

COMPANY	Melbana Energy Limited (MAY)	28 th June 2024
MCAP / SHARE PRICE	\$111m; Current share price \$0.033/share	
VALUATION	Our risked valuation is \$0.073/share – revised from \$0.145/share	
NEWS	<p>Middle Section (Alameda Formation) flow test of Alameda-3 well fails to flow to surface. <i>An unexpected, disappointing, if still ambiguous outcome.</i></p> <p>Similar problem to the Lower Section (Marti Formation) inconclusive flow test</p> <ul style="list-style-type: none"> • Despite a different flow test design and an initial rise in pressure to 3,031 psi suggestive of movement, the Alameda Formation test failed. • The Alameda-3 well is to be suspended for future re-entry once remedial action is devised. <u>We have altered our valuation to reflect the uncertainty.</u> • MAY's activities focus moves to oil production commercialisation activities of the Upper Section (Amistad) Unit1B discovery made in 2023. 	

Link to this report:

Link to Pre-latest flow test Note 25th June 2024 – [Flash Desk Note](#) ; Link to Marti flow report: [RR_MAY240618](#)

Maiden Resource [RR_MAY240326](#)

A significant disappointment, with an undefined explanation

The reason for the lack of oil flow ~2 week ago of the Lowest Sheet (Marti Reservoir) has not been definitively pinpointed. Pressure, temperature and either the interaction of drilling mud fluids with the formation or oil contained within, perhaps created an emulsifying or a semi-solidification effect on fluids that stopped flows.

Significant differences in the isolation and completion for flow testing the Middle Sheet (Alameda Formation) was thought by MAY and this analyst sufficient to avoid a repeat failure. *Unfortunately, this test also failed.*

The outcome is baffling given that the usual indicators for good flow rates were present. These included both fracture and conventional porosity backed up by wireline/FMI and other data and the presence of moveable oil during drilling operations without evidence of significant formation water.

"At this stage the Company is unsure whether this is due to formation damage related to the formation of an emulsion, i.e. an oil-drill mud reaction, or a rock-drill mud reaction" is a key statement from MAY.

Forward plan – suspend Alameda-3 well for re-entry; and Commercialisation of Amistad oil zone

- MAY will move to suspend the Alameda-3 well, after pulling the pressure gauges, DST string and gathering other data. *This to enable future re-entry of Alameda Formation and possibly the Marti as well.*
- MAY will assess and devise an optimum remediation plan based upon all new data, previous drilling experience, and perhaps crucially with international and local expert carbonates field knowledge.

Importantly, these results do not impact initial field development plan based on Amistad Unit 1B which is on track to deliver an extended well operations following Alameda-3 well activity's cessation.

Commercialisation plan – DecH 2024 activity

The data from producing the Upper Sheet – Amistad formation Unit 1B from the Alameda-2 well – now to be known as **Amistad-1**; will be used to compile a full commercialisation plan over the DecH 2024 to support acquiring the equivalent of a production licence.

Once awarded, oil sold recently and in the interim for credits, will be converted to cash.

In practice, this includes compiling a field development and production data, onsite handling, tankage and truck transfer management plans. Then transport onto either nearby oil battery/pipeline to local refineries. Alternatively, to the also proximate to MAY's Block 9, an export oil terminal.

Melbana will provide regular updates on the development program through to first oil exports later this year.

Reserves Booking and Funding Options

An award of a production licence will allow conversion into Reserves, some of the Contingent 2C (50% probability) oil Resource of 46 million bbl for Eastern portion of the upper formation (Amistad) Unit 1B.

This maiden Resource was declared in March 2024 by McDaniel and Associates.

A funding mechanism for drilling numerous development wells has not yet been disclosed. However, a declaration of Reserves and demonstration of production and movement to customers makes possible a variety of debt funding options – including Reserves backed lending. Standard practice in field development funding.

Review of Valuation – our Risked \$0.148/share valuation is re-set to \$0.073/share

Our valuation carried in our reports since the March 2024 declaration of Maiden Resource **was a risked value of \$0.148/share. Our new valuation is \$0.073/share.** Big changes were generated in two parts of the valuation:

Part A: Commercial impact upon Upper Reservoirs

- First we reduced our NPV per bbl from A\$10/bbl to \$9.75/share to incorporate either slower lifting, or more production lift assist in case the complicating factors at depth have an echo in upper formations.
- A small reduction in the Amistad West – Prospective Resource recovery of ~1mm bbl to a net 14mm bbl to MAY. Again to reflect potential for perhaps additional lifting that with added cost can reduce economically recoverable oil resource.
- We overlay added commercial risks to this valuation as MAY moves to commercial phase and funding.

Overall these valuation changes contributed a **\$0.030/share reduction** in our valuation of the Amistad Unit 1B East Resource and Amistad Unit 1B West Prospective Resource.

Note - good extended well performance of Amistad-1 could reverse our added layering of conservatism.

Part B: A sobering re-assessment of the Middle and Lower Reservoirs

In addition we reviewed more conservatively, the Middle Sheet - Alameda Formation and the Lowest Sheet – Marti Formation valuation based upon Prospective Resources following the failed flow tests of the past 2 weeks.

While not altering the volumetrics, we have recognised the added uncertainty of converting in-place oil to future reserves. This was via reducing our confidence factor (i.e. 1 minus the risk % factor) from 40% to just 22%.

In addition, commercialisation risk overlay was incorporated for added expenditures and/or ownership dilution.

This **reduced our risked valuation by a steep \$0.042/share.**

A remediation plan for Alameda-3 Mid- and Lower Formations to induce free flowing oil, could see a big re-rating of our valuation, though will require added funds to secure this outcome.

There is plenty of oilfield precedent of remediation of carbonate reservoirs interface with a well bore to enhance output. We note that around 60% or more of the world's production to date has come from carbonate reservoirs.

Other valuation changes – less material

Remaining valuation change reflects the reduction net cash movements, only to a \$0.003/share reduction.

One upside not contained in the valuation is the potential for Upper Sheet Amistad Units 1A, 2 and 3 to have a declared Resource. We await an updated McDaniels review of these Units and expect some positive news.

Detailed valuation matrix and final column change of our valuation is as follows.

Melbana Energy Ltd	Equity Melbana	Resource P50 Best	Resource Best	Net of Risk Valuation	Valuation	Risk Valn Melbana	Riskd Valn/share	Riskd Valn Δ
Price Shares No	\$0.033 3,370	%	Unrisked mm bbl	Riskd mm bbl	%	A\$/boe	A\$m	A\$/share
<i>Volume Source: McDaniels Resource Update</i>								
Amistad Unit 1B East - Develop't pen	30.0%	14	11	80.0%	\$9.50	105	\$0.031	-\$0.002
Amistad Unit 1B West - Prospective	30.0%	27	14	52.5%	\$9.50	135	\$0.040	-\$0.005
Amistad Unit 1B total		41	25			240	\$0.071	-\$0.007
Adjusted for Commercial and other risks			25	66.7%	\$6.34	160	\$0.047	-\$0.030
<i>Other Amistad FM</i>	<i>30.0%</i>	<i>0</i>	<i>0</i>	<i>0.0%</i>	<i>\$9.50</i>	<i>0</i>	<i>\$0.000</i>	<i>\$0.000</i>
<i>- awaiting McDaniel Resource Update</i>								
<i>Prospective Formations - Alameda-3 drilling ambiguous flow tests</i>								
Alameda Formation - Prospective	30.0%	33	7	22.0%	\$9.50	68	\$0.020	-\$0.019
Marti Formation - Prospective	30.0%	21	5	22.0%	\$9.50	44	\$0.013	-\$0.012
Total Lower Formations		54	12			112	\$0.033	-\$0.030
Adjusted for Commercial and other risks			12	66.7%	\$6.34	75	\$0.022	-\$0.042
Total Alameda Field Valuation		95	37	26.1%	\$6.34	235	\$0.070	-\$0.072
Acreage Valuation: 10% of base valuation						23	\$0.007	-\$0.000
Cash @ 31 Mar 24						16	\$0.005	
Other Net Current items @ 31 Dec23						2		
Option and capital raised						0		
Jun Q expenditure est.						-15		
Net Cash						3	\$0.001	-\$0.003
Corporate costs NPV						-15	-\$0.005	
Total Valuation						246	\$0.073	-\$0.075

Sources: PAC Partners estimates, McDaniels report of Resources and Prospective Resources.

For reference – The Update Note from 25th June 2024 contains our pre-test expectations

Flow testing has commenced on the Alameda reservoir, over the interval 3272- 3450mMD (see Figure 1) – to take ~5-days.

The test program has been altered on learnings from inconclusive lower formation test results last week.

Objective of the flow testing program is to determine oil quality and flow rates for the Alameda reservoir (the Middle Sheet Reservoir).

Success here in our view would lead to completion of current zone for later extended well flow tests later in 2024. Next oilfield activity after Alameda-3 completion is an Extended flows for commerciality testing of the Alameda-2 completed in the Unit 1B Upper Sheet called the Amistad Formation.

Quality improvement with depth thesis – important and positive commercial implications

Ongoing analysis of samples collected from the Marti flow-test program conducted prior to 17th June (Lowest sheet Reservoirs)

This points towards a major objective of the Alameda-3 well being attained – that oil quality improves with greater depth, *though more analysis is required for confirmation.*

Preliminary analysis found higher than average 18.9°API with 2.3% sulphur crude,

This compares to dominant Cuban Upper Sheet production of 9°API to 12 and would be likely to command higher oil price and should have comparatively better production flow rates.

Re-design of Alameda-3 Middle Sheet Flow test that started Monday – Cuba time.

Originally up to 3 separate flow tests of different sections of the Alameda Reservoir were intended.

Instead, the test will be over a single zone with perforations covering the lower section which is interpreted to contain the highest porosity and productivity interval as indicated by wireline logs (see Figure 1).

MAY's re-design seeks to avoid what perhaps was a contributing factor to the lower-than-expected performance of the Marti reservoir. That is an emulsion formed between oil and drilling mud within the test string.

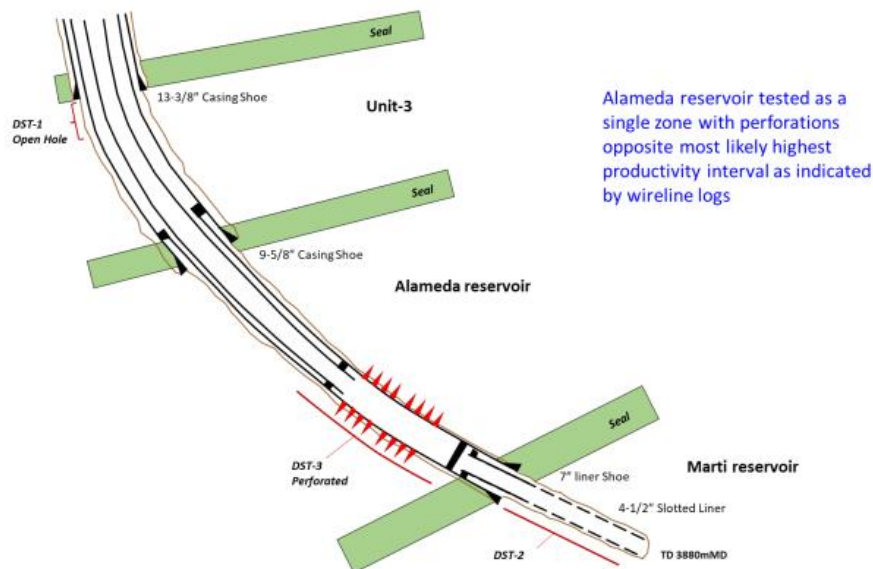


Figure 1: Positioning of the Alameda reservoir where flow testing has commenced at depth

This test program supersedes last weeks released 3 test program – for comparison, see next page.

Report dated - 18th June 2024 key points are below:

Alameda-3 deepest test zone fails to flow oil to surface.

Puzzling result – as had good fracturing, definite oil indications and confirmed high pressures would otherwise indicate oil flows were likely

Unexpected lack of oil flow to surface – despite good fracturing & oil shows

On the 17th of June 2024 – MAY reported a well test of the lowest reservoir section of the Alameda 3 well in Block 9 PSC, onshore Cuba about 140 km east of the capital, Havana. MAY has a 30% interest and is the licence operator.

Key facts

MAY successfully set 4.5-inch slotted liner in the lowest Marti Reservoir. The open flow was from 3642-3880 mMD measured depth. Drill stem testing was conducted over a 6-day period and included shut-in and flow sequences.

Natural flows did not reach the surface, yet oil contaminated with drilling fluid was recovered on reverse circulation and samples obtained.

The inconclusive result was despite indications of significant reservoir fracturing, confirmed high pressure reservoir and presence of oil with the absence of formation water. These are normally all highly encouraging signs. Extra information from downhole pressure recorders and laboratory tests for oil quality data may shed further light on whether to pursue re-entering and re-testing the Marti Reservoir, over coming weeks.

MAY stated the two attempts to flow the well may have been compromised by the inability to remove all heavy drilling mud. This could have emulsified oil with mud making it heavy/sluggish to flow as no mechanical issue was detected to impede flows. Cracking the downhole chemistry could unlock a resource.

Next activity – Flow testing of the overlying Alameda Formation

MAY will isolate and suspend the lower Marti formation for possible later re-entry following investigations.

To move higher to the Middle Sheet Alameda Formation and conduct 2 or 3 flow tests. MAY had previously drilled, logged this section and have high-graded particular zones to test.

The inconclusive flow test of the Marti Reservoir is disappointing, though full explanation may yet reveal it to be a zone of potential commercial significance. We await further data and now look to Alameda Formation flow tests.

Importantly, MAY designed the well to be completed from the best zone – in either the Marti or Alameda formations.

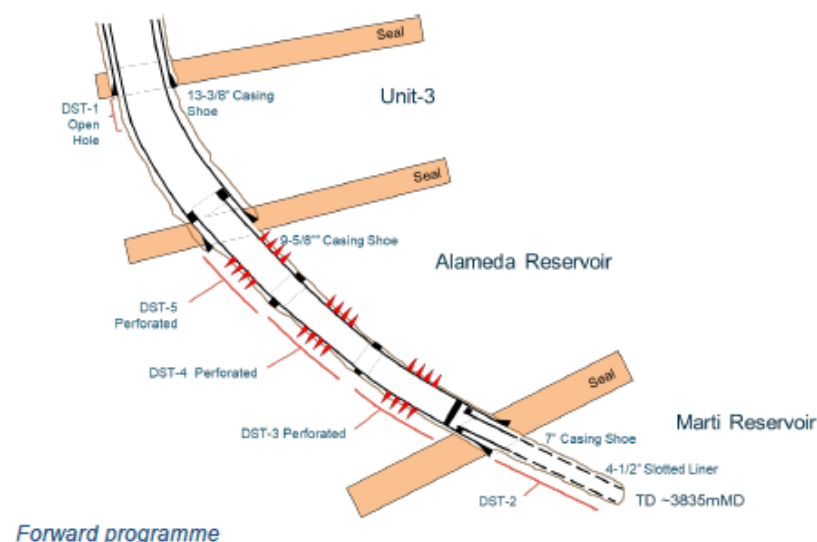
Additionally, MAY is currently preparing for extended flow testing of the Unit1B of Alameda-2 as prelude to commercial production in Cuba. On success case, Reserves backed funding can enable multiplied output growth.

We also seek a timeline for EOG's drilling an Australian billion boe prospect which MAY has royalty interest. In addition MAY has potential to farmout its own acreage for future drilling in WA/NT – see *further details below*.

Lower Marti Reservoir inconclusive flow test

Next operation to move up to the Alameda Formation for 3 planned Flow Tests

Note this test program has now been altered as outlined above



Sources: MAY's Presentation on left; and 17 June 2026 announcement on right

Extensive Fracturing of Marti Reservoir

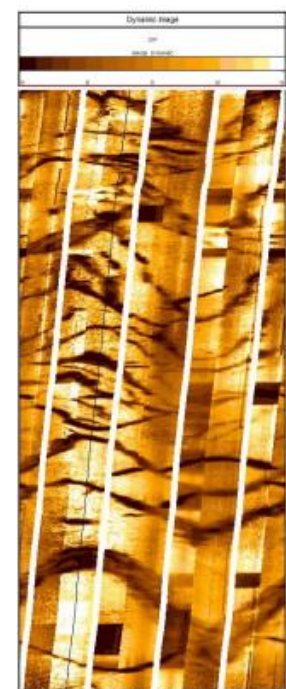


Figure 1 – FMI from Alameda-3 Marti formation demonstrating high degree of fracturing

COMPANY BACKGROUND

Melbana Energy Limited (ASX – MAY) is an ASX-listed oil & gas explorer and developer in Cuba and Australia. Formerly known as MEO, Melbana has built-up and successfully traded a portfolio of assets in hydrocarbon rich basins. It has done this with technical excellence, value-adding and prudent risk-taking. More drilling, production testing and deal execution can add to valuation.

Key Risks of Investment

Melbana Energy has risks of early-stage oil & gas exploration/development companies, but are not limited to:

Exploration and appraisal well operations are inherently risky as wells may experience operational problems as well as encounter unexpected results or failures to delineate commercial hydrocarbons.

MAY's Block 9 asset has **complex geology**, that makes interpreting 2D seismic difficult. While MAY has made great strides in complimenting seismic with other predictive processes, there remains high exploration risk. *3D-seismic is being considered to aid well siting and resource/reserve estimation.*

Risks also applies to laterally set appraisal wells, as reservoir quality can change markedly over short distances. MAY is moving from a pure exploration company to a combined production and explorer-developer company. This transition will at least initially require elements of external funding. MAY could find difficulties in obtaining debt and equity funding to permit output expansion.

While MAY have experienced timely licence and operations signoffs to date, there may be changes to or practical difficulties in obtaining regulatory permissions to moving to full field development.

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Speculative buy = We expect the stock's total return (nominal yield plus capital appreciation) to exceed 20% over 12 months. The investment may have strong capital appreciation but also has a high degree of risk and there is a significant risk of capital loss.

Speculative Buy			
>20%	Buy	Hold	Sell

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>20%	20% – 5%	<5%
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