MARCH QUARTER 2002 8412.0

Australian Bureau of Statistics

MINERAL AND PETROLEUM EXPLORATION

AUSTRALIA

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NOTES

FORTHCOMING ISSUES

ISSUE (Quarter)	*RELEASE DATE*
June 2002	18 September 2002
September 2002	18 December 2002

CHANGES IN THIS ISSUE

In this issue is a feature article, "Decade of Australian exploration expenditure—1991–92 to 2000–01."

ABBREVIATIONS

ABS	Australian Bureau of Statistics
GST	Goods and Services Tax
LPG	liquefied petroleum gas
WST	wholesale sales tax
JPDA	Joint Petroleum Development Area
UNTAET	United Nations Transitional Administration in East Timor
ZOC	Zone of Cooperation

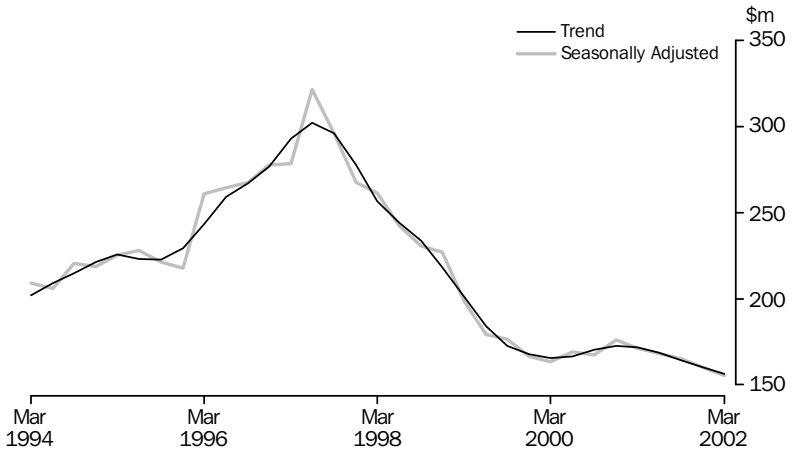
Dennis Trewin
Australian Statistician

MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

TREND ESTIMATES

The trend estimate for total mineral exploration expenditure decreased in the March quarter 2002 by 2%.

The March quarter 2002 trend estimate of $156m was 9% lower than the trend estimate of $172m for the March quarter 2001.



The largest decrease in the trend estimate between the December and March quarters occurred in Western Australia (down $3.5m), with smaller decreases in the estimates for New South Wales, Queensland and Tasmania. In Victoria and South Australia estimates showed small increases while the trend estimate in the Northern Territory remained unchanged.

The trend estimate for metres drilled fell slightly in the March quarter 2002. The decrease between the December quarter 2001 and the March quarter 2002 was 3,000 metres (0.2%). The March quarter 2002 figure of 1.3 million metres was 14% lower than the March quarter 2001.

MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

OVERVIEW

In seasonally adjusted terms, mineral exploration expenditure for the March quarter 2002 decreased by 3% ($5m) to $155m, compared to the previous quarter.

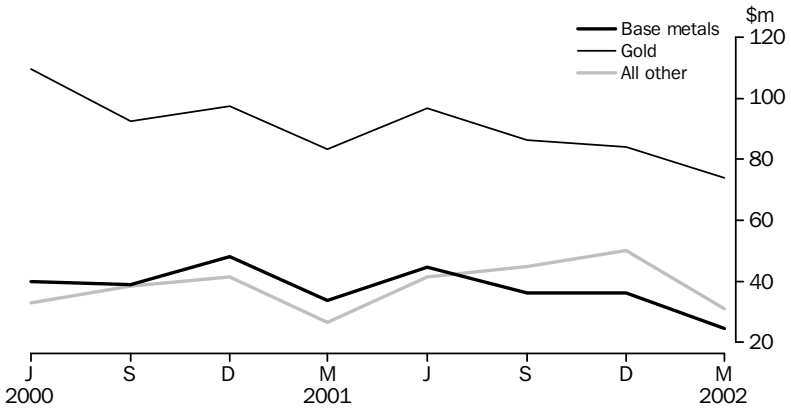
In original terms, exploration expenditure reported for the March quarter 2002 decreased by 24% ($41m) to $130m. The March quarter 2002 total mineral exploration expenditure was 10% ($14m) lower than the March quarter 2001.

The decrease in total mineral exploration in the March quarter 2002 was mainly due to a 23% ($31m) decrease in expenditure reported on 'all other areas'. The majority of the decrease on 'all other areas' occurred in Western Australia, down 26% ($22m) and Queensland, down 28% ($5m).

Overall Western Australia was the main contributor to the March quarter 2002 decrease, down $26m, followed by Queensland down $8m, and the Northern Territory down $6m. Historically, for the March quarter each year exploration expenditure is adversely affected by seasonal factors (the wet season) in the northern part of Australia.

Between the December and March quarters, exploration expenditure for gold decreased by $10m (12%), nickel and cobalt by $7m (41%) and diamonds by $5m (47%). The majority of the decrease for gold, nickel, cobalt and diamonds occurred in Western Australia. Exploration expenditure for selected base metals (copper, silver, lead-zinc, nickel and cobalt) decreased by 32% ($12m) to $25m.

MINERAL EXPLORATION EXPENDITURE, Original Series



MINERAL EXPLORATION EXPENDITURE (OTHER THAN FOR PETROLEUM)

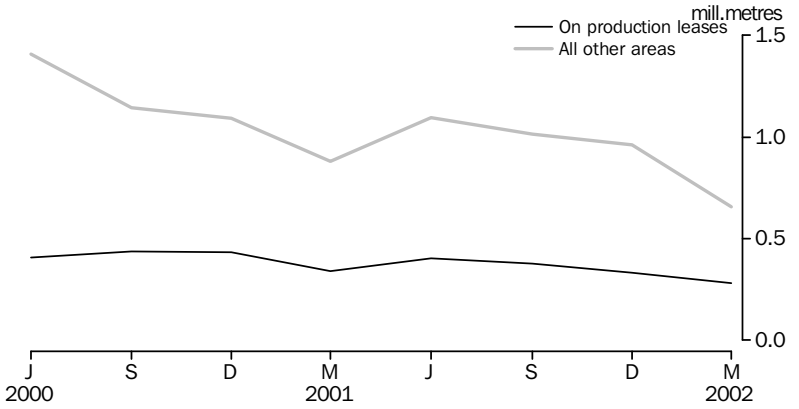
METRES DRILLED

The seasonally adjusted estimate of 1.2 million metres drilled for the March quarter 2002 was 8% lower than the December quarter 2001, and 23% lower than the March quarter 2001.

In original terms, the 0.9 million metres drilled (total) reported for the March quarter 2002 was 28% lower than the December quarter 2001.

Since the December quarter 2001, drilling on 'production leases' has decreased by 16% to 0.3 million metres, and drilling on 'all other areas' has decreased by 32% to 0.7 million metres.

METRES DRILLED, Original Series



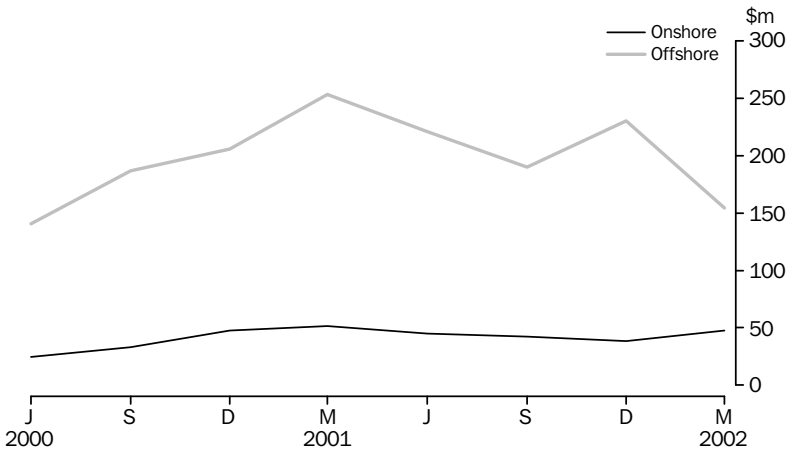
PETROLEUM EXPLORATION EXPENDITURE

OVERVIEW

Reported expenditure on petroleum exploration in the March quarter 2002 was $202m, 25% ($66m) lower than the December quarter 2001, and 34% ($102m) lower than the March quarter 2001.

The decrease in total petroleum exploration expenditure for the March quarter 2002 occurred as a result of a 38% ($58m) decrease in offshore drilling expenditure.

Between December quarter 2001 and March quarter 2002, expenditure for petroleum exploration on 'all other areas' decreased by 26% ($65m), and exploration on 'production leases' decreased by 6% ($1m).



REGIONAL DATA

Regional data for petroleum exploration expenditure are available for Victoria, Queensland, Western Australia, the Northern Territory/Ashmore and Cartier Islands and the Joint Petroleum Development Area formerly known as the Zone of Cooperation Area A. Combined, these regions contributed 96% to total exploration expenditure in the March quarter 2002.

Of the published regions, Western Australia was the main contributor, with a reported $120m expenditure on exploration, a decrease of 16% ($22m) from the December quarter 2001. Northern Territory/Ashmore and Cartier Islands reported a fall in exploration expenditure of 49% ($38m) to $39m.

DECADE OF AUSTRALIAN EXPLORATION EXPENDITURE—1991–92 TO 2000–01

Note: In this article, all values, except those relating to "World Exploration Expenditure", are presented in current prices. It has not been feasible to remove the effects of price changes from these data.

INTRODUCTION

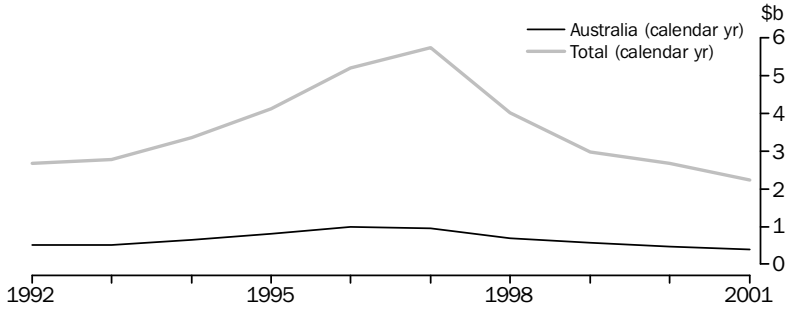
This article discusses expenditure on mineral and petroleum exploration over the past ten years and, in broad terms, attempts to describe some of the major influences on that expenditure. Where geographic breakdowns are examined, the analysis covers seven years only, as a breakdown for petroleum exploration data was not available before 1994–95.

EXPENDITURE PATTERN OVER THE PAST TEN YEARS

Over the ten years to June 2001, $8.3b was spent on the search for minerals in Australia, while $7.5b was spent on the search for petroleum in Australia and surrounding waters.

For the decade to December 2001, Australian non-ferrous mineral exploration expenditure remained relatively consistent as a proportion of global non-ferrous mineral exploration, averaging 18.3%. This relationship has been particularly steady in the past five years with the average proportion being 17.7%. Since 1997, both the global and the Australian levels in exploration expenditure have declined steadily.

WORLD EXPLORATION EXPENDITURE, $US(a)



(a) Reference year for real expenditure values is 2001.

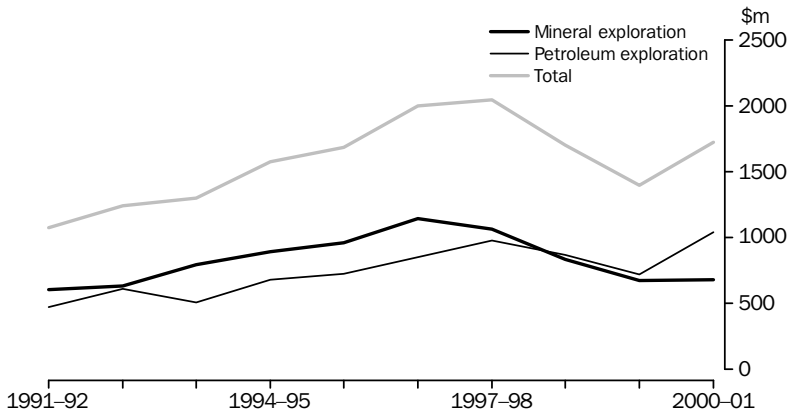
Note: All exploration expenditure data includes non-ferrous mineral exploration only.

Source: ABARE: Australian Commodities: Forecasts and Issues, March 2002.

As the following graph shows, expenditure on mineral and petroleum exploration grew reasonably steadily from the early 1990s until 1997–98. It then declined, with mineral exploration being the major contributor to the total decline. By 2000–01, total exploration had fallen to levels which were similar to those of the early 1990s. Petroleum exploration expenditure fell in 1998–99 and 1999–2000 but rose markedly in 2000–01 to the highest level ever recorded in the series (which began in the mid 1970s).

EXPENDITURE PATTERN OVER THE PAST TEN YEARS *continued*

MINERAL AND PETROLEUM EXPLORATION



The pattern of expenditure on exploration from the early 1990s to date does not appear to have been strongly influenced by the economic performance of the mining industry, or by that of industry as a whole (both the mining industry and total industry increased production throughout the 1990s with some of the highest growth in production occurring in those years when exploration expenditure was declining).

INFLUENCES ON MINERAL EXPLORATION LEVELS

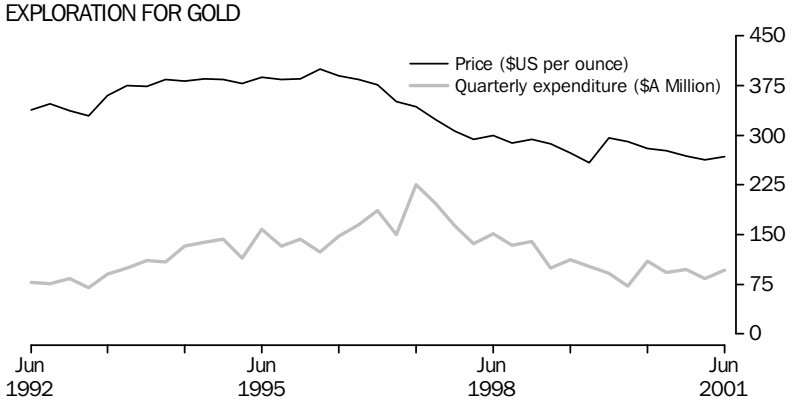
Intuitively, commodity prices would be a major consideration in corporate decisions concerning exploration activity. To test the strength of this link without the complexity which would accompany examination of data for a large number of commodities, the possible relationship between commodity prices and mineral exploration expenditure in Australia has been examined below in terms of exploration for gold. Over the past ten years, gold exploration expenditure has been the major contributor to overall mineral exploration expenditure (contributing more than half) and movements in gold exploration expenditure have often been the major factor which has driven changes in overall mineral exploration expenditure.

The following graph shows the broad relationship between expenditure on gold exploration and the price of gold in $US (virtually all Australian gold contracts are expressed in $US). The underlying data shows that there was a fairly strong positive relationship between gold prices and gold exploration expenditure over most of the period, though this relationship should not be regarded as being fixed.

Up to 1996, levels of exploration expenditure generally followed prices with a lag of around three months. During mid to late 1996 and early 1997, there was a short period where the relationship became unstable. This period coincided with the beginning of the downward trend in gold prices which has continued up to the present date. By late 1997, the positive correlation seemed to resume (again in a general way) but with a longer lag between price changes and expenditure changes (around six months). In recent years, gold exploration expenditure has followed prices downward and is now at levels barely above those of the early 1990s.

INFLUENCES ON MINERAL EXPLORATION LEVELS *continued*

EXPLORATION FOR GOLD



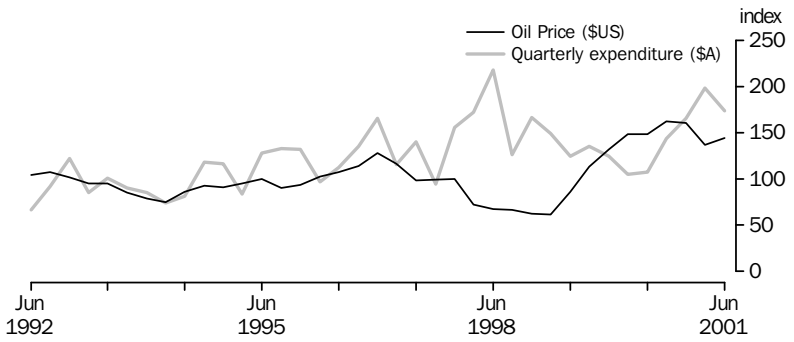
Source: ABARE: Australian Mineral Statistics (prices data)

While the price of gold and trends in that price are clearly important factors in determining levels of exploration expenditure, there have also been several other influences in recent years. Prominent among these other influences have been the availability and placement of venture capital (which is subject to a variety of influences, including in more recent years, central bank gold sales and the emergence of "dot.com" investment opportunities, as well as general economic influences) and considerations related to taxation, native title, cultural heritage protection and environment protection. However, little data is available to determine the extent to which such influences have affected the level of expenditure on gold exploration.

INFLUENCES ON PETROLEUM EXPLORATION LEVELS

In contrast to the situation with gold, there appears to be little (if any) correlation between the price of oil and the level of petroleum exploration expenditure (as illustrated by graph 4). Therefore, other factors must explain the levels of petroleum exploration expenditure in Australia.

PETROLEUM EXPLORATION, index numbers(a)



(a) Base of index: 1992–93 = 100

Source: ABARE: Australian Mineral Statistics (prices data)

INFLUENCES ON PETROLEUM EXPLORATION LEVELS *continued*

One likely explanation is that a substantial proportion of petroleum exploration expenditure is carried out by the major oil companies (or by others on their behalf) with exploration representing an early phase of their overall operations. In these circumstances, the main influences on exploration expenditure within Australia are likely to be the more complex commercial considerations of oil companies operating in a global context.

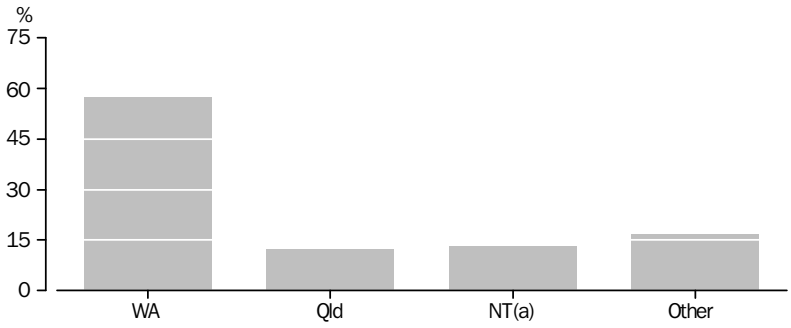
Investment decisions by the oil companies, along with decisions by the other businesses engaged in petroleum exploration, will most likely be influenced by broad conditions such as global and national economic trends, taxation systems, arrangements regarding the Joint Petroleum Development Area (formerly known as the Zone of Co-operation), and the availability of venture capital and the opportunity costs associated with use of that capital. In addition, there will be more specific issues underlying exploration decisions such as the issues associated with native title requirements, cultural heritage protection, environment protection, overseas prospects, and international political stability.

GEOGRAPHIC ASPECTS OF EXPLORATION EXPENDITURE IN RECENT YEARS

The following graph shows the broad geographic distribution of exploration expenditure in Australia over recent years. In looking at State and Territory shares, it should be noted that offshore petroleum exploration expenditure has been allocated to the State/Territory which administers the region. Exploration expenditure for the Joint Petroleum Development Area (see explanatory notes) has been allocated to the Northern Territory data.

State and Territory distribution of exploration expenditure corresponds broadly to the level of production by the mining industry within the respective State or Territory. This is particularly the case for Western Australia which has by far the largest production by the mining industry as well as the largest exploration expenditure. Similarly, Queensland ranks second among the States for both production and exploration expenditure (although Northern Territory exploration expenditure is slightly larger when account is taken of the offshore areas).

EXPLORATION EXPENDITURE—1994–95 to 2000–01



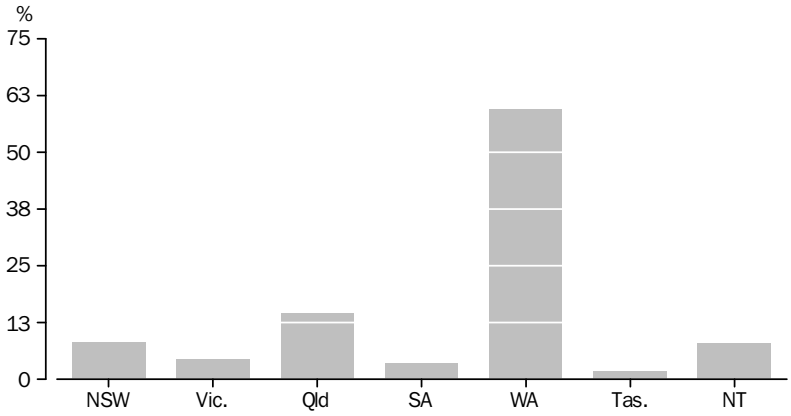
(a) Petroleum exploration expenditure includes the Ashmore and Cartier Islands and the Joint Petroleum Development Area in the Timor Sea. Mineral exploration expenditure includes data for NT only.

GEOGRAPHIC ASPECTS OF EXPLORATION EXPENDITURE IN RECENT YEARS *continued*

The next graph narrows the focus to mineral exploration expenditure only. It illustrates that over the past seven years, mineral exploration expenditure in Western Australia was substantially larger than expenditure in any other State or Territory, and in fact exceeded expenditure in all other States and Territories combined.

Western Australian dominance of exploration expenditure was largely due to investment in the search for gold ($2.6b having been spent over the seven year period). For other minerals, Western Australia remains the State attracting the largest expenditure but not to the same degree.

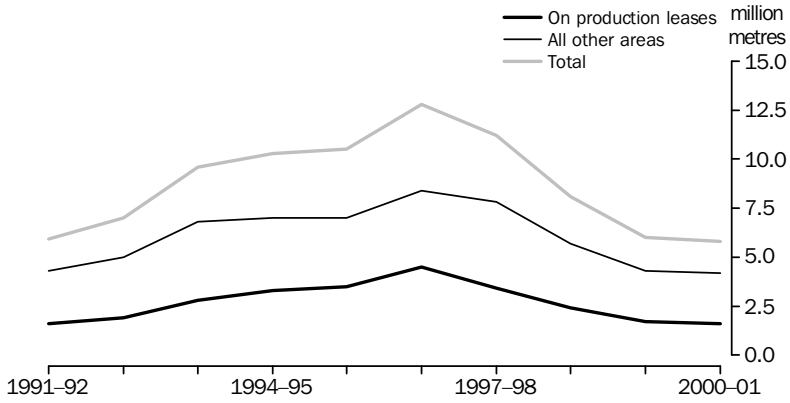
MINERAL EXPLORATION EXPENDITURE—1994–95 TO 2000–01



DRILLING OPERATIONS IN MINERAL EXPLORATION

During the ten years to 2000–01, over 87 million metres (87,000 kilometres) of drilling was undertaken in the search for minerals in Australia. Graph 7 shows a steady rise in drilling activity from the early 1990s reaching a peak of 12.8 million metres in 1996–97. Over the period the proportion of drilling which was undertaken on production leases remained fairly stable ranging from a low of 28% (several years) to a high of almost 35% (in 1996–97).

METRES DRILLED



DRILLING OPERATIONS IN MINERAL EXPLORATION *continued*

A variety of drilling methods are used in mineral exploration in Australia. In the period 1994–95 to 1999–2000 inclusive, $825m was spent on diamond drilling resulting in 8.1 million metres drilled. Corresponding data for other methods are reverse circulation drilling ($781m spent and 22.2 million metres drilled), rotary air blast drilling ($252m spent and 19.3 million metres drilled) and various other methods ($223m spent and 9.5 million metres drilled).

1 PRIVATE EXPLORATION, Actual and Expected Expenditure(a)

	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*
Period	$m	$m	%	$m	$m	%	$m	$m	%
1998–99	837.8	773.4	108.3	182.3	144.2	126.4	685.4	540.1	126.9
1999–2000	676.3	705.2	95.9	110.1	155.3	70.9	613.3	637.0	96.3
2000–01	683.3	683.2	100.0	176.9	174.4	101.4	867.0	934.5	92.8
December Half 2000	357.0	358.6	99.5	80.7	118.7	68.0	392.6	374.4	104.9
June Half 2001	326.3	324.6	100.5	96.2	55.7	172.8	474.3	560.2	84.7
December Half 2001	338.1	430.5	78.5	80.3	86.8	92.5	419.9	551.9	76.1
June Half 2002	nya	307.2	nya	nya	97.6	nya	nya	372.3	nya

nya not yet available

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

(b) Refer to Explanatory Notes paragraphs 13–15.

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

	EXPENDITURE					METRES DRILLED				
	On production leases	*On all other areas*(b)	*Total*	*Seasonally adjusted*	*Trend estimate*	*On production leases*	*On all other areas*(b)	*Total*	*Seasonally adjusted*	*Trend estimate*
Period	$m	$m	$m	$m	$m	'000 m	'000 m	'000 m	'000 m	'000 m
1998–99	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	. .	. .
2000–01	157.0	526.2	683.3	. .	. .	1 611	4 211	5 822	. .	. .
2000										
June	37.4	145.3	182.7	168.9	166.6	408	1 409	1 817	1 532	1 459
September	43.3	126.5	169.8	167.3	170.3	436	1 145	1 582	1 479	1 538
December	47.2	140.0	187.2	175.9	172.5	433	1 092	1 525	1 564	1 553
2001										
March	33.6	109.9	143.5	171.1	171.8	339	879	1 218	1 591	1 479
June	32.9	149.8	182.8	168.0	168.7	402	1 094	1 496	1 254	1 378
September	37.5	129.9	167.4	165.0	164.2	375	1 014	1 389	1 302	1 302
December	33.5	137.1	170.7	160.4	160.3	334	963	1 297	1 331	1 275
2002										
March	23.8	105.7	129.5	155.4	156.3	280	656	937	1 226	1 272

. . not applicable

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

(b) Refer to Glossary for definition.

3 MINERAL EXPLORATION, (Other than for Petroleum), Expenditure(a)

	TYPE OF LEASE		
	On production leases	*On all other areas*(b)	*Total*
State	$m	$m	$m
New South Wales	1.7	8.8	10.5
Victoria	np	np	8.4
Queensland	4.6	12.7	17.3
South Australia	0.2	7.1	7.3
Western Australia	14.2	63.6	77.8
Tasmania	np	np	1.0
Northern Territory	np	np	7.2
Australia	**23.8**	**105.7**	**129.5**

np not available for publication but included in totals where applicable, unless otherwise indicated

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

(b) Refer to Glossary for definition.

4 MINERAL EXPLORATION, (Other than for Petroleum), Exploration by State and Territory(a)

Period	*New South Wales* $m	*Victoria* $m	*Queensland* $m	*South Australia* $m	*Western Australia* $m	*Tasmania* $m	*Northern Territory* $m	***Australia*** $m
				ORIGINAL				
1998–99	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**
2000–01	57.2	32.7	83.1	29.6	424.1	9.2	47.5	**683.3**
2000								
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**
December	15.8	7.3	21.4	6.8	118.0	2.6	15.3	**187.2**
2001								
March	12.7	8.4	17.1	4.9	90.8	2.5	7.2	**143.5**
June	15.1	8.4	22.8	12.4	110.9	2.3	10.9	**182.8**
September	12.5	7.2	21.6	6.9	103.3	0.9	15.0	**167.4**
December	12.6	7.1	25.0	8.0	103.5	1.2	13.3	**170.7**
2002								
March	10.5	8.4	17.3	7.3	77.8	1.0	7.2	**129.5**
				SEASONALLY ADJUSTED				
2000								
June	13.6	10.1	20.6	4.5	105.0	1.4	13.7	**168.9**
September	14.7	8.9	21.7	5.6	102.7	1.8	11.9	**167.3**
December	14.7	6.9	20.2	6.7	110.8	2.7	13.9	**175.9**
2001								
March	13.6	8.5	20.8	6.4	108.2	2.3	11.3	**171.1**
June	14.1	8.4	20.3	9.9	102.7	2.4	10.2	**168.0**
September	13.6	7.4	21.6	7.1	101.8	0.9	12.6	**165.0**
December	11.7	6.8	23.8	7.9	96.9	1.2	12.1	**160.4**
2002								
March	11.3	8.5	21.0	9.5	92.8	0.9	11.4	**155.4**
				TREND				
2000								
June	13.7	8.9	20.9	5.0	103.2	1.7	13.2	**166.6**
September	14.3	8.7	21.0	5.3	106.0	1.9	13.1	**170.3**
December	14.5	8.2	20.7	6.5	107.9	2.3	12.4	**172.5**
2001								
March	14.3	8.0	20.4	7.6	107.5	2.4	11.6	**171.8**
June	13.8	7.9	20.9	8.0	104.8	2.0	11.3	**168.7**
September	13.1	7.6	21.8	8.1	100.6	1.4	11.6	**164.2**
December	12.2	7.5	22.3	8.3	97.0	1.1	11.9	**160.3**
2002								
March	11.5	7.7	22.2	8.6	93.5	0.9	11.9	**156.3**

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

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

	Copper	*Silver, lead-zinc*	*Nickel, cobalt*	*Selected base metals total*(b)	*Gold*	*Iron ore*	*Mineral sands*	*Uranium*	*Coal*	*Diamonds*	*Other*(c)	*Total*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
MARCH QUARTER 2002												
New South Wales	0.6	0.7	0.5	1.8	3.9	—	1.6	—	np	—	np	10.5
Victoria	—	—	—	np	6.6	—	1.6	—	—	—	np	8.4
Queensland	2.9	2.2	—	5.1	4.8	—	np	—	6.7	—	np	17.3
South Australia	np	0.9	np	4.9	0.8	—	np	np	np	np	—	7.3
Western Australia	0.6	2.1	8.5	11.2	53.5	2.7	2.4	—	—	4.3	3.7	77.8
Tasmania	np	np	np	0.5	0.4	—	—	—	—	—	—	1.0
Northern Territory	0.3	np	0.4	np	4.0	—	np	np	—	np	0.2	7.2
Australia	8.1	6.7	9.8	24.6	73.9	2.7	7.0	0.9	10.2	5.7	4.6	129.5
AUSTRALIA												
1998–99	na	na	na	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	21.5	11.7	35.4	29.8	16.7	676.3
2000–01	32.8	59.8	72.8	165.4	370.2	23.4	23.6	8.4	41.3	31.8	19.3	683.3
June 2000	7.0	14.6	18.4	40.0	109.8	np	7.6	np	8.7	4.9	3.1	182.7
September 2000	6.9	14.9	17.1	38.9	92.5	7.2	4.9	np	9.2	11.3	np	169.8
December 2000	7.7	16.3	24.1	48.2	97.5	7.4	6.1	2.9	9.3	9.7	6.0	187.2
March 2001	5.8	13.1	14.7	33.6	83.3	3.4	5.8	1.1	7.6	4.1	4.6	143.6
June 2001	12.3	15.5	16.9	44.7	96.8	5.4	6.8	np	15.1	6.7	np	182.8
September 2001	10.0	11.4	14.9	36.3	86.4	4.4	7.8	3.0	11.9	9.4	8.2	167.4
December 2001	10.3	9.3	16.7	36.3	84.2	6.9	8.7	2.1	14.4	10.7	7.3	170.7
March 2002	8.1	6.7	9.8	24.6	73.9	2.7	7.0	0.9	10.2	5.7	4.6	129.5

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

na not available

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

(b) Selected base metal total is copper, silver, lead-zinc, nickel, cobalt.

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

6 PETROLEUM EXPLORATION EXPENDITURE(a)

	ONSHORE			OFFSHORE			TOTAL EXPENDITURE		
	Drilling	*Other*	*Total*	*Drilling*	*Other*	*Total*	*On production leases*	*On all other areas*(b)	*Total*
Period	$m	$m	$m	$m	$m	$m	$m	$m	$m
1998–99	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	381.8	231.4	613.2	121.9	601.4	723.3
2000–01	98.4	78.5	176.9	543.3	323.7	867.0	212.5	831.3	1 043.9
2000									
June	8.6	15.6	24.2	78.7	62.1	140.8	19.9	145.1	165.0
September	17.3	15.8	33.1	129.2	57.4	186.6	42.3	177.5	219.8
December	26.8	20.8	47.6	104.4	101.6	206.0	60.0	193.5	253.5
2001									
March	28.2	23.2	51.4	157.8	95.3	253.1	59.7	244.8	304.5
June	26.1	18.7	44.8	151.8	69.4	221.2	50.5	215.5	266.0
September	28.8	13.3	42.1	137.3	52.5	189.8	40.5	191.4	231.8
December	23.2	15.0	38.3	152.3	77.8	230.1	23.1	245.2	268.3
2002									
March	16.7	31.2	47.9	94.6	59.7	154.3	21.8	180.4	202.1

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

(b) Refer to Glossary for definition.

7 PETROLEUM EXPLORATION, By Region(a)

Period	*New South Wales* $m	*Victoria* $m	*Queensland* $m	*South Australia* $m	*Western Australia*(b) $m	*Tasmania* $m	*Northern Territory/ Ashmore and Cartier Islands* $m	*Joint Petroleum Development Area*(c) $m	***Total*** $m
1998–99	0.1	32.6	65.9	np	530.8	np	132.0	32.3	**867.7**
1999–2000	np	63.2	50.6	np	444.1	np	88.3	45.2	**723.3**
2000–01	6.4	74.4	84.8	66.7	687.5	np	63.4	np	**1 043.9**
2000									
June	np	np	np	np	113.9	np	14.6	np	**165.0**
September	np	6.7	22.3	np	148.8	np	30.8	np	**219.8**
December	np	13.3	27.1	np	166.3	np	8.6	np	**253.5**
2001									
March	np	10.3	19.2	np	216.4	np	np	np	**304.5**
June	1.1	44.0	16.1	25.0	156.0	np	np	0.1	**266.0**
September	2.7	np	19.4	12.1	136.3	np	np	0.4	**231.8**
December	np	np	14.0	np	141.7	np	77.7	1.8	**268.3**
2002									
March	np	21.7	13.3	np	119.7	—	39.3	0.3	**202.1**

np not available for publication but included in totals where applicable, unless otherwise indicated

— nil or rounded to zero (including null cells)

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

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

(c) Refer to Explanatory Notes paragraphs 2–5.

EXPLANATORY NOTES

INTRODUCTION

1 The private sector exploration statistics appearing in this publication have been collected and compiled from the Mineral Exploration and Petroleum Exploration quarterly censuses conducted by the Australian Bureau of Statistics. This publication contains actual and expected exploration expenditure.

SCOPE AND COVERAGE

2 The Mineral Exploration and Petroleum Exploration censuses cover private enterprises known to be engaged in exploration in Australia, in Australian waters, in the Joint Petroleum Development Area (JPDA), and in Areas B and C previously recognised under the Timor Sea Economic Cooperation Zone (referred to as the Zone of Cooperation (ZOC)), regardless of the main activity of the explorer.

3 The Joint Petroleum Development Area (JPDA) is an area in the Timor Sea, about 500 km north west of Darwin. The JPDA consists of the area previously referred to as Area A of the Zone of Cooperation (ZOC). A Treaty was signed with Indonesia in 1989 to enable exploration for and development of petroleum resources in this area. Following East Timor's separation from Indonesia, arrangements have continued on a transitional basis since 25 October 1999 with Australia and the United Nations Transitional Administration in East Timor (UNTAET) on behalf of East Timor. These arrangements were terminated when East Timor became independent on 20 May 2002.

4 Australia and East Timor have agreed on a Framework Arrangement to form the basis of a Treaty to come into effect on East Timorese independence. Under this Arrangement, the JPDA will be controlled by a designated authority which will report to a Joint Commission, with a Ministerial Council to provide oversight. Ninety per cent of resources in this region will belong to East Timor and 10% to Australia.

5 The situation regarding Areas B and C, in the former Zone of Cooperation has not yet been determined. Under the original agreement, 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. Exploration expenditure in this area has been included with the Western Australia data. 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. Exploration expenditure in this area is excluded from the data.

6 The 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 the Northern Territory data.

SEASONAL ADJUSTMENT

7 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. Seasonal adjustment does not aim to remove the irregular or non-seasonal influences which may be present in any particular series.

8 These irregular influences that are volatile or unsystematic can make it difficult to interpret the movement of the series even after adjustment for seasonal variation. This means that quarter-to-quarter movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour.

SEASONAL ADJUSTMENT *continued*

9 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.

TREND ESTIMATES

10 The smoothing of seasonally adjusted series to create trend estimates reduces the impact of the irregular component of the seasonally adjusted series.

11 The trend estimates are derived by applying a 7-term Henderson moving average to the seasonally adjusted series. The 7-term Henderson average 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.

12 *Information Paper: A Guide to Interpreting Time Series, Monitoring Trends, an Overview* (Cat. no. 1348.0), can be obtained by contacting Time Series Analysis Canberra on (02) 6252 6345 or e-mail timeseries@abs.gov.au.

EXPECTED EXPLORATION EXPENDITURE

13 Expected expenditure is collected in June and December quarter each year. Businesses are asked to report their expected expenditure for the next six months.

14 From the June quarter 2000 publication, the basis for the Expected Mineral Exploration Expenditure series changed. Prior to June 2000, the expected estimates released were simple aggregates of data compiled through the quarterly Mineral Exploration collection. However, these aggregates underestimated actual expenditure to a fairly consistent degree. The consistency with which the published data underestimated actual expenditure suggested that adjustments to improve the accuracy and usefulness of the estimates of expected expenditure would be possible.

15 In the period since June 2000, such adjustments have been made to reported expected exploration data resulting in estimates which better predict actual expenditure for the same period. For more information regarding the adjustments made to the Expected Mineral Exploration Expenditure series, see the feature article in *Mineral and Petroleum Exploration Australia June quarter 2000* (Cat No 8412.0).

TAX REFORM

16 Goods and Services Tax (GST) which came into effect on 1 July 2000 is not included in the value of exploration expenditure. Enterprises in the censuses are asked to report actual expenditure based on the expected net cost to them under the New Tax System. That is, the Wholesale Sales Tax 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. 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.

ACKNOWLEDGEMENT

17 ABS publications draw extensively on information provided freely by individuals, businesses, government and other organisations. Their continued cooperation is appreciated: without it a wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the Census and Statistics Act 1905.

RELATED PUBLICATIONS

18 Users may also wish to refer to the following publications which are for sale and available on request:

- *Australian Business Expectation*s (Cat. no. 5250.0)
- *Private New Capital Expenditure and Expected Expenditure, Australia* (Cat. no. 5625.0)
- *Australian Mining Industry* (Cat. no. 8414.0)
- *Mining Operations* (Cat. no. 8415.0)

ABS DATA AVAILABLE ELECTRONICALLY

19 This publication and other downloadable products can be purchased online using a credit card. They can be downloaded (with no credit card needed) by AusStats and ABS@ subscribers, Australian universities and at some public libraries.

20 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 or on the ABS' web site www.abs.gov.au.

21 Publications showing the details of wells and metres drilled in petroleum exploration are available from the Petroleum Resources Program of Geoscience Australia.

EFFECTS OF ROUNDING

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

Development Phase usually following exploration where a prospective discovery (e.g. proven oil or gas field or concentrate of ore) is brought into production or for extending the life of a current mine or well. Activities may include preparing the ground by the removal of overburden, constructing shafts, drives and winzes; or by drilling and completing wells. All activities are for the purposes of commencing extraction/mining or extending production.

Exploration Activity involves searching for concentrations of naturally occurring solid, liquid or gaseous materials and includes new field wildcat and stratigraphical and extension/appraisal wells and mineral appraisals intended to delineate or greatly extend the limits of known deposits by geological, geophysical, geochemical, drilling or other methods. This includes drilling of boreholes, 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 Covers all expenditure (capitalised and non-capitalised) during the exploratory or evaluation stages in Australia, Australian waters, JPDA and Areas B and C of the original ZOC. Costs include cost of exploration, determination of recoverable reserves, engineering and economic feasibility studies, procurement of finance, gaining access to reserves, construction of pilot plants and all technical and administrative overheads directly associated with these functions. Examples are costs of satellite imagery, airborne and seismic surveys, use of geophysical and other instruments, geochemical surveys and map preparation; licence fees, land access and legal costs; geologist inspections, chemical analysis and payments to employees and contractors. Cash bids for offshore petroleum exploration permits are also included.

Exploration licence/permit Is designed to cover the exploration phase of a project and confers exclusive rights to the exploration for and recovery of samples from the area designated. These rights are granted by relevant Commonwealth, State or Territory Governments.

Minerals Are a naturally occurring inorganic element or compound having an orderly internal structure and characteristic chemical composition, crystal form, and physical properties. These, for example, comprise of metallic minerals, such as copper, silver, lead-zinc, nickel, cobalt, gold, iron ore, mineral sands, uranium and non-metallic minerals such as coal, diamonds and other precious and semi-precious stones and construction materials (e.g. gravel and sand).

Mining licence/lease Covers the commercial mining phase of a project for the licenced area. This licence authorises both full recovery and further exploration to occur.

Offshore Commences from the low water mark to three nautical miles out (referred to as coastal waters) under State and Northern Territory legislation and extends to those areas beyond coastal waters governed by the Commonwealth under the *Petroleum (Submerged Lands) Act 1967*.

Onshore Includes all Australian territorial lands to the low water mark.

Petroleum Is a naturally occurring hydrocarbon or mixture of hydrocarbons. As oil or gas in solution (e.g. LPG), it is widespread in Australian sedimentary rocks.

Retention licence Is an intermediate form of tenure between the exploration licence and mining licence allowing the holder of the exploration licence to retain title to the area for a limited time. It is designed to ensure the retention of rights pending the transition of a project from the exploration phase to the commercial mining phase.

Selected base metals Are made up of the following minerals: copper, silver, lead-zinc, nickel and cobalt.

Type of expenditure Classification used:

Drilling expenditure — includes wages and salaries paid to employees; purchase, rental, hiring as well as operation and maintenance of drilling equipment together with activities associated with accessing the areas where drilling is to occur (e.g. road creation, vessel/transport hiring, site preparation and restoration). Also includes expenditure on drilling done by contractors.

Other expenditure — includes all other exploration costs, other than those associated with drilling expenditure. This expenditure includes purchase of capital and non-capital items, rental or hiring fees, service fees relating to surveying and analysis, administrative and legal fees associated with obtaining licences/permits, land access, map preparation, feasibility studies, environmental impacts studies and restoration costs.

Type of lease Classifications used:

Production lease — is an area on which development to extract coal, minerals, liquids or gaseous materials is underway or where extraction/mining of these substances is already occurring. See also mining licence/lease.

All other areas — are those areas outside the Production lease. These include areas under exploration licence/permit or retention licence, as well as non-licenced areas being assessed for exploration, e.g. through airborne surveys.

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DIAL-A-STATISTIC	For the latest figures for National Accounts, Balance of Payments, Labour Force, Average Weekly Earnings, Estimated Resident Population and the Consumer Price Index call 1900 986 400 (call cost 77c per minute).

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