constellation RESOURCES

ASX ANNOUNCEMENT
19 May 2025

THERMOGENIC HYDROGEN POTENTIAL CONFIRMED AT EDMUND–COLLIER

Constellation Resources Limited (the "Company" or "Constellation") is pleased to advise that it has received initial results for both Total Organic Carbon ("TOC") and Thermal Maturity ("TM") analysis of shale samples from its Edmund-Collier Natural Hydrogen Project ("Edmund-Collier Project"). The initial results have confirmed that basin-wide shale units are organic-rich and are prospective for **thermogenic hydrogen generation,** one of the potential sources for natural hydrogen.

These organic-rich units are hosted in two stratigraphic units (Blue Billy and Discovery Formations) within the Edmund-Collier Basin and are laterally extensive over the Project area. The Edmund-Collier Project is part of the Company's wider Natural Hydrogen Project which currently spans a sizeable 87,602km^2 across Western Australia.

HIGHLIGHTS

- Analysis of core samples by Core Laboratories Pty Ltd taken over regular intervals from organic-rich shales units have returned highly encouraging TOC values over large widths in the first batch of results from **three of eleven diamond drillholes** (eight holes pending):
    - 17BBDD002: **TOC values ranging from 0.91% to 10.10%** (average 3.59%) from eleven core samples over a 339m down hole interval through the Blue Billy Formation (127m-466m).
    - E044/0051: **TOC values ranging from 1.40% to 4.76%** (average 3.08%) from five core samples over a 159m down hole interval through the Blue Billy Formation (60m-219m).
    - DD97BC14: **TOC values ranging from 3.06% to 7.75% (**average 5.76%) from four core samples over a 59m down hole interval through the Discovery Formation (62m-121m).
- TM analysis of bitumen within core samples by the CSIRO taken over selected intervals from organic-rich shales indicate they are overmature. Based on paleo-temperature gradient estimates, the organic rich units within the Wanna Syncline are likely to have been within the optimum range for thermogenic hydrogen generation.
- CSIRO test work underway to analyse the composition of trapped gases within any fluid inclusions and/or the gases liberated from fluid inclusions from crushed core samples. If hydrogen and associated gases are detected, it could indicate the likely origin and processes to produce these generated gases.
- The Edmund-Collier Project continues to present a first-mover basin-scale opportunity to explore for natural hydrogen, potentially generated from overmature and organic-rich shale units that are laterally extensive, **300km east–west and 40km north–south,** with associated targets never tested by drilling.
- Additional potential sources for hydrogen and helium includes gases generated from heat-producing radiogenic Paleoproterozoic granites that sit under the Edmund-Collier Basin.
- Global hydrogen demand is expected to grow fivefold by 2050. Current hydrogen consumption is mainly sourced from grey hydrogen (produced by heating natural gas up to 800°C-900°C with steam).

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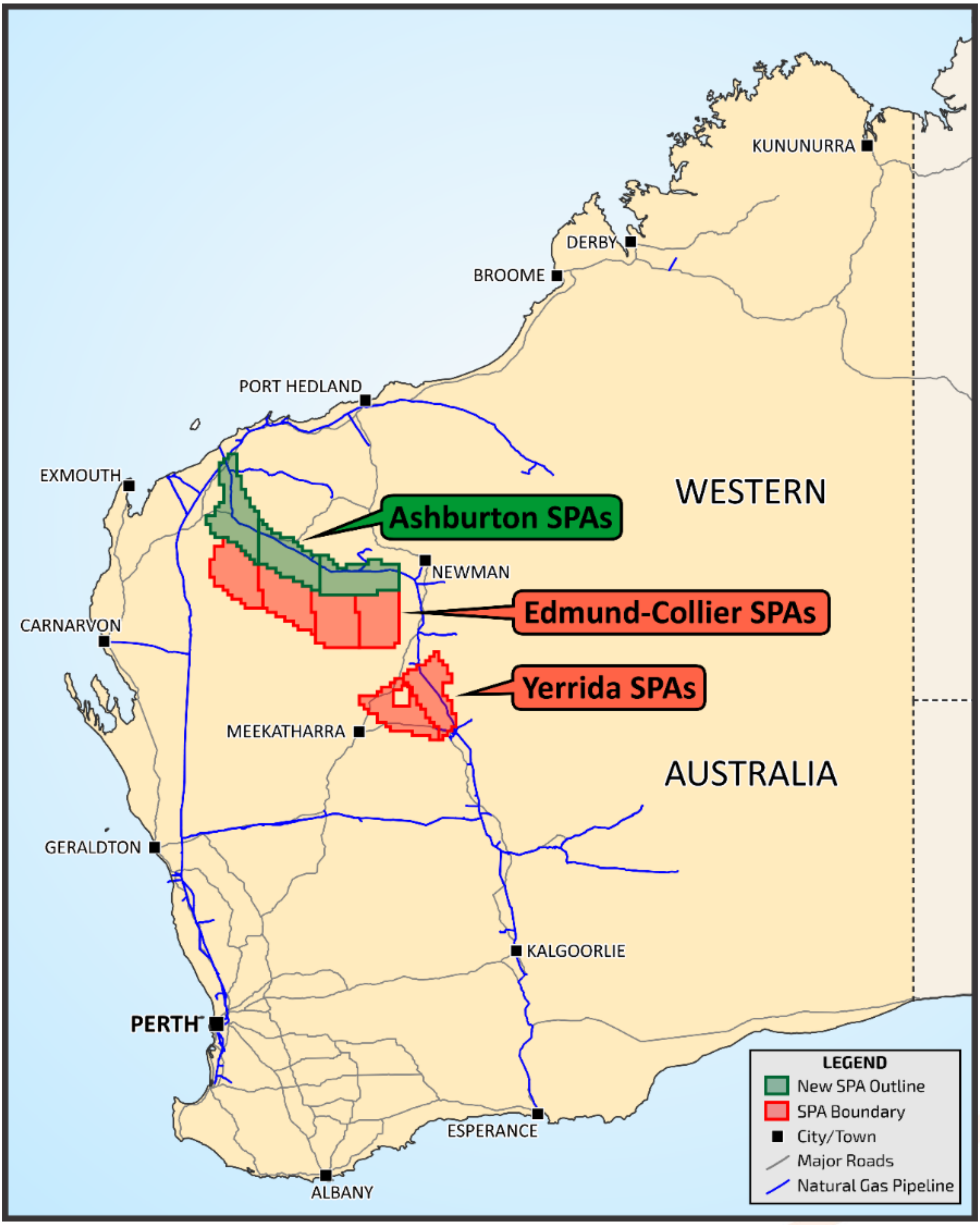

Figure 1: Constellation SPA-AO application locations.

THERMOGENIC HYDROGEN ASSESSMENT – EDMUND-COLLIER NATURAL HYDROGEN

A review of all open-file core holes that were drilled by previous mineral explorers within the Edmund-Collier Project Special-Prospecting Authority with an Acreage Option ("SPA-AO)" boundaries has been completed. The diamond cores from eleven mineral exploration holes were inspected by the Company at the GSWA Perth Core Library. The northern basin margin for these organic-rich units have been targeted for Mt Isa style 'shale-hosted' zinc-lead-copper mineralisation and to a lesser extent for uranium by previous explorers. A particular focus was investigating the organic-rich shale units within the Edmund-Collier Basin i.e. the Blue Billy and Discovery Formations, which are one of the potential sources of natural hydrogen via thermogenic hydrogen generation from overmature shales.

Initial TOC laboratory results from three of eleven diamond drillholes within the Edmund–Collier Project area have returned highly encouraging values from the organic-rich shales units. The TOC values returned were analysed from core plugs taken over regular intervals throughout shale units and over wide widths (Table 1):

- 17BBDD002: **TOC values ranging from 0.91% to 10.10%** (average 3.59%) from eleven core samples over a 339m down hole interval through the Blue Billy Formation (127m-466m) – refer to Figure 5 core photo).
- E044/0051: **TOC values ranging from 1.40% to 4.76%** (average 3.08%) from five core samples over a 159m down hole interval through the Blue Billy Formation (60m-219m).
- DD97BC14: **TOC values ranging from 3.06% to 7.75%** (average 5.76%) from four core samples over a 59m down hole interval through the Discovery Formation (62m-121m).

The first batch of TOC samples received all reported circa >1% TOC values from selected intervals of the shale unit, above the threshold considered useful for hydrogen source rock potential. The remaining TOC results from eight diamond holes are expected in the coming months.

Forty-two core samples from the same eleven drill holes within the Edmund-Collier Project were assessed by CSIRO for thermal maturity using techniques suitable for Meso-Proterozoic organic rocks (Figure 3 for locations).

The method selected to determine the TM is to measure the vitrinite reflectance equivalent (EqVR) values. The analyses were predominantly measured from bitumen (preferred) within the organic-rich shale units and/or from alginite. The results from the TM analysis indicate that the samples are within the optimum range for thermogenic hydrogen generation from shales (Figure 2). Vitrinite reflectance equivalent results include (Table 2):

- 17BBDD002: EqVR range: **2.73-6.40** from 5 samples (average 4.37) between 143m-485m down hole
- E044/0051: EqVR range: **4.37-5.19** from 3 samples (average 4.76) between 99m-270m down hole
- DD97BC14: EqVR range: **3.43-3.76** from 2 samples (average 3.6) between 57m-95m down hole
- DD97BC16 EqVR range: **2.99** from 1 sample at 45m down hole
- DDH2: EqVR range: **3.58-5.21** from 2 samples (average 4.4) between 44m-150m down hole
- DDH3: EqVR range: **5.33-11.05*** from 2 samples (average 8.19) between 84m-184m down hole
- DH4: EqVR range: **8.78** at 55m from 1 sample down hole
- DH13: EqVR range: **6.32** at 84m from 1 sample down hole
- FD1: EqVR range: **3.45*** at 90m from 1 sample down hole
- ISBD2: EqVR range: **3.14-3.44** from 2 samples (average 3.29) between 136m-192m down hole
- WHRD021: EqVR range: **2.24** at 260m from 1 sample down hole

* Vitrinite reflectance equivalent of alginite as bitumen was either absent or too fine-grained for measurement. Metres values are all rounded.

Minor thermogenic hydrogen generation from organic-rich source-rocks can arise during hydrocarbon catagenesis (the cracking process of organic kerogens, breaking them down into oil and gas), but importantly with increasing temperature, thermogenic hydrogen generation continues and increases markedly beyond the close of the hydrocarbon dry-gas window (at approximately 250°C).

During continued burial and increasing temperature, the remaining degraded organic matter and pyrobitumens can produce hydrogen through metagenic and metamorphic processes until graphite is ultimately formed (Figure 2; Hanson and Hanson, 2023).

Optimal hydrogen generation is predicted at ~250°C to 500°C, which equates potentially to at least the minimum temperature that organic-rich shales have reached in the deepest parts of the Wanna Syncline (now at present-day ~4–5km depth (Figure 3 & 4). The organic-rich shale units are projected to be increasing in thermal maturity with depth into the Wanna Syncline depocentre and the highly organic-rich units could potentially also get thicker. There has been no deep drilling in the Wanna Syncline which is a large-scale basinal feature within the Edmund–Collier Basins, extending in excess of 300km east-west and 40km north-south.

Research in the Songliao Basin in China (Horsfield et al., 2022) also supports this thermogenic model, where high-TOC shales have been shown to generate hydrogen (between 250°C and 450°C) after dry-gas hydrocarbon generation is complete. Similarly, research in the Niigata Basin in Japan (Suzuki et al., 2017) identified hydrogen as the primary gas liberated from organic matter in marine shales and metapelites (metamorphosed shale) at paleo-temperatures between 100°C and 600°C. The hydrogen production starts to increase at a paleo-temperature of around 200°C and is the most abundant gas in residual gas of the metapelite.

The collective research points to a hydrogen window that develops within a sedimentary basin where organic-rich formations have been heated beyond 250°C and **presents a potential new frontier for natural hydrogen exploration.**

The CSIRO has also initiated works on core samples to identify and determine the bulk composition of trapped gases within any fluid inclusions. Samples have been submitted for the following test programs:

- In-situ fluid inclusion analysis to characterise the gas composition and relative abundance by Raman spectroscopy; and
- Analysis of bulk-gas extracted from crushed rock samples.

The detection of hydrogen and associated gases within these samples may point to the origins for a basin-wide kitchen for these gases.

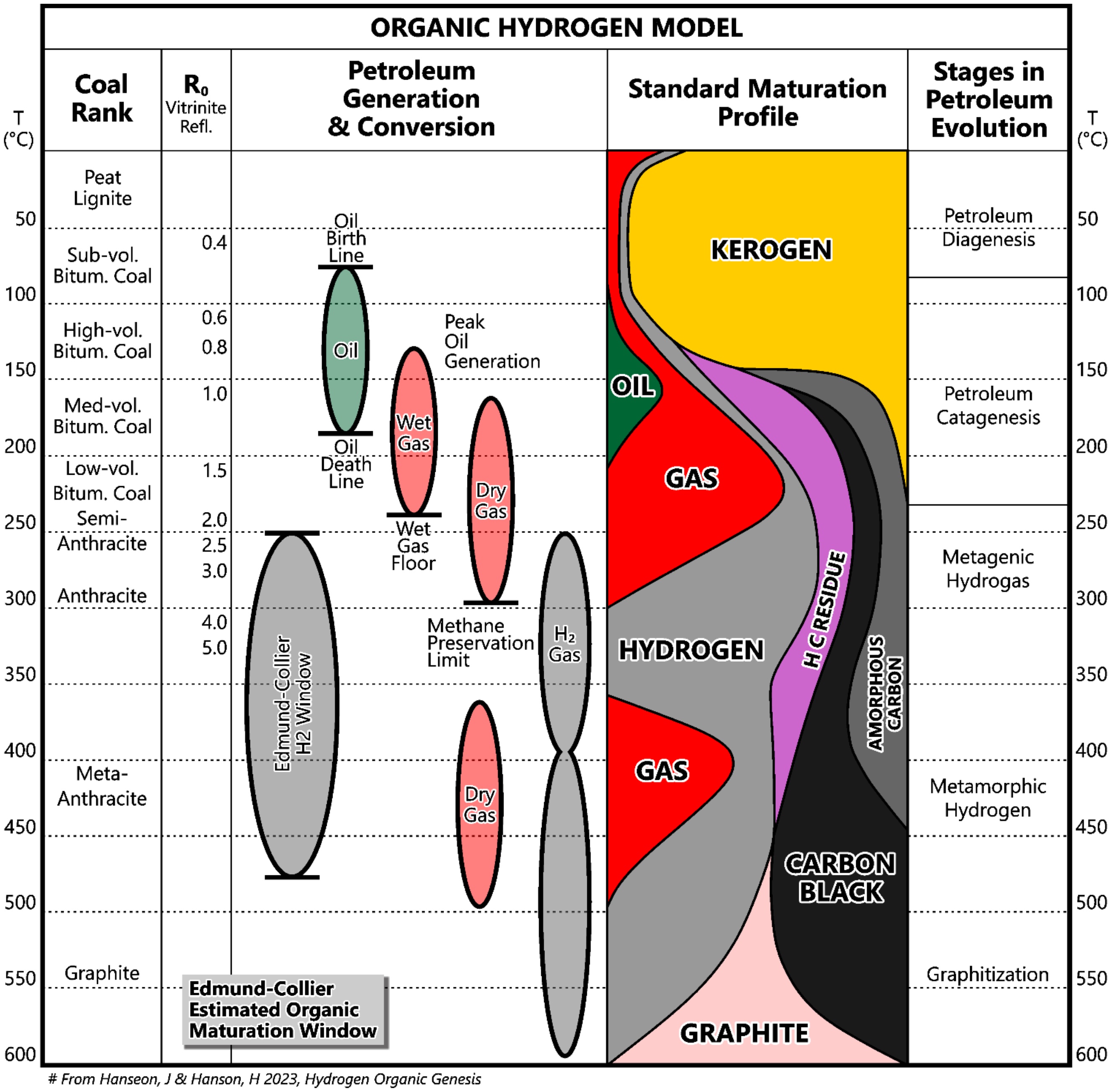

Figure 2: Hydrogen generation model (Hanson & Hanson, 2023) with interpreted Edmund-Collier Maturation Window Plotted.

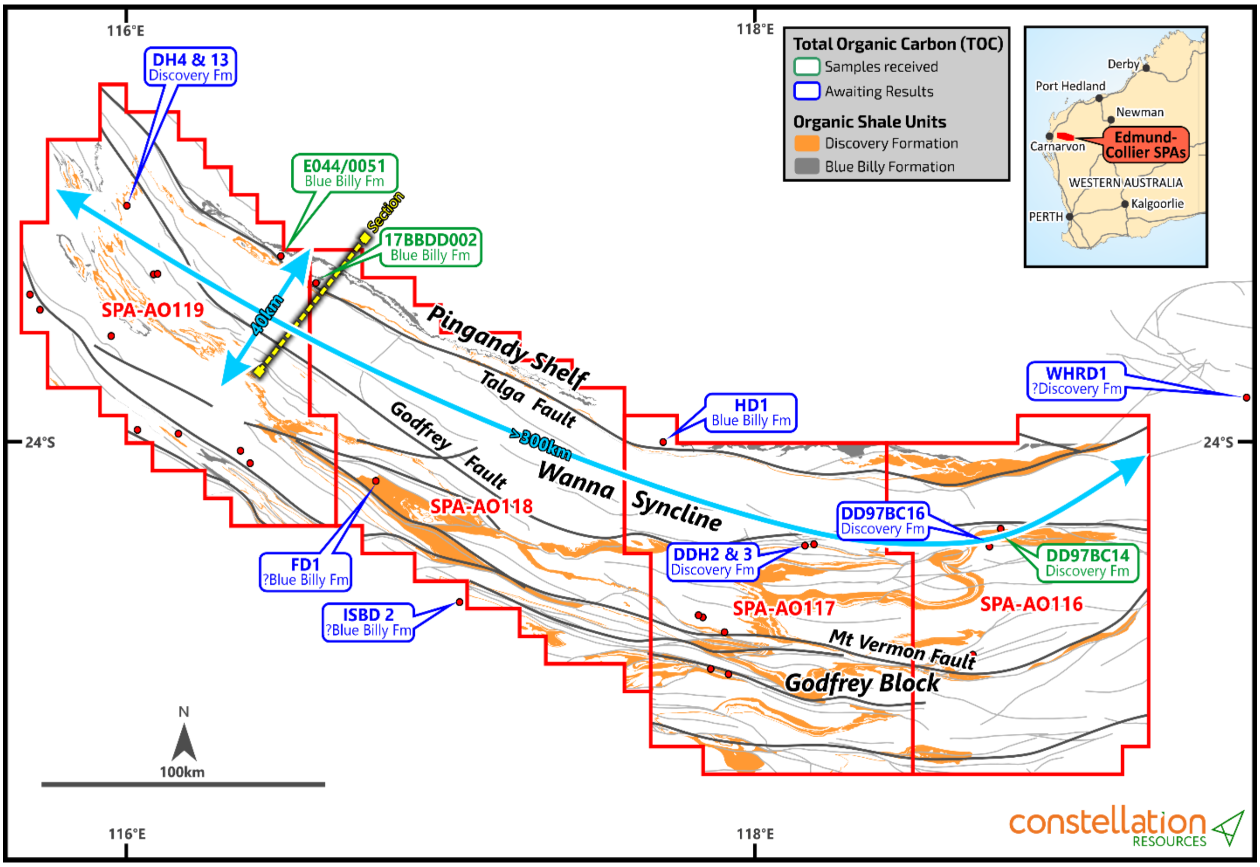

Figure 3: Edmund-Collier Basin outcropping organic-rich shale units and drill hole sample locations for TOC and thermal maturity analysis.

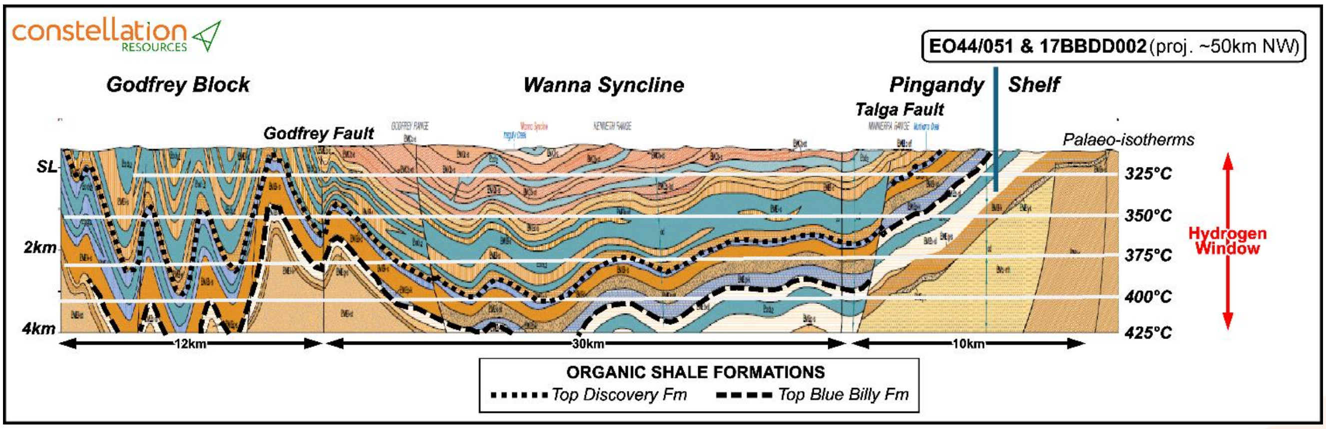

Figure 4: Cross-section based on outcrop and seismic line 10GA-CP2 (Elliot Creek 1:100 000 geological map sheet; GSWA, 2004). The conceptual palaeo-isotherms are based on shallow thermal maturity data from the Blue Billy Fm collected by the Company and a conservative palaeo-geothermal gradient of 25°C/km.

Figure 5: Organic-rich and overmature shales of the Blue Billy Fm in 17BBDD002 (337.7m-345.50m). Core photos included for illustrative purposes only.

COMMERCIAL HYDROGEN BACKGROUND

Steam-methane reforming ("SMR") accounts for nearly all commercially produced hydrogen in the United States of America (grey hydrogen). Commercial hydrogen producers and petroleum refineries use steam-methane reforming to separate hydrogen atoms from carbon atoms in methane (CH_4). Optimal SMR reactor operating conditions lie within a temperature range of 800°C to 900°C at medium pressures of 20-30 bar. Hydrogen production reached 97Mt in 2023, of which 99% was derived from hydrocarbons.

This natural hydrogen production via thermogenic process of overmature organic rich shales has parallels to the industrial methods. Global hydrogen demand is expected to grow fivefold by 2050. Current hydrogen consumption is mainly sourced from grey hydrogen (produced by natural gas) and the search for and uses of a zero-carbon source of hydrogen is gathering momentum worldwide.

EDMUND-COLLIER NATURAL HYDROGEN PROJECT BACKGROUND

The Edmund-Collier Project is in the Gascoyne Province of Western Australia. The four contiguous SPA-AOs 37,288km^2) are bordered to the north, east and west by gas transmission pipelines (Figure 1).

The Edmund Fold Belt is largely outcropping and contains a well-documented folded succession of up to 5km thick Proterozoic clastics, carbonates and dolerite sills, with associated deeply penetrating fault systems that cap radiogenic Proterozoic basement providing the elements needed for a total hydrogen system with possible reservoirs, seals, migration pathways and traps identified.

Potential sources for hydrogen along with thermogenic hydrogen from organic rich rocks includes gases generated from heat-producing radiogenic Paleoproterozoic granites (Durlacher and Moorarie Supersuites) from the hydrolysis of groundwater and from primordial degassing. Helium generation is from the extremely long-lived radiogenic decay of uranium and thorium in these radiogenic granites and potentially also from some sedimentary rocks.

A significant opportunity in the Edmund–Collier is the development of multiple and long-lived traps for gas accumulations, including anticlinal and structural traps, stratigraphic depositional pinch outs and diagenetic traps, and density driven hydrologic traps. These prospective fold-closures at surface can be extrapolated in the subsurface in various geophysical interpretations. Importantly, widespread anticline development since c. 1171 Ma and voluminous dolerite intrusions have provided traps for the potential accumulation of ongoing hydrogen and helium gases for at least one billion years. Refer conceptual cross section below (Figure 6).

The Company plans to undertake a soil gas survey across its entire portfolio to directly detect the potential presence for micro seepage of targeted gases in the following months.

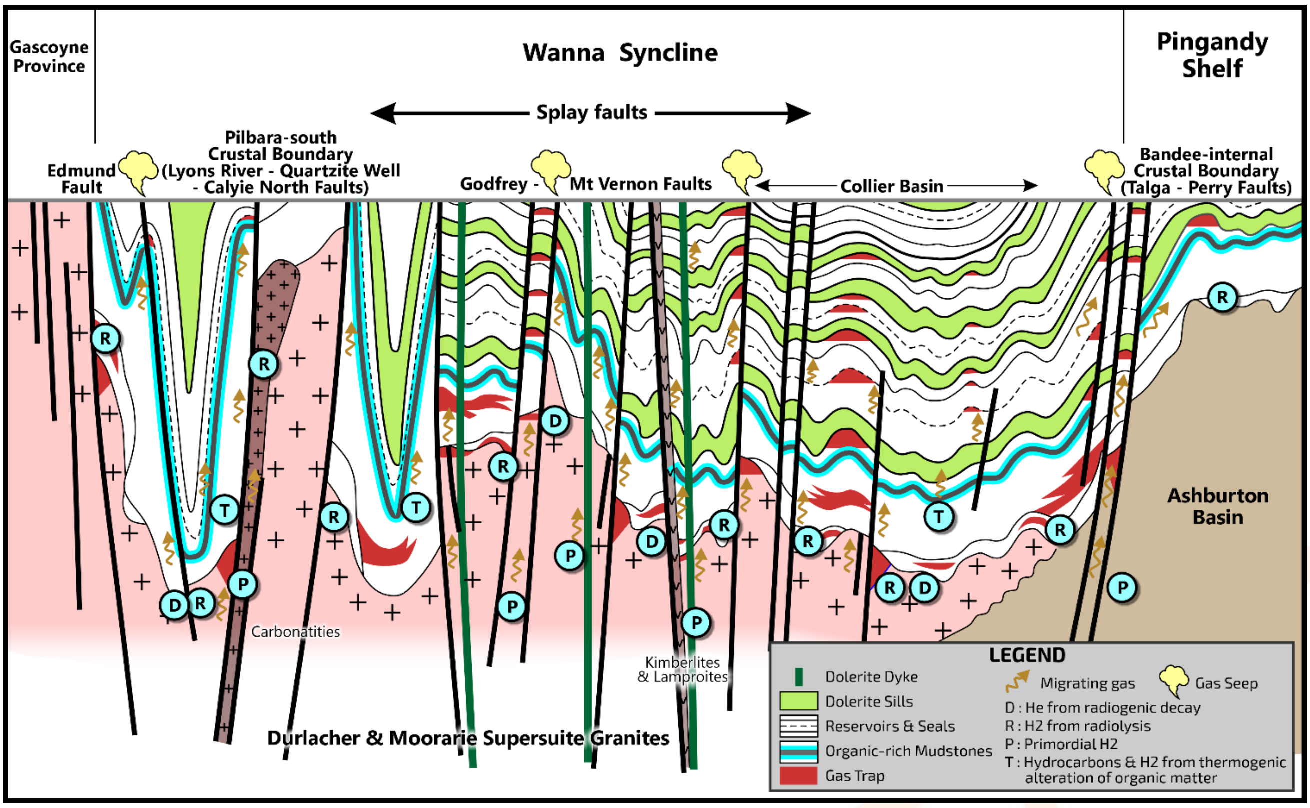

Figure 6: Conceptual Edmund-Collier Basin H_2 - He System.

COMPETENT PERSONS STATEMENT

The information in this announcement that relates to Exploration Results is based on information reviewed by Mr Peter Muccilli, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy. Mr Muccilli is the Technical Director for Constellation Resources Limited and a holder of shares and incentive options in Constellation Resources. Mr Muccilli has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration, and to the activity being undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Mr Muccilli consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

FORWARD LOOKING STATEMENTS

Statements regarding plans with respect to Constellation's projects are forward-looking statements. There can be no assurance that the Company's plans for development of its projects will proceed as currently expected. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of the Company, which could cause actual results to differ materially from such statements. The Company makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of that announcement.

This ASX Announcement has been authorised for release by the Company's Managing Director, Mr Peter Woodman.

References

Hanson J and Hanson H, 2023, Hydrogen's organic genesis: Unconventional Resources, V 4.

Horsfield B et al., 2022, Molecular hydrogen from organic sources in the deep Songliao Basin, P.R. China: International Journal of Hydrogen Energy, Volume 47/38.

Pangea Resources, 2016, WAMEX open-file report (A110192 number)

Suzuki N et al., 2017, Hydrogen gas of organic origin in shales and metapelites: International Journal of Coal Geology, Volume 173.

Luo et al. (2021) "Thermal evolution behaviour of the organic matter and a ray of light on the origin of vitrinite-like maceral in the Mesoproterozoic and Lower Cambrian black shales: Insights from artificial maturation." Int J. Coal Geol (244)

For the calculation of vitrinite reflectance equivalence from alginite, we have used the equation of Faiz, M., Altmann, C., Baruch, E., Cote, A., Gong, S., Schinteie, R. and Ranasinghe, P. (2022) Organic matter composition and thermal maturity evaluation of Mesoproterozoic source rocks in the Beetaloo Sub-Basin, Australia: Organic Geochemistry, 174 (2022), 104513.

Table 1: TOC and Thermal Maturity Sample Holes Results

Drillhole	Sample ID	Formation	Sample Depth (m)	TOC (wt%)	Easting*	Northing*	Collar Azimuth (degrees)	Collar Dip (degrees)	Total Depth (m)
17BBDD002	17BBDD002_127.50	Blue Billy Fm	127.50	2.37	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_246.15	Blue Billy Fm	246.20	0.91	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_266.15	Blue Billy Fm	266.20	1.96	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_296.10	Blue Billy Fm	296.10	3.16	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_326.10	Blue Billy Fm	326.10	5.54	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_346.13	Blue Billy Fm	346.10	7.09	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_366.00	Blue Billy Fm	366.00	10.1	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_396.10	Blue Billy Fm	396.10	2.54	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_416.05	Blue Billy Fm	416.10	2.68	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_446.10	Blue Billy Fm	446.10	1.76	460215	7397610	210	-80	649.00
17BBDD002	17BBDD002_466.10	Blue Billy Fm	466.10	1.36	460215	7397610	210	-80	649.00
E044/0051	E044/0051_60.04	Blue Billy Fm	60.00	3.05	451720	7409140	0	-90	441.40
E044/0051	E044/0051_73.9	Blue Billy Fm	73.90	4.05	451720	7409140	0	-90	441.40
E044/0051	E044/0051_104.13	Blue Billy Fm	104.10	4.76	451720	7409140	0	-90	441.40
E044/0051	E044/0051_129.19	Blue Billy Fm	129.20	1.4	451720	7409140	0	-90	441.40
E044/0051	E044/0051_219.33	Blue Billy Fm	219.30	2.12	451720	7409140	0	-90	441.40
DD97BC14	DD97BC14_62.07	Discovery Fm	62.10	6.47	682102	7313931	0	-90	153.30
DD97BC14	DD97BC14_87.20	Discovery Fm	87.20	7.75	682102	7313931	0	-90	153.30
DD97BC14	DD97BC14_107.45	Discovery Fm	107.50	5.76	682102	7313931	0	-90	153.30
DD97BC14	DD97BC14_121.30	Discovery Fm	121.30	3.06	682102	7313931	0	-90	153.30

**GDA94 UTM MGA Zone 50*

Table 2: Vitrinite Sample Holes

Hole ID	Northing	Easting	RL	Dip	Az	Sample ID	Sample Depth From (m)	Sample Depth To (m)	Estimated Vitrinite Reflectance Equivalent (%) Of Alganite	Estimated Vitrinite Reflectance Equivalent (%) Of Bitumen
17BBDD002	7397610	460215	295	-80	210	E5219	143.25	143.30	8.70	2.87
						E5220	286.10	286.15		*N/A*
						E5221	336.12	336.17		6.40
						E5222	386.10	386.15		6.03
						E5223	436.25	436.30	3.93	2.73
						E5224	485.50	485.55	4.49	3.82
						E5225	540.10	540.15	6.66	*N/A*
E044/0051	7409140	451720	441	-90	0	E5226	46.17	46.22		*N/A*
						E5227	99.15	99.20		5.19
						E5228	177.24	177.29		4.37
						E5229	270.25	270.30		4.73
						E5230	370.00	370.05		*N/A*
DD97BC14	7313931	682102	533	-90	0	E5231	57.60	57.65		3.43
						E5232	94.80	94.85		3.76
						E5233	135.30	135.35		*N/A*
DD97BC16	7311917	677317	466	-90	0	E5234	45.00	45.05		2.99
						E5235	80.00	80.05	1.77	*N/A*
						E5236	142.50	142.55	2.18	*N/A*

DDH2	7311344	620896	N/A	-60	0	E5237	44.15	44.20		5.21
						E5238	149.96	150.01		3.58
						E5239	233.50	233.55	4.63	*N/A*
DDH3	7311144	618266	N/A	-70	0	E5240	84.73	84.78	11.05	*N/A*
						E5241	183.29	183.34	5.33	*N/A*
DH4	7425264	397882	N/A	-90	0	E5242	54.79	54.84		8.78
DH13	7424711	397715	N/A	-90	0	E5243	83.74	83.79		6.32
FD1	7333095	479250	501.2	-60	140	E5244	90.13	90.17	3.45	*N/A*
						E5245	198.03	198.08		*N/A*
						E5246	248.35	248.40		*N/A*
						E5247	327.58	327.63		*N/A*
						E5248	388.30	388.35		*N/A*
						E5249	462.06	462.10		*N/A*
ISBD2	7292436	506290	475	-80	60	E5250	101.92	101.97		*N/A*
						E5251	136.65	136.70		3.14
						E5252	192.55	192.60		3.44
						E5253	241.05	241.10		*N/A*
						E5254	290.90	290.95		*N/A*
WHRD021	7358790	761998	583.65	-90	0	E5255	109.00	109.05	1.27	*N/A*
						E5256	259.73	259.75		2.24
						E5257	313.38	313.40	4.95	*N/A*
						E5258	417.04	417.09	4.90	*N/A*
						E5259	496.50	496.55	11.20	*N/A*
						E5260	562.85	562.86	1.20	*N/A*

N/A: Bitumen reflectance not possible due to bitumen absent or too fine-grained for measurement Where possible alganite reading measured.

Appendix 1: JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (i.e. Cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	Core samples were sourced from three publicly available diamond drill holes drilled within the boundaries of the Edmund–Collier Special Prospecting Authorities applications. The diamond drillholes are located at the Geological Survey of Western Australia Perth Core Library, 37 Harris St , Carlisle WA 6101. Standard industry cores collected by Geological of Western Australia staff. The small core samples (several centimetre lengths) were selected from the core available and delivered to the following laboratories for analyses: Core Laboratories Australia Pty Ltd located at 89 Leach Hwy, Kewdale WA 6105 and then sent to Core Laboratories in Houston, TX for analysis.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Further details in the reported mineral diamond holes can be found in the following references; 17BBDD002: Drilled by AusQuest, refer to open file WAMEX reports A116556, A131800, A132230, A135257 E044/0051. Drilled by Alcoa of Australia Ltd refer to open file WAMEX reports A12226, A105861, A110192, A122258 and A143954 DD97BC14. Drilled by Rio Tinto Exploration refer to open file WAMEX reports A54567 and A110192 DDH2, DDH3, DDH4 and DDH14 were drilled by Westfield Minerals N.L. refer to open file WAMEX reports A571 and A143954 FD1 was drilled by Dolphin Resources, refer to open file WAMEX reports A94468, A96612 and A105861

Criteria	JORC Code explanation	Commentary
		ISD02 was drilled by Western Mining Corporation, refer to WAMEX reports A41630, A110192 and A105861. WHRD021 was drilled by Atlas Iron, refer to WAMEX report A97512, A103768 and A137477 See included table for Hole ID locations and intervals analysed.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Not applicable.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	The selected holes were logged by CR1 Energy consultant Iain Copp from Good Earth Consulting to interpret geological intervals and select representative sample sites.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	Total organic carbon (TOC) analyses were carried out as part of industry standard Rock-Eval analysis used to determine hydrocarbon source-rock potential, maturity, and kerogen quality. 1. Sample Preparation Finely milled rock samples (cuttings, chips, or plugs) are required for analysis, with the 1-4 mm size fraction preferred for cuttings. 2. Heating and Analysis: The sample is heated under an inert gas (like helium or nitrogen) at a controlled rate. This process releases hydrocarbons and CO2, which are measured by the Rock-Eval instrument. 3. Parameter Measurement: The Rock-Eval pyrolysis generates several parameters, including:

Criteria	JORC Code explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	S1 and S2 Peaks: These represent the free and initially generated hydrocarbons, respectively. S3 Peak: This indicates the amount of CO2 released during the heating process. Tmax: The maximum temperature at which the pyrolysis peak occurs, reflecting the sample's thermal maturity. 4. Shale Play Mode: Rock-Eval can be adapted for unconventional source rocks, using two heating stages to obtain Sh0 (free hydrocarbons), Sh1 (sorbed hydrocarbons), and Sh2 (potential hydrocarbon generation). 5. Derived Parameters: From the Rock-Eval data, other parameters can be calculated, including Hydrogen Index (HI) , and Oxygen Index (OI).
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	Rock-Eval Analysis is a standard test to evaluate the hydrocarbon source-rock potential, maturity, and kerogen quality, including Total Organic Carbon (TOC) levels. TOC measures the organic richness of a rock in weight per cent organic carbon. Organic richness is the first requirement for a potential thermogenic source rock. The dried samples are pulverised and treated with hot and cold hydrochloric acid to remove carbonate minerals (inorganic carbon). After acid treatment, the organic carbon content is determined by combustion of the sample in a Leco TOC. Leco TOC was performed using the Leco SC-632 instrument and Rock-Eval 6 pyrolysis analysis was performed using the Rock-Eval 6 instrument. The samples were crushed to -60 mesh prior to the analyses. Rock-Eval Pyrolysis. The Rock-Eval 6 Analyzer (standard model S/N 18-001) provides a rapid (30min/sample) source rock analysis of a small sample (50-70 mg) by heating the rock over temperature range of 300-650 °C. The temperature is set to hold at 300 °C for 3 minutes and increase to 650°C at 25 °C /min temperature rate. An IFP standard is used as to calibrate the instrument. This analysis quickly evaluates the concentration of volatile and soluble organic matter (S1), the amount of pyrolysable organic matter (S2) and thermal maturity (Tmax). The results identify

Criteria	JORC Code explanation	Commentary
		possible source on which more detailed analyses may be performed. To determine the thermal maturity of samples, the reported estimated vitrinite reflectance equivalent (EqVRo) of bitumen using industry standard processes, was prepared for CSIRO under the second technical service agreement/ Constellation Resources by independent consultants Energy Resources Consulting Pty Ltd PO Box 54 Coorparoo, Qld 4151. For a core sample, a flat face perpendicular to bedding is prepared by grinding. This is placed in a 30 mm diameter mould along with several randomly oriented grains. The whole is mounted in epoxy resin. The epoxy resin samples are polished using a variety of wet and dry papers, diamond polishing compounds and colloidal silica. The polished samples are dried in a desiccator for a minimum of 12 hours prior to analysis. Analysis is made using a Leica MP4500P system with Hilgers DISKUS software. A mechanical stage is used to traverse the sample in a regular pattern. Mean maximum reflectance in oil of the organic matter is determined by rotating the microscope stage. Reflectance is determined of a 2 µm2 area at 546nm using a total magnification of 500X. Equivalent vitrinite reflectance of solid bitumens was calculated using the conversion for Mesoproterozic solid bitumens (SB) as outlined by Luo *et al.* (2021) "Thermal evolution behaviour of the organic matter and a ray of light on the origin of vitrinite-like maceral in the Mesoproterozoic and Lower Cambrian black shales: Insights from artificial maturation." Int J. Coal Geol (244): EqVRo = 0.87×SBRo + 0.25.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	The TOC levels reported in historical testwork by Pangaea Resources utilising Core Laboratories on the same holes reported similar levels. Reference source: *Pangaea Resources, 2016, Core Library Sampling Results P437: Geological Survey of Western Australia, M-series A110192 (open file).* Historical thermal maturity analyses mentioned were selected from the same holes and were also submitted to Core Laboratories for analysis (*Pangaea Resources, 2016).*

Criteria	JORC Code explanation	Commentary
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	The hole coordinates were taken from submitted DEMIRS reports, and GPS accuracy deemed appropriate for basin-scale prospectivity analysis.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	Holes were sampled according to whether they intercepted the organic-rich shale units in the Edmund-Collier Basins. TOC laboratory results analysed core plugs that were taken at over regular intervals throughout the organic shale unit. For each reported TOC grade, the core plug location downhole has been tabled. Over the reported interval of the organic rich unit, the number of analysis and the range of TOC values has been recorded to demonstrate variability with a ""notional" average estimated. The vitrinite reflectance equivalent (EqVR) values were measured from core samples taken at intervals throughout the organic shale unit. For each reported EqVR result, the interval downhole has been tabled. The number of analysis and the range of EqVR values has also been recorded to demonstrate variability with a "notional" average estimated over the reported interval.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Diamond holes 17BBDD002 and E044/0051 both intersects the organic-rich Blue Billy Formation along the northwest margins of the Pingandy Shelf. Thickness of the Blue Billy Formation within these holes are interpreted to be up to 370 metres, but elsewhere along the Pingandy Shelf, the Blue Bully Formation is interpreted to be up to 800m in thickness by the GSWA. The Blue Billy Formation dips shallowly to the south and strikes northwest. These units are outcropping and both holes are drilled directly down dip. The Pingandy Shelf is located on the footwall side of the steeply south dipping Talga Fault corridor. The Talga Fault corridor defines the northern margin of the Wanna Syncline. Diamond hole DD97BC14 intersects the organic-rich Discovery Formation on the Godfrey Block. The hole is located down dip of the outcropping surface around the Brumby Anticline. The Discovery Formation as

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		interpreted here also includes underlying shales and siltstones of the uppermost Kangi Creek Formation. The Godfrey Block is located on the southern side of the Wanna Syncline along the footwall side of the Godfrey Fault – Mt Vernon Fault. The Discovery Formation in DD97BC14 is shallowly dipping to the south and strikes west. The estimated thickness of the Discovery Formation in the area is around 700m.
Sample security	*The measures taken to ensure sample security.*	Not applicable.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The TOC results are being reviewed by CSIRO as part of the ongoing Technical Research Agreement.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section).

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The Edmund-Collier Project is located in the Gascoyne Province of Western Australia. The four contiguous SPA-AOs (477 graticular blocks covering 37,288km2) span an east–west strike length of approximately 380km and are bordered to the north, east and west by gas transmission pipelines The Company is the preferred applicant of the SPA-AO applications. The step-by-step process tow working on an SPA-AO is highlighted below: 1. The Company confirms its intention to proceed with the SPA-AO on the basis of the requirements outlined, including undertaking a number of regulatory requirements, namely: i. Entering into the expedited procedure process under the Native Title Act 1993 (Cth) future act provisions; ii. Engaging relevant stakeholders (pastoral stations, other tenement holders etc); and iii. Assessment and approval of proposed exploration work programs under the Petroleum and Geothermal Energy Resources Act 1967 (WA)(“PGERA”) which includes the submission of an Environment Plan which

Criteria	JORC Code explanation	Commentary
		must be approved prior to commencement of any activity. 2. It is expected the time required to complete the above regulatory requirements will be approximately six to twelve months, subject to successful stakeholder engagement. Once complete, the SPA-AO will proceed to be granted to allow a six-month work window, the dates of which can be elected by the Company to assist in optimal sampling conditions. 3. The Company then has a further six months to evaluate the exploration data collected during the field programs and if the results warrant further work, apply for a Petroleum Exploration Permit ("PEP"). The number of blocks within a single PEP permitted to be applied for is limited to 50% of the SPA-AO area and the application process for a PEP through to grant, the timeframe of which is dependent upon consultation periods with relevant stakeholders.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Limited historic analyses of both shale units indicate they contain pyrobitumen and are organic-rich and overmature (i.e. experienced high temperatures and potentially within the hydrogen window) (Pangea Resources, 2016).
Geology	*Deposit type, geological setting and style of mineralisation.*	The Edmund–Collier SPA comprises the western parts of the Mesoproterozoic Edmund Basin and the overlying Collier Basin (1679–1067 Ma), which together lie along the central part of the Proterozoic Capricorn Orogen. The shallower parts of the northern basin margin have been targeted for shale-hosted exhalative mineralisation (lead- zinc) by previous explorers in both the organic-rich Blue Billy and Discovery Formations. Thermogenic hydrogen from organic source-rocks forms during hydrocarbon generation, but importantly continues well after the hydrocarbon gas window begins to close at around 250°C. With increasing temperature due to continued burial, the degraded organic matter and pyrobitumens produced during hydrocarbon generation continue to release hydrogen through a metagenesis process until graphite is

Criteria	JORC Code explanation	Commentary
		ultimately formed. This process also matches the temperatures and results at which laboratory experiments and petrochemical processes used to generate hydrogen-stock are currently observed.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole.* ○ *down hole length and interception depth* ○ *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Contained in the body of text.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Not applicable.
Relationship between mineralisation	*These relationships are particularly important in the reporting of Exploration Results.*	Not applicable.

Criteria	JORC Code explanation	Commentary
widths and intercept lengths	*If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	A representative cross-section and plans of drillhole locations have been provided in the body of the report.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.*	Commentary and diagrams include all key inputs for balanced reporting.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Further work is planned as stated in this announcement.

19 May 2025

Notice under section 708AA(12) of the Corporations Act 2001 (Cth)

On 14 April 2025, the Company announced the launch of a non-renounceable pro-rata entitlement offer to eligible shareholders to acquire one (1) new fully paid ordinary share (**New Share**) for every four (4) existing shares held in the Company, at an offer price of $0.15 per New Share to raise approximately $2.36 million (before costs) (**Entitlement Offer**).

The purpose of this notice is to inform shareholders of the changes to the Company's circumstances since the previous notice dated 15 April 2025, issued under section 708AA(2)(f) of the *Corporations Act 2001* (Cth) (**Corporations Act**), and constitutes a notice for the purposes of section 708AA(12) of the Corporations Act, as modified by the Australian Securities and Investments Commission (**ASIC**) Corporations (Non-Traditional Rights Issues) Instrument 2016/84 (**ASIC Instrument**) in relation to the new information described in this announcement.

The Company confirms the following:

(a) the Company will offer the New Shares under the Entitlement Offer without disclosure under Part 6D.2 of the Corporations Act;

(b) this notice given under section 708AA(12)(f) of the Corporations Act, as modified by the ASIC Instrument, updating its previous notice under section 708AA(2)(f) of the Corporations Act dated 26 November 2024;

(c) as at the date of this notice, the Company has complied with:

  (i) the provisions of Chapter 2M of the Corporations Act as they apply to the Company; and

  (ii) sections 674 and 674A of the Corporations Act;

(d) as at the date of this notice, on the basis of this ASX announcement dated 18 December 2024, there is no information:

  (i) that has been excluded from a continuous disclosure notice in accordance with the ASX Listing Rules; and

  (ii) that investors and their professional advisers would reasonably require for the purpose of making an informed assessment of:

    (A) the assets and liabilities, financial position and performance, profits and losses and prospects of the Company; or

    (B) the rights and liabilities attaching to the New Shares; and

(e) the potential effect that the issue of the New Shares, under the Entitlement Offer, will have on the control of the Company is as follows:

  (i) if all eligible shareholders take up their entitlements under the Offer, the New Shares issued under the Offer will have no effect on the control of the Company and all shareholders will hold the same percentage interest in the Company, subject only to changes resulting from ineligible shareholders being unable to participate in the Offer;

  (ii) in the more likely event that there is a shortfall in the Offer, eligible shareholders who do not subscribe for their full entitlement of New Shares under the Offer will be diluted relative to those eligible shareholder who subscribe for some or all of their entitlement, and will be diluted by any take up of shortfall shares; and

  (iii) in relation to any person participating in the shortfall offer, the Directors will ensure that no person will be issued, through participating in the shortfall offer, New Shares if such issue will result in their voting power in the Company exceeding 19.9%.