# Yumna Field, Block 50 Oman Update of Independent Reserves Audit Summary

February 2022

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This summary Qualified Person's Report ("QPR") has been prepared by the Rex International Holding Group's in-house qualified person, Lars B. Hübert, CEO and Exploration Manager of Lime Petroleum AS located at Drammensveien 145A, N-0277 Oslo, Norway, and has been prepared in accordance with the applicable requirements in Practice Note 4C of the Singapore Exchange Securities Trading Limited's Listing Manual Section B: Rules of Catalist.

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Lars B. Hübert Oslo, 24 Feb 2022

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### **Summary**

RPS Energy Consultants Ltd ("RPS") prepared an independent QPR for the Yumna Field in Oman for Masirah Oil Ltd ("MOL" or the "Company") dated 26 October 2020 ("RPS QPR"). An in-house summary QPR dated 5 March 2021 provided an update to the RPS QPR. This summary QPR provides a further update to the RPS QPR, accounting for the 18 months of production for the period from 1 July 2020 to 31 December 2021.

This summary QPR is prepared in line with the standards set out under the Petroleum Resource Management System ("PRMS") to include production from the Yumna 1, Yumna 2 and Yumna 3 wells until 31 December 2021, in the Yumna Field. The RPS QPR thus provides the basis for the report, along with production data provided by MOL. MOL's internal work carried out throughout 2021 has provided an updated static and dynamic model with improved reservoir characterisation and updated volumetrics. The same model after calibration to historical production data was used to provide with production forecasts to estimate the remaining reserves under various development options as of 31 December 2021.

The Yumna discovery was made in the GA South 1 well which was spudded in December 2013. The well tested a NE-trending fault-block in the Cretaceous and PreCambrian. The well encountered hydrocarbons in the Campanian Lower Aruma Sandstone Formation. The well was tested and flowed oil at a maximum rate of 3,481 stb/d. The oil density was light with 42° API. The first development well, Yumna 1, was spudded in December 2019 and completed in February 2020. The well was put on test production from the drilling rig, producing via a flexible flowline to a tanker moored some 500 metres away. In April 2020, production was transferred to a Mobile Offshore Production Unit (MOPU). Production continued throughout 2020 from Yumna 1. In December 2020, MOL commenced drilling operations with the Shelf Drilling Tenacious jack-up rig, to add on the Yumna 2 and Yumna 3 production wells. Yumna 2 was spudded on 10 December 2020 and was put on production on 23 January 2021. The well started production at a rate of 9,000 stb/d of oil. The rate was constrained by the size of the downhole Electrical Submersible Pump installed in the well. Yumna 3 was spudded on 20 January 2021 and production commenced on 18 February 2021 at a rate of 12,984 stb/d of oil on natural flow through an 80/64" choke.

The plan forward is to continue producing from the three wells whilst continuously optimising the production rates.

In view of the field depletion through production since the publication of the RPS QPR in 2020, an update of the remaining reserve estimate is prudent. The STOIIP (stock tank oil initially in place) is updated based on the modelling work carried out in 2021. The reserves presented herein are based on new assumptions for economic cut-off.

As of 31 December 2021, the Yumna Field had produced 5.772 MMstb. Based on the recoverable reserve estimate from the 2021 internal work, the remaining reserves are presented in Table 1.

Table 1 Yumna Field Summary of Oil Reserves as of 31 December 2021

	Gross	MOL Net	MOL Net Entitlement Volume <sup>2, 3</sup>			
Category	Attributable to Licence (MMstb) <sup>1, 2</sup>	Previous Report (MMstb) <sup>4</sup>	Current Report (MMstb)⁵	% Change from Previous Update	Risk Factors <sup>6</sup>	Remarks
Reserves						
Low 1P	4.2	2.1	2.7	+29%	N/A	Change due to production <sup>5</sup> , maturation of reserves and updated volumetrics
Base 2P	6.6	5.4	4.0	-26%	N/A	Change due to production <sup>5</sup> , maturation of reserves and updated volumetrics
High 3P	7.6	8.5	4.6	-46%	N/A	Change due to transfer to production <sup>5</sup> , maturation of reserves and updated volumetrics

Gross field Reserves (100% basis) after economic limit test as of 31 December 2021
 Economic cut off year for the 1P, 2P and 3P reserves in 2025, 2026 and 2027, respectively
 Company net entitlement Reserves after economic limit test
 Volume as at 31 December 2020 (based on the in-house QPR dated 5 March 2021)
 Volume after subtraction of net entitlement production of 3.66 MMstb gross from 1 January 2021 until 31 December 2021 plus upgrade and maturation of reserves
 No risk is applied to Reserves

### **Background**

This summary QPR aims to provide updated estimates on the remaining reserves of the Yumna Field as at 31 December 2021. This summary QPR is based on the internal work done during 2021 and which presents the reserves in the Yumna Field as at 31 December 2021.

Current ownership of MOL includes Rex International Holding Ltd (91.81%), Schroder & Co Banque S.A. (6.36%) and PETROCI (the National Oil Company of Côte D'Ivoire) (1.83%).

Table 2 gives a detailed description of the asset.

Table 2 Yumna Field detailed description

Asset name / Country	MOL interest (%)	Development Status	Licence expiry date	Licence Area	Type of mineral, oil or gas deposit	Remarks
Yumna Field, Oman	100 %	Developed and producing	12 July 2030 or until the field waters out	Block 50, Oman	Oil Field	N/A

The Yumna Field lies within the Block 50 licence located on the eastern coast of the Sultanate of Oman, in a water depth of some 30 metres. The licence is owned and operated by MOL. The Yumna Field is the first discovery in Block 50 Oman and is located in the Masirah Graben geological feature. Further prospects are being evaluated within the licence area. The principal terms and conditions for the concession are discussed in detail in the RPS QPR, including fiscal conditions, environmental and rehabilitation requirements, abandonment costs and consents, and there have been no changes since.

The development of estimated in place resource has been positive during the development of the field. The development is summarised in Table 3. This shows a consistent improvement of the estimation and reduction in uncertainty of the volumes in place. The latest estimates have a small range of circa 1 MMstb.

Table 3 Yumna Field STOIIP and Reserve History

	Gross Attributable to Licence			
	STOIIP (MMstb)		Reserves <sup>2</sup> (MMstb)	
Category	RPS 2020 <sup>1</sup>	End 2021	RPS 2020 <sup>1</sup>	End 2021
Low 1P	11.5	22.1	4.4	10.0
Base 2P	18.1	23.5	9.6	12.2
High 3P	26.7	24.5	14.6	13.3

<sup>1</sup> RPS Reserves Audit as at 30 June 2020 dated 26 October 2020 after Yumna Field had produced approximately 1.05 MMstb.

<sup>2</sup> Volume before subtraction of gross production attributable to Licence

#### **Technical review**

The RPS QPR dated 26 October 2020 has given a brief overview of the geological setting and history of the licence and hence, such information is not repeated here. The RPS QPR details the reserves as of 1 July 2020 and this report accounts for the 18 months of production for the period from 1 July 2020 to 31 December 2021.

The first of the development wells, Yumna 1, was spudded by MOL in December 2019 and reached its target depth in January 2020, discovering oil in several sands. The well tested the Lower Aruma sandstone and yielded a production rate of 11,843 stb/d, through a 1-inch choke with the extended testing flowing at a sustained commercial rate of 10,000 stb/d to surface. The well was placed onto an extended test until the end of April 2020 when production was moved to permanent facilities, which included a mobile offshore production unit (MOPU) and an Aframax storage tanker with a capacity of 700,000 bbls. Until 1 July 2020, the Yumna Field had produced approximately 1.05 MMstb.

Yumna 2 was spudded on 10 December 2020. The well was drilled directionally some 1,700 metres to the north-north-east to a location close to the eastern bounding fault of the field. The well found the Lower Aruma reservoir slightly deeper than mapped, and the Lower Aruma sandstone reservoir was oil saturated. Due to wellbore stability issues while running the casing, it was decided to side-track the well 700 metres closer to the surface location, where the Lower Aruma sandstone reservoir was encountered roughly at the predicted depth. The well encountered an oil saturated reservoir with net thickness of 10 metres and average porosity of 21%. The completion of the well included running an electrical submersible pump. The well was put on production on 23 January 2021 and produced through the pump at a stabilised rate of 9,000 stb/d.

Yumna 3 was spudded on 20 January 2021. The well was drilled directionally some 950 metres to the south-southeast targeting a structurally high location close to the bounding fault on the south eastern side of the field. The well encountered the Lower Aruma sandstone as predicted, finding 10.4 metres of oil saturated sandstone. The average porosity is very good, at 23.4 per cent. The well was put on production on 18 February 2021 and tested at a rate of 12,984 stb/d. Sustained production rates are some 15% below the test rate.

Based on well log data from the new penetrations of the reservoir, the reservoir properties (porosity and permeability) appear to be in line, or slightly better than predicted. The reservoir thickness is roughly as predicted. However, a thinning trend to the north has been observed. The reservoir looks to be slightly deeper in the far northern reaches of the Yumna structure.

The reservoir pressure depletion over the first year of production has been in the order of 100 psi, demonstrating an average high permeability of around 2,000 mD, and suggesting pressure support from a strong natural aquifer.

In order to accommodate higher production rates to the Mobile Offshore Production Unit (MOPU), MOL is in the process of upgrading the maximum liquid processing capacity to handle up to 40,000 bpd. This is expected to be completed by the end of the first quarter of 2022.

### **Remaining Reserves**

The remaining Yumna Field reserves are estimated based on the reservoir model presented in the RPS QPR, which carried reserves numbers with production up to 1 July 2020 and the 2021 In-house Summary QPR dated 5 March 2021. The volume has thereafter been updated based on modelling work carried out in 2021. As of 31 December 2021, 5.772 MMstb of oil had been produced from the Yumna Field. The volume of 3.66 MMstb produced from the Yumna Field from 1 January 2021 to 31 December 2021 has been subtracted from the updated volume carried out in 2021 for each of the three cases (Low, Base, High) on a gross basis attributable to the licence, and on a net entitlement basis to MOL, 2.38 MMstb has been subtracted for each of the three cases (Low, Base, High) since 31 December 2020. The MOL net entitlement basis is found after an economic limit test, with economic cut-off year for Low, Base, and High case at 2025, 2026, and 2027 respectively. The remaining reserves are presented in Table 1 above.

# **Exploration Wells**

Three exploration wells - Yumna North, Zakhera-1 (Mimas prospect) and Yumna East (Pluto prospect) - were drilled in 2021 after the completion of the Yumna development wells. The effect on the total prospective resources was negative as all three wells proved to be sub-economic. However, currently work is being carried out to identify new plays and prospects for drilling later in 2022.

## Way forward

A fourth development well is under consideration in addition to working up new plays and prospects. It is anticipated that the change out of the tanker and further upgrade of facilities should be finished during 1Q 2022.

#### References

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## **Glossary**

bbls barrels

bpd barrels per day

mD millidarcy (unit of rock permeability)

MMstb million stock tank barrels

psi pound-force per square inch (unit of pressure)

stb/d stock tank barrels of oil per day STOIIP stock tank oil-initially-in-place

1P Proven reserves have high degree of certainty to be recovered from reservoirs under

existing conditions. There is relatively little risk associated with such reserves.

2P Proven & Probable reserves have at least a 50% probability that reserves will be

recovered. This is determined after analysing geological and engineering data.

3P Proven, Probable & Possible reserves has a low degree of certainty to be recovered.

There is relatively high risk associated with these reserves.