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Petroleum, Sedimentology, Exploration

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May 27, 2021

ASX Limited
PO Box H224
Australia Square NSW 1215

Attention: Kevin Lewis

Dear Sir,

Re: Proposed Changes to the oil and gas reporting requirements in the ASX Listing Rules 16 April 2021

PetroSedex is a private company which in recent times has specialized in training and consulting to oil and gas exploration professionals, university petroleum engineering students, administrative staff, and financial professionals.

As a training entity we include the PRMS (Society of Petroleum Engineers, 2018) in our course contents as the recommended approach to the evaluation of oil and gas resources and reserves. Since 2008, we have been particularly involved and interested in unconventional shale gas and light tight oil resources, both in North America and Australia,

In addition to other recent publications on the merits and limitations of the evolving PRMS, we note and concur with the strong endorsement by the Australian Competition and Consumer Commission in their paper of 2019 that it does provide a consistent approach to the calculation of petroleum quantities.

As such, PetroSedex supports the recommended changes proposed by the ASX (2021) and will only amplify its submission on the points below.

We shall restrict our comments to three issues:

1. The estimation of proven reserves in shale gas wells
2. The issue of compliance with and regulatory enforcement of rule 5.30
3. The qualifications of the resource evaluators.

1.0 The estimation of proven reserves of gas in low permeability 'shales' or mudrocks is extremely difficult, particularly in the early exploration and appraisal stages. Initial volumetric proven reserve assessments are best expressed with error bars. Once a period of production is established, then estimates can be based on more dynamic (production) data.

Initial reserve estimates are difficult to verify and since all shale gas accumulations appear to have their own diverse parameters, the use of analog metrics can be misleading. Initial reserve 'booking' may require caution, particularly when 'take away' capacity is lacking implying the resources may be best considered as 'contingent', since they carry a chance of commerciality. The resource estimates of

individual shale gas wells ('projects') are statistical in nature and wide variations are to be expected.

Reserves must be discovered, recoverable, commercial, and remaining (based on the development of the applied 'project').

2.0 As a consulting organization, we rely not only on client's data but information in the public domain, including data and information released by public companies under the continuous disclosure and listing rules.

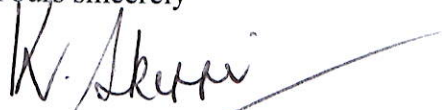
We are concerned that there is frequently **little entity conformity or ASX enforcement under Rule 5.30** when a publicly reporting entity does not include all the information relating to drilling results. This is extremely important when flow rates and test duration are reported – we frequently see an omission of pressures associated with the flow rates and the duration of the test. The information requested under 5.30, particularly 5.30 (i), (j) and (k) is important to inform interested, engaged and potential investors. For example, information entering the public arena such as 'flowed 10MMCF/d and achieved an average flow rate of 2.3 MMCF/d during the 90 hours of testing' (reference withheld) is incomplete and may be misleading to stakeholders.

3.0 We encourage the ASX to publicly **list those professional organizations** *who may have members* that meet paragraph (c) of the definition on page 1927 of the ASX listing rules Chapter 19.

It is perhaps important that the resource evaluations are conducted by **qualified independent evaluators** to improve stakeholder's confidence in such work and avoid, as far as possible, unintended bias in some estimations and projections.

I respectfully submit these comments for your consideration.

Yours sincerely



Keith Skipper
President

References:

ASX, 2021, Proposed changes to the oil and gas reporting requirements in the ASX Listing Rules, Public Consultation, including Annexure A, 16 April 2021, 33p.

Australian Competition & Consumer Commission, 2019, Framework for the consistent reporting of natural gas reserves and resources: ACCC recommendations, May 2019, 60p.

Society of Petroleum Engineers, 2018, Petroleum Resources Management System, version 1.01, revised June 2018, 57p.