MPS
MARTIN PLACE SECURITIES

12 June 2017 – Initiation

12 Month Price Target:A$1.46

CAPITAL STRUCTURE

Share Price	$0.15
Net Asset Value	A$220m
12 Month Range	$0.12- $0.21
Market Cap (diluted)	$48m
Issued Shares	320.3m
Fully dil capital @ A$0.15	390m
Cash	US$10.5m

DIRECTORS

Terry Fern	Executive Chairman
David Mortimer	Non-Executive Director
Alan Baden	Non- Executive Director
Paul Gahdmar	Company Secretary

TOP SHAREHOLDERS

Martin Place Securities Nominees*	19%
Canning Energy and Assoc	12%
HSBC Custody Noms	7%
David and Barbara Mortimer	3.5%
Top 20	58.5%

SHARE PRICE CHART

The report has been written by:
Barry Dawes
BSc FAusIMM(CP) MSAFAA

Petsec Energy Limited (PSA)

Strong cashflows in sight for the new Petsec Energy

Resumption in US cashflows tying in with major new earnings surge from oil production growth from outstanding Yemen assets.

SUMMARY

Petsec Energy's (ASX:PSA) period of quiet E&P activity levels in the US Gulf of Mexico is ending simultaneously with start-up of substantial production from two high potential tenements in Yemen. Operating cashflows of US$3.5m from the US and US$28m from Yemen in 2018 (total A$42m) almost match the current market cap and fully support the Audited Reserves NPV_{10} of US$181m (A$0.75/share).

These developments support the MPS 12 month target of A$1.46 with further activity that should provide at least four years petroleum output growth.

KEY POINTS

- Audited NPV_{10} of US$181m(A$240m)>> PSA's current A$48m Mkt cap
- 9.5MMboe (*minimum net to PSA*) reserves with a net 5.6MMbbls as oil
- Key Hummer discovery Stage I on-stream in early Dec Qtr 2017
- US operations to have increased activity and output in 2018
- First 4-5 Yemen wells planned on stream in Dec Qtr 2017 for >5kbopd
- Yemen assets previous management and operator team now with PSA
- Oil to be initially trucked east to Masila export pipeline
- Existing proved reserves to support substantial output growth

PSA has adopted a second strategic direction through a new experienced management team and the low cost acquisition of reserves and production facilities within production block Damis Block S-1 and exploration Block 7 in Yemen. The assets were acquired during recent civil unrest in Yemen. Indications are that the worst of the crisis is over and Yemeni Government production and oil exports have restarted and other producers have been encouraged to follow suit. Risks are now localised to the northwest so oil production and transport can flow in the east.

The NPV_{10} of US operations and potential from Hummer alone well exceed PSA's current market cap but opportunities now provided in the Yemen acquisition strategy have the potential to put PSA into a much bigger league of oil producers. Existing capacity from just the Damis Block S-1 12.8MMbbl 2P An Nagyah field is 20,000bopd from 15 connected (but shut in) producing wells and has an audited NPV_{10} US$155m (A$208m A$0.65/share) that MPS considers should soon be substantially higher.

Smaller companies having oil production are rare and those with demonstrable reserve upside are even rarer.

Damis Block S-1's An Nagyah Oilfield has12.8MMbbls of 2P reserves and four other discoveries with resources of 35MMbbls and 600Bcf whilst Block 7 has 11-50MMbbls at Al Meashar and other targets up to 900MMbbls. When An Nagyah Oilfield is reopened and producing at least 5,000bopd PSA will be in the extraordinary position of considerably increasing its production base from existing assets with just modest capex. The Yemen assets offer a major increase in output, cash flows and potential new reserves.

MPS has a base case value of A$1.46 but the potential is much higher through higher output, increased reserves and exploration opportunities.

Year end Dec	2017	2018	2019	2020	2021
Brent oil US$/bbl	50	50	50	50	50
Gross Oil production Mbbl	100	2,796	3,855	3,855	3,855
Dailly production rate (bopd)	-	7,660	10,561	10,561	10,561
Net Gas Production Share BCF	0.2	1.1	1.8	2.6	3.3
Base case net income (US$M)	-6.1	29.2	56.1	62.8	78.4
Base case net income (A$M)	-8.2	38.9	74.7	83.7	104.6
EPS A$	-0.03	0.12	0.23	0.26	0.33
CFPS A$	0.02	0.17	0.28	0.31	0.38
PER	-5.9	1.2	0.6	0.6	0.5
PCFR	6.1	0.9	0.5	0.5	0.4

*Martin Place Securities Nominees holds on behalf of several offshore groups including members of SingRim Group. No individual entity holds more than 5% of PSA within this nominee. The author owns shares in PSA. MPS was the Underwriter of the recent A$11m PSA Rights Issue. Data has been sources from available public information and reflects the author's own assessments.

1.0 Petsec Energy Ltd - In Profile

US reserves NPV10 US$25m = A$0.10/PSA share

US operations	2P Oil/Cond	Gas	BOE Mmbo
Mystic Bayou	0.16	8.8	1.6
Hummer	0.38	18.7	2.2
Total	0.54	27.5	3.8

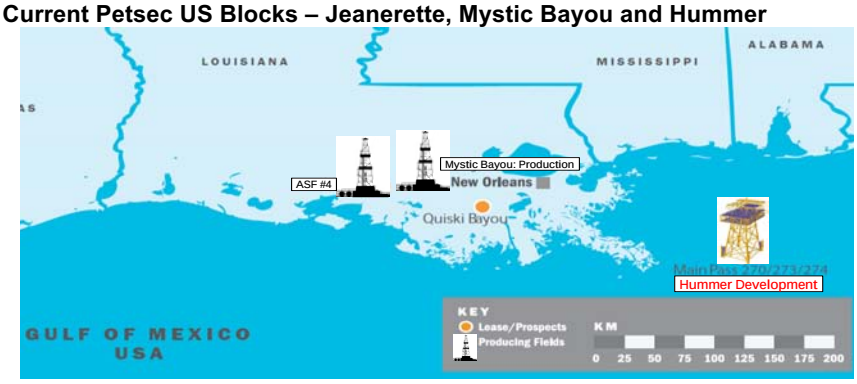
Damis Production Block S-1 NPV10 US$155m = A$0.65/PSA share

Damas S-1	Oil MMbbls 2P	2C	Total Oil	Gas BCF 2P
An Nagyah	12.8		12.8	
Harmel		17	17.0	
Osaylan		5	5.0	
Wadi Bayhan		1	1.0	50
An Naeem		12	12.0	550
Total	12.8	35.0	47.8	600

USA

Petsec Energy has had a long history of production from mature oil and gas basin assets in and near the Gulf of Mexico (GoM). NPV_{10} of onshore ops is ~US$10m whilst offshore is around US$15m with good upside. Current US tenements are:

Current Petsec US Blocks – Jeanerette, Mystic Bayou and Hummer



Source: PSA

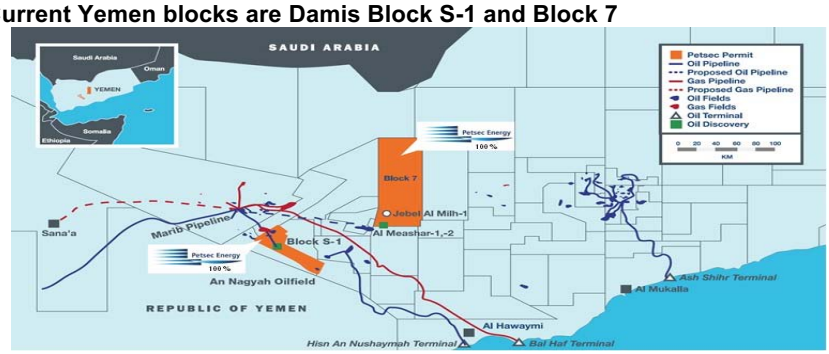
Onshore Louisiana – Mystic Bayou (25% W.I./18.5% N.R.I.) and Jeanerette (12.5% W.I./9.22% N.R.I.).

Offshore Gulf of Mexico – Hummer (12.5% W.I./10.24% N.R.I.) >200Bcf + 3.7MMbbl oil/condensate with potential for at least double. Oil and gas sales beginning early Dec Qtr 2017 start 20-25MMcfpd & 400bopd.

Yemen

The Yemen assets have been acquired over the past three years through the knowledge and long term understanding of Yemen by Mr. Maki Petkovski, a former 20-year Oil Search executive with 10 years in Yemen and his MENA team.

Current Yemen blocks are Damis Block S-1 and Block 7



Source: PSA

Damis Block S-1: 100% interest (82.5% participating interest) in 1156km^2 block acquired over 2015/16 from TransGlobe Energy and Occidental Petroleum. Licence expiry 2023 but 2-3 year extension probable due to recent *force majeure*.

Contains the An Nagyah Oilfield (12.8MMbbl) with 15 shut in wells with facilities capable of 20kbopd connected to the Marib oil pipeline to the Ras Isa Terminal on Red Sea. Audited NPV_{10} US$155m. Several untapped oil and gas fields totalling 35MMbbl & 600Bcf ready for further development.

Al Barqa Block 7: 100% interest (85% net) in 4939km^2 exploration block acquired over 2014/16 from Oil Search, AWE, Mitsui and Kufpec.

The Al Meashar 11-50MMbbl target discovery of 2010 in fractured basement requiring development and is located 14km E of OMV's 170MMbbl Habban field.

Financial History (US$)

Financial History	2012	2013	2014	2015	2016	2017 IHE
Revenue	8.6	16.4	8.2	1.6	1.1	1.1
EBITDAX	0.5	7.7	3.4	-3.5	-9.3	-4
Total assets	64.3	44.6	40.1	32.5	35.4	34
Net Shareholder Equity	51.9	35.4	34.2	23.8	18.1	17
Cash	28.4	25.4	32.6	12.8	13.1	13.1
Net Equity /share US$	21.4	14.4	14.8	10.1	6.3	5.3
Net Equity /share A$	20.7	14.9	16.5	13.5	8.5	7.2
Shares on issue	242	246	231	235	287	320

MPS
MARTIN PLACE SECURITIES

Small companies with oil production are rare

US operations audit valuation at US$25mil is A$0.10/PSA share

MPS US Valuation A$0.24/PSA share

Yemen provides attractive portfolio parameters

Yemen assets audit value US$155m (A$0.65/share)

MPS Yemen valuation US$281m (A$1.17/share)

PSA blocks have basement fracture potential

One year target of AU$1.46/share

(See P39 for larger version)

2.0 Investment Review

It is rare to find junior oil companies with substantial shares of oil production assets in early stage hydrocarbon basins where large structures in oil prone stratigraphy are not yet fully tested. PSA has done that in underexplored Yemen. Production and discoveries here could result in many-fold increases in shareholder value.

PSA has acquired an experienced technical and management team that has brought on board exploration and production assets they operated or were familiar with in Yemen through working with Oil Search, Nexen, Occidental and Total.

The assets sit in a predefined petroleum system in the production play fairway in the Shabwa Basin and are ready for immediate production after finalization of administrative issues. Potential for more production and increased reserves is high.

PSA has had a long history of discovery in the mature US Gulf of Mexico basins and it identified the potential 183BCF + 3.7MMMbbl Hummer prospect in 2010 and, with subsequent farm in partners, discovered potentially more gas with 20MMcfpd and 400bopd output from just one sand and probably much more coming. Hummer could be >400BCF with PSA holding a net 10.24%. This is a good discovery but is very modest compared to the projects in Yemen.

PSA is following Oil Search, now a major LNG producer out of PNG that in 2000 had also set up a Yemen portfolio and drilling ~50(including 12 exploration) wells. PSA, unlike Oil Search, has acquired 100% of existing or producing fields and infrastructure (as well as the experienced management and technical teams) on very modest outlays and so eliminated most capital expenditure risk.

The parameters set by Oil Search for a Yemen portfolio are otherwise the same:

- World class petroleum system –success rates >30%
- Acceptable fiscal regime within conventional PSA terms
- Access to producing infrastructure in key areas
- Relatively under-explored petroleum basins
- Recent discoveries and new developments
- Low capex and opex (typically <US$<5/bbl and <US$10/bbl)
- Active and established E & P industry

The fields in production Damis Block S-1 should generate substantial cash flows and add major value to PSA's share price to augment the current US operations.

The 800m oil column in the Al Measher (Al Barqa Block 7) fractured basement field could also be brought on stream soon after for additional low capex production.

Fractured basement reservoirs in Yemen are now producing nearly 50% of oil production and offer potential for large and long life oil fields in PSA's blocks.

PSA's US assets already underpin the current share value and give some further upside but these assets are small against the Yemen potential.

MPS gives an appraised value one year target of A$1.46/share.

Valuation Matrix

Petsec Energy		0.15	Valuation Matrix																
US$/A$		0.75						Revenue	Book Value			Market value*			Appraised Value		
Year end Dec	%	2015	2016	2017	2018	2019	2020	2018 US$m	US$m	US$/sh	A$/sh	US$m	US$/sh	A$/sh	US$m	US$/sh	A$/sh
Louisiana	25.0	-3	-1	-1	1	1	1	3	4	0.01	0.01	8	0.03	0.03	8	0.03	0.03
Main Pass 274	10.2	0	0	1	3	6	9	4	8	0.03	0.03	18	0.06	0.08	42	0.13	0.18
Block S-1#	82.0	0	-2	1	28	55	60	65	3	0.01	0.01	155	0.48	0.65	233	0.73	0.97
Block 7*	85.0	-1	-1	0	3	7	7	6	3	0.01	0.01	3	0.01	0.01	43	0.14	0.18
Yemen Exploration		0	-1	0	-2	-3	-3		0	0.00	0.00	0	0.00	0.00	25	0.08	0.10
GG&A		-5	-6	-6	-6	-7	-8		-6	-0.02	-0.03	-6	-0.02	-0.03	-6	-0.02	-0.03
DD&A		-1	-1	-1	-2	-4	-5		0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Conv Note Int/debt		0	-1	-1	-1	0	0		-3	-0.01	-0.01	-5	-0.01	-0.02	-5	-0.01	-0.02
Interest/ (net cash)		0	0	0	0	1	2		10	0.03	0.04	10	0.03	0.04	10	0.03	0.04
Pretax		**-11**	**-13**	**-7**	**24**	**56**	**63**	**78**	**18**	**0.055**	**0.073**	**183**	**0.57**	**0.76**	**351**	**1.10**	**1.46**
Tax		0	0	0	0	0	0			0.00	0.00		0.00	0.00		0.00	0.00
Net		**-11**	**-13**	**-7**	**24**	**56**	**63**	**78**	**18**	**0.055**	**0.073**	**183**	**0.57**	**0.76**	**351**	**1.10**	**1.46**
Cashflow		-9	-9	-5	29	63	71										
Capex		12	3	3	10	15	25										
EPS US$		**-0.04**	**-0.04**	**-0.02**	**0.07**	**0.18**	**0.20**										
EPS A$		**-0.06**	**-0.06**	**-0.03**	**0.10**	**0.23**	**0.26**										
CFPS A$		**-0.05**	**-0.04**	**-0.02**	**0.12**	**0.26**	**0.29**										
Shares on issue		240	290	320	320	320	320		Market value*						Appraised Value		$ 1.46
									Audited NPV10						2018	2019	2020
PER			**-2.6**	**-4.9**	**1.5**	**0.6**	**0.6**							PER	14.7	6.3	5.6
PCFR			**-3.4**	**-6.8**	**1.2**	**0.6**	**0.5**							PCFR	-34.3	6.2	2.9

(see page 39 of this document for a full-size image)

PSA has two valuable assets with reserve upside in the US

Mystic Bayou has reserve upside

Hummer has considerable upside from just testing additional sands

And then step outs for gas and for oil

And over a dozen targets in Yemen including five existing oil fields

A single number does not do the potential upside any justice

Excellent source rocks, fractured basement and sandstone reservoirs

Multi billion US$ potential

2.1 Sensitivity Analysis

Petsec Energy has some high-quality assets that could provide substantial upside in valuations once operations commence and as additional development work is carried out. **Operations are low cost and are relatively insensitive to oil prices.**

Therefore, a single number is not appropriate against a large range of variables in terms of oil and gas prices, production rates and potential additions to reserves.

In general terms Petsec produces gas and oil/condensate in the US and intends to produce oil in Yemen.

US sales

The US gas sales are expected to be 1.1BCF in 2018 rising to 3.3 by 2021. Condensate is expected to be 40bcpd at 20bbls/MMcf.

1BCF at US$3.20/MMbtu + 20,000bbls generates pre-tax earnings of US$2.8m.

Mystic Bayou

Reserves are around 1.6MMboe with NPV_{10} of ~US$8m and success with the **Proved UnDeveloped reserves** (**PUDs**) could add to gas sales and increase NPVs.

Each additional gross 10Bcf = ~US$8m net to PSA.

Hummer

The Hummer reserve is 183Bcf + 3.7MMbbl oil (34MMboe) and has NPV_{10} of around US$150m (~US$15m net to PSA).

Gas processing and handling capacity installed in 50MMcfpd and 1000bopd.

Initial gas sales are estimated at 25MMcfpd rising to 50MMcfpd and oil/condensate sales are estimated at 20bbbls/MMcf = 500bopd.

Should Hummer Reservoir D be increased to 200Bcf then the NPV rise net to PSA becomes US$18m.

Should total gas be increased to 400Bcf in 2018 and beyond then the NPV would more than double net of additional platforms and wells.

Yemen oil sales

Petsec should have oil production from two blocks in 2018.

Damis oil sales are expected to start at 1.8MMbbls (5000bopd) and generate US$100m in sales with over US$47m for cost recovery (capex and opex) plus over US$15m in after-tax profit. PSA would therefore retain over US$60m for existing and new activities.

Block 7 production should start at 1,000bopd/well.

Oil reserves at Al Meashar could be a major company changer.

The targets are:

Block 7 Oil Targets	Size	Unrisked Value	
	MMbbls	US$m	US$ /bbl
Al Meashar upside	50	600	12
Alpha Lam	12	120	10
Lead E Basement	60	700	12
East Irema	100	1100	11
West Irema	110	1300	12
Sabre	40	400	10
East Lam	60	600	10
Omega	439	5000	11
Total	871	9820	11

Source: PSA MPS estimates

MPS
MARTIN PLACE SECURITIES

Gulf of Mexico supplies 17% of US crude oil and 5% of its gas

High volatility in prices has made operating difficult

Gas rig mobilisation fell >90%,oil rigs fell 75%

Nothing easy here

3.0 Petsec Energy US Operations

PSA has been in the US since 1989 with prime focus on the shallow water oil and gas targets in the Gulf of Mexico.

The Gulf of Mexico petroleum structure reflects the vast deltas and sedimentary basins associated with the major rivers generating massive source material with a multitude of sandy tracts that acts as reservoirs for oil and gas. The Gulf is one of the world's great petroleum deposits but it is a mature basin with few targets left.

US EIA indicates that the Gulf of Mexico offshore accounts for 17% of US crude production and 5% of gas production. Almost half of US refining capacity and over 50% of gas processing plant is located along the coast to provide ready markets.

Oil prices have been very volatile over the past few decades and gas prices have shown similar variation with sometimes devastating impact on US E&P operations.

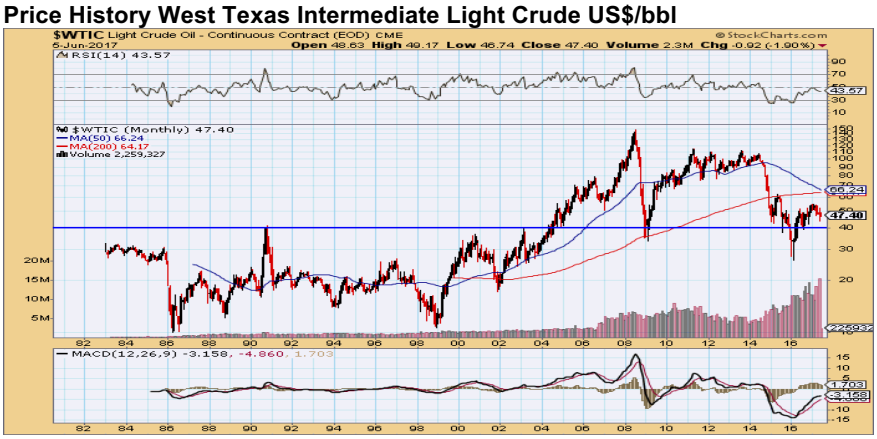
Consequently, over the past few years PSA has wound down its activities to focus on key projects and now has just three operations that have combined reserves of 3.9MMboe NPV_{10} of US$25m (A$0.06/PSA share).

Two are onshore Louisiana with **Mystic Bayou Field** (PSA 25% working and 18.75% net) and **Jeanerette Field** (12.5% and 9.2% net) as producing fields.

One is offshore Gulf of Mexico in the Main Pass sector as the **Hummer** development (12.5% working interest and 10.24% net) with as yet to be confirmed resources of at least 183Bcf and 3.7MMbbl and expected to be flowing gas and oil in Sept Qtr. 2017.

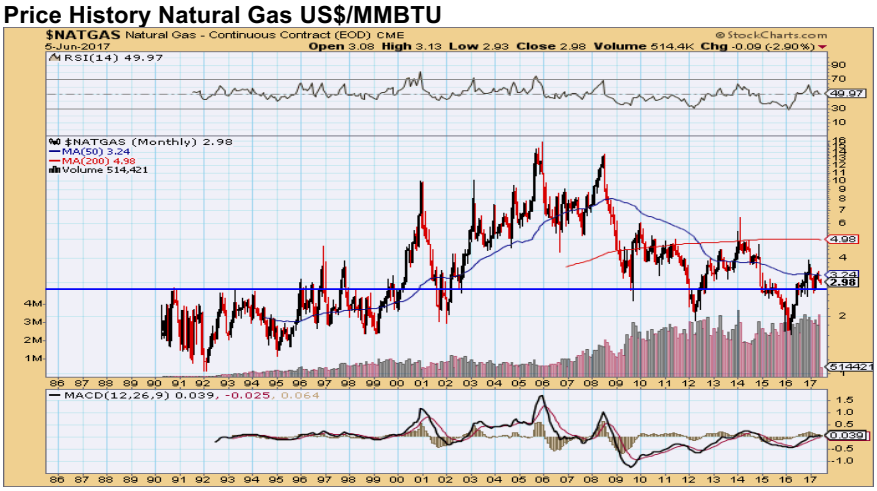
The volatility in oil and gas prices has made operating very difficult for oil and gas producers.

Price History West Texas Intermediate Light Crude US$/bbl



Source: Stockcharts

Price History Natural Gas US$/MMBTU



Source: Stockcharts

The nature of the exploration and production business follows the prices with leads and lags but activity can experience severe downturns as price and offtake decline and as corporate liquidity issues emerge.

Activity has been reduced in recent years and many participants have withdrawn from operations, particularly in the near offshore regions.

Environmental issues have also arisen after the sinking of the Deepwater Horizon drilling the Macondo Prospect oil field in 2010 and the subsequent industry- hampering legislation produced by the Obama Administration.

PSA had wound down activities to reflect these difficulties.

Onshore Louisiana activities

3.1 Current Onshore Louisiana Operations

The company has two producing gas/condensate fields onshore Louisiana that have combined Audited Reserve NPV_{10s} of around US$8m (A$0.03/PSA share).

Mystic Bayou – operating below capacity but some good upside

Jeanerette was discovered and producing in June 2014 but is smaller than Mystic Bayou and provides only intermittent revenues. These two projects provide some cash income but are negative after GG&A.

3.1.1 Mystic Bayou (PSA 18.50% Net Revenue Interest)

Mystic Bayou (PSA 25% Working Interest.) is a gas/condensate discovery made in mid-2015 and brought on stream soon after in August 2015. Cumulative gas production has been >39Bcf and 3.7MMbbls condensate. Current production is around 4MMcfpd giving PSA about 300MMcf pa and generating around US$1-U$1.5m p.a. from remaining reserves of 1.6MMboe.

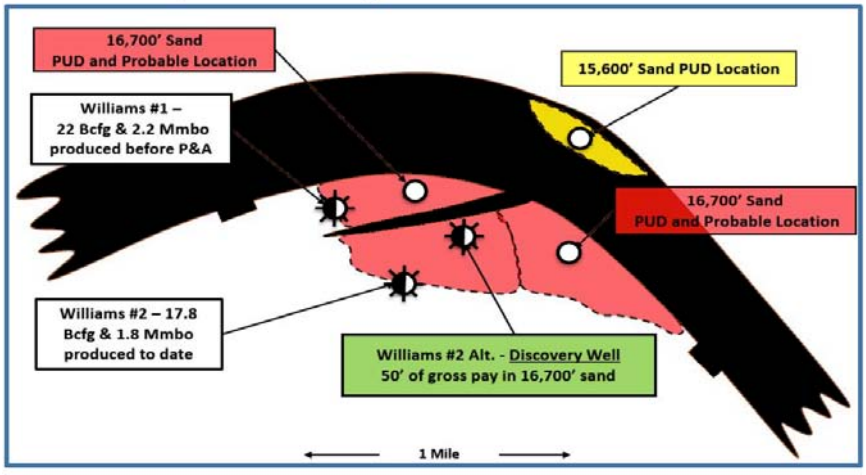
The current valuation of the fields has been downgraded to around US$8m.

Poor performance from Williams #2 Alt well has produced disappointing results from the reservoir since a 2016 workover but expectations are for a better flow rate as the well cleans up. Three more wells to access three proved undeveloped reserves (**PUD**s) are being considered by the operator.

Identified PUDs that should each be 10-25BCF with condensate

The field has given enough evidence to suggest the PUDs and the current well are still capable of producing much more hydrocarbons from this reservoir.

Cross-section of Mystic Bayou showing additional Reserve Potential



Source: PSA

Awaiting operator action for additional wells

3.1.2 Jeanerette (12.55 WI and 9.22% NRI)

Jeanerette is a shut in operation in its last stages and is no longer a material asset.

Hummer should be bigger than the 183Bcf targetted

Only Reservoir D tested…

Other reservoirs will be accessed by future wells in 2018 from same platform

New platforms will drill future wells as step outs

Up to 8 wells could each produce 20MMcfd + oil

A separate oil leg is also possible

3.2 Offshore GoM Operations Main Pass Hummer Development

The Main Pass tenements have been in the PSA portfolio for some years and the company had previously identified a large target across Main Pass tenements 270/273/274. The target was similar to a nearby highly productive gas/condensate field owned by the subsequent farm in partner.

PSA farmed down its interest to fund the drilling of Main Pass 270 #3 which encountered 5 zones of potential reservoir in an important discovery in late 2015.

Main Pass 270 # 3 was drilled in Sept Qtr. 2015 on a PSA determined target of 183Bcf +3.7MMbbl that carries across three Main Pass blocks, 270, 273 and274.

The well hit the targeted sands but a thicker than expected sand interval of 129 feet gross pay with high permeability and porosity at Reservoir D indicated that the 183Bcf and liquids target was likely to be exceeded. In addition, four other sands were logged with gas/liquid pay and would be expected to add to reserves.

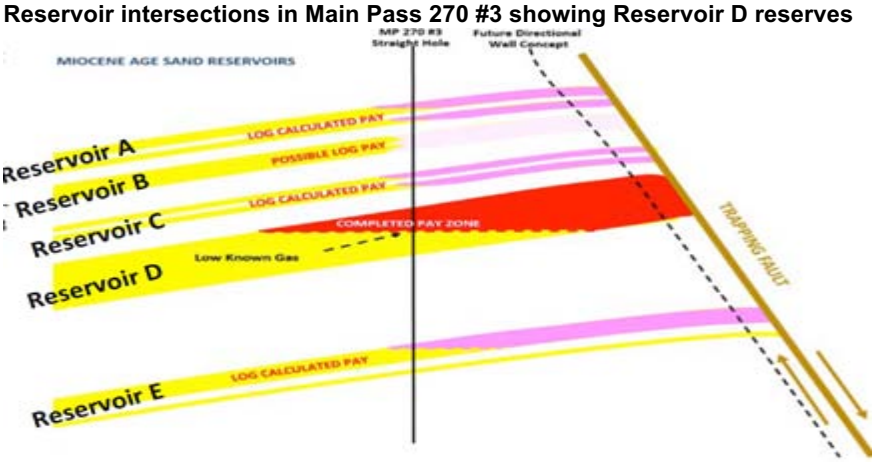
Testing of the Reservoir D produced gas flows of ~20MMcfpd with ~400bopd. Four other zones were not tested but are likely to be tested in 2018 from a separate well from the current platform. Production from these pay zones on other fields has run at around 25MMcfpd and 500bbls oil/condensate.

The platform has gas processing capacity for 50MMcfpd and 1000bopd in place and is expected to begin production in Sept Qtr. 2017.

Additional wells to tap the other potential reservoirs are likely to be drilled from the platform in 2018.

The Hummer Development is likely to initially produce cashflows of US$2-3m p.a. per well and should grow very rapidly.

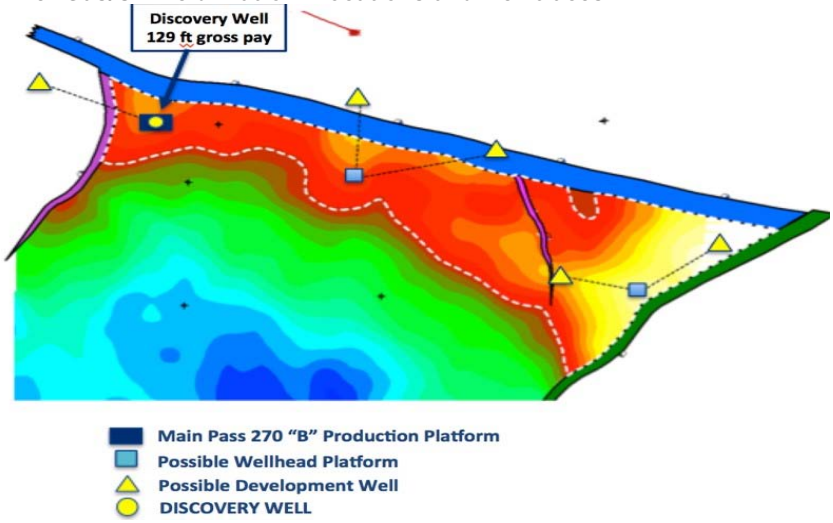
Reservoir intersections in Main Pass 270 #3 showing Reservoir D reserves



Source: PSA

The untested sand reservoir sands will be targets for additional wells in the next few years from a number of new platforms at step out locations.

Hummer Gas/Oil Field Platform locations and well traces



Source: PSA

MPS
MARTIN PLACE SECURITIES

Reserve possibilities could more than double existing estimates

Output from up to 8 wells could deliver >100MMcfd

20MMcfd would generate US$2.5m net to Petsec in 2018.

Additional wells are expected to be onstream in 2018.

Additional wells would provide NPVs above the current figures.

The well has been completed for production and temporarily suspended. Installation of permanent production facilities for oil and gas is underway with expectation of production in late Sept Qtr. 2017.

The operator expects to be able to drill 3-8 wells as step outs. Additional wells are likely from the newly installed platform, and also from other wellhead platforms.

Each well could be expected to produce around 20MMcfd making the development quite significant and delivering over 100MMcfd in total.

PSA has stated it considers that Hummer may eventually prove to be 3-4 times the existing gas resource and based on nearby tenement operating performances it is possible that a 25-35MMbbls oil field also lies down dip.

Main Pass Project Reserve possibilities

Main Pass 270 Hummer Project Reserve possibilities	Reservoir D	Step Out 1	Step Out 2	Total
Gas (Bcf)	200	50	200	450
Oil/Condensate (MMbbls)	4	1	4	9
Oil (MMbbls)		35		35

Source: MPS estimates

The production jacket has been designed for 50MMCFD with up to 100MMCFD possible with addition of extra gas treatment equipment.

This highly productive reservoir is expected to produce at least 20MMcfd and generate a robust cashflow that will allow at least one additional well to be onstream by mid-2018 and possibly a second by year end.

Petsec's 10.24% Net revenue interest

Hummer	2017	2018	2019	2020	2021
WTIC US$/bbl	48	48	48	48	48
Gas US$/mmbtu	2.61	3.15	3.00	3.00	3.00
PSA Share (bcf)	0.2	1.1	1.8	2.6	3.3
PSA Share (kbbls)	5.7	21.7	33.2	44.2	55.0
Revenue	1.0	4.4	7.6	10.6	13.5
Opcosts	0.4	1.2	1.4	1.7	1.8
EBITDAX	0.6	3.2	6.3	9.0	11.7
Capex	-2	-3	-3	-4	-4
Net cash	-1.4	0.2	3.3	5.0	7.7

Source: MPS estimates

NPVs for the Hummer development based on 10 years and 300Bcf

Hummer NPVs		US$	A$ 0.75		320 /share
Discount rate	6%	$55.8	$74.4		0.23
	8%	$48.5	$64.6		0.20
	10%	$42.3	$56.4		0.18
	12%	$37.0	$49.4		0.15
	14%	$32.6	$43.4		0.14
	16%	$28.7	$38.3		0.12
	18%	$25.4	$33.9		0.11

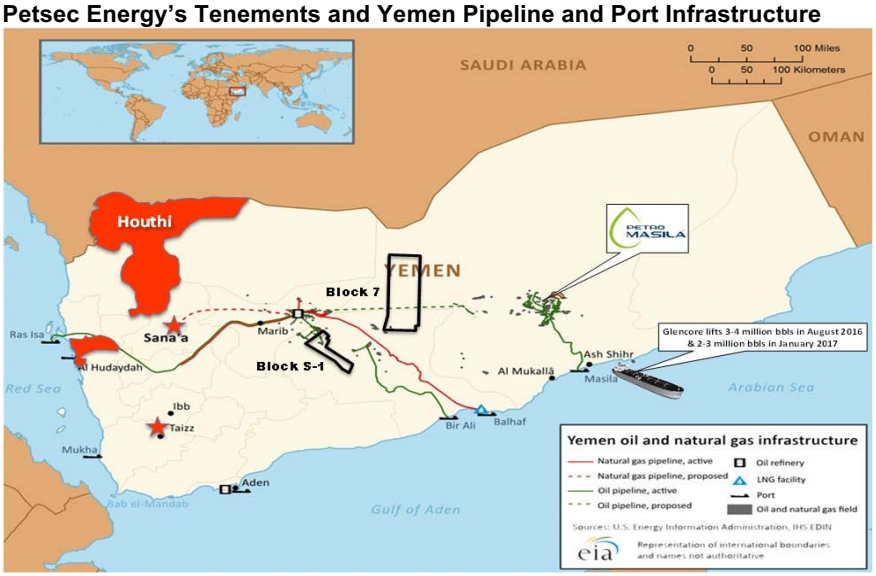
Source: MPS estimates

4.0 Petsec Energy Operations in Yemen

Civil unrest stopped tankers arriving

Civil unrest in Yemen in early 2014 caused the withdrawal of shipping offtake from all of Yemen's four oil export terminals and the shutting-in of the main westward Marib pipeline through to the Ras Isa Export Terminal on the Red Sea.

Petsec Energy's Tenements and Yemen Pipeline and Port Infrastructure



Source: EIA PSA

No ships, no exports

The closure of the Ash Shihr port on the southern coast on the Gulf of Aden also shut the pipeline serving the Masila Basin fields owned by the Yemen Government's PetroMasila company in the east of the country.

Yemen LNG's 6.7mmtpa export LNG facility (TOTAL 39%, Exxon 30%, Yemen interests 21.7%) at Bal Haf on the Gulf of Aden coast and sourced via a 320km pipeline from the Marib Gas Fields was also closed.

Total and Exxon still here

With the shutting in of these fields, companies such as Nexen, **ASX: OSH**, **ASX: AWE**, DNO, and Chinese petroleum companies withdrew from Yemen. TOTAL and Exxon have remained.

PSA has two near term producing oil fields

These closures and corporate withdrawal allowed PSA and its Yemen team to cheaply acquire interests in the two blocks and to work towards resumption of production at An Nagyah in the Damis Block S-1 and to soon after consider initial production from the Al Measher field in Block 7.

Shipping resumed

The resumption of crude liftings at the port of Ash Shihr has allowed continuous and rising production since August 2016 from PetroMasila's Masila Basin fields in the east to approximately 75,000bopd and with 3.5MMbbl of storage at the port **allowed uplift and shipping of 2-3MMbbls every 4-6 weeks**. Resumption of exports and Government of Yemen encouragement and assurances has provided the opportunity for PSA and Austrian company OMV to consider engaging in trucking to the Masila fields and into the Masila pipeline for export via Ash Shihr.

Marib Light (45° API) oil is a highly desirable crude cargo

Oil from Marib and Shabwa is highly sought after as a high quality light fraction oil (Marib Light 45°API) and the location allows shipments east to Asia or west via the Red Sea.

Several cargoes totalling ~6mbbls have been lifted last August with strong interest in the Ash Shihr cargoes.

Yemen Government needs the income

The Yemeni Government is in critical need of income and as oil and gas have usually provided >60% of tax revenues. Consequently, it has resumed production at Masila and has encouraged companies like PSA and OMV to also recommence production and shipments.

Fractured basement reservoir potential

Importantly, and as noted, in recent years over 50% of Yemen's oil output has come from fractured basement reservoirs which have proven to host large oil reserves. These types of reservoirs are in PSA's blocks.

Global interest in Yemen has been considerable due to this reservoir type and should become an attraction for potential future farm in partners.

Operator can get around 63% of cashflows

PSA currently holds 100% of each netting down to ~82-85%

An Nagyah has audited value of US$155m (A$210m)

This is A$0.65/PSA share

Reserves net to PSA will increase if tenement is extended

Initial in-place reserves were ~50MMbbls

An Nagyah should be operated at full capacity once a pipeline is reopened

15 production wells already connected to 20,000bopd capacity facilities

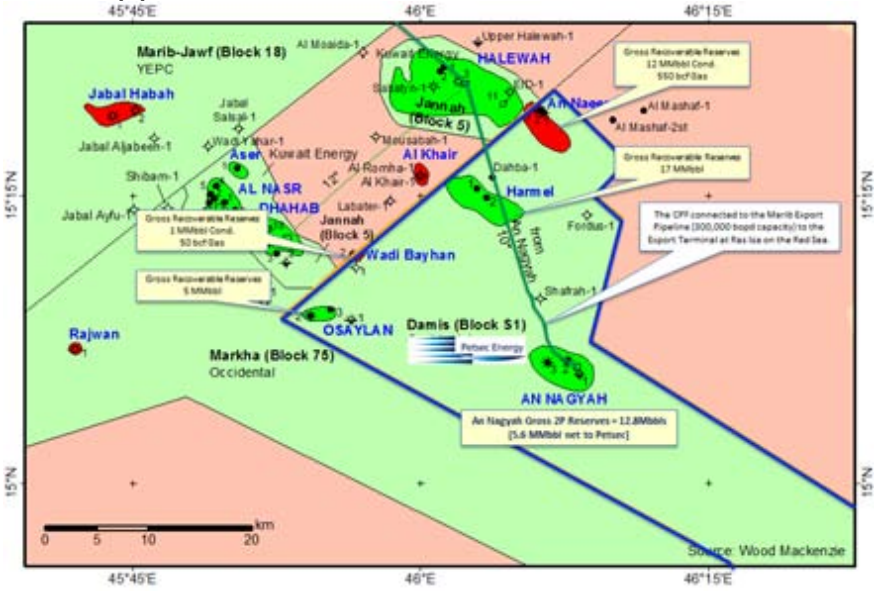
PSA is 100% (net 82.5%) operator in Damis Block under a standard Production Sharing Agreement (PSA) that give the operator around a net 63% of cash flows including operating costs and capex recovery. Substantial carry forward capex of around US$60m is available to Petsec as cost recovery under the PSA in Damis Block S-1.

The Damis Block S-1field can resume production quickly for Petsec and the Block 7 Al Meashar can soon follow to give two income streams from Yemen in 2018.

4.1 Damis (Block S-1) PSA 100% working interest (net 82.5%)

This 1156km^2 block is within the Marib-Shabwah Basin located in the Shabwah Province and is adjacent to several other shut in oil fields. It is connected to the currently closed Marib Pipeline to the Red Sea.

Oil fields, pipelines and tenements around Damis Block S-1



Source: PSA

The Damis Block hosts the currently shut in **An Nagyah** 12.8MMbbl (5.65MMbbls net to PSA) 2P reserves oil field (with a further 10MMbbl likely) and four other fields with as yet untapped oil and reserves totalling 35MMbbls and 600Bcf. Additional targets are already identified in the Damis Block.

Initial inplace reserves at An Nagyah were estimated at around 50MMbbls of which about 25MMbbls have been recovered and about 23 remain. If production is held constant at 5,000bopd, then about 10MMbbls would be considered to be still available beyond the PSA expiry date of 2023. The company expects that the expiry date will be extended to make up the time loss through *force majeure* since Feb 2014 so PSA plans to aggressively increase output rates and reserves through step-out and infill wells and facilities upgrades. Typical US$3-4mwells here are less than 2000m deep and each new production well could add 1-3MMbbls.

PSA's net 5.6MMbbls of An Nagyah oil have an audited value NPV_{10} of US155m (A$210m ~ A$0.65/share**) and US$28/bbl.**

Higher production rates and additional reserves will substantially increase these figures.

As the Audited Reserve only covers oil to be produced during the life of the PSA to 2023 so extension could add another 2-3MMbbls net to Petsec.

The An Nagyah field was discovered by SHELL in 1993 and made commercial by TransGlobe Energy/Vintage (farm in operator) with An Nagyah-2 and 3 in 2002/03. The field was developed in 2003-04 with 15 production wells and the first oil shipped in 2005 via the Jannah Block 5 pipeline to the Marib export pipeline. Occidental acquired Vintage in 2003.

Currently the field has 15 production wells with typical production rates per well of 1000bopd and flows up to 3000bopd. Widespread 3D seismic had defined this field and several others in the Block and **over a dozen exploration wells were drilled with a success rate of over 70%. Several An Nagyah new targets are obvious.**

MPS
MARTIN PLACE SECURITIES

Harmel and Osaylan already have wells and reserves but require more development

Individual An Nagyah wells have up to 3,000bopd delivery.

Low case output is 5,000bopd but production rising to at least 10,000bopd.

Reopening of an oil pipeline should allow up to 20,000bopd to be produced

These numbers may prove to be conservative

5,000bopd brings about A$39m p.a. income

10,000bopd gives around A$95m p.a. income

Two additional oil fields **Harmel** (17MMbbl) and **Osaylan** (5MMbbl) have initial production facilities in place but will need further development during the life of the PSA and the An Naeem 550BCF and 12MMBbbl condensate field may have a local power station offtake or could feed into the Yemen LNG pipeline. The Damis Block is underexplored compared to Masila so excellent exploration potential exists.

A total of US$450m was expended on the seismic, drilling (average US$3-4m per well plus horizontal wells) production and gathering systems including the 28km pipeline to the Halewa field in the Jannah Block linking to the main Marib pipeline.

The field became available to Petsec after it was considered a non-core asset to Occidental once a corporate decision was made to exit challenging locations in the Middle East.

The An Nagyah field had produced at over 10,000bopd and was producing over 5600bopd from 12 wells from first class modern facilities when shut-in in 2014. It has been kept under competent care and maintenance since. Consequently, PSA will need little in the way of additional capex to recommence production. The first four wells to be put online have production records of over 3,000bopd, with the target of 5,000bopd expected to be easily achieved with no significant capex requirement. All wells are likely to be sequentially brought on stream and should give output of at least 10,000bopd in 2018.

Additional wells at An Nagyah and development of Osaylan and the shallow but lower grade Harmel (with gas injection) could allow production at >20kbopd.

Shipments will initially be by daily truck convoy to the Masila facilities storage, transport by pipeline to the port and picked up in 4-6 weekly liftings.

Resumption of production at An Nagyah will require a series of back-to back agreements to minimize any financial risk.

The agreement sequence in order of importance is:

- Yemeni Government approvals on all operating procedures
- Yemeni acceptance of all cost recovery procedures
- Shipping offtake with payment on delivery to the port
- Pipeline tariffs for the PetroMasila Pipeline
- Receipt and storage agreements with PetroMasila
- Trucking contract from An Nagyah to Masila field storage
- Re employment of An Nagyah workforce

These agreements are likely to be in place before end of July 2017 to allow trucking in the December Qtr. The US$0.3m truck filling gantry acquired by Petsec is expect to be on site and operational by end July 2017.

The following output schedule would be a reasonable expectation for the next five years to generate these revenues and operating surpluses at current oil prices**.**

PSA would gain about 63% of all revenues and a net ~30% of the cash surplus.

Low Case 5,000bopd An Nagyah Production and net surplus

Year end Dec	2017	2018	2019	2020	2021	2022	2023
Gross Oil production Mbbl	100	1,700	1,800	1,800	1,800	1,800	1,800
Dailly production rate (bopd)	-	4,658	4,932	4,932	4,932	4,932	4,932
Base case net income (US$M)	0.7	27.6	29.3	29.3	29.3	29.3	29.3
Base case net income (A$M)	0.9	36.8	39.0	39.0	39.0	39.0	39.0

Source: MPS estimates

Base Case 10,000bopd An Nagyah Production and net surplus

Year end Dec	2017	2018	2019	2020	2021	2022	2023
Gross Oil production Mbbl	100	1,825	3,600	3,600	3,600	3,600	3,600
Dailly production rate (bopd)		5,000	9,863	9,863	9,863	9,863	9,863
Base case net income (US$M)	0.7	28.7	71.0	71.0	71.0	71.0	71.0
Base case net income (A$M)	0.9	38.3	94.7	94.7	94.7	94.7	94.7

Source: MPS estimates

A positive commercial operation on An Nagyah could be expected to quickly boost cash flows to Petsec.

Operating details are provided in section 6.2.3.

MPS
MARTIN PLACE SECURITIES

Damis Block still has exploration potential

Targets around An Nagyah are attractive with a potential 2,000m thick zone.

Fractured basement potential also exists

Leads are identified around Osaylan and Harmel

Al Meashar was drilled and discovered by PSA's Yemen team

Al Meashar has at least 11MMbbls but the +800m oil column could provide >110MMbbls

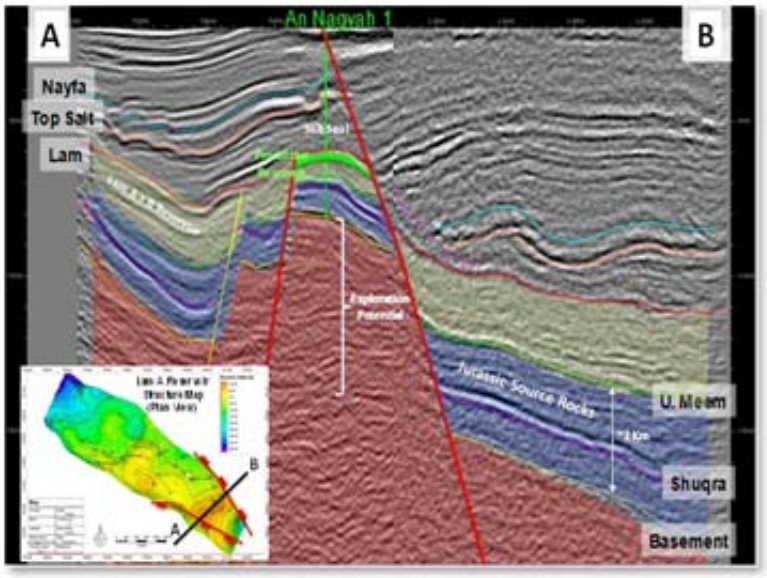
Al Meashar is the same style as Habban field with its 945m oil column

4.1.1 Damis Block Exploration Potential

Little exploration has taken place on the Block since 2011 and new concepts including potential fractured basement targets are being considered.

Considerable potential exists at An Nagyah itself based on the recognition of over 2,000m of Shuqra source rock and several potential traps on the `À' side of the major fault in the Lam formation including possible fractured basement.

Cross Section of An Nagyah Oil field



Source: PSA

Infill wells are planned and could add 1-3MMbbls EUR per well.

The extensive source rock has already provided oil to Osaylan and Harmel and PSA has already recognized attractive leads around all these fields.

4.2 Al Barqa Block 7 – PSA 100% (net interest 85%)

PSA acquired an initial 10% of this block from Mitsui in 2014 and subsequently acquired three other tranches from Kufpec, AWE and Oil Search to eventually gain 100% in 2016.

The Block is in the southern section of the Shabwah Basin and has important near term production assets and substantial longer term opportunities.

The key asset is the Al Measher oil field discovered in 2010 by Oil Search which drilled two wells that encountered an oil column in excess of 800m in sediments and also into the fractured basement rocks. Initial flow rates gave 200-1,000bopd. **Key operator Maki Petkovski and team designed and operated the wells.**

The field has reserves of 11MMbbl of which PSA's share is 9.3. The target at Al Measher is 11-50MMbbls but this could be as much as 110MMbbls or more.

Al Measher Fault Blocks 1& 2

Closure	Additional potential reserves (MMbbl)			
Initial closure			11	
Mapped lowest contour		+39	50	
Total well depth		+ >50	>110	

Source: PSA

The Block hosts 8 other seismic leads with mapped targets sizes of 2-900MMbbl.

The oil column in the fractured basement rocks is similar to other such discoveries in Yemen and is only 14km from the Habban Field discovered in 2005 and operated by Austrian oil company OMV in the adjacent Al Uqlah Block S-2. The Al Meashar discovery is in the same Kuhlan and Lam Sandstones and Basement formations encountered at Habban. The oil is the same and the source the same.

The Persian Gulf region clearly has vast high quality source rock and some Yemen basins should be heat kitchens supplying oil into reservoirs such as Habban and Al Measher.

Additional fields are highly likely from already identified basins.

At 12,000bopd the earnings to PSA are ~A$0.32/share

The combined flows of 15 existing wells at An Nagyah, several new wellsand two from Al Measher could be well over 20,000bopd.

4.2.1 Block 7 Exploration Potential

The Petsec MENA exploration team considers the exploration potential of the Block 7 to be very attractive and typical of the oil fields of the Gulf region with the same source rocks and salt seals. The size of the targets is in line with the early stages of exploration in any prospective hydrocarbon basin.

The source rock in the Al Barqa Sub-Basin appears to have very high total organic carbon (toc) exceeding 10% and would likely have provided the oil into Habban and Al Measher.

Oil Search, through PSA's current MENA team, had carried out major studies on this Block and drilled four successes from four wells including Al Measher 1 & 2.

The earlier wells drilled by Oil Search and others in Block 7 had oil shows and more recent surveys have suggested very large oil volumes of source rocks and numerous possible traps and seals.

Several targets have been identified and range up to 900MMbbls.

These are treated in more detail in Section 6.1.

4.3 Potential Cashflows

The potential production from the two Yemen operations could be expected to provide a substantial near term earnings base for PSA within the next 12 months and grow very strongly thereafter.

An Nagyah should easily produce >10,000bopd in 2018 and Al Measher should readily produce 1,000bopd from each of the two wells.

These figures are very attractive to PSA shareholders.

Scenarios for Combined output for Damis Block S-1 and Block 7

Gross 000bopa	2017	2018	2019	2020	2021	2022	2023
An Nagyah low	100	1700	1800	1800	1800	1800	1800
An Nagyah base	100	1825	3600	3600	3600	3600	3600
Al Measher		400	750	750	750	750	750
Gross total 000bopd*							
An Nagyah low		5753	6986	6986	6986	6986	6986
An Nagyah base		6096	11918	11918	11918	11918	11918
* incl Al Measher							
EPS A$*		Potential earnings to PSA					
An Nagyah low		0.13	0.15	0.15	0.15	0.15	0.15
An Nagyah base		0.13	0.32	0.32	0.32	0.32	0.32
* incl Al Measher							
Petsec Energy PER	0.15		PER < 1.0x				
An Nagyah low		1.2	1.0	1.0	1.0	1.0	1.0
An Nagyah base		1.1	0.5	0.5	0.5	0.5	0.5
* incl Al Measher							

Source: MPS estimates

The nature of both Damis Block S-1 and Block 7 are that each could provide extended oil field reserves, additional oilfields and/or far higher production rates.

MPS
MARTIN PLACE SECURITIES

Persian Gulf States have almost 60% of world's oil reserves.

The Gulf provides about 32% of world oil production.

The source rocks are oil rich and widespread.

Pipelines deliver some oil to markets but is has been cheaper to ship through the Strait of Hormuz by tanker

Yemen is very important strategically for tanker transit through Bab el-Mandeb Strait.

5.0 The significance of Yemen in Middle East Oil

5.1 Middle East Oilfields

According to BP's 2016 Statistical Review for 2015 data the Persian Gulf states produced approximately 32% of the world's oil, while holding 57%* (728 billion barrels – *net of Venezuela's 300MMbbl of heavy oil) of the world's crude oil reserves and also host the world's largest LNG export facilities.

The majority of this production needs to be shipped through the Strait of Hormuz or travel through all or part of the Red Sea.

Saudi Arabia has around 266bn bbls of oil as reserves and at 12MMbopd is the world's 3rd largest producer. Saudi Arabia has Ghawar, the world's largest oil field, with over 115 billion bbls initial oil in place reserves.

Qatar has almost 500Tcf of gas that support 77MMtpa of LNG exports.

Middle East Oil Reserves and Production	Bn bbls	000bopd
Saudi Arabia	266.6	12,014
Iran	157.8	3,920
Iraq	143.1	4,031
Kuwait	101.5	3,096
United Arab Emirates	97.8	3,902
Qatar	25.7	1,898
Oman	5.3	952
Yemen	3.0	47
Syria	2.5	27

Source: BP Data

This massive and widespread accumulation of petroleum is due to the super quality of the regional source rock of Jurassic Age.

Selected Oil and Gas Pipelines in the Middle East

Source: USGS

Most oil and gas deposits in the Middle East occur within a major rift valley that forms the Persian Gulf bounded by the thrust fault along the Zagros Mountains in the east and the Arabian Plate on the west.

Oil and gas fields surround the shoreline and offshore fields are numerous.

MPS
MARTIN PLACE SECURITIES

Saudi Arabia has oil and gas pipelines to refineries and petrochemical plants and export terminals on the Red Sea

Most oil is by tanker through the Strait of Hormuz

Non Asia shipments are around Yemen to the Red Sea, SuMed pipeline or Suez canal

Saudi Arabia, UAE and US guard the sea lanes

5.2 Middle East Oil and Gas Infrastructure

Local petroleum consumption in the Middle East is rising rapidly due to its tax free or subsidized cost structure and from rapidly growing populations from labour immigration but most petroleum needs transportation for export.

Saudi Arabia is biggest exporter and whilst it has oil and gas pipelines to refineries and export markets on the Red Sea (the Trans Arabian Pipeline to Lebanon was shut in 1990), much of its export shipments of oil and LNG from the Persian Gulf and most of those of Iran, Iraq, Kuwait, Qatar and the UAE are transported through the Strait of Hormuz.

Saudi Arabia Major Oil and Gas Infrastructure

Source: EIA

Almost all non-Asian shipments travel past Yemen in the Gulf of Aden and through the narrows at Bab el-Mandab and into the Red Sea for travel through the Suez Canal or in the 2.5MMbopd SuMed pipeline through Egypt to the Mediterranean.

Almost 4 MMbopd of crude and refined petroleum products flow through these narrows toward Europe, the US and Asia.

The Bab el-Mandeb Strait is only 25km wide at its narrowest point and allows only two 3km wide channels for passing ships.

This Bab el-Mandeb Strait is also considered a highly strategic shipping link between the Mediterranean Sea and the Indian Ocean.

The importance of control of safe passage past Yemen is a collective imperative for all the Gulf States and especially Saudi Arabia whose navy patrols the Gulf of Aden and the Red Sea and for the UAE which has also been providing military support in Yemen. The US and Saudi Arabia also have a naval base on Yemen's Socotra Island, about 380km off the eastern section of Yemen's southern coast.

MPS
MARTIN PLACE SECURITIES

The Arabian Plate gets squeezed between Eurasian Plate and African Plate

Tectonic pressures are great

Basins have filled with Jurassic source rocks

Substantial tectonic activity has taken place

The Arabian Plate has ample high quality source rock

Excellent salt and other seals, reservoir rocks such as sandstones, clastic rocks and fractures in shattered basement rocks

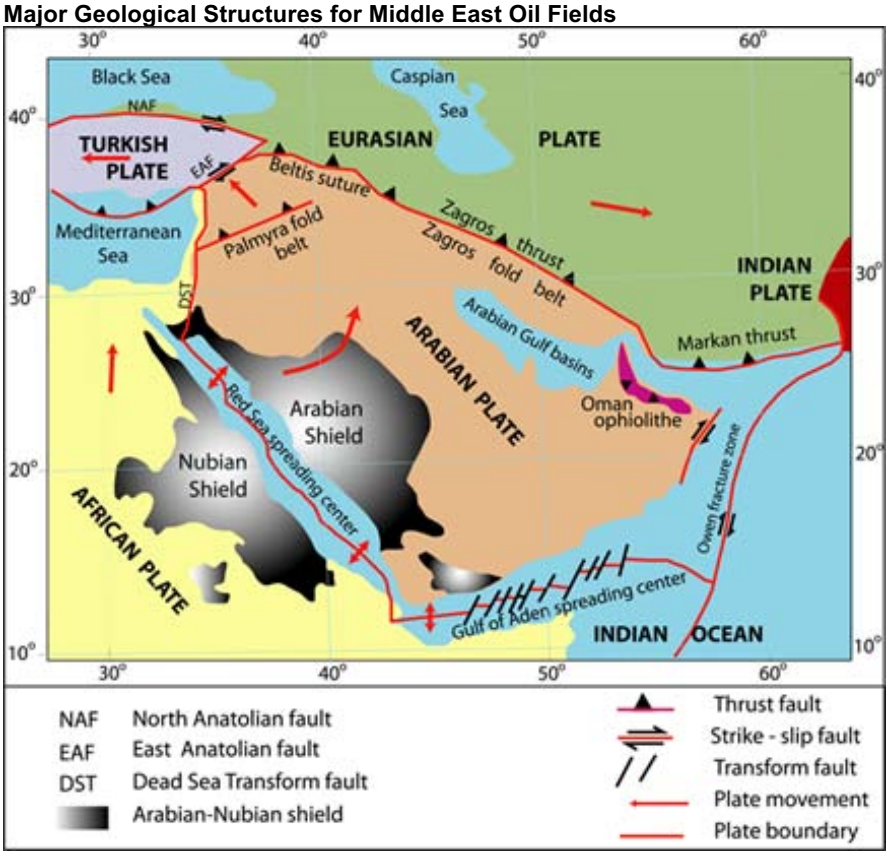
Fractured basement reservoirs in Yemen are likely to become even more important.

5.3 Middle East Geology

Whilst the Gulf Region is brought together through Arabic history (and separated by various Islamic sects) and the Ottoman Empire it is the geology that is the key.

The tectonic activity in this region has been high as the Arabian Plate sits between the much larger land masses of the Eurasian plate and Africa. This position is one of high tectonic stress and has resulted in major regional faulting and, where the crust is spreading, in rift zones such as the Red Sea Rift and the Gulf of Aden Rift.

Major Geological Structures for Middle East Oil Fields



Source: ResearchGate

The geology of the Jurassic Period (200 to 145myBP) provides the source and the structures for Middle Eastern oil which lies within a series of Jurassic failed rift basins along the eastern and southern margins of the Arabian tectonic plate. Source rock is observed in both clastic and carbonate sequences and often associated with evaporatic salt sequences. Most of the oil reservoirs are within 200km of the Persian Gulf coastline and stretch down to Oman and Yemen.

Whilst the petroleum reservoir geology of Oman is mostly related to carbonates and evaporate salt sealing beds, Yemen appears to have the same Saudi Arabian source material and seals but less conventional reservoir rocks but it is assisted by extensive fractured basement rocks which have been shattered in the rift valley tectonics and have acted as reservoirs.

The Alif Sandstone member is the most prolific reservoir in Yemen and is typically 100-125m thick sequence of delta front sandstones.

The Upper and Lower Lam sandstones are also important reservoir sandstones in Yemen and make the reservoirs at An Nagyah. The Lam is usually covered by the Saba'atayn overlying salt seal.

The Qishn Sands, the Azal carbonates and the Saar Dolomite lie above the Alif and Lam sandstones and also provide good reservoirs.

These fractured basement rocks recently provided over 50% of Yemen's oil production and on current estimates make up even more of the county's reserves.

Possibilities exist for the basement reservoirs to become even more important as exploration is resumed in Yemen in the future.

MPS
MARTIN PLACE SECURITIES

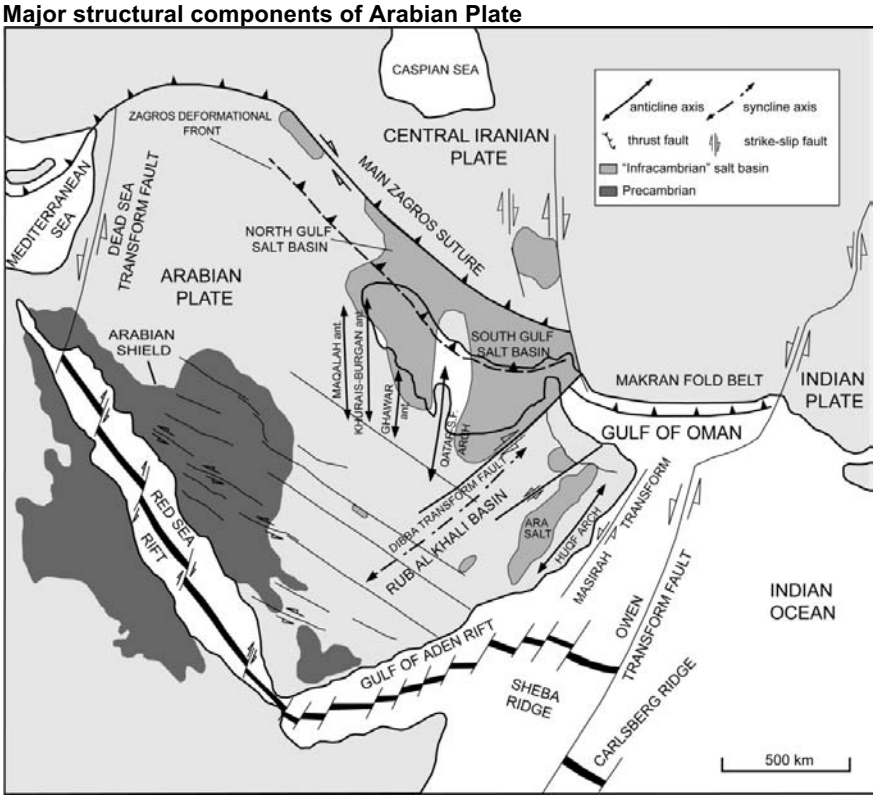
Major structures help define the oilfields on the Arabian Plate

Source rocks extend down into Oman and Yemen

Reservoirs trapped below salt seals are well known in Oman and Yemen

Tenements are distributed over the oil fields but exploration in the region has been limited in the past decade

Major structural components of Arabian Plate

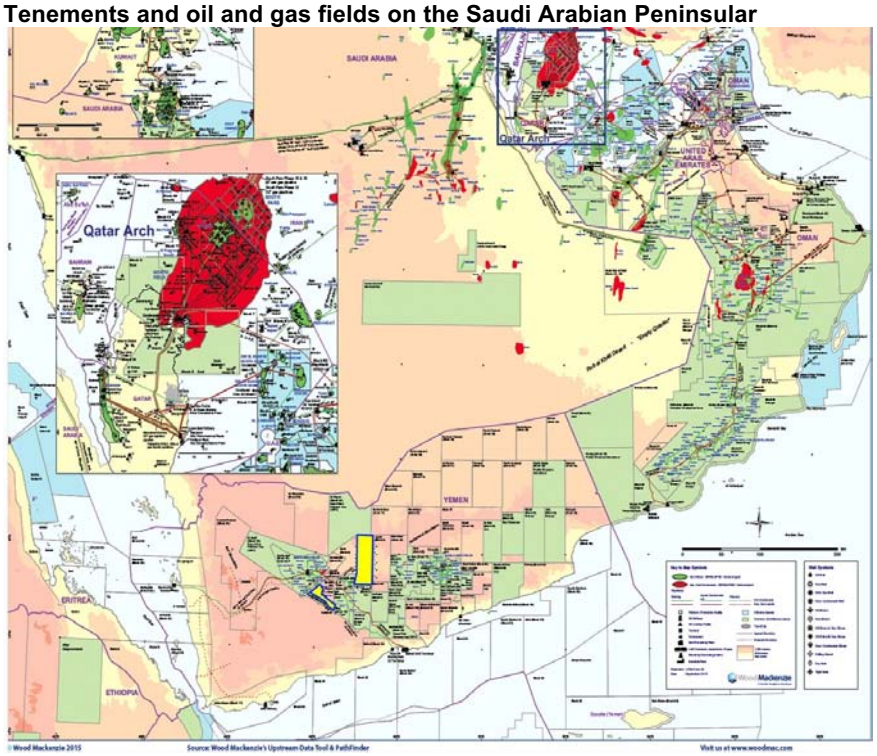


Source: Perroti Carruba et al.

The regions around the Persian Gulf have most of the oil in a concentrated area but the extensions around into Oman under the salt platforms and more importantly into Yemen have had far less drilling activity.

The tenements patterns are a good indicator of activity and successful oilfields but vast areas are still underexplored and often under desert sand cover showing the early stages of exploration.

Tenements and oil and gas fields on the Saudi Arabian Peninsular



Source: Wood McKenzie

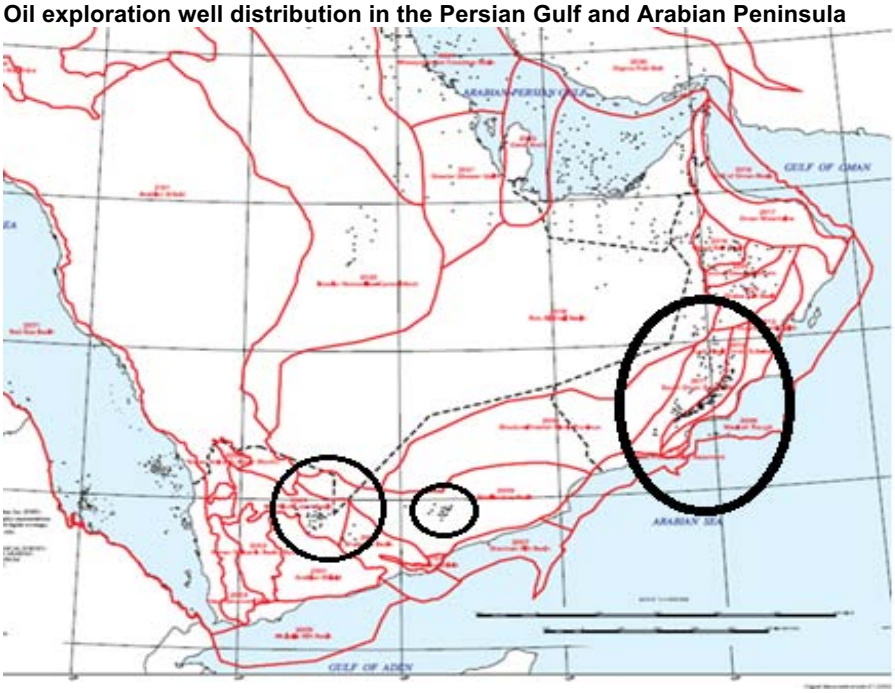
Yemen has excellent exploration prospects but many of the Blocks are currently vacant.

MPS
MARTIN PLACE SECURITIES

Yemen has a very low exploration drilling density in a region of excellent source rock.

This recent USGS report shows a very low drilling density in Yemen, in comparison to its successful neighbors, reinforcing the very limited investment in the sector reflecting a late start (first commercial oil discovery in 1984) and, in more recent times, the challenging operational environment.

Oil exploration well distribution in the Persian Gulf and Arabian Peninsula



Source: USGS

5.4 Infrastructure for Oil fields in Yemen

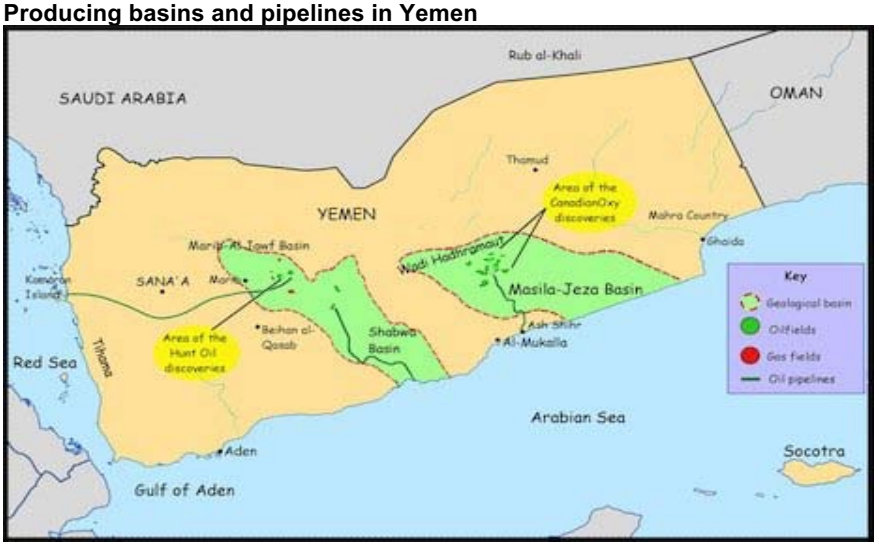
Current pipeline infrastructure caters for all 11 producing fields in Yemen.

There are three oil pipelines and the TOTAL Yemen LNG gas pipeline.

The **Marib Pipeline** runs to the West to the Red Sea whilst the **Bir Ali**, **Masila** and the **Yemen LNG gas** pipeline are to ports on the Gulf of Aden/Arabian Sea to the South.

The eleven `operating' oil fields lie within just two basins and are served by three oil pipelines and one gas pipeline.

Producing basins and pipelines in Yemen



Source: Geo Expo 2013 Oil Exploration in Yemen (Michael Quentin Morton)

Yemen has oil and gas production history of over 3bn bbls to date from only two main sedimentary basins:

1. **Marib – Shabwah Basin**
   in Marib and Shabwah Provinces in central west of Yemen

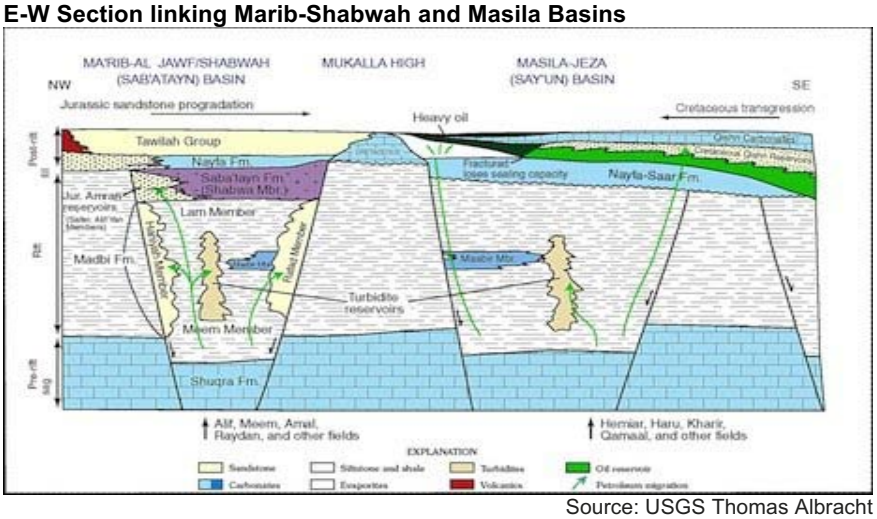
2. **Say'un – Masila Basin**
   in Hadhramaut Province in central east of Yemen

These basins have each produced over 1.5bn barrels of oil.

Twelve other sedimentary basins have been identified and some wells drilled but no other is currently an operating producer.

Production in Yemen has mainly been from the Cretaceous Qishn Sandstone unit and also the Jurassic Lam Sandstone as equivalents to many reservoirs in Saudi Arabia, but fractured basement plays are now becoming dominant.

E-W Section linking Marib-Shabwah and Masila Basins



Source: USGS Thomas Albracht

Reservoirs in Yemen are typically sandstones and carbonates but several notable reservoirs have been recognised in fractured basement rocks (including granites and high grade metamorphics) whilst various sub salt targets exist as extensions of characteristics of fields in Saudi Arabia and nearby Oman.

First oil discovery was in 1984 from Hunt Oil in Marib Basin

The Marib section in the north of the **Marib–Shabwah Basin** had the first oil discovery (1984) and the first pipeline was established in 1985. The pipeline is 24 inch and has 400,000bopd capacity over the 438km length west to the Ras Isa, an island in the Red Sea, with 3.0MMbbl storage.

Oil in the southern section of the Marib-Shabwah Basin was discovered in 1987 by Russian oil company Techno-Export in Block 4 and a 204km 21 inch 270,000bopd pipeline was established to Bir Ali in the south on the Arabian Gulf in 1990 with storage of 0.63MMbbl. This pipeline currently requires some repair.

Total found gas for an export LNG project.

The gas discoveries associated with the Hunt fields (now run by Safer Petroleum) were developed under contract to TOTAL and partners which led to the setting up of Yemen LNG was in 1991 and the 340km pipeline to the 6.7mmtpa LNG export facility at Bal Haf on the south coast. This is adjacent to the oil pipeline at Bir Ali.

First discovery in the Masila Basin was in 1991

Oil from discoveries in the Damis BlockS-1 was initially transported 28km through the Jannah 10-inch pipeline which was linked 40km to the Marib pipeline.

The **Say'un–Masila Basin** had its first discovery in 1990 and the Masila production facilities with the 138km 24inch 350,000bopd pipeline to Ash Shihr oil terminal on the coast of the Arabian Gulf were completed in 1993 with 3.5MMbbl storage.

6.3 History of Petroleum in Yemen

Yemen has no strong national oil company

Most oilfields in the Middle East particularly Saudi Arabia, Iran, Iraq, Kuwait, Qatar and UAE have national or nationalised ownership with resulting large national oil companies.

Oil majors and the entrepreneurial sectors have liked Yemen

The position in Yemen is quite different with a much smaller national oil company (PetroMasila) and refining company (Safer) and international oil companies from Asia, North America, Australia and Europe having a presence.

TOTAL, OMV, DNO and Dove from Europe, Sinopec and CNOOC from Asia and SHELL, Amoco, Exxon, Calvalley, TransOcean, Vintage, Occidental and First Calgary from Nth America are or have been involved.

The first well was drilled in 1961 with the first commercial discovery made in 1984.

MPS
MARTIN PLACE SECURITIES

102 Blocks in existence but only 39 currently held.

Potential for acquisition of additional blocks is open to Petsec

Whilst Marib and Masila Basins have the only operating fields another 12 basins are underexplored.

Source rock is widespread but the trap and reservoir styles need to be identified

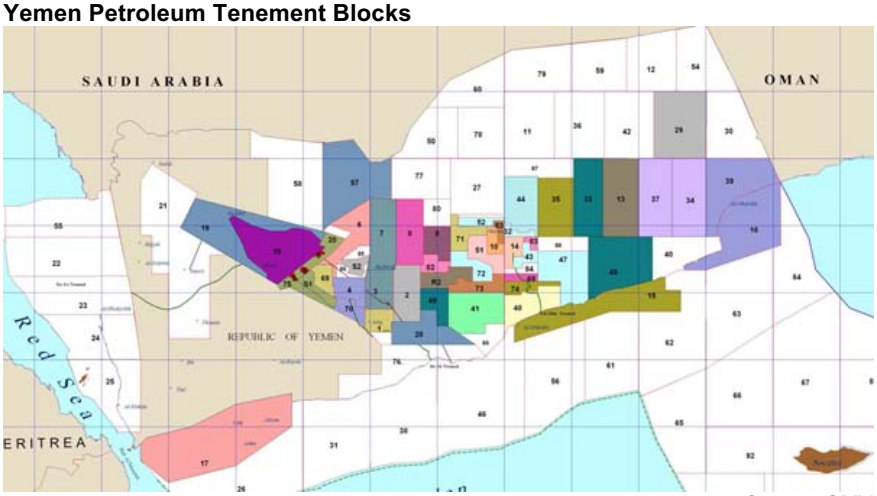
Marib fields have exceeded1,500MMbbls output

Sunah fields at Masila have fractured basement reservoirs

>30MMbbls from a single well!

Currently Yemen has 13 producing blocks operated by 11 companies and prior to 2014 had a further 26 blocks operated by 14 companies of a total of 102 blocks.

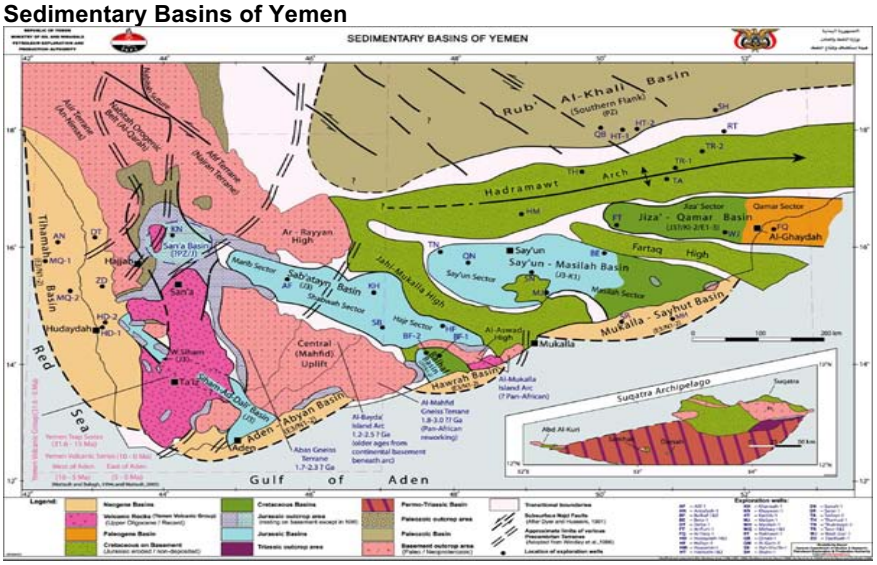
Yemen Petroleum Tenement Blocks



Source: OMV

As noted, production is from only two basins, Marib-Shabwah and Masila-Say'un (shown in blue below) although another 12 have potential.

Sedimentary Basins of Yemen



Source: PEPA

In 1984 Hunt Oil discovered the first oil in Yemen in the Alif #1 with 8,000bopd on the **Marib Field** in Block 18 near the Yemen capital Sana'a. The field was developed and production began in 1986. The 400,000bopd 438km Marib – Ras Isa Pipeline was commissioned in 1987. Initial reserves are over 2bn boe and production from these fields exceeded 1.5bn bbls.

In 1987, a second discovery was made to the south in Block 4 in Shabwah field by Russian operator Techno-Export with subsequent discoveries made at West Ayad, East Ayad and Amel fields. A pipeline was built to Ash Bir Ali on the Arabian Sea.

In 1991 in the first **Masila Basin** finds, significant discoveries were made in the east at the **Sunah** field in Block 14 by Canadian Occidental Petroleum (now Canadian Nexen). Facilities and the Masila oil pipeline to Al-Dhabah (Ash Shihr) on the Arabian Gulf were completed for shipments in 1993. These have proved to be amongst the most successful fields in Yemen, producing over 1bn bbls. A large proportion of Sunah field output has been from fractured basement reservoirs with 7-10,000bopd from basement wells and up to 200MMbbl reserves. **Over 30MMbbls were recovered from a single well Sunah-4 over 20 years**.

In 1993, SHELL discovered 8m oil and 58m gas columns in the **An Nagyah - 1** well in **Damis Block S-1**.

These discoveries show a high discovery rate overtwo decades

Habban discovery was thought to be a 20MMbbl sandstone reservoir and then the fractured basement was recognised

Single wells in East Shabwah section of Masila Basin having 50MMbbls reservoirs and >1000m oil columns

More fractured basement reservoirs

Yemen has produced >3,000MMbbls

In 1998, Total Yemen (Total Fina Elf) made a number of oil discoveries in the **East Shabwah Block 10** at Kharir, Atouf, and Wadi Taribah and production was linked with to the Masila Block 14 facilities hub and pipeline.

In 1999, DNO, a Norwegian company as operator of **Warim Block 32** discovered of oil and started production for export through Al-Masila pipeline late 2001.

In 2000, Vintage as operator in **Damis Block S-1** made additional oil discoveries over net 30m oil column at **An Naeem-1** (40MMcfd gas and 1020bopd), over net 36m **An Naeem-2** (28MMcfd and 880bopd), **An Naeem-3** (3.8MMcfd and 12bopd) and **Hamel-1**(500bopd).

In 2001, Dove Energy made a commercial oil discovery in **East Saar Block 53** and started production and exporting oil through Al-Masila pipeline in 2003.

In 2002, Vintage as operator of **Damis Block S1**, with **An Nagyah-2** declared the block commercial and started production and exporting oil through Jannah pipeline in 2004.

In late 2003, Nexen Petroleum Yemen Ltd, a Canadian company as operator of East Al-Hajr Block 51, made a commercial oil discovery and started exporting oil through Masila pipeline in late 2005.

In 2005, Oil Search and DNO discovered the **Nabrajah** field in **Block 43** in fractured basement that flowed 5,000bopd from reserves of over 30MMbbl and initiated oil production (operators now part of the PSA MENA team).

Also in 2005, Calvalley a Canadian company as operator of **Malik Block 9**, started production from a discovery British Gas had considered uneconomic in 1996.

In 2005, OMV, an Austrian company as operator of **Al-Uqlah block S2**, announced the oil commercial discovery of the **Habban** Oilfield in the fractured basement and started production and exporting oil in December 2006 from 2P reserves of ~170MMbbl. Nearby **Al-Nilam** was also found during 2005 in fractured basement.

In 2005, an oil discovery by TOTAL at Kharir in fractured basement was made in **East Shabwah Block 10** with single wells having >50MMbbls OOIP in reservoirs with >1000m oil columns in fractured basement rocks.

In 2006, Occidental found gas in **Damis Block S-1** in **Bayhan-2** 2.6MMCFD and subsequently found oil in **Osaylan**-2 with 153bopd.

In 2006, DNO had additional oil in the **Bayoot** Structure in **Block 53**.

In 2006, Nexen found two more basement oil discoveries with **Bashir Al-Khi**r in **Block 51**.

In 2008, Sinopec found oil in fractured basement in **Henin-1 Block 71**.

In 2010, Oil Search found oil in the **Al Measha**r field in **Block 7** with an oil column > 800m with much in a fractured basement play.

In 2011, DNO found oil in its **Yaalen** field in **South Hood Block 47** and planned new production with flows of over 10,000bopd (currently suspended).

In 2013, DNO made a discovery on its **Block 32 Meshgha** structure in **Salsala-1** with 5,900 bopd.

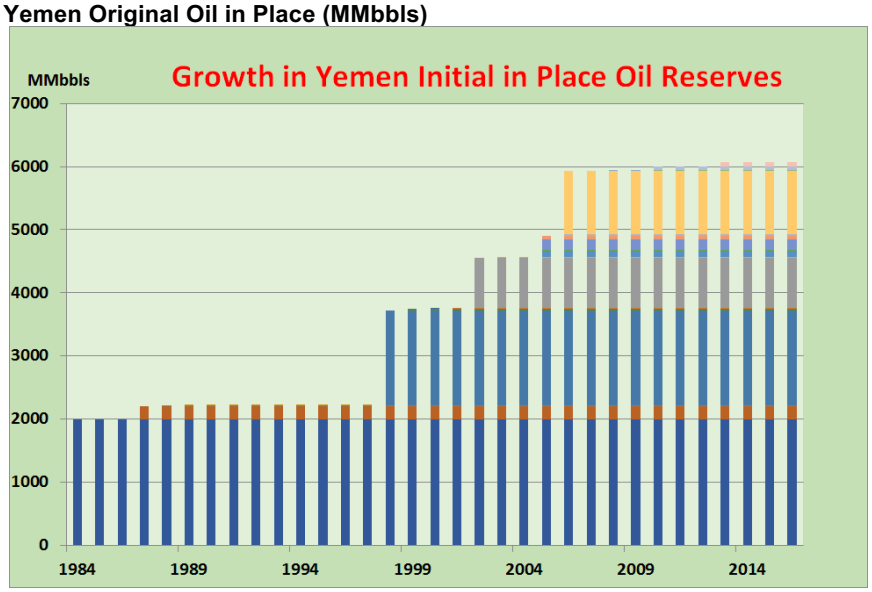
5.5 Yemen Oil Reserves and Production

These discoveries have increased Yemen's potential oil reserves to possibly 6bn bbls while cumulative production of over 3bn bbls has been documented to date.

MPS
MARTIN PLACE SECURITIES

In place reserves according to BP are still 3,000MMbbls after production of 3,000MMbbls

Yemen Original Oil in Place (MMbbls)

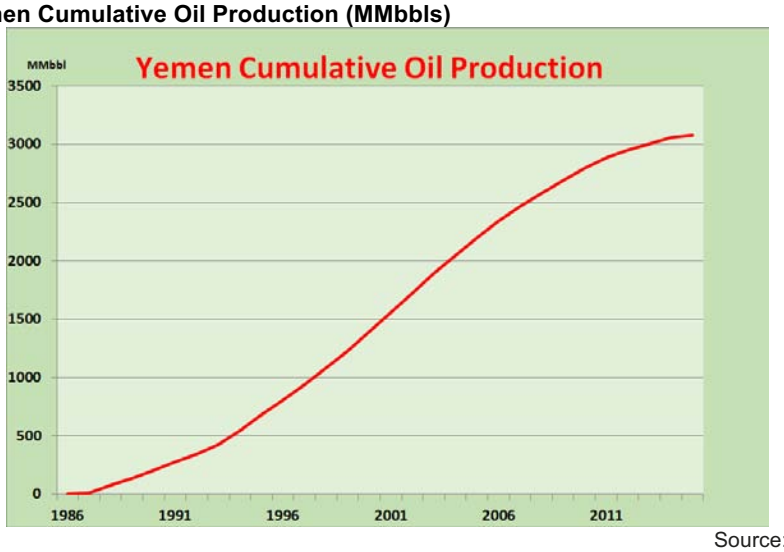


Source: Various MPS estimates

Discoveries have generally been brought rapidly into production and usually within two years.

Rapid output growth from 1998 to 2010

Yemen Cumulative Oil Production (MMbbls)



Source: BP

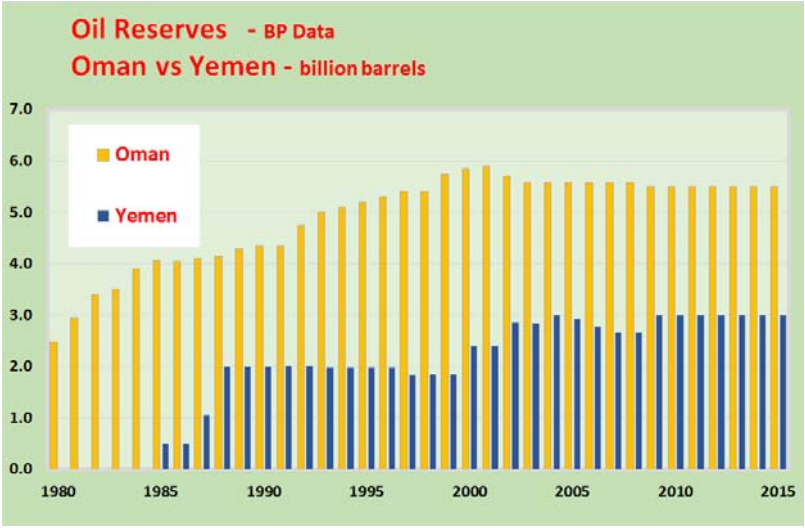
Yemen PEPA claims 2P reserves >9,000MMbbls

The results of these discoveries taking place over a 25-year period showed 3 billion bbls as oil reserves (1P) and compares favorably with its bigger neighbour Oman.

The Yemen PEPA claims 2P reserves in excess of 9 billion bbls compared to the 3bn bbl Proved Reserves from the BP Statistical data.

Oman has less than double Yemen's reserves

Oil Reserves - Yemen vs Oman



Source: BP

Oman is a good comparison for Yemen

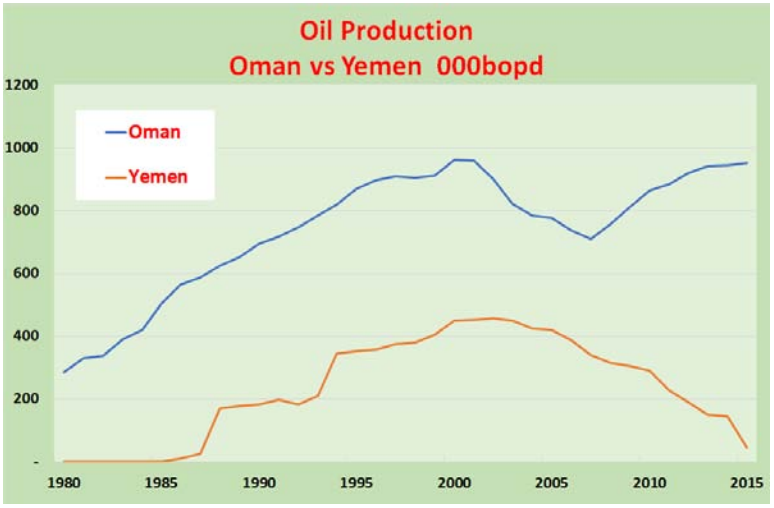
Both Oman and Yemen were late starters to oil production

Yemen had up to 30 exploration wells in a single year

Yemen is one of the centres for understanding fractured basement reservoirs

Yemen and Oman were both late entrants in the oil and gas game with the first oil production in Oman in 1967 and 1986 in Yemen.

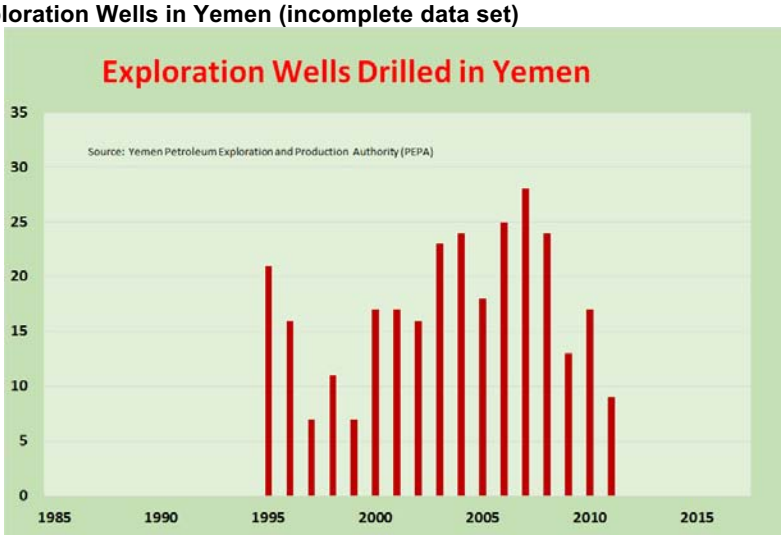
Oil Production – Yemen vs Oman



Source: BP

As noted above by Oil Search, Yemen has had an active E&P industry capable of drilling almost 30 exploration wells in any one year and numerous development wells.

Exploration Wells in Yemen (incomplete data set)



Source: PEPA

5.6 Fractured Basement Plays in Yemen

Yemen has over a dozen sedimentary basins and most have access to Jurassic (145MY BP) Madbi Formation source rock material and widespread evaporite salt sequences that act as the seal to petroleum reservoirs.

Reservoir rocks and production oil have been initially mainly from the Cretaceous Qishn Sandstone unit and the Jurassic Alif formation. More recently Yemen has become one of the centres for reservoirs that occur in fractured basement.

The combination of the source rock and the overlying salt seal places oil under high pressure and seeking somewhere to flow. This flow can be lateral and also be downward into voids created within fractures in hard crystalline rock. The basement rocks themselves being igneous or high grade metamorphics have almost zero intrinsic porosity but can be brittle and shattered by tectonic forces.

These fractured hard rocks can actually have up to 3% porosity and very high permeability so can support very long life fields. Exploration focus is on only those targets in highly fractured fault zones since basement rocks themselves are barren and very difficult and expensive to drill into.

MPS
MARTIN PLACE SECURITIES

Imagine shattered granites like this holding vast volumes of oil

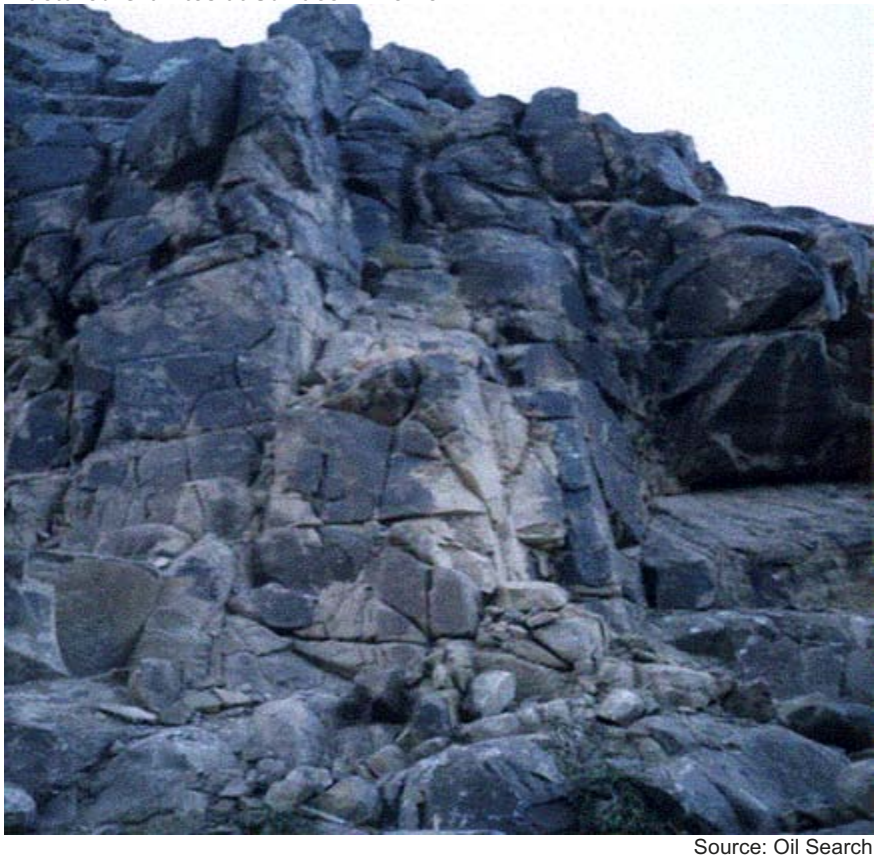
Major rifting forces shattered large areas of crystalline rocks

In some cases the granites were above sea level at some stage

Shabwah sub-basin fractured granites have some important oil fields

Fractured basement reservoirs can be continually recharging adjacent conventional rersvoirs

Fractured Granites at Surface in Yemen



Source: Oil Search

The geology of the floors of the basins in Yemen is closely linked to the break-up of Gondwana during the Jurassic and Cretaceous Periods.

Major rift basins, oriented north-northwest, south-southeast, developed during the Late Jurassic and Early Cretaceous and in many cases the stresses shattered the brittle underlying crystalline rocks such as granites and also high-grade metamorphic rocks. Thick accumulations of sediments were subsequently deposited in the basin areas and in some circumstances, were directly overlying the igneous and metamorphic basement that had at some stage become a land surface as the basin floor.

Here the source and kitchen basins have provided the oil which has been pressured into any voids including the fractured basements. As fractured granites have no rock porosity, all the oil is trapped in fractures and consequently can have very high permeability for oil flows and also a very high recovery rate because less oil is trapped in rock pores.

To date, fractured basement oilfields in the Marib-Shabwah Basin have only been located in the Shabwah Sub-Basin portion in fractured basement.

These are:

- **Block 43 -Habban Field** - operated by OMV has the Jurassic Khulan Sandstone overlying crystalline basement consisting of quartz porphyrys and gneisses which have been highly fractured in the rifting and have provided cellar and lateral hydrocarbon reservoirs.
- **Block 7 - Al Meashar** (Petsec) discovery has the same Khulan Sandstone overlying the same metamorphics and granites as at nearby Habban. The Lam Sandstone also flowed at Habban.

However, most of the discoveries in fractured basement have been in the Say'un-Masila Basin.

Note that sands or clastic rocks abutting the fractured basement also provide reservoirs that can be continually recharged from the basement.

MPS
MARTIN PLACE SECURITIES

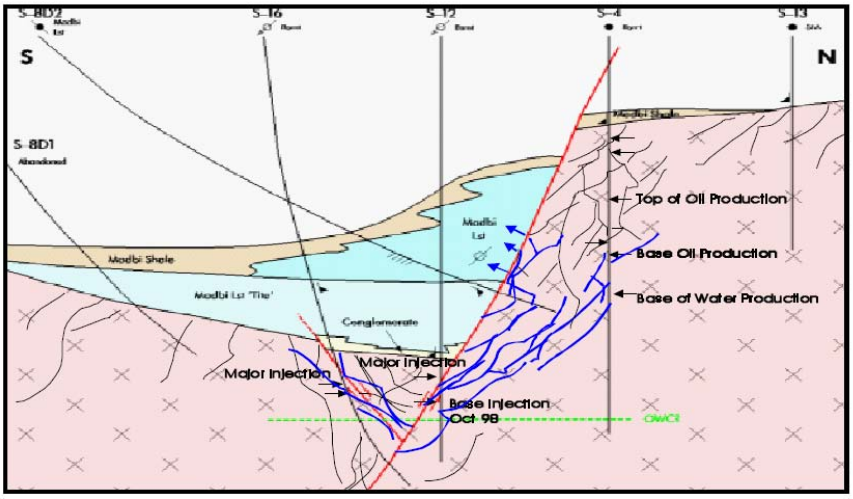
Source rocks abutting fractured crystalline basement rocks have oil forced into voids

Masila fields have more fractured basement reservoirs

One well - 30MMbbls over 20 years

Most oil production comes from near the base of this column in the Upper Jurassic

Source Rock abutting fractured basement



Source: Oil Search 2005

Important oilfields include:

- **Block 14 -** Operated by PetroMasila has numerous accumulations but it has several key fractured basement fields that have brought cumulative production to over 1,500MMbbls. The Sounah Field has basement reserves of up to 200MMbbls with **a single Sunah-4 well delivering over 30MMbbls over 20 years**.

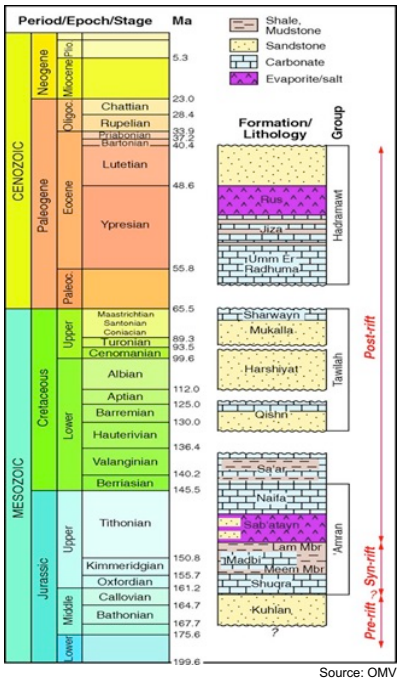
- **Block 43 - Nabrajah Field has** production from the the Qishn Formation sandstone and the Kuhlan Formation dolomite and also significant hydrocarbons have also been discovered in the basement with reported basement flow of 5800 bopd of 38 API crude and 4.1MMCFD of gas.

- **Block 53 - Bayoot Field** (DNO) lies within the oil-prone northern margin of the Say'un Masila Basin. The basement is intensely fractured and heterogeneous and total oil reserves are estimated at over 15 MMbbls.

- **Block 9 Al- Hajar** in the Masila basin has oil in the fractured granitic basement, gas-condensate in Jurassic Kuhlan sands and oil in the overlying Cretaceous Qishn formation.

- **Block 10 Kharir Field and Wadi Tariba** - Located in the East Shabwa Block 10/10A. DNO's primary drilling target was the fractured basement, with secondary targets in the overlying sediments. Oil flows were over 27,000 bopd, with 30% from the basement. The oil column was > 1000m in fractured basement **with individual wells having >50MMbbls OOIP**.

Stratigraphic Column in Yemen



Source: OMV

MPS
MARTIN PLACE SECURITIES

PSA strategy to build up low cost reserve assets

Start off these major fields with low cost capex and produce ready cashflows

Over 800m of oil column

Three scenarios:

11 MMbbls to upper contour

50MMbbls to next contour

>110MMbbls to total depth

+++?? Below??

6.0 Petsec's Portfolio – Important Strategic Holdings

As noted, PSA is following the entry by Oil Search in 2000. Petsec Energy (Middle Eastern) Limited CEO Maki Petkovski and team had previously managed Oil Search's MENA interests including Block 7 so should be considered amongst the most experienced and knowledgeable technical teams in Yemen today.

The team recognized that substantial oil field opportunities could be acquired in the world ranking petroleum system of the Marib-Shabwa Basin which, is not only set in more voluminous and better source rocks than the prolific Masila fields, is significantly under explored and has a far lower low drilling density.

And acquired at investment costs well below those in the US or Australia.

These Yemen assets could be just the first two steps in a strategy to build up Petsec Energy to a medium size oil production company.

6.1 Step 1

The first step of acquisition of the initial interest in exploration Block 7 in 2014 was followed by subsequent purchases that gave PSA 100% in 2016.

The tenement has an area of 4939km^2 with the Al Meashar making up just 25km^2 for its potential 110MMbbls.

Block 7 had participants ASX.OSH, ASX.AWE, Mitsui and the Kuwait National Oil Company (KUFPEC).

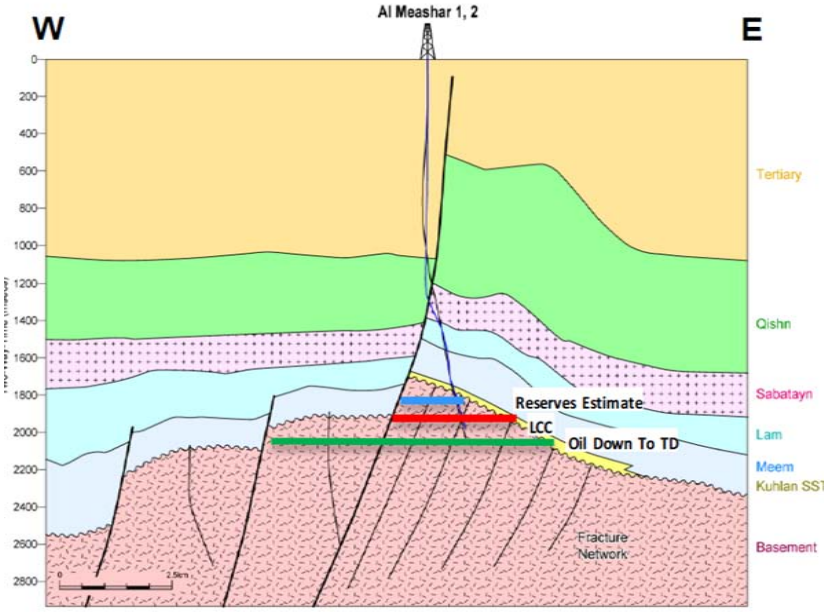
Oil Search as operator drilled Al Meashar-1 and Al Meashar-2 in 2009-10 intersecting an oil column exceeding 800m in fractured metasediments so **this opportunity is very well understood by PSA technical management.**

The geological formations are the same as the OMV Habban oilfield 14km to the West which has a 945m oil column and had been producing in excess of 20,000bopd before it was shut-in in 2015. Habban had OOIP of 50MMbbls Proved and 120MMbbls Probable Reserves and current indications are that the basement reservoir may be >350MMbbls.

The source material in the Al Barqa Sub Basin kitchen has great areal extent and could support a major oil generating system and large reserves.

The oil columns in each extend into fractured basement and such fields often provide very robust reservoirs with resilient flow rates.

Al Meashar wells 1 and 2 with Reservoir targets.



Source: PSA

MPS
MARTIN PLACE SECURITIES

These reserve estimates in plan view

>11MMbbls to blue contour

>50MMbbls to red contour

>110MMbbls to green contour

Additional targets here.

At US$11/bbl is almost US$10bn

This is very different to Bass Strait or Cooper Basin..

....or Gulf of Mexico

Al Meashar 1 and 2 were 3800m holes testing Lam and Kuhlan Sandstone targets and into the fractured basement.

Al Meashar Initial and Additional Reserve Potential

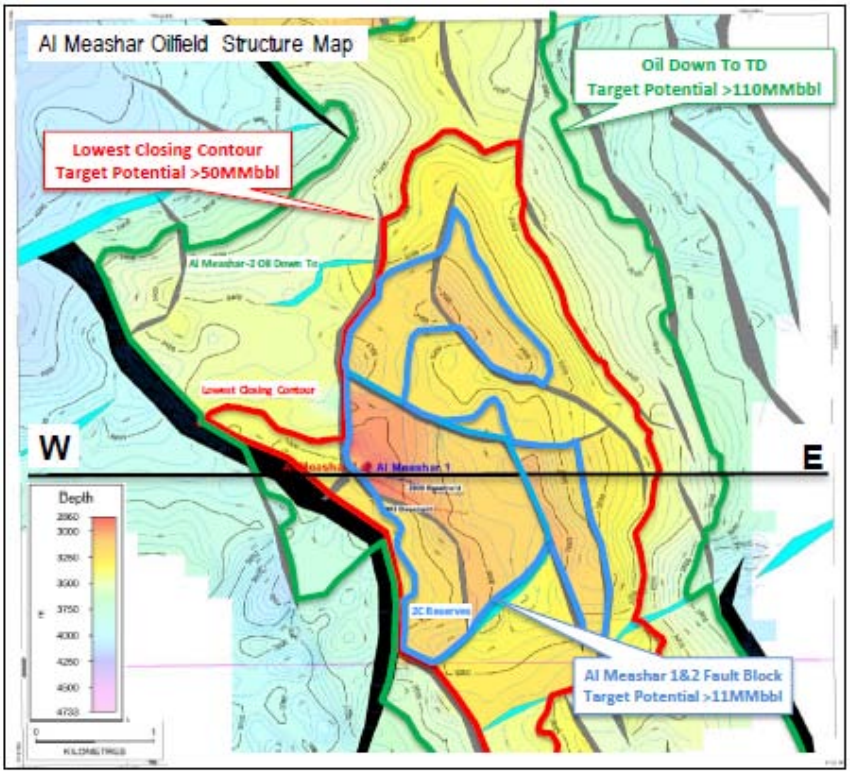
Closure	Additional potential reserves (MMbbl)			
Initial closure			11	
Mapped lowest contour		+39	50	
Total well depth		+ >50	>110	

Source: PSA

The top target in the Al Meashar fault Block had estimated recoverable reserves of 11MMbbls (blue line). Potential reserves to the red line of over 50MMbbls and to the green line to the total depth of the hole is >110MMbbls.

This could be as much as 200MMbbls and may be much larger.

Al Meashar Oilfield Structure Map



Source: PSA

The development plan is to re-enter the Al Meashar #2 well, install a production string and initiate production. Following this initial production #1 well will be brought on stream. Further appraisals are likely to be drilled to maximize production and recovery of oil from the field.

Additional prospects have been identified by geology and seismic as follows:

Block 7 Oil Targets	Size MMbbls	Unrisked value US$n	Value /bbl
Al Meashar upside	50	600	12
Alpha Lam	12	120	10
Lead E Basement	60	700	12
East Irema	100	1100	11
West Irema	110	1300	12
Sabre	40	400	10
East Lam	60	600	10
Omega	439	5000	11
Total	871	9820	11

Source: PSA MPS estimates

Should Al Meashar prove a significant reserve in the fractured basement then Block 7 has considerable additional potential.

MPS
MARTIN PLACE SECURITIES

The zone in pink is the Al Barqa Sub Basin that hosts the source rock expected to flow oil into the Omega structure.

Up to 900MMbbls here

The small pinkish zone (under Al Meashar label) is considered to be feeding the Habban and Al Meashar oil fields

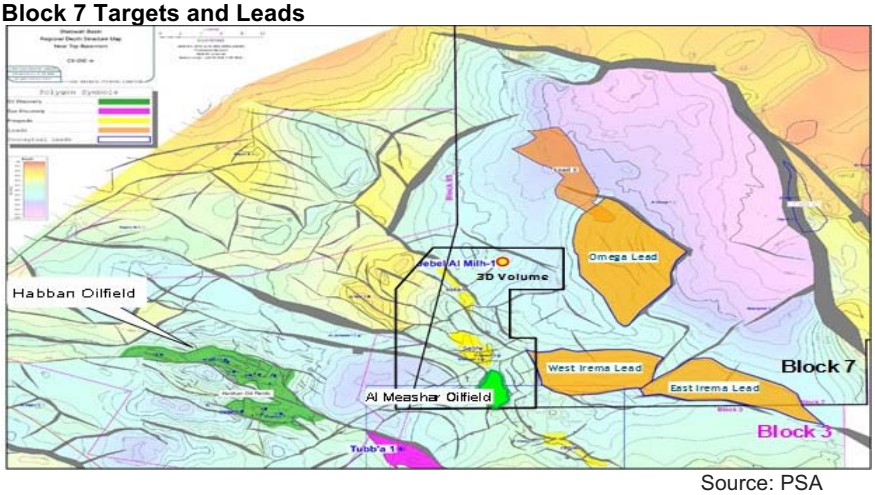
Al Meashar source is much smaller than the Barqa basin feeding Omega.

The Damis acquisition was fortuitous as it offered a large asset base and near term cashflow on a smaller reserve base

An Nagyah has an audited NPV_{10} of US$155m (A$0.65/PSA share)

Entire Damis Block has 47.8MMbbls reserves plus 600BCF gas

Block 7 Targets and Leads



Source: PSA

The Al Barqa Sub Basin immediately to the East of the Omega Structure is a likely major source of oil.

The fractured basement reservoirs concepts offer potential oilfields with reserves well in excess of seismic reservoir definitions in a normal structure.

It is important to note that the oilfields of the Persian Gulf have hundreds of billions of reserve barrels generated from the same prolific source rocks as exist in Yemen and that fractured basement rocks may provide very large reservoirs for oil accumulation.

Once PSA is able to produce oil here it is highly likely that farm in partners will be interested to undertake additional exploration.

The potential in this block is >1bn bbls and it is worth noting that Australia's biggest oilfield, Kingfish in the Bass Strait, was only just over 1.1bn bbls.

Step 2

The second strategic step was the acquisition of production tenement Damis Block S-1 which has reserves and production facilities that can generate near term cash flows to fund its own development and also to develop Block 7. Damis Block is only about 100km from Block 7 (An Nagyah Field to Al Meashar Field).

After the commitment to Block 7, PSA was able to acquire the Damis Block S-1 from TransGlobe Energy and Occidental Petroleum as those companies' strategic aims looked to withdraw from Yemen.

Unlike exploration Block 7, Block S-1 contains the developed An Nagyah Oilfield with a Central Processing Facility (`CPF') capable of producing up to 20,000bopd and 15 shut-in production wells feeding into the 400km Marib pipeline to the Ras Isa Export Terminal to the west on the Red Sea. An Nagyah is located within a well-developed oil field region with 25 years' operating history.

An Nagyah has a formal audited NPV_{10} of US$155m (A$0.65/PSA share).

Over US$450m has been spent in Block S-1 on developing the 50MMbbl An Nagyah Oilfield, and the discovery and appraisal 4 other oil and gas fields. Whilst An Nagyah is the principal field both Harmel and Osaylan also have wells that are currently shut in. An Neem also has 550BCF of gas shut in that could be linked to the Yemen LNG pipeline.

Gross recoverable reserves

Damas S-1	Oil MMbbls		Total	Gas BCF
	2P	2C	Oil	2P
An Nagyah	12.8		12.8	
Harmel		17	17.0	
Osaylan		5	5.0	
Wadi Bayhan		1	1.0	50
An Naeem		12	12.0	550
Total	12.8	35.0	47.8	600

Source: PSA

MPS
MARTIN PLACE SECURITIES

An Nagyah field is on stream but shut in with 15 wells and 20,000bopd processing capacity

Harmel and Osaylan have unlinked production wells in place

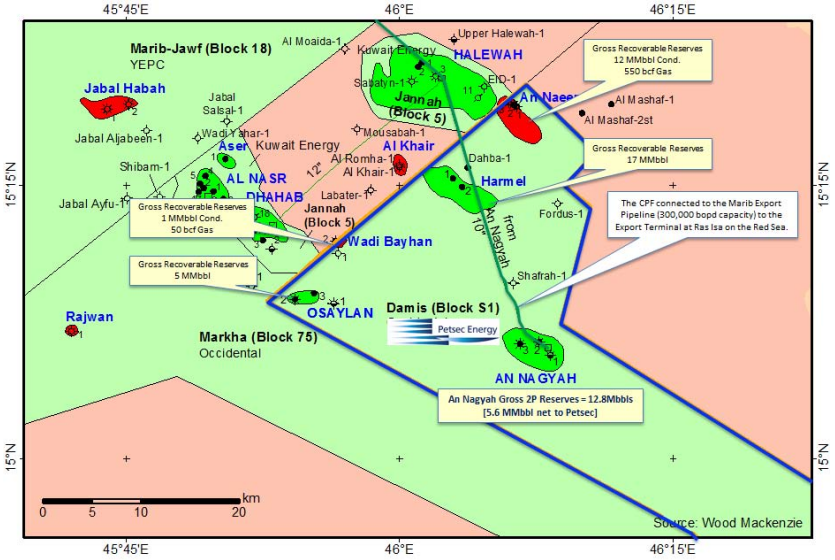
Is there fractured basement below?

50MMbbls original reserve, 25MMbbls recovered and about 25 to go

19 producing wells of which 14 are active

Horizontal wells used here

Damis Block – S1 and surrounding fields and infrastructure



Source: PSA

The An Nagyah field is in the Lam Member strata with Sab'atayn Salt as seal and source rock being the Meem Member and all are within the Upper Jurassic. The drill density here is well below those in the Masila fields to the East and the Hunt fields to the West.

6.2 Restarting Production in Yemen

6.2.1 Damis Block S-1

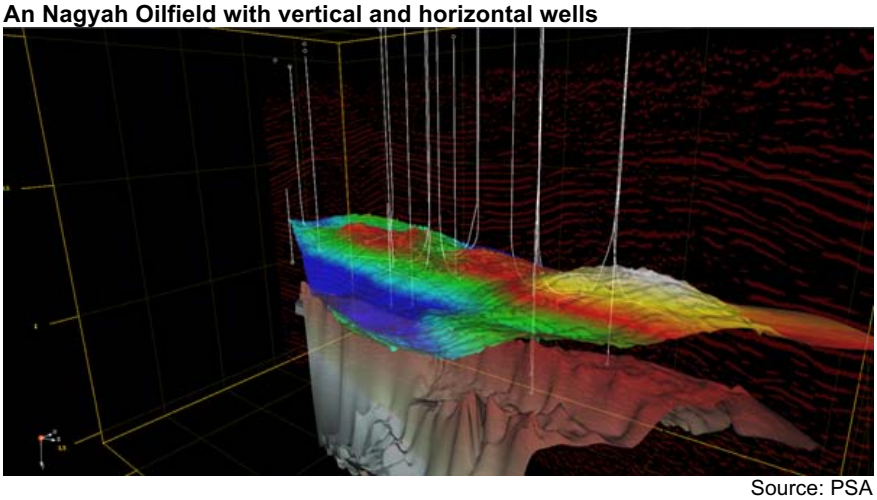
An Nagyah field covers an area of approximately 20km^2 and produces from the Lam A and Lam B sandstones in the Amran Group sealed by overlying salt of the Sabatayn Fm. The field is a structural-stratigraphic trap with closure on the west by faulting whilst on the north, east and south dipping sandstone with a limestone interbed exhibit and inclination of approximately 5^o to the northeast.

The field has a granite basement beneath which has untested fracture reservoir 0potential. Strong inconclusive shows were identified in the An Nagyah 31 well.

The field is a notional 50MMbbl field of which 25MMbbls have been recovered and expectations of a further 24MMbls (2P) to be recovered.

An Nagyah has produced since output began in 2004 at an average peak rate of 10,000bopd. 29 wells have been drilled on the fields including 12 horizontal wells and 15 wells have been brought on stream. The field had 12 wells on line producing 5600bopd when shut in in February 2014.

An Nagyah Oilfield with vertical and horizontal wells



Source: PSA

All wells are linked to the Central Production Facility which has capacity of 20,000bopd as well as associated gas for reinjection and recycling. Storage facilities have 17,500 bopd capacity.

Recommissioning should be relatively straight forward

Trucking will be a minimum of 5,000bopd

Trucks sent in convoys to Masila fields to the east

The low case should be 5,000bopd

Would bring US$29m p.a (A$39m) to PSA

The product is Marib Light which is a light sweet crude with 45°API that sells at or a premium to Brent pricing.

PSA intends to complete installation of a truck filling gantry and progressively reopen 5-6 selected An Nagyah horizontal wells to quickly build up to an initial 5,000bopd and truck by road 154km to PetroMasila's storage tanks and from there into the Masila An Shihr pipeline for export.

The Damis S-1 Block also has the Osaylan field with contingent reserves of 5MMbbls which was production tested in 2007 and then shut in. This field could be producing immediately from the shut-in wells and developed in the near future.

6.2.2 Operational Outlook

***PSA is seeking the lowest cost route to cashflows so will start with the An Nagyah development ahead of Al Measha*r.**

The development plan for An Nagyah is to reopen the wells:

- Install a US$0.4m trucking filling gantry
- Recommission site facilities
- Enter into storage and pipeline agreements with Petro Masila
- Enter into oil sales agreements with a shipping group such as Glencore
- Enter into trucking delivery contract with a local company
- Arrange delivery of oil shipments to tanks at the Masila oilfield

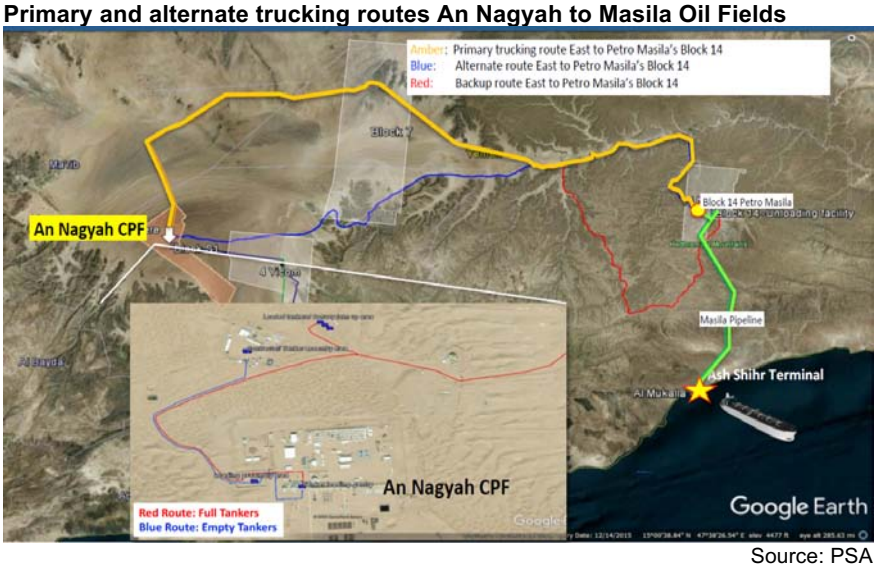
Payment for oil sales is made offshore and PSA pays Yemen Government its production share less operating and lifting costs.

Whilst the An Nagyah field has 15 shut in wells, PSA expects to be able to open just 4 to 5 wells to achieve the 5,000bopd which would match set by initial trucking capacity in daylight hours. Reopened wells after 30mths shut-in are expected to provide a recharging surge above earlier rates as has been seen at Masila in 2017.

The truck filling gantry is a short lead time modest item that will allow the facility to simultaneously fill two 400bbl road tankers approximately every 30 minutes.

Tankers will be sent in convoys on a daily basis 500km east to Petro Masila's Block 14 receiving facilities at the head of the Masila pipeline, the crude will then be piped to the Ash Shihr Export Terminal storage tanks.

Primary and alternate trucking routes An Nagyah to Masila Oil Fields



Source: PSA

6.2.3 Production Forecasts

6.2.3.1 Low Case

The Low Case assumes ~5,000bopd that can be delivered by road tanker to PetroMasila, no other pipeline is reopened and the tenement expiry date is not extended.

The Low Case is a very conservative probability

Low Case An Nagyah Production and net surplus

Year end Dec	2017	2018	2019	2020	2021	2022	2023
Gross Oil production Mbbl	100	1,700	1,800	1,800	1,800	1,800	1,800
Dailly production rate (bopd)	-	4,658	4,932	4,932	4,932	4,932	4,932
Base case net income (US$M)	0.7	27.6	29.3	29.3	29.3	29.3	29.3
Base case net income (A$M)	0.9	36.8	39.0	39.0	39.0	39.0	39.0

Source: MPS estimates

This low case has been given an Audited Reserve value of US$155m (A$220m = A$0.65/PSA share) and MPS has constructed the following NPV table.

Low Case Production Net Present Value

NPV	US$m		A$m	Per PSA share
Disc rate			US$/A$	0.75
8%	$124		$166	$ 0.52
10%	$115		$154	$ 0.48
12%	$107		$142	$ 0.44
14%	$99		$132	$ 0.41
16%	$92		$123	$ 0.38
18%	$86		$115	$ 0.36

Source: MPS estimates

6.2.3.2 Base Case

It is highly unlikely that a field with 15 producing wells and a 20,000bopd processing plant will be run at 5,000bopd given that previous output has exceed 10,000bopd.

The oilfield should be able to be managed to maintain a steady flow for several years and 5-6 additional infill and step out wells are likely to be drilled to add to flows and reserves. Each well could add 1-3MMbbls to reserves and six wells could boost field reserves by another 10 MMbbls.

The Osaylan and Harmel fields can also be brought on stream.

Accordingly, a Base Case of 10,000bopd can be assumed.

Base case An Nagyah Production and net surplus

Year end Dec	2017	2018	2019	2020	2021	2022	2023
Gross Oil production Mbbl	100	1,825	3,600	3,600	3,600	3,600	3,600
Dailly production rate (bopd)		5,000	9,863	9,863	9,863	9,863	9,863
Base case net income (US$M)	0.7	28.7	71.0	71.0	71.0	71.0	71.0
Base case net income (A$M)	0.9	38.3	94.7	94.7	94.7	94.7	94.7

Source: MPS estimates

The NPVs of 10,000bopd are over A$1.00/PSA share.

NPV here is over A$400m to PSA or A$1.29/PSA share

Base Case Production Net Present Value

NPV	US$m		A$m	Per PSA share
Disc rate			US$/A$	0.75
8%	$343		$458	$ 1.43
10%	$311		$414	$ 1.29
12%	$282		$376	$ 1.18
14%	$257		$343	$ 1.07
16%	$235		$313	$ 0.98
18%	$215		$287	$ 0.90

Source: MPS estimates

As the internal political crisis winds down it is highly probable that the Marib Pipeline will be reopened and also that OMV will be encouraged construct a 30km pipeline to the Block 4 Oil Fields and to rebuild the Bir Ali pipeline. OMV is reported to already have the pipes on site from an earlier decision to construct the pipeline.

MPS
MARTIN PLACE SECURITIES

Combined 20,000bopd from An Nagyah, Osaylan, Hamel and other discoveries are quite realistic

NPVs are over A$2.00/share

With either development, AN Nagyah could have its output increased and additional infill An Nagyah wells and production from Osaylan and Harmel would take this output higher to 20,000bopd.

Accordingly, this should in reality be considered a highly probable outcome.

High Case An Nagyah Production and net surplus

Year end Dec	2017	2018	2019	2020	2021	2022	2023
Gross Oil production Mbbl	100	1,825	3,600	7,300	7,300	7,300	7,300
Dailly production rate (bopd)		5,000	9,863	20,000	20,000	20,000	20,000
Base case net income (US$M)	0.7	30.5	49.4	129.5	136.8	136.8	136.8
Base case net income (A$M)	0.9	40.7	65.9	172.6	182.4	182.4	182.4

Source: MPS estimates

High Case Production Net Present Value (after substantial capex)

NPV	US$m		A$m	Per PSA
			0.75	320
8%	$564		$753	$ 2.35
10%	$501		$668	$ 2.09
12%	$446		$595	$ 1.86
14%	$399		$532	$ 1.66
16%	$358		$478	$ 1.49
18%	$323		$431	$ 1.35

Source: MPS estimates

The numbers are startling for a small oil company but it is important to recognize:

1. The reserves are independently audited in good oilfield practice
2. The production capacity is already in place and in good order
3. 15 wells with production capabilities up to 1000bopd are already connected
4. The Arabian Peninsula has the world's best source rocks

P&L account for the Low Case

Petsec Energy			2017	2018	2019	2020	2021	2022	2023
Oil Price									
Brent			50	50	50	50	50	50	50
US$/A$			0.75	0.75	0.75	0.75	0.75	0.75	0.75
An Nagyah Production									
000 barrels			100	1,700	1,800	1,800	1,800	1,800	1,800
bopd ave				4658	4932	4932	4932	4932	4932
Cumulative production			100	1,800	3,600	5,400	7,200	9,000	10,800
Remaining reserves	to 2023	13000	12,900	11,200	9,400	7,600	5,800	4,000	2,200
Remaining reserves	Total	23000	22,900	21,200	19,400	17,600	15,800	14,000	12,200
Oil shares									
Royalty share			3	51	54	54	54	54	54
Cost Oil			49	825	873	873	873	873	873
Profit Oil			49	825	873	873	873	873	873
Yemen share			32	536	567	567	567	567	567
Contractor share			17	289	306	306	306	306	306
Ycol share			3	51	53	53	53	53	53
Net contractor Oil			14	238	252	252	252	252	252
Net oil to Petsec			63	1,063	1,125	1,125	1,125	1,125	1,125
Revenue US$/bbl			**50**	**50**	**50**	**50**	**50**	**50**	**50**
Production costs			5	5	5	5	5	5	5
Trucking costs			7	7	7	7	7	7	7
Pipeline			1	1	1	1	1	1	1
Shipping			1	1	1	1	1	1	1
GG&A			1	1	1	1	1	1	1
Total /US$ bbl			**15**	**15**	**15**	**15**	**15**	**15**	**15**
Operating surplus/US$ bbl			***35***	***35***	***35***	***35***	***35***	***35***	***35***
Revenues US$m			**3.1**	**53.1**	**56.3**	**56.3**	**56.3**	**56.3**	**56.3**
Costs US$m									
Production costs			0.5	8.5	9.0	9.0	9.0	9.0	9.0
Trucking costs			0.7	11.9	12.6	12.6	12.6	12.6	12.6
Pipeline			0.1	1.7	1.8	1.8	1.8	1.8	1.8
Shipping			0.1	1.7	1.8	1.8	1.8	1.8	1.8
GG&A			1.0	1.7	1.8	1.8	1.8	1.8	1.8
Total Costs			**2.4**	**25.5**	**27.0**	**27.0**	**27.0**	**27.0**	**27.0**
cost/bbl			**24.0**	**15.0**	**15.0**	**15.0**	**15.0**	**15.0**	**15.0**
Total costs			2.4	25.5	27.0	27.0	27.0	27.0	27.0
Operating cashflow			**0.7**	**27.6**	**29.3**	**29.3**	**29.3**	**29.3**	**29.3**

Source: MPS estimates

MPS
MARTIN PLACE SECURITIES

Al Measher is very similar to Habban.Same oil same large oil column.

Should Al Measher wells do up to 3000bopd then these numbers could be much larger

Should Al Measher confirm reservoir to the lowest closing contour at total depth then PSA could be worth A$800m or A$2.45/share

These figures are based on assessed structures and the understanding that the source rock here is outstanding and that very large oil fields are nearby

6.2.4 Block 7

The Al Measher 1 and 2 wells were drilled by Oil Search (designed and operated by PSA's current MENA team) and partners in 2010 and each encountered an oil column in mostly fractured metamorphic basement rocks.

The flows came from the Kuhlan Sandstone and also from fractured basement with a total oil column of >800m. Oil production is likely to come from the sandstones which are expected to act as recharging conduits from basement reservoirs.

Al Measher is at the southern boundary of the Block 7 and only 14km from the 23,000bopd 170MMbbl Habban Field operated by OMV. Oil was trucked west by OMV to the Marib pipeline at 23,000bopd. The oil column is a similar 850-900m, the oil character is identical and is in the same sandstone and basement rocks and the oil source kitchen is considered to be the same. However, the two fields are unlikely to be connected because of the basinal low between them.

Oil should be able to be produced here and trucked to Masila along the same road used for An Nagyah crude and that from OMV.

Oil flows on short test were up to 1000bopd accompanied by gas and production could start relatively quickly from each well.

The field could be brought on stream with just a workover service rig.

These figures are considered to be just nominal and would be prior to any capex for increasing output and any exploration test of the numerous exploration targets.

Low Case Production Rate

Al Measher	2017	2018	2019	2020	2021	2022	2023
Gross Oil production MMbbl	-	400	750	750	750	750	750
Dailly production rate (bopd)	-	1,096	2,055	2,055	2,055	2,055	2,055
Base case net income (US$M)	0.0	3.2	6.6	6.6	6.6	6.6	6.6
Base case net income (A$M)	0.0	4.3	8.8	8.8	8.8	8.8	8.8

Source: MPS estimates

The Low Case is preliminary but by itself it gives Petsec value above the current share price.

NPV	US$m		A$m	Per PSA
			US$/A$	0.75	320
	8%	$48	$64	$ 0.20
	10%	$43	$58	$ 0.18
	12%	$40	$53	$ 0.17
	14%	$36	$49	$ 0.15
	16%	$34	$45	$ 0.14
	18%	$31	$41	$ 0.13

Source: MPS estimates

Should the production testing at Al Measher conclude the oil column extends to the lowest closing contour to give 50MMbbls then the value to PSA could be as much as US$600m (A$800m – A$2.45/ PSA share).

Should the oil column extend to the total depth of the Al Measher #1 well and the reserves are 110MMbbls then this would be almost A$1,800m (A$ 5.63/share) net to PSA.

The additional targets in Block 7 are likely to be drilled by farm in partners but the size of these fields could easily turn to several US$ billion net to PSA and give double digit share price targets.

These unrisked figures from Petsec Energy of US$9820m vs PSA A$48m on 320m shares. Keep in mind PSA also has a 900MMbbl target for Omega.

Yemen Production Sharing Agreements are better than most

The Operator gets 35% of the net operating surplus to a net 29.75%

Recoupment of op costs and previous capex brings cashflow up to about 63% of the gross revenue.

Success in any one of these targets would be a company changer.

Block 7 Oil Targets	Size	Unrisked Value	
	MMbbls	US$m	US$ /bbl
Al Meashar upside	50	600	12
Alpha Lam	12	120	10
Lead E Basement	60	700	12
East Irema	100	1100	11
West Irema	110	1300	12
Sabre	40	400	10
East Lam	60	600	10
Omega	439	5000	11
Total	871	9820	11

Source: PSA MPS estimates

6.3 Yemen – PSA Terms

Petroleum tenements in Yemen operate within a Production Sharing Agreement system where production is divided into:

- Royalty Oil equal to approximately 3% of Gross Production
- Cost Oil equal to approximately 50% of remaining oil after Royalty
- Profit Oil equal to approximately 50% of remaining oil after Royalty

For production from the Damis Block S-1 Block, this split is:

Royalty Oil: the government collects an initial 3% of Gross Production before other distribution.

The Royalty < 12,500bopd is 3% but increases with output:

- 12,500-25,000bopd = 4%
- 25,000-50,000bopd = 6%
- 50-100,000bopd = 8%
- >100,000bopd = 10%

Cost Oil: after deducting the 3% Royalty, the operator recovers capital (CAPEX) and operating costs (OPEX) from 50% of the remaining production (48.5% of gross).

Profit Oil: after deduction the royalty, 50% of the remaining oil (48.5% of gross) is then distributed 65% to the government and 35% to the JV partners:

- **JV Partner Share:** PSA receives 82.5% share of the JV partner share
- **The Yemen Oil & Gas Company (YOGC)** receives the remaining 17.5% of the JV Partner share.

Operating Profit

- **Yemen Government share** is 65% of Profit Oil (31.525% of Gross Production)
- **Operator share** is 35% of Profit Oil
  - Less Yemen Oil Company 17.5% share of operator's profit
- **Operator Net Share** 29.75% of Profit Oil (14.4275% of Gross Production)

Net cashflow to operator:

- 14.4275% of Gross as Profit
- 48.5% of Gross as Cost Recovery (maximum)
- **Total 62.9275% of Gross to PSA**

Within the cost oil allowance, it is in the contractor's interest to minimise costs so that the difference between the 50% share as cost allowance and actual cash costs can be set to recover any current or carried forward capex.

Block 7 has similar terms but it is awaiting declaration of commerciality for final detail on terms.

MPS
MARTIN PLACE SECURITIES

7.0 The Political Scene in Yemen

Yemen has held a strategic position in the links between Asia and Europe from its position on the Red Sea.

Yemen has activity that stretches over more than 2000 years It has had a long history as a trading port nation specifically concerning ancient spice routes and accessibility to its trading ports; (Aden, Hudaydah and Mukalla) with periods of Indian, Turkish and British occupation reflecting its strategic importance for trade between the Red Sea and Egypt and with Africa and much of Asia.

The Yemen of today shares two land borders. One to the north, which it shares with Saudi Arabia, and one to the east with Oman.

The population of Yemen is around 25m and its GDP US$31bn.

Many different interest groups have been involved in Yemen's political history.

Republic of Yemen was formed in 1990 through the combining of North Yemen as the Yemen Arab Republic and former Soviet era vassal and South Yemen which under the British was the Aden Protectorate that later became a communist state.

Yemen was unified under one government, with its seat of power in the Yemen Capital of Sana'a, and eventually led by Ali Abdullah Saleh. Since unification, Yemen has been slowly modernising.

The problems over 2014-2016 have now largely been dissipated and the rebellious regions have been isolated.

The current President Andrabbuh Mansour Hadi is its internationally recognised leader and is backed by Saudi Arabia. He is of the Sunni faction. The Government controls over 85% of the country other than a Shiite area abutting the border with Saudi Arabia. The conflict is essentially now contained within this northern section and a smaller region on the Red Sea.

The current conflict (almost a Yemeni Civil War) is an ongoing conflict that began in 2015 between two factions claiming to constitute the legitimate Yemeni government, along with their supporters and allies.

Zaidi Shia rebels (known as Sharia Houthis) have been backing ex-President Saleh and have had the support of the Yemen Herzabolla funded by Iran.

Saudi Arabia, UAE and the USA are big players here now.

Houthi forces controlling the capital Sana'a allied with forces loyal to the former president Ali Abdullah Saleh continued to oppose and clash with forces loyal to the internationally recognised government of Abdrabbuh Mansur Hadi, who was eventually forced to flee to Aden.On 21 March 2014, after taking control of Sana'a and government offices, the Houthi Supreme Revolutionary Committee declared a general mobilisation to overthrow Hadi, who by this point had fled to Aden, and in so doing extending their control by driving into southern provinces. The Houthi offensive, allied with military forces loyal to Saleh, began immediately after. By 25 March, the Houthis and they reached the outskirts of Aden, the seat of power for Hadi's government.

Consequently, a coalition led by Saudi Arabia launched military operations by using airstrikes to restore the former Yemeni government with the United States providing intelligence and logistical support for the campaign.

Recent peace initiatives have brought most parties to the table and all parties are seeking an end to the hostilities and an end to the humanitarian famine crisis that has developed from lack of available food.

US and Saudi forces have been mopping up the last of the rebels such that economic activity is on its way to becoming normalised.

On current indications, the reopening of the important Marib Pipeline to the Red Sea is likely to take place within the next eighteen months.

US Strategic Policies

The new US administration of President Donald Trump has also significantly increased its drone attack program against the Houthi rebels in 2017.

US attacks have been highly targeted

The Strait of Hormuz has been well known as a critical sea passage from the Saudi and other oil and gas fields around the Persian Gulf. The Bab al-Mandab Strait on Yemen's southwestern coast links the Gulf of Aden to the Red Sea and Suez Canal for shipments into the Mediterranean and beyond but is much narrower. Saudi and UAE forces have had much at stake so, with US air and naval support, have essentially neutered the earlier uprisings by the Houthis.

MPS
MARTIN PLACE SECURITIES

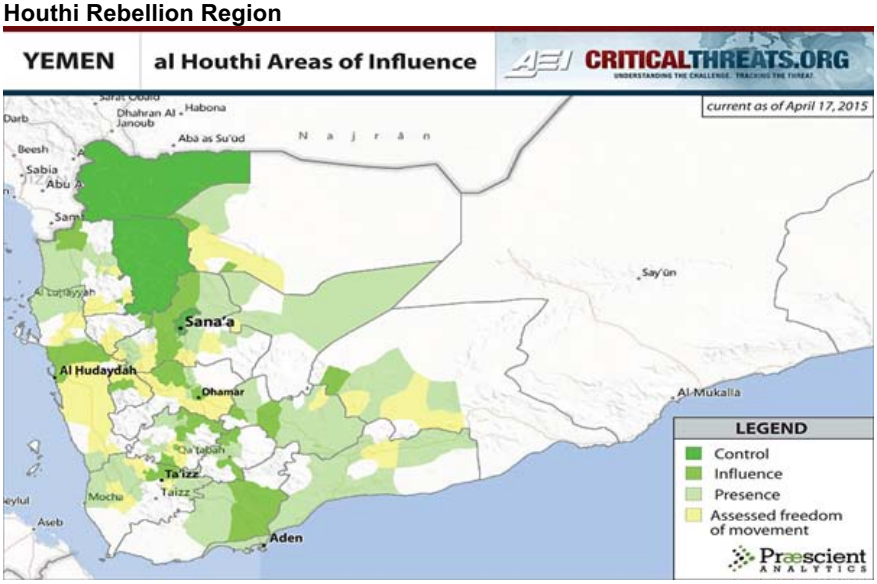
Naval safety is assured by US and Saudi escort ships

Masila pipeline has operated without incident since August 2016

The location of the PSA operations are well outside the areas of current conflict, which, as this diagram indicates, are primarily in the North-West abutting the border with Saudi Arabia and on some areas closer to the Red Sea.

Whilst interference can occur anywhere, PSA operations are in a region that are the old South Yemen and is more than 500km from the locations of current uprisings. Most of the fighting has taken place within the districts of the old North Yemen.

Houthi Rebellion Region



Source: Praescient Analytics

The re-opening of the Masila pipeline in August has continued since August 2016 without incident and oil tankers have successfully lifted around 6 million barrels with support of US and Saudi navies.

MPS
MARTIN PLACE SECURITIES

Board has long experience in oil and gas

US operators have had long term track record

MENA team has been associated with Yemen for over 20 years

8.0 Management

The Board of Petsec Energy

Terry Fern – Founding Director of the current company. Geologist with wide experience in petroleum and minerals exploration development and financing.

David Mortimer – Highly credentialed and experienced company director with roles including being chairman of several large listed (Leightons Holdings) and unlisted companies (Australia Post). Ex CEO of TNT Ltd.

Alan Baden – US attorney with wide experience over 40 years in US oil and gas.

US Management

Ross Keogh – President of Petsec Nth America and Group CFO

Dick Smith – CEO of Petsec Nth America, 45 years oil and gas experience

Ron Krenzke – Exploration VP, highly experienced geologist based in Houston

MENA Management

Maki Petkovski – CEO Petsec Middle East Former MENA Team Leader at Oil Search for 20 years.

Murray Hawkes – Chief Operating Officer Petsec ME ex Oil Search MENA team

John Rees – VP Technical Petsec ME with >25 year MENA/Yemen experience

Corporate Management

Paul Gahdmar – Company Secretary and Group Financial Controller

Manny Anton – Head Investor Relations and Corporate Development

9.0 The Petsec Balance Sheet

The Petsec Balance Sheet is simple and at 31 December 2016 had gross assets of US$35.4m and liabilities of US$17.3m giving net assets of US$18.1m.

The assets are US$10m in cash, US$3.4m in rehabilitation bonds and US$17m in oil and gas properties.

Liabilities are mostly trade payables and US$4.5m in non-current borrowings from Tranche 1 of the Convertible Notes.

Cash assets are sufficient to commence operations at An Nagyah and at Hummer in the current financial year.

Petsec has acquired the Yemen assets very cheaply and has arranged a 2 year US$15m Secured Convertible Note facility through a major shareholder Republic Investment Management and its associates through Sing Rim Pte Ltd of Singapore.

The facility was established to finance the development of the Yemen Operations at An Nagyah in the Damis Block S-1.

The facility has three tranches of US$15m.

Tranche 1

Drawn down by Petsec in Dec 2016 with a 12.5% coupon with principal and interest conversion at A$0.15.

Tranche 2

To be drawn down to fund the Yemen oil projects.

Sub tranches are available to be drawn down against:

1. US$2m resumption of oil production in Yemen by the Petro Masila and delivery of oil to the export markets.
2. US$2m in four lots of US$500,000 each on production of 50,000bbls of oil from Petsec's operations shipped ready for sale
3. US$1m in two lots of US$500,000 each on sale of 50,000bbls of oil

The principal and interest can be converted at up to 50% of the Tranche facility at A$0.25 per share.

Tranche 3

To be drawn down in ten lots of US$500,000 for each 50,000bbls of oil sold in excess of the 100,000bbls per month delivered under Tranche 2.

The principal and interest can be converted at up to 50% of the Tranche at A$0.30 per share.

As stated at 31 December 2016 US$4.5m had been drawn down under the facility.

MPS
MARTIN PLACE SECURITIES

The Valuation Matrix is a combined P&L, Cashflow and balance sheet.

P&L gives contributions to earnings with cashflow and capex

Book Value shows balance Sheet Items

Market Value gives arm's length valuation (here, Audited NPV$_{10}$s)

Appraised Value is the value MPS attributes to each asset.

EPS and cashflow numbers are given

The Appraised Value is given PERs and PCFRs for that A$1.46 price.

Valuation Matrix

Petsec Energy		0.15	Valuation Matrix						Revenue	Book Value		Market value*		Appraised Value	
US$/A$		0.75													
Year end Dec	%	2015	2016	2017	2018	2019	2020	2018	US$m	US$/sh	A$/sh	US$m	US$/sh	A$/sh	US$m	US$/sh	A$/sh
Louisiana	25.0	-3	-1	-1	1	1	1	3		4	0.01	0.01	8	0.03	0.03	8	0.03	0.03
Main Pass 274	10.2	0	0	1	3	6	9	4		8	0.03	0.03	18	0.06	0.08	42	0.13	0.18
Block S-1#	82.0	0	-2	1	28	55	60	65		3	0.01	0.01	155	0.48	0.65	233	0.73	0.97
Block 7*	85.0	-1	-1	0	3	7	7	6		3	0.01	0.01	3	0.01	0.01	43	0.14	0.18
Yemen Exploration		0	-1	0	-2	-3	-3			0	0.00	0.00	0	0.00	0.00	25	0.08	0.10
GG&A		-5	-6	-6	-6	-7	-8			-6	-0.02	-0.03	-6	-0.02	-0.03	-6	-0.02	-0.03
DD&A		-1	-1	-1	-2	-4	-5			0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Conv Note Int/debt		0	-1	-1	-1	0	0			-3	-0.01	-0.01	-5	-0.01	-0.02	-5	-0.01	-0.02
Interest/ (net cash)		0	0	0	0	1	2			10	0.03	0.04	10	0.03	0.04	10	0.03	0.04
Pretax		**-11**	**-13**	**-7**	**24**	**56**	**63**	**78**		**18**	**0.055**	**0.073**	**183**	**0.57**	**0.76**	**351**	**1.10**	**1.46**
Tax		0	0	0	0	0	0				0.00	0.00		0.00	0.00		0.00	0.00
Net		**-11**	**-13**	**-7**	**24**	**56**	**63**	**78**		**18**	**0.055**	**0.073**	**183**	**0.57**	**0.76**	**351**	**1.10**	**1.46**
Cashflow		-9	-9	-5	29	63	71											
Capex		12	3	3	10	15	25											
EPS US$		**-0.04**	**-0.04**	**-0.02**	**0.07**	**0.18**	**0.20**											
EPS A$		**-0.06**	**-0.06**	**-0.03**	**0.10**	**0.23**	**0.26**											
CFPS A$		**-0.05**	**-0.04**	**-0.02**	**0.12**	**0.26**	**0.29**											
Shares on issue		240	290	320	320	320	320			Market value* Audited NPV$_{10}$					Appraised Value			**$ 1.46**
																2018	2019	2020
PER			**-2.6**	**-4.9**	**1.5**	**0.6**	**0.6**								PER	14.7	6.3	5.6
PCFR			**-3.4**	**-6.8**	**1.2**	**0.6**	**0.5**								PCFR	-34.3	6.2	2.9

MPS
MARTIN PLACE SECURITIES

GENERAL SECURITIES – ADVICE WARNING

Martin Place Securities makes no representation and gives no warranties to the accuracy or reliability of any information contained in this document and does not accept any liability for any loss caused by representations, errors or omissions on the part of Martin Place Securities or by any of their respective officers, employees or agents. In preparing this information, Martin Place Securities did not take into account the investment objectives, financial situation and particular needs of the reader.

Before making an investment decision on the basis of this information, the reader needs to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of their particular investment needs, objectives and financial circumstances.

ANALYST VERIFICATION

Barry Dawes, as the author of this report, and as Head of Resources of Martin Place Securities, hereby certifies that the views expressed in this research accurately reflect his personal views about the subject securities or issuers. No part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research has received compensation based on overall revenues, including investment banking revenues, of Martin Place Securities. The Analyst has taken reasonable care to achieve and maintain independence unbiased objectivity in making any recommendations.

RESEARCH DISCLAIMER

Investment Research provided has been prepared for the general use of the clients of Martin Place Securities and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient, you must not use or disclose the information in this research in any way. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account the investment objectives, financial situation and particular needs of the reader. Before making an investment decision on the basis of this research, the reader needs to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of their particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of Martin Place Securities accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

DISCLAIMER

Martin Place Securities and its associates declare that as of 10 June 2017, they may have a relevant interest in the securities recommended herein.

The author of this report holds shares in the companies mentioned herein. This position may change at any time.

Martin Place Securities was Broker and Underwriter to the recent A$11m rights issue at A$0.15.