

Block 9, Alameda-2: Appraisal Update

Highlights

- Presence of moveable oil in Unit 3 confirmed. Testing indicates potential to flow at about 750 barrels of oil per day.
- Oil quality appears to be similar to Unit 1. Samples being analysed.
- No formation water observed during the flow test or from logs.
- Unit 3 penetrated 200 metres updip and 500 metres to the south of Alameda-1.
- Total logged Net Pay for the Amistad interval now 346 metres TVD, increasing to 615 metres TVD when natural fracturing incorporated.
- Testing of Unit 2 has commenced, with Unit 1B to follow.

Melbana Energy’s Executive Chairman, Andrew Purcell, commented: “Results from Unit 3 have again demonstrated the presence of moveable hydrocarbons in the Amistad interval – adding to what was already found in Unit 1A. Also similar to Unit 1A, the good quality logs obtained have allowed us to identify natural fracturing that enhance the productive qualities of the reservoir. That Unit 3 was intercepted some 500 metres away and 200 metres updip from where the same unit was intercepted in Alameda-1 means we have a significant oil bearing formation typical of what is normally produced in Cuba. We still need to test the last two units, but from the results obtained to date we now have the potential for a project in this upper sheet Amistad formation.”

SYDNEY, AUSTRALIA (15 August 2023)

Melbana Energy Limited (ASX: MAY) (**Melbana** or **Company**), a 30% interest holder in and operator of Block 9 PSC onshore Cuba, provides this update on its appraisal well Alameda-2.

Unit 3 of Alameda-2 was penetrated 200 metres updip and 500 metres to the south of Alameda-1. Total depth for the 6” hole section was reached at 1,975 metres MD on 31 July 2023, after which wireline logging operations were undertaken from TD to the casing shoe at 1,594 metres MD. Upon completion of the wireline logging operation, a slotted liner was run with liner slots located over limestone reservoir sections in the basal sections of Units 2 and 3.

The initial inflow of the DST displaced a 63-barrel water cushion over a 2-hour period, equating to an approximate flow rate of 750 bopd. Oil did not flow to surface as the weight of the fluid column naturally killed the well. A static gradient survey confirmed that 8.2 cubic metres of fluid had flowed into the string (of a potential string volume of 10 cubic metres). The column of fluid in the string comprised minor solution gas, predominantly viscous oil and some drilling mud.

No formation water was present. Oil samples have been obtained for lab analysis. The estimated oil gradient derived from the static gradient survey was 1.47-1.49 psi/metre indicating a heavy oil similar to the results of the DST undertaken in Unit 1A.



Figure 1 - Samples collected for analysis from Unit 3 in the Amistad interval

The DST in Unit 3 has confirmed the presence of moveable heavy viscous oil similar in nature to that observed in Unit 1A. Importantly, no formation water has been observed in either the test or the wireline logs. The wireline logs confirm the presence of moveable oil within limestone units of the basal section of Unit 2 and Unit 3.

Utilising a conventional net pay cut-off of 9%, a total of 5.8 metres TVD of logged Net Pay from a gross interval of 161.8 metres TVD has been assigned to the Unit 2 basal section, increasing its logged Net Pay to 43.8 metres TVD. Similarly, 15.1 metres TVD of logged Net Pay over a gross interval of 156.7 metres TVD has been assigned to the Unit 3 section, increasing its Net Pay to 67.4 metres TVD. Wireline logs confirmed the presence of natural fractures in the lower Unit 2 and Unit 3 basal sections.

Conventional logged Net Pay in Alameda-2 totals 346.3 metres TVD from a gross section of 1380.5 metres TVD (total 25% net to gross) across all units penetrated. By comparison, Alameda-1 logged a total of 109 metres TVD from a gross section of 1277.5 metres TVD (8.5% net to gross). When fractures are incorporated into the calculations, Alameda-2 has a Net Pay of 615 metres TVD from the gross section of 1380.5 metres TVD (45% net to gross). No comparison of the fractured contribution to net pay can be made for Alameda-1 due to the lack formation imaging tool data in that hole.

Like the oil from Unit 1A, this interval could be produced in the future with the utilisation of artificial lift mechanisms. To this end, the tested section has now been suspended to preserve the interval for later intervention.

ABOUT THE BLOCK 9 APPRAISAL WELL PROGRAM

Block 9 PSC is a large onshore area of more than 2,300km² located on the north coast of Cuba in a proven hydrocarbon system and along trend with the multi-billion barrel Varadero oil field. Melbana’s technical team has identified 19 structural prospects and leads within the block (see Figure 2).

Melbana completed an initial two well exploration program in 2022, the first of which (designated Alameda-1) encountered three geologically independent oil-bearing intervals, each with moveable oil accompanied by high pressure, that were subsequently independently estimated to contain oil in place of 5.0 billion barrels for a Prospective Resource of 267 million barrels (gross unrisked best estimate)¹ - an 89% increase of the predrill prognosis.

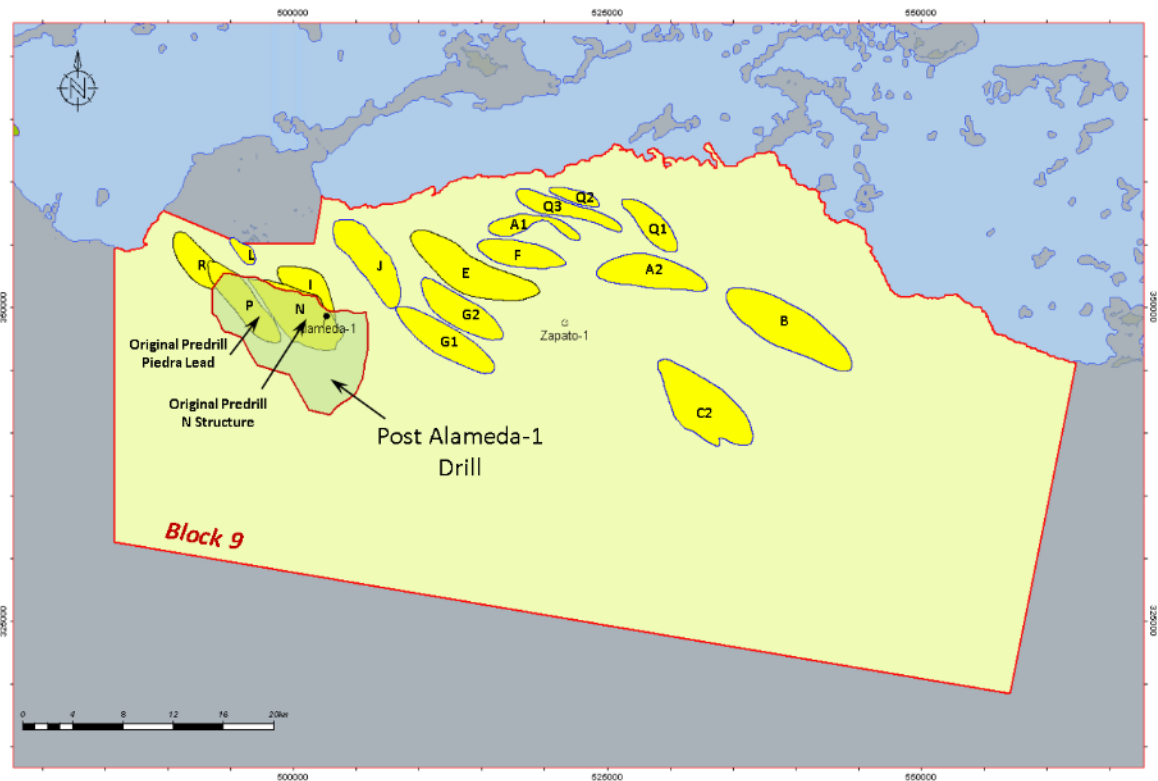


Figure 2 - Block 9 structural prospects and leads

* **Prospective Resources Cautionary Statement** - The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Future exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Melbana then designed a two well appraisal program to better understand the characteristics of these intervals and their production potential (see Figure 3 on page 4). The first of these appraisal wells, designated Alameda-2, is testing the three oil bearing units of the shallowest interval called Amistad. Drilling of Alameda-2 commenced in June 2023.

¹ See ASX announcement dated 1 August 2022

Following the completion of Alameda-2, the second appraisal well (designated Alameda-3) will test the two deeper intervals called Alameda and Marti. The scope of these appraisal wells includes coring, wireline logging, flow testing and quality analysis.

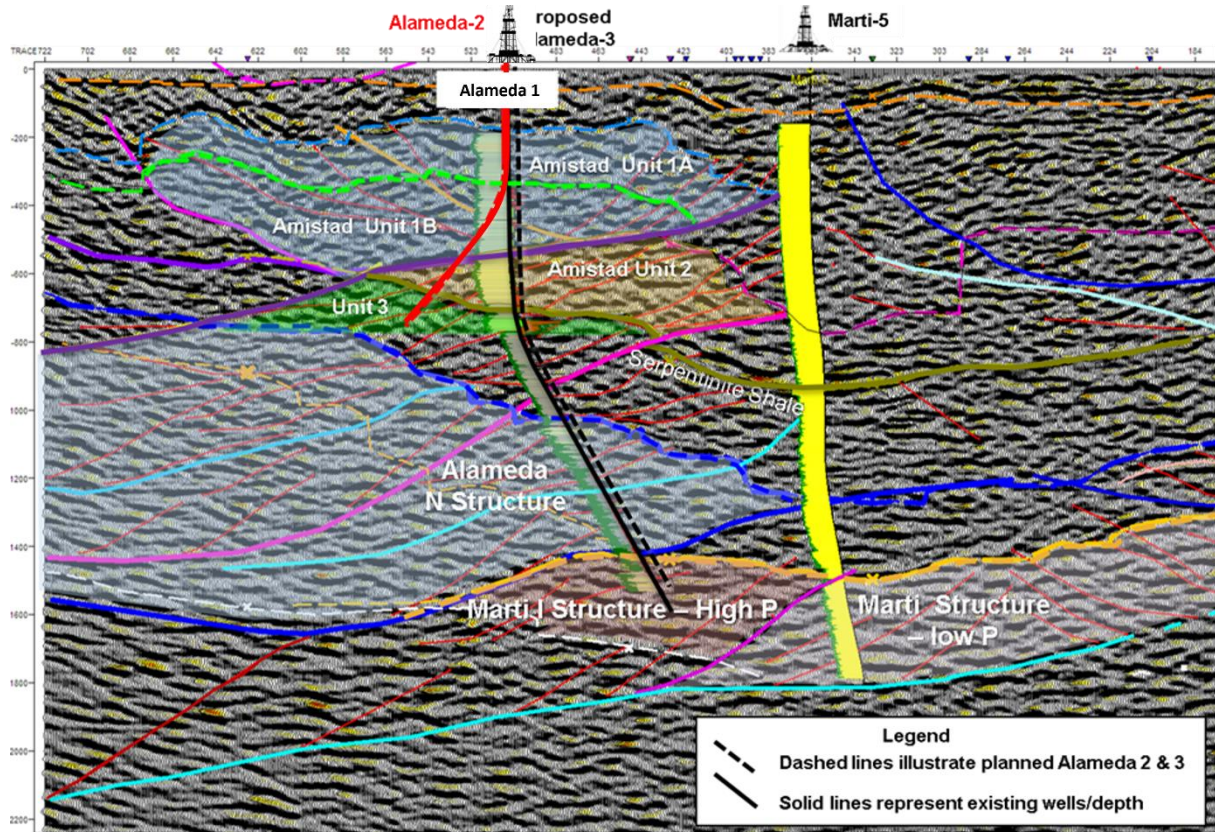


Figure 3 - Targets, trajectories and progress for the two appraisal wells (Alameda-2 and Alameda-3)

ENDS.

For and on Behalf of the Board of Directors:

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APPENDIX A

DISCLOSURES UNDER ASX LISTING RULE 5

ALAMEDA-2: UNIT 3	
LR 5.30 (a)	Alameda-2 appraisal well, conventional oil.
LR 5.30 (b)	Block 9 PSC, onshore Cuba about 140 km east of the capital, Havana.
LR 5.30 (c)	Melbana Energy holds a 30% interest and operatorship.
LR 5.30 (d)	The section of well bore that was logged and tested had 21 metres TVD of Net Pay using a cut-off of 9% porosity, Vsh 40% and Sw 50% over a gross interval of 318.5 metres TVD. When incorporating fracture contributions seen on the formation micro imager log, net pay increases from 21 metres TVD to 111 metres TVD over the measured 318.5 metres TVD interval.
LR 5.30 (e)	Fractured limestone.
LR 5.30 (f)	Three zones with open slots in the liner were open co-mingled flow: 1600-1649mMD, 1780-1865mMD, 1959-1970mMD.
LR 5.30 (g)	Drill stem testing over a total period of 80 hours which included multiple shut-in and flow periods.
LR 5.30 (h)	Heavy viscous oil was recovered from the test string after reverse circulation with some drilling mud.
LR 5.30 (i)	No formation water was recovered.
LR 5.30 (j)	Oil did not flow to surface so no accurate flow rate can be quoted. Based on a displacement of a 64-barrel water cushion in a two-hour period before the well killed itself, an approximate flow rate of 750 bopd can be deduced. Choke sizes varied during the test. Initial choke size was 12/64", increasing to 32/64" then 72/64".
LR 5.30 (k)	N/A
LR 5.30 (l)	N/A
LR 5.30 (m)	N/A

Table 1 - Glossary of Key Terms

Term	Meaning
Barrel	One barrel of oil; 1 barrel = 35 imperial gallons (approx.) or 159 litres (approx.); 7.5 barrels = 1 tonne (approximately, depending on the oil density); 6.29 barrels = 1 cubic metre.
BOPD	Barrels of oil per day
Carbonate	Class of sedimentary rocks which mainly contains calcite, aragonite and dolomite
DST	Tests conducted with a downhole shut-in tool with the drillstring still in the hole
Net Pay	The portion of the reservoir rock which is capable of storing hydrocarbon.
M	Thousands
MD	Measured depth
MM	Millions
P10	the term used to describe the volume of hydrocarbons defined as having a better than 10% chance of occurrence
P50	the term used to describe the volume of hydrocarbons defined as having a better than 50% chance of occurrence
P90	the term used to describe the volume of hydrocarbons defined as having a better than 90% chance of occurrence
Prospect	A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target
Prospective Resources	Those quantities of petroleum that are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations
PSI	Pounds per square inch
Stock Tank Oil	Volume of oil at nominal atmospheric storage pressure and temperature (as opposed to reservoir conditions)
STOOIP	Stock tank oil originally in place
TD	Total depth
TVD	True vertical depth
Unrisked	Prior to taking into account the chance of discovery
Vuggs or Vuggy	Naturally occurring voids within the rock