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Alameda-1: Independent Resources Assessment (Marti Reservoir)

Highlights

- **Independent expert McDaniel & Associates has made the following assessment of the third and final reservoir encountered by the Alameda-1 exploration well in the Block 9 Production Sharing Contract (Block 9 PSC) area, onshore Cuba:**
  - **1.5 billion barrels of oil in place**
  - **95 million barrels of Prospective Resource[1,2]**
  - **(up to) 56% chance of discovery[6]**
- **The three reservoirs encountered by the Alameda-1 exploration well have now been independently assessed to contain a combined:**
  - **6.4 billion barrels of oil in place**
  - **362 million barrels of Prospective Resource[1,2]**
- **All of the volumes quoted above are on a gross unrisked mean estimate basis. Melbana has a 30% participating interest in Block 9 PSC.**

Melbana Energy's Executive Chairman, Andrew Purcell, commented: "*It is easy to overlook the significance of the sheer scale of these numbers given all the intensive work streams going on at present between drilling Zapato-1 and preparing for the future. I am incredibly proud of our team, whose tireless efforts deserved a result as tremendous as this.*"

[1] 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. All quoted volumes have been taken from Independent Expert McDaniel & Associates Competent Persons Report dated 8 March 2022, 4 July 2022 and 28 July 2022. Melbana is not aware of any new information or data that materially affects the information included in that announcement and that all the material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

[2] Assuming recovery factors experienced by McDaniel when evaluating other oil fields in Cuba

SYDNEY, AUSTRALIA (1 August 2022)

Melbana Energy Limited (ASX: MAY) (**Melbana**) is pleased to report that independent reserves and resources certifier McDaniel & Associates (**McDaniel**) has completed its assessment for the third and final reservoir encountered by the Alameda-1 exploration well – the Marti (previously "I") structure.

Refer to the seismic profile shown in Figure 1, which describes the volumetrics and structural geometries of the relevant sheets as well as defining the separate units encountered during the drilling of the Alameda-1 exploration well.

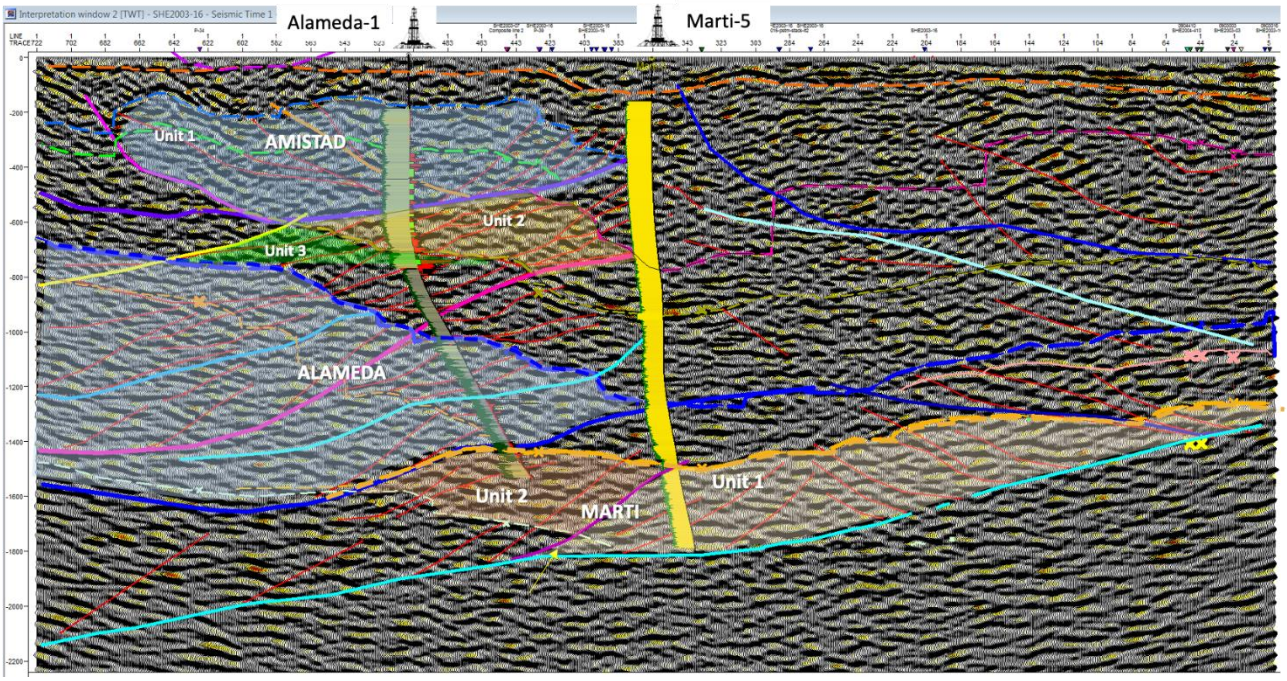

Figure 1 – Updated interpretation of the subsurface at Alameda-1

The Marti structure was initially encountered in 1988 by the Marti-5 well which recovered 24° API oil from a normally pressured section. Alameda-1 has now drilled the same section offset by about one kilometre to the south and also encountered oil but in a high pressure interval. Therefore, the Marti objective is divided into Unit-1, the normally pressured section intersected by Marti-5, and Unit 2, the high-pressure section intersected by Alameda-1. The two units appear to be separated by a fault identified on seismic data.

McDaniel's combined estimates for this Marti reservoir are 1.5 billion barrels of oil originally in place (**OOIP**) and a Prospective Resource of 95 million barrels of oil - a significant increase to the pre-drill assessment of 72 million barrels of oil[1,3], particularly given that the base of the Marti reservoir may not have been encountered.

The total resource estimate for the three structures encountered whilst drilling Alameda-1 (Amistad, Alameda and Marti) is therefore 6.4 billion barrels of OOIP and 362 million barrels of Prospective Resource[1,3].

[3] gross unrisked mean estimate basis

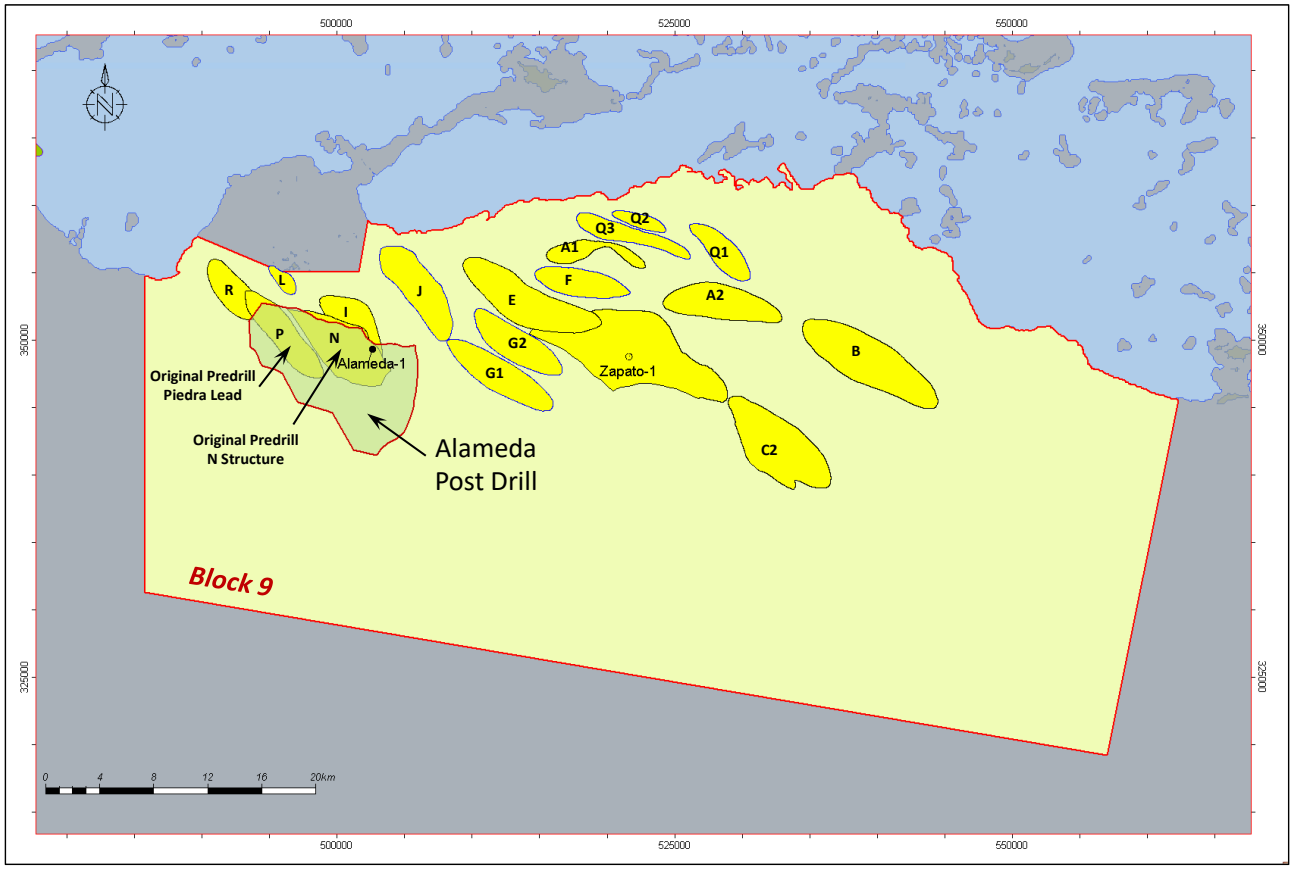

Figure 2 – Original and revised prospects maps for Block 9

For and on Behalf of the Board of Directors:

Mr Andrew Purcell
Executive Chairman

Ends -

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MARTI STRUCTURE

Table 1 - Summary of OIIP Estimates

		Gross (100%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Marti (I) – Unit 1	35%	392	913	1,141	2,146
Marti (I) – Unit 2	56%	136	317	394	741

		Melbana's Working Interest (30%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Marti (I) – Unit 1	35%	118	274	342	644
Marti (I) – Unit 2	56%	41	95	118	222

Table 2 – Summary of Prospective Resources

		Gross (100%) Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Marti (I) – Unit 1	35%	16	52	71	147
Marti (I) – Unit 2	56%	5	18	24	50

		Melbana's Working Interest (30%)[7] Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Marti (I) – Unit 1	35%	5	16	21	44
Marti (I) – Unit 2	56%	2	6	7	15

[5] COS = Chance of Success. The Prospective Resources have not been adjusted for the chance of development (**COD**), which is estimated by McDaniel to be 70%. Quantifying the COD requires consideration of both economic contingencies and other contingencies such as legal, market access, political, social licence, internal and external approvals and commitment to project finance and development timing. As many of these factors are as yet unknown they must be used with caution.

[6] The numbers quoted here are defined as Prospective Resources which are the same category of estimates of yet-to-be-drilled volumes in exploration prospects. In this case oil and gas shows and flows have actually been encountered and confirmed by electric logging, so Melbana believes that these numbers deserve a different category. However, industry and ASX guidelines stipulate that they be categorised as Prospective Resources so Melbana will continue to use that category - however observers should be aware of this anomaly.

[7] Net working interest Prospective Resources are based on Melbana's 30% working interest. Net entitlement Prospective Resources are the net working interest Prospective Resources less royalties payable to others. These royalties are determined by the Block 9 Production Sharing Contract and are dependent on a number of factors such as commodity prices, development costs and operating costs and as such cannot be reliably determined at this stage.

AMISTAD STRUCTURE

Table 3 – Summary of OIIP Estimates

		Gross (100%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Amistad (All units)	43 - 56%	799	1,939	2,490	4,751

		Melbana's Working Interest (30%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Amistad (All units)	43 - 56%	240	581	747	1,425

Table 4 – Summary of Prospective Resources

		Gross (100%) Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Amistad (All units)	43 - 56%	30	88	119	240

		Melbana's Working Interest (30%)[7] Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Amistad (All units)	43 - 56%	9	26	36	72

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ALAMEDA STRUCTURE

Table 5 - Summary of OIIP Estimates

		Gross (100%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Alameda (N)	56%	818	1,872	2,330	4,409

		Melbana's Working Interest (30%) Unrisked Oil Originally In Place (MMbbl)[6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Alameda (N)	56%	246	562	699	1,323

Table 6 – Summary of Prospective Resources

		Gross (100%) Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Alameda (N)	56%	34	109	148	297

		Melbana's Working Interest (30%)[7] Unrisked Prospective Resources (MMbbl)[1,6]			
Zone	**COS[5]**	**Low (1U)**	**Best (2U)**	**Mean**	**High (3U)**
Alameda (N)	56%	10	33	44	89

Notes:

[5] COS = Chance of Success. The Prospective Resources have not been adjusted for the chance of development (**COD**), which is estimated by McDaniel to be 70%. Quantifying the COD requires consideration of both economic contingencies and other contingencies such as legal, market access, political, social licence, internal and external approvals and commitment to project finance and development timing. As many of these factors are as yet unknown they must be used with caution.

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McDaniel's methodology for determining Prospective Resources for the Alameda structure

All the prospective resources assigned as part of this assessment have been estimated probabilistically as this is the most appropriate method given the high degree of uncertainty in the various input parameters. In the case of Block 9 in Cuba, there is a fair bit of uncertainty in the structural mapping but it is our opinion that Melbana has conducted a reasonable interpretation with the geological and geophysical data available. Distributions of the various reservoir and fluid parameters were determined based on parameters from Alameda-1 well, McDaniel's experience of other fields in the area or general worldwide data and probabilistic calculations of the unrisked oil-in-place (OIIP) and recoverable resources were prepared for each prospect.

The prospects were risked using five parameters: source, migration, reservoir, structure (or trap) and seal.

Contingent and Prospective Resources: Unless otherwise specified, the information that relates to Contingent Resources and Prospective Resources for Melbana is based on, and fairly represents, information and supporting documentation compiled by Mr. Peter Stickland, who is a Director of the company and has more than 30 years of relevant experience. Mr. Stickland is a member of the European Association of Geoscientists & Engineers and the Petroleum and Exploration Society of Australia. Mr. Stickland consents to the publication of the resource assessments contained herein. The Contingent Resource and Prospective Resource estimates are consistent with the definitions of hydrocarbon resources that appear in the Listing Rules. Conversion factors: 6 Bscf gas equals 1 MMboe; 1 bbl condensate equals 1 boe; "MMstb" means million stock tank barrels of oil.