8.32	57.31	476.72			
8757.50	52.20	51.00	2.51	-0.00	10.30	53.65	552.76			
8758.00	35.80	51.00	6.56	-0.00	12.40	50.08	621.02			
8758.50	28.27	51.00	5.88	-0.00	12.22	50.71	619.79			
8759.00	32.43	51.00	3.87	-0.00	10.68	50.36	537.73			
8759.50	46.48	51.00	1.63	-0.00	8.09	49.69	402.00			
8760.00	53.37	51.00	0.27	-0.00	6.41	60.49	387.69			
8760.50	50.39	51.00	0.14	-0.00	6.65	68.13	452.82			
8761.00	26.85	51.00	0.08	-0.00	7.88	80.77	636.76			
8761.50	14.31	51.00	0.03	-0.00	8.00	91.18	729.18			
8762.00	7.26	51.00	0.02	-0.00	7.91	97.30	769.34			
8762.50	6.71	51.00	0.01	-0.00	7.59	98.18	745.24			
8763.00	10.87	51.00	0.25	-0.00	9.22	73.94	682.07			
8763.50	16.47	51.00	0.20	-0.00	8.29	72.61	602.21			
8764.00	20.29	51.00	0.16	-0.00	7.61	71.76	546.05			
8764.50	21.27	51.00	0.09	-0.00	7.15	75.04	536.85			

000133

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8765.00	21.81	51.00	0.15	-0.00	7.47	71.75	536.30			
8765.50	19.47	51.00	0.20	-0.00	7.90	70.50	557.22			
8766.00	13.68	51.00	0.15	-0.00	7.95	73.91	587.66			
8766.50	11.48	51.00	0.10	-0.00	7.52	75.90	571.00			
8767.00	18.02	51.00	0.07	-0.00	6.57	75.56	496.52			
8767.50	27.21	51.00	0.02	-0.00	5.66	82.21	465.68			
8768.00	33.31	51.00	0.01	-0.00	5.43	86.68	470.78			
8768.50	35.81	51.00	0.02	-0.00	5.94	86.50	513.97			
8769.00	29.00	51.00	0.02	-0.00	6.98	91.30	637.46			
8769.50	21.56	51.00	0.06	-0.00	8.72	87.04	758.91			
8770.00	17.05	51.00	0.08	-0.00	9.66	87.53	845.50			
8770.50	15.15	51.00	0.09	-0.00	10.32	88.15	909.59			
8771.00	17.88	51.00	0.04	-0.00	9.78	94.32	922.67			
8771.50	20.81	51.00	0.10	-0.00	10.63	88.79	944.19			
8772.00	22.45	51.00	0.08	-0.00	10.49	90.24	946.56			
8772.50	19.60	51.00	0.06	-0.00	10.24	93.22	954.73			
8773.00	15.75	51.00	0.08	-0.00	10.64	90.83	966.31			
8773.50	12.94	51.00	0.09	-0.00	10.66	89.75	956.49			
8774.00	13.32	51.00	0.24	-0.00	11.28	81.14	915.45			
8774.50	13.89	51.00	0.22	-0.00	10.92	80.85	882.52			
8775.00	11.65	51.00	0.04	-0.00	9.32	94.54	881.47			
8775.50	12.75	51.00	0.05	-0.00	10.10	92.85	937.35			
8776.00	9.65	51.00	0.07	-0.00	11.16	93.84	1047.17			
8776.50	7.31	51.00	0.18	-0.00	12.27	87.22	1069.82			
8777.00	9.08	51.00	0.07	-0.00	10.90	93.03	1014.12			
8777.50	8.95	51.00	1.15	-0.00	13.82	71.98	994.80			
8778.00	6.78	51.00	0.81	-0.00	13.34	74.38	992.47			
8778.50	5.88	51.00	0.26	-0.00	12.25	83.42	1021.74			
8779.00	5.88	51.00	0.64	-0.00	13.57	77.48	1051.27			
8779.50	7.95	51.00	0.10	-0.00	11.59	90.90	1053.92			
8780.00	10.45	51.00	0.05	-0.00	10.84	97.04	1051.99			
8780.50	13.53	51.00	0.14	-0.00	11.86	88.65	1051.29			
8781.00	9.81	51.00	0.17	-0.00	12.44	88.51	1100.86			
8781.50	12.00	51.00	0.21	-0.00	12.43	85.80	1066.77			
8782.00	14.97	51.00	0.22	-0.00	12.42	85.38	1060.56			
8782.50	15.29	51.00	0.14	-0.00	12.56	90.65	1138.94			
8783.00	11.08	51.00	0.11	-0.00	13.25	94.83	1256.14			
8783.50	7.80	51.00	0.08	-0.00	13.38	98.78	1321.27			
8784.00	6.50	51.00	0.07	-0.00	13.60	100.00	1359.51			
8784.50	7.58	51.00	0.07	-0.00	13.36	100.00	1335.71			
8785.00	9.06	51.00	0.15	-0.00	14.18	93.82	1330.77			
8785.50	10.83	51.00	0.24	-0.00	13.99	88.68	1240.83			
8786.00	12.84	51.00	0.36	-0.00	12.94	81.70	1057.12			
8786.50	12.01	51.00	0.37	-0.00	11.65	77.87	907.35			
8787.00	16.61	51.00	0.17	-0.00	9.35	78.54	734.49			
8787.50	26.87	51.00	0.11	-0.00	7.72	76.43	590.02			
8788.00	46.96	51.00	0.15	-0.00	6.81	68.33	465.14			
8788.50	54.28	51.00	0.13	-0.00	6.59	68.85	453.91			
8789.00	56.42	51.00	0.18	-0.00	6.81	66.69	454.17			
8789.50	58.30	51.00	0.29	-0.00	6.99	62.60	437.84			

000134

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8790.00	70.64	51.00	0.45	-0.00	6.32	54.44	344.13			
8790.50	86.15	51.00	0.99	-0.00	5.54	41.69	230.91			
8791.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8791.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8792.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8792.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8793.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8793.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8794.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8794.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8795.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8795.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8796.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8796.50	84.54	51.00	0.01	-0.00	4.40	81.32	358.06			
8797.00	58.55	51.00	0.01	-0.00	6.67	100.00	667.11			
8797.50	54.69	51.00	0.01	-0.00	7.40	100.00	740.38			
8798.00	32.35	51.00	0.02	-0.00	9.20	100.00	919.85			
8798.50	20.97	51.00	0.02	-0.00	9.63	100.00	962.70			
8799.00	17.68	51.00	0.02	-0.00	9.47	100.00	947.45			
8799.50	26.29	51.00	0.02	-0.00	8.58	100.00	858.26			
8800.00	33.82	51.00	0.02	-0.00	8.11	98.46	798.95			
8800.50	36.96	51.00	0.02	-0.00	8.10	93.64	758.04			
8801.00	38.10	51.00	0.03	-0.00	8.51	94.32	802.64			
8801.50	43.05	51.00	0.03	-0.00	8.75	95.85	838.64			
8802.00	31.74	51.00	0.07	-0.00	10.13	89.77	909.43			
8802.50	23.97	51.00	0.20	-0.00	10.82	81.64	883.06			
8803.00	26.38	51.00	0.20	-0.00	9.85	78.62	774.50			
8803.50	29.95	51.00	0.08	-0.00	8.12	81.13	658.82			
8804.00	35.38	51.00	0.03	-0.00	6.45	85.09	548.89			
8804.50	41.01	51.00	0.01	-0.00	6.72	97.51	655.63			
8805.00	44.85	51.00	0.02	-0.00	7.80	96.10	749.72			
8805.50	45.21	51.00	0.02	-0.00	9.18	99.20	910.79			
8806.00	29.62	51.00	0.04	-0.00	11.04	100.00	1103.57			
8806.50	18.12	51.00	0.04	-0.00	11.28	100.00	1128.13			
8807.00	17.23	51.00	0.03	-0.00	10.85	100.00	1084.74			
8807.50	19.85	51.00	0.03	-0.00	10.18	100.00	1017.53			
8808.00	31.19	51.00	0.04	-0.00	8.93	93.12	831.89			
8808.50	61.69	51.00	0.07	-0.00	6.41	74.33	476.14			
8809.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8809.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8810.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8810.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8811.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8811.50	54.40	51.00	0.01	-0.00	7.69	100.00	768.80			
8812.00	18.93	51.00	0.03	-0.00	10.24	100.00	1023.57			
8812.50	8.64	51.00	0.04	-0.00	11.18	100.00	1118.36			
8813.00	3.19	51.00	0.04	-0.00	11.67	100.00	1166.87			
8813.50	0.00	51.00	0.05	-0.00	11.96	100.00	1196.04			
8814.00	0.00	51.00	0.05	-0.00	12.08	100.00	1207.84			
8814.50	0.54	51.00	0.05	-0.00	12.15	100.00	1214.54			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8815.00	3.42	51.00	0.05	-0.00	11.84	100.00	1183.60			
8815.50	6.42	51.00	0.04	-0.00	11.17	100.00	1117.33			
8816.00	9.03	51.00	0.03	-0.00	10.63	100.00	1063.47			
8816.50	11.90	51.00	0.03	-0.00	10.24	100.00	1023.59			
8817.00	14.28	51.00	0.03	-0.00	10.09	100.00	1009.31			
8817.50	9.71	51.00	0.04	-0.00	11.38	100.00	1137.67			
8818.00	8.22	51.00	0.05	-0.00	11.80	100.00	1180.12			
8818.50	7.87	51.00	0.05	-0.00	11.81	100.00	1181.09			
8819.00	8.23	51.00	0.06	-0.00	12.45	100.00	1244.62			
8819.50	8.43	51.00	0.06	-0.00	12.84	100.00	1283.59			
8820.00	8.40	51.00	0.06	-0.00	13.08	100.00	1307.69			
8820.50	7.14	51.00	0.06	-0.00	13.03	100.00	1303.27			
8821.00	9.17	51.00	0.05	-0.00	12.05	100.00	1205.37			
8821.50	13.29	51.00	0.04	-0.00	11.04	100.00	1104.45			
8822.00	16.74	51.00	0.03	-0.00	10.07	100.00	1007.08			
8822.50	15.69	51.00	0.02	-0.00	9.72	100.00	971.55			
8823.00	15.89	51.00	0.03	-0.00	10.07	100.00	1006.64			
8823.50	17.26	51.00	0.03	-0.00	10.22	100.00	1022.26			
8824.00	12.28	51.00	0.04	-0.00	11.02	100.00	1102.01			
8824.50	7.27	51.00	0.05	-0.00	12.28	100.00	1227.59			
8825.00	5.50	51.00	0.05	-0.00	12.19	100.00	1219.45			
8825.50	6.26	51.00	0.04	-0.00	11.58	100.00	1158.41			
8826.00	10.65	51.00	0.06	-0.00	10.69	94.61	1011.31			
8826.50	21.20	51.00	0.16	-0.00	9.40	79.06	742.90			
8827.00	34.40	51.00	1.96	-0.00	9.79	54.41	532.50			
8827.50	53.18	51.00	3.31	-0.00	8.04	42.10	338.36			
8828.00	67.85	51.00	3.23	-0.00	6.46	34.75	224.63			
8828.50	79.34	51.00	1.55	-0.00	4.82	32.15	154.82			
8829.00	88.74	51.00	0.23	-0.00	2.70	32.06	86.43			
8829.50	97.45	51.00	0.01	-0.00	1.02	30.20	30.75			
8830.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8830.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8831.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8831.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8832.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8832.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8833.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8833.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8834.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8834.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8835.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8835.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8836.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8836.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8837.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8837.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8838.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8838.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8839.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8839.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 10

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8840.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8840.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8841.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8841.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8842.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8842.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8843.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8843.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8844.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8844.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8845.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8845.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8846.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8846.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8847.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8847.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8848.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8848.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8849.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8849.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8850.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8850.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8851.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8851.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8852.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8852.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8853.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8853.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8854.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8854.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8855.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8855.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8856.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8856.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8857.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8857.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8858.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8858.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8859.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8859.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8860.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8860.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8861.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8861.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8862.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8862.50	94.67	51.00	0.06	-0.00	2.13	37.78	80.58			
8863.00	88.36	51.00	0.69	-0.00	3.85	32.69	125.71			
8863.50	86.72	51.00	0.37	-0.00	3.61	37.17	134.21			
8864.00	95.00	51.00	0.04	-0.00	2.00	39.48	78.97			
8864.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8865.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8865.50	87.60	51.00	0.04	-0.00	2.34	45.08	105.28			
8866.00	81.47	51.00	0.01	-0.00	1.42	73.03	103.82			
8866.50	71.99	51.00	0.01	-0.00	1.58	79.42	125.38			
8867.00	66.50	51.00	0.01	-0.00	2.57	60.89	156.22			
8867.50	67.60	51.00	0.03	-0.00	3.06	56.68	173.30			
8868.00	85.43	51.00	0.24	-0.00	3.36	38.86	130.59			
8868.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8869.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8869.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8870.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8870.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8871.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8871.50	79.68	51.00	1.45	-0.00	5.24	35.79	187.53			
8872.00	66.03	51.00	0.58	-0.00	5.24	45.31	237.46			
8872.50	52.48	51.00	2.30	-0.00	6.97	40.90	284.92			
8873.00	50.36	51.00	2.16	-0.00	6.93	41.40	286.82			
8873.50	57.91	51.00	1.41	-0.00	6.14	41.67	256.03			
8874.00	67.13	51.00	0.80	-0.00	5.22	41.83	218.36			
8874.50	78.42	51.00	0.57	-0.00	4.28	38.53	164.93			
8875.00	90.92	51.00	0.91	-0.00	3.63	27.93	101.43			
8875.50	97.96	51.00	0.01	-0.00	0.82	49.88	40.68			
8876.00	97.70	51.00	0.01	-0.00	0.92	47.77	43.94			
8876.50	94.40	51.00	0.10	-0.00	2.24	34.45	77.12			
8877.00	97.42	51.00	0.01	-0.00	1.03	48.29	49.92			
8877.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8878.00	99.31	51.00	0.01	-0.00	0.27	69.75	19.15			
8878.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8879.00	99.93	51.00	0.01	-0.00	0.03	82.31	2.30			
8879.50	79.11	51.00	0.01	-0.00	1.09	70.66	76.98			
8880.00	54.21	51.00	0.01	-0.00	2.15	65.20	140.22			
8880.50	49.34	51.00	0.01	-0.00	2.57	60.13	154.37			
8881.00	57.40	51.00	0.04	-0.00	2.98	54.97	164.07			
8881.50	71.62	51.00	3.43	-0.00	5.56	28.90	160.73			
8882.00	91.13	51.00	1.08	-0.00	3.55	25.25	89.54			
8882.50	98.39	51.00	0.01	-0.00	0.64	46.12	29.73			
8883.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8883.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8884.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8884.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8885.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8885.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8886.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8886.50	72.73	51.00	0.83	-0.00	8.56	58.76	503.29			
8887.00	57.89	51.00	0.11	-0.00	8.94	81.29	726.85			
8887.50	33.86	51.00	0.17	-0.00	10.98	83.67	919.01			
8888.00	29.50	51.00	0.17	-0.00	11.21	84.71	949.67			
8888.50	28.08	51.00	0.09	-0.00	10.66	89.88	958.27			
8889.00	19.38	51.00	0.06	-0.00	10.54	94.12	991.94			
8889.50	19.50	51.00	0.04	-0.00	9.81	95.06	932.43			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8890.00	28.14	51.00	0.05	-0.00	8.86	89.69	796.31			
8890.50	40.71	51.00	0.13	-0.00	8.15	76.25	621.61			
8891.00	56.02	51.00	0.29	-0.00	7.04	62.93	442.74			
8891.50	71.18	51.00	19.95	-0.00	7.35	20.27	148.97			
8892.00	86.45	51.00	10.04	-0.00	5.42	16.83	91.21			
8892.50	98.15	51.00	0.01	-0.00	0.74	43.87	32.44			
8893.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8893.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8894.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8894.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8895.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8895.50	95.29	51.00	0.02	-0.00	1.88	42.70	80.42			
8896.00	87.80	51.00	1.95	-0.00	4.88	30.21	147.39			
8896.50	87.27	51.00	1.97	-0.00	5.09	31.61	161.00			
8897.00	92.63	51.00	0.11	-0.00	2.95	42.54	125.41			
8897.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8898.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8898.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8899.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8899.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8900.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8900.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8901.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8901.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8902.00	24.82	51.00	91.66	-0.00	16.56	17.06	282.44	0.30	0.20	2.50
8902.50	25.67	51.00	12.42	-0.00	10.77	28.90	311.32	0.35	0.24	3.00
8903.00	27.11	51.00	6.07	-0.00	8.83	39.07	345.13			
8903.50	29.27	51.00	2.21	-0.00	8.07	46.46	374.86			
8904.00	26.42	51.00	3.74	-0.00	9.15	45.38	415.39			
8904.50	23.59	51.00	7.63	-0.00	10.51	42.74	449.30	0.41	0.27	3.50
8905.00	24.67	51.00	10.06	-0.00	11.48	38.90	446.75	0.46	0.30	4.00
8905.50	28.83	51.00	15.15	-0.00	12.26	32.62	399.98	0.53	0.35	4.50
8906.00	36.57	51.00	33.46	-0.00	14.15	24.57	347.59			
8906.50	44.85	51.00	43.81	-0.00	14.31	19.71	282.05			
8907.00	56.04	51.00	45.44	-0.00	13.68	15.20	207.89			
8907.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8908.00	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8908.50	C 00 A L		C 00 A L		C 00 A L		C 00 A L			
8909.00	93.14	51.00	0.44	-0.00	2.75	25.81	70.86			
8909.50	93.83	51.00	0.23	-0.00	2.47	28.75	70.94			
8910.00	87.35	51.00	5.69	-0.00	5.06	20.33	102.80			
8910.50	73.81	51.00	0.01	-0.00	0.23	100.00	23.27			
8911.00	64.07	51.00	0.01	-0.00	1.29	85.98	111.04			
8911.50	60.72	51.00	0.01	-0.00	1.98	74.75	147.90			
8912.00	63.43	51.00	0.02	-0.00	2.73	59.71	163.09			
8912.50	69.53	51.00	0.03	-0.00	2.87	54.56	156.72			
8913.00	75.27	51.00	0.04	-0.00	2.88	51.50	148.41			
8913.50	77.04	51.00	0.07	-0.00	3.07	48.53	149.04			
8914.00	76.12	51.00	0.10	-0.00	3.30	47.29	156.16			
8914.50	70.10	51.00	0.17	-0.00	3.76	46.54	174.83			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8915.00	67.52	51.00	0.18	-0.00	3.84	46.76	179.72			
8915.50	72.19	51.00	0.11	-0.00	3.36	47.40	159.27			
8916.00	80.33	51.00	0.04	-0.00	2.57	48.28	124.28			
8916.50	89.40	51.00	0.05	-0.00	2.21	41.26	91.12			
8917.00	99.41	51.00	0.01	-0.00	0.24	65.83	15.48			
8917.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8918.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8918.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8919.00	87.86	51.00	0.05	-0.00	2.34	41.85	97.91			
8919.50	92.36	51.00	0.59	-0.00	3.06	26.44	80.83			
8920.00	97.43	51.00	0.01	-0.00	1.03	37.81	38.92			
8920.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8921.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8921.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8922.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8922.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8923.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8923.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8924.00	92.02	51.00	0.50	-0.00	3.19	29.57	94.42			
8924.50	79.18	51.00	0.67	-0.00	4.14	35.65	147.67			
8925.00	75.80	51.00	0.78	-0.00	4.22	34.73	146.68			
8925.50	73.70	51.00	0.90	-0.00	4.23	33.28	140.74			
8926.00	72.79	51.00	1.96	-0.00	4.67	28.70	134.16			
8926.50	75.78	51.00	5.22	-0.00	5.31	22.92	121.74			
8927.00	80.82	51.00	7.17	-0.00	5.47	20.66	113.05			
8927.50	67.78	51.00	7.80	-0.00	6.61	26.34	174.01			
8928.00	53.76	51.00	6.86	-0.00	7.79	33.43	260.37			
8928.50	51.91	51.00	2.97	-0.00	7.24	39.62	286.97			
8929.00	50.65	51.00	1.82	-0.00	6.88	42.94	295.57			
8929.50	49.22	51.00	1.43	-0.00	6.59	43.92	289.60			
8930.00	51.57	51.00	1.15	-0.00	6.08	43.40	264.04			
8930.50	64.77	51.00	0.71	-0.00	4.96	41.33	204.93			
8931.00	69.66	51.00	0.53	-0.00	4.37	40.02	174.87			
8931.50	74.18	51.00	1.57	-0.00	4.79	31.79	152.19			
8932.00	84.30	51.00	2.68	-0.00	4.58	24.66	112.83			
8932.50	98.53	51.00	0.01	-0.00	0.59	44.60	26.28			
8933.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8933.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8934.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8934.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8935.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8935.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8936.00	92.75	51.00	0.65	-0.00	2.90	23.56	68.32			
8936.50	83.80	51.00	21.72	-0.00	6.48	15.00	97.15			
8937.00	82.78	51.00	31.30	-0.00	6.89	13.32	91.70			
8937.50	83.32	51.00	30.51	-0.00	6.67	12.49	83.33			
8938.00	86.24	51.00	15.78	-0.00	5.50	12.64	69.53			
8938.50	C O A L		C O A L		C O A L		C O A L			
8939.00	C O A L		C O A L		C O A L		C O A L			
8939.50	C O A L		C O A L		C O A L		C O A L			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8940.00	C O A L		C O A L		C O A L	C O A L	C O A L	C O A L		
8940.50	C O A L		C O A L		C O A L	C O A L	C O A L	C O A L		
8941.00	C O A L		C O A L		C O A L	C O A L	C O A L	C O A L		
8941.50	68.69	51.00	40.62	-0.00	12.52	10.08	126.18			
8942.00	70.78	51.00	31.37	-0.00	11.69	10.39	121.41			
8942.50	82.50	51.00	0.27	-0.00	2.71	30.12	81.52			
8943.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8943.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8944.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8944.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8945.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8945.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8946.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8946.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8947.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8947.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8948.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8948.50	96.02	51.00	0.01	-0.00	1.06	41.18	43.81			
8949.00	94.16	51.00	0.01	-0.00	1.17	41.16	48.04			
8949.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8950.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8950.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8951.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8951.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8952.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8952.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8953.00	74.02	51.00	0.05	-0.00	2.41	43.67	105.11			
8953.50	66.21	51.00	0.05	-0.00	2.71	47.11	127.77			
8954.00	64.76	51.00	0.04	-0.00	2.60	48.25	125.68			
8954.50	65.20	51.00	11.22	-0.00	6.63	22.68	150.31			
8955.00	78.24	51.00	11.81	-0.00	8.70	13.76	119.73			
8955.50	90.03	51.00	3.02	-0.00	3.99	18.66	74.41			
8956.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8956.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8957.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8957.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8958.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8958.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8959.00	93.96	51.00	0.11	-0.00	2.03	29.45	59.66			
8959.50	86.24	51.00	0.08	-0.00	2.34	38.42	89.84			
8960.00	84.87	51.00	0.06	-0.00	2.27	40.39	91.58			
8960.50	88.32	51.00	0.06	-0.00	2.11	37.24	78.59			
8961.00	94.81	51.00	0.06	-0.00	1.73	30.50	52.66			
8961.50	90.65	51.00	0.07	-0.00	2.03	34.36	69.83			
8962.00	94.46	51.00	0.05	-0.00	1.72	32.73	56.21			
8962.50	88.66	51.00	0.05	-0.00	2.02	38.67	78.07			
8963.00	88.16	51.00	0.03	-0.00	1.95	40.32	78.59			
8963.50	93.32	51.00	0.03	-0.00	1.64	35.39	57.87			
8964.00	98.13	51.00	0.01	-0.00	0.75	36.99	27.64			
8964.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000141

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8965.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8965.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8966.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8966.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8967.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8967.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8968.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8968.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8969.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8969.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8970.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8970.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8971.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8971.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8972.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8972.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8973.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8973.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8974.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8974.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8975.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8975.50	88.62	51.00	3.27	-0.00	4.55	22.42	102.09			
8976.00	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8976.50	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8977.00	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8977.50	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8978.00	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8978.50	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8979.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8979.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8980.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8980.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8981.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8981.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8982.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8982.50	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8983.00	C 0 A L		C 0 A L	L	C 0 A L		C 0 A L			
8983.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8984.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8984.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8985.00	72.25	51.00	9.77	-0.00	7.45	28.18	209.89			
8985.50	65.73	51.00	8.96	-0.00	7.96	31.39	249.81			
8986.00	64.78	51.00	23.55	-0.00	9.15	26.16	239.25			
8986.50	80.96	51.00	20.68	-0.00	7.62	21.14	161.00			
8987.00	88.93	51.00	22.41	-0.00	4.43	24.64	109.08			
8987.50	82.54	51.00	19.77	-0.00	6.99	18.60	129.92			
8988.00	72.50	51.00	12.69	-0.00	6.73	21.94	147.76			
8988.50	59.10	51.00	2.67	-0.00	5.12	28.64	146.65			
8989.00	40.59	51.00	4.32	-0.00	6.08	29.61	180.05			
8989.50	43.10	51.00	28.96	-0.00	8.59	21.81	187.30			

000142

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
8990.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8990.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8991.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8991.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8992.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8992.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8993.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8993.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
8994.00		96.50	51.00	0.03	-0.00	1.40	32.12	44.98			
8994.50		80.96	51.00	22.01	-0.00	7.62	20.50	156.10			
8995.00		49.42	51.00	24.75	-0.00	12.43	21.54	267.77			
8995.50		36.89	51.00	46.85	-0.00	14.69	20.37	299.20			
8996.00		40.15	51.00	88.26	-0.00	16.49	17.39	286.76			
8996.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8997.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8997.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8998.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8998.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8999.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
8999.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9000.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9000.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9001.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9001.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9002.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9002.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9003.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9003.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9004.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9004.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9005.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9005.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9006.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9006.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9007.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9007.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9008.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9008.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9009.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9009.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9010.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9010.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9011.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9011.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9012.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9012.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9013.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9013.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9014.00	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		
9014.50	C	0 A L		C 0 A L		C 0 A L		C 0 A L	C 0 A L		

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9015.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9015.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9016.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9016.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9017.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9017.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9018.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9018.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9019.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9019.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9020.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9020.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9021.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9021.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9022.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9022.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9023.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9023.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9024.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9024.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9025.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9025.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9026.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9026.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9027.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9027.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9028.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9028.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9029.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9029.50		68.90	51.00	3.68	-0.00	5.95	30.53	181.74			
9030.00		86.95	51.00	0.01	-0.00	0.51	88.90	45.51			
9030.50		89.33	51.00	0.01	-0.00	0.33	90.93	29.88			
9031.00		86.21	51.00	0.01	-0.00	0.72	78.38	56.81			
9031.50		79.05	51.00	0.01	-0.00	1.53	60.75	93.09			
9032.00		76.17	51.00	0.02	-0.00	2.13	49.97	106.60			
9032.50		77.95	51.00	0.05	-0.00	2.33	43.59	101.73			
9033.00		77.42	51.00	0.11	-0.00	2.72	40.09	109.00			
9033.50		77.51	51.00	0.20	-0.00	3.09	38.22	118.04			
9034.00		79.32	51.00	0.28	-0.00	3.29	36.56	120.28			
9034.50		77.33	51.00	0.11	-0.00	3.87	41.89	120.02			
9035.00		74.08	51.00	0.37	-0.00	3.60	36.87	132.63			
9035.50		71.35	51.00	0.31	-0.00	3.49	37.63	131.32			
9036.00		69.77	51.00	0.18	-0.00	3.13	39.81	124.63			
9036.50		69.42	51.00	0.29	-0.00	3.32	36.57	121.30			
9037.00		73.85	51.00	0.47	-0.00	3.38	32.26	108.96			
9037.50		78.09	51.00	0.47	-0.00	3.17	30.06	95.25			
9038.00		78.40	51.00	0.51	-0.00	3.14	28.93	90.89			
9038.50		78.31	51.00	0.54	-0.00	3.12	28.03	87.45			
9039.00		74.87	51.00	0.57	-0.00	3.20	28.29	90.41			
9039.50		71.76	51.00	0.31	-0.00	2.97	32.04	95.05			

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Well name = BROLGA #1

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9040.00	70.25	51.00	0.02	-0.00	1.88	46.65	87.85			
9040.50	62.56	51.00	0.01	-0.00	1.22	77.05	94.11			
9041.00	43.28	51.00	0.01	-0.00	2.82	71.04	200.05			
9041.50	26.07	51.00	0.04	-0.00	4.50	68.56	308.28			
9042.00	20.29	51.00	0.04	-0.00	5.35	74.24	396.98			
9042.50	19.34	51.00	0.42	-0.00	7.62	61.79	470.80			
9043.00	23.82	51.00	0.89	-0.00	8.73	58.70	512.21			
9043.50	24.04	51.00	1.82	-0.00	9.91	55.61	551.01			
9044.00	21.17	51.00	5.55	-0.00	10.99	47.61	523.13	0.58	0.37	5.00
9044.50	21.14	51.00	7.24	-0.00	10.85	44.39	481.45	0.63	0.41	5.50
9045.00	21.96	51.00	6.06	-0.00	10.11	43.79	442.64	0.68	0.43	6.00
9045.50	24.76	51.00	4.38	-0.00	9.37	44.54	417.37			
9046.00	32.90	51.00	2.84	-0.00	8.41	45.24	380.30			
9046.50	41.17	51.00	2.16	-0.00	7.75	45.29	351.03			
9047.00	40.50	51.00	5.68	-0.00	9.61	42.69	410.08			
9047.50	25.89	51.00	10.07	-0.00	11.54	43.10	497.21	0.74	0.47	6.50
9048.00	18.97	51.00	13.34	-0.00	13.48	41.55	559.96	0.81	0.51	7.00
9048.50	17.22	51.00	15.51	-0.00	14.40	42.11	606.17	0.88	0.55	7.50
9049.00	20.50	51.00	11.86	-0.00	13.83	45.66	631.67	0.95	0.58	8.00
9049.50	16.54	51.00	10.37	-0.00	13.63	47.81	651.57	1.02	0.62	8.50
9050.00	14.34	51.00	9.28	-0.00	13.27	48.82	647.71	1.09	0.65	9.00
9050.50	10.54	51.00	7.74	-0.00	12.96	49.89	646.46	1.15	0.69	9.50
9051.00	9.73	51.00	7.04	-0.00	12.65	50.04	633.17			
9051.50	10.13	51.00	6.50	-0.00	12.43	50.27	625.05			
9052.00	10.89	51.00	8.50	-0.00	12.85	48.62	624.88	1.21	0.72	10.00
9052.50	11.58	51.00	9.65	-0.00	13.26	49.39	641.36	1.28	0.75	10.50
9053.00	12.26	51.00	9.99	-0.00	13.60	48.92	665.32	1.35	0.79	11.00
9053.50	13.03	51.00	10.14	-0.00	13.87	49.23	682.79	1.42	0.82	11.50
9054.00	15.88	51.00	5.83	-0.00	12.98	52.90	686.62			
9054.50	18.87	51.00	6.81	-0.00	13.15	51.72	680.00			
9055.00	20.88	51.00	9.47	-0.00	13.24	48.54	642.48	1.48	0.86	12.00
9055.50	18.74	51.00	10.90	-0.00	13.12	46.75	613.25	1.55	0.89	12.50
9056.00	17.82	51.00	11.01	-0.00	12.70	42.57	540.56	1.61	0.93	13.00
9056.50	24.76	51.00	10.74	-0.00	11.68	38.21	446.21	1.67	0.97	13.50
9057.00	29.06	51.00	16.48	-0.00	10.75	35.52	381.83	1.73	1.00	14.00
9057.50	34.94	51.00	14.17	-0.00	9.85	34.03	335.15			
9058.00	47.62	51.00	11.96	-0.00	8.80	31.88	280.56			
9058.50	53.38	51.00	5.18	-0.00	8.00	37.29	298.47			
9059.00	49.84	51.00	4.82	-0.00	8.56	40.37	345.47			
9059.50	38.49	51.00	5.32	-0.00	9.20	41.87	385.29			
9060.00	37.66	51.00	10.16	-0.00	9.68	36.91	357.46			
9060.50	40.76	51.00	10.38	-0.00	9.14	34.66	316.61			
9061.00	47.05	51.00	12.59	-0.00	8.73	31.06	271.06			
9061.50	51.90	51.00	12.02	-0.00	8.38	30.12	252.29			
9062.00	54.03	51.00	6.45	-0.00	7.47	32.62	243.75			
9062.50	47.32	51.00	4.60	-0.00	7.55	36.48	275.43			
9063.00	42.64	51.00	4.11	-0.00	7.83	38.94	305.02			
9063.50	40.50	51.00	3.87	-0.00	8.12	40.83	331.65			
9064.00	39.04	51.00	3.52	-0.00	8.29	42.51	352.31			
9064.50	39.29	51.00	2.37	-0.00	7.97	45.31	361.24			

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Well name = BROLGA #1

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9065.00	45.24	51.00	2.02	-0.00	7.46	44.68	333.49			
9065.50	50.71	51.00	1.76	-0.00	6.92	43.47	300.65			
9066.00	55.39	51.00	1.14	-0.00	6.64	46.53	309.05			
9066.50	58.32	51.00	0.39	-0.00	6.58	57.34	377.19			
9067.00	54.82	51.00	0.75	-0.00	8.01	57.42	460.09			
9067.50	43.28	51.00	1.92	-0.00	10.23	56.19	575.09			
9068.00	30.65	51.00	1.93	-0.00	11.42	59.97	684.93			
9068.50	29.06	51.00	2.22	-0.00	11.29	58.08	655.80			
9069.00	33.06	51.00	1.06	-0.00	9.88	61.21	604.90			
9069.50	35.95	51.00	0.60	-0.00	8.94	63.59	568.65			
9070.00	31.40	51.00	1.22	-0.00	9.81	59.42	583.12			
9070.50	27.03	51.00	1.16	-0.00	10.15	61.11	620.01			
9071.00	23.85	51.00	1.99	-0.00	11.12	58.72	653.00			
9071.50	23.79	51.00	2.95	-0.00	11.83	56.78	671.75			
9072.00	25.98	51.00	4.14	-0.00	11.99	53.72	644.21			
9072.50	29.95	51.00	3.11	-0.00	10.91	53.39	582.67			
9073.00	37.36	51.00	1.77	-0.00	9.42	54.16	509.93			
9073.50	44.77	51.00	1.01	-0.00	8.11	54.76	444.31			
9074.00	47.14	51.00	0.80	-0.00	7.46	54.37	405.72			
9074.50	46.54	51.00	1.18	-0.00	7.62	50.98	388.28			
9075.00	45.86	51.00	1.62	-0.00	8.37	50.97	426.68			
9075.50	44.10	51.00	1.07	-0.00	8.75	56.80	496.95			
9076.00	30.25	51.00	0.96	-0.00	9.95	62.42	620.81			
9076.50	18.78	51.00	0.92	-0.00	10.87	65.93	716.97			
9077.00	15.58	51.00	0.84	-0.00	10.99	67.35	740.25			
9077.50	15.52	51.00	1.22	-0.00	10.90	63.12	688.34			
9078.00	20.03	51.00	3.43	-0.00	10.86	52.23	567.39			
9078.50	27.53	51.00	8.57	-0.00	11.16	43.61	486.46	1.78	1.03	14.50
9079.00	37.69	51.00	7.29	-0.00	9.89	41.10	406.42			
9079.50	50.95	51.00	10.43	-0.00	10.43	31.64	329.98			
9080.00	66.15	51.00	14.20	-0.00	10.57	23.73	250.90			
9080.50	80.35	51.00	21.20	-0.00	7.86	21.97	172.69			
9081.00	87.37	51.00	4.11	-0.00	5.05	23.68	119.63			
9081.50	82.51	51.00	5.83	-0.00	5.46	22.73	124.04			
9082.00	66.50	51.00	2.99	-0.00	5.32	28.79	153.17			
9082.50	45.99	51.00	4.12	-0.00	6.55	32.66	213.80			
9083.00	39.58	51.00	4.32	-0.00	7.32	36.06	263.99			
9083.50	36.03	51.00	2.80	-0.00	7.28	40.42	294.44			
9084.00	40.00	51.00	1.34	-0.00	6.57	44.49	292.46			
9084.50	46.96	51.00	0.98	-0.00	6.09	45.07	274.52			
9085.00	50.90	51.00	1.80	-0.00	7.06	43.94	309.99			
9085.50	38.15	51.00	2.78	-0.00	8.80	47.09	414.47			
9086.00	28.85	51.00	3.10	-0.00	10.07	50.63	509.84			
9086.50	26.04	51.00	1.18	-0.00	9.66	59.27	572.59			
9087.00	26.89	51.00	0.77	-0.00	8.96	61.12	547.47			
9087.50	28.46	51.00	0.63	-0.00	8.59	61.79	531.09			
9088.00	27.34	51.00	0.98	-0.00	9.22	59.60	549.66			
9088.50	21.72	51.00	1.12	-0.00	9.97	60.92	607.70			
9089.00	17.84	51.00	1.35	-0.00	10.74	61.59	661.72			
9089.50	15.57	51.00	1.44	-0.00	11.34	62.78	711.58			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9090.00	12.68	51.00	1.60	-0.00	12.04	63.74	767.69			
9090.50	10.09	51.00	2.12	-0.00	12.92	63.30	818.10			
9091.00	8.33	51.00	2.83	-0.00	13.53	61.86	836.96			
9091.50	7.51	51.00	2.08	-0.00	13.22	64.26	849.33			
9092.00	8.97	51.00	0.84	-0.00	11.93	70.17	837.12			
9092.50	11.87	51.00	0.64	-0.00	11.31	71.20	805.43			
9093.00	12.75	51.00	0.53	-0.00	10.85	71.60	776.70			
9093.50	13.28	51.00	0.76	-0.00	11.24	69.18	777.67			
9094.00	13.59	51.00	1.81	-0.00	12.59	64.04	805.94			
9094.50	11.26	51.00	2.35	-0.00	13.41	63.48	851.13			
9095.00	8.51	51.00	2.55	-0.00	14.01	64.19	899.06			
9095.50	6.99	51.00	2.57	-0.00	14.30	64.80	926.40			
9096.00	10.08	51.00	1.04	-0.00	12.94	70.81	916.64			
9096.50	13.96	51.00	1.17	-0.00	12.72	68.92	876.70			
9097.00	18.58	51.00	1.23	-0.00	12.31	67.30	828.38			
9097.50	24.07	51.00	0.54	-0.00	10.70	71.04	759.96			
9098.00	31.58	51.00	0.32	-0.00	9.33	71.63	668.65			
9098.50	41.13	51.00	0.16	-0.00	7.74	72.05	557.54			
9099.00	49.73	51.00	0.07	-0.00	6.10	72.49	441.94			
9099.50	48.65	51.00	4.83	-0.00	5.74	26.46	151.97			
9100.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9100.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9101.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9101.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9102.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9102.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9103.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9103.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9104.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9104.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9105.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9105.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9106.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9106.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9107.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9107.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9108.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9108.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9109.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9109.50	76.78	51.00	19.26	-0.00	9.29	3.19	29.66			
9110.00	84.50	51.00	56.56	-0.00	6.20	3.49	21.64			
9110.50	83.80	51.00	66.08	-0.00	6.48	3.40	22.05			
9111.00	77.47	51.00	12.38	-0.00	8.55	10.54	90.14			
9111.50	49.26	51.00	31.30	-0.00	8.99	22.59	203.02			
9112.00	41.60	51.00	9.42	-0.00	8.34	32.49	270.93			
9112.50	39.72	51.00	4.39	-0.00	8.02	39.08	313.36			
9113.00	39.56	51.00	5.46	-0.00	8.66	39.48	341.81			
9113.50	54.63	51.00	11.03	-0.00	9.82	25.72	252.63			
9114.00	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			
9114.50	C 0 0 A L		C 0 0 A L		C 0 0 A L		C 0 0 A L			

000147

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9115.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9115.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9116.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9116.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9117.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9117.50	C 76.94	51.00	17.53	-0.00	9.22	5.60	51.68	C O A L		
9118.00	C 90.11	51.00	7.03	-0.00	3.96	9.57	37.84	C O A L		
9118.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9119.00	C 94.36	51.00	0.71	-0.00	2.26	13.86	31.26	C O A L		
9119.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9120.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9120.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9121.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9121.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9122.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9122.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9123.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9123.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9124.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9124.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9125.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9125.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9126.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9126.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9127.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9127.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9128.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9128.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9129.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9129.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9130.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9130.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9131.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9131.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9132.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9132.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9133.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9133.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9134.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9134.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9135.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9135.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9136.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9136.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9137.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9137.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9138.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9138.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9139.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9139.50	C O A L		C O A L		C O A L		C O A L	C O A L		

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9140.00	C	0	A	L							
9140.50	C	0	A	L							
9141.00	C	0	A	L							
9141.50	C	0	A	L							
9142.00	C	0	A	L							
9142.50	C	0	A	L							
9143.00	C	0	A	L							
9143.50	C	0	A	L							
9144.00	C	0	A	L							
9144.50	C	0	A	L							
9145.00	C	0	A	L							
9145.50	C	0	A	L							
9146.00	C	0	A	L							
9146.50	C	0	A	L							
9147.00	C	0	A	L							
9147.50	C	0	A	L							
9148.00	C	0	A	L							
9148.50	C	0	A	L							
9149.00	C	0	A	L							
9149.50	C	0	A	L							
9150.00	C	0	A	L							
9150.50	C	0	A	L							
9151.00	C	0	A	L							
9151.50	C	0	A	L							
9152.00	C	0	A	L							
9152.50	C	0	A	L							
9153.00	C	0	A	L							
9153.50	C	0	A	L							
9154.00	C	0	A	L							
9154.50	C	0	A	L							
9155.00	C	0	A	L							
9155.50	C	0	A	L							
9156.00	C	0	A	L							
9156.50	C	0	A	L							
9157.00	C	0	A	L							
9157.50	C	0	A	L							
9158.00	C	0	A	L							
9158.50	C	0	A	L							
9159.00	C	0	A	L							
9159.50	C	0	A	L							
9160.00	C	0	A	L							
9160.50	C	0	A	L							
9161.00	C	0	A	L							
9161.50	C	0	A	L							
9162.00	C	0	A	L							
9162.50	C	0	A	L							
9163.00	C	0	A	L							
9163.50	C	0	A	L							
9164.00	C	0	A	L							
9164.50	C	0	A	L							

000149

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9165.00	C	O	A	L	C	O	A	L	C	O	A
9165.50	C	O	A	L	C	O	A	L	C	O	A
9166.00	C	O	A	L	C	O	A	L	C	O	A
9166.50	C	O	A	L	C	O	A	L	C	O	A
9167.00	C	O	A	L	C	O	A	L	C	O	A
9167.50	C	O	A	L	C	O	A	L	C	O	A
9168.00	C	O	A	L	C	O	A	L	C	O	A
9168.50	C	O	A	L	C	O	A	L	C	O	A
9169.00	C	O	A	L	C	O	A	L	C	O	A
9169.50	C	O	A	L	C	O	A	L	C	O	A
9170.00	C	O	A	L	C	O	A	L	C	O	A
9170.50	C	O	A	L	C	O	A	L	C	O	A
9171.00	C	O	A	L	C	O	A	L	C	O	A
9171.50	C	O	A	L	C	O	A	L	C	O	A
9172.00	C	O	A	L	C	O	A	L	C	O	A
9172.50	C	O	A	L	C	O	A	L	C	O	A
9173.00	C	O	A	L	C	O	A	L	C	O	A
9173.50	C	O	A	L	C	O	A	L	C	O	A
9174.00	C	O	A	L	C	O	A	L	C	O	A
9174.50	C	O	A	L	C	O	A	L	C	O	A
9175.00	C	O	A	L	C	O	A	L	C	O	A
9175.50	C	O	A	L	C	O	A	L	C	O	A
9176.00	C	O	A	L	C	O	A	L	C	O	A
9176.50	C	O	A	L	C	O	A	L	C	O	A
9177.00	C	O	A	L	C	O	A	L	C	O	A
9177.50	C	O	A	L	C	O	A	L	C	O	A
9178.00	C	O	A	L	C	O	A	L	C	O	A
9178.50	C	O	A	L	C	O	A	L	C	O	A
9179.00	C	O	A	L	C	O	A	L	C	O	A
9179.50	C	O	A	L	C	O	A	L	C	O	A
9180.00	C	O	A	L	C	O	A	L	C	O	A
9180.50	C	O	A	L	C	O	A	L	C	O	A
9181.00	C	O	A	L	C	O	A	L	C	O	A
9181.50	C	O	A	L	C	O	A	L	C	O	A
9182.00	C	O	A	L	C	O	A	L	C	O	A
9182.50	C	O	A	L	C	O	A	L	C	O	A
9183.00	C	O	A	L	C	O	A	L	C	O	A
9183.50	C	O	A	L	C	O	A	L	C	O	A
9184.00	C	O	A	L	C	O	A	L	C	O	A
9184.50	C	O	A	L	C	O	A	L	C	O	A
9185.00	C	O	A	L	C	O	A	L	C	O	A
9185.50	C	O	A	L	C	O	A	L	C	O	A
9186.00	C	O	A	L	C	O	A	L	C	O	A
9186.50	C	O	A	L	C	O	A	L	C	O	A
9187.00	C	O	A	L	C	O	A	L	C	O	A
9187.50	C	O	A	L	C	O	A	L	C	O	A
9188.00	C	O	A	L	C	O	A	L	C	O	A
9188.50	C	O	A	L	C	O	A	L	C	O	A
9189.00	C	O	A	L	C	O	A	L	C	O	A
9189.50	C	O	A	L	C	O	A	L	C	O	A

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9190.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9190.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9191.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9191.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9192.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9192.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9193.00	99.94	51.00	0.01	-0.00	0.03	16.14	0.42			
9193.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9194.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9194.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9195.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9195.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9196.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9196.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9197.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9197.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9198.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9198.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9199.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9199.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9200.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9200.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9201.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9201.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9202.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9202.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9203.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9203.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9204.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9204.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9205.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9205.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9206.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9206.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9207.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9207.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9208.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9208.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9209.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9209.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9210.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9210.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9211.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9211.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9212.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9212.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9213.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9213.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9214.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9214.50	C O A L		C O A L		C O A L		C O A L	C O A L		

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9215.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9215.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9216.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9216.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9217.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9217.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9218.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9218.50	93.78	51.00	0.75	-0.00	2.49	16.73	41.60			
9219.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9219.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9220.00	98.33	51.00	0.01	-0.00	0.67	47.29	31.68			
9220.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9221.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9221.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9222.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9222.50	99.97	51.00	0.01	-0.00	0.01	100.00	1.35			
9223.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9223.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9224.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9224.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9225.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9225.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9226.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9226.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9227.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9227.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9228.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9228.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9229.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9229.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9230.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9230.50	91.92	51.00	0.37	-0.00	3.23	33.17	107.18			
9231.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9231.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9232.00	86.88	51.00	3.05	-0.00	5.25	28.12	147.62			
9232.50	76.73	51.00	10.49	-0.00	9.31	23.26	216.55			
9233.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9233.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9234.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9234.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9235.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9235.50	97.92	51.00	0.04	-0.00	0.83	8.66	7.21			
9236.00	93.57	51.00	1.31	-0.00	2.57	12.07	31.05			
9236.50	61.57	51.00	23.72	-0.00	10.78	10.72	115.53			
9237.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9237.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9238.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9238.50	C O A L		C O A L		C O A L		C O A L	C O A L		
9239.00	C O A L		C O A L		C O A L		C O A L	C O A L		
9239.50	C O A L		C O A L		C O A L		C O A L	C O A L		

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V	Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9240.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9240.50		A L L		C	A L L		A L L		A L L		
9241.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9241.50		A L L		C	0 A L		A L L		A L L		
9242.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9242.50		A L L		C	0 A L		A L L		A L L		
9243.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9243.50		A L L		C	0 A L		A L L		A L L		
9244.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9244.50		A L L		C	0 A L		A L L		A L L		
9245.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9245.50		A L L		C	0 A L		A L L		A L L		
9246.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9246.50		A L L		C	0 A L		A L L		A L L		
9247.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9247.50		A L L		C	0 A L		A L L		A L L		
9248.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9248.50		A L L		C	0 A L		A L L		A L L		
9249.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9249.50		A L L		C	0 A L		A L L		A L L		
9250.00	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9250.50		A L L		C	0 A L		A L L		A L L		
9251.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9251.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9252.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9252.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9253.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9253.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9254.00		97.99	51.00	0.01	-0.00	0.80	41.73	33.56			
9254.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9255.00		A L L		C	0 A L		A L L		A L L		
9255.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9256.00		A L L		C	0 A L		A L L		A L L		
9256.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9257.00		A L L		C	0 A L		A L L		A L L		
9257.50	C	0 A L		C	0 A L	C	0 A L	C	0 A L		
9258.00		56.11	51.00	13.67	-0.00	8.49	29.24	248.35			
9258.50		66.97	51.00	2.90	-0.00	6.20	34.43	213.44			
9259.00		83.63	51.00	0.99	-0.00	4.12	31.41	129.50			
9259.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9260.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9260.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9261.00		99.79	51.00	0.01	-0.00	0.08	75.70	6.24			
9261.50		84.10	51.00	0.04	-0.00	2.34	44.01	102.93			
9262.00		78.34	51.00	0.01	-0.00	2.13	53.04	112.86			
9262.50		83.27	51.00	0.01	-0.00	1.41	60.05	84.40			
9263.00		91.22	51.00	0.01	-0.00	0.59	72.13	42.68			
9263.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9264.00		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9264.50		100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9265.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9265.50	96.94	51.00	0.01	-0.00	0.22	42.69	52.21			
9266.00	90.97	51.00	0.84	-0.00	3.61	28.58	103.25			
9266.50	75.93	51.00	24.24	-0.00	8.36	22.73	189.98			
9267.00	53.70	51.00	11.30	-0.00	10.18	27.56	280.42			
9267.50	36.14	51.00	12.48	-0.00	10.96	30.00	328.90			
9268.00	28.92	51.00	11.73	-0.00	10.89	31.25	340.18	1.84	1.07	15.00
9268.50	30.16	51.00	10.82	-0.00	10.65	32.03	341.17			
9269.00	27.93	51.00	12.33	-0.00	11.16	31.59	352.66	1.89	1.11	15.50
9269.50	23.29	51.00	14.49	-0.00	11.85	31.41	372.14	1.95	1.15	16.00
9270.00	21.62	51.00	16.81	-0.00	12.43	30.97	384.85	2.01	1.19	16.50
9270.50	20.16	51.00	20.86	-0.00	12.99	28.88	375.04	2.08	1.24	17.00
9271.00	18.79	51.00	25.07	-0.00	13.35	26.63	355.49	2.14	1.29	17.50
9271.50	17.45	51.00	25.71	-0.00	13.25	25.48	337.54	2.21	1.34	18.00
9272.00	16.10	51.00	24.91	-0.00	12.98	24.69	320.42	2.28	1.38	18.50
9272.50	16.32	51.00	23.25	-0.00	12.64	24.32	307.31	2.34	1.43	19.00
9273.00	19.03	51.00	20.56	-0.00	12.11	24.12	292.14	2.40	1.48	19.50
9273.50	22.65	51.00	17.91	-0.00	11.53	23.90	275.44	2.46	1.52	20.00
9274.00	22.46	51.00	22.26	-0.00	12.18	22.55	274.67	2.52	1.57	20.50
9274.50	21.44	51.00	26.35	-0.00	12.82	22.43	287.63	2.58	1.62	21.00
9275.00	21.72	51.00	29.45	-0.00	13.30	22.68	301.58	2.65	1.67	21.50
9275.50	19.96	51.00	31.88	-0.00	13.80	23.76	327.94	2.72	1.72	22.00
9276.00	17.24	51.00	32.29	-0.00	14.02	24.63	345.12	2.79	1.78	22.50
9276.50	14.68	51.00	30.86	-0.00	14.02	25.66	359.87	2.86	1.83	23.00
9277.00	12.69	51.00	29.95	-0.00	13.97	26.02	363.51	2.93	1.88	23.50
9277.50	13.50	51.00	29.48	-0.00	13.68	24.83	339.84	3.00	1.93	24.00
9278.00	15.23	51.00	27.38	-0.00	13.27	24.16	320.54	3.06	1.98	24.50
9278.50	15.88	51.00	26.80	-0.00	13.08	23.55	307.92	3.13	2.03	25.00
9279.00	14.16	51.00	25.20	-0.00	13.03	24.71	322.01	3.19	2.08	25.50
9279.50	14.90	51.00	22.58	-0.00	12.79	25.94	331.85	3.26	2.13	26.00
9280.00	16.13	51.00	21.43	-0.00	12.73	26.79	340.92	3.32	2.17	26.50
9280.50	17.61	51.00	28.52	-0.00	13.66	25.42	347.14	3.39	2.23	27.00
9281.00	19.49	51.00	21.69	-0.00	12.84	27.13	348.27	3.45	2.27	27.50
9281.50	22.22	51.00	17.64	-0.00	12.19	28.40	346.04	3.51	2.32	28.00
9282.00	25.19	51.00	15.42	-0.00	11.73	29.09	341.18	3.57	2.36	28.50
9282.50	28.16	51.00	15.16	-0.00	11.62	28.89	335.80	3.63	2.40	29.00
9283.00	30.79	51.00	15.06	-0.00	11.55	28.60	330.34			
9283.50	27.37	51.00	18.65	-0.00	11.97	25.72	307.93	3.69	2.44	29.50
9284.00	24.06	51.00	19.46	-0.00	11.87	23.99	284.77	3.75	2.49	30.00
9284.50	23.91	51.00	16.86	-0.00	11.22	23.47	263.33	3.81	2.53	30.50
9285.00	27.27	51.00	14.60	-0.00	10.52	22.52	236.95	3.86	2.57	31.00
9285.50	30.98	51.00	12.06	-0.00	9.80	22.77	223.22			
9286.00	35.82	51.00	29.82	-0.00	9.10	23.53	214.09			
9286.50	39.29	51.00	23.72	-0.00	9.02	25.59	230.79			
9287.00	37.51	51.00	19.70	-0.00	9.20	28.21	259.44			
9287.50	31.44	51.00	17.75	-0.00	9.59	30.77	295.11			
9288.00	22.51	51.00	18.73	-0.00	10.06	31.88	320.78	3.91	2.61	31.50
9288.50	19.72	51.00	10.17	-0.00	10.14	30.43	308.43	3.96	2.64	32.00
9289.00	20.65	51.00	11.03	-0.00	10.02	27.13	271.77	4.01	2.68	32.50
9289.50	21.57	51.00	10.73	-0.00	9.85	26.74	263.35			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9290.00	23.49	51.00	12.05	-0.00	10.12	25.25	255.68	4.06	2.72	33.00
9290.50	22.50	51.00	16.37	-0.00	11.28	24.63	277.75	4.12	2.76	33.50
9291.00	16.90	51.00	24.01	-0.00	12.84	24.73	317.49	4.18	2.81	34.00
9291.50	13.80	51.00	49.39	-0.00	15.16	21.81	330.75	4.26	2.87	34.50
9292.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9292.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9293.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9293.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9294.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9294.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9295.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9295.50	85.93	51.00	4.81	-0.00	5.63	25.81	145.31			
9296.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9296.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9297.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9297.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9298.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9298.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9299.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9299.50	89.83	51.00	2.72	-0.00	4.07	20.39	82.93			
9300.00	99.62	51.00	0.01	-0.00	0.15	66.04	10.04			
9300.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9301.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9301.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9302.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9302.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9303.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9303.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9304.00	85.25	51.00	7.39	-0.00	5.90	22.98	135.57			
9304.50	90.81	51.00	0.89	-0.00	3.67	28.57	105.01			
9305.00	89.89	51.00	0.13	-0.00	2.75	38.31	105.28			
9305.50	88.39	51.00	0.01	-0.00	1.62	60.48	97.75			
9306.00	87.98	51.00	0.01	-0.00	1.37	66.67	91.18			
9306.50	89.51	51.00	0.01	-0.00	1.92	48.53	93.19			
9307.00	92.08	51.00	0.57	-0.00	3.17	28.08	88.94			
9307.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9308.00	85.76	51.00	6.65	-0.00	5.70	22.86	130.25			
9308.50	76.87	51.00	0.01	-0.00	2.16	70.16	151.36			
9309.00	67.49	51.00	0.02	-0.00	3.29	66.82	219.58			
9309.50	59.88	51.00	0.07	-0.00	4.67	63.07	294.68			
9310.00	52.17	51.00	0.19	-0.00	6.05	62.15	376.30			
9310.50	41.44	51.00	0.63	-0.00	7.90	58.72	464.00			
9311.00	36.60	51.00	5.65	-0.00	10.81	46.87	506.85			
9311.50	40.13	51.00	17.01	-0.00	13.52	36.30	490.92			
9312.00	36.35	51.00	19.06	-0.00	13.87	35.40	491.14			
9312.50	38.98	51.00	16.55	-0.00	13.09	34.81	455.48			
9313.00	45.06	51.00	13.43	-0.00	11.56	31.66	365.83			
9313.50	55.81	51.00	21.83	-0.00	9.61	28.69	275.81			
9314.00	73.28	51.00	8.42	-0.00	6.78	26.44	179.21			
9314.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9315.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9315.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9316.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9316.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9317.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9317.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9318.00	91.92	51.00	0.53	-0.00	3.23	29.46	95.15			
9318.50	75.27	51.00	17.36	-0.00	7.50	22.44	168.41			
9319.00	58.53	51.00	5.86	-0.00	6.82	30.44	207.68			
9319.50	58.25	51.00	6.73	-0.00	6.86	29.20	200.37			
9320.00	67.09	51.00	8.32	-0.00	6.64	25.85	171.59			
9320.50	78.43	51.00	1.95	-0.00	4.64	28.45	131.92			
9321.00	87.59	51.00	0.35	-0.00	3.12	32.58	101.59			
9321.50	89.17	51.00	0.10	-0.00	2.54	38.81	98.73			
9322.00	84.47	51.00	0.04	-0.00	2.47	45.97	113.62			
9322.50	81.87	51.00	0.12	-0.00	2.91	41.10	119.70			
9323.00	84.23	51.00	0.11	-0.00	2.66	38.72	103.12			
9323.50	92.88	51.00	0.57	-0.00	2.85	24.34	69.27			
9324.00	99.15	51.00	0.01	-0.00	0.34	45.29	15.48			
9324.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9325.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9325.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9326.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9326.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9327.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9327.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9328.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9328.50	88.39	51.00	2.40	-0.00	4.64	26.34	122.28			
9329.00	66.53	51.00	24.39	-0.00	11.86	18.11	214.69			
9329.50	61.64	51.00	15.10	-0.00	10.51	21.47	225.55			
9330.00	60.45	51.00	14.10	-0.00	8.13	27.41	222.81			
9330.50	60.58	51.00	3.50	-0.00	6.32	33.16	209.70			
9331.00	62.66	51.00	1.38	-0.00	5.27	36.49	192.39			
9331.50	72.03	51.00	0.21	-0.00	3.55	42.47	150.60			
9332.00	86.18	51.00	0.05	-0.00	2.36	42.95	101.35			
9332.50	90.86	51.00	0.03	-0.00	1.97	43.91	86.71			
9333.00	88.03	51.00	0.07	-0.00	2.53	42.68	108.16			
9333.50	92.36	51.00	0.13	-0.00	2.61	36.21	94.36			
9334.00	99.11	51.00	0.01	-0.00	0.36	72.43	25.79			
9334.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9335.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9335.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9336.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9336.50	98.10	51.00	0.01	-0.00	0.76	70.18	53.39			
9337.00	78.41	51.00	0.03	-0.00	3.17	59.05	187.46			
9337.50	67.19	51.00	0.04	-0.00	3.73	61.59	229.74			
9338.00	65.64	51.00	0.03	-0.00	3.59	63.70	228.90			
9338.50	67.82	51.00	0.02	-0.00	3.30	65.02	214.35			
9339.00	74.02	51.00	0.02	-0.00	3.01	62.20	187.27			
9339.50	74.74	51.00	0.28	-0.00	4.21	45.41	191.33			

000156

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9340.00	66.01	51.00	0.06	-0.00	3.73	57.28	213.60			
9340.50	63.47	51.00	0.25	-0.00	4.43	48.15	213.29			
9341.00	63.95	51.00	16.29	-0.00	10.62	20.15	214.13			
9341.50	C D A L		C D A L		C D A L		C D A L			
9342.00	59.24	51.00	1.91	-0.00	6.03	37.84	228.23			
9342.50	51.43	51.00	5.71	-0.00	7.75	35.16	272.45			
9343.00	41.19	51.00	14.24	-0.00	9.61	33.11	318.13			
9343.50	34.30	51.00	19.70	-0.00	12.41	26.97	334.71			
9344.00	32.63	51.00	36.07	-0.00	14.24	23.46	334.15			
9344.50	31.41	51.00	37.11	-0.00	14.30	23.15	330.94			
9345.00	27.20	51.00	26.41	-0.00	13.30	25.17	334.75	4.32	2.92	35.00
9345.50	28.55	51.00	16.42	-0.00	11.68	27.13	316.73	4.38	2.96	35.50
9346.00	33.86	51.00	14.19	-0.00	9.15	31.44	287.63			
9346.50	34.73	51.00	4.84	-0.00	7.86	37.35	293.39			
9347.00	30.75	51.00	6.50	-0.00	8.63	37.57	324.35			
9347.50	24.06	51.00	11.08	-0.00	10.87	32.73	355.78	4.44	2.99	36.00
9348.00	20.94	51.00	15.19	-0.00	12.03	31.27	376.36	4.50	3.04	36.50
9348.50	21.59	51.00	27.85	-0.00	13.98	27.64	386.34	4.57	3.09	37.00
9349.00	24.17	51.00	20.39	-0.00	12.78	28.27	361.15	4.63	3.13	37.50
9349.50	26.94	51.00	12.55	-0.00	9.66	34.63	334.45			
9350.00	31.39	51.00	11.10	-0.00	9.53	23.24	221.59			
9350.50	42.87	51.00	24.09	-0.00	8.06	21.50	173.21			
9351.00	52.40	51.00	6.02	-0.00	5.77	24.31	140.18			
9351.50	80.86	51.00	0.60	-0.00	3.08	26.46	81.55			
9352.00	89.97	51.00	0.10	-0.00	2.12	32.20	68.18			
9352.50	81.74	51.00	1.69	-0.00	4.26	27.02	115.07			
9353.00	72.98	51.00	3.46	-0.00	5.52	28.56	157.65			
9353.50	63.12	51.00	4.80	-0.00	6.50	30.84	200.52			
9354.00	52.43	51.00	4.28	-0.00	7.06	34.92	246.60			
9354.50	43.15	51.00	4.94	-0.00	7.70	36.44	280.52			
9355.00	35.77	51.00	6.91	-0.00	8.46	36.21	306.33			
9355.50	36.62	51.00	9.88	-0.00	8.64	33.23	287.04			
9356.00	39.06	51.00	18.35	-0.00	9.19	28.92	265.70			
9356.50	40.83	51.00	17.20	-0.00	8.78	27.99	245.67			
9357.00	37.00	51.00	12.63	-0.00	8.24	29.01	238.97			
9357.50	43.77	51.00	6.87	-0.00	6.81	28.70	195.32			
9358.00	60.24	51.00	2.74	-0.00	4.93	27.03	133.24			
9358.50	79.74	51.00	0.54	-0.00	2.95	26.14	77.04			
9359.00	87.19	51.00	3.68	-0.00	3.91	15.89	62.11			
9359.50	82.90	51.00	36.00	-0.00	6.71	10.93	73.31			
9360.00	73.74	51.00	15.42	-0.00	9.20	9.61	88.46			
9360.50	64.39	51.00	28.17	-0.00	11.15	9.01	100.48			
9361.00	62.32	51.00	25.41	-0.00	10.92	9.98	108.98			
9361.50	61.26	51.00	14.33	-0.00	9.39	13.79	129.46			
9362.00	57.04	51.00	7.93	-0.00	6.17	23.81	147.01			
9362.50	54.41	51.00	0.92	-0.00	4.61	36.04	166.17			
9363.00	52.75	51.00	0.60	-0.00	4.72	41.25	194.53			
9363.50	51.44	51.00	1.02	-0.00	5.32	40.00	212.77			
9364.00	47.42	51.00	2.53	-0.00	6.24	36.09	225.30			
9364.50	41.22	51.00	5.24	-0.00	7.23	33.60	242.77			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9365.00	40.36	51.00	7.27	-0.00	7.60	31.97	243.09			
9365.50	43.89	51.00	7.74	-0.00	7.50	30.85	231.35			
9366.00	49.33	51.00	7.48	-0.00	7.15	29.54	211.16			
9366.50	57.07	51.00	6.88	-0.00	6.64	27.81	184.64			
9367.00	58.81	51.00	5.47	-0.00	6.20	27.83	172.58			
9367.50	60.06	51.00	2.27	-0.00	5.32	31.67	168.41			
9368.00	65.11	51.00	0.52	-0.00	4.40	40.38	177.49			
9368.50	70.54	51.00	0.10	-0.00	3.66	51.61	189.15			
9369.00	67.99	51.00	0.23	-0.00	4.43	49.29	218.56			
9369.50	55.27	51.00	0.77	-0.00	5.96	46.91	279.58			
9370.00	44.04	51.00	0.64	-0.00	6.24	50.32	313.85			
9370.50	42.30	51.00	0.47	-0.00	6.03	52.44	316.37			
9371.00	42.94	51.00	0.44	-0.00	6.00	52.82	316.84			
9371.50	39.78	51.00	2.06	-0.00	7.90	46.42	366.57			
9372.00	36.38	51.00	8.58	-0.00	10.74	42.28	454.10			
9372.50	31.22	51.00	2.05	-0.00	9.65	53.46	516.07			
9373.00	22.51	51.00	10.98	-0.00	12.95	46.24	598.96	4.69	3.17	38.00
9373.50	17.90	51.00	3.15	-0.00	11.13	53.95	600.55			
9374.00	18.84	51.00	1.74	-0.00	9.79	55.67	544.81			
9374.50	22.01	51.00	1.72	-0.00	9.12	53.34	486.40			
9375.00	26.26	51.00	5.57	-0.00	9.86	43.78	431.57			
9375.50	36.34	51.00	18.70	-0.00	12.29	27.57	338.80			
9376.00	C O A L		C O A L		C O A L		C O A L			
9376.50	C O A L		C O A L		C O A L		C O A L			
9377.00	C O A L		C O A L		C O A L		C O A L			
9377.50	82.77	51.00	28.99	-0.00	6.89	14.14	97.46			
9378.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9378.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9379.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9379.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9380.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9380.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9381.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9381.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9382.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9382.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9383.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9383.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9384.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9384.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9385.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9385.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9386.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9386.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9387.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9387.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9388.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9388.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9389.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9389.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000158

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9390.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9390.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9391.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9391.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9392.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9392.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9393.00	85.58	51.00	0.64	-0.00	3.36	28.91	97.10			
9393.50	84.17	51.00	14.55	-0.00	6.33	18.36	116.23			
9394.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9394.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9395.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9395.50	98.12	51.00	0.01	-0.00	0.75	30.00	22.59			
9396.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9396.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9397.00	99.14	51.00	0.01	-0.00	0.34	59.22	20.28			
9397.50	88.88	51.00	0.01	-0.00	1.28	62.29	79.54			
9398.00	84.25	51.00	0.01	-0.00	1.81	56.31	101.94			
9398.50	80.77	51.00	0.01	-0.00	1.97	57.70	113.42			
9399.00	78.29	51.00	0.01	-0.00	2.26	56.79	128.34			
9399.50	79.78	51.00	0.02	-0.00	2.35	55.16	129.59			
9400.00	86.63	51.00	0.01	-0.00	2.01	53.80	107.91			
9400.50	94.91	51.00	0.01	-0.00	1.49	49.83	74.21			
9401.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9401.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9402.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9402.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9403.00	89.02	51.00	0.10	-0.00	2.67	40.25	107.49			
9403.50	77.54	51.00	0.21	-0.00	3.58	42.62	152.41			
9404.00	76.09	51.00	0.13	-0.00	3.27	44.83	146.37			
9404.50	83.04	51.00	0.29	-0.00	3.28	36.11	118.45			
9405.00	90.05	51.00	0.86	-0.00	3.40	26.19	89.09			
9405.50	97.80	51.00	0.01	-0.00	0.88	37.01	32.54			
9406.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9406.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9407.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9407.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9408.00	95.53	51.00	0.16	-0.00	1.79	21.37	38.20			
9408.50	90.36	51.00	0.08	-0.00	2.00	32.12	64.37			
9409.00	86.60	51.00	0.35	-0.00	2.81	28.96	81.27			
9409.50	79.26	51.00	7.58	-0.00	5.44	19.85	107.89			
9410.00	77.94	51.00	11.50	-0.00	8.53	12.91	110.06			
9410.50	88.65	51.00	6.27	-0.00	4.54	15.54	70.53			
9411.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9411.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9412.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9412.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9413.00	92.62	51.00	0.01	-0.00	1.09	56.81	61.80			
9413.50	83.41	51.00	0.01	-0.00	1.52	66.72	101.50			
9414.00	77.16	51.00	0.01	-0.00	1.73	73.32	126.80			
9414.50	74.11	51.00	0.01	-0.00	2.27	64.22	145.70			

000159

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9415.00	70.50	51.00	0.09	-0.00	3.20	48.18	154.26			
9415.50	78.08	51.00	2.83	-0.00	4.90	26.48	129.67			
9416.00	88.66	51.00	4.55	-0.00	4.54	18.86	85.55			
9416.50	96.63	51.00	0.02	-0.00	1.35	34.77	46.89			
9417.00	94.29	51.00	0.11	-0.00	2.28	33.33	76.16			
9417.50	72.36	51.00	0.41	-0.00	4.42	43.19	191.06			
9418.00	65.62	51.00	0.18	-0.00	4.37	51.17	223.81			
9418.50	62.32	51.00	0.15	-0.00	4.20	52.07	218.70			
9419.00	65.49	51.00	0.09	-0.00	3.63	51.74	187.82			
9419.50	79.82	51.00	0.02	-0.00	2.37	52.34	123.79			
9420.00	89.23	51.00	0.01	-0.00	1.48	53.02	78.66			
9420.50	96.25	51.00	0.01	-0.00	1.38	37.34	51.63			
9421.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9421.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9422.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9422.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9423.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9423.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9424.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9424.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9425.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9425.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9426.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9426.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9427.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9427.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9428.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9428.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9429.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9429.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9430.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9430.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9431.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9431.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9432.00	97.91	51.00	0.01	-0.00	0.73	46.92	34.12			
9432.50	83.81	51.00	0.02	-0.00	1.92	46.71	89.52			
9433.00	68.61	51.00	0.98	-0.00	4.18	32.00	133.61			
9433.50	33.40	51.00	81.65	-0.00	15.76	15.10	237.97			
9434.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9434.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9435.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9435.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9436.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9436.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9437.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9437.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9438.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9438.50	81.99	51.00	3.28	-0.00	3.97	17.64	70.07			
9439.00	82.98	51.00	0.14	-0.00	2.37	32.65	77.32			
9439.50	82.82	51.00	0.10	-0.00	2.48	37.85	93.77			

000160

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9440.00	84.18	51.00	1.72	-0.00	4.13	25.74	106.42			
9440.50	92.67	51.00	0.67	-0.00	2.93	23.57	69.10			
9441.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9441.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9442.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9442.50	89.13	51.00	2.28	-0.00	4.35	24.61	107.03			
9443.00	78.06	51.00	10.11	-0.00	8.77	19.85	174.17			
9443.50	64.51	51.00	16.52	-0.00	10.88	21.64	235.47			
9444.00	50.91	51.00	11.44	-0.00	10.33	28.25	291.72			
9444.50	52.14	51.00	14.35	-0.00	8.73	29.71	259.41			
9445.00	64.46	51.00	3.02	-0.00	5.96	32.67	194.74			
9445.50	82.31	51.00	0.78	-0.00	3.80	31.09	118.16			
9446.00	95.66	51.00	0.06	-0.00	1.74	29.80	51.74			
9446.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9447.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9447.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9448.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9448.50	99.70	51.00	0.01	-0.00	0.12	48.83	5.81			
9449.00	89.33	51.00	0.12	-0.00	2.19	31.31	68.52			
9449.50	95.10	51.00	0.05	-0.00	1.62	30.22	48.95			
9450.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9450.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9451.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9451.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9452.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9452.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9453.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9453.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9454.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9454.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9455.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9455.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9456.00	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9456.50	C 0 A L		C 0 A L		C 0 A L		C 0 A L			
9457.00	97.03	51.00	0.11	-0.00	1.19	10.58	12.59			
9457.50	96.21	51.00	0.20	-0.00	1.52	13.46	20.42			
9458.00	97.67	51.00	0.01	-0.00	0.93	29.11	27.16			
9458.50	82.69	51.00	0.01	-0.00	1.65	47.83	78.71			
9459.00	72.06	51.00	0.01	-0.00	1.15	68.98	79.35			
9459.50	68.27	51.00	0.01	-0.00	1.23	70.56	86.92			
9460.00	65.67	51.00	0.01	-0.00	1.47	66.61	98.08			
9460.50	64.32	51.00	0.01	-0.00	1.82	50.24	91.36			
9461.00	75.92	51.00	0.04	-0.00	1.87	38.36	71.79			
9461.50	86.11	51.00	0.29	-0.00	2.60	28.30	73.59			
9462.00	92.65	51.00	0.92	-0.00	2.94	20.43	60.07			
9462.50	96.07	51.00	0.10	-0.00	1.57	21.41	33.63			
9463.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9463.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9464.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9464.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000161

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 35

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9465.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9465.50	99.06	51.00	0.01	-0.00	0.37	28.74	10.76			
9466.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9466.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9467.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9467.50	96.79	51.00	0.04	-0.00	1.28	24.96	32.05			
9468.00	86.68	51.00	11.20	-0.00	5.33	15.08	80.37			
9468.50	96.83	51.00	0.03	-0.00	1.27	25.89	32.84			
9469.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9469.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9470.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9470.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9471.00	86.72	51.00	4.00	-0.00	4.66	21.13	98.48			
9471.50	72.16	51.00	7.08	-0.00	6.26	25.47	159.42			
9472.00	48.55	51.00	9.66	-0.00	7.85	30.14	236.78			
9472.50	47.53	51.00	12.13	-0.00	8.43	30.24	254.89			
9473.00	46.23	51.00	11.05	-0.00	10.01	27.03	270.52			
9473.50	41.17	51.00	15.88	-0.00	11.33	25.81	292.52			
9474.00	34.21	51.00	26.79	-0.00	13.08	23.58	308.41			
9474.50	29.95	51.00	27.01	-0.00	13.15	23.78	312.66	4.76	3.22	38.50
9475.00	25.71	51.00	19.99	-0.00	12.26	25.75	315.76	4.82	3.26	39.00
9475.50	23.67	51.00	15.43	-0.00	11.35	26.70	302.96	4.88	3.30	39.50
9476.00	24.67	51.00	12.09	-0.00	10.39	27.07	281.28	4.93	3.34	40.00
9476.50	27.29	51.00	11.18	-0.00	9.92	26.00	257.85			
9477.00	30.14	51.00	11.25	-0.00	9.78	24.76	242.17			
9477.50	29.94	51.00	11.91	-0.00	9.87	23.67	233.62			
9478.00	23.72	51.00	12.68	-0.00	10.25	24.67	252.91	4.98	3.38	40.50
9478.50	23.42	51.00	11.97	-0.00	10.16	25.73	261.50	5.03	3.42	41.00
9479.00	23.44	51.00	12.39	-0.00	10.35	26.08	269.95	5.08	3.46	41.50
9479.50	24.10	51.00	23.80	-0.00	12.44	22.52	280.04	5.15	3.50	42.00
9480.00	31.67	51.00	22.42	-0.00	12.19	22.41	273.15			
9480.50	35.93	51.00	20.39	-0.00	11.88	22.88	271.88			
9481.00	40.39	51.00	16.64	-0.00	10.95	21.93	240.10			
9481.50	47.77	51.00	6.98	-0.00	6.98	29.41	205.23			
9482.00	70.55	51.00	0.05	-0.00	2.69	47.15	126.96			
9482.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9483.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9483.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9484.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9484.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9485.00	98.94	51.00	0.01	-0.00	0.42	55.73	23.67			
9485.50	92.76	51.00	0.01	-0.00	1.43	46.70	66.80			
9486.00	88.77	51.00	0.02	-0.00	1.81	44.30	80.35			
9486.50	94.57	51.00	0.02	-0.00	1.56	36.38	56.69			
9487.00	89.86	51.00	0.04	-0.00	1.97	39.90	78.58			
9487.50	84.60	51.00	0.03	-0.00	2.10	43.53	91.25			
9488.00	83.10	51.00	0.01	-0.00	1.82	47.97	87.11			
9488.50	89.01	51.00	0.01	-0.00	1.59	42.73	68.01			
9489.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9489.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

Page No 36

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9490.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9490.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9491.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9491.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9492.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9492.50	86.17	51.00	0.01	-0.00	1.27	63.99	81.26			
9493.00	82.27	51.00	0.01	-0.00	1.60	59.94	95.98			
9493.50	85.01	51.00	0.02	-0.00	1.93	47.82	92.46			
9494.00	82.20	51.00	0.10	-0.00	2.77	41.50	114.86			
9494.50	71.19	51.00	0.15	-0.00	3.63	46.87	170.15			
9495.00	61.61	51.00	0.07	-0.00	3.71	55.56	206.21			
9495.50	61.16	51.00	0.02	-0.00	3.37	62.92	212.16			
9496.00	60.84	51.00	0.07	-0.00	3.63	54.77	198.78			
9496.50	63.73	51.00	0.14	-0.00	3.67	48.04	176.23			
9497.00	70.34	51.00	0.37	-0.00	3.99	40.59	162.06			
9497.50	72.96	51.00	0.81	-0.00	4.54	36.83	167.03			
9498.00	67.48	51.00	1.09	-0.00	5.26	38.87	204.49			
9498.50	44.11	51.00	3.10	-0.00	7.16	38.75	277.47			
9499.00	41.41	51.00	4.56	-0.00	7.72	37.35	288.28			
9499.50	54.27	51.00	3.76	-0.00	7.22	37.05	267.49			
9500.00	61.16	51.00	3.87	-0.00	7.11	36.22	257.63			
9500.50	55.42	51.00	5.21	-0.00	7.84	36.50	286.00			
9501.00	36.51	51.00	7.83	-0.00	9.34	38.35	358.09			
9501.50	32.99	51.00	9.65	-0.00	9.37	36.28	339.81			
9502.00	35.17	51.00	12.33	-0.00	9.26	33.32	308.45			
9502.50	34.79	51.00	10.77	-0.00	8.80	32.97	290.15			
9503.00	32.12	51.00	8.07	-0.00	8.25	33.72	278.12			
9503.50	30.14	51.00	11.67	-0.00	8.68	31.67	274.95			
9504.00	28.56	51.00	7.87	-0.00	8.14	33.54	273.13			
9504.50	30.95	51.00	4.47	-0.00	7.42	36.21	268.82			
9505.00	35.42	51.00	10.07	-0.00	8.28	31.53	260.90			
9505.50	37.88	51.00	10.52	-0.00	8.07	30.22	243.98			
9506.00	36.23	51.00	5.76	-0.00	7.22	32.60	235.34			
9506.50	40.57	51.00	9.08	-0.00	7.44	28.88	214.71			
9507.00	45.48	51.00	15.90	-0.00	7.71	24.31	187.46			
9507.50	48.15	51.00	17.23	-0.00	10.39	16.71	173.65			
9508.00	26.91	51.00	44.52	-0.00	13.77	16.17	222.54	5.22	3.56	42.50
9508.50	21.27	51.00	50.86	-0.00	14.36	16.82	241.55	5.29	3.62	43.00
9509.00	19.61	51.00	39.14	-0.00	13.70	18.62	255.00	5.36	3.68	43.50
9509.50	19.60	51.00	16.45	-0.00	11.46	25.73	294.93	5.41	3.72	44.00
9510.00	20.16	51.00	11.23	-0.00	10.74	31.57	339.09	5.47	3.76	44.50
9510.50	21.33	51.00	13.52	-0.00	10.28	36.02	370.28	5.52	3.79	45.00
9511.00	21.15	51.00	9.32	-0.00	9.99	38.89	388.42			
9511.50	19.91	51.00	9.67	-0.00	10.18	39.15	398.46	5.57	3.82	45.50
9512.00	18.52	51.00	12.89	-0.00	10.75	38.06	409.08	5.62	3.85	46.00
9512.50	17.67	51.00	11.84	-0.00	11.68	35.67	416.61	5.68	3.89	46.50
9513.00	17.75	51.00	10.63	-0.00	11.35	36.71	416.77	5.74	3.93	47.00
9513.50	19.73	51.00	13.98	-0.00	10.78	37.32	402.36	5.79	3.96	47.50
9514.00	21.56	51.00	11.39	-0.00	10.25	37.68	386.07	5.84	3.99	48.00
9514.50	20.13	51.00	8.65	-0.00	9.78	38.93	380.70			

000163

Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9515.00	25.17	51.00	9.83	-0.00	9.72	37.40	363.70			
9515.50	35.84	51.00	2.29	-0.00	7.13	41.75	297.67			
9516.00	47.92	51.00	0.62	-0.00	5.01	43.09	215.94			
9516.50	58.80	51.00	0.10	-0.00	3.20	46.24	147.75			
9517.00	70.74	51.00	0.02	-0.00	1.95	45.51	88.67			
9517.50	85.42	51.00	0.14	-0.00	2.11	28.72	60.65			
9518.00	93.90	51.00	0.01	-0.00	0.76	35.41	26.88			
9518.50	92.49	51.00	0.10	-0.00	1.81	26.89	48.66			
9519.00	86.79	51.00	4.53	-0.00	4.50	18.63	83.87			
9519.50	72.98	51.00	12.69	-0.00	6.85	22.55	154.52			
9520.00	29.85	51.00	21.53	-0.00	9.92	29.93	296.96			
9520.50	24.11	51.00	17.62	-0.00	10.33	33.43	345.30	5.89	4.03	48.50
9521.00	22.23	51.00	3.07	-0.00	8.55	45.05	385.26			
9521.50	25.52	51.00	0.80	-0.00	7.10	52.60	373.65			
9522.00	36.89	51.00	0.33	-0.00	5.54	53.24	295.19			
9522.50	48.71	51.00	0.18	-0.00	4.38	51.20	224.12			
9523.00	57.32	51.00	0.20	-0.00	3.92	46.29	181.45			
9523.50	62.43	51.00	0.13	-0.00	3.39	46.02	156.11			
9524.00	48.30	51.00	0.26	-0.00	4.16	45.67	189.87			
9524.50	42.40	51.00	6.85	-0.00	7.11	30.25	215.11			
9525.00	35.92	51.00	24.69	-0.00	12.00	18.79	225.54			
9525.50	31.82	51.00	1.95	-0.00	5.79	36.22	209.74			
9526.00	45.61	51.00	0.27	-0.00	3.81	42.22	161.03			
9526.50	64.05	51.00	0.10	-0.00	2.70	40.36	109.01			
9527.00	87.65	51.00	0.02	-0.00	1.37	36.73	50.39			
9527.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9528.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9528.50	98.56	51.00	0.01	-0.00	0.57	40.76	23.42			
9529.00	95.90	51.00	0.04	-0.00	1.64	33.63	55.16			
9529.50	87.32	51.00	0.73	-0.00	3.61	29.90	107.92			
9530.00	82.18	51.00	1.19	-0.00	4.29	30.88	132.31			
9530.50	81.73	51.00	1.62	-0.00	4.51	29.42	132.83			
9531.00	86.37	51.00	0.26	-0.00	3.08	35.11	108.01			
9531.50	88.74	51.00	0.03	-0.00	2.11	45.84	96.75			
9532.00	90.50	51.00	0.01	-0.00	1.66	54.25	89.88			
9532.50	87.58	51.00	0.01	-0.00	1.51	65.07	98.13			
9533.00	88.21	51.00	0.01	-0.00	1.25	71.93	89.75			
9533.50	88.50	51.00	0.01	-0.00	1.20	70.42	84.76			
9534.00	86.99	51.00	0.01	-0.00	1.29	68.23	87.78			
9534.50	85.90	51.00	0.01	-0.00	1.34	66.33	88.55			
9535.00	85.55	51.00	0.01	-0.00	1.31	65.43	85.54			
9535.50	90.60	51.00	0.01	-0.00	1.34	53.20	71.46			
9536.00	94.21	51.00	0.01	-0.00	1.29	44.48	57.19			
9536.50	97.36	51.00	0.01	-0.00	1.05	37.14	39.17			
9537.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9537.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9538.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9538.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9539.00	96.18	51.00	0.02	-0.00	1.53	36.09	55.15			
9539.50	C D A L		C D A L		C D A L		C D A L			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9540.00	C O A L		C O A L		C O A L		C O A L			
9540.50	C O A L		C O A L		C O A L		C O A L			
9541.00	C O A L		C O A L		C O A L		C O A L			
9541.50	C O A L		C O A L		C O A L		C O A L			
9542.00	46.81	51.00	21.29	-0.00	9.76	4.72	46.08			
9542.50	55.41	51.00	63.89	-0.00	6.77	5.31	35.94			
9543.00	57.31	51.00	38.89	-0.00	6.41	8.57	54.94			
9543.50	53.26	51.00	2.89	-0.00	6.14	34.14	209.55			
9544.00	43.93	51.00	3.60	-0.00	7.32	37.99	278.17			
9544.50	39.43	51.00	3.43	-0.00	8.25	42.64	351.68			
9545.00	37.45	51.00	4.49	-0.00	8.65	41.48	358.88			
9545.50	39.12	51.00	8.33	-0.00	9.23	37.31	344.34			
9546.00	41.94	51.00	13.17	-0.00	9.61	33.96	326.48			
9546.50	42.87	51.00	19.72	-0.00	10.24	31.96	327.34			
9547.00	44.69	51.00	13.72	-0.00	11.29	29.51	333.31			
9547.50	44.08	51.00	16.78	-0.00	12.09	29.08	351.51			
9548.00	36.65	51.00	16.53	-0.00	12.44	31.46	391.34			
9548.50	30.19	51.00	13.45	-0.00	12.11	34.78	421.34			
9549.00	24.14	51.00	12.99	-0.00	11.32	39.78	450.21	5.95	4.06	49.00
9549.50	21.55	51.00	5.97	-0.00	10.04	43.72	439.00	6.00	4.09	49.50
9550.00	20.91	51.00	5.27	-0.00	9.66	43.64	421.41			
9550.50	26.22	51.00	7.32	-0.00	9.69	40.36	391.20			
9551.00	25.30	51.00	8.15	-0.00	9.70	39.28	381.17			
9551.50	25.11	51.00	7.53	-0.00	9.53	39.48	376.32			
9552.00	22.76	51.00	7.66	-0.00	9.69	39.87	386.21			
9552.50	20.31	51.00	10.30	-0.00	10.25	38.74	396.84	6.05	4.12	50.00
9553.00	22.40	51.00	14.23	-0.00	10.69	36.86	394.16	6.11	4.16	50.50
9553.50	19.48	51.00	10.77	-0.00	11.29	35.99	406.13	6.16	4.19	51.00
9554.00	17.41	51.00	11.80	-0.00	11.53	34.92	402.67	6.22	4.23	51.50
9554.50	17.01	51.00	11.39	-0.00	11.33	34.70	392.98	6.28	4.27	52.00
9555.00	18.53	51.00	10.03	-0.00	10.79	35.03	378.04	6.33	4.30	52.50
9555.50	26.22	51.00	11.43	-0.00	9.39	34.60	324.84			
9556.00	41.51	51.00	4.20	-0.00	6.96	34.64	241.26			
9556.50	51.19	51.00	0.64	-0.00	4.60	39.74	182.77			
9557.00	64.02	51.00	0.05	-0.00	2.59	45.89	118.97			
9557.50	77.07	51.00	0.02	-0.00	1.74	44.78	77.85			
9558.00	84.48	51.00	0.06	-0.00	2.07	36.10	74.64			
9558.50	88.19	51.00	0.62	-0.00	3.01	25.35	76.25			
9559.00	90.37	51.00	2.98	-0.00	3.85	17.57	67.68			
9559.50	93.93	51.00	0.54	-0.00	2.43	19.24	46.71			
9560.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9560.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9561.00	97.66	51.00	0.01	-0.00	0.94	29.71	27.84			
9561.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9562.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9562.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9563.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9563.50	99.66	51.00	0.01	-0.00	0.14	26.51	3.60			
9564.00	C O A L		C O A L		C O A L		C O A L			
9564.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

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Well name = BROLGA #1

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9565.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9565.50	C O A L		C O A L		C O A L		C O A L			
9566.00	C O A L		C O A L		C O A L		C O A L			
9566.50	87.48	51.00	8.58	-0.00	5.01	15.70	78.64			
9567.00	88.22	51.00	5.78	-0.00	4.71	17.70	83.42			
9567.50	C O A L		C O A L		C O A L		C O A L			
9568.00	C O A L		C O A L		C O A L		C O A L			
9568.50	C O A L		C O A L		C O A L		C O A L			
9569.00	C O A L		C O A L		C O A L		C O A L			
9569.50	C O A L		C O A L		C O A L		C O A L			
9570.00	C O A L		C O A L		C O A L		C O A L			
9570.50	C O A L		C O A L		C O A L		C O A L			
9571.00	59.05	51.00	0.85	-0.00	4.76	38.05	181.29			
9571.50	62.05	51.00	0.33	-0.00	3.99	41.62	165.89			
9572.00	74.75	51.00	0.85	-0.00	4.04	32.29	130.58			
9572.50	80.49	51.00	1.48	-0.00	4.05	26.58	107.59			
9573.00	84.21	51.00	0.64	-0.00	3.22	27.36	87.95			
9573.50	85.28	51.00	0.09	-0.00	2.16	34.24	74.00			
9574.00	97.15	51.00	0.06	-0.00	1.14	15.37	17.52			
9574.50	75.01	51.00	7.85	-0.00	4.96	16.29	80.79			
9575.00	46.01	51.00	19.53	-0.00	7.35	20.49	150.56			
9575.50	36.18	51.00	28.09	-0.00	8.48	21.68	183.71			
9576.00	37.92	51.00	21.73	-0.00	8.21	23.24	190.76			
9576.50	37.85	51.00	11.94	-0.00	7.60	26.79	203.65			
9577.00	31.90	51.00	7.65	-0.00	7.50	30.98	232.41			
9577.50	21.35	51.00	5.73	-0.00	7.89	35.73	281.86			
9578.00	10.61	51.00	6.08	-0.00	8.56	37.98	325.22			
9578.50	10.13	51.00	8.25	-0.00	8.99	36.51	328.27			
9579.00	14.16	51.00	9.63	-0.00	8.98	34.83	312.68			
9579.50	15.71	51.00	10.81	-0.00	9.07	33.97	307.92			
9580.00	9.97	51.00	10.33	-0.00	9.68	36.73	355.54			
9580.50	5.74	51.00	11.99	-0.00	10.22	37.05	378.52	6.38	4.33	53.00
9581.00	6.51	51.00	15.29	-0.00	10.40	35.13	365.34	6.43	4.37	53.50
9581.50	10.61	51.00	10.09	-0.00	10.33	31.97	330.23	6.49	4.40	54.00
9582.00	14.72	51.00	15.59	-0.00	9.47	31.67	299.91			
9582.50	19.07	51.00	13.74	-0.00	9.07	31.48	285.44			
9583.00	23.98	51.00	11.95	-0.00	8.78	31.80	279.04			
9583.50	28.76	51.00	7.77	-0.00	8.33	34.48	287.39			
9584.00	33.07	51.00	7.53	-0.00	8.36	34.92	292.00			
9584.50	36.26	51.00	8.70	-0.00	8.54	34.17	291.91			
9585.00	35.32	51.00	8.53	-0.00	8.64	34.78	300.69			
9585.50	36.76	51.00	7.02	-0.00	8.01	34.17	273.86			
9586.00	39.31	51.00	5.38	-0.00	7.33	33.83	247.83			
9586.50	42.27	51.00	5.22	-0.00	7.20	33.54	241.63			
9587.00	45.56	51.00	5.31	-0.00	7.66	35.51	272.04			
9587.50	44.46	51.00	16.56	-0.00	9.30	30.41	282.82			
9588.00	29.14	51.00	17.81	-0.00	12.16	28.01	340.56	6.55	4.45	54.50
9588.50	21.83	51.00	44.25	-0.00	15.20	24.19	367.55	6.62	4.50	55.00
9589.00	C O A L		C O A L		C O A L		C O A L			
9589.50	53.36	51.00	100.66	-0.00	16.19	13.42	217.36			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9590.00	85.31	51.00	17.18	-0.00	5.87	14.03	82.43			
9590.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9591.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9591.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9592.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9592.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9593.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9593.50	77.71	51.00	8.49	-0.00	6.65	25.72	171.16			
9594.00	26.12	51.00	10.55	-0.00	11.17	35.89	400.99	6.68	4.54	55.50
9594.50	13.80	51.00	14.07	-0.00	12.74	36.92	470.47	6.74	4.58	56.00
9595.00	7.31	51.00	13.86	-0.00	13.03	38.67	504.01	6.81	4.62	56.50
9595.50	0.41	51.00	23.69	-0.00	14.87	35.29	524.79	6.88	4.67	57.00
9596.00	0.00	51.00	64.68	-0.00	17.86	29.01	518.07	6.97	4.73	57.50
9596.50	0.75	51.00	40.36	-0.00	16.25	30.81	500.53	7.05	4.79	58.00
9597.00	7.60	51.00	23.17	-0.00	13.92	31.34	436.11	7.12	4.84	58.50
9597.50	19.19	51.00	59.40	-0.00	16.06	22.67	363.91	7.20	4.90	59.00
9598.00	34.17	51.00	64.67	-0.00	15.18	16.51	250.66			
9598.50	57.25	51.00	86.79	-0.00	15.24	10.95	166.94			
9599.00	69.27	51.00	38.12	-0.00	12.29	9.95	122.32			
9599.50	76.92	51.00	50.11	-0.00	7.99	13.61	108.77			
9600.00	84.64	51.00	2.99	-0.00	3.92	18.17	71.27			
9600.50	92.99	51.00	1.13	-0.00	2.80	16.63	46.63			
9601.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9601.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9602.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9602.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9603.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9603.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9604.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9604.50	97.32	51.00	0.01	-0.00	1.07	30.85	33.06			
9605.00	79.00	51.00	0.11	-0.00	3.15	44.53	140.37			
9605.50	66.15	51.00	0.51	-0.00	5.13	46.03	236.35			
9606.00	56.26	51.00	0.98	-0.00	6.51	47.47	309.09			
9606.50	46.74	51.00	1.55	-0.00	7.50	47.60	357.17			
9607.00	37.92	51.00	0.87	-0.00	7.23	52.37	378.52			
9607.50	33.05	51.00	0.63	-0.00	7.03	54.67	384.31			
9608.00	31.10	51.00	0.44	-0.00	6.65	56.62	376.59			
9608.50	29.44	51.00	0.30	-0.00	6.29	58.48	367.82			
9609.00	24.45	51.00	0.37	-0.00	6.54	57.89	378.81			
9609.50	19.04	51.00	0.66	-0.00	7.23	55.26	399.36			
9610.00	11.58	51.00	0.87	-0.00	8.59	58.36	501.52			
9610.50	3.92	51.00	1.27	-0.00	9.97	59.59	593.89			
9611.00	3.43	51.00	1.59	-0.00	10.77	59.98	646.29			
9611.50	6.83	51.00	1.86	-0.00	11.12	59.39	660.43			
9612.00	9.99	51.00	2.14	-0.00	11.46	59.03	676.76			
9612.50	12.69	51.00	2.59	-0.00	11.84	58.15	688.46			
9613.00	12.87	51.00	1.97	-0.00	11.56	60.19	695.68			
9613.50	10.12	51.00	1.43	-0.00	11.41	63.04	719.42			
9614.00	11.96	51.00	1.45	-0.00	11.39	62.84	715.84			
9614.50	14.41	51.00	1.71	-0.00	11.38	61.09	695.35			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9615.00	19.83	51.00	1.85	-0.00	11.09	59.38	658.44			
9615.50	22.87	51.00	1.89	-0.00	10.86	58.45	634.97			
9616.00	20.50	51.00	2.15	-0.00	11.10	57.84	641.87			
9616.50	15.93	51.00	2.57	-0.00	11.69	57.78	675.33			
9617.00	10.31	51.00	2.10	-0.00	11.90	60.50	719.79			
9617.50	6.28	51.00	2.39	-0.00	11.78	58.80	692.54			
9618.00	8.60	51.00	2.53	-0.00	11.55	57.56	664.90			
9618.50	14.04	51.00	3.04	-0.00	11.53	55.56	640.55			
9619.00	18.78	51.00	1.86	-0.00	10.83	58.49	633.40			
9619.50	22.03	51.00	1.13	-0.00	10.25	61.79	633.56			
9620.00	15.74	51.00	0.78	-0.00	10.04	64.97	652.42			
9620.50	13.71	51.00	0.75	-0.00	9.78	64.34	629.17			
9621.00	23.77	51.00	0.76	-0.00	9.01	61.39	553.16			
9621.50	29.79	51.00	0.86	-0.00	8.87	59.65	529.33			
9622.00	28.67	51.00	1.00	-0.00	9.74	61.23	596.62			
9622.50	26.62	51.00	1.21	-0.00	10.24	61.02	624.92			
9623.00	24.57	51.00	0.49	-0.00	8.57	64.28	550.91			
9623.50	33.68	51.00	0.14	-0.00	6.38	67.28	429.59			
9624.00	55.84	51.00	0.04	-0.00	4.04	64.77	261.74			
9624.50	71.37	51.00	0.01	-0.00	2.40	62.85	150.86			
9625.00	81.50	51.00	0.01	-0.00	2.28	57.57	131.03			
9625.50	81.53	51.00	0.09	-0.00	3.64	51.46	187.08			
9626.00	77.08	51.00	0.12	-0.00	4.12	53.37	219.94			
9626.50	67.77	51.00	0.06	-0.00	4.19	60.70	254.35			
9627.00	63.61	51.00	0.05	-0.00	3.90	60.32	235.36			
9627.50	85.24	51.00	0.01	-0.00	1.89	51.34	97.18			
9628.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9628.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9629.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9629.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9630.00	94.06	51.00	0.05	-0.00	2.38	43.74	103.97			
9630.50	94.93	51.00	0.03	-0.00	2.03	44.75	90.84			
9631.00	93.89	51.00	0.02	-0.00	1.93	47.35	91.53			
9631.50	87.65	51.00	0.01	-0.00	2.01	58.08	116.57			
9632.00	89.48	51.00	0.01	-0.00	1.83	57.81	106.06			
9632.50	90.62	51.00	0.02	-0.00	2.28	52.20	119.00			
9633.00	91.63	51.00	0.03	-0.00	2.41	49.81	120.03			
9633.50	95.25	51.00	0.01	-0.00	1.75	48.22	84.53			
9634.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9634.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9635.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9635.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9636.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9636.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9637.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9637.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9638.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9638.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9639.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9639.50	86.85	51.00	0.63	-0.00	5.26	44.63	234.70			

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Well name = BROLGA #1

Location = 27-35-36S/140-01-28E

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DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9640.00	73.94	51.00	3.33	-0.00	8.26	42.99	355.00			
9640.50	64.49	51.00	2.36	-0.00	8.69	48.34	420.22			
9641.00	65.62	51.00	1.77	-0.00	8.13	49.03	398.82			
9641.50	69.29	51.00	1.26	-0.00	7.37	49.10	361.65			
9642.00	70.50	51.00	0.85	-0.00	6.77	50.27	340.17			
9642.50	72.43	51.00	0.73	-0.00	6.36	49.75	316.62			
9643.00	77.76	51.00	0.65	-0.00	5.76	47.40	272.97			
9643.50	86.90	51.00	0.52	-0.00	4.71	42.76	201.56			
9644.00	97.36	51.00	0.01	-0.00	1.06	64.74	68.42			
9644.50	95.06	51.00	0.01	-0.00	1.97	51.92	102.50			
9645.00	96.57	51.00	0.01	-0.00	1.37	55.86	76.55			
9645.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9646.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9646.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9647.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9647.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9648.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9648.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9649.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9649.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9650.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9650.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9651.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9651.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9652.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9652.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9653.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9653.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9654.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9654.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9655.00	98.44	51.00	0.01	-0.00	0.13	71.72	9.10			
9655.50	94.07	51.00	0.01	-0.00	0.78	70.54	55.13			
9656.00	97.24	51.00	0.01	-0.00	1.11	55.10	60.90			
9656.50	99.95	51.00	0.01	-0.00	0.02	90.94	1.65			
9657.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9657.50	99.30	51.00	0.01	-0.00	0.28	81.25	22.84			
9658.00	89.54	51.00	0.04	-0.00	2.87	53.18	152.50			
9658.50	94.59	51.00	0.02	-0.00	2.16	50.46	109.22			
9659.00	98.48	51.00	0.01	-0.00	0.61	70.67	42.89			
9659.50	94.13	51.00	0.03	-0.00	2.35	47.83	112.26			
9660.00	90.47	51.00	0.02	-0.00	2.49	53.96	134.12			
9660.50	94.77	51.00	0.01	-0.00	1.76	54.45	95.64			
9661.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9661.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9662.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9662.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9663.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9663.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9664.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9664.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			

000169

Well name = BROLGA #1

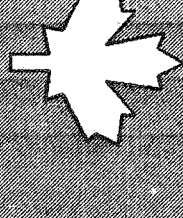
Location = 27-35-36S/140-01-28E

Page No 43

DEPTH	V Shale	Rho G	Perm	Phi2nd	PhiE	Sw	PhiE*Sw	Cum. Phi*H	Cum. Hc*H	Cum. H
9665.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9665.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9666.00	91.91	51.00	0.05	-0.00	3.23	54.56	176.47			
9666.50	86.34	51.00	0.32	-0.00	4.82	48.78	235.18			
9667.00	83.45	51.00	0.26	-0.00	4.92	51.44	253.23			
9667.50	83.24	51.00	0.21	-0.00	4.70	52.28	245.54			
9668.00	88.19	51.00	0.15	-0.00	3.95	49.84	197.01			
9668.50	95.78	51.00	0.01	-0.00	1.69	60.31	101.76			
9669.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9669.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9670.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9670.50	99.39	51.00	0.01	-0.00	0.24	100.00	24.37			
9671.00	95.31	51.00	0.01	-0.00	1.87	67.23	125.99			
9671.50	96.45	51.00	0.01	-0.00	1.42	72.78	103.34			
9672.00	95.61	51.00	0.01	-0.00	1.76	66.08	116.09			
9672.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9673.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9673.50	99.78	51.00	0.01	-0.00	0.09	95.15	8.19			
9674.00	96.79	51.00	0.01	-0.00	0.34	93.73	31.65			
9674.50	96.71	51.00	0.01	-0.00	1.07	66.53	71.40			
9675.00	99.05	51.00	0.01	-0.00	0.38	89.04	33.81			
9675.50	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9676.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9676.50	96.61	51.00	0.01	-0.00	1.36	63.23	85.81			
9677.00	93.88	51.00	0.01	-0.00	2.01	57.27	115.27			
9677.50	89.46	51.00	0.01	-0.00	1.92	69.76	133.63			
9678.00	94.66	51.00	0.01	-0.00	1.19	73.04	86.92			
9678.50	99.03	51.00	0.01	-0.00	0.39	91.42	35.58			
9679.00	100.00	51.00	0.01	-0.00	0.00	100.00	0.00			
9679.50	95.02	51.00	0.01	-0.00	1.99	60.96	121.34			

000170

COMENT LTD
COMPUTER ENTERPRISES



1927-1

COMPUTERIZED

LOG

INTERPRETATION

FOR

BROLGA #1

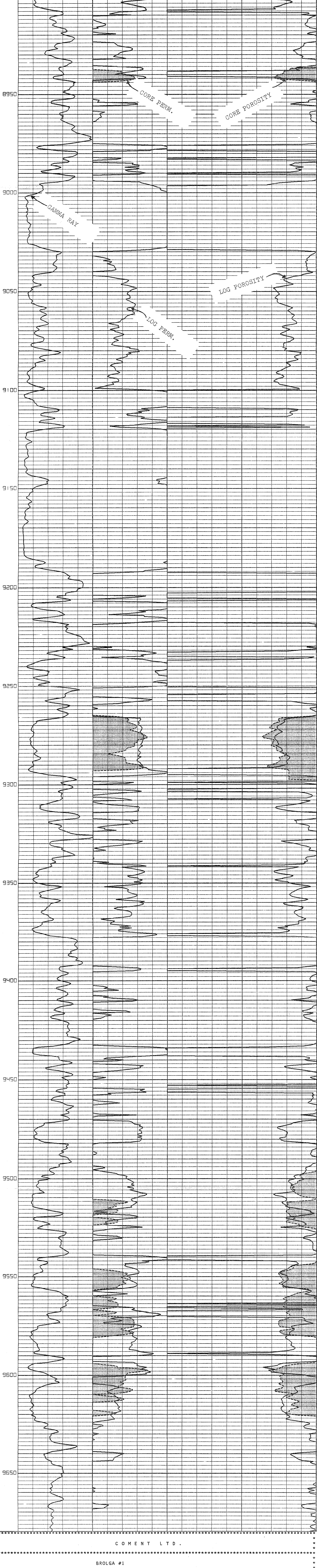
27-35-36S/140-01-28E

02/06/82

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATIONS MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES.

REMARKS
DATA STORED IN DBROLGA-1

GAMMA RAY PERMEABILITY POROSITY
0-----200 .01-----1000 50-----0

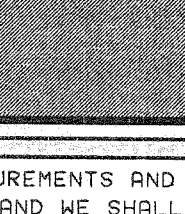


COMENT LTD.

BROLGA #1

27-35-36S/140-01-28E

COMENT LTD
COMPUTER
ENTERPRISES



1927-2

COMPUTERIZED

LOG

INTERPRETATION

FOR

BROLGA #1

27-35-36S/140-01-28E

03/06/82

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATIONS MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES.

GENERAL LOG ANALYSIS

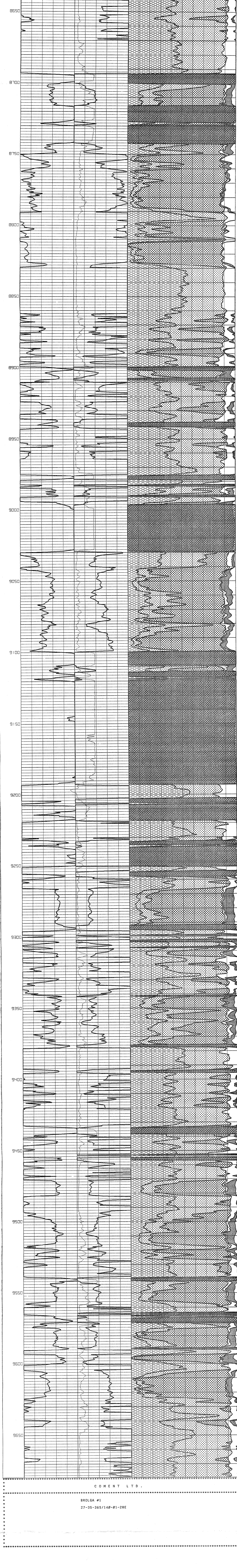
FACTORS USED IN THIS INTERPRETATION

TOP	BASE	A	M	N	RA	TEMP	GRAD	GMAX	GMIN	ASH	COR	C	G	I	PTYP	MAT	FLD	RHOS	PHIS	DTSH
8640.00	8630.00	1.00	2.00	2.00	0.130	229.0	1.73	128.0	24.0	18.0	2	2	2	1	51.00250.00	-0.00	0.00	64.00		
8630.00	8574.00	1.00	2.00	2.00	0.130	233.0	1.73	128.0	16.0	100.0	2	2	2	1	51.00250.00	-0.00	0.00	64.00		
8574.00	9574.00	1.00	2.00	2.00	0.120	246.0	1.73	92.0	28.0	28.0	2	2	2	1	51.00250.00	-0.00	0.00	64.00		

REMARKS
POROSITY DERIVED FROM ACOUSTIC LOG
DATA STORED IN ABROLGA-1

DEPTH	PERMEABILITY	WATER SATURATION	BULK VOLUME ANALYSIS			
			CLAY	SILT	SAND	ØZ ØE ØESW

DELTA HOLE
-8 -4 +4 +8



COMENT LTD.

BROLGA #1
27-35-36S/140-01-28E

000194

WIRELINE REPORT

CLIENT SANTOS LTD WELL BROLGA #21.

DATE 1/4/86

PROGRAMME PATCHAWARRA CENTRAL FIELD PRODUCTION TEST.

PURPOSE OF WORK DUMMY RUN-: TO ENSURE TUBING IS CLEAR OF ANY OBSTRUCTIONS.

REPORT OF WORK PERFORMED RIG UP BOP'S, TOOL STRING CONSISTING OF 1.75 BLIND BOX CROSSOVER, 3' OF STEM, SPANG JARS, NUCKLE JOINT, 5' STEM, ROPE SOCKET. 2 SECTIONS OF LUBRICATOR, FUNCTION TEST BOP'S AND PRESSURE TEST LUBRICATOR TO FULL F.T.H.P. AT 1055 HRS.

RUN IN HOLE AT 1100 HRS TO 9639' KB. NO OBSTRUCTIONS AND OUT OF HOLE. IN LUBRICATOR AT 1130 HRS. BREAK DOWN TOOL STRING AND PREPARE TO RUN TANDEM PRESS ELEMENTS FOR FLOWING GRADIENT.


Operator's Signature

WORKED PERFORMED BY RUSSEN CAMPDEN OF EXPERTEST.

WELL DATA:

Tubing Size 2 7/8" FWHP 360 PSI SIWHP N/A.
Subsurface S.V./Landing Nipple @ - S.S.D. @ -
'X' Nipple @ 9451' 'N'/XN' Nipple @ - Other @ -
Min. I.D. 1.875" @ 9451' Packer @ 9435'
Perforated Interval: 9514-9541' 9568'-9580'





**** BROLGA 2L ****

FLOWING PRESSURE GRADIENT

TEST DATE: 1/4/86

DEPTH (FT.)	TOP PRESSURE ELEMENT 27617/5675			BOTTOM PRESSURE ELEMENT 27616/5700		
	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.1210	348.4	----	0.1250	369.6	----
1000	0.1500	432.9	0.0845	0.1510	444.7	0.0751
2000	0.1810	523.1	0.0902	0.1840	539.8	0.0952
3000	0.2050	592.9	0.0697	0.2170	634.9	0.0951
4000	0.2530	732.1	0.1393	0.2540	741.4	0.1065
5000	0.3000	868.3	0.1361	0.3020	879.3	0.1380
6000	0.3470	1004.2	0.1359	0.3480	1011.4	0.1321
7000	0.4010	1160.1	0.1560	0.4030	1169.1	0.1578
8000	0.4570	1321.7	0.1616	0.4610	1335.4	0.1662
9000	0.5180	1497.5	0.1759	0.5190	1501.5	0.1662
9300	0.5410	1563.8	0.2209	0.5420	1567.4	0.2196
9347	0.5790	1673.3	0.4433	0.5820	1682.0	0.4638
LUB	0.1930	558.0	----	0.1930	565.8	----

GENERAL REMARKS:

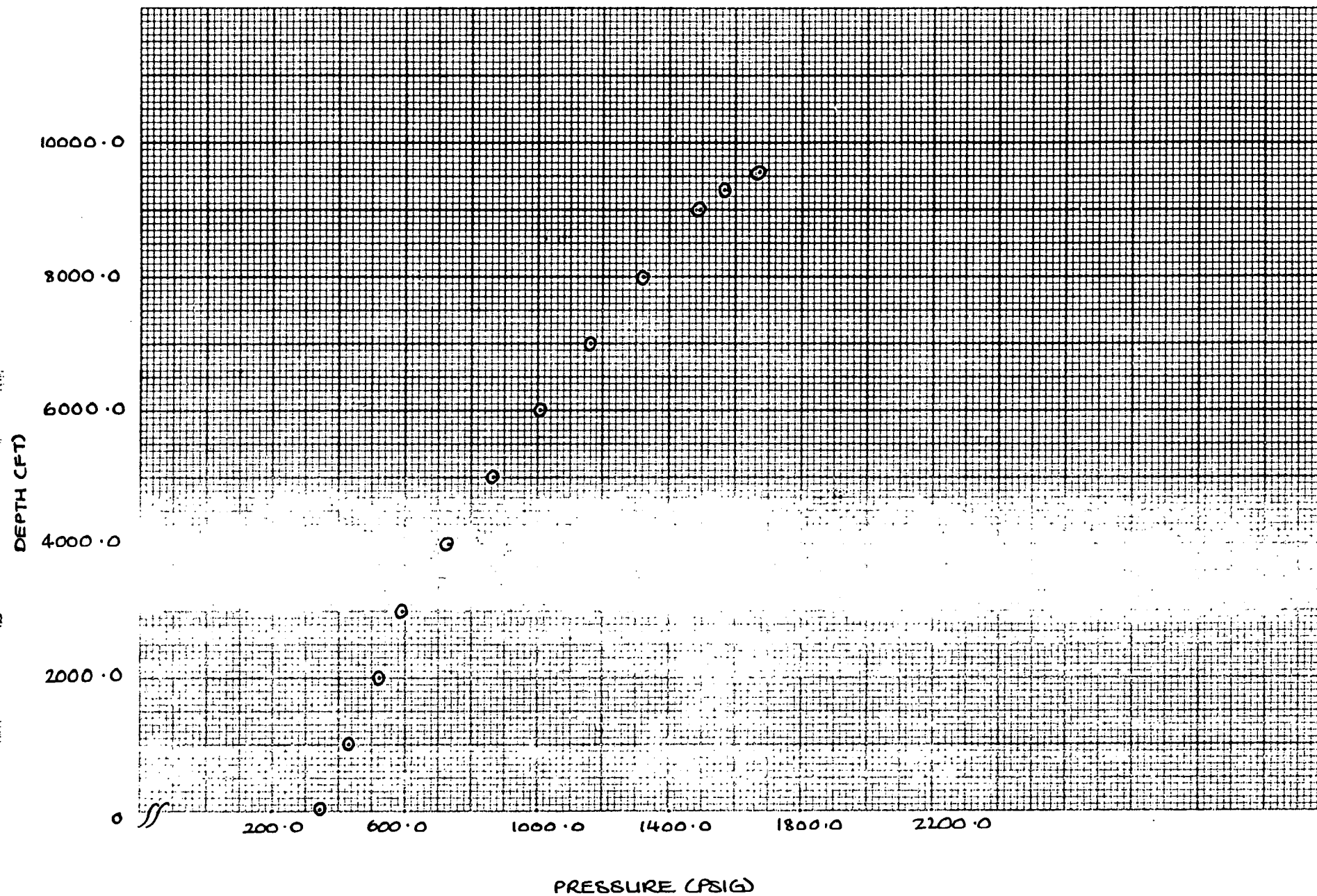
G350PSI TUB490PSI TEMP111F GAS.2684MMSQF/D TOT.LIQUID161BBL'S GOR1778

DWT IN: 358
DWT OUT: 490
MAX BHT: 289 F

ELEMENT 27617/5675 CALIBRATED 14.3.86
ELEMENT 27616/5700 CALIBRATED 14.3.86

BROLGA # 2L - FLOWING PRESSURE GRADIENT - 1/4/86

ELEMENT # 27617/5675 (TOP)





CLIENT SANTOS LTD.

WELL BROLGA #21

FLOWING GRADIENT SURVEY

OPERATOR RUSSEN CAMPBELL

DATE 1/4/86

BOMB No. 1 DATA

ELEMENT No. 27617 ELEMENT RANGE 5675
 RECORDER No 13029 CLOCK DATA A16086 15MS @ 3HR
 ENGAGE STYLUS 1319 HRS DISENGAGE 1558 HRS
 PRESSURE LUBRICATOR 13:26 HRS

BOMB No 2 DATA

ELEMENT No. 27616 ELEMENT RANGE 5700
 RECORDER No 14629 CLOCK DATA A15014 15MS 3HR
 ENGAGE STYLUS 1319 HRS DISENGAGE 1558 HRS
 BLEED LUBRICATOR 1550 HRS

DWT IN
358 PSI
 DWT OUT
357 PSI

DATE	TIME	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
<u>1/4/86</u>										
	<u>1326</u>	<u>Ø</u>	<u>.1210</u>	<u>348.4</u>	<u>-</u>	<u>Ø</u>	<u>.1250</u>	<u>369.6</u>	<u>-</u>	<u>10 mins.</u>
	<u>1336</u>	<u>R.I.H</u>				<u>R.I.H</u>				
	<u>1340</u>	<u>1,000</u>	<u>.1500</u>	<u>432.9</u>	<u>.0845</u>	<u>1,000</u>	<u>.1516</u>	<u>442.7</u>	<u>.0751</u>	} <u>5 mins.</u>
	<u>1349</u>	<u>2,000</u>	<u>.1810</u>	<u>523.1</u>	<u>.0902</u>	<u>2,000</u>	<u>.1840</u>	<u>539.8</u>	<u>.0952</u>	
	<u>1358</u>	<u>3,000</u>	<u>.2050</u>	<u>592.9</u>	<u>.0697</u>	<u>3,000</u>	<u>.2170</u>	<u>634.9</u>	<u>.0951</u>	
	<u>1407</u>	<u>4,000</u>	<u>.2530</u>	<u>732.1</u>	<u>.1393</u>	<u>4,000</u>	<u>.2540</u>	<u>741.4</u>	<u>.1065</u>	
	<u>1416</u>	<u>5,000</u>	<u>.3000</u>	<u>868.3</u>	<u>.1361</u>	<u>5,000</u>	<u>.3020</u>	<u>879.3</u>	<u>.1380</u>	
	<u>1425</u>	<u>6,000</u>	<u>.34700</u>	<u>1004.2</u>	<u>.1359</u>	<u>6,000</u>	<u>.3480</u>	<u>1011.4</u>	<u>.1321</u>	
	<u>1433</u>	<u>7,000</u>	<u>.4010</u>	<u>1160.1</u>	<u>.1560</u>	<u>7,000</u>	<u>.4030</u>	<u>1169.1</u>	<u>.1578</u>	
	<u>1440</u>	<u>8,000</u>	<u>.4570</u>	<u>1321.7</u>	<u>.1616</u>	<u>8,000</u>	<u>.4610</u>	<u>1335.4</u>	<u>.1662</u>	
	<u>1449</u>	<u>9,000</u>	<u>.5180</u>	<u>1497.5</u>	<u>.1759</u>	<u>9,000</u>	<u>.5190</u>	<u>1501.5</u>	<u>.1662</u>	
	<u>1455</u>	<u>9,300</u>	<u>.5410</u>	<u>1563.8</u>	<u>.2209</u>	<u>9,300</u>	<u>.5420</u>	<u>1567.4</u>	<u>.2196</u>	
	<u>1501</u>	<u>9547</u>	<u>.5790</u>	<u>1673.3</u>	<u>.4433</u>	<u>9547</u>	<u>.5820</u>	<u>1682.0</u>	<u>.4638</u>	<u>15 mins.</u>
	<u>1516</u>	<u>ROH</u>				<u>ROH</u>				
	<u>1540</u>	<u>Ø</u>	<u>.1930</u>	<u>558.0</u>	<u>-</u>	<u>Ø</u>	<u>.1930</u>	<u>565.8</u>	<u>-</u>	<u>10 mins.</u>

GENERAL REMARKS: 1500 HRS 1/4/86 CASING PSI 350 TUBING PSI 490 TEMP 111°F GAS RATE .2684 MMSCF/D TOTAL LIQUID 16.55 GOR 1778
WELL UNSTABLE

OPERATOR R. CAMPBELL



SANTOS LTD

WELL TEST DATA SHEET

DATE 30/3/86

PAGE No. 1 ONE

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000198

WELL DROLGA "2L

OPERATOR R. CAMPBELL



SANTOS LTD

WELL TEST DATA SHEET

DATE 31/3/86

PAGE No. 2 Two

DATE TIME	WELLHEAD					H.P. SEPARATOR CAMSAT					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. = 2.900					L.P. METER RUN I.D. =								
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D				
31/3/86				PATCHANARRA CENTRAL FIELD PRODUCTION TEST.															
0100	400	348	129	2 1/4		115	60	131	1.000	3875						3875	231.426	2000	
0500	350	345	131	"		168	50	123	1.000	4279						4279	231.426	2298	
0530						CHANGE ORIFICE RATE 1.250					REDUCE SEPERATOR PRESSURE								
0700	390	312	120	"		91	40	118	"	4567						4567	191.178	2836	
1100	350	325	118	"		70	80	118	"	5756						5756	221.364	3134	
1455						CHANGE ORIFICE RATE 1.000													
1500	390	304	128	"		83	100	128	"	4327						4327	203.755	2529	
1600	350	301	128	2 1/4		CUT CHOKE TO RAISE F.T.H.P.													
1700	350	320	128	2 1/4		"		"		"									
1710						INCREASE SEPERATOR PRESSURE.													
1800	"	330	"	20/64		CUT CHOKE TO RAISE F.T.H.P.													
1900	390	350	122	"		140	50	116	"	3944						3944	203.755	2272	
2300						CHANGE FROM FRAC TANK #07 TO #29. TARE A" OIL & H ₂ O													
2300	350	363	122	"		136	50	116	"	3889						3889	191.171	2453	
1/4/86																			
0300	350	360	122	"		137	50	113	"	3915						3915	186.147	2570	API 50.0
0700	350	355	120	"		131	50	114	"	3828						3828	130.804	4004	API 51.6
0825						← ROCK CHOKE DUE TO SUSPECT WAXING.													
1030						RIG UP WIRELINE UNIT #100 FOR BLIND BOX RUN OF 1750"													

6006

000199

WELL .. BROGA "2L



SANTOS LTD

OPERATOR R. CAMPBELL

WELL TEST DATA SHEET

DATE 1/24/86

PAGE No. (3) THREE.

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000200

WELL KROKKA 2LTANK:— CAPACITY 356 BBLs
#07 SCALE 1" = 1.677 BBLs
#29

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 30/3/86PAGE No. (1) ONEOPERATOR R. CAMPBELL

DATE TIME	CUM. TIME	* OIL/CONDENSATE PRODUCTION * PATCHAWARRA CENTRAL FIELD PRODUCTION TEST *					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	
30/3/86		1.75	TANK TARE DIP #			07	4.25					
1700	2	14.5	21.381	256.581	21.381		8	6.288	75.465	6.288		
1900	4	25.75	18.8663	226.395	40.248		10.25	3.773	45.279	10.062		
2100	6	35.75	16.770	201.240	57.018		12.25	3.354	40.248	13.416		
31/3/86												
0100	10	55	32.282	193.693	89.300		16	6.288	37.732	19.704		
0500	14	73.5	31.024	186.147	120.324		20.5	7.546	45.279	27.251		
0700	16	81.5	13.416	160.992	133.740		22	2.515	30.186	29.766		
1100	20	99.5	30.605	183.631	164.345		25.75	6.288	37.732	36.055		
1500	24	116.75	28.509	171.054	192.854		29	5.450	32.701	41.505		
1900	28	134	28.928	173.569	221.782		32	5.031	30.186	46.536		
2300	32	149.75	26.412	158.476	248.194		35.25	5.450	32.701	51.986		
2300		4	TANK TARE DIP #29				0					CHANGE TANKS.
1/4/86												
0300	36	19.5	25.993	155.961	274.187	50.0	3	5.031	30.186	57.018		
0700	40	29	15.931	96.589	290.119	51.6	6.5	5.869	35.217	62.887		0825 ROCK CHOKED (BLOCKAGE)
1100	44	52	38.571	231.426	328.69		9	4.192	25.155	67.079		
1500	48	67	25.155	150.030	353.845		10	1.677	10.062	68.756		SAMPLES TAKEN.
1600	49	68	1.677	40.248	355.522	50.1	11.5	2.515	60.372	71.271		
		TEST COMPLETED										

CLIENT ... SANTOS LTD.

WELL ... BRAUN* 2h



TELEPHONE (08) 354 0488 TELEX AA87183

Date 30/3/86... Page No (1) ONE

Operator R. CAMPBELL

 Orifice Fitting Type ... DANIELS
 Gas Flow Recorder Type ... FOXBORO
 Date of Last Calibration ... 24/3/86

 Orifice Fitting Size ... 2.900
 Pressure Range ... 0-20 MPa
 Differential Range ... 0-50 kPa

 Gas Specific Gravity ... 1.1514
 Perforated Interval ... 954 TO 9580'
 Formation Tested ... BASAL PATCHAWARRA

 Base Conditions = 14.73psi @ 60°F
☒ Flange Taps ☐ Pipe Taps

TIME DATA		Choke Size 64ths Inch	METER RUN DATA				$\sqrt{Pf \times Hw}$	$C' = Fu \times Fb \times Fg \times Ftf \times Fpv \times Y2$							Flow Rate $Q = C' \times \sqrt{Pf \times Hw}$	
Date Time	Elapsed Time Hours		(Pf) Press P.S.I.A.	Diff (Hw) Inches Water	Temp. °F	Plate Size Inches		Fu	Fb	Fg	Ftf	Fpv	Y2	C'		
30/3/86			* PATCHAWARRA CENTRAL FIELD PRODUCTION TEST *													
1500	0	24/64	200	80	129	1.500	126.405	24	477.36	.9319	.9396	1.0410	1.0000	10443.5274	1.3201	
1700	2	"	200	80	129	1.000	126.405	"	204.04	"	.9396	1.0410	"	4463.421	.5643	
1900	4	"	135	40	118	1.250	73.411	"	323.63	"	.9485	1.0292	"	7065.9545	.5187	
2100	6	"	125	70	127	1.000	93.440	"	204.04	"	.9412	1.0257	"	4405.5984	.4117	
31/3/86																
0100	10	"	130	60	131	"	88.225	"	204.04	"	.9380	1.0261	"	4392.6258	.3875	
0500	14	"	183	50	123	"	95.585	"	204.04	"	.9444	1.0387	"	4476.9200	.4279	
0700	16	"	106	40	118	1.250	65.052	"	323.63	"	.9485	1.0228	"	7022.2172	.4567	
1100	20	"	85	80	118	"	82.331	"	323.63	"	.9485	1.0182	"	6990.7617	.5756	
1500	24	"	98	100	128	1.000	98.8585	"	204.04	"	.9404	1.0199	"	4377.2072	.4327	
1900	28	20/64	155	50	116	"	87.9574	"	204.04	"	.9501	1.0340	"	4483.4434	.3944	
2300	32	"	151	50	116	"	86.8130	"	204.04	"	.9501	1.0330	"	4479.5544	.3889	
1/4/86																
0300	36	"	152	50	113	"	87.1005	"	204.04	"	.9526	1.0339	"	4494.7085	.3915	
0700	40	"	146	50	114	"	85.3610	"	204.04	"	.9518	1.0323	"	4484.0574	.3828	
1100	44	"	105	80	122	"	91.5336	"	204.04	"	.9452	1.0221	"	4409.0131	.4036	
1500	48	"	92	40	114	"	60.5739	"	204.04	"	.9518	1.0202	"	4431.3558	.2684	
1600	49	"	93	40	114	"	60.9032	"	204.04	"	.9518	1.0204	"	4432.3244	.2699	
			TEST COMPLETED. * NOTE STATIC PEN OUT OF CALIBRATION - 1 SEPARATOR PRESSURE MEASURED BY VITREX GAUGE													

000202

000203

WIRELINE REPORT

CLIENT SANTOS WELL BROLGA H 1

DATE 10-4-87

PROGRAMME STATIC GRADIENT

PURPOSE OF WORK DUMMY RUN

REPORT OF WORK PERFORMED

0845 ARRIVE ON LOCATION RIG UP WIRELINE UNIT

0900 R.I.H. WITH 1.75" BLIND BOX TAG P.B.T.D AT 9345'KB

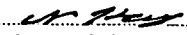
NO OBSTRUCTIONS

0920 P.O.O.H

0915 ARRIVE AT LUB

RIG UP 2 PRESSURE ELEMENTS 1 TEMP ELEMENT

0913 RUN STATIC GRADIENT



 Operator's Signature

WORKED PERFORMED BY N. HAY OF EXPERTEST

WELL DATA:

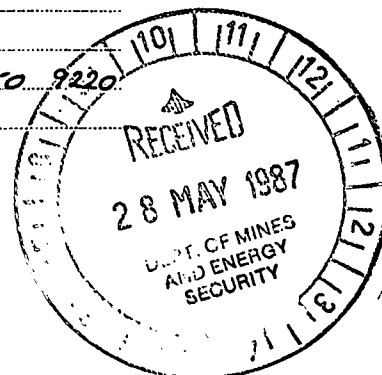
Tubing Size 2 7/8 FWHP 862 PSI

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

'X' Nipple @ 9244 'N' Nipple @ 9256 Other @

Min. I.D. 1.781 @ 9256 Packer @ 8950 9220

Perforated Interval: 9267-9294





**** BROLGA 1 ****

STATIC PRESSURE GRADIENT

TEST DATE: 10/4/87

TOP PRESSURE ELEMENT 29322/3950				BOTTOM PRESSURE ELEMENT 22420/4250		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.4310	863.3	----	0.4020	848.3	----
1000	0.4510	903.2	0.0399	0.4210	888.9	0.0405
2000	0.4720	945.1	0.0419	0.4400	929.4	0.0406
3000	0.4920	985.0	0.0399	0.4590	970.0	0.0406
4000	0.5130	1026.9	0.0419	0.4790	1012.7	0.0427
5000	0.5340	1068.8	0.0419	0.5000	1057.6	0.0449
6000	0.5550	1110.8	0.0419	0.5190	1098.2	0.0406
7000	0.5750	1150.7	0.0399	0.5400	1143.1	0.0449
8000	0.5970	1194.6	0.0439	0.5600	1185.9	0.0428
8500	0.6070	1214.6	0.0399	0.5710	1209.4	0.0471
9184	0.6220	1244.5	0.0438	0.5860	1241.5	0.0469
9250	0.6230	1246.5	0.0303	0.5870	1243.6	0.0324
9280	0.6240	1248.5	0.0666	0.5880	1245.8	0.0713
9294	0.6250	1250.5	0.1426	0.5890	1247.9	0.1529
LUB	0.4330	867.3	----	0.4070	859.0	----

GENERAL REMARKS:

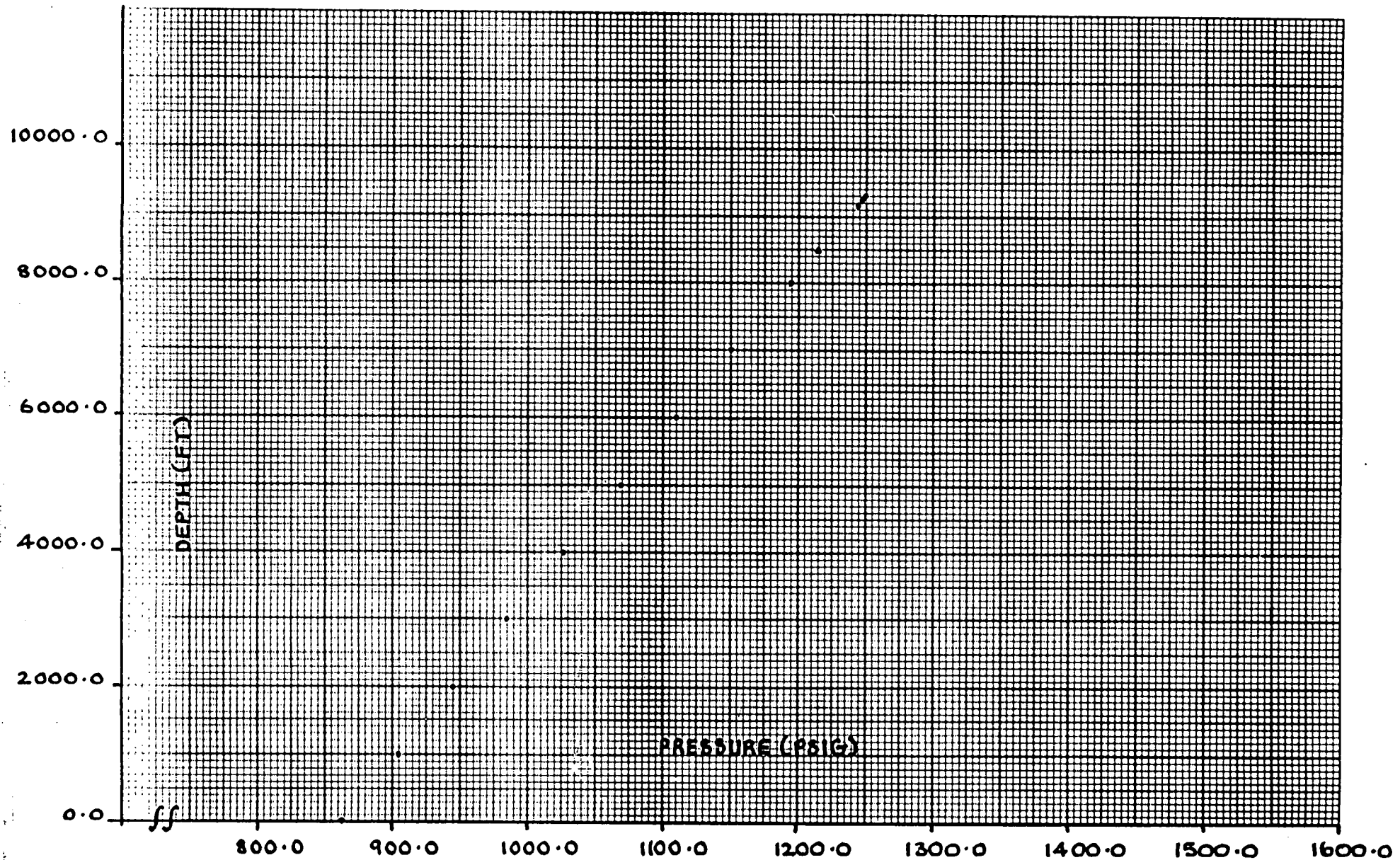
UN TEMP ELE NO22945/148-439 F RECORDER NO14621-15 TLS CLOCK 2323-3HR

DWT IN: 862
DWT OUT: 864
MAX BHT: RUN TEMP ELE

ELEMENT 29322/3950 CALIBRATED 25.1.87
ELEMENT 22420/4250 CALIBRATED 25.1.87

BROLGA # 1 - STATIC PRESSURE GRADIENT - 10/4/87

ELEMENT # 29322/3950 (TOP)



000205

WELL NAME:

BR06GA #1

STATIC GRADIENT SURVEY

DATE:

10-4-87

BOMB No. 1 DATA

ELEMENT No. 29322 ELEMENT RANGE: 3950 PSI
 ORDER No. 14632X15T15 CLOCK DATA: 2360X3HR
 GAGE SYLUS: 09335 DISENGAGE: 1231

BOMB No. 2 DATA

ELEMENT No. 22420 ELEMENT RANGE: 4250
 RECORDER No. 54651 CLOCK DATA: 2530X3HR
 ENGAGE SYLUS: 09335 DISENGAGE: 1231

LUBRICATOR DATA

PRESSURE WITH D.W.T.: IN 862 OUT 864
 TIME PRESSURED: 1003
 TIME DEPRESSURED: 1226

DATE	TIME	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT ps/ft	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT ps/ft	REMARKS
4-87		648	431			648	402			HANG 10 MIN
	1013									R.I.H.
	1017	1000	451			1000	421			HANG 3 MIN
	1024	2000	472			2000	440			" 3 "
	1031	3000	492			3000	459			" 3 "
	1038	4000	513			4000	479			" 3 "
	1045	5000	534			5000	500			" 3 "
	1052	6000	555			6000	519			" 3 "
	1100	7000	575			7000	540			" 3 "
	1107	8000	597			8000	560			" 3 "
	1113	8500	607			8500	571			" 3 "
	1119	9184	622			9184	586			" 3 "
	1123	9250	623			9250	587			" 3 "
	1126	9280	624			9280	588			" 3 "
	1130	9294	625			9294	589			" 3 "
	1135									P.O.O.H
	1216	648	433			648	407			HANG 10 MIN
										TEMP ELEMENT N° 22945X148°-439°
										RECORDER N° 14621X15T15
										CLOCK N° 2323X3HR

General Comments:

000206



WIRELINE REPORT

000207

WELL: BROGA #1

DATE: 11-12-87

PROGRAM: SET ISOLATION SLEEVE + RUN STATIC GRADIENT.

PURPOSE OF WORK:

REPORT OF WORK PERFORMED:

08:45 ARRIVED LOCATION RIGGED UP.
09:30 R.H. 1.75 B/BOX TO 9325 KB TAGGED BOTTOM P.O.D.H.
10:05 R.H. 1.875 ISOLATION TOOL TO 9194' KB UNABLE TO LOCATE IN SSD.
P.O.D.H. CHECKED ISOLATION TOOL (FOUND BOTTOM PIN SHEARED).
REDRESSED ISOLATION TOOL.
11:25 R.H. 1.875 ISOLATION TOOL TO 9194' KB SET P.O.D.H.
12:34 R.H. WITH STATIC GRADIENT WITH STOPS AS PER PROGRAM.
14:01 P.O.D.H. STATIC GRADIENT. BOTH CHARTS GOOD.
14:40 RIGGED DOWN.

Karl Dove
OPERATOR'S SIGNATURE

WORK PERFORMED BY: K. DOVE & S. CULBRANSEN OF EXPERTEST.

WELL DATA:

Tubing Size: 2 7/8" EUE FWHP: - SIWHP: 1048 PSI
Sub Surface S.V./Landing Nipple @ - S.S.D. @: 9182'
"X" Nipple @ 9244' "N"/"X" Nipple @ 9256' other -
Min I.D. 1.791" @ 9256' Packer @ 8250' & 9217'
Perforated Interval: 9042' - 9057' 9267' - 9294'

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

000208



** BROLGA #1 **

STATIC PRESSURE GRADIENT

TEST DATE: 11.12.87

TOP PRESSURE ELEMENT 22316/4075				BOTTOM PRESSURE ELEMENT 29323/3950		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.5005	1036.0	----	0.5270	1042.8	----
1000	0.5272	1091.4	0.0554	0.5560	1100.5	0.0577
2000	0.5547	1148.5	0.0571	0.5850	1158.2	0.0577
3000	0.5825	1206.2	0.0577	0.6140	1215.9	0.0577
4000	0.6115	1266.4	0.0602	0.6430	1273.6	0.0577
5000	0.6405	1326.6	0.0602	0.6730	1333.3	0.0597
6000	0.6702	1388.2	0.0616	0.7035	1394.0	0.0607
7000	0.7002	1450.5	0.0623	0.7340	1454.7	0.0607
8000	0.7318	1516.1	0.0656	0.7660	1518.3	0.0637
8500	0.7485	1550.8	0.0694	0.7835	1553.2	0.0696
8750	0.7570	1568.4	0.0706	0.7925	1571.1	0.0716
9000	0.7655	1586.1	0.0706	0.8012	1588.4	0.0693
9160	0.7718	1599.2	0.0818	0.8070	1599.9	0.0721
LUB	0.5055	1046.4	----	0.5300	1048.8	----

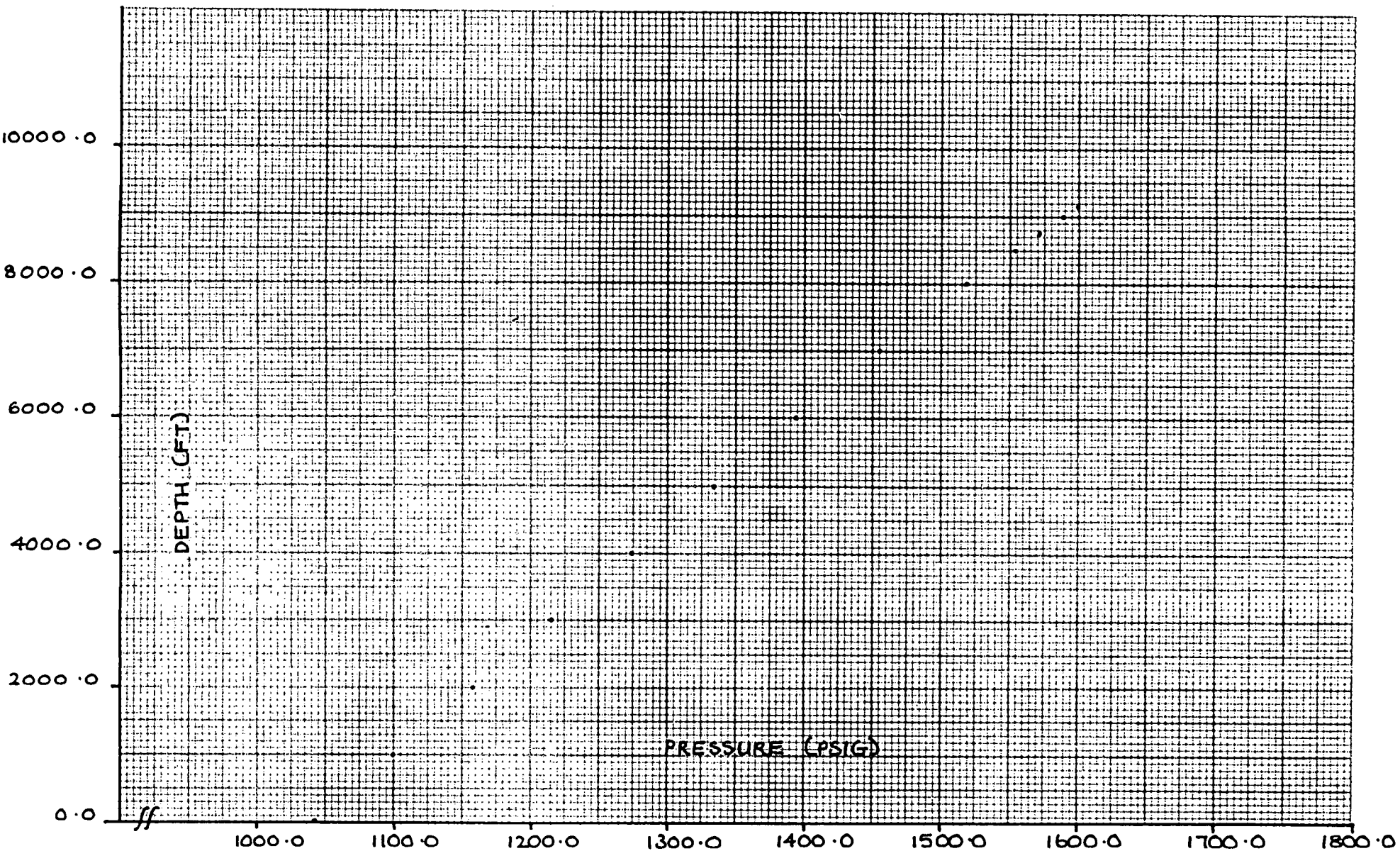
GENERAL REMARKS:

DWT IN: 1048
DWT OUT: 1047
MAX BHT: 268 F

ELEMENT 22316/4075 CALIBRATED 29.10.87
ELEMENT 29323/3950 CALIBRATED 29.10.87

BROLGA # 1 - STATIC PRESSURE GRADIENT - 11/12/87

ELEMENT # 29323 / 3950 (BOT)



000209



WIRELINE REPORT

000210

WELL: BRONGA # 1

DATE: 11-1-88

PROGRAM: STATIC GRADIENT

PURPOSE OF WORK:

REPORT OF WORK PERFORMED:

08:30 ARRIVED LOCATION RIGED UP.
09:43 R.I.H. WITH STATIC GRADIENT AS PER PROGRAM TO 9160' KB
11:28 P.O.O.H.
11:55 IN LUB. BOTH CHARTS GOOD.
12:25 R.I.H. 2" GS TO 9209' WLM & PULLED ISOLATION SLEEVE - P.O.O.H.
13:00 R.I.H. 2" PX PLUG TO 9272' (WLM) SET OK P.O.O.H.
13:50 R.I.H. 1" PAX TO 9272' (WLM) & SET IN PX PLUG P.O.O.H.
14:30 BLEED TUBING DOWN FROM 1117 PSI TO 600 PSI
14:40 RIGED DOWN.

Keith D...
OPERATOR'S SIGNATURE

WORK PERFORMED BY: K. DOVE & MANY OF EXPERTEST.

WELL DATA:

Tubing Size: 2 7/8" EU FWHP: SIWHP: 1117 PSI

Sub Surface S.V./Landing Nipple @ S.S.D. @: 9162'

"X" Nipple @ 9244' "N"/"XN" Nipple @ 9256' other -

Min I.D. 1.791" @ 9256' Packer @ 8949', 9217'

Perforated Interval: 9042'-9057' 9267'-9294'

Forward to: Petroleum Engineering - Adelaide
Production Department - Moomba

8/2/88

000211



** BROLGA # 1 **

STATIC PRESSURE GRADIENT

TEST DATE: 11-1-88

DEPTH (FT.)	TOP PRESSURE ELEMENT 22410/4100			BOTTOM PRESSURE ELEMENT 21374/4075		
	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.5420	1104.2	----	0.5470	1101.5	----
1000	0.5720	1166.0	0.0618	0.5775	1163.8	0.0623
2000	0.6025	1228.9	0.0629	0.6090	1228.1	0.0644
3000	0.6330	1291.8	0.0629	0.6400	1291.5	0.0634
4000	0.6660	1359.9	0.0681	0.6730	1359.0	0.0675
5000	0.6965	1422.8	0.0630	0.7050	1424.5	0.0655
6000	0.7300	1492.1	0.0692	0.7385	1493.1	0.0686
7000	0.7640	1562.4	0.0703	0.7730	1563.7	0.0707
8000	0.8000	1636.9	0.0745	0.8090	1637.5	0.0738
8500	0.8190	1676.3	0.0787	0.8290	1678.6	0.0820
8750	0.8300	1699.1	0.0912	0.8380	1697.0	0.0738
9000	0.8390	1717.8	0.0746	0.8480	1717.5	0.0821
9160	0.8450	1730.2	0.0778	0.8540	1729.8	0.0769
LUB	0.5480	1116.6	----	0.5530	1113.7	----

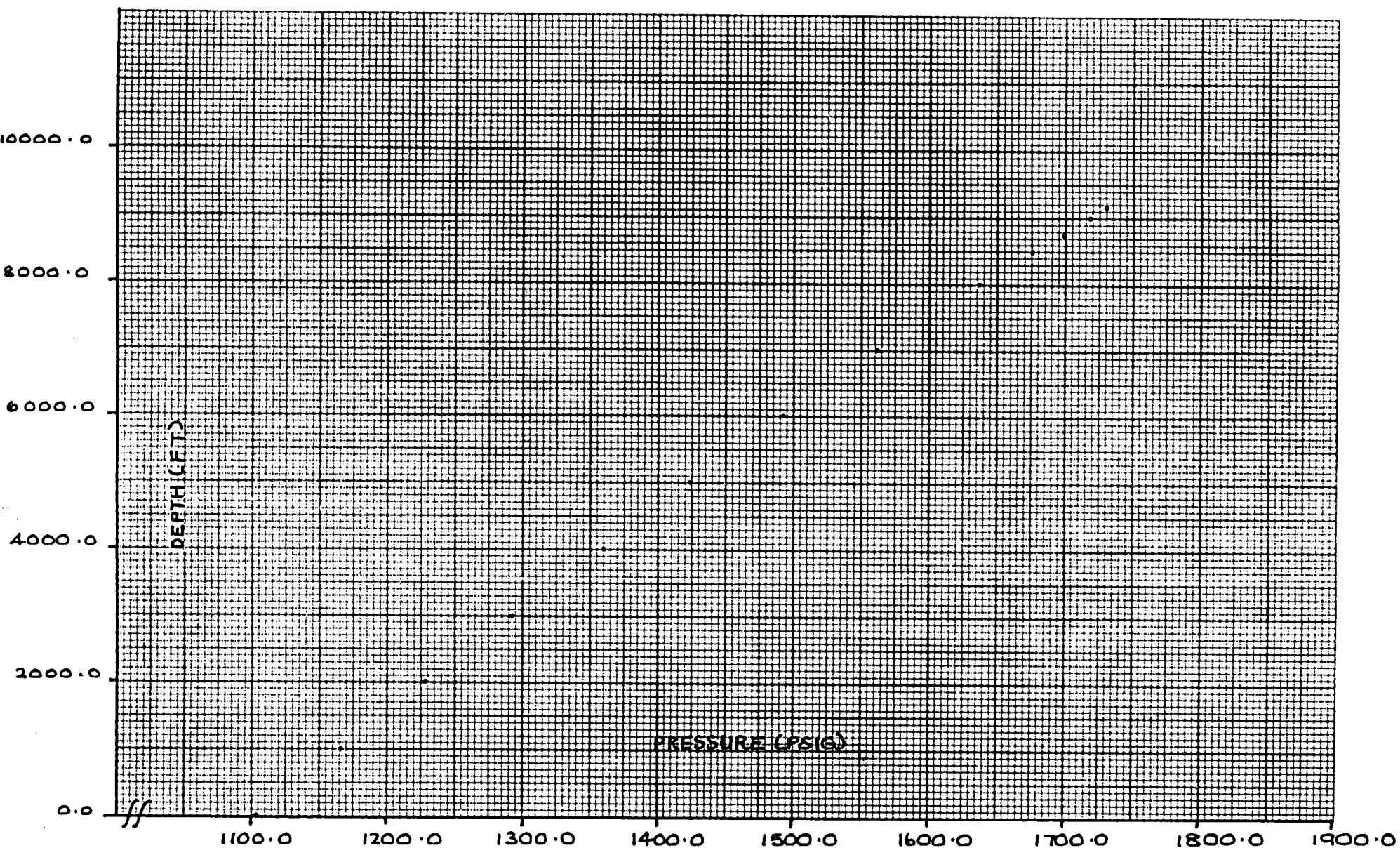
GENERAL REMARKS:
MBHT NOT AVAILABLE

DWT IN: 1114
DWT OUT: 1117
MAX BHT: 0

ELEMENT 22410/4100 CALIBRATED 7.1.88
ELEMENT 21374/4075 CALIBRATED 7.1.88

BROLGA # 1 - STATIC PRESSURE GRADIENT - 11/1/88

ELEMENT # 22410/4100 (TOP)



000212



CLIENT SANTOS

WELL BROLGA #1

STATIC GRADIENT SURVEY

OPERATOR A. SMITH

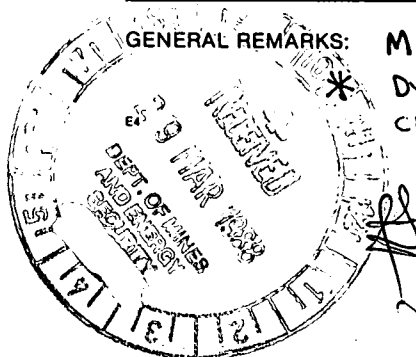
DATE 6-2-88

BOMB No. 1 DATA						BOMB No. 2 DATA				DWT IN 6.84 KPA DWT OUT Ø	
ELEMENT No. <u>85036A</u>		ELEMENT RANGE <u>5150 PSI</u>				ELEMENT No. <u>46103</u>		ELEMENT RANGE <u>4800 PSI</u>			
RECORDER No. <u>70544</u>		CLOCK DATA <u>15014 x 3 HR</u>				RECORDER No. <u>14633</u>		CLOCK DATA <u>2533 x 3 HR</u>			
ENGAGE STYLUS <u>1355</u>		DISENGAGE <u>1605</u>				ENGAGE STYLUS <u>1355</u>		DISENGAGE <u>1605</u>			
PRESSURE LUBRICATOR <u>1405</u>						BLEED LUBRICATOR <u>1600</u>					
DATE	TIME	DEPTH METERS	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH METERS	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS	
<u>6TH</u>	<u>FEBRUARY</u>	<u>1988</u>									
	<u>1405</u>	<u>LUB</u>				<u>LUB</u>				<u>PRESSURE LUBRICATOR</u>	
	<u>1415</u>	<u>R.I.H</u>								<u>RUN IN HOLE</u>	
	<u>1418</u>	<u>304.8</u>				<u>304.8</u>					
	<u>1424</u>	<u>609.6</u>				<u>609.6</u>					
	<u>1430</u>	<u>914.4</u>				<u>914.4</u>					
	<u>1436</u>	<u>1219.2</u>				<u>1219.2</u>					
	<u>1442</u>	<u>1524</u>				<u>1524</u>					
	<u>1448</u>	<u>1828.8</u>				<u>1828.8</u>					
	<u>1454</u>	<u>2133.6</u>				<u>2133.6</u>					
	<u>1500</u>	<u>2438.4</u>				<u>2438.4</u>					
	<u>1505</u>	<u>2590.8</u>				<u>2590.8</u>					
	<u>1509</u>	<u>2667</u>				<u>2667</u>					
	<u>1513</u>	<u>2743.2</u>				<u>2743.2</u>					
	<u>1517</u>	<u>2791.9</u>				<u>2791.9</u>					
	<u>1527</u>	<u>P.O.O.H</u>								<u>PULL OUT OF HOLE</u>	
	<u>1550</u>	<u>LUB</u>				<u>LUB</u>				<u>ARRIVE IN LUBRICATOR</u>	

GENERAL REMARKS:

MBHT = N/A °F = N/A °C CASING = Ø KPA

* DUE TO THE EXCEEDINGLY LOW BHP IT WAS NOT POSSIBLE TO INTERPRET THE BHP CHARTS AS THE TRACE DID NOT LEAVE THE BASELINE.



000213

ENV. 1927



WIRELINE REPORT

000214

WELL: BROLGA #1

DATE: 6-2-88

PROGRAM: STATIC GRADIENT

PURPOSE OF WORK:

REPORT OF WORK PERFORMED:

6TH FEBRUARY 1988

1325 ARRIVE ON LOCATION & RIG UP WIRELINE EQUIPMENT.
(NO DUMMY RUN REQUIRED)
1405 PRESSURE TEST EQUIPMENT (PRESSURE LUBRICATOR.)
1415 R.I.H. WITH 2. PRESSURE ELEMENTS & M.B.H. THERMOMETER.
1527 P.O.O.H
1550 ARRIVE IN LUBRICATOR
1600 BLEED LUBRICATOR, RECOVER CHARTS (OK.) & RIG DOWN
WIRELINE EQUIPMENT.

N.B. DUE TO THE EXCEEDINGLY LOW BHP IT WAS NOT
POSSIBLE TO INTERPRET THE CHARTS AS THE TRACE DID
NOT LEAVE THE BASELINE.

A. Smith
OPERATOR'S SIGNATURE

WORK PERFORMED BY: A. SMITH OF EXPERTEST.

WELL DATA:

Tubing Size: 2 7/8" FWHP: - SIWHP: 6.9 KPA

Sub Surface S.V./Landing Nipple @ 2818 m S.S.D. @ 2799 m

"X" Nipple @ "N"/"XN" Nipple @ 2821 m other

Min I.D. 47.62 mm @ 2818 m Packer @ 2728 m & 2809 m

Perforated Interval: PATCHAWARRA - 2756 m - 2833 m

Forward to: Petroleum Engineering - Adelaide
Production Department - Moomba



WIRELINE REPORT

000215

WELL: BROGGA #1

DATE: 7-2-88

PROGRAM: OPEN SSD

PURPOSE OF WORK:

REPORT OF WORK PERFORMED:

12:45 ARRIVED LOCATION. RIGED UP.

13:10 R.H. 1.875 SHIFTING TOOL TO 2812 M UNABLE TO LOCATE IN SSD
OPENING DOWN P.O.O.H.

13:55 R.H. 1.875 SHIFTING TOOL TO 2812 M UNABLE TO LOCATE IN SSD
OPENING UP P.O.O.H.

14:35 RIGED DOWN

Karl De...
OPERATOR'S SIGNATURE

WORK PERFORMED BY: K. DOWE - R. SARGENT OF EXPERTEST

WELL DATA:

Tubing Size: 2 7/8" EUE FWHP: SIWHP: 97 KPA

Sub Surface S.V./Landing Nipple @ S.S.D. @:

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

Min I.D. @ Packer @

Perforated Interval:

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

000216

WELL: <u>Brolga # 1</u>	Pf =	kPa
ORIFICE SIZE: 25.400 mm 1.000 "	T =	°C
LINE SIZE: 97.180 mm 3.826 "	Diff =	kPa

Cumulative Production to end of June = 25.865 m³ x 10⁶

Number of hours online in June = 648

Production in June = 0.239 m³ x 10⁶

.. Average flow rate in June = (0.239/648) x 24 = 0.009 m³ x 10⁶/d

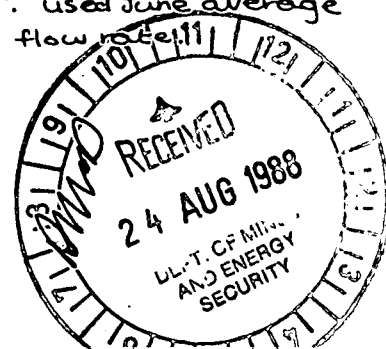
Number of days online in June ^{after} before Shut In 0700 hrs 29/6 /88
= NIL

.. Production up to 0700 hrs 29 / 6 /88 = June total Production m³ x 10⁶

Total cumulative production

= 25.865 m³ x 10⁶
= 918.052 mmscf ✓

Flow rate just prior to Shut In = no flow recorded 3 prior 6 to well being shut in
0.009 m³ x 10⁶ ∴ used June average
= 0.314 mmscf/d ✓



SANTOS LTD
39 GRENELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS	RUN 01 FIELD BROLGA	WELL 01
EFF DEPTH	WELL STAT	TOOL HUNG 9268'
CASING -	CASING PRESS	ON BOTTOM 2000 28/6
LINER -	TUBING PRESS	OFF BOTTOM 0700 3/8
DATE 880703	ELEMENT RANGE 0 - 4164	ZERO POINT
ELEVATION	ZONE	SHUT-IN 0700 29/6
MAX TEMP	PICK-UP	ON-PROD
PERF -	CAL SER NO. 22316	MPP
TUBING -		

UNITS	ENGLISH	PURPOSE	BUILD-UP
-------	---------	---------	----------

SURVEY DATA

CO. SANTOS				RUN 01 FIELD BROLGA				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
7:00	1376.0	0.0	0.0	7:34	1429.8	53.8	.6				
7:01	1391.2	15.2	.0	7:40	1431.3	55.2	.7				
7:02	1396.8	20.8	.0	7:45	1433.3	57.3	.8				
7:03	1402.1	26.0	.1	7:59	1437.4	61.4	1.0				
7:05	1405.2	29.1	.1	8:59	1441.6	65.5	2.0				
7:06	1408.1	32.0	.1	10:37	1453.3	77.3	3.6				
7:07	1411.4	35.4	.1	16:23	1470.1	94.1	9.4				
7:09	1414.3	38.3	.2	0:23	1480.2	104.1	17.4				
7:11	1416.4	40.3	.2	7:38	1488.5	112.5	24.6				
7:14	1418.7	42.6	.2	17:01	1493.5	117.4	34.0				
7:16	1420.7	44.7	.3	6:39	1501.4	125.4	47.7				
7:20	1422.6	46.6	.3	19:14	1507.7	131.7	60.2				
7:23	1425.1	49.0	.4	7:54	1513.8	137.8	72.9				
7:26	1427.4	51.3	.4	19:43	1520.5	144.5	84.7				
7:31	1428.6	52.6	.5	7:00	1524.0	147.9	96.0				

LUB IN DWT = 702 PSI / OUT = 1022 PSI

LUB IN AMERADA = 705 PSI / OUT = 1026 PSI

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS	RUN 02 FIELD BROLGA	WELL 01
EEF DEPTH	WELL STAT	TOOL HUNG 9274'
CASING -	CASING PRESS	ON BOTTOM 2000 28/6
LINER -	TUBING PRESS	OFF BOTTOM 0700 3/6
DATE 880703	ELEMENT RANGE 0 - 4032	ZERO POINT
ELEVATION	ZONE	SHUT-IN 0700 29/6
MAX TEMP	PICK-UP	ON-PROD
PERF -	CAL SER NO. 22418	MPP
TUBING -		
UNITS ENGLISH	PURPOSE	BUILD-UP

SURVEY DATA

CO. SANTOS		RUN 02 FIELD BROLGA		WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
7:00	1379.2	0.0	0.0	11:07	1458.6	79.4	4.1
7:01	1386.2	7.0	.0	13:36	1464.3	85.1	6.6
7:02	1397.5	18.3	.0	16:14	1473.9	94.7	9.2
7:04	1405.6	26.4	.1	20:06	1478.2	99.1	13.1
7:06	1411.8	32.6	.1	0:08	1483.9	104.7	17.1
7:10	1418.1	38.9	.2	5:41	1489.5	110.3	22.7
7:14	1420.3	41.1	.2	13:13	1494.1	114.9	30.2
7:17	1424.6	45.4	.3	20:53	1499.6	120.4	37.9
7:22	1428.6	49.4	.4	5:50	1504.9	125.7	46.8
7:31	1430.9	51.7	.5	15:07	1509.1	129.9	56.1
7:44	1435.2	56.0	.7	3:15	1516.3	137.1	68.2
7:55	1439.8	60.7	.9	15:19	1519.7	140.5	80.3
8:26	1442.4	63.2	1.4	4:42	1525.3	146.1	93.7
9:07	1446.3	67.1	2.1	7:00	1529.1	149.9	96.0
9:51	1453.0	73.8	2.8	0:00	0.0	0.0	0.0

LUB IN DWT = 702 PSI / OUT = 1022 PSI

LUB IN AMERADA = 697 PSI / OUT = 1018 PSI

000219



** BROLGA #1 **

STATIC PRESSURE GRADIENT

TEST DATE: 3.07.88

TOP PRESSURE ELEMENT 22316/4075				BOTTOM PRESSURE ELEMENT 22418/4000		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.4920	1021.8	----	0.5120	1019.3	----
1000	0.5190	1077.9	0.0561	0.5400	1075.1	0.0558
2000	0.5440	1129.9	0.0520	0.5660	1127.0	0.0519
3000	0.5700	1183.9	0.0540	0.5940	1182.9	0.0559
4000	0.5960	1238.0	0.0540	0.6210	1236.8	0.0539
5000	0.6220	1292.0	0.0540	0.6480	1290.8	0.0540
6000	0.6470	1344.0	0.0520	0.6750	1344.8	0.0540
7000	0.6740	1400.1	0.0561	0.7030	1400.8	0.0560
8000	0.7000	1454.2	0.0541	0.7320	1458.9	0.0581
8500	0.7140	1483.3	0.0582	0.7470	1488.9	0.0601
9000	0.7280	1512.4	0.0582	0.7610	1517.0	0.0561
9280	0.7360	1529.0	0.0594	0.7690	1533.0	0.0573
LUB	0.4960	1030.1	----	0.5150	1025.2	----

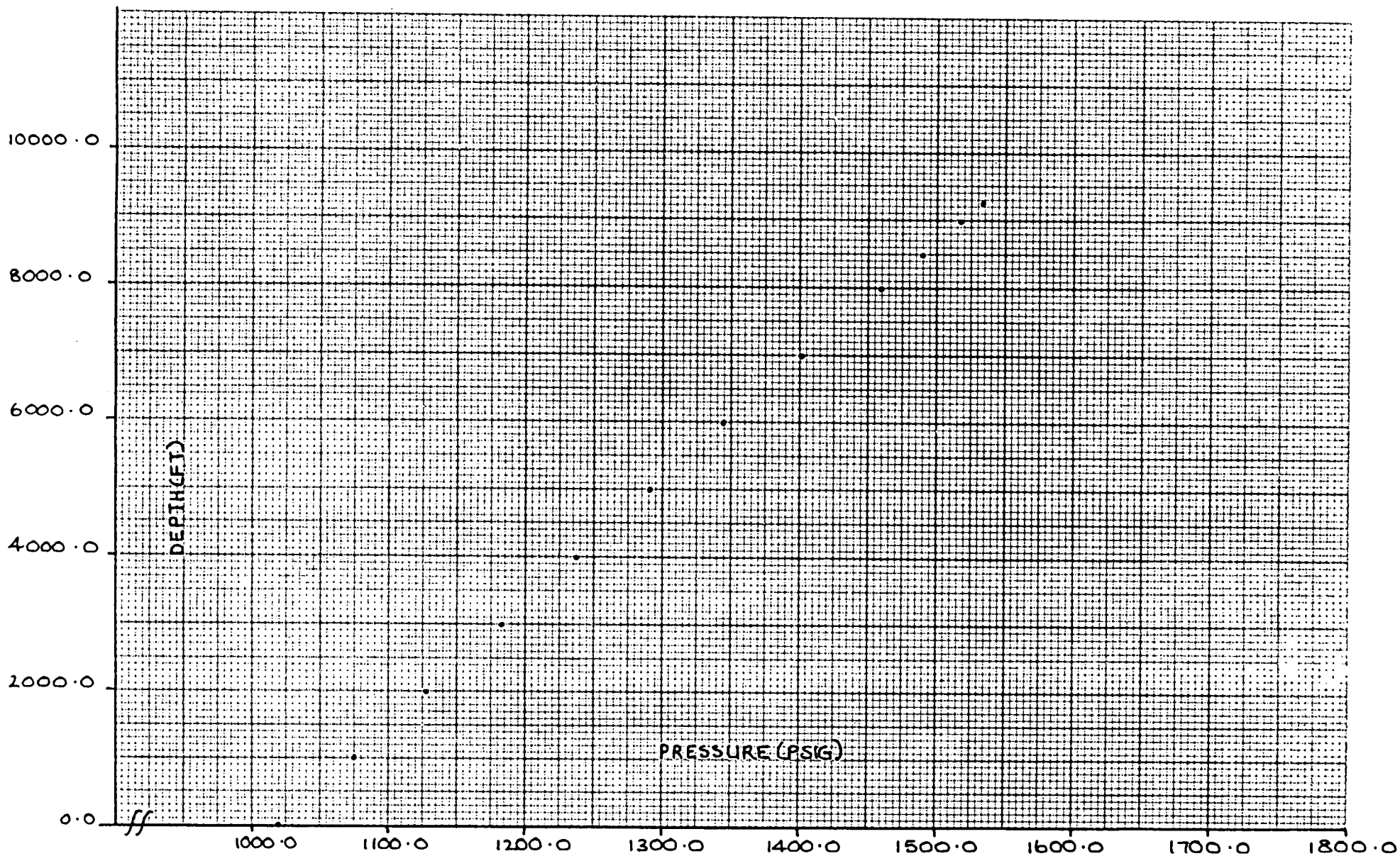
GENERAL REMARKS:

DWT IN: 1020
 DWT OUT: 1027
 MAX BHT: 272 F or 133 C

ELEMENT 22316/4075 CALIBRATED 9.6.88
 ELEMENT 22418/4000 CALIBRATED 9.6.88

BROLGA # 1 - STATIC PRESSURE GRADIENT - 3/7/88

ELEMENT # 22418/4000 (BOT)





CLIENT SANTOS LTD.

WELL Brolga #1 FORM Palcaawarra

STATIC GRADIENT SURVEY

OPERATOR I. Kurnial

DATE 3.07.88

BOMB No. 1 DATA						BOMB No. 2 DATA				DWT IN
ELEMENT No. <u>22316</u>		ELEMENT RANGE <u>4075 PSI</u>				ELEMENT No. <u>22418</u>		ELEMENT RANGE <u>4000 PSI</u>		1020 PSI
RECORDER No. <u>14928 x 15 TKS</u>		CLOCK DATA <u>A16080 x 3 HRS</u>				RECORDER No. <u>14926 x 15 TKS</u>		CLOCK DATA <u>A16046 x 3 HRS</u>		DWT OUT
ENGAGE SYLUS <u>1020 HRS</u>		DISENGAGE <u>1232 HRS</u>				ENGAGE SYLUS <u>1020 HRS</u>		DISENGAGE <u>1232 HRS</u>		1027 PSI
PRESSURE LUBRICATOR <u>1028 HRS</u>						BLEED LUBRICATOR <u>1224 HRS</u>				
DATE	TIME	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLEC-TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
<u>3.07.88</u>	<u>1028</u>	<u>0</u>	<u>492</u>			<u>0</u>	<u>512</u>			
	<u>1038</u>	<u>R.I.H.</u>				<u>R.I.H.</u>				
	<u>1042</u>	<u>1000</u>	<u>519</u>			<u>1000</u>	<u>540</u>			
	<u>1048</u>	<u>2000</u>	<u>544</u>			<u>2000</u>	<u>566</u>			
	<u>1054</u>	<u>3000</u>	<u>570</u>			<u>3000</u>	<u>594</u>			
	<u>1101</u>	<u>4000</u>	<u>596</u>			<u>4000</u>	<u>621</u>			
	<u>1107</u>	<u>5000</u>	<u>622</u>			<u>5000</u>	<u>648</u>			
	<u>1113</u>	<u>6000</u>	<u>647</u>			<u>6000</u>	<u>675</u>			
	<u>1119</u>	<u>7000</u>	<u>674</u>			<u>7000</u>	<u>703</u>			
	<u>1125</u>	<u>8000</u>	<u>700</u>			<u>8000</u>	<u>732</u>			
	<u>1130</u>	<u>8500</u>	<u>714</u>			<u>8500</u>	<u>747</u>			
	<u>1135</u>	<u>9000</u>	<u>728</u>			<u>9000</u>	<u>761</u>			
	<u>1140</u>	<u>9280</u>	<u>735</u>			<u>9280</u>	<u>769</u>			
	<u>1150</u>	<u>P.O.O.H.</u>				<u>P.O.O.H.</u>				
	<u>124</u>	<u>0</u>	<u>496</u>			<u>0</u>	<u>515</u>			

GENERAL REMARKS:

E4

000221

000222

Well: BEOLGA #1 Date: 28/6/88

Lubricator Data: ① 705 1026 Operator: R. CAMPBELL
② 697 1018

Pressure with D.W.T. In TURBINE 4340 KPA GAS @ (702 PSI) Out Tubing 7047 KPA GAS @ (1022 PSI)

Time Pressured 1630 HRS 28/6/88 Time Depressed 10.00 HRS 3.07.88

Time Run in Hole 1930 HRS 28/6/88 Time off Bottom 0700 HRS 3.07.88

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range	<u>22316 x 1075 PSI</u>	<u>22418 x 1000 PSI</u>
Recorder No.	<u>14928 x 15 TLS</u>	<u>14926 x 15 TLS</u>
Clock and Lead Screw Data	<u>F15685 x 120 HR.</u>	<u>F15683 x 120 HR.</u>
Engage Stylus	Date: <u>28/6/88</u> Time: <u>1612 HRS.</u>	Date: <u>28/6/88</u> Time: <u>1612 HRS</u>
Disengage	Date: <u>3.07.88</u> Time: <u>1007 HRS</u>	Date: <u>3.07.88</u> Time: <u>1007 HRS</u>

Remarks: TEMP ELEMENT # 29217 = 114/338°F RUN WITH PRESSURE ELEMENTS
RECORDER # 14621 = 15 TLS
CLOCK # F15682, 120 HRS. Temp N/A due to unreadable baseline.

28/6/88 2000 @ 9280' KB

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead KPA _g	Casing KPA _g	Wellhead Temp.	Remarks
<u>28/6/88</u>	<u>0700</u>	<u>0</u>	<u>4550</u>	<u>0</u>		<u>START WELL IN FOR BUMP UP</u>
	<u>0715</u>		<u>5109</u>	<u>"</u>		
	<u>0730</u>		<u>5316</u>	<u>"</u>		
	<u>0745</u>		<u>5502</u>	<u>"</u>		
	<u>0800</u>	<u>1</u>	<u>5633</u>	<u>"</u>		
	<u>0815</u>		<u>5722</u>	<u>"</u>		
	<u>0830</u>		<u>5798</u>	<u>"</u>		
	<u>0845</u>		<u>5826</u>	<u>"</u>		
	<u>0900</u>	<u>2</u>	<u>5929</u>	<u>"</u>		
	<u>0915</u>		<u>6040</u>	<u>"</u>		
	<u>0930</u>		<u>6088</u>	<u>"</u>		
	<u>0945</u>		<u>6136</u>	<u>"</u>		
	<u>1000</u>	<u>3</u>	<u>6184</u>	<u>"</u>		
	<u>1015</u>		<u>6239</u>	<u>"</u>		
	<u>1030</u>		<u>6295</u>	<u>"</u>		
	<u>1045</u>		<u>6336</u>	<u>"</u>		
	<u>1100</u>	<u>4</u>	<u>6370</u>	<u>"</u>		
	<u>1500</u>	<u>8</u>	<u>6895</u>	<u>"</u>		
	<u>1900</u>	<u>12</u>	<u>6881</u>	<u>"</u>		
	<u>2300</u>	<u>16</u>	<u>7033</u>	<u>"</u>		
<u>30.6.88</u>	<u>0300</u>	<u>20</u>	<u>7115</u>	<u>"</u>		
	<u>0700</u>	<u>24</u>	<u>7288</u>	<u>"</u>		
	<u>1100</u>	<u>28</u>	<u>7378</u>	<u>"</u>		
	<u>1500</u>	<u>32</u>	<u>7378</u>	<u>"</u>		

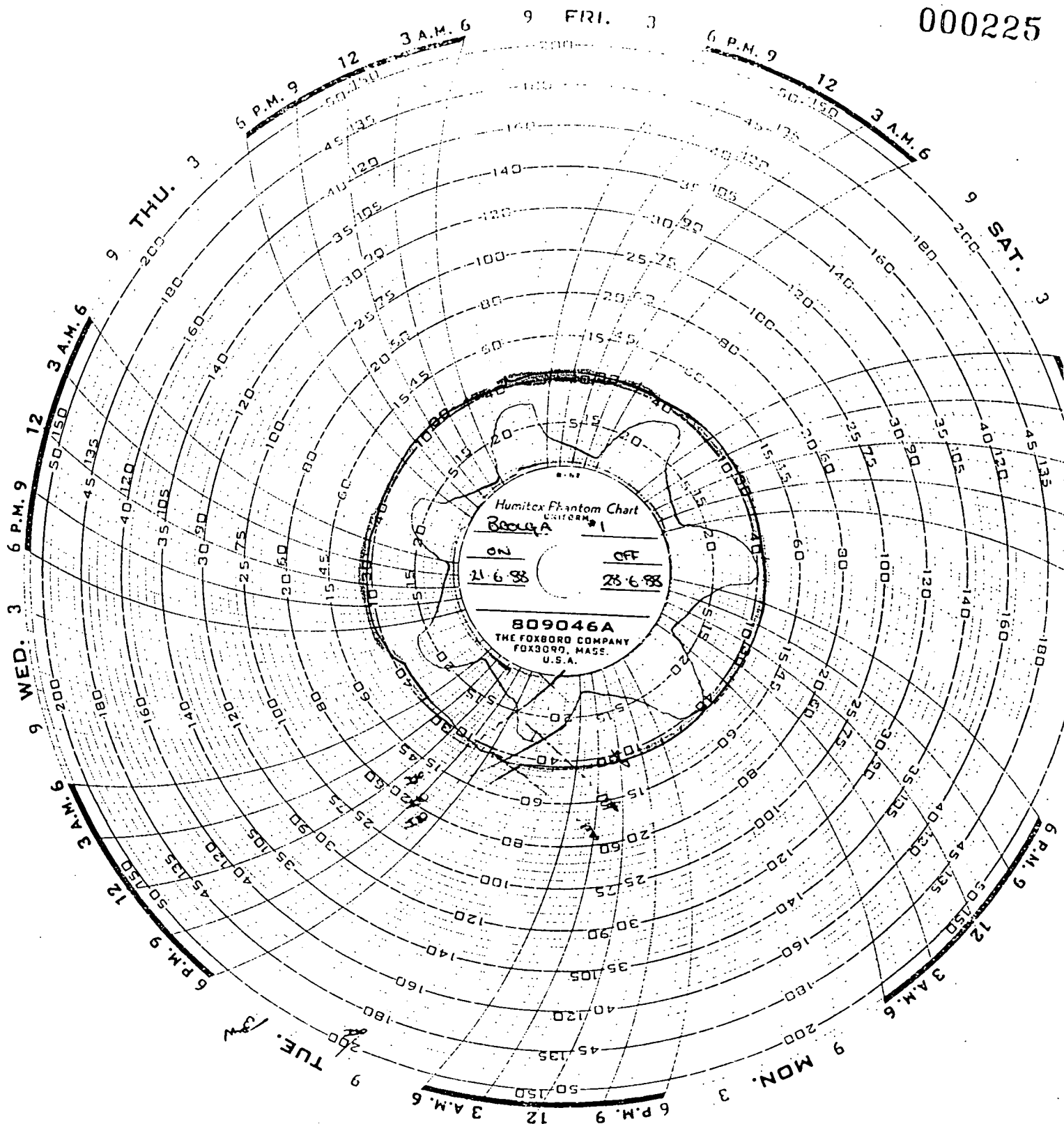
EP

135

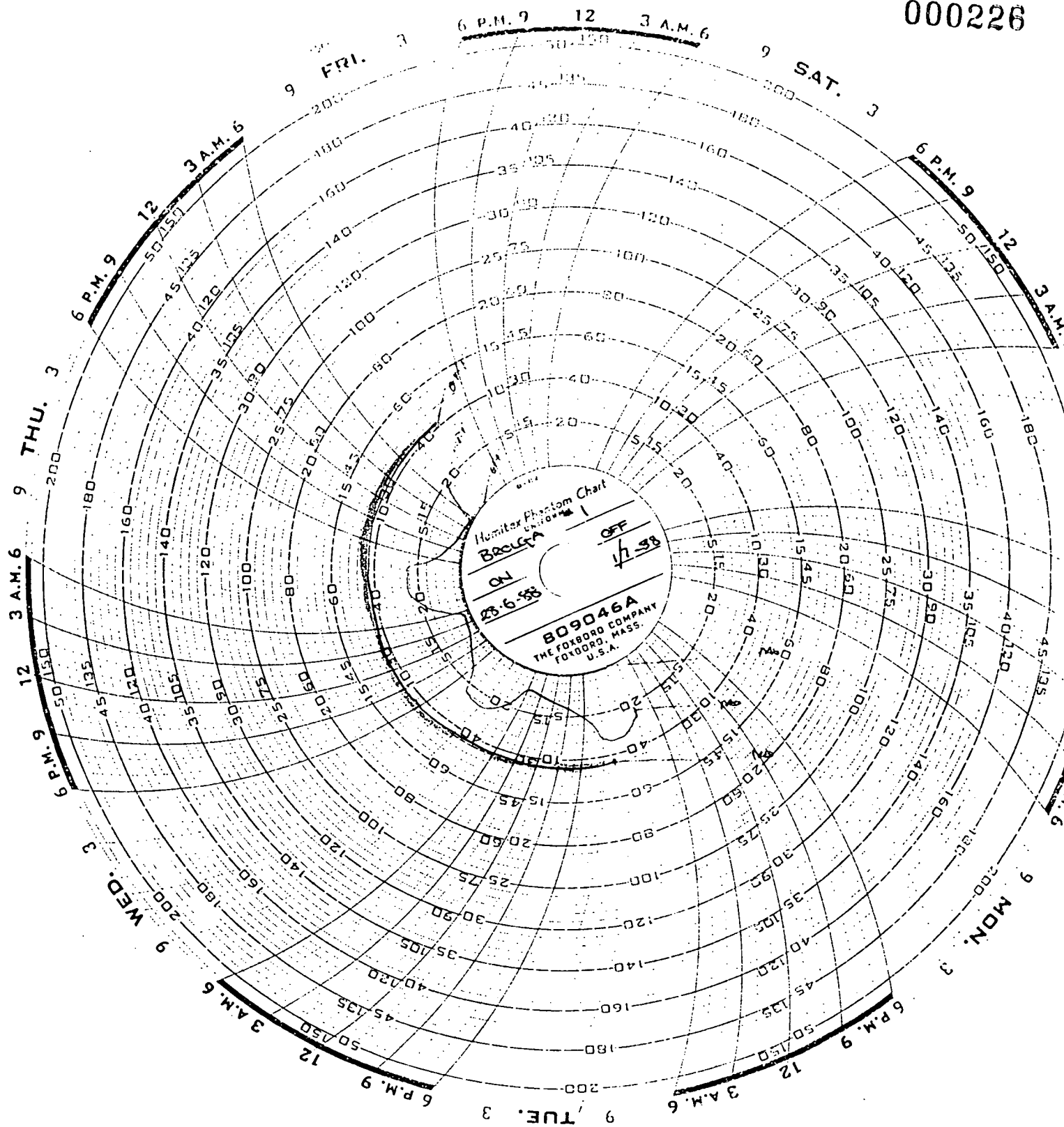
000224

Well ID#		Well Name		Well No.		Date	
Bouga #1		21 / L 88		L-88665		28 / 6 / 88	
Depth		OR: DIA.		25.400		RE	
Time		97.180		RE			
Pressure		0-20 MPa BLUE		0-50 KPa RED		0-150°C GREEN	
Well on Test		YES ☐		NO ☒		CHOKE SETTING ☐	

000225



000226



000227

WIRELINE REPORT

CLIENT **SANTOS LTD.**

WELL **BROLGA*1**

DATE **27/6/88**

PROGRAMME **BOTTOM HOLE PRESSURE SURVEY - APRIL 1988** WP 43075

PURPOSE OF WORK **BLIND BOX RUN OF 1.75" (44.5mm) TO ENSURE TUBING AND PERPS CLEAR OF OBSTRUCTIONS PRIOR TO RUNNING TANDEN PRESSURE ELEMENTS AND TEMP. ELEMENT IN HOLE FOR FLOWING BOTTOM HOLE PRESSURE / BUILDUP SURVEY.**

REPORT OF WORK PERFORMED **27/6/88**

1550 ARRIVED ON LOCATION, RIG UP TOOL STRING OF ROPE SOCKET
1600 5' WEIGHT BAR, NUCLE JOINT, 5' SPARK TAPS, 1' WEIGHT BAR, 1.75' BUND BOX.
1615 RIG UP TWO SECTIONS OF LUBRICATOR STAND BY FOR FIELD
1630 OPERATOR. SHUT WELL IN AND INSTALL SWAB VALVE.
1645 RIG UP AND FUNCTION TEST BOP'S. PRESSURE TEST HUB TH 180 KPA
1648 RUN IN HOLE, TAG OBSTRUCTION IN XMAS TREE, RUN WEIGHT
BACK ON WIRE WITH UNIT. PULL WIRE BY HAND AND IDENT-
1650 IFY OBSTRUCTION, OPEN MASTER VALVE COMPLETELY, BLIND
BOX DROPPED THROUGH, JARRED DOWN ON WIRE AND SWAPPED
AT ROPE SOCKET. RETURN TO MOORBA

28/6/88

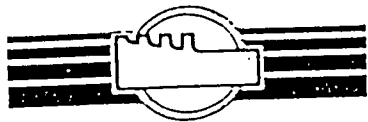
1045 ARRIVED ON LOCATION, STRIP OFF 200' OF WIRE FROM UNIT
"107, UNSTAIR LUBRICATOR AND BREAK DOWN.
1130 RE DRESS STUFFING BOX, MAKE UP LUBRICATOR AND TOOL
STRING OBTAINED FROM MOORBA K.B. AT TUBING SPOOL, STAD.
1215 RUN IN HOLE WITH 1.75" BLIND BOX TH 6619 KPA CAS @.
1250 TAG P.B.T.D @ 9330' KB. PERPS GEAR. POSITELY TAGED TO OF 11.5' DIA.
1251 PULL OUT OF HOLE.
1305 AT SURFACE WITH TOOL STRING, PREPARE TO RUN ELEMENTS.
TH 6757 KPA CAS @ 1315 OPEN WELL TO ATMOSPHERE 20/61 CHARGE.
1930 RUN IN HOLE WITH TANDEN PRESS ELEMENTS & TEMP. ELEMENT TH 4860 KPA CAS @

Operator's Signature

WORKED PERFORMED BY **R. CAMPBELL** OF **EXPERTEST.**

WELL DATA:

Tubing Size **2 7/8"** FWHP **5771 KPA** SIWHP **6895 KPA**
Subsurface S.V./Landing Nipple @ **9182.68 → 9185.15' KB.**
'X' Nipple @ **9244.22' KB → 9245' KB** 'N'/'XT' Nipple @ **9256.73' KB** Other @ **9256.73' KB.**
Min. I.D. **1.791"** @ **9256.73' KB.** Packer @ **8950' KB + 9217' KB.**
Perforated Interval: **9012' → 9051' KB, 9267' → 9294' KB**



SEQUENCE OF EVENTS

CUSTOMER : SANTOS PETROLEUM

PERFORATIONS:

PAGE: 1 OF

WELL NAME: BROGA #1

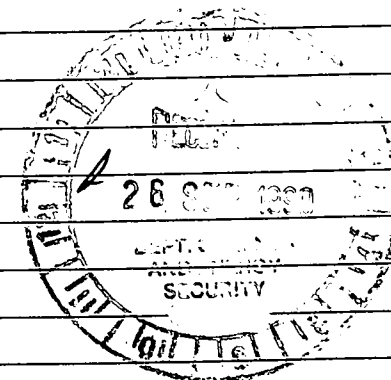
FORMATION : PATCHAWARRA

DATE: 14.4.90

TEST TYPE : STATIC GRADIENT

OPR: R. LARKIN

DATE/TIME	DESCRIPTION OF EVENTS
APRIL 14/90	
10:10	on location. well shut in due to unable to flow.
	Rig up w/l unit, lub, BOP.
10:45	R.I.H. 1.75" BLIND BOX
11:05	Hit obstruction at 8991' KB. unable to pass.
11:10	POOH.
11:35	R.I.H. 1.5" TOOL STRING.
11:55	Hit SAME obstruction. unable to pass.
12:00	POOH.
12:30	CONFER with P.E. (A. POTTER)
13:10	R.I.H. 1.925" LEAD IMPRESSION BLOCK.
13:25	tag obstruction. POOH.
13:45	check LTB. NO IMPRINT. except along outer diameter of LTB.
	Rig up FOR STATIC GRADIENT.
14:05	Pres. Lub
14:20	R.I.H.
15:31	Bottom stop. 8977' KB. 15 min.
15:46	POOH
16:02	IN Lub
16:17	Dep. Lub charts good. Rig DOWN
16:45	Secure well.
	note. Tag Fluid at 4700' KB.



000228



DOWNHOLE INSTALLATION

000229

Well: Brolga-1

K.B. to top of tubinghead spool

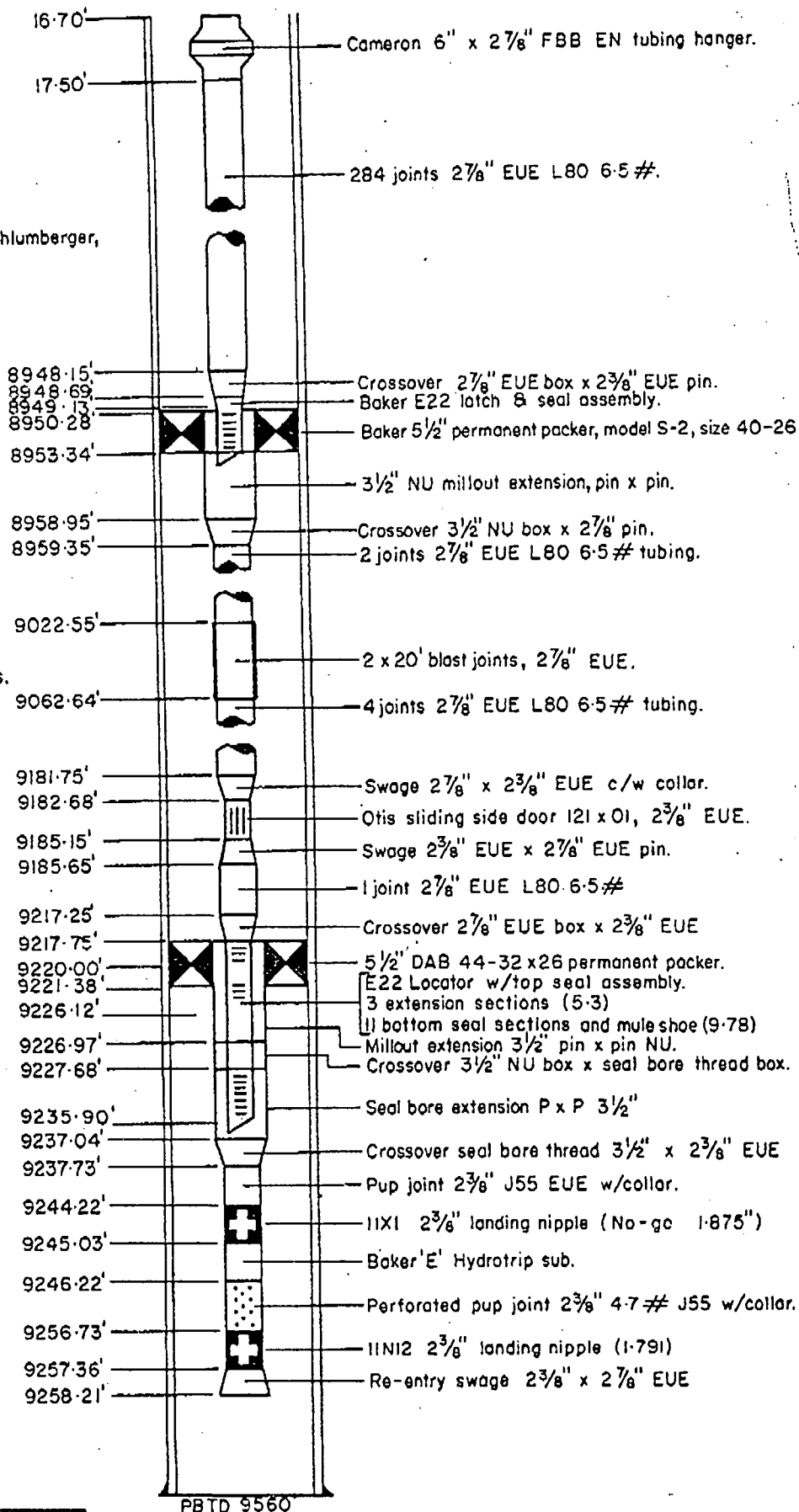
REMARKS

1. Tagged T.D. at 9560' K.B.
2. Logger T.D. at 9575' K.B.
3. Bottom packer set 9220' K.B. by Schlumberger, landed in 10000# compression.
4. Top packer at 8950' K.B. landed in 10000# compression.

PERFORATIONS

PATCHAWARRA

- 9042'-9057': 4 shots per foot
1" / 16 thru tubing energjets.
- 9267'-9294': 4 shots per foot,
4" casing guns.



PBTD 9560

PROPOSED RE/COMPLETION	X
RE/COMPLETION AS RUN	

DESIGNED	S.P. WHITAKER.
DRAFTED	H. REGLAR.

000230

Tested Saturday, 14th April 1990.

CLIENT	LOCATION	FORMATION
Santos Ltd.	BROLGA 1	PATCHAWARRA

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	59451	5000	16/ 2/90
Bottom	60322	5000	16/ 2/90

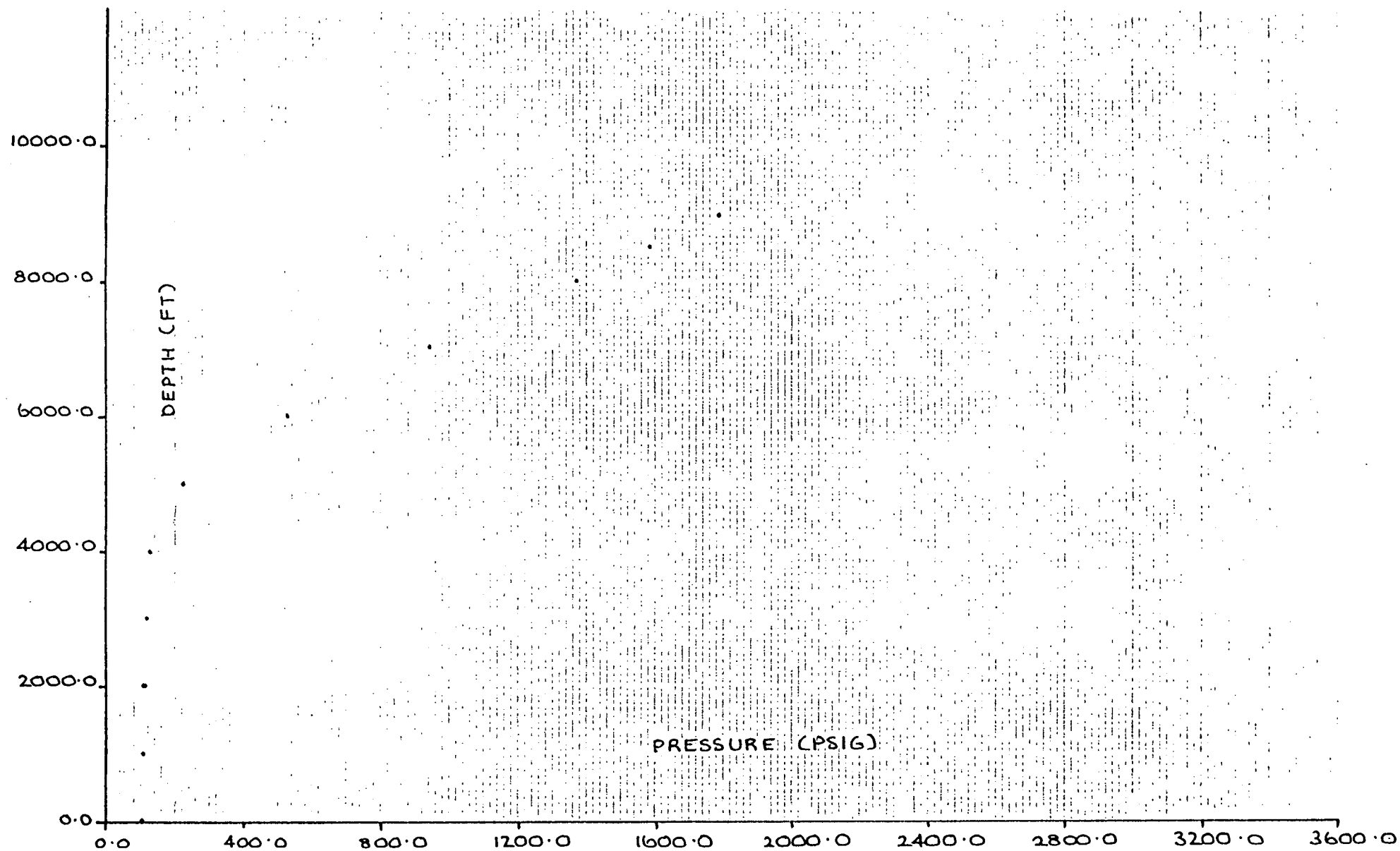
WELL DATA	
PARAMETER	VALUE
DWT In	117 PSI
DWT Out	118 PSI
Max BHT	258 F

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.0410	92.5	-----	0.0440	100.5	-----
1000	0.0440	100.3	0.008	0.0460	105.7	0.005
2000	0.0460	105.6	0.005	0.0470	108.3	0.003
3000	0.0475	109.5	0.004	0.0495	114.7	0.007
4000	0.0500	116.0	0.007	0.0520	121.2	0.007
5000	0.0890	218.2	0.102	0.0920	224.3	0.103
6000	0.2050	521.6	0.303	0.2100	527.9	0.304
7000	0.3630	934.1	0.413	0.3710	940.8	0.413
8000	0.5290	1366.8	0.433	0.5390	1370.7	0.430
8500	0.6110	1580.3	0.427	0.6220	1582.8	0.424
8977	0.6880	1780.7	0.420	0.7000	1782.2	0.418
LUB.	0.0440	100.3	-----	0.0450	103.1	-----

GENERAL REMARKS

BOTTOM STOPS ALTERED DUE TO OBSTRUCTION AT 8991 FT KB.

BROLGA # 1 — STATIC PRESSURE GRADIENT — 14/4/90
ELEMENT # 60322/5000 (BOT)



000231

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS PETROLEUM

PERFORATIONS:

PAGE: 1 OF

WELL NAME: BZOL9A #1

FORMATION : PATCHAWAREE

DATE: 14. 4. 90

TEST TYPE : STATIC GRADIENT

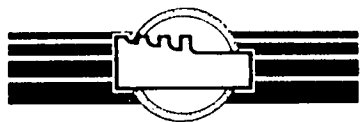
OPR : R. LARKIN

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)
ELEMENT SERIAL NO.		59451	60322		DATE : 14.4.90			N/A
ELEMENT RANGE		PST 5000	5000		PRESSURE LUBRICATOR :	1405		
RECORDING SECTION SERIAL NO.		13028	12952		RUN IN HOLE :	1420	117	
DATE OF CALIBRATION:		16.2.90	16.2.90		ON DEPTH AT : 8977' FT/M	1531		
CLOCK SERIAL NO.		SN ^o 1	SN ^o 2		DATE : 14.4.90			
CLOCK RANGE		3 HR	3 HR		PULL OUT OF HOLE :	1546	118	
LEAD SCREW TYPE		15 TLS	15 TLS		AT SURFACE :	1602		
					DEPRESSURE LUBRICATOR :	1617	117	
ENGAGE STYLUS	DATE 14.4.90	TIME 13:58	13:58		MAXIMUM BHT AT	FT/M = 8977'	°F/C 258°F	
DISENGAGE STYLUS		DATE 16:20	16:20		N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

[illegible]

000232

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD.

PERFORATIONS: 9042' - 9294' K.B.

PAGE: 1 OF 1

WELL NAME: BROUGA #1

FORMATION : PATCHAWARRA

DATE: 3.6.93

TEST TYPE : S.G.S.

OPR : P. BLACK

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

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

ELEMENT SERIAL NO.

850207

850208

N/A.

DATE : 3.6.93

ELEMENT RANGE

P.S.I.

4075

4100

PRESSURE LUBRICATOR

14:04

9184

5593

RECORDING SECTION SERIAL NO.

3433

3434

RUN IN HOLE

14:19

"

"

DATE OF CALIBRATION: @ 290°F

6.3.92

6.3.92

ON DEPTH AT : 8970' FT/M

15:34

"

"

CLOCK SERIAL NO.

A-15013

A-16084

DATE : 3.6.93

CLOCK RANGE

HRS.

3

3

PULL OUT OF HOLE

15:44

9184

5593

LEAD SCREW TYPE

T.L.S.

15

15

AT SURFACE

16:08

"

"

DEPRESSURE LUBRICATOR

16:23

"

"

ENGAGE STYLUS DATE 3.6.93 TIME

14:02

14:02

MAXIMUM BHT AT 8970' FT/M = 254°F/G

DISENGAGE STYLUS DATE 3.6.93 TIME

16:28

16:28

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

DATE

TIME

REMARKS

000234

**EXPERTEST**

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX AAB7183

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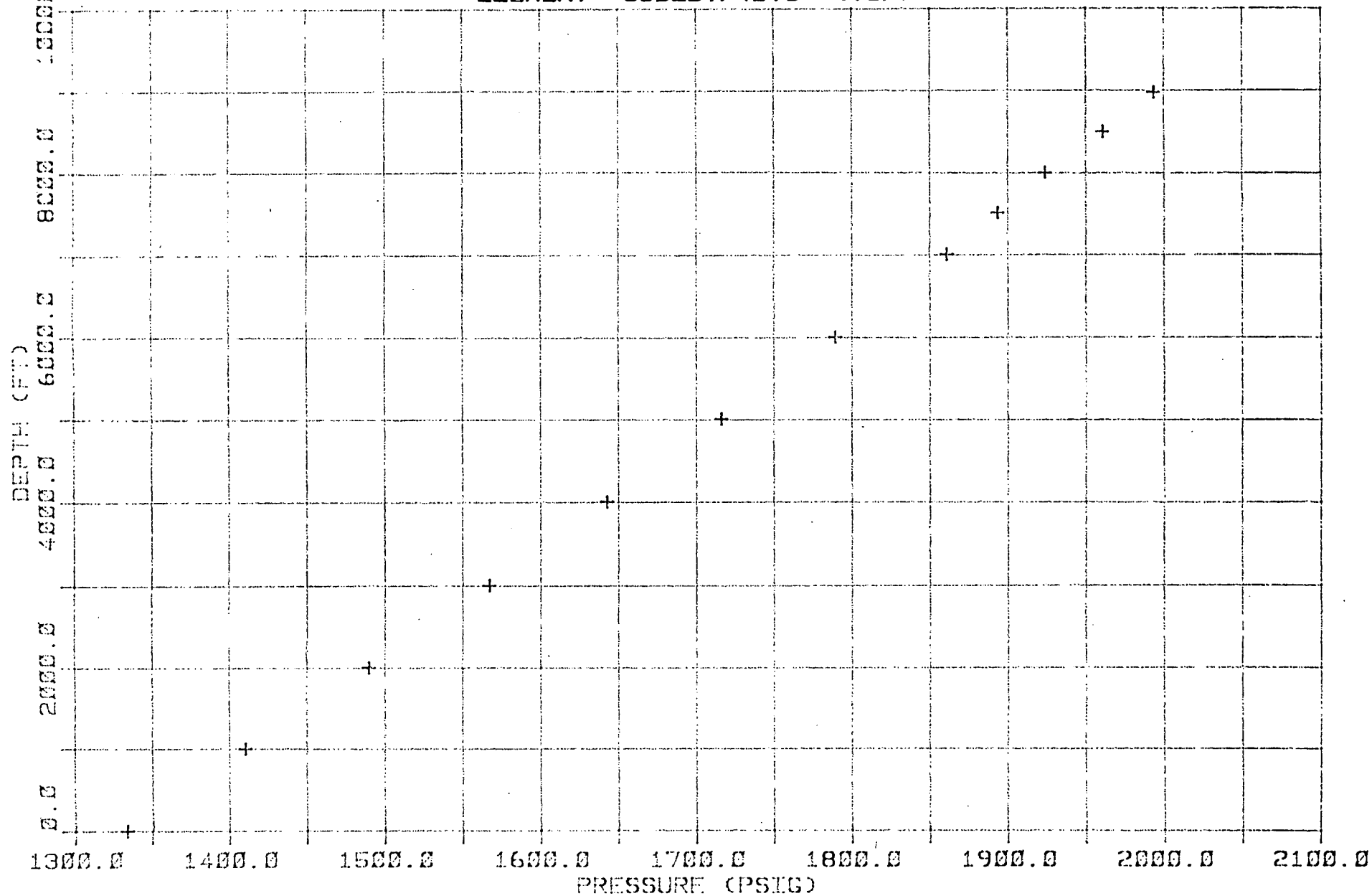
Tested Thursday, 3rd June 1993.

STATIC PRESSURE GRADIENT REPORT

CLIENT		LOCATION		FORMATION		
SANTOS LTD.		BROLGA #1		PATCHWARRA		
PRESSURE ELEMENT DATA				WELL DATA		
POSITION	SERIAL NO.	RANGE	CALIBRATED	PARAMETER	VALUE	
Top	850207	4075	6/ 3/92	DWT In	1332 PSIG	
Bottom	850208	4100	6/ 3/92	DWT Out	1332 PSIG	
				Max BHT	254 F	
TOP ELEMENT			BOTTOM ELEMENT			
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.6575	1333.7	-	0.6510	1335.6	-
1000	0.6950	1410.1	0.076	0.6880	1411.7	0.076
2000	0.7340	1489.6	0.080	0.7260	1489.8	0.078
3000	0.7720	1567.0	0.078	0.7630	1565.8	0.076
4000	0.8090	1642.5	0.075	0.8000	1641.8	0.076
5000	0.8450	1715.9	0.073	0.8360	1715.8	0.074
6000	0.8810	1789.3	0.073	0.8700	1785.7	0.070
7000	0.9160	1860.7	0.071	0.9050	1857.6	0.072
7500	0.9320	1893.3	0.065	0.9215	1891.5	0.068
8000	0.9470	1923.9	0.061	0.9375	1924.4	0.066
8500	0.9650	1960.6	0.073	0.9540	1958.3	0.068
8970	0.9810	1993.3	0.070	0.9700	1991.2	0.070
LUB.	0.6570	1332.7	-	0.6490	1331.5	-

GENERAL REMARKS

BROLGA #1 --- STATIC PRESSURE GRADIENT --- 03/06/93
ELEMENT #850207/4075 (TOP)



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