



Highlights

- Petroleum discoveries continued in the September quarter. *Offshore*, two gas discoveries were made, a significant gas discovery at Blacktip in the southern part of the Bonaparte Basin of the Northern Territory, and one at East Pilchard near the Kipper gas field in the Gippsland Basin. *Onshore*, six gas discoveries were made, two in the Otway Basin of South Australia, two in the Bowen and Surat Basins and two in the Cooper/Eromanga Basin of Queensland. The Blacktip discovery is encouraging in demonstrating a likely new gas province in the region.
- Offshore exploration drilling in the first nine months of 2001 is below last year's level. Drilling occurred in the Bonaparte, Browse, Carnarvon, Gippsland and Otway Basins.
- Onshore exploration drilling in the first nine months of 2001 is above the corresponding level of the previous two years. Drilling was undertaken in the Bowen/Surat, Cooper/Eromanga, Gippsland, Otway, Perth and Surat Basins.
- Offshore seismic survey activity in this quarter was carried out in the Bonaparte, Browse, Carnarvon, Money Shoal and Perth Basins off Western Australia and the Northern Territory.
- Onshore seismic survey activity is limited to the Cooper/Eromanga Basin of Queensland and South Australia and a small survey in the Gunnedah Basin of New South Wales.
- Offshore development completions in this quarter occurred in at West Tuna in the Gippsland Basin and Agincourt, Simpson and Yodel in the Carnarvon Basin, whilst onshore completions were carried out in the Carnarvon and Cooper/Eromanga Basins

Drilling activity

Exploration drilling (Tables 1–3 & Figure 1) activity in the first nine months of 2001 (84 wells) is 12 more wells than the total drilled during the same period in 2000 (72).

Offshore exploration wells drilled during the September quarter 2001 (10) decreased by 10 wells compared to the same period last year (20 wells). Drilling was completed in the Gippsland (1 well) and the Otway (1), the Carnarvon (3) and the Bonaparte (5) Basins. Drilling continued at the end of September in the Carnarvon, Bonaparte and Otway Basins.

Onshore exploration wells drilled during the September quarter 2001 (14) has increased by 5 wells compared to September 2000 (9). These wells were drilled in the Surat (3 wells), the Bowen/Surat (3), the Cooper/Eromanga (3), the Otway (2), the Perth (2) and the Canning (1) Basins. One well remains suspended in the Canning Basin.

Development drilling (Tables 1–3 & Figure 1) activity for the first nine months of 2001 (71 wells) has decreased by 1 well compared to the same period in 2000 (72 wells).

Offshore, development wells drilled during the September quarter 2001 (8) increased by 4 wells compared with the same quarter last year. Completions were carried out in the Carnarvon (4) and Gippsland (4) Basins. At the end of September, 1 well was drilling ahead in the Gippsland Basin.

Onshore, 17 development wells were drilled in the September quarter of 2001, 7 fewer than the September 2000 quarter (24 wells). Drilling was completed in the Cooper/Eromanga (12) and the Carnarvon (5) Basins. Three wells were drilling ahead at the end of September also in the Cooper/Eromanga (2) and Carnarvon (1) Basins.

Figure 1. Wells and metres drilled, 1990-2001

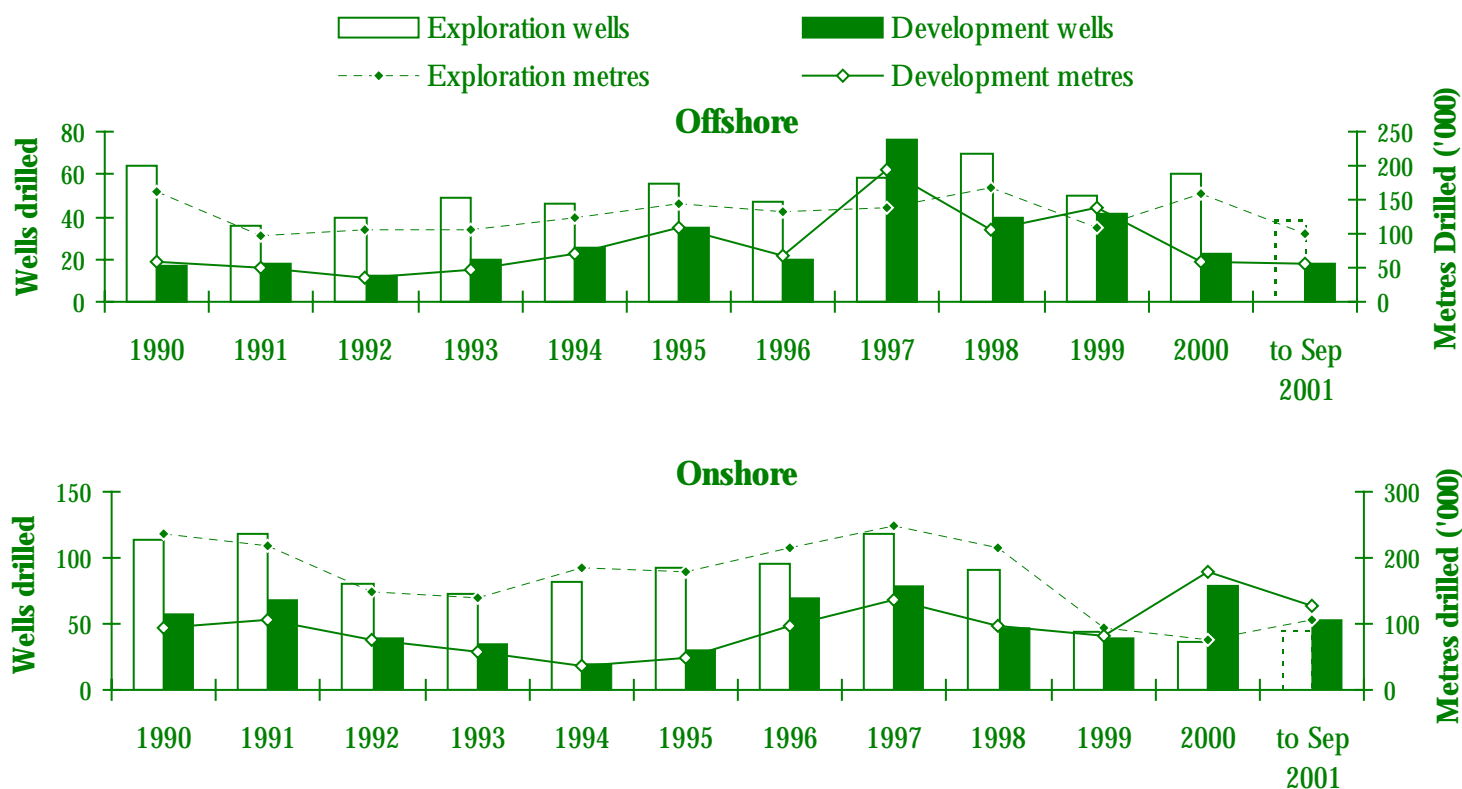


Table 1. Quarterly wells* and metres drilled, 1998, 1999, 2000 and to September 2001

Quarter Ended	Exploration				Development				Exploration		Development		Total	
	Onshore		Offshore		Onshore		Offshore		Total		Total		Total	
	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres
Mar-98	25	65 503 ^a	18	46 544 ^a	13 ^a	24 273 ^a	8	21 967 ^a	44	112 047	21	46 240	65	158 287
Jun-98	29 ^a	61 883 ^a	21 ^a	42 498 ^a	20 ^a	37 695 ^a	12	32 148 ^a	50	104 381	32	69 843	82	174 224
Sep-98	16	39 256 ^a	13	34 928 ^a	3	6 621 ^a	13	29 368 ^a	29	74 184	16	35 989	45	110 173
Dec-98	21 ^a	48 113 ^a	18	43 649 ^a	11 ^a	28 480 ^a	7	21 380 ^a	40	91 762	18	49 860	58	141 622
Total 98	91^a	214 755^a	70^a	167 619^a	47^a	97 069^a	40^a	104 863^a	161^a	382 374^a	87^a	201 932^a	248^a	584 306^a
Mar-99	12	29 581	16	32 000	12	30 261 ^a	9	35 018 ^a	28	61 581 ^a	21	65 279 ^a	49	126 860 ^a
Jun-99	8 ^a	14 946 ^a	10	25 406	10	23 120	15 ^a	50 226 ^a	18 ^a	40 352 ^a	25 ^a	73 346 ^a	43 ^a	113 698 ^a
Sep-99	11 ^a	23 193 ^a	8 ^a	21 260 ^a	9	13 408	12	42 436 ^a	19	44 453 ^a	21 ^a	55 844 ^a	40 ^a	100 297 ^a
Dec-99	13	27 072	16	31 661	9	16 679	5	10 250	29	58 733	14	26 929 ^a	43	85 662 ^a
Total 99	44	94 792^a	50^a	110 327^a	40	83 468^a	41	137 930^a	94^a	205 119^a	81	221 398^a	175^a	426 517^a
Mar-00	7	14 357	15	36 449 ^a	14	35 854 ^a	2 ^a	4645 ^a	22	50 806	16	40 499	38	91 305
Jun-00	7	12 235	14	35 847	19 ^a	38 801	9	19 156	21	48 082	28	57 957	49	106 039
Sep-00	9 ^a	21 457 ^a	20 ^a	52 906 ^a	24 ^a	53 873 ^a	4	9 618	29	74 363	28	63 491	57	137 854
Dec-00	14	28 400	11 ^a	33 841 ^a	22	51 202	8	24 639 ^a	25	62 241	30	75 841	55	138 082
Total 00	37^a	76 449^a	60	159 043^a	79	179 730^a	23^a	58 058^a	97^a	235 492^a	102^a	237 788^a	199^a	473 280^a
Mar-01	16 ^a	35 663 ^a	17 ^a	44 846 ^a	21 ^a	50 358 ^a	0	0	33 ^a	80 509	21 ^a	50 358	54	130 867
Jun-01	15	36 212	12	31 218	17	40 893	8	32 762 ^a	27	67 430	25	73 655	52	141 085
Sep-01	14	32 874	10	24 915	17	37 936	8	20 766	24	57 789	25	58 702	49	116 491

*Only wells that reached total depth during the quarter. ^aRevised.

Table 2. Onshore and offshore wells and metres drilled or drilling, September Quarter 2001*

State	Exploration				Development				Onshore		Offshore		Total	
	Onshore		Offshore		Onshore		Offshore		Total		Total		Total	
	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres	Wells	Metres
Qld	8	17 094	-	-	3	8 551	-	-	11	25 645	-	-	11	25 645
NSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vic	1	1 703	1	3 138	-	-	4	9 724	2	4 841	4	9 724	6	14 565
Tas	-	-	1	2 525	-	-	-	-	-	-	1	2 525	1	2 525
SA	2	5 270	-	-	9	24 959	-	-	11	30 229	-	-	11	30 229
WA	3	8 807	8	19 252	5	4 427	4	11 042	6	11 706	14	31 822	20	43 528
NT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JPDA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	14	32 874	10	24 915	17	37 937	8	20 766	30	72 421	19	44 071	49	116 492

*Includes wells that have reached total depth ** JPDA: Joint Petroleum Development Area.

Table 3. Onshore and offshore drilling status at 30 September 2001

State	Exploration wells										Development wells												
	Completed or C&S					Abandoned or secured					Completed or C&S					Abandoned or secured							
	D ¹	DA	Sus ²	Oil	Gas	O&G	Dry	Oil	Gas	O&G	Un	D	DA	Sus	Oil	Gas	O&G	Ser ³	Dry	Oil	Gas	O&G	Un
Qld	8	-	-	6	-	2	-	-	-	-	-	3	1	-	3	-	2	-	-	-	-	-	-
NSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vic	2	1	-	2	-	-	-	-	-	-	4	1	-	2	-	2	-	-	-	-	-	-	-
Tas	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SA	3	-	-	2	-	1	-	-	-	-	9	1	-	1	8	-	-	-	-	-	-	-	-
WA	11	1	-	1	-	8	1	1	-	-	9	1	-	7	1	-	-	1	-	-	-	-	-
NT ⁴	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JPDA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Qtr	25	3	-	11	-	12	1	1	-	-	25	4	-	10	12	2	-	1	-	-	-	-	-
2000	98	4	1	4	15	-	54	4	17	2	1	104	3	1	36	60	-	1	4	-	-	-	1
1999	94	2	-	4	17	-	55	4	9	3	2	82	2	-	38	33	-	5	4	1	1	-	-
Previous quarter	27	1	1	-	10	-	12	1	2	-	1	25	3	1	8	16	-	-	-	-	-	-	-

C&S, cased and suspended; D, drilled; DA, drilling ahead; Sus, suspended; O&G, oil and gas; Un, unspecified; Ser, service well; JPDA: Joint Petroleum Development Area.

¹ Excludes wells drilling ahead or suspended. ² Indicates drilling has temporarily stopped before reaching final depth. ³ Classification applicable only to development wells.

⁴ Includes Territory of Ashmore and Cartier Islands. Note: Wells drilled from 1999 to 2001 may include wells "suspended" at final depth.

(Subject to revision).

Discoveries

Table 4 lists details of the reported discoveries of oil, gas and condensate in the September quarter of 2001.

Table 4. Discoveries,* 1 January to 30 September 2001 (in order of discovery)

Operator	Field	Nature of discovery	Basin	State	Permit	Operator	Field	Nature of discovery	Basin	State	Permit
Offshore						Onshore (cont'd)					
Tap Oil	Lindsay†	Oil & Gas	Carnarvon	WA	EP 364	Lakes	Gangell	Gas	Gippsland	Vic	PEP137
OMV	Audacious	Oil	Bonaparte	NT	AC/P17	Santos	McIntee†	Gas	Otway	VIC	PEP154
Apache	South Plato†	Oil	Carnarvon	WA	TL/1	Santos	Tregony†	Gas	Otway	VIC	PEP153
Apache	Gibson†	Oil	Carnarvon	WA	TL/1	Santos	Quasar	Gas	Cooper/Ero	Qld	ATP259
Woodside	Kuda Tasi†	Oil	Bonaparte	JPDA**	ZOCA91-01	Santos	Moona	Gas	Cooper/Ero	SA	PPL22
Coveyork	Kaleidoscope†	Gas	Browse	WA	WA-274-P	Santos	Quasar South	Gas	Cooper/Ero	Qld	ATP259P
Origin	Thylacine†	Gas	Otway	Tas	T/30P	Santos	Tellus†	Gas	Cooper/Ero	Qld	ATP259P
Santos	Corowa	Oil	Carnarvon	WA	WA-264-P	Santos	Croft†	Gas	Otway	Vic	PEP154
Woodside	Geograph†	Gas	Otway	Vic	Vic/P43	Santos	Lavers†	Gas	Otway	Vic	PEP154
Esso	East Pilchard†	Gas	Gippsland	Vic	Vic/L 9	Santos	Naylor†	Gas	Otway	Vic	PEP154
Woodside	Blacktip†	Gas	Bonaparte	WA	WA-279-P	Origin	Balnaves	Gas	Otway	SA	PEL32
Onshore						Mosaic	Spring Grove†	Gas	Surat	Qld	ATP471P
Santos	Coonaberry	Gas	Cooper/Ero	Qld	ATP259	Origin	Limestone Ridge†	Gas	Otway	SA	PEL32
Santos	Tarrango†	Gas	Cooper/Ero	SA	PPL10	Mosaic	Churchief	Gas	Bowen/Surat	Qld	ATP471P
Santos	Raworth	Gas	Cooper/Ero	Qld	ATP259	Santos	Karnak†	Gas	Cooper/Ero	Qld	ATP259P
						Santos	Wellington	Gas	Cooper/Ero	Qld	PL131

*Subject to revision. **Joint Petroleum Development Area. †Inferred from logs only

Seismic survey activity

Offshore, 2D seismic surveys accumulated 10 491 line km during the third quarter of 2001 (Table 5 & Figure 2). This is down on the 16 166km total of quarter 2, but much greater than in the same period last year (1 498 line km). The data were acquired in the Bonaparte, Carnarvon, Money Shoal and Perth Basins.

3D seismic surveys were carried out over 2 943km², which is slightly up on the 2 392km² of the previous quarter, and down on the 4 803 km² in quarter 3 of 2000. These surveys were undertaken in the Bonaparte Basin of the Northern Territory and the Carnarvon and Browse Basins of Western Australia.

Onshore, the level of 2D seismic acquisition during the September quarter of 2001 (101 line km) is only about one sixth of the data acquired during the June quarter of 2001 (622 line km), and nearly eleven times less than the 1 091km in the same period last year. Onshore 2D seismic occurred only in the Gunnedah Basin of New South Wales.

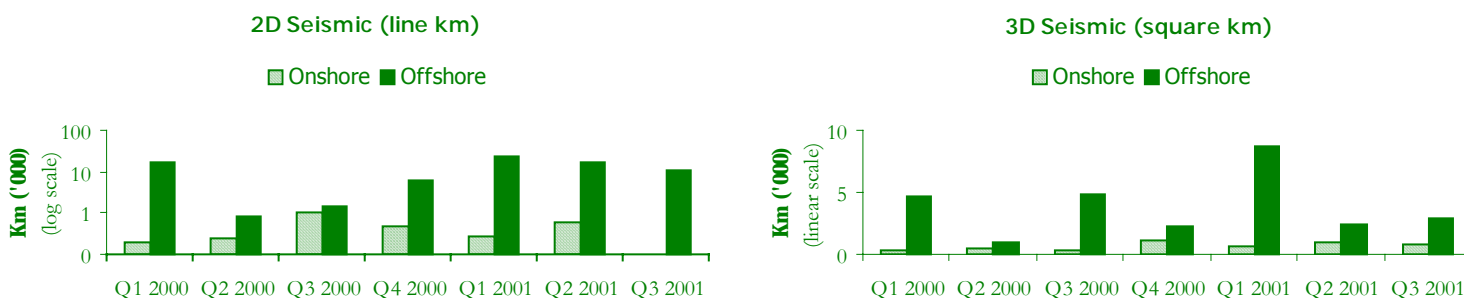
3D seismic recorded onshore this quarter (830km²), is on par with the 894km² shot last quarter and not much short of the 924km² of the same period last year. 3D surveys were carried out only in the Cooper Basin of South Australia and Queensland.

Table 5. Seismic survey activity

State	2000						Six months ending June 2001				September quarter 2001			
	Onshore			Offshore			Onshore		Offshore		Onshore		Offshore	
	2D	3D Line	3D km ²	2D	3D Line	3D km ²	2D	3D km ²	2D	3D km ²	2D	3D km ²	2D	3D km ²
Qld	1 491	538	215	-	-	-	12	-	-	-	-	172	-	-
NSW	-	-	-	-	-	-	-	-	-	-	101	-	-	-
Vic	161	479	84	129	11 138	374	131	195	933	188	-	-	-	-
Tas	-	-	-	-	2 571	250	659	-	3 576	-	-	-	-	-
SA	188	12 822	865	-	-	-	100	1 368	14 058	-	-	658	-	-
WA	142	-	1 064	24 258	118 576	9 203	-	-	19 292	10 867	-	-	6 694	2 768
NT	-	-	-	1 650	14 100	2 205	-	-	665	-	-	-	3 797	175
JPDA*	-	-	-	-	5 900	918	-	-	-	-	-	-	-	-
Sub-total	1 982	13 839	2 228	26 037	152 285	12 950	902	1 563	38 524	11 055	101	830	10 491	2 943
Total (Line km)	15 821			178 322										
Grand Line km	194 143						39 426				10 592			
Total Square km	15 178						12 618				3 773			

*JPDA: Joint Petroleum Development Area. Line: approx. Line km for 3D surveys

Figure 2. Seismic survey activity Quarter 1, 2000 to Quarter 3, 2001



Rig activity

The total number of active rigs during September 2001 (19) is four more than in September 2000 and two more than were active in June 2001 (17) (Table 6).

Offshore, the number of active rigs varied from 6 to 7 throughout the first 9 months of 2001. The 7 rigs active in the September quarter were drilling ahead or carrying out workovers at the following locations: the Gippsland Basin (2), the Otway Basin (1), Carnarvon Basin (2), and the Bonaparte Basin (2). During the September quarter, the development drilling occurred in the Gippsland Basin, workover drilling occurred in the Carnarvon Basin and exploration drilling was carried out in the Carnarvon, the Otway and the Bonaparte Basins.

Onshore, the number of active rigs varied between 10 and 12 for the September quarter 2001, which is higher than the June quarter 2001 (maximum of 11) and down from the March quarter 2000 (maximum of 14). At the end of the September quarter, the 12 active rigs were engaged in drilling, carrying out workovers, or mobilising to drill in the Cooper/Eromanga (5), the Surat (1), the Gunnedah (1), the Perth (1), Carnarvon (2) and the Canning (2) Basins.

Success rates

The success rates shown in Table 7 are based on the number of petroleum discoveries and new-field wildcat wells drilled in Australia onshore and offshore from 1989 to 2000. No assumptions have been made about whether a 'discovery' has proved or will prove to be commercial. Geoscience Australia defines a discovery as a well from which a measurable amount of oil or gas has been recovered and excludes those discoveries inferred from well logs.

Table 7. Success rates, 1989-2000

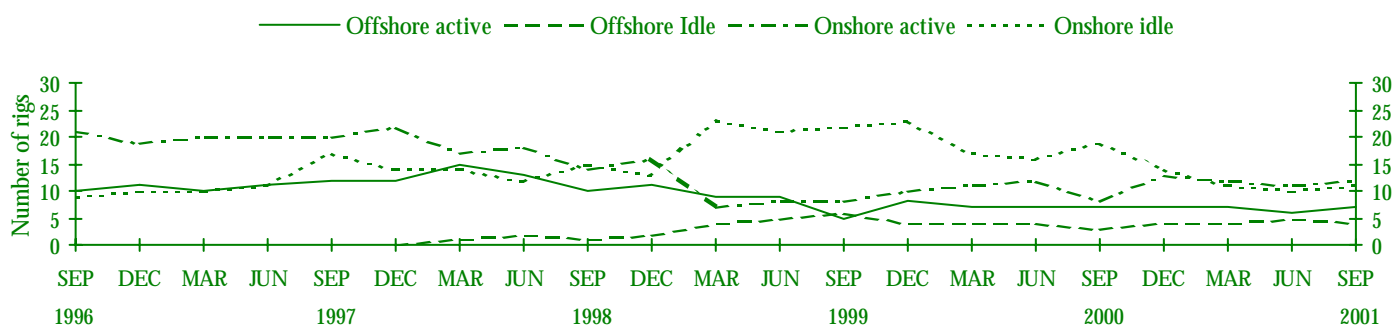
Year	Success Rate		
	Onshore	Offshore	Combined
1989	1:2.8	1:3.0	1:2.9
1990	1:3.0	1:4.5	1:3.5
1991	1:2.9	1:7.8	1:3.6
1992	1:3.2	1:4.7	1:3.6
1993	1:3.0	1:4.0	1:3.4
1994	1:1.9	1:4.3	1:2.8
1995	1:2.5	1:3.8	1:2.8
1996	1:2.5	1:6.2	1:3.1
1997	1:1.8	1:5.4	1:2.3
1998	1:2.3	1:8.6	1:3.5
1999	1:2.5	1:3.9	1:3.2
2000	1:3.8	1:4.7	1:4.4

Table 6. Drilling rig activity, October 2000 to September 2001

	Active				Idle				Availability					
	Onshore		Offshore	Total	Onshore		Offshore	Total	Onshore		Offshore			
	S	M	D		(all deep)	S	M		D	(all deep)	Total	%Active	Total	%Active
Oct 2000	1	5	9	8	23	2	5	8	4	19	27	50	12	67
Nov	0	3	10	8	21	2	7	7	3	19	26	45	11	73
Dec	0	3	10	7	20	2	6	6	4	18	24	48	11	64
Jan 2001	0	2	11	6	19	0	4	7	5	16	24	54	11	55
Feb	1	3	10	6	20	0	3	7	5	15	24	58	11	55
Mar	0	3	9	7	19	0	3	8	4	15	23	52	11	64
Apr	0	2	9	6	17	1	2	8	5	16	22	50	11	55
May	0	1	9	7	17	0	4	6	4	14	20	50	11	64
Jun	0	2	9	6	17	0	4	6	5	15	21	52	11	55
Jul	0	0	10	7	17	1	7	4	4	16	22	45	11	64
Aug	0	3	8	7	18	1	4	7	4	16	23	48	11	64
Sep	1	3	8	7	19	1	3	7	4	15	23	52	11	64

S, shallow (<1525 m); M, medium (1525-2750 m); D, deep (>2750 m).

Figure 3. Drilling rig activity, 1996-2001



This publication includes the following: preliminary statistics for wells and metres drilled, seismic survey line & square kilometres recorded and rig activity, to the end of September 2001. The data from which these statistics are derived have been compiled by Geoscience Australia from various sources, including the petroleum exploration industry and State and Northern Territory departments of mines.

Queries concerning these statistics should be directed to Eugene Petrie: Eugene.Petrie@ga.gov.au; Ph. (02) 6249 9270 or Fax (02) 6249 9962. This document is available on the Internet at www.ga.gov.au/general/technotes then select Petroleum Industry Quarterly Statistics.