OIL BASINS LIMITED

Derby Block Prospectivity Overview Oil Basins Limited

February 2013



A SUPERB HYDROCARBON ADDRESS FOR USG / USO EXPLORATION IN THE CANNING BASIN

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- Information on the Reserves and Resources in this release is based on an independent evaluation conducted by 3D-Geo Pty Ltd (3D-Geo). 3D-Geo is a independent geoscience consultancy specialising in petroleum. The technical work was undertaken by a team of geoscientists and petrophysicists and is based open-file seismic and well data and data supplied by OBL. The technical assessment was performed primarily by Dr Jeff Keetley, Director 3D-Geo. Dr Keetley holds the qualification BSc (Petroleum Geoscience) & PhD from Melbourne University, has over 15 years of experience as a geophysicist and is a Member of Society of Exploration Geophysicists (SEG) and the American Association of Petroleum Geologists. 3D-Geo's approach has been to review the data supplied by OBL for reasonableness and then independently estimate ranges of in-place and recoverable volumes using Petrel TM. We have estimated the degree of uncertainty inherent in the measurements and interpretation of the data and have calculated a range of recoverable volumes, based tief did performance for the property. 3D-Geo and Dr Keetley have given their consent at the date of the release to the inclusion of this statement and the information in the form and context in which they appear in this OBL ASX Release dated 13 February 2013.
- CSG assessments quoted have been complied and / or assessed by an Independent Expert Report by Mapcourt Pty Ltd released to the ASX on 8 July 2010.
- The technical information quoted has been complied and / or assessed by Company Director Mr Neil Doyle who is a professional engineer (BEng, MEngSc Geomechanics) with over 35 years standing and has been a full and continuous member of the US Petroleum Engineers since 1981 and by Mr Geoff Geary who is a professional geologist (Bachelor Science Geology) with over 33 years standing and who is also a Member of Petroleum Exploration Society of Australia. Both Mr Doyle and Mr Geary have consented to the inclusion in this announcement of the matters based on the information in the form and context in which they originally appear investors should at all times refer to appropriate ASX Releases.
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www.oilbasins.com.au

Level 4, 100 Albert Road, South Melbourne Vic 3205 Australia Telephone: (+61 3) 9692 7222 Facsimile: (+61 3) 9077 9233 Email: enquiries@oilbasins.com.au Website: www.oilbasins.com.au

3D_{GEO}

Oil Basins Limited

Corporate Snapshot

Directors

Kim McGrath Neil Doyle Nigel Harvey Executive Chairman *(Founder)* Director & CEO *(Founder)* Non-Executive Director

Senior Management

Melanie Leydin Justin Mouchacca Geoff Geary Company Secretary Company Secretary Exploration Consultant

Major Shareholders

The Albers Group / Octanex9.46%Directors & Management4.60%

Oil Basins has access via long-term arrangements to highly experienced corporate, geology & engineering teams delivering modern technologies & techniques to mature basins.

In addition, during 2012 the Company strengthened its operational & technical support base:

- **DU-EL** (Petroleum Engineering)
- 3D-Geo (Geophysical & Reservoir Engineering)
- ecologia (Environment)
- Terrex (Onshore Seismic)

ASX Trading Symbols	OBL, OBLOB
Shares (Ordinary OBL)	565.41 M
Options OBLOB (@ 4 cents 30/06/14)	86.89 M
Unlisted Options OBLAI (@ 9 cents 30/06/16)	48.00 M
52-week Trading Range – Closing Price	\$0.025 - \$0.087
Share Price	\$0.025
52-week Average Daily Volume	3.649 M
Cash (@ 31 December 2012)	\$0.3 M
Market Capitalisation	\$14.1 M
OBL holds circa 89.154 M shares in Bass Strait Oil Company (BAS) @ 1.7 cps	\$1.52 M





Overview of Company's Portfolio

- **OBL** listed as explorer in 2006; became operator both onshore / offshore during 2010
- Since then the Company has built its exposure to a diverse exploration and development portfolio with large equity positions in:
 - Conventional offshore and onshore oil and gas
 - Unconventional shale gas (USG) and shale oil (USO)
 - Coal seam gas (CSG)
- OBL operates one Offshore and two Onshore permits:
 - Oil: Offshore Carnarvon (Cyrano Oil Field development project) 100% R3/R1 Retention Lease
 - Oil: Onshore Canning 80% rights Backreef Area (foundation IPO asset)
 - Oil, CSG/USG: Onshore Canning Basin Application WA 5/07-8EP ("Derby Block") OBL 50% rights exploration permit – Native Title Tribunal Permission to Grant attained on 1 February 2013 (DMP grant pending and subject to 25% conditional farmout to Octanex NL (ASX code OXX) following grant).
- Two non-operated exploration permits in Eastern Gippsland Basin
 - Oil & Gas: offshore permit Vic/P41 12.5% (foundation IPO asset)
 - Oil & Gas: offshore permit Vic/P66 17%

Objective: Establish production hubs near known oil & gas fields in mature basins



New Updated Assessment of Derby Block

Highlights

- OBL commissioned 3D-Geo Pty Ltd (3D-Geo) to update their previous 2012 USG / USO prospectivity assessment of the Derby Block using additional information reported in the recent Buru Energy Limited ASX Release dated 8 February 2013.
- The modelling and Monte Carlo risked assessment of prospective potential resources has been completed using Petrel[™], Trinity 3D[™] and Lithotect[™] software with resources assessed using PRMS.
- 3D-Geo has concluded the following:
 - The gross 'onshore area' containing the Laurel accumulation Basin Centred Gas within the Derby Block is estimated at over 4,000 square kilometres (i.e. over 1 million acres).
 - The Best Estimate (P50) of the Laurel Formation USG / USO accumulation, is that it contains gross unrisked recoverable volume of 18.7 TCF of gas and 461.9 million barrels of condensate (2,500 to 4,000 metres) – within the capacity of current largest Australian based land rigs.
 - The High Case Estimate (P10) is that it contains gross unrisked recoverable volume of 68.9 Tcf of gas and 1,785 million barrels of condensate (including 4,000 to 5,000 metres)
- In addition, the Derby Block contains Conventional and CSG prospectivity:
 - Conventional Oil & Gas: leads mapped; largest > 130 MM barrels Oil or 0.4 Tcf of gas
 - CSG prospectivity: **2.2 to 5.2 Tcf of gas** previously assessed in an earlier 2010 IER Study

In the opinion of 3D-Geo the Derby Block is highly prospective address for USG / USO



Company is an experienced Canning Operator





Backreef-1 (2010) Hunt Rig#3 1800 m TD ~ \$4.5m

East Blina-1 (2012) Dynamic Rig#17 1195 m TD ~ \$2.5m



Backreef-1 (2012) ADS Rig#2 2 x Production Tests ~ \$2.2m Oil Basins Limited (OBL) since mid-2010 has drilled two exploration wells: Backreef-1 (October 2010) and East Blina-1 (October 2012) - and conducted a modern production test program of Backreef-1 (May 2012) recovering oil shows using nitrogen stimulation.

- Since 2010, OBL has mobilised 3 drilling rigs form east coast to WA
- Arranged rig inspection
- Finalised well drilling and well test programs
- Arranged environmental and traditional owner clearances using local contractors (wherever possible)
- Introduced / deployed new specialist service contractors to the region e.g. DU-EL / ProTest / Vause Wireline
- Successfully operated the drilling and testing programs in a low cost manner



OBL has a significant investment in Derby Block

Since announced award of the WA 5/07-8EP Application Area (Derby Block) in early 2008, OBL has conducted (at its sole cost as designated operator USG/CSG) several technical studies spending ~\$250k to date. These studies provided a updated view of the overall prospectivity of this frontier acreage highlighting its unconventional potential for oil and gas discoveries. Work included:

- Evaluation of over 250 water bores to provide ground water information Westbury Consulting (2010)
- Independent assessment of CSG potential in the permit Westbury Consulting (2010)
- Independent assessment of CSG & USG potential Mapcourt Consulting (2010)
- ✤ A Geological and Geophysical Review of the oil and gas potential in the Derby Block (including both conventional and USG/USO potential) 3D-Geo (2012)
- Updated Geological and Geophysical Review of unconventional USG/USO potential in the Derby Block- 3D-Geo (2013)

In addition OBL personnel and consultants attended several CSG and USG Workshops and Conferences.

OBL funded the Mediation/Section 35 Determination for the Derby Block involving expenditure of >\$300k to date, involving:

- Expert Native Title Tribunal legal costs in the DMP directed Mediation process May 2011 to June 2012.
- Management and funding of all legal proceedings since August 2012
- Reaching a landmark determination decision from the Native Title Tribunal on 1 February 2013



Overview of Derby Block

3D-GEO Pty Ltd was commissioned by OBL to conduct a independent geotechnical reviews in 2012, updated in 2013, of the Derby Block in the Canning Basin. The studies focussing on conventional oil and gas prospectivity together with the emerging unconventional potential for shale oil and shale gas. This study followed an earlier Independent CSG study commissioned by OBL in 2010.

The Derby Block covers a large area of some 5,063 km² (1,251,095 acres) situated in a relatively underexplored portion of the NW margin of the Fitzroy Trough. The block is 'on-trend' to Buru Energy's Valhalla Basin Centred Gas ('BCG') asset to the south-east which has proved to be highly prospective for USG and USO (gross circa 33 Tcf).

Drilling: only <u>three wells have been</u> drilled within the block -Puratte-1(1979), Booran-1(1982) and East Yeeda-1(1985). Booran-1 was drilled by Exxon on a large anticline on the Derby Peninsular. East Yeeda-1 was drilled by Bridge Oil on a faulted anticline with the Anderson Formation as the primary target with TD in the Laurel Fm. There are several wells and small oil fields near the permit including Kora-1, West Kora-1, Millard-1, Blina and Sundown oil fields.

Seismic data coverage is also sparse in the Derby Block with most acquired in the 1970s and 80s. Data quality is variable, but is interpretable in most regions.





Regional Basin Setting



GEO

Derby Block has Significant Play Potential

Conventional Plays

- Noonkanbah Formation: reservoir objective.
- Poole Sandstone: thick & homogeneous.
- Grant Formation: potential for Top Grant and intraformational reservoir/seal pairs.
- Anderson Formation: very thick in the Fitzroy Trough with significant intraformational sealing potential and potential for tight oil and gas.
- Laurel/Yellow Drum: emerging play in the Canning Basin with an oil discovery at Ungani and gas/condensate discoveries at Valentine, Yulleroo and Valhalla.

Unconventional (CSG) Plays

- Light Jack Formation: Permian coal measure objectives.
- 3m to 20m thick coal measure sequences across the block 300m to 700m deep in two major depocentres.

Unconventional (USG & USO) Plays

- Devonian Lower Carboniferous: hydrocarbon source rocks in various formations (e.g. Laurel Sequence & Gogo Fm) with potential for Shale Gas and Shale Oil potential in basinal shales and carbonates in the Fitzroy Trough - gas/condensate discovery (BCG) at Valhalla.
- Ordovician Silurian: hydrocarbon source rocks principally recognised in Goldwyer Formation with potential for Shale Gas and Oil potential in basal sequences in the Fitzroy Trough and along its margins.



Conventional Potential





Present Day Oil & Gas Migration at Top Devonian





Prospectively Summary: CSG Potential

Permian Light Jack Coals Measures (similar to Surat thermal coals) OBL Mapped Gross Rock Volume: **55 to 118 billion tonnes in-situ** *source IER (2010)* Net prospective risked 2P resources assessed at between: **2.2 – 5.2 Tcf** *source IER (2010)*



Extent of Light Jack Formation Upper Coal Member



Unconventional: USG & USO Potential



ILLARA EXTENSIO

PRICES CREEK

Regional tiltin

ddy Sag Pha

Middle

Lower

Ludlo

Middle Lower Cambrian

GEO

Upper

In the core of the Fitzroy Trough, basement is very deep with a significant thickness of <u>Ordovician – Carboniferous</u> sediments deposited.

Source rocks in these sequences are mature and probably the source for the oil and gas on the platform areas margining the Fitzroy Trough. They have significant potential for USG and USO.





Unconventional: USG & USO Potential

Laurel Formation – Basin Centred Gas 3D-Geo mapped: In eastern / central parts of the block, the Laurel is at reasonable drillable depths (~4000 m) and is more than 500 m thick.





Prospectivity Summary: USG & USO Potential

Early Carboniferous to Devonian isopach:





Unconventional Inputs for Monte Carlo Simulations

✤ Gross Rock Volume (GRV)

- P90/P50 Volumes Top Laurel to 4,000m*
- P10 Volume Top Laurel to 5,000m*
- Degree of fill
 - Assumed filled-to-spill
- Net-to-gross (NG)
 - Calculated from the geostatistical model shown in later slides, provides a sandstone/carbonate to shale ratio of 65:35
- Porosity
 - P90 assumes 5% (Amie et al., 2011)
 - P10 assumes 15%
- ✤ Sw
 - Sw > 50%
 - Sw < 70 % (Amie *et al.,* 2011)
- Dry gas FVF (1/Bg)
 - P90 pressure gradients (0.55psi/ft Barnett Shale)
 - P10 pressure gradients (0.85psi/ft Haynesville/Bossier)
- ✤ NGL/gas ratio
 - Condensate (NGL) yield ranges calculated from Buru ASX Announcement (8 February 2013)
- ✤ Gas recovery factor
 - (See following slide)

Amie M. Lucier, Ronny Hofmann, and L. Taras Bryndzia, 2011, Evaluation of variable gas saturation on acoustic log data from the Haynesville Shale gas play, NW Louisiana, USA, The Leading Edge 30, 300-311. * Measured Depth



Name	Unit	Shape	Min	P90	P50	P10	Max	Mode	Mean
GRV	km2.m	Lognor	138,552	431,728	1,007,720	2,352,173	7,329,360	650,667	1,254,096
Deg. of fill	%	Single	100	100	100	100	100	100	100
Net-to-gross	%	Lognor	9.58	20	34.6	60	125	28.8	38
Porosity	%	Lognor	2.39	5	8.66	15	31.3	7.21	9.49
Sw	%	Normal	36.6	50	60	70	83.4	60	60
Dry gas FVF									
(1/Bg)	vol/vol	Normal	66	210	180	265	350	265	265
NGL/gas ratio	m3/mm.m3	Normal	10.6	19	25.3	31.5	39.9	25.3	25.3
Gas rec fac	%	Lognor	4.79	10	17.3	30	62.7	14.4	19

Validation of Inputs:

Geological Parameters of Key Shale Gas Regions

	Cooper Basin	Perth Basin			US principa	al prospective S	hale Gas Marine E	Basins		
	Permian REM	Permiar REM	Carynginia & Kockatea	Marcellus	Haynesville	Bossier	Barnett	Fayetteville	Woodford	EagleFord
GIP- Bcf / sq.km	40-80	42	76	70		40	23	27	77	
Technically recoverable Tcf	85	59	250-500	250	100	44	42			
Depth -top, m	3000	1600	1200	3200	3500	2000	1700	1800	2700	
Depth- bottom, m	4000	3200	2600	4100		2600		3400	4000	
Average depth				3500		2300	1500	2400	3200	
Shale thickness(m)	>100m	60-90	60	60	75	110	40	55	75	
Thermal maturity (Ro)	2 - 4	NA	1.8	2.7	2.7	2.4	2.4			
TOC (Av. %)	2.5 - 5	1 - 4	7	4		4.5	4	1 -14	4.5	
Average log porosity-%		3 - 6	7	10	7.5	6	6	6	4 - 6	
Pressure gradient-psi/ft	0.72	0.45	0.61	0.84	0.78	0.46	0.42			
Expected recovery factor-%		NA	20	25	28	20	30	15	20	
Avg. UER/ horiz. Well- Bcf		NA	5.2	6.5	5.5	3	2.6			

Source: Chesapeake Energy, EIA, AWE reports, Beach Energy, Morgan Stanley Research, Oil & Gas Journal

Currently there is no production in the Canning Basin from unconventional petroleum resources. Therefore the gas recovery factor, porosity and NG (Net to Gross) values used in the probabilistic calculations are comparable to other known mature shale gas basins (see above). Other operators within the basin are in early stages of exploration and have not publicly qualified their inputs for similar calculations.



PRMS Resources Classification 2011



Not to scale



Well Correlation





3D-GEO Laurel Facies Distribution: Derby Block





Stratigraphic Cross-section A – A'

Shale/coal = brown/black Sandstone/Carbonates = Yellow

Monte Carlo Outputs

Gas in Place - Tcf

Technical su	ICCESS	
bcf	Whole Trap	NRI
Min:	122.9	122.9
P99:	11768	11768
P90:	31770	31770
P50:	107374	107374
P10:	357784	357784
P1:	912198	912198
Max:	23857030	23857030
Mean:	164716	164716

-Volumes-

-Volumes-



Recoverable Gas - Tcf

Volumes						
Technical success						
•						
bcf	Whole Trap	NRI				
Min:	5.883	5.883				
P99:	1737	1737				
P90:	4851	4851				
P50:	18735	18735				
P10:	68841	68841				
P1:	194458	194458				
Max:	14948760	14948760				
Mean:	31192	31192				



Recoverable Condensate - MMstb

mmstb	Whole Trap	NRI
Min:	0.06248	0.06248
P99:	37.14	37.14
P90:	117.4	117.4
P50:	461.9	461.9
P10:	1785	1785
P1:	5320	5320
Max:	596159	596159
Mean:	801.7	801.7





Derby Block: USG / USO Prospective Resources

	Prospective Resources (Onshore Derby Block)					
Product	P90	P50	P10	Mean		
Gas In-Place Tcf	31.8	107.4	357.8	164.7		
Recoverable Gas Tcf	4.8	18.7	68.8	31.2		
Recoverable Condensate MMstb	117.4	461.9	1,785.0	801.7		

The gross estimated recoverable volumes of prospective resources for the onshore portion of the Derby Block for the Laurel USG/USO, as determined by 3D-Geo, are summarised in the table above.

The P90/P50 estimates above only consider prospective Laurel sequence at depths 2,500m to 4,000m measured depth; P10 estimates assume additional prospective Laurel section from 4,000m to 5,000m. The upside case assumes that modern high capacity rigs of 5000m depth rating will be mobilised following successful production tests within shallower Laurel down to 4,000m.



Unconventional: USG & USO Potential

The Carboniferous **Laurel** sequences with their demonstrated source rock potential in the Fitzroy Trough, Canning Basin are likely to have significant potential for both USG and USO. While no risked estimate of gross recoverable prospective resources is definitive in the Derby Block at this early stage of exploration, the sheer size of this potential new USG/USO play is significant. The magnitude of the gross rock volume and resource assessments in the Derby Block is comparable to other established operators in the Canning Basin.

The Canning Basin and specifically OBL's Derby and Backreef blocks would seem to be candidates for the application of modern gas extraction techniques, with long-reach horizontal multi-lateral well drilling technologies and multiple-fraccing technologies as used in North American marine basins extracting USG/USO.

Should large enough volumes of gas of a USG shale genesis be proven up, then OBL and its JVPs would very likely consider plans for (a) the establishment of domestic gas (Domgas) supply for the local region or (b) to the significant mineral operations in the Pilbara or (c) to the increasing Domgas market in Perth/bulk gas users in south west WA, and/or (d) the establishment of either CSG or USG sourced liquefied natural gas (LNG) plant feedstock supply to the proposed Kimberley LNG Hub at James Price Point and/or (e) potentially the development of a large scale gas to liquids (GTL) synthesis plant situated near Derby.



OBL's 2013 Work Program



OBL as operator USG/CSG has lodged its Year 1 Work Program as the basis for the Native Title Tribunal (NTT) determination.

The NTT determination gives protocols for Aboriginal Heritage conditions including recording of 500km 2D seismic during Year 1 – objective is to link with the existing vintage surveys in the north to the south.

OBL has an executed HOA with Terrex Seismic.

OBL has long-term consulting arrangements with *ecologia* Environment Consultants.



Summary of Derby Block Value Attributes

Significant Oil and Gas Prospectivity

- USG / USO: Best Estimate P50 18.9 Tcf & 461.9 MMstb primary target.
- Conventional Oil & Gas: leads mapped; largest > 130 MMbbls or 0.4 Tcf Gas primary target.
- CSG: ~ 2.2 to 5.2 Tcf (potentially useful for low-cost, front-end pipeline gas) <u>low priority</u>.

Location

- Region of Fitzroy Trough is ideally situated as hydrocarbon source / kitchen with marine shale sediments of right geological age based upon North American USG / USO experience.
- Nearby Derby township, airports and significant support infrastructure (Base Hospital etc.).
- Main prospective region is completely bounded to the west, north and south by all-weather bitumen highways and only three significant pastoralist landowners.
- Route of proposed new Great Northern Pipeline traverses permit in the south.
- Unique NTT Award with potential significant long-term benefits (access / clearances).
- Derby Block offers significant potential for future Domgas competition to Pilbara/South-west WA.

Highly attractive for future farmouts

A superb hydrocarbon address for USG / USO exploration in the Canning





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West Australian USG/USO Technically innovative State-of-the-art seismic analysis New play concepts High leverage

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