

INVICTUS  
ENERGY LIMITED

## Mukuyu-1 evaluation update, operations completed and Phase 2 campaign planning commenced

23 January 2023

### HIGHLIGHTS

- Mukuyu-1 ST1 identifies 13 potential hydrocarbon bearing zones
- Combined 225m gross potential hydrocarbon bearing zones identified in primary Upper Angwa target
- Mukuyu-1 ST1 operations completed
- Rig 202 is rigged down in preparation for maintenance and upgrades
- Planning commenced for Mukuyu appraisal & Phase 2 drilling and evaluation

Invictus Energy Limited ("Invictus" or "the Company") is pleased to provide an update on operations at its 80% owned SG 4571 licence in Zimbabwe's Cabora Bassa Basin.

#### Comments from Managing Director Scott Macmillan:

*"The Mukuyu-1 and ST1 drill campaign has been a great success, identifying 13 potential hydrocarbon bearing zones across the Pebbly Arkose and Upper Angwa formations.*

*"Significantly, a combined 225 metres of gross potential hydrocarbon bearing zones have been identified in the primary target Upper Angwa, which still contains deeper untested potential.*

*"This is an outstanding result and virtually unprecedented for the first well in a frontier basin, establishing a new petroleum province and substantially de-risking the Company's wider acreage in the Cabora Bassa Basin.*

*"We are still interpreting all the data, with results to be integrated into the seismic data and basin models to guide future well locations and exploration prospect selection."*

#### Mukuyu-1 ST1 identifies 13 potential hydrocarbon bearing zones

Following completion of operations of the Mukuyu-1 ST1 well, a total of 13 potential hydrocarbon bearing zones were interpreted in the Pebbly Arkose and Upper Angwa formations.

Of note is the primary target Upper Angwa formation, with 11 identified potential hydrocarbon bearing zones totalling a combined 225 metres.

#### ABOUT INVICTUS ENERGY

Invictus Energy Ltd is an independent oil and gas exploration company focused on high impact energy resources in sub-Saharan Africa. Our asset portfolio consists of a highly prospective 360,000 hectares within the Cabora Bassa Basin in Zimbabwe. SG 4571 and EPOs 1848/49 contain the Mukuyu and multiple Basin Margin prospects

#### BOARD & MANAGEMENT

**Joe Mutizwa**  
Non-Executive &  
Deputy Chairman

**Gabriel Chiappini**  
Non-Executive Director  
& Company Secretary

**Scott Macmillan**  
Managing Director

All potential hydrocarbon bearing zones have been isolated and plugged and the Mukuyu-1 and ST1 wells have been left in a safe condition.

The potential hydrocarbon bearing zones that have been isolated are as follows:

Formation	Top of Interval mMDRT	Bottom of Interval mMDRT	Gross Interval <sup>1</sup> mMDRT <sup>2</sup>
Pebbly Arkose	2456	2459	3
Pebbly Arkose	2678	2683	5
Upper Angwa	2823	2852	29
Upper Angwa	2969	3007	38
Upper Angwa	3023	3072	49
Upper Angwa	3120	3150	30
Upper Angwa	3173	3189	16
Upper Angwa	3254	3257	3
Upper Angwa	3296	3309	13
Upper Angwa	3417	3445	28
Upper Angwa	3465	3467	2
Upper Angwa	3484	3488	4
Upper Angwa	3526	3539	13

Table 1 - Potential hydrocarbon bearing zones isolated in Mukuyu-1 ST1

<sup>1</sup>Some gross intervals may contain significant proportions of non-net reservoir. Further log calibration will be obtained following completion of side wall core analysis.

<sup>2</sup>metres Measured Depth below Rotary Table (mMDRT)

Wireline log interpretation calculated porosity of up to 15% and gas saturation of up to 90% in selected potential pay zones in the Upper Angwa but are yet to be calibrated with fluid and core data and subsequently subject to wide margins of error.

Weak to strong hydrocarbon fluorescence was noted from approximately 2,100m Measured Depth (mMD) in the Pebbly Arkose and was consistent to TD at 3,923mMD, with up to 100% fluorescence observed in some cuttings and side wall cores.

Further reservoir and potential pay intervals in the Upper Angwa intersected when the Mukuyu-1 well was deepened from 3,618 to 3,923m could not be fully evaluated due to a breakdown in the borehole, preventing logging of the deepened section.

The Upper Angwa primary target contained a 1,400m vertical section of sand, siltstone, carbonaceous claystone and coal, which can be indicators of potential hydrocarbon reservoirs and have confirmed the presence of competent seals.

The interpreted gas sands suggest good calibration with the velocity (Vint) slowdowns observed at the 500 and 600 surfaces (currently interpreted to represent the Pebbly Arkose and Upper Angwa, respectively), as shown in Figure 1, and will provide both calibration for mapping this anomaly around the Mukuyu structure and application to the Pebbly Arkose and Upper Angwa play in the remaining prospect portfolio.

Additional reservoir intervals encountered in the Pebbly Arkose sections with porosity up to 20% (not included in Table 1) contained minor fluorescence and elevated gas shows above background.

Log interpretation indicates residual gas saturation within these sands, establishing hydrocarbon migration has occurred through this zone and provides for additional targets in updip locations towards the crest of the structure.

Multiple reservoir sand and seal pairs were intersected in the Post Dande, Forest, Pebbly Arkose and Upper Angwa formations and multiple intervals of rich source encountered in the Upper Angwa as prognosed.

Deeper untested potential remains in the Mukuyu structure, with the bottom of the Upper Angwa not reached in either Mukuyu-1 or ST1, while the Lower Angwa was also not intersected.

The success of Mukuyu-1 on the southern flank of structure in a location that is 300m below the crest (Figure 1) also provides further untested updip potential, which will be targeted in forthcoming drilling programs.

The Mukuyu-1 and ST1 operations have been concluded with no Lost Time Injuries and rig down completed.

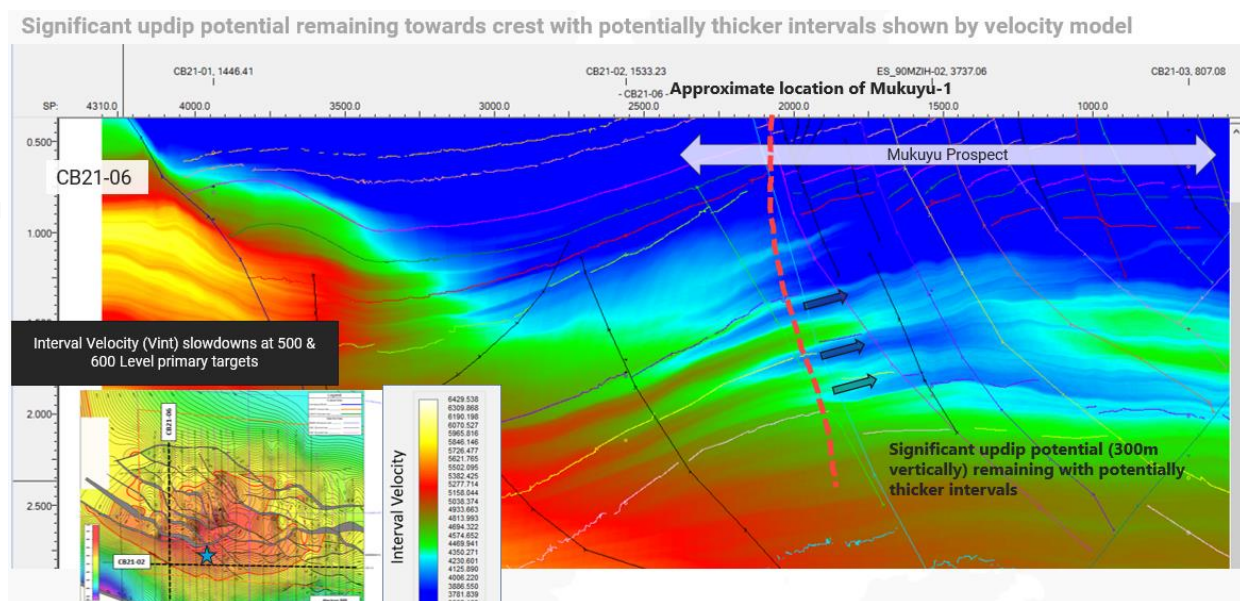


Figure 1 - Updip potential towards crest of Mukuyu structure shown by interval velocity slowdowns in Pebbly Arkose and Upper Angwa

## Mukuyu appraisal and Phase 2 drilling program planning commences

Rig 202 is warm stacked at the Mukuyu-1 well location to allow for maintenance and upgrades prior to recommencing drilling.

Laboratory analysis of sidewall cores acquired during logging, and drill cuttings and mudgas samples acquired whilst drilling will provide further calibration of the wireline and the geological model once completed.

These results will be integrated into the seismic data and basin models to guide future well locations and exploration prospect selection.

The Company is now assessing the forward work program and a range of targets for the first well in its Phase 2 drilling campaign, including Mukuyu-2 and Baobab-1, as well as other promising exploration prospects identified across the wider Cabora Bassa acreage.

The timing of the forward exploration and drilling will be determined following the completion of long lead and well services tendering exercises which are commencing imminently.

## Cabora Bassa Basin petroleum system pre-drill vs. post drill summary

The pre-drill interpretation and understanding of the Cabora Bassa Basin was a gas prone petroleum system with potential seal and charge vs trap timing (containment) risk.

Post-drill, results from the Mukuyu-1 and subsequent sidetrack have proven a working hydrocarbon system and the presence of gas-condensate and potentially light oil, evidenced from elevated mudgas (C1-C5 components), fluorescence and wireline log interpretation, significantly de-risking remaining prospectivity in the basin.

The primary pre-drill risks of seal (presence and effectiveness) and source rock (presence and quality) have effectively been de-risked with the intersection of multiple competent seals and presence of gas filled sands indicating the preservation of reservoired hydrocarbons, significantly reducing the historically high risks of containment.

A summary of the pre-drill vs. post-drill petroleum system in the Cabora Bassa Basin is shown below and overpage.

Petroleum System Element	Pre-Drill	Post-Drill
Trap	Considered to be relatively low risk – Mukuyu anticline is large and reasonably well defined by 2D seismic interpretation and amplitude extraction work	Considered to be low risk – the Mukuyu anticline has been proven to have closure.

<b>Source</b>	Considered to be of moderate risk – the basin is undrilled, with no source rock proven to date. A seep to the south, geochemistry of outcrop samples and charge modelling suggests a working petroleum system is present, however the extent and mechanisms of this are not well defined	Considered to be low risk – both source rock and hydrocarbons were intersected with evidence of lateral migration as well as present day generation on structure from interbedded source rocks
<b>Reservoir</b>	Considered to be of moderate risk – legacy porosity and permeability measurements of outcrop samples suggest reservoir quality sandstones are present throughout the sedimentary sequence, however lateral extent is unknown	Considered to be of moderate risk – good porosity values (up to 15% in Upper Angwa, 20% in Pebbly Arkose and 30% in Dande) were interpreted from petrophysical logs. Lateral extent and continuity of reservoir sands is still unknown
<b>Seal &amp; Containment</b>	Considered to be relatively high risk – historically the basin is considered to be dominated by sand, with minimal shale development. Invictus research and depositional environment interpretation suggests intraformational seals should be present, however the extent and competency of these is uncertain. Multiple episodes of structural movement also indicate the potential for leakage of accumulated hydrocarbons	Considered to be relatively low risk – multiple seals were intersected in the well, and the presence of hydrocarbons suggest containment is lower risk than initially thought on the southern flank of the Mukuyu structure. Multiple shales, claystones and siltstones throughout the drilled sequence confirmed the presence of competent seals.
<b>Timing</b>	Unknown	Proven

-Ends-

Approved for release by the Board

## Questions and enquiries

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### About Invictus Energy Ltd (ASX: IVZ)

*Invictus Energy Ltd is an independent upstream oil and gas company listed on the Australian Securities Exchange (ASX: IVZ). The Company is headquartered in Perth, Australia and has offices in Harare, Zimbabwe. Invictus is opening one of the last untested large frontier rift basins in onshore Africa – the Cabora Bassa Basin – in northern Zimbabwe through a high impact exploration programme.*

*Invictus Energy is committed to operating in a safe, ethical and responsible manner, respecting the environment, our staff, contractors and the communities in which we work.*

**#Cautionary Statement:** *The estimated quantities of petroleum that may be potentially recovered by the application of a future development project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation are required to determine the existence of a significant quantity of potentially movable hydrocarbons. Prospective Resource assessments in this release were estimated using probabilistic methods in accordance with SPE-PRMS standards.*

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