



MINERAL AND PETROLEUM EXPLORATION

AUSTRALIA

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- For further information about these and related statistics, contact Kylie Freer on Darwin 08 8943 2171, or the National Information Service on 1300 135 070.

NOTES

FORTHCOMING ISSUES

<i>ISSUE (Quarter)</i>	<i>RELEASE DATE</i>
December 2000	21 March 2001
March 2001	20 June 2001

CHANGES IN THIS ISSUE

The goods and services tax (GST) came into effect on 1 July 2000. It replaces the wholesale sales tax (WST) which had been included in the value of exploration expenditure before this date.

From September quarter 2000, businesses in the survey have been asked to report actual exploration expenditure based on the net cost to them under the New Tax System. That is, the WST no longer applies and the exploration expenditure estimates should exclude the 10% GST where this amount can be returned to the business as a tax credit.

Investigations have shown that exploration businesses have been able to report expenditure on the required basis. As a result, expenditure in current price terms, on the same volume of exploration activity, is less than if the changes in tax legislation had not taken place.

No adjustments have been made to exploration expenditure data for periods prior to September quarter 2000. This should be considered when comparing current price estimates for periods from September quarter 2000 with data from earlier periods.

Table 3 Mineral exploration (other than for petroleum), expenditure, by type of lease is a new table which will be published in future issues. Table 3 shows the reported exploration expenditure on 'production leases' and 'all other areas' by State and Territory. Due to the publishing of this new table, the table numbers in this publication have changed.

Table 5 Mineral exploration (other than for petroleum), expenditure by mineral sought has been modified for this and future issues. The 'base metals' category has been split to show separate exploration by State and Territory for the commodities copper, silver-lead-zinc and nickel and cobalt. Due to publishing the breakdown of 'base metals' the commodities tin, tungsten, scheelite, wolfram and construction materials are now included in the 'other' category in this table.

This issue contains some revisions to the June quarter 2000 data.

This issue also contains the results of the supplementary survey, Mineral Exploration, drilling methods by state, 1999–00.

Dennis Trewin
Australian Statistician

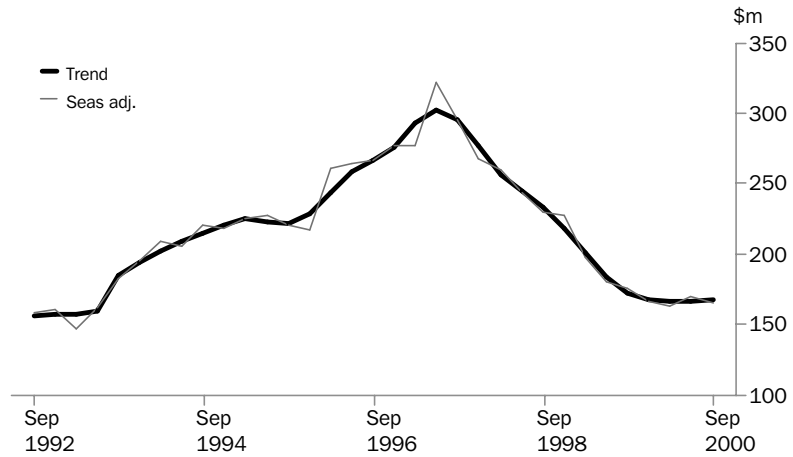
SUMMARY OF FINDINGS

MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

TREND ESTIMATES

The trend estimate for mineral exploration expenditure was relatively stable in the September quarter 2000. This followed the levelling off of the trend estimate in the June quarter 2000 after 12 quarters of decline.

The September quarter 2000 trend estimate of \$167m was 3% lower than the trend estimate of \$172m for the September quarter 1999.



In the September quarter 2000 the largest increase in the trend estimate occurred in Victoria (up 8%), while in New South Wales, Queensland and South Australia the estimates increased only marginally.

Western Australia, Tasmania and the Northern Territory showed small decreases.

Between the June quarter 2000 and the September quarter 2000 the trend estimate for metres drilled increased by 39,000 metres (3%) to 1.5 million metres. This was 0.4% lower than the September quarter 1999.

SUMMARY OF FINDINGS *continued*

OVERVIEW

In seasonally adjusted terms, exploration expenditure for the September quarter 2000 decreased by 2% (\$4m) to \$166m.

In original terms, exploration expenditure reported for the September quarter 2000 decreased by 7% (\$13m) to \$170m. The September quarter 2000 total mineral exploration expenditure was 6% (\$10m) lower than the September quarter 1999.

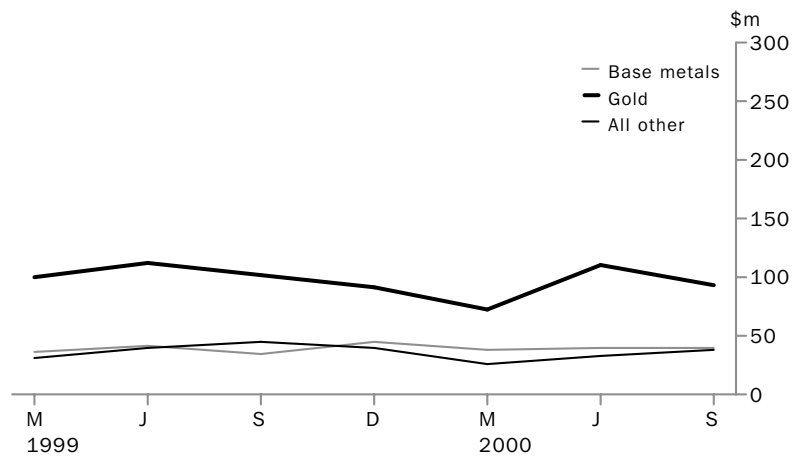
The fall in total mineral exploration expenditure in the September quarter 2000 was due to a 13% (\$19m) fall in expenditure reported in 'all other areas'. The magnitude of the fall was partially offset by a 16% (\$6m) increase in exploration expenditure on 'production leases'.

Western Australia was the main contributor to the September quarter decrease, down \$9m (8%), with New South Wales, Victoria and Queensland contributing \$1m each, down 7%, 14% and 6% respectively.

Exploration expenditure for gold decreased by 16% (\$17m) in the September quarter 2000. The majority of the decrease for gold occurred in Western Australia, down 16% (\$12m).

Between the June and September quarters 2000, exploration expenditure for base metals (copper, silver-lead-zinc, nickel and cobalt) decreased 3% to \$39m.

MINERAL EXPLORATION EXPENDITURE, *Original Series*



SUMMARY OF FINDINGS *continued*

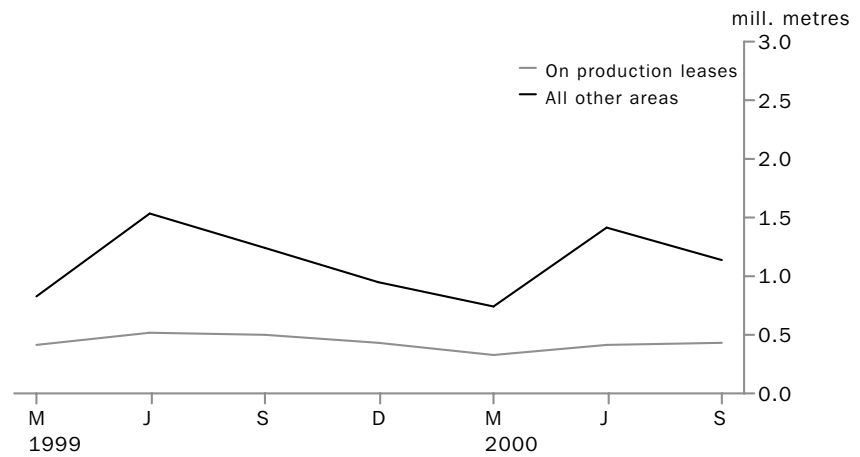
METRES DRILLED

The seasonally adjusted estimate of 1.4 million metres for the September quarter 2000 was 12% lower than the June quarter 2000 and 9% lower than the September quarter 1999.

In original terms, the 1.6 million metres drilled (total) reported for the September quarter 2000 was 13% lower than the June quarter 2000.

Since the June quarter 2000 drilling on 'production leases' has increased 7% to 0.4 million metres, while drilling on 'all other areas' has decreased to 1.1 million metres.

METRES DRILLED, Original Series



SUMMARY OF FINDINGS *continued*

PETROLEUM EXPLORATION EXPENDITURE

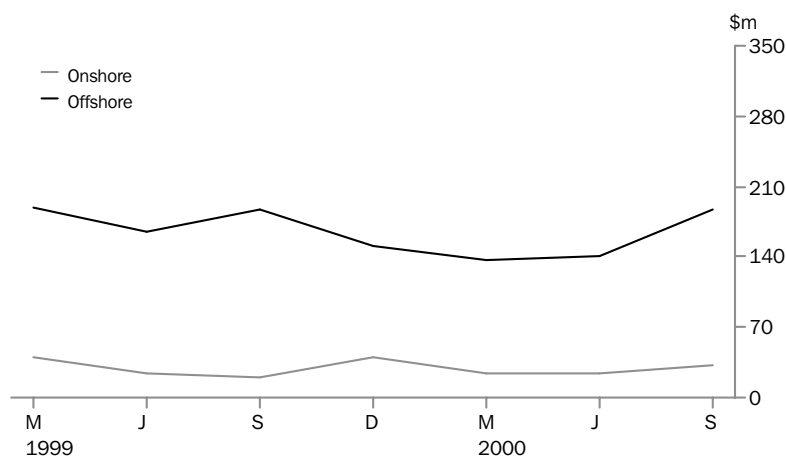
OVERVIEW

Reported expenditure on petroleum exploration in the September quarter 2000 was \$220m, 33% (\$55m) higher than the June quarter 2000, and 6% (\$13m) higher than the September quarter 1999.

Total petroleum exploration expenditure for the September quarter 2000 was the highest reported estimate since March quarter 1999.

Total petroleum expenditure rose for the September quarter 2000 as a result of a 33% (\$46m) increase in offshore expenditure, all of which was in drilling expenditure, up 64% (\$50m).

Between June and September quarters 2000, expenditure for petroleum exploration on both 'production leases' and 'all other areas' rose 113% (\$22m) and 22% (\$32m) respectively.



REGIONAL DATA

Regional data for petroleum exploration expenditure was available for Victoria, Queensland, Western Australia and Northern Territory/Ashmore and Cartier Islands which combined contributed 95% to total exploration expenditure in the September quarter 2000.

Of the published regions, Western Australia was the main contributor increasing by 31% (\$35m), while Northern Territory/Ashmore and Cartier Islands reported an increase in expenditure of 111% (\$16m).

SUMMARY OF FINDINGS *continued*

ANNUAL SUPPLEMENTARY SURVEY

DRILLING METHOD

The drilling method with the highest reported expenditure in 1999–00 was diamond drilling. This method accounted for 40% of the total \$257m expenditure reported, although it contributed only 16% of the 6.5 million metres drilled.

The most significant drilling method in terms of metres drilled for 1999–00 was reverse circulation, contributing 34% (2.2 million metres) of the total 6.5 million metres drilled. This method accounted for 33% (\$84m) of total drilling expenditure.

Rotary air blast was the second most significant drilling method used in terms of metres drilled, contributing 24% (1.6 million metres) of the total metres drilled. However, this method accounted for only 10% of the total exploration expenditure for drilling.

PRIVATE EXPLORATION, Actual and Expected Expenditure(a)

Period	MINERAL EXPLORATION ...			PETROLEUM ONSHORE ...			PETROLEUM OFFSHORE		
	Actual	Expected(b)	Actual as a proportion of expected	Actual	Expected(b)	Actual as a proportion of expected	Actual	Expected(b)	Actual as a proportion of expected
	\$m	\$m	%	\$m	\$m	%	\$m	\$m	%
1997-1998	1 066.8	1 083.4	98.5	232.3	145.0	160.2	748.9	773.7	96.8
1998-1999	837.8	769.2	108.9	182.3	144.2	126.4	685.4	540.1	126.9
1999-2000	676.3	700.4	96.6	110.1	155.3	70.9	594.0	637.0	93.2
6 months ended June 1999	362.3	358.4	101.1	64.8	72.6	89.2	354.8	293.6	120.8
6 months ended December 1999	356.9	365.8	97.6	60.9	86.0	70.8	336.7	241.8	139.2
6 months ended June 2000	319.4	334.7	95.4	49.2	69.3	71.0	257.3	395.2	65.1
6 months ended December 2000	n.y.a.	358.8	n.y.a.	n.y.a.	118.7	n.y.a.	n.y.a.	374.4	n.y.a.

n.y.a. not yet available

(a) From July 2000 value data no longer contains Wholesale Sales Tax. (b) Refer to Explanatory Notes paragraphs 14-17.

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MINERAL EXPLORATION (Other than for Petroleum), Expenditure and Metres Drilled(a)

Period	EXPENDITURE.....					METRES DRILLED.....				
	On production leases	On all other areas(b)	Total	Seasonally adjusted	Trend estimate	On production leases	On all other areas	Total	Seasonally adjusted	Trend estimate
	\$m	\$m	\$m	\$m	\$m	'000 m	'000 m	'000 m	'000 m	'000 m
1997-1998	253.2	813.6	1 066.8	..	..	3 365	7 843	11 209	..	..
1998-1999	199.1	638.7	837.8	..	..	2 404	5 697	8 101	..	..
1999-2000	158.4	517.9	676.3	..	..	1 662	4 342	6 004	..	..
1998										
December	60.0	179.7	239.6	227.5	218.7	786	1 833	2 619	2 623	2 139
1999										
March	46.0	121.3	167.3	197.8	201.0	412	835	1 247	1 564	1 943
June	41.7	153.3	195.0	180.1	184.1	517	1 534	2 051	1 855	1 730
September	43.9	136.2	180.1	175.5	172.2	504	1 239	1 743	1 583	1 525
December	40.2	136.7	176.9	167.3	167.6	431	948	1 379	1 385	1 459
2000										
March	36.9	99.8	136.7	162.8	166.3	319	745	1 064	1 339	1 429
June	37.4	145.3	182.7	170.1	166.4	408	1 409	1 817	1 639	1 480
September	43.3	126.5	169.8	166.2	167.4	436	1 145	1 582	1 436	1 519

(a) From July 2000 value data no longer contains Wholesale Sales Tax.

(b) Refer to Explanatory Notes paragraph 9.

3

MINERAL EXPLORATION (Other than for Petroleum), Expenditure(a): September Qtr 2000

State	TYPE OF LEASE.....		
	On production leases	On all other areas (b)	Total
	\$m	\$m	\$m
New South Wales	1.5	12.1	13.6
Victoria	n.p.	n.p.	8.6
Queensland	4.9	16.9	21.8
South Australia	n.p.	n.p.	5.5
Western Australia	33.2	71.2	104.4
Tasmania	0.4	1.3	1.7
Northern Territory	1.8	12.4	14.2
Total	43.3	126.5	169.8

n.p. not available for publication.

(a) From July 2000 value data no longer contains Wholesale Sales Tax.

(b) Refer to Explanatory Notes paragraph 9.

MINERAL EXPLORATION (other than for Petroleum), Expenditure by State and Territory(a)

	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australia
Period	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
ORIGINAL								
1997-1998	88.2	43.1	133.2	45.0	660.4	20.7	75.9	1 066.8
1998-1999	65.6	37.0	93.8	41.9	523.1	11.9	64.5	837.8
1999-2000	56.1	33.8	82.6	22.6	415.0	8.8	57.5	676.3
1998								
December	18.4	11.0	25.0	8.9	157.3	3.0	16.0	239.6
1999								
March	15.6	10.3	20.2	7.6	102.3	3.8	7.6	167.3
June	17.4	6.7	26.4	12.8	109.4	2.6	19.6	195.0
September	14.6	8.2	21.0	6.5	107.9	2.7	19.2	180.1
December	14.8	8.1	21.3	6.7	108.8	2.3	14.8	176.9
2000								
March	12.1	7.5	17.1	3.8	85.0	2.4	8.8	136.7
June	14.6	10.0	23.1	5.6	113.3	1.3	14.7	182.7
September	13.6	8.6	21.8	5.5	104.4	1.7	14.2	169.8
SEASONALLY ADJUSTED								
1998								
December	17.8	9.8	23.0	8.7	150.2	3.1	14.9	227.5
1999								
March	16.5	10.6	25.4	9.7	120.4	3.8	11.4	197.8
June	15.9	7.0	23.4	10.2	102.4	2.5	18.7	180.1
September	15.8	8.6	21.2	6.9	104.3	2.8	15.9	175.5
December	14.2	7.2	19.6	6.5	103.7	2.4	13.7	167.3
2000								
March	12.8	7.7	21.6	4.8	100.4	2.3	13.2	162.8
June	13.4	10.5	20.4	4.5	106.0	1.3	14.0	170.1
September	14.9	9.0	22.0	5.8	100.9	1.8	11.8	166.2
TREND								
1998								
December	16.4	9.8	23.5	10.5	140.7	3.1	14.7	218.7
1999								
March	16.7	9.4	24.1	9.8	123.1	3.2	14.7	201.0
June	16.3	8.5	23.3	8.9	108.5	3.0	15.6	184.1
September	15.2	7.6	21.6	7.8	101.5	2.7	15.8	172.2
December	14.1	7.6	20.4	6.1	102.2	2.4	14.8	167.6
2000								
March	13.5	8.4	20.6	5.2	103.0	2.1	13.5	166.3
June	13.6	9.1	21.1	5.0	102.9	1.7	13.0	166.4
September	14.1	9.8	21.6	5.1	102.6	1.5	12.7	167.4

(a) From July 2000 value data no longer contains
Wholesale Sales Tax.

MINERAL EXPLORATION (other than for Petroleum), Expenditure by Mineral Sought(a)

	Copper	Silver, lead-zinc	Nickel, cobalt	Base metals total	Gold	Iron ore	Mineral sands	Uranium	Coal	Diamonds	Other(b)	Total
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
SEPTEMBER QUARTER 2000												
New South Wales	1.0	1.4	1.6	3.9	4.0	—	1.9	—	n.p.	n.p.	0.8	13.6
Victoria	—	—	—	—	7.7	—	0.9	—	—	—	—	8.6
Queensland	3.9	5.1	0.4	9.5	5.7	—	—	—	6.2	—	0.4	21.8
South Australia	n.p.	n.p.	—	n.p.	2.0	—	n.p.	0.1	—	n.p.	0.2	5.5
Western Australia	0.4	5.5	14.3	20.2	64.4	7.2	n.p.	n.p.	n.p.	9.2	1.5	104.4
Tasmania	—	n.p.	n.p.	n.p.	0.7	—	—	—	—	—	n.p.	1.7
Northern Territory	n.p.	n.p.	n.p.	2.0	8.1	—	—	n.p.	—	n.p.	n.p.	14.2
Australia	6.9	14.9	17.1	38.9	92.5	7.2	4.9	n.p.	9.2	11.3	n.p.	169.8
AUSTRALIA												
1997–1998	n.a.	n.a.	n.a.	227.1	648.4	30.0	14.0	22.2	64.8	42.8	17.5	1 066.8
1998–1999	n.a.	n.a.	n.a.	176.9	486.1	41.5	19.0	15.4	39.9	40.9	18.0	837.8
1999–2000	28.4	55.4	73.0	156.8	374.8	29.7	r 21.5	11.7	35.4	29.8	r 16.7	676.3
December 1998	n.a.	n.a.	n.a.	46.4	139.8	13.7	5.8	3.6	9.4	15.3	5.8	239.6
March 1999	n.a.	n.a.	n.a.	36.5	99.4	7.2	4.6	1.4	9.8	3.6	4.9	167.3
June 1999	n.a.	n.a.	n.a.	42.0	112.7	8.1	5.0	3.1	11.1	9.0	4.1	195.0
September 1999	6.5	16.1	11.1	33.7	101.5	8.8	4.5	4.8	9.5	12.2	5.1	180.1
December 1999	8.3	14.7	22.0	45.0	91.6	n.p.	4.8	3.7	9.2	9.2	n.p.	176.9
March 2000	6.5	10.0	21.6	38.2	71.9	5.0	4.6	n.p.	7.9	3.5	n.p.	136.7
June 2000	7.0	14.6	18.4	40.0	109.8	n.p.	7.6	n.p.	8.7	4.9	3.1	182.7
September 2000	6.9	14.9	17.1	38.9	92.5	7.2	4.9	n.p.	9.2	11.3	n.p.	169.8

n.p. not available for publication

— nil or rounded to zero

n.a. not available

r figure or series revised since previous issue

(a) From July 2000 value data no longer contains Wholesale Sales Tax.

(b) From September quarter 2000 this category includes tin, tungsten, scheelite, wolfram and construction materials.

PETROLEUM EXPLORATION EXPENDITURE(a)

Period	ONSHORE.....			OFFSHORE.....			TOTAL EXPENDITURE.....		
	<i>Drilling</i>	<i>Other</i>	<i>Total</i>	<i>Drilling</i>	<i>Other</i>	<i>Total</i>	<i>On production leases</i>	<i>On all other areas</i>	<i>Total</i>
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1997-1998	174.1	58.2	232.3	501.2	247.6	748.9	68.8	912.4	981.2
1998-1999	111.7	70.5	182.3	428.5	257.0	685.4	105.6	762.1	867.7
1999-2000	53.8	56.3	110.1	r 381.8	r 231.4	r 613.2	121.9	r 601.4	r 723.3
1998									
December	44.7	16.9	61.6	123.0	70.4	193.3	35.1	219.8	254.9
1999									
March	20.8	18.9	39.7	127.0	61.8	188.9	24.6	203.9	228.5
June	12.0	13.1	25.1	96.9	69.0	165.9	21.6	169.4	191.0
September	10.9	9.5	20.3	113.2	72.9	186.1	23.8	182.6	206.5
December	23.7	16.9	40.6	86.8	63.7	150.5	51.2	139.9	191.1
2000									
March	10.6	14.4	25.0	103.1	32.6	135.8	26.9	133.9	160.7
June	8.6	15.6	24.2	r 78.7	r 62.1	r 140.8	19.9	r 145.1	r 165.0
September	17.3	15.8	33.1	129.2	57.4	186.6	42.3	177.5	219.8

r figure or series revised since previous issue

(a) From July 2000 value data no longer contains Wholesale Sales Tax.

PETROLEUM EXPLORATION, By Region(a)

<i>Period</i>	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>South Australia</i>	<i>Western Australia(b)</i>	<i>Tasmania</i>	<i>Northern Territory/ Ashmore and Cartier Islands</i>	<i>Zone of Cooperation Area A(c)</i>	<i>Total</i>
<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>
1997-1998	0.2	34.5	107.1	n.p.	464.0	n.p.	n.p.	61.9	981.2
1998-1999	0.1	32.6	65.9	n.p.	530.8	n.p.	132.0	32.3	867.7
1999-2000	n.p.	63.2	50.6	n.p.	r 444.1	n.p.	88.3	45.2	r 723.3
1998									
December	n.p.	n.p.	19.1	n.p.	148.5	n.p.	36.7	n.p.	254.9
1999									
March	n.p.	15.6	15.3	11.1	164.1	n.p.	17.9	4.3	228.5
June	n.p.	7.2	14.3	n.p.	127.2	n.p.	35.2	0.8	191.0
September	n.p.	n.p.	11.0	n.p.	112.0	0.2	42.4	18.5	206.5
December	—	20.9	23.2	n.p.	96.9	0.4	18.8	n.p.	191.1
2000									
March	n.p.	11.6	n.p.	n.p.	121.2	n.p.	12.6	1.6	160.7
June	n.p.	n.p.	n.p.	n.p.	r 113.9	n.p.	14.6	n.p.	r 165.0
September	n.p.	6.7	22.3	n.p.	148.8	n.p.	30.8	n.p.	219.8

n.p. not available for publication

— nil or rounded to zero

r figure or series revised since previous issue

(a) From July 2000 value data no longer contains Wholesale Sales Tax.

(b) Includes expenditure on Western Australia leases in the Zone of Cooperation, Area B.

(c) Refer to Explanatory Notes paragraphs 18–20.

MINERAL EXPLORATION, Drilling Methods, By State, 1999–2000

<i>Drilling method</i>	<i>New South Wales</i>	<i>Victoria</i>	<i>Queensland</i>	<i>South Australia</i>	<i>Western Australia</i>	<i>Tasmania</i>	<i>Northern Territory</i>	<i>Australia</i>
EXPENDITURE (\$ million)								
Diamond	16.7	n.p.	15.4	1.1	59.2	n.p.	1.9	103.5
Reverse Circulation	4.7	n.p.	5.0	1.0	67.9	n.p.	4.5	84.0
Percussion	n.p.	—	2.5	n.p.	1.2	—	—	5.3
Rotary Air Blast	0.9	n.p.	8.6	1.7	12.3	—	n.p.	24.9
Air Core/Vacuum	3.8	5.0	n.p.	0.2	19.5	—	n.p.	30.4
Other	n.p.	n.p.	n.p.	n.p.	3.9	—	n.p.	8.5
Total	28.3	11.7	34.4	6.1	164.0	3.3	8.6	256.6
METRES DRILLED ('000 m)								
Diamond	117	n.p.	140	18	686	n.p.	15	1 061
Reverse Circulation	116	n.p.	108	38	1 789	n.p.	157	2 232
Percussion	n.p.	—	58	n.p.	32	—	—	139
Rotary Air Blast	47	n.p.	353	142	935	—	n.p.	1 560
Air Core/Vacuum	178	263	n.p.	11	863	—	n.p.	1 374
Other	n.p.	n.p.	n.p.	n.p.	26	—	n.p.	123
Total	513	350	706	273	4 331	21	294	6 489
	n.p. not available for publication			— nil or rounded to zero				

EXPLANATORY NOTES

INTRODUCTION	<p>1 This publication contains annual and quarterly statistics of private sector exploration for minerals (other than oil shale) and petroleum in Australia.</p>
SOURCE	<p>2 Data are collected and compiled from exploration censuses conducted by the Australian Bureau of Statistics (ABS).</p>
SCOPE AND COVERAGE	<p>3 All exploration activity is included, regardless of the main activity of the explorer. Details of exploration are collected from all private enterprises known to be engaged in exploration, in Australia (including Australian waters) and incurring expenditure of more than \$20,000 per year.</p>
SEASONAL ADJUSTMENT	<p>4 Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences can be more clearly recognised.</p> <p>5 Seasonal adjustment does not remove from the series the effect of irregular or non-seasonal influences. Particular care should be taken in interpreting quarterly movements in the adjusted figures in this publication.</p> <p>6 Irregular influences that are highly volatile can make it difficult to interpret the series even after adjustment for seasonal variation.</p> <p>7 Seasonal factors are reviewed and revised annually to take account of each additional year's original data. The nature of the seasonal adjustment process is such that the magnitude of some revisions resulting from the re-analysis may be quite significant, especially for data for more recent quarters. For this reason, additional care should be exercised when interpreting movements in seasonally adjusted data for recent quarters.</p>
TREND ESTIMATES	<p>8 The trend estimates are derived by applying a 7-term Henderson moving average to the seasonally adjusted series. The 7-term Henderson average (like all Henderson averages) is symmetric but, as the end of a time series is approached, asymmetric forms of the average are applied. Unlike the weights of the standard 7-term Henderson moving average, the weights employed here have been tailored to suit particular characteristics of the individual series. While the asymmetric weights enable trend estimates for recent quarters to be produced, it does result in revisions to the estimates for the most recent three quarters as additional observations become available. There may also be revisions because of changes in the original data and as a result of the re-estimation of the seasonal factors. <i>Information Paper: A Guide to Interpreting Time Series —Monitoring Trends, an Overview</i> (Cat. no. 1348.0), Time Series Analysis Canberra (02) 6252 6345.</p>
CLASSIFICATIONS	<p>9 The following categories are used:</p> <ul style="list-style-type: none">▪ Production lease/All other areas, where a <i>production lease</i> is an area on which production or development is actually taking place. <i>All other areas</i> are areas outside of a <i>production lease</i> which can include exploration leases, retention leases and areas not leased but under assessment for exploration, e.g. by airborne surveys.▪ Onshore/Offshore, where offshore includes all operations in a marine area under the <i>Petroleum (Submerged Lands) Act 1967</i> or under any Acts administered by State and Territory Governments.▪ Drilling/Other, where <i>drilling expenditure</i> includes cost of access (roads, vessel hire, etc.) to the drilling site and site preparation etc., and <i>other expenditure</i> includes costs of surveys, report writing, map preparation and all other activities attributable to exploration.

EXPLANATORY NOTES

DEFINITIONS

MINERALS 10 In the broad sense these comprise metallic minerals, construction materials, gemstones, other non-metallic minerals and petroleum (oil or gas).

EXPLORATION 11 This includes the search for new ore occurrences or undiscovered oil or gas, and/or appraisal intended to delineate or greatly extend the limits of known deposits of minerals or oil or gas reservoirs by geological, geophysical, geochemical, drilling or other methods. This includes construction of shafts and adits primarily for exploration purposes but excludes activity of a developmental or production nature. Exploration for water is excluded.

EXPLORATION EXPENDITURE 12 This covers all expenditure on exploration activity in Australia. It includes expenditure on aerial surveys (including Landsat photographs), general surveys, report writing, map preparation, airborne surveys, administration expenses and other activities indirectly attributable to exploration. Cash bids for offshore petroleum exploration permits are also included.

13 The value of exploration expenditure excludes the goods and services tax (GST) which came into effect on 1 July 2000. The GST replaced the wholesale sales tax (WST) which was included in the value of exploration expenditure estimates for periods up to June quarter 2000. Businesses in the collection are asked to report actual expenditure based on the expected net cost to them under The New Tax System. That is, the WST no longer applies and the exploration expenditure estimates should exclude the 10% GST where this amount can be returned to the business as a tax credit.

EXPECTED EXPENDITURE 14 This refers to expected expenditure on exploration as reported by private business' explorers who were included in the previous census. Events such as new discoveries, unexpected weather conditions, government policy changes and unforeseen changes in economic conditions may cause actual expenditures to differ from those previously expected. The differences between actual and expected expenditure can be seen in table 1.

15 From the June quarter 2000 publication, the basis for the Expected Mineral Exploration Expenditure series has changed. Previously, the expected estimates released were an aggregate of data compiled through the quarterly Mineral Exploration collection. The aggregated data consistently underestimated the actual data for the same period. The consistency with which the published data underestimated subsequent actual expenditure provided a statistical basis on which to improve the accuracy and usefulness of the estimates.

16 A statistical factor is derived by examining the relationship between actual and expected exploration data. When expected exploration data is collected for the next period, the factor is applied to the raw expected total to create an estimate which better predicts actual expenditure for the same period. For more information regarding the adjustment made to the Expected Mineral Exploration Expenditure series, see the feature article in *Mineral and Petroleum Exploration, Australia June 2000 (Cat No. 8412.0)*.

EXPLANATORY NOTES

17 From the June Quarter 2000 publication, the value of expected exploration expenditure excludes the goods and services tax (GST) which came into effect on 1 July 2000. The GST replaces the wholesale sales tax (WST) which was included in the value of expected exploration expenditure. Businesses in the collection have been asked to report expected expenditure for the next six months based on the expected cost to them under The New Tax System. That is, they should exclude the WST, but not add on the 10% GST where this amount can be returned to the business as a tax credit.

ZONE OF COOPERATION (ZOC) **18** The ZOC is an area in the Timor Sea, about 500 km north west of Darwin. A Treaty was signed in 1989 to enable exploration for and development of petroleum resources in this area, initially between Indonesia (and since 25 October 1999 with the United Nations Transitional Administration in East Timor (UNTAET) in behalf of East Timor) and Australia.

19 The ZOC is divided into three areas; A, B and C. Area A is controlled by a Ministerial Council and a Joint Authority, and all petroleum operations in this area are carried out through production sharing contracts and a petroleum mining code. Benefits to the two countries are shared equally.

20 Area B is controlled by Australian authorities, but UNTAET must be notified of any changes to tenements in the area and will be paid 10% of resource rent tax revenues collected by Australia from corporations producing petroleum. Area C is controlled by UNTAET, but Australia must be notified of any changes to tenements in the area and will be paid 10% of Contractors Income Tax collected by UNTAET from corporations producing petroleum.

ASHMORE AND CARTIER ISLANDS **21** Tenements in the Ashmore and Cartier Islands are administered by the Northern Territory Department of Mines and Energy. Therefore all petroleum exploration expenditure in this area has been included with Northern Territory data.

DRILLING METHODS **22** A supplementary collection was also conducted during 1999–00 to collect information on exploration drilling for minerals in Australia, by drilling method. Unpublished data are also available, as a special data request, for expenditure and metres drilled by drilling methods used on production leases and other areas, as defined in paragraph 9 of these notes.

23 Data were collected for the following drilling methods:

- Diamond drilling uses rotary action combined with a diamond impregnated drill bit to produce a solid cylindrical sample called drill core.
- Reverse Circulation drilling uses a combination of separate percussive and rotational action. Reverse Circulation drilling differs from percussion drilling in that the drill cuttings are removed by compressed air up an inner tube in the drilling rods (instead of outside the rods) to improve sample quality.
- Percussion drilling uses a combination of separate percussive and rotational actions. Compressed air is used to remove drill cuttings outside of the drill rods.
- Rotary Air Blast (RAB) drilling generally uses rotational action with a blade bit to reach bedrock using compressed air to remove drill cuttings.
- Aircore/Vacuum drilling is a rotary system whereby drill cuttings are drawn up through the centre of the drill rod or rods by vacuum or compressed air which is kept within the drill stem itself and does not exit at the face of the bit.

EXPLANATORY NOTES

RELATED PUBLICATIONS

24 Users may also wish to refer to the following priced publications which are available on request:

- *Australian Business Expectations* (Cat. no. 5250.0)
- *Australian Mining Industry* (Cat. no. 8414.0)
- *Mining, Electricity and Gas Operations, Australia, Preliminary* (Cat. no. 8401.0)
- *Mining Operations, Australia* (Cat. no. 8145.0)
- *Private New Capital Expenditure and Expected Expenditure, Australia* (Cat. no. 5625.0)

25 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

26 Publications showing the details of wells and metres drilled in petroleum exploration are available from the Petroleum Resources Program of the Australian Geological Survey Organisation.

EFFECTS OF ROUNDING

27 Where figures have been rounded, discrepancies may occur between the sums of the component items and their totals.

SYMBOLS AND OTHER USAGES

n.a.	not available
n.p.	not available for publication
n.y.a.	not yet available
r	figure or series revised since previous issue
. .	not applicable
—	nil or rounded to zero

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