

BHP BILLITON LTD  
Form 6-K  
January 18, 2012

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**Form 6-K**

**REPORT OF FOREIGN PRIVATE ISSUER**  
**PURSUANT TO RULE 13a-16 OR 15d-16 UNDER**  
**THE SECURITIES EXCHANGE ACT OF 1934**

January 18, 2012

**BHP BILLITON LIMITED**

(ABN 49 004 028 077)

(Exact name of Registrant as specified in its charter)

VICTORIA, AUSTRALIA  
(Jurisdiction of incorporation or organisation)

180 LONSDALE STREET, MELBOURNE,

VICTORIA  
3000 AUSTRALIA  
(Address of principal executive offices)

**BHP BILLITON PLC**

(REG. NO. 3196209)

(Exact name of Registrant as specified in its charter)

ENGLAND AND WALES  
(Jurisdiction of incorporation or organisation)

NEATHOUSE PLACE, VICTORIA, LONDON,

UNITED KINGDOM  
(Address of principal executive offices)

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Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F       Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934:  Yes  No

If  Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): n/a

**Release Time** IMMEDIATE  
**Date** 18 January 2012  
**Number** 02/12

**BHP BILLITON EXPLORATION AND DEVELOPMENT REPORT**

**FOR THE QUARTER ENDED 31 DECEMBER 2011**

This report covers the Group's exploration and development activities for the December 2011 quarter. Unless otherwise stated, BHP Billiton's interest in the projects referred to in this report is 100 per cent and references to project schedules are based on calendar years.

**Development**

A focus on high return growth projects, diversified by commodity, geography and market was further reinforced during the December 2011 half year with the approval of projects in the Metallurgical Coal and Energy Coal businesses. BHP Billiton's commitment to its world class growth pipeline now exceeds US\$26 billion.

During the December 2011 quarter, BHP Billiton announced the approval of the Caval Ridge mine development and the expansion of the Peak Downs operation (both Australia) which will add high quality export coking coal capacity and future development options for our leading Queensland Coal business. BHP Billiton also approved the Western Australia Iron Ore (WAIO) Orebody 24 mine and the North West Shelf Greater Western Flank-A project (Australia).

Pre-commitment expenditure of US\$1.2 billion for the first phase of the Olympic Dam Project (Australia) was activated following environmental approval by the Government of South Australia and the Commonwealth, and the successful passage of the Indenture agreement through the South Australian Parliament. This funding will facilitate the procurement of long lead time items such as trucks and accommodation, infrastructure development and early site works.

Onshore US drilling and development expenditure in the Petroleum business totalled US\$0.9 billion during the December 2011 quarter and US\$1.4 billion during the December 2011 half year.

Project and ownership	Share of approved capex (US\$m)	Initial production target date	Production capacity (100%)	Quarterly progress
<b>Petroleum projects</b>				
Macedon (Australia)	1,050	CY13	200 million cubic feet gas per day.	On schedule and budget. The overall project is 45% complete.
	71.43%			
<b>Gas</b>				
Bass Strait Kipper (Australia)	900	CY12 <sup>(a)</sup>	10,000 bpd condensate and processing capacity of 80 million cubic feet gas per day.	On revised schedule and budget. The overall project is 88% complete.
	32.5% - 50%			
<b>Gas/Gas Liquids</b>				

Project and ownership	Share of approved capex (US\$m)	Initial production target date	Production capacity (100%)	Quarterly progress
Bass Strait Turrum (Australia)	1,350	CY13	11,000 bpd condensate and processing capacity of 200 million cubic feet gas per day.	On revised schedule and budget. The overall project is 72% complete.
50%				
Gas/Gas Liquids				
North West Shelf North Rankin B Gas	850	CY13	2,500 million cubic feet gas per day.	On budget. Steady state production remains on track for CY13. The overall project is 85% complete.
Compression				
(Australia)				
16.67%				
LNG				
North West Shelf	400	CY16	To maintain LNG plant throughput from the North West Shelf operations.	Project approved by all joint venture partners in December 2011.
Greater Western				
Flank-A				
(Australia)				
16.67%				
LNG				
<b>Minerals projects</b>				
Worsley Efficiency & Growth	2,995	Q1 CY12	1.1 million tpa of additional alumina.	On revised schedule and budget. The overall project is 94% complete. Marradong mine has been commissioned and is ramping up to expected capacity.
(Australia)				
86%				
Alumina				
Antamina Expansion	435	Q1 CY12	Increases ore processing capacity to 130,000 tpd.	In commissioning phase with first production now expected in Q1 CY12. The overall project is 79% complete.
(Peru)				
33.75%				
Copper				
Escondida Ore Access	319	Q2 CY12	The relocation of the in-pit crushing and conveyor infrastructure provides access to higher grade ore.	On schedule and budget. The overall project is 77% complete.
(Chile)				
57.5%				
Copper				
EKATI Misery Open Pit Project	323	CY15	Project consists of a pushback of the existing Misery open pit which was	On schedule and budget. The overall project is 16% complete.

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(Canada)

mined from 2001 to 2005.

80%

Diamonds

WAIO Jimblebar Mine Expansion	3,300 <sup>(b)</sup>	Q1 CY14	Increases mining and processing capacity to 35 million tpa with incremental debottlenecking opportunities to 55 million tpa.	On schedule and budget. The overall project is 21% complete.
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(Australia)

96%

Iron Ore

WAIO Port Hedland Inner Harbour Expansion	1,900 <sup>(b)</sup>	H2 CY12	Increases total inner harbour capacity to 220 million tpa with debottlenecking opportunities to 240 million tpa.	On schedule and budget. The overall project is 42% complete.
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(Australia)

85%

Iron Ore

Iron Ore

Project and ownership	Share of approved capex (US\$m)	Initial production target date	Production capacity (100%)	Quarterly progress
WAIO Port Blending and Rail Yard Facilities (Australia)	1,400 <sup>(b)</sup>	H2 CY14	Optimises resource and enhances efficiency across the WAIO supply chain.	On schedule and budget. The overall project is 13% complete.
				85%
Iron Ore WAIO Orebody 24 (Australia)	698	H2 CY12	Maintains iron ore production output from the Newman Joint Venture operations.	Approval announced. See News Release dated 16 November 2011.
				85%
Iron Ore Samarco Fourth Pellet Plant (Brazil)	1,750	H1 CY14	Increases iron ore pellet production capacity by 8.3 million tpa to 30.5 million tpa.	On schedule and budget. The overall project is 18% complete.
				50%
Iron Ore Daunia (Australia)	800	CY13	Greenfield mine development with capacity to produce 4.5 million tpa of export metallurgical coal.	On schedule and budget. The overall project is 27% complete.
				50%
Metallurgical Coal Broadmeadow Life Extension (Australia)	450	CY13	Increases productive capacity by 0.4 million tpa and extends life of the mine by 21 years.	On schedule and budget. The overall project is 56% complete.
				50%
Metallurgical Coal Hay Point Stage Three Expansion (Australia)	1,250 <sup>(b)</sup>	CY14	Increases port capacity from 44 million tpa to 55 million tpa and reduces storm vulnerability.	On schedule and budget. The overall project is 36% complete.
				50%
Metallurgical Coal Caval Ridge (Australia)	2,100 <sup>(b)</sup>	CY14	Greenfield mine development and expansion of the Peak Downs Mine with capacity to produce 8.0 million tpa of export metallurgical coal.	Approval announced. See News Release dated 1 November 2011.
				50%
Metallurgical Coal RX1 Project	400	H2 CY12	Increases run-of-mine thermal coal production by approximately 4 million	On schedule and budget. The overall project is 62% complete. First

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(Australia) tpa. production is now expected in H2 CY12.

100%

Energy Coal

Cerrejon P40 Project (Colombia)	437	CY13	Increases saleable thermal coal production by 8 million tpa to approximately 40 million tpa.	On schedule and budget. The overall project is 11% complete.
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33.3%

Energy Coal

Newcastle Third Port Project Stage 3 (Australia)	367	CY14	Increases total coal terminal capacity from 53 million tpa to 66 million tpa.	On schedule and budget. The overall project is 12% complete.
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35.5%

Energy Coal

**Substantial increase in the Spence Mineral Resource**

BHP Billiton today announced a near 700 per cent increase in the Mineral Resource tonnage of the wholly owned Spence mine in northern Chile. This increase reflects the initial declaration of a significant hypogene (chalcopyrite) extension of the supergene (chalcocite and copper oxide) mineralisation that comprises the current Mineral Resource. The reporting of hypogene Mineral Resource follows a four year US\$30 million brownfield exploration program.

This significant Mineral Resource increase, in addition to the previously announced 129 per cent<sup>(c)</sup> increase in the Mineral Resource surrounding Escondida and 32 per cent<sup>(c)</sup> increase in the Antamina Mineral Resource, further demonstrates the continued success of BHP Billiton's extensive brownfield exploration program. Elsewhere in the portfolio, a total of 542 thousand metres was drilled across the Pilbara in the 2011 calendar year, contributing to a 20 per cent<sup>(d)</sup> increase in the WAIO Mineral Resource to 19.3 billion tonnes<sup>(d)</sup> as reported in the 2011 Annual Report. In the Saskatchewan potash basin, BHP Billiton's activities included the completion of a 3D seismic survey and deep drilling on an exploration target, and four seismic 2D programs. In our Metallurgical Coal business a total of 267 thousand metres was drilled across the Bowen Basin during the 2011 calendar year, increasing our confidence in the Mineral Resource underpinning our development projects including Daunia and Caval Ridge.

**Mineral Resource Spence (100%)<sup>(g)</sup>**

As at 31 December 2011														As at 30 June 2011		
Commodity Deposit <sup>(f)</sup>	Ore type	Measured Resource		Indicated Resource			Inferred Resource			Total Resource			Total Resource		BHP Billiton interest %	
		Millions of dry metric tonnes	% TCu	Millions of dry metric tonnes	% TCu	ppm Mo	Millions of dry metric tonnes	% TCu	ppm Mo	Millions of dry metric tonnes	% TCu	ppm Mo	Millions of dry metric tonnes	% TCu		
<b>Copper</b>																
Spence <sup>(g)</sup>	Oxide	53	0.99	14	0.83		0.3	0.46		68	0.95		64	1.01	100	
	Low-grade oxide and sulphide	8	0.25	9	0.25		2.4	0.23		20	0.25		22	0.24		
	Supergene sulphide	156	0.96	62	0.64		4.0	0.54		221	0.86		222	0.91		
	Transitional sulphide	24	0.72	9	0.51		0.7	0.38		34	0.66		37	0.65		
	Hypogene sulphide			1,184	0.46	148	1,167	0.39	86	2,352	0.43	117				

**Minerals exploration**

Greenfield exploration continued on copper targets in South America, Mongolia and Zambia; nickel and copper targets in Australia. Exploration for iron ore, potash and uranium was undertaken in a number of regions including Australia, Africa and the Americas.

For the December 2011 half year, BHP Billiton spent US\$532 million on minerals exploration, of which US\$451 million was expensed.



**Petroleum exploration**

Exploration and appraisal wells drilled during the quarter or in the process of drilling as at 31 December 2011.

Well	Location	BHP Billiton equity	Status
Deep Blue-1	Gulf of Mexico GC 723	31.875% (Noble operator)	Plugged and abandoned Hydrocarbons encountered
Mad Dog North-1	Gulf of Mexico GC 738	23.9% (BP operator) <sup>(h)</sup>	Plugged and abandoned Hydrocarbons encountered See news release dated 7 September 2011
Jujur-1	Sabah Malaysia Block N	60% (Operator)	Temporarily suspended
Julong Centre	Brunei Block CA-01	22.5% (Total operator)	Drilling ahead
Seraph-1	North West Shelf Australia WA-3-L	16.67% (Woodside operator)	Plugged and abandoned Dry hole
Gunflint-3	Gulf of Mexico MC948	11.2% (Noble operator)	Drilling ahead
Tidepole East	North West Shelf Australia WA-28-P	16.67% (Woodside operator)	Plugged and abandoned Hydrocarbons encountered

Petroleum exploration expenditure for the December 2011 half year was US\$565 million, of which US\$265 million was expensed. Our guidance for petroleum exploration expenditure for the 2012 financial year is US\$1.4 billion, including the new Onshore US exploration program.

- (a) Facilities ready for first production pending resolution of mercury content.
- (b) Excludes announced pre-commitment funding.
- (c) This BHP Billiton Mineral Resource information was sourced from the BHP Billiton 2011 Annual Report. This document can be viewed at [www.bhpbilliton.com](http://www.bhpbilliton.com). The Mineral Resource information is compiled by Richard Preece (FAusIMM) Escondida and Jhon Espinoza (MAusIMM) Antamina, who are full time employees of BHP Billiton and who have the required qualifications and experience to qualify as Competent Persons under the JORC Code and consent to the form and context in which it appears above. Mineral Resources are stated on a 100% basis. The detailed breakdown of Escondida Mineral Resources is 3.1bt @ 0.75% Cu Measured, 4.7bt @ 0.59% Cu Indicated, 11.7bt @ 0.49% Cu Inferred, and Antamina Mineral Resources is 187mt @ 0.85% Cu Measured, 1,019mt @ 0.91% Cu Indicated, 708mt @ 0.73% Cu Inferred.
- (d) This BHP Billiton Mineral Resource information was sourced from the BHP Billiton 2011 Annual Report. This document can be viewed at [www.bhpbilliton.com](http://www.bhpbilliton.com). The Mineral Resource information is compiled by Paul Whitehouse (MAusIMM) Western Australian Iron Ore, who is a full time employee of BHP Billiton and who has the required qualifications and experience to qualify as a Competent Person under the JORC Code and consents to the form and context in which it appears above. Mineral Resources are stated on a 100% basis. The detailed breakdown of the Western Australian Iron Ore Mineral Resources is 2.2bt @ 59.3% Fe Measured, 3.9bt @ 60.1% Fe Indicated, 13.2bt @ 59.1% Fe Inferred.

(e) Competent Person J. Céspedes (MAusIMM).

The statement of Mineral Resources is presented on a 100 per cent basis and is based on information compiled by the above named Competent Person and relates to Mineral Resources estimates as at 31 December 2011. Mr. Céspedes is a full time employee of BHP Billiton Limited, has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the JORC Code, and he is a member of the Australasian Institute of Mining & Metallurgy (AusIMM). The Competent Person consents to the inclusion in this report of the matters based on their information in the form and context in which it appears.

(f) %TCu per cent total copper, ppm Mo - parts per million molybdenum.

(g) Spence The inclusion of hypogene sulphide Mineral Resource is partly a result of exploration and infill drilling results, and partly a result of selection (pre-feasibility) stage studies that have demonstrated the potential of economic viability for open pit mining, milling and flotation of the hypogene resource. Hypogene sulphides are newly reported chalcopyrite - molybdenite mineralisation that are the precursor to and immediately underlies the supergene and transitional sulphide ore types that are currently processed through heap leaching and SX-EW.

The deposit has been evaluated with 108,000 metres of drill core in 264 holes located on grid spacing of 100x100 metres for Indicated tonnages and 200x200 metres for Inferred. Changes in the supergene resources compared to 30 June 2011 include additional drilling, revised pit design and depletion due to production during the first half of the 2012 financial year.

(h) BHP Billiton is operator of the well.

Further information on BHP Billiton can be found at: [www.bhpbilliton.com](http://www.bhpbilliton.com)

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BHP Billiton Limited and BHP Billiton Plc

Date: January 18, 2012

By: /s/ Jane McAloon  
Name: Jane McAloon  
Title: Group Company Secretary