



Highlights

- Petroleum Discoveries continued in the December quarter. *Offshore*, one oil discovery was made at Crosby No. 1 in the Carnarvon Basin. *Onshore*, one oil discovery and one gas discovery was made in the Cooper/Eromanga Basin of Queensland and South Australia respectively.
- During 2003 there were a total of 7 *offshore* discoveries, six of which were in the Carnarvon Basin at Stybarrow No. 1 (oil), Cyrano No. 1 (oil and gas), Skiddaw No. 2 (oil and gas), Ravensworth No. 1 (oil and gas), Ginger No. 1 (gas), Crosby No. 1 (oil), and one in the Gippsland Basin at Scallop (gas). *Onshore*, 6 discoveries were made, 4 of which were oil (one in the Perth Basin, 3 in the Cooper/Eromanga Basin), and 2 gas, both in the Cooper/Eromanga Basin.
- Offshore exploration drilling during 2003 accounted for 55 wells drilled and is 7 wells more than the number drilled (48) during 2002.
- Onshore exploration drilling (36 wells drilled) is 4 less wells than during 2002 and one below the very low level of 37 wells drilled during 2000.
- Overall level of seismic survey activity has failed to increase significantly compared to data shot over the last few years. Onshore, both 2 and 3D acquisition is at very low levels. Offshore 2D acquisition is below 2002 levels, whilst 3D acquisition increased by about one-third of 2002 levels.

period in 2002 (27) wells and is eight more than the 18 wells drilled in the previous quarter this year.

Offshore exploration wells drilled during the December quarter 2003 (9) is six less than the fifteen of the December quarter 2002 and two less than in the previous quarter. Drilling was carried out in the Bonaparte (1), Browse (1), Carnarvon (5), Gippsland (1) and Otway (1) Basins.

Onshore exploration wells drilled during the December quarter 2003 (17) is ten more than the seven wells of the previous quarter and five more than the twelve wells of the December quarter last year. Fourteen of these wells were drilled in the Cooper/Eromanga Basin and three in the Bowen/Surat Basin. Four wells were drilling ahead at the end of the quarter, two in the Cooper/Eromanga Basin, one in the Gippsland Basin and one in the Perth Basin.

Development drilling (Tables 1–3 & Figure 1) activity for the fourth quarter of 2003 (24) is four less than the previous quarter (28) and is eight more than for the same period last year (16).

Offshore, the number of development wells drilled during the December quarter of 2003 (9) is three more than the previous quarter and four more than in the December quarter of 2002 (5). These wells were drilled in the Bonaparte (1), Browse (1), Carnarvon (4), Gippsland (2) and Otway (1) Basins.

Onshore, development wells drilled in the fourth quarter (15) is seven less than the twenty-two wells of the previous quarter. This is four more than the figure drilled in the corresponding period of 2002 (11). One well was drilled in the Bowen Basin, thirteen in the Cooper/Eromanga Basin and one in the Perth Basin.

Drilling activity

Exploration drilling (Tables 1–3 & Figure 1) for the December quarter 2003 (26 wells) is only one less than drilled during the same

Figure 1. Wells and metres drilled, 1993-2003

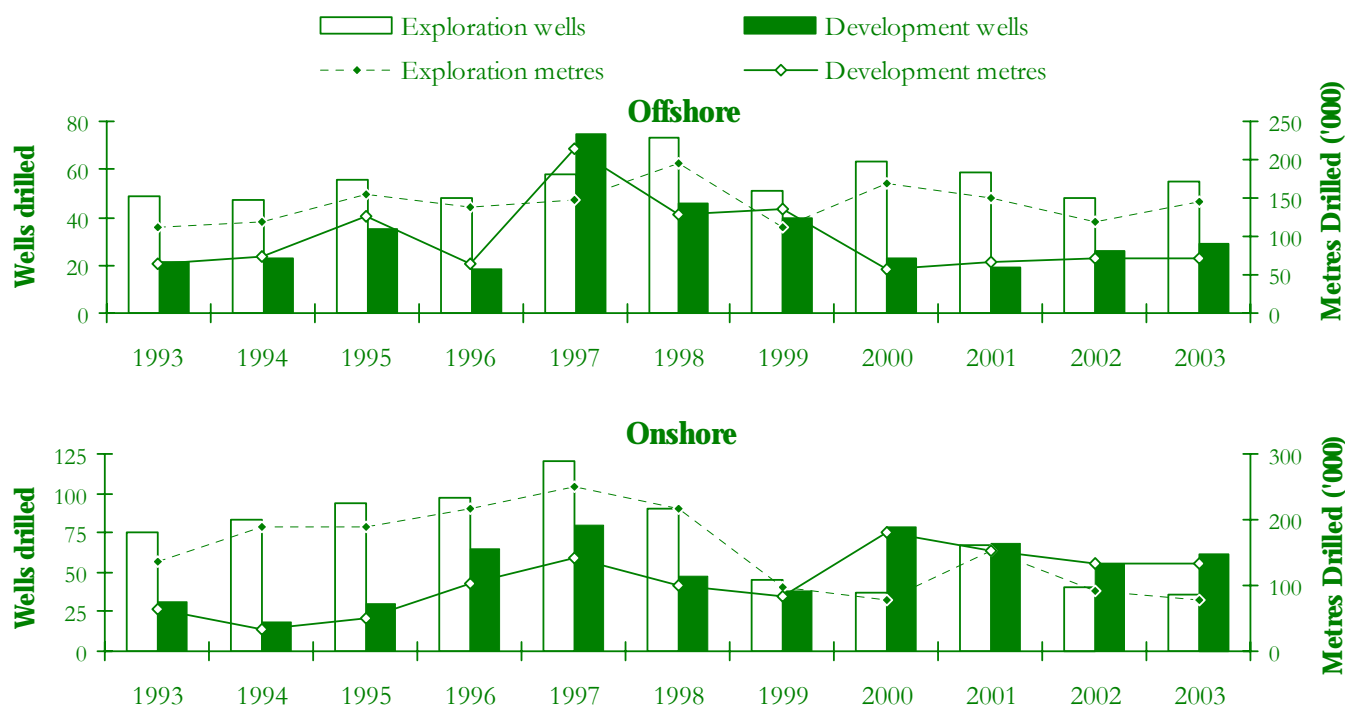


Table 1. Quarterly wells* and metres drilled 2000 to 2003

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-00	7	14 357	15	36 449	14	35 856	3	5 719	22	50 806	17	41 575	39	92 381
Jun-00	7	12 235	15	37 947	19	38 801	8	17 056	22	50 182	27	55 857	49	106 039
Sep-00	9	21 457	20	52 906	24	53 873	4	9 618	29	74 363	28	63 491	57	137 854
Dec-00	14	28 400	12	37 308	22	51 202	9	24 854	26	65 708	31	76 056	57	141 764
Total 2000	37	76 449	62	164 610	79	179 732	24	57 247	99	241 059	103	236 979	202	478 038
Mar-01	16	33 975	19	48 938	23	55 232	0	0	35	82 913	23	55 232	58	138 145
Jun-01	15	36 212	12	31 218	17	40 893	8	36 100	27	67 430	25	76 993	52	144 423
Sep-01	15	34 358	10	25 184	16	36 543	7	21 175	25	59 542	23	57 718	48	117 260
Dec-01	21	49 280	18	44 465	12	20 291	4	9 792	39	93 745	16	30 083	55	123 828
Total 2001	67	153 825	59	149 801	68	152 959	19	67 067	126	303 626	87	220 026	213	523 652
Mar-02	11	23 164	16	38 668	18	45 639	4	10 460	27	61 832	22	56 099	49	117 931
Jun-02	7	17 099	8	17 921	21	47 860	10	27 989	15	35 020	31	75 849	46	110 869
Sep-02	10	22 673	9	25 023	6	15 539	7	19 198	19	47 696	13	34 737	32	82 433
Dec-02	12	29 102	15	38 655	11	23 448	5	13 188	27	67 757	16	36 636	43	104 393
Total 2002	40	92 038	48	120 267	56	132 486	26	70 834	88	212 305	82	203 320	170	415 625
Mar-03	9	18 600	21 [†]	46 773 [†]	9	23 160	8	20 462	30 [†]	65 373 [†]	17	43 622	47 [†]	108 995 [†]
Jun-03	3	8 475	14	39 797	15	37 653	6	18 916	17	48 272	21	56 569	38	104 841
Sep-03	7	13 552	11	31 885	22	44 381	6	12 953	18	45 437	28	57 334	46	102 771
Dec-03	17	36 970	9	26 249	15	27 221	9	19 978	26	63 219	24	47 199	50	110 418
Total 2003	36	77 597	55	144 704	61	132 415	29	72 309	91	222 301	90	204 724	181	427 025

*Wells that reached total depth during the quarter. † Revised.

Table 2. Onshore and offshore wells and metres drilled, December 2003*

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	11	22 750	–	–	9	15 009	–	–	20	37 759	–	–	20	37 759
NSW	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Vic	–	–	2	5 360	–	–	3	7 370	–	–	5	12 730	5	12 730
Tas	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SA	6	14 220	–	–	5	8 882	–	–	11	23 102	–	–	11	23 102
WA	–	–	6	17 339	1	3 330	5	11 773	1	3 330	11	29 112	12	32 442
NT	–	–	–	–	–	–	–	–	–	–	–	–	–	–
JPDA**	–	–	1	3 550	–	–	1	835	–	–	2	4 385	2	4 385
Total	17	36 970	9	26 249	15	27 221	9	19 978	32	64 191	18	46 227	50	110 418

*Wells that reached total depth during the quarter.

Table 3. Onshore and offshore drilling status at 31 December 2003

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 ¹	DA	Sus	Oil	Gas	O&G	Ser ³	Dry	Oil	Gas	O&G	Un
Qld	11	1	1	2	4	–	5	–	–	–	–	9	1	–	6	2	–	–	1	–	–	–	–
NSW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Vic	2	1	–	–	–	–	2	–	–	–	–	3	–	–	2	–	–	–	–	–	1	–	–
Tas	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SA	6	1	–	–	1	–	5	–	–	–	–	5	–	–	5	–	–	–	–	–	–	–	–
WA	6	1	–	–	–	–	4	1	1	–	–	6	2	–	2	–	–	1	2	1	–	–	–
NT ⁴	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
JPDA	1	–	–	1	–	–	–	–	–	–	–	1	1	9	1	–	–	–	–	–	–	–	–
Total Qtr	26	4	1	3	5	–	16	1	1	–	–	24	4	9	16	2	–	1	3	1	1	–	–
2002	88	3	2	14	22	2	32	12	3	3	–	82	7	–	34	41	3	–	4	–	–	–	–
2001	126	5	1	8	41	–	60	10	6	1	–	87	1	–	27	55	–	–	3	–	2	–	–
Previous quarter	18	4	1	6	–	–	9	–	3	–	–	28	14	2	15	5	2	–	5	1	–	–	–

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.

Discoveries

Table 4 lists details of the reported discoveries of oil and gas at the end of December 2003.

Table 4. Discoveries*, 1 January to 31 December 2003 (in order of discovery)

Operator	Field	Nature of discovery	Basin	State	Permit	Operator	Field	Nature of discovery	Basin	State	Permit
Offshore						Onshore					
Esso	Scallop†	Gas	Gippsland	Vic	Vic/RL2	Arc	Eremia†	Oil	Perth	WA	L 1 R1
BHPBilliton	Stybarrow†	Oil	Carnarvon	WA	WA-255-P	Arc	Christies	Oil	Cooper/Eromanga	SA	PEL 92
Tap	Cyrano†	Oil & Gas	Carnarvon	WA	EP 364	Beach	Carrickalinga	Gas	Cooper/Eromanga	SA	PEL 91
BHPBilliton	Skiddaw†	Oil & Gas	Carnarvon	WA	WA-255-P R1	Stuart Pet	Worrior	Oil	Cooper/Eromanga	SA	PEL 93
BHPBilliton	Ravensworth†	Oil & Gas	Carnarvon	WA	WA-155-P R3	Stuart Pet	Kiwi	Gas	Cooper/Eromanga	SA	PEL 90
Apache	Ginger	Gas	Carnarvon	WA	TL/1	Santos	Mulberry	Oil	Cooper/Eromanga	Qld	PL39
BHPBilliton	Crosby	Oil	Carnarvon	WA	WA-12-R						

*Subject to revision. † Inferred from logs only

Seismic survey activity

Offshore. 2D seismic surveys recorded 6 636 line km during the December quarter of 2003 (Table 5 & Figure 2). These surveys were carried out in the Otway, Perth and Sorell Basins. There were no 2D surveys recorded in the September quarter 2003. 3D seismic surveys recorded 1294 km². There were no 3D surveys recorded during the September quarter. The surveys were undertaken in the Carnarvon, Otway and Perth Basins.

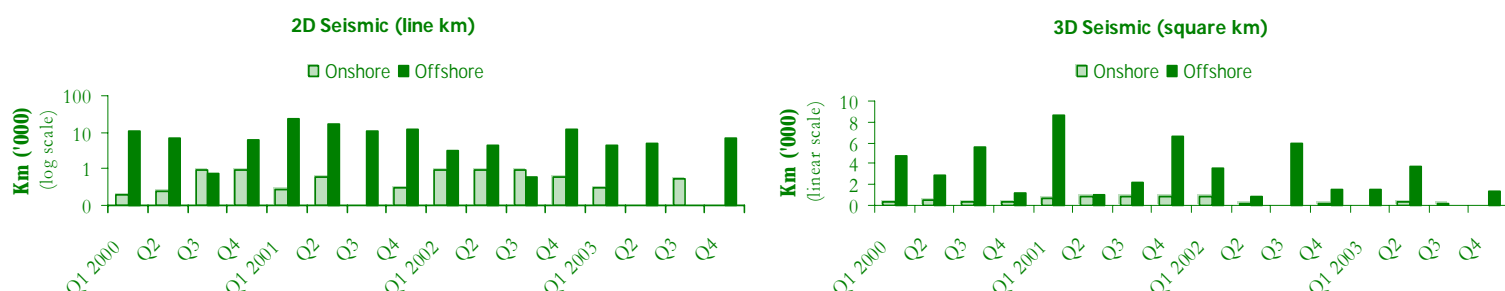
Onshore. No 2D seismic surveys were completed during the December quarter of 2003. 3D seismic surveys were undertaken over 424 km². These surveys were carried out in the Cooper and Surat Basins. This is a significant increase on the 92 km² of the previous quarter and the 87 km² for the same period in 2002.

Table 5. Seismic survey activity

State	2002				Nine months ending September 2003				December Quarter 2003			
	Onshore		Offshore		Onshore		Offshore		Onshore		Offshore	
	2D	3D km ²	2D	3D km ²	2D	3D km ²	2D	3D km ²	2D	3D km ²	2D	3D km ²
Qld	1 688	838	--	--	210	--	23	--	--	394	--	--
NSW	311	--	--	--	175	--	--	--	--	--	--	--
Vic	562	--	3 286	3 885	284	--	--	1 500	--	--	954	209
Tas	--	--	1 142	--	--	--	--	--	--	--	1 336	--
SA	826	342	--	300	702	--	507	--	--	30	--	--
WA	--	57	14 867	2 110	--	--	14 248	5 026	--	--	4 346	1 085
NT	--	--	6 485	--	--	--	--	--	--	--	--	--
JPDA*	--	--	--	--	--	--	678	--	--	--	--	--
Sub-total	3 387	1 237	25 780	6 295	1 371	--	15 456	6 526	--	424	6 636	1 294
Grand Total	<i>Line km</i>		29 167				16 827				6 636	
Total	<i>Square km</i>		7 532				6 526				1 718	

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

Figure 2. Seismic survey activity Quarter 1, 2000 to Quarter 4, 2003



Rig activity

The total number of active rigs during the December 2003 quarter was seventeen, four more than in December 2002 (13). Rig activity during the quarter ranged from 14 to 17 rigs active at the end of the quarter.

Offshore, the number of active rigs remained steady at five for each month, with inactive rigs at three, two and two during the quarter. Active rigs were drilling in the Bonaparte, Browse, Carnarvon, Gippsland and Otway Basins.

Onshore, the number of active rigs varied between nine and twelve, which is more than in the same period last year (7-8). The total number of inactive rigs ranged from nine to eleven compared with the same quarter last year of eleven to fifteen. The active rigs were located in the Bowen/Surat, Cooper/Eromanga, Gippsland and Perth 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 1990 to 2003. 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 also includes those discoveries inferred from well logs.

Table 7. Success rates, 1990-2002

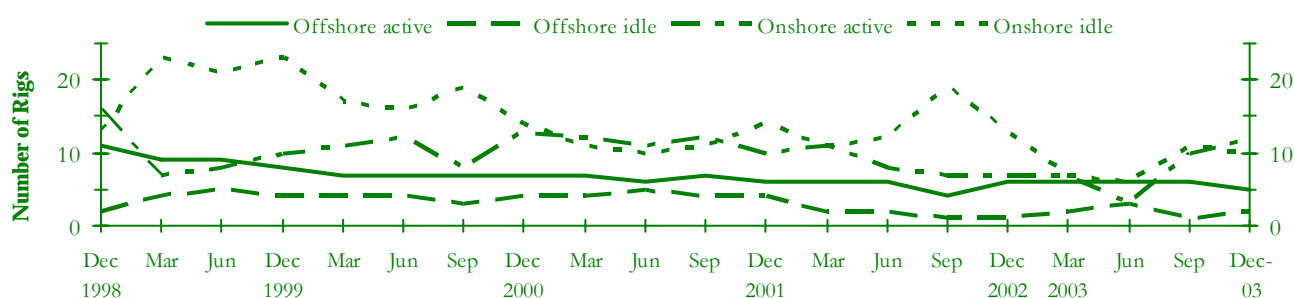
Year	Success Rate		
	Onshore	Offshore	Combined
1990	1:2.7	1:5.2	1:3.5
1991	1:2.7	1:5.1	1:3.2
1992	1:3.4	1:4.3	1:3.7
1993	1:3.4	1:3.5	1:3.4
1994	1:1.9	1:4.0	1:2.3
1995	1:2.8	1:4.7	1:3.4
1996	1:2.8	1:3.5	1:3.1
1997	1:2.1	1:4.6	1:2.6
1998	1:2.2	1:4.9	1:3.0
1999	1:4.0	1:4.0	1:4.0
2000	1:3.3	1:2.9	1:3.0
2001	1:1.9	1:4.0	1:2.6
2002	1:1.5	1:2.8	1:2.2
2003	1:3.5	1:7.1	1:5.2

Table 6. Drilling rig activity, July 2002 to December 2003

	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
Jul	0	2	6	3	11	1	7	6	2	16	22	36	5	60
Aug	0	1	5	3	9	1	8	8	1	18	23	26	4	75
Sep	0	1	6	4	11	2	9	8	1	20	26	27	5	80
Oct	0	2	6	3	11	2	7	6	1	16	23	35	4	75
Nov	2	2	5	5	14	0	6	5	0	11	20	45	5	100
Dec	0	1	6	6	13	2	5	6	1	14	20	35	7	86
Jan-03	1	3	5	6	15	2	1	5	1	9	17	53	7	86
Feb	2	2	6	6	16	2	2	6	1	11	20	50	7	86
Mar	1	2	7	6	16	3	2	7	2	14	22	45	8	75
Apr	0	3	5	5	13	6	2	6	4	18	22	36	9	56
May	0	1	4	6	11	4	2	5	3	14	16	31	9	67
Jun	0	1	3	6	10	3	2	6	3	14	15	27	9	67
Jul	0	1	5	5	11	4	2	7	4	17	19	32	9	56
Aug	0	1	6	5	12	5	3	7	3	18	22	32	8	63
Sep	0	2	8	6	16	3	3	5	1	12	21	48	7	86
Oct	0	2	7	5	14	3	2	6	3	14	20	45	8	63
Nov	0	2	9	5	16	3	2	4	2	11	20	55	7	71
Dec	0	2	10	5	17	3	4	3	2	12	22	55	7	71

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

Figure 3. Drilling rig activity, Dec 1998-Dec 2003



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 December 2003. 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 <http://www.ga.gov.au/oceans/> and look under 'Petroleum Industry Statistics'.