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INVICTUS  
ENERGY LIMITED

Invictus Energy Ltd (ASX: IVZ)

# Asset Summary Special Grant 4571

Conventional Oil & Gas  
August 2018

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**COMPETENT PERSON'S STATEMENT** The information in this document relating to petroleum resources and exploration results is based on information compiled by Mr Scott Macmillan. Mr Macmillan is a Reservoir Engineer and has a Bachelor of Chemical Engineering and an MSc in Petroleum Engineering from Curtin University. He is a member of the Society of Petroleum Engineers (SPE) and has over 12 years experience in the industry in exploration, field development planning, reserves and resources assessment, reservoir simulation, commercial valuations and business development. Estimated resources are un-risked and it is not certain that these resources will be commercially viable to produce.

# Overview



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## **Invictus is the first mover in one of the largest under-explored interior rift basins in Africa**

Invictus has acquired an 80% interest and operatorship of Special Grant 4571 which covers **250,00 acres** in Zimbabwe over the **most prospective part of the Cabora Bassa Basin**

### **Contains potentially the largest, seismically defined, undrilled structure onshore Africa**

- Mzarabani prospect is a potential TCF+ conventional gas-condensate target
- Simple 4 way dip anticline mapped on multiple seismic lines over a large area

Acreage formerly held by Mobil in early 1990s and has an **extensive legacy dataset**

- ~US\$30m spent on 2D seismic, gravity, aeromagnetic and geochemical data
- Studies demonstrated that all required elements for a working petroleum system are present
- Data not previously available or seen in the public domain until now

### **Completed acquisition of 80% of SG 4571 and commenced work program**

- Heavily oversubscribed \$4.5 million placement
- Fully funded to farm-out with 2 year budget secured
- Work program underway with contractor being mobilised to Zimbabwe

### **Low cost work program required to mature prospect to farm-out / drill ready stage**

- Reprocess legacy data and independently evaluate SG 4571 and Mzarabani Prospect
- Multiple regional players to be targeted for farm-out in 2019

# Corporate Snapshot



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## Key Statistics – ASX: IVZ

Shares Outstanding	365,746,191
Performance Shares	101,022,804
Options (ex 6c)	35,000,000
Directors & Management	24.1%
Top 20 Shareholders (25 June 2018)	44.7%
Market Cap @ \$0.056	A\$20,481,787
Cash – no debt (30 June 2018)	A\$4,302,000
EV	A\$16,179,786

## Performance Share Milestones

## Expiry

Class A	25.2 M	An independent prospective resource certification of greater than 1.5TCF Gas or 250 mmboe with respect to the Cabora Bassa Project.	20/03/2019
Class B	31.5 M	A farmout which includes a commitment to drill a well to a minimum planned depth of 3,000 metres with respect to the Cabora Bassa Project.	20/06/2020
Class C	44.2 M	Drilling of an exploration well upon the Cabora Bassa Project that results in the maiden booking of Contingent Resources or Reserves (as those terms are defined in the Guidelines for Application of the Petroleum Resources Management System (2011 Edition).	20/12/2021

Positioned with strong register, significant director and management ownership and performance shares linked to milestones that will enhance the value of the company and share price

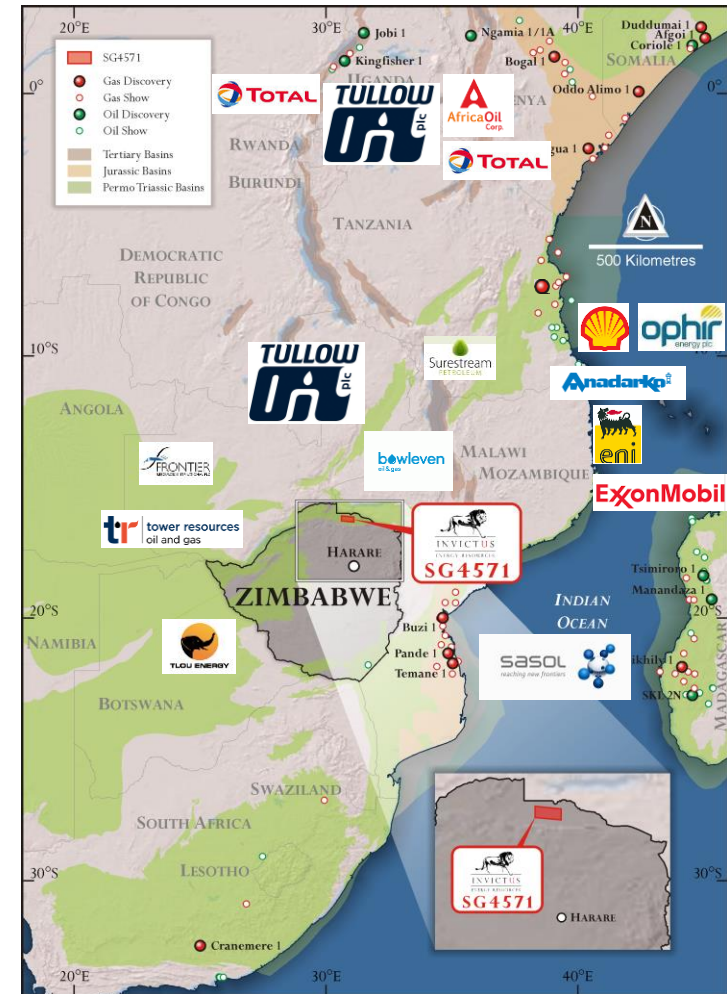
# Regional Activity Map



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## Significant regional activity underway

- Karoo aged (Permo-Triassic) rift plays gaining attention
- Cabora Bassa Basin possesses similar characteristics to prolific interior rift basin petroleum systems in Uganda, Kenya, South Sudan, Perth and Cooper-Eromanga basins
- Regional license rounds have attracted established East African Rift players to Karoo rift basins
- Near term activity and news flow from neighbours will enhance the value of SG 4571
- Invictus is the first mover into Cabora Bassa portion of the greater Zambezi Valley rift play that extends from Namibia, through Botswana, Zambia and Zimbabwe, into Mozambique
- Invictus has secured the most prospective acreage in the basin, as well as an extensive legacy data set

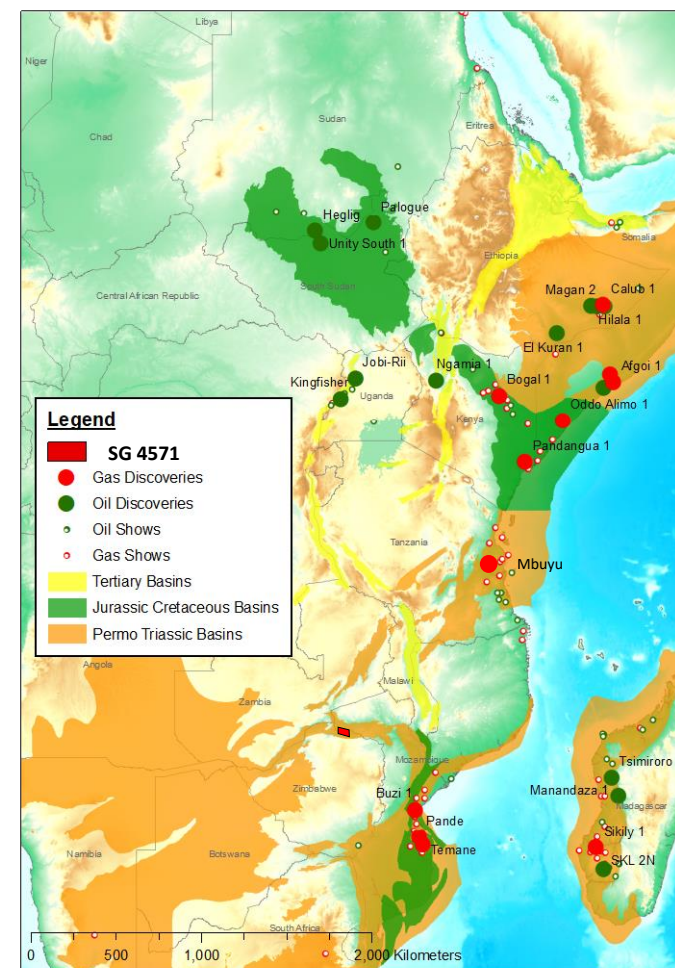


# Regional Karoo Hydrocarbon Discoveries



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Country	Discovery	HC Type	Estimated Ultimate Recovery (2P/2C)
Ethiopia	El Kuran	Oil	155 million bbl
Ethiopia	Calub & Hilala	Gas-Cond	6.0 – 8.0 Tcf
Ethiopia	Calub South	Oil	-
Ethiopia	Magan	Oil	-
Ethiopia	Genale	Gas-Cond	460 Bcf + 78 million bbl
Kenya	Bogal	Gas	60 Bcf
Somalia	Afgoi	Gas	200 Bcf
Somalia	Coriole	Oil	-
Madagascar	Manandaza	Oil	-
Madagascar	Tsimiroro	Oil	675 million bbl
Madagascar	Belemologa	Tar Sand	22 billion bbl
Madagascar	Sikhily	Gas	-
Tanzania	Mbuyu	Gas	2.7 – 5.9 Tcf



# Cabora Bassa Basin Stratigraphy



**Thick sedimentary sequences set up multiple targets**

Dande Sandstone – tertiary target

Forest Sandstone – tertiary target

Pebbly Arkose – secondary target

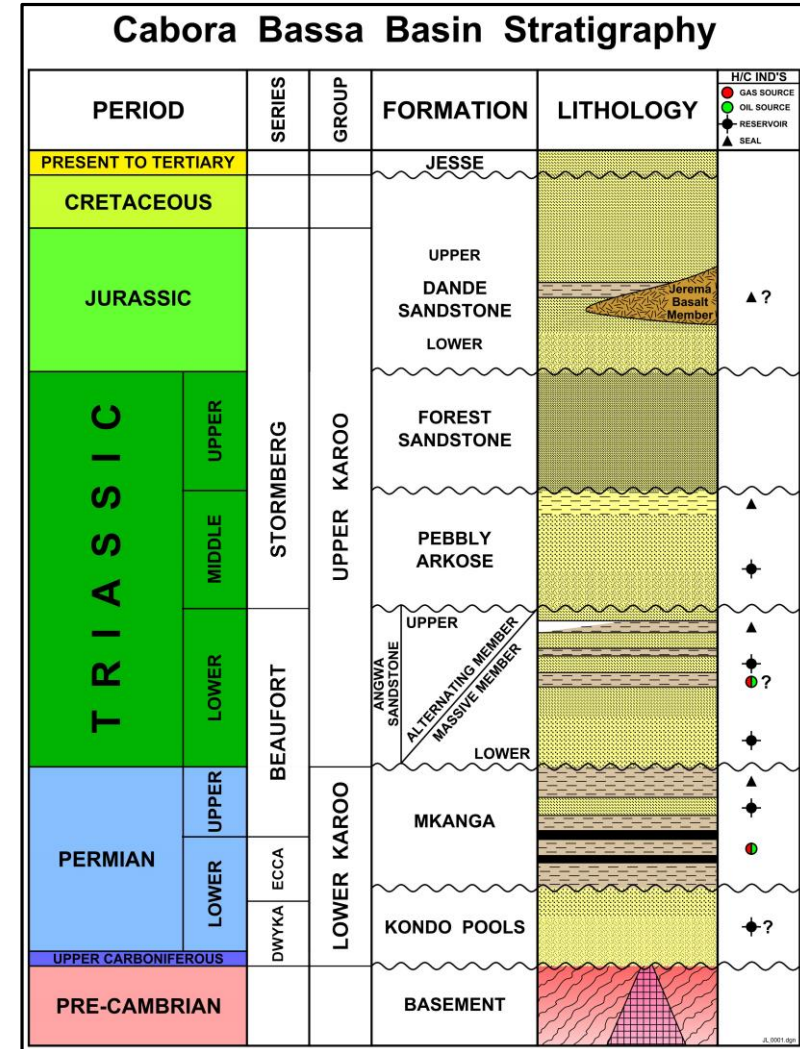
Upper Angwa – Alternations Member – Primary Target

Lower Angwa – Massive Member – Secondary Target

Mkanga Formation – secondary target

Kondo Pools Formation – tertiary target

## Play Elements



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# Cabora Bassa Basin Play Elements



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## Source ✓

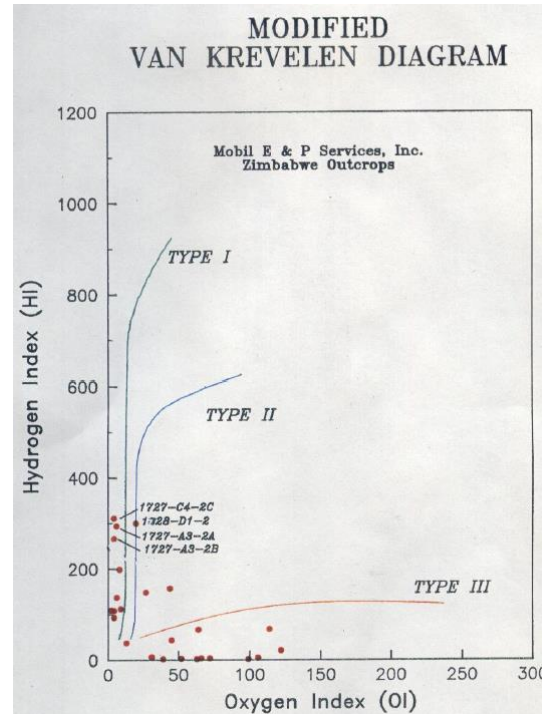
46m thick outcrop of Upper Angwa source rock



Plate 4 Oil-prone Shales of Upper Alternations Member, Angwa Sandstone Formation; Manyima River-Cabora Bassa Basin

## Maturity ✓

Type I / Type III mixture capable of generating low sulphur waxy crude or rich gas condensate depending on maturity.



## Seal ✓

Mudstone and siltstones capable of 1000m oil column heights

**Table 1**  
Mercury and Oil/Brine Breakthrough Pressures  
with Corresponding Maximum Oil Column Heights

Sample	Lithology	Porosity	P(bt) Hg	P(bt) oil	Height (ft)
90/1630A2-1a	Mst		2,500	170	1,308
90/1630A2-2	Sst	13.3	3,000	204	1,570
90/1630A2-3a	Mst		1,000	68	523
90/1630B1-1	Sst		100	7	52
91/1529D2-3	Mst		6,000	408	3,140
91/1529D2-11	Sst	11.7	2,500	170	1,308
91/1529D4-3	Mst		75	5	39
91/1530C3-3	Sst	10.2	1,000	68	523
91/1530C3-9	Sst	18.1	2,000	136	1,047
Z69/2	Mst		500	34	262

Lighter, more gas-rich oils would have greater buoyancy and therefore reduced maximum oil column heights. Heavier oils could accumulate in taller columns. Due to compaction, the sealing capacities of fine-grained sediments tend to increase with depth. Since the Angwa samples were obtained from outcrops, it is likely that their subsurface equivalents are better seals.

# Cabora Bassa Basin Play Elements (continued)

## Reservoir ✓

Angwa Sandstone primary target has conventional reservoir properties with excellent porosity around 20% and permeability in 100-1000+ mD range.



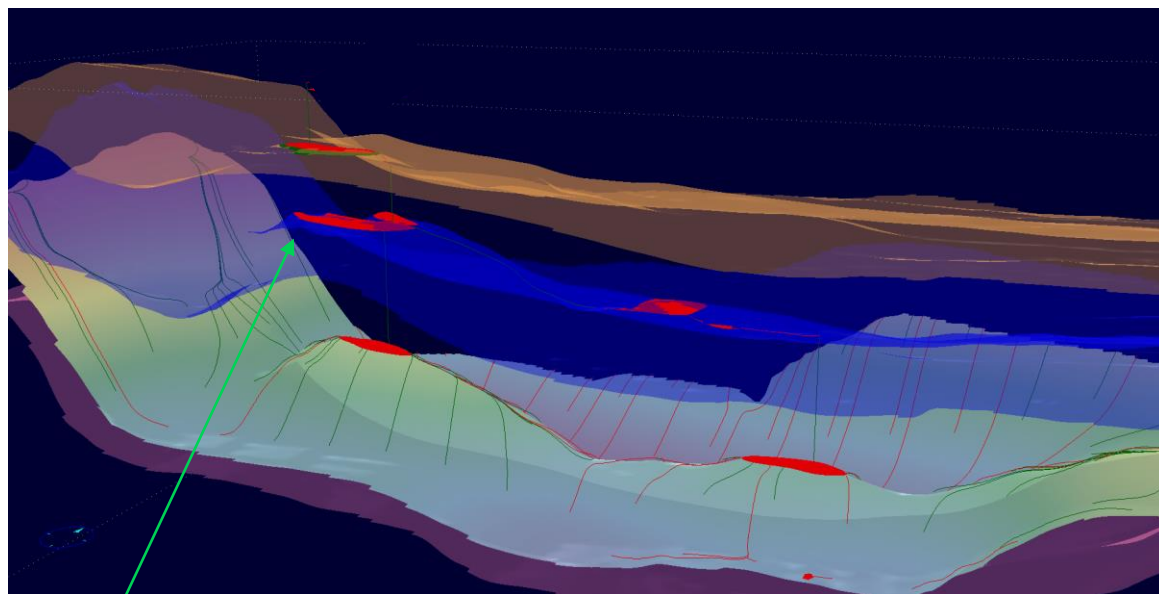
The Angwa Sandstones - braided stream sands, meandering river sands, flood plain sands - have good porosities (around 20%) and permeabilities up to 1200 md. Thus, the thick Angwa Formation offers a good reservoir potential which is close to underlying Mukanga Formation source rocks and intercalated source rocks. Mudstones within the Angwa Formation can provide efficient seals.

## Trap ✓

Massive 4 way Mzarabani anticline provides structural closure with >500m vertical relief

## Migration ✓

Proximity to kitchen immediately north as well as underlying source rocks allows for lateral and vertical migration



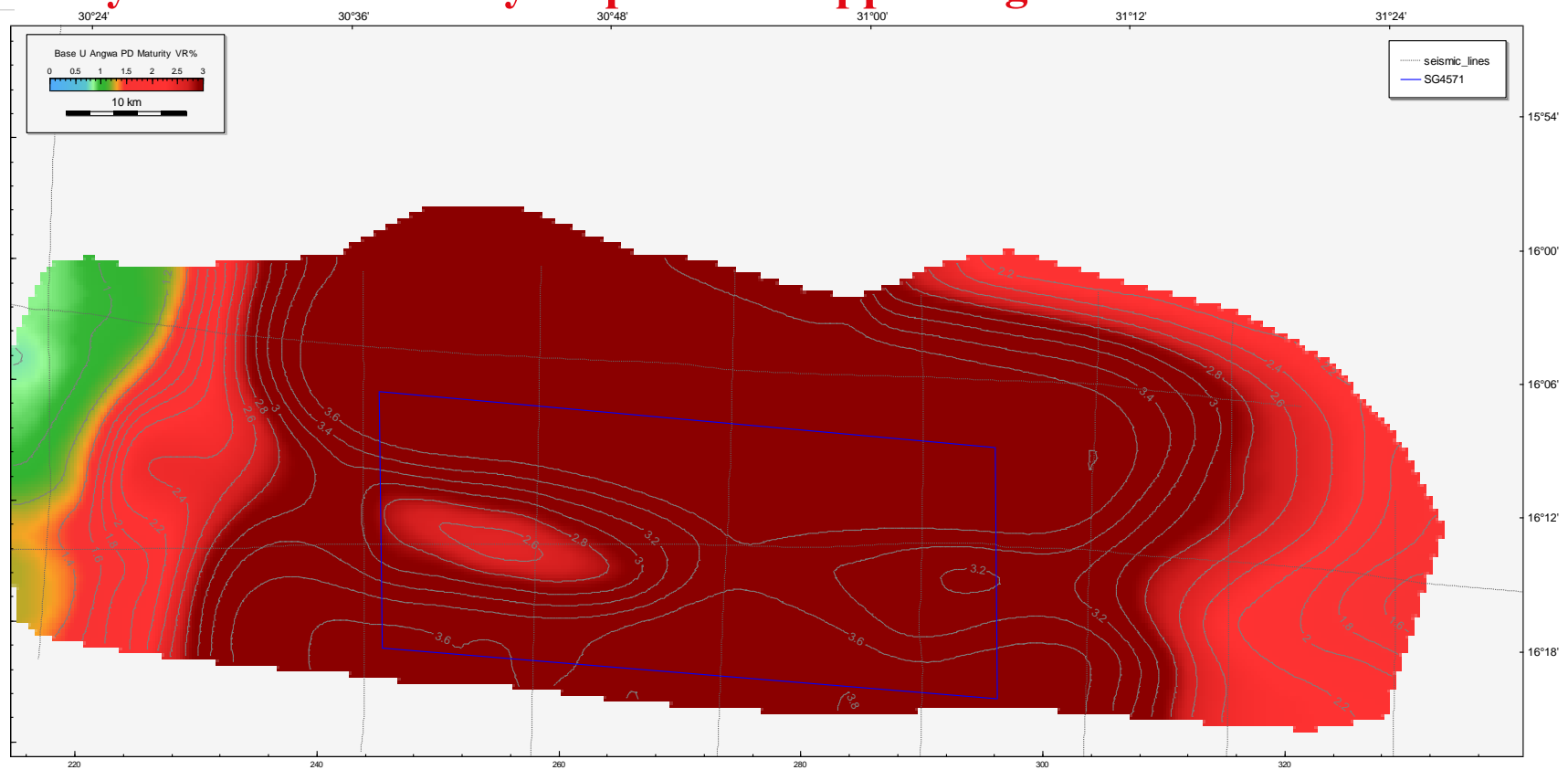
Mzarabani closure at Upper Angwa. Large fetch area with extensive hydrocarbon migration pathways into the trap. Upper Angwa has ~2,000m thickness within SG 4571 portion of Cabora Bassa Basin

# Cabora Bassa Basin Present Day Maturity Map



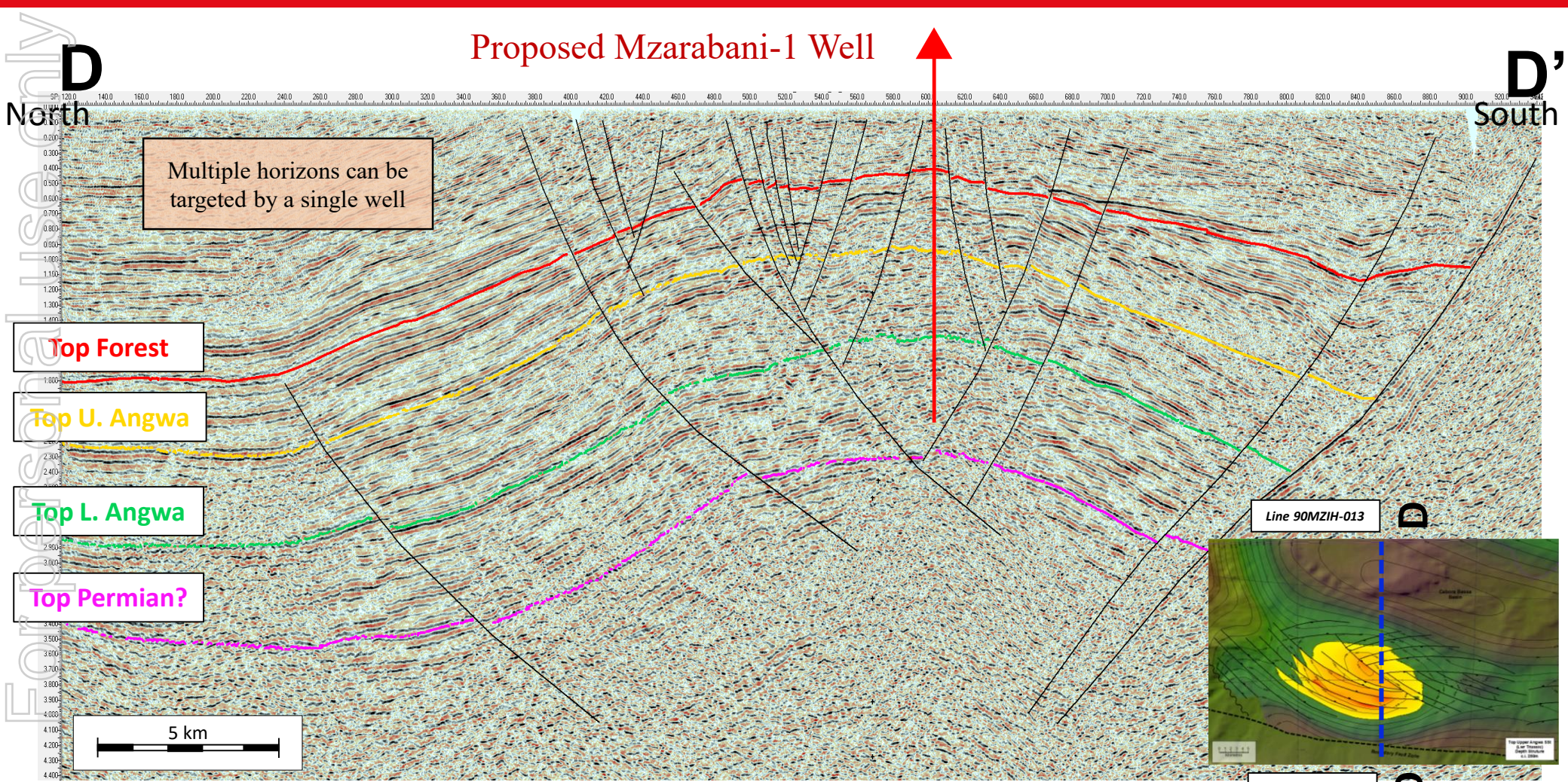
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## Present day modelled maturity map at base Upper Angwa



Modelled present day maturity map from vitrinite reflectance suggests both dry and wet gas expulsion has taken place in the past and is continuing to present day

# Mzarabani Prospect – Seismic Line 013



Proposed Mzarabani-1 Well

Multiple horizons can be targeted by a single well

Top Forest

Top U. Angwa

Top L. Angwa

Top Permian?

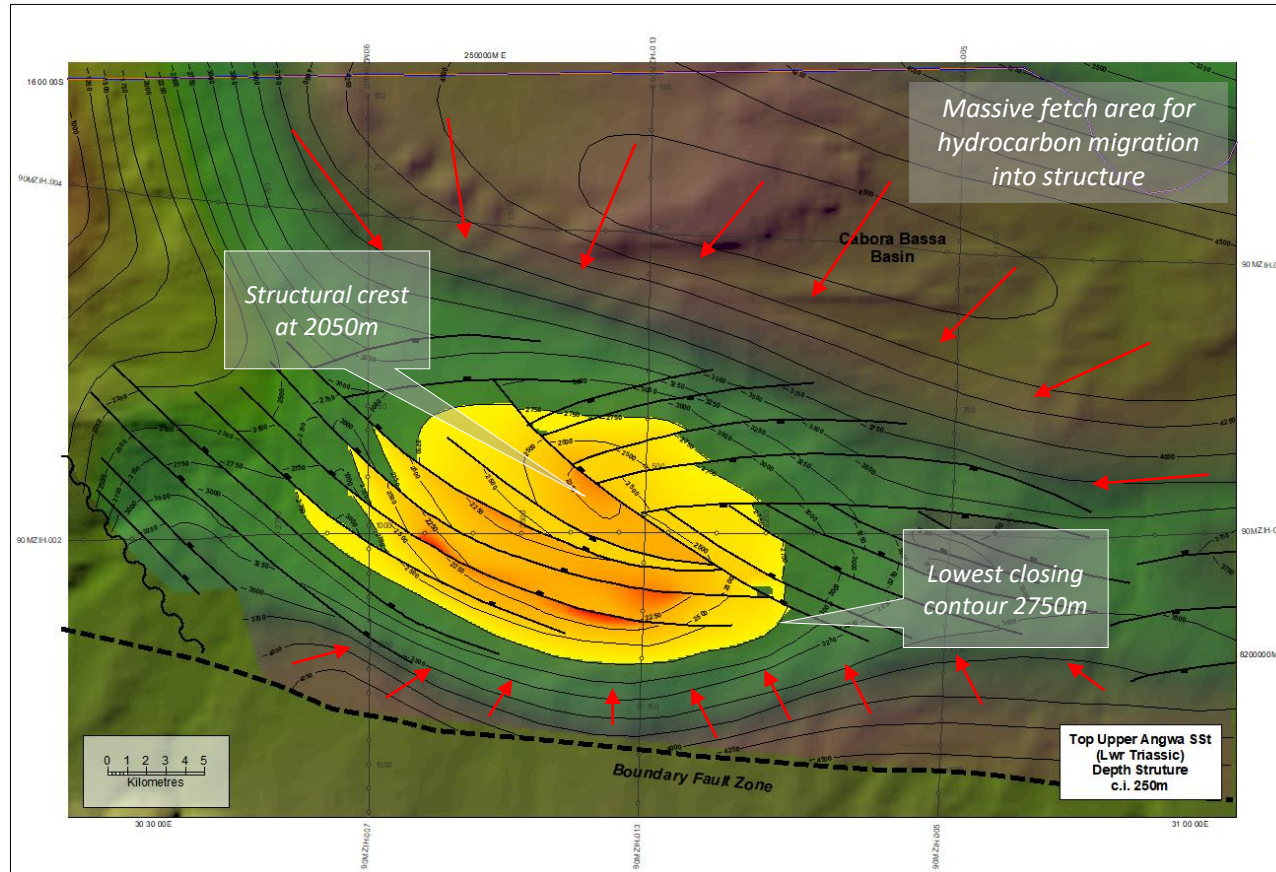


Line 90MZIH-013

Line 90MZIH-013

# Mzarabani Prospect – Top Upper Angwa Structure Map

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Top Upper Angwa structure map showing 700m vertical relief and >200km<sup>2</sup> under closure – the largest, undrilled, seismically defined structure onshore Africa

# Mzarabani Prospect – Upper Angwa Inputs



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## **MOBIL EXPLORATION ZIMBABWE INC** **CABORA BASSA BASIN - MZARABANI PROSPECT**

### **SUMMARY - GAS CONDENSATE CASE** **MONTE CARLO SIMULATION - 5,000 PASSES**

#### **INPUT PARAMETERS - CALCULATED MEAN VALUES**

Reservoir Rock Volume = 3.15 Million AF (Avg. Net Pay of 46 m.)

Porosity = 18%

Gas Saturation = 78%

Reservoir Pressure = 4900 psi

Reservoir Temperature = 244 Deg. F (118 Deg C)

Gas Deviation Factor (Z) = 0.99

Gas Recovery Factor = 70%

Condensate Yield = 112 Bbl. Cond. / Million CF Gas

Condensate Recovery Factor = 48%

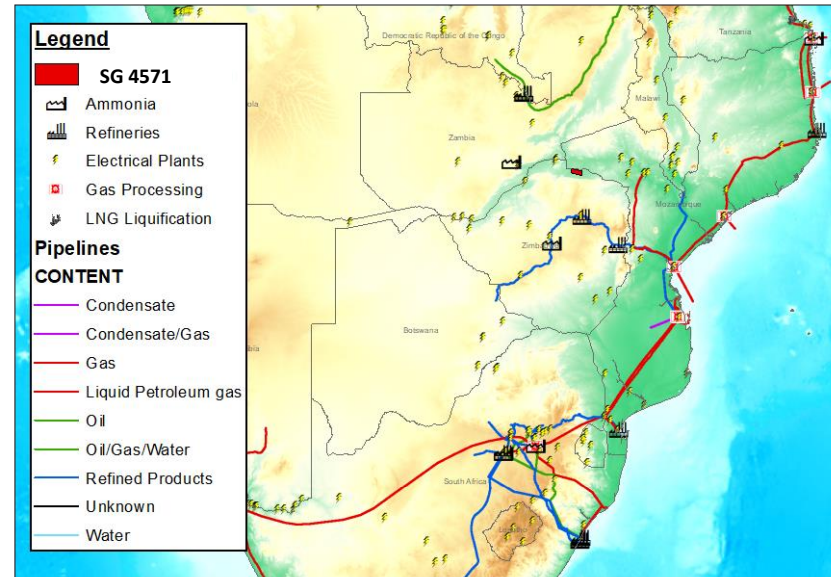
Mobil studies concluded that the Mzarabani Prospect contains conventional gas-condensate reservoir properties



# Infrastructure & Markets

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- SG 4571 proximal to existing and future pipeline infrastructure for the domestic and export markets
- Excellent access – dual lane tarmac all the way to the permit. 2 hours from Harare by road
- Located in a non-farming area on State Land with extremely low number of inhabitants and wildlife
- Numerous regional markets exist to monetise oil and gas in a starved market – e.g. Mossel Bay GTL gas feedstock crisis
- Southern Africa power crisis affecting growth in the region amidst a huge push to adopt gas as an alternate energy source to coal



## Markets Identified

- Hwange power station
- Pande-Temane gas pipeline to South Africa
- Feruka and Harare refineries
- Sable ammonia plant (Kwekwe)
- Rovuma basin LNG plants
- Industrial customers
- Independent Power Plant construction will allow electricity exports to any country within Southern Africa through the Southern Africa Power Pool



# Zimbabwe: Open for Business

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**New Zimbabwe President Emmerson Mnangagwa has declared that “Zimbabwe is open for business”**

## **Significant new investment activity is underway**

New government has implemented investor friendly economic reforms

## **Experienced mining industry executive appointed as Minister of Mines**

### **Amended Indigenization and Empowerment Act**

- 100% foreign ownership of assets
- Guarantee of investor rights
- 100% remittance of earnings

### **Special Economic Zones**

- 5 year tax holiday
- 15% corporate tax rate thereafter



Invictus Energy and One-Gas site visit to Dande Formation outcrop near SG 4571



# Forward Work Plan

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Build a quality portfolio of high potential assets with low cost entry that can be de-risked through technical work and farmed out on good terms

## Re-evaluate Mobil legacy data – underway (Q3 2019)

- Aeromagnetic and gravity data integration
- Geochemical data
- 2D seismic data reprocessing and interpretation

## Geological and Geophysical Studies (Q3-Q4 2019)

- Basin modelling
- Prospect generation and prospective resource determination
- Independent CPR estimate of SG 4571

## Farm-out process (H1 2019)



Mobil seismic field tapes stored at the Zimbabwe Geological Survey

# Summary



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Invictus Energy has secured an 80% equity stake in SG 4571\* containing the Mzarabani gas-condensate prospect. TCF+ potential

SG 4571 granted in August 2017 with initial 12 month work program already completed

Partnered with a highly regarded local company *One-Gas Resources* in the resources sector with extensive in-country relationships with government and industry

Access to existing and future local and regional markets and infrastructure

Extensive legacy dataset that will utilise a modest work program to progress to farm-out / drill ready

**Near term activity is low risk, low cost, but high value add**

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# Appendix

# SG 4571 Work Program & Budget Estimate



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YEAR 1		
Transaction Completion	✓	\$0.75m
Working Capital		\$0.50m
Gravity/Aeromag Data Processing		\$0.05m
Seismic Re-Processing (800km) and G&G Interpretation		\$0.50m
Environmental Impact Assessment		\$0.05m
<b>Total</b>		<b>\$1.85m</b>

YEAR 2	
Working Capital	\$0.50m
G&G Studies	\$0.10m
Third Party Certification	\$0.10m
Farm-out Process	\$0.20m
<b>Total</b>	<b>\$0.90m</b>

This is an estimate of the proposed use of funds and is subject to change

Fully funded, low cost work program to advance to farm-out



# Directors & Management

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## **Scott Macmillan – Managing Director**

Mr. Macmillan is a Reservoir Engineer and founder of Invictus Energy Resources. He has a Bachelor of Chemical Engineering and an MSc in Petroleum Engineering from Curtin University. He is a member of the Society of Petroleum Engineers (SPE) and has over 12 years experience in exploration, field development planning, reserves and resources assessment, reservoir simulation, commercial valuations and business development. He also has extensive business experience in Zimbabwe.

## **Brent Barber – Country Manager**

Mr. Barber is an exploration geologist with over forty years applied experience. He is the Technical Director of Invictus Energy Resources and Managing Director of Geological Organisation Logistics and Design (GOLD). He has been involved in the exploration and evaluation of mineral prospects and mining venture throughout Africa and in South America and SE Asia. When employed by Mobil Exploration he headed the hydrocarbon exploration undertaken along the Zambezi Valley in both Zambia and Zimbabwe. Mr. Barber is based in Harare and currently focuses on the acquisition, assessment and design and management of exploration prospects.

## **Barnaby Egerton-Warburton – Non Executive Director**

Mr. Egerton-Warburton holds a Bachelor of Economics and is a graduate of the Australian Institute of Company Directors and a member of the American Association of Petroleum Geologists. Mr. Egerton-Warburton is currently Managing Director of Eneabba Gas Limited (ASX: ENB) and Non-Executive Director of iSignthis Limited (ASX: ISX). Mr. Egerton-Warburton has over 20 years investment banking experience with a focus on the energy sector.

## **Eric de Mori – Non Executive Director**

Mr. de Mori has over 15 years investment banking experience in ASX listed companies spanning natural resources, biotechnology and technology. Mr. de Mori has held several major shareholder positions with ASX listed companies and is currently a Director and co-founder of ASX listed Adriatic Metals Ltd. (ASX: ADT).

## **Gabriel Chiappini – Non Executive Director and Company Secretary**

Mr. Chiappini is an experienced ASX director and has been active in the capital markets for 17 years. He has assisted in raising \$AUD450m and has provided investment and divestment guidance to a number of companies and has been involved with 10 ASX IPO's in the last 12 years. He is a member of the AICD and CA ANZ. Mr. Chiappini is a director of Black Rock Mining, Eneabba Gas Limited and Fastbrick Robotics Limited.

# Investing in Zimbabwe – Perception vs. Reality



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Perception	Reality
Security of mining and resources tenure in Zimbabwe is high risk	Zimbabwe has well developed mining laws based on its long history as a mining jurisdiction. It has over 100 years of history in mining with a legislative framework that works well and an administrative function that understands and supports the needs of the resources industry. Several CSG/CBM companies active in Zimbabwe were recently granted 25 year production leases.
The Mines and Minerals Act is not credible	Mining legislation is based on a combination of Roman-Dutch and English law and is based on equivalent South African legislation.
The Indigenisation Act forces companies to cede a 51% equity stake in all foreign owned businesses	The Indigenisation Act has recently been amended to allow 100% foreign ownership of assets.
No major international companies operate in the resources sector in Zimbabwe	Zimbabwe has internationally recognised companies operating in the country such as Rio Tinto, Anglo American, Implats (JSE: ZAC), Caledonia Mining (TSX: CAL), Prospect Resources (ASX: PSC)
Zimbabwe is a hostile investment destination for foreign owned companies	The new Zimbabwe Government and Ministry of Mines and Mining Development has recently signalled its desire to attract new foreign direct investment to the country spearheaded by resources. Favourable investment terms for special mining leases have been introduced including 15% flat tax rate, 100% remittance on earnings, no restriction on carry over tax losses, full write off on capital expenditure including exploration, development and operating expenses. Special Economic Zones (SEZ) are available for projects of significance which affords even more favourable investment terms.
Foreign companies face a high risk of asset nationalisation in Zimbabwe	The Zimbabwean Government recently amended the Indigenisation Act to allow 100% foreign ownership of assets and guarantee property rights and investment. In addition, Zimbabwe has several Bilateral Investment Treaties that allow for international arbitration and protection of foreign interests. Zimbabwe is also a signatory to the Multilateral Investment Guarantee Agency, Overseas Private Investment Corporation, International Convention on Settlement of Investment Disputes, New York Convention on the enforcement of Foreign Arbitral Awards and the United Nations Convention on International Trade Law.
There is a significant foreign exchange risk when dealing in Zimbabwe Dollars	The Zimbabwe Dollar was officially abandoned in 2009 and no longer exists. Zimbabwe has adopted a basket of currencies to trade in, principally the USD but also accepts AUD, GBP, CYN, ZAR and EUR.

# Regional Corporate Activity Snapshot



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Year	Country	Block	Buyer	Seller	Transaction Type	Asset Stage	Equity Acquired	Equity Value US\$(M)	Total Value US\$(M)
2018	South Africa, Namibia	Block 11B/12B & 2B, PEL 37	Africa Oil	Africa Energy	Corporate	Exploration	6.09%	18	295
2017	Kenya, Ethiopia	Various	Maersk	Africa Oil	Farm in	Pre-Development	25%	~500	2,000
2014	Zambia, South Africa	Block 40 & 41; Algoa-Gamtoos	Tower Resources	Rift Petroleum	Corporate	Exploration	100%	32	32
2013	Mozambique	Buzi	PT EnergiMega	ENH	Farm in	Post Discovery	75%	175	233
2013	Kenya	Block 2B	Premier Oil	Taipan Resources	Farm in	Pre Drill	55%	14	25
2013	Kenya	Block 2A	Ajax Exploration	Simba Energy	Farm in	Exploration	66%	16	24
2012	Kenya	Block 9, Block 12A	Marathon Oil	Africa Oil	Farm in	Exploration	50% + 15%	57	~100
2012	Ethiopia	South Omo	Marathon Oil	Agiterra Ltd	Asset Sale	Exploration	20%	40 + 10	200
2012	Kenya	11B	Bowleven	Adamantine Energy	Farm in	Exploration	50%	10	20
2012	Madagascar	Morovoay	Octant Energy	Ophir	Farm in	Exploration	50%	40	80
2012	Somaliland	Odewayne	Genel	Jacka Resources	Farm in	Exploration	50%	26	52
2011	Tanzania, Kenya	Block 7, Block L-9, Block L-15	Ophir	Dominion	Corporate	Exploration	100%	175	175
2011	Kenya, Somalia	Various	Africa Oil	Lion Energy	Corporate	Exploration	Various	36	36
2010	Kenya, Mali	Block 10BA, Block 7, Block 11	Africa Oil	Centric Energy	Corporate	Exploration	100%	55	55
2010	Kenya	Block 10BA	Tullow Oil	Centric Energy	Farm in	Exploration	50%	25	50
2010	Various	Various	Afren	Black Marlin Energy	Corporate	Exploration	100%	103	103