

## Welchau-1 Discovery Well to be Cased and Suspended for Future Testing

*“Logging results reveal a high correlation between hydrocarbon shows and open fracture networks essential for well productivity over a large gross interval. Down hole sampling tool sticking prevented adequate sampling across zones of interest.*

*Liquid hydrocarbons and gas inflow was observed at surface following down hole sampling which further confirms existence of mobile hydrocarbons.”*

### Key points:

- The Welchau-1 gas exploration well was spudded on the 24<sup>th</sup> of February using the RED Drilling & Services GmbH (RED) E200 drill rig in the ADX-AT-II exploration licence in Upper Austria.
- Operations at 6.00 am Central European Time (CET) on the 24<sup>th</sup> of March was retrieving Modular Formation Dynamic Tester (MDT) tool which was previously stuck in the well bore and preparing to run 7 inch casing.
- Progress since the last report on the 18<sup>th</sup> of March has been conditioning the well and running wireline logs, down hole pressure recording and sampling tools.
- The forward program is to condition the well then run and cement 7-inch casing down to the well total depth for well suspension.
- Liquid hydrocarbons and gas inflow to the wellbore were observed at surface following down hole sampling operations further confirming existence of mobile hydrocarbons.
- Preliminary well results from logging, which included image log, sonic log, density log, neutron and resistivity logs and the down hole pressure recording and sampling tool, are summarised as follows;
  - A strong correlation between formation open fractures, important for carbonate reservoir productivity, with hydrocarbon shows encountered while drilling the well.
  - Strong evidence of vugs in carbonate matrix also coincident with hydrocarbon shows, in drill cutting samples and a 7 metre whole core recovered from the well.
  - Fracture networks and vuggy porosity encountered between depths of 1346 metres measured depth (MD) and 1702 metres MD (356 metres gross interval) across three interpreted lithological sequences.
  - MDT tested intervals show medium to very high permeability which is in agreement with fracture density and petrophysical log interpretation.

The MDT downhole sampling of the reservoir fluids was unable to sample reservoir fluids from the zones of interest primarily due to the extensive mud losses into the open fractures of the well. Furthermore the sampling procedures were hampered due tool sticking impacting the recoverability of representative samples from the zones of interest.

**ADX Executive Chairman, Mr Ian Tchacos, said,** *“The logging results have confirmed the presence of well-developed open fracture networks and vuggy porosity coincident with hydrocarbon shows. These fracture networks and vugs are key to well productivity in carbonate reservoir systems. Encountering potential productive zones over a gross interval of 356 metres is very compelling. While it is frustrating that the attempted fluid sampling was hampered due to operational difficulties which are relatively common in fractured carbonate reservoirs, the well inflow of hydrocarbons further confirms the existence of mobile gaseous and liquid hydrocarbons that can only be properly evaluated with a cased hole testing program.*

*We will now run casing to protect the reservoir encountered in the well and look forward to coming back to test the well in accordance with previous environmental permit commitments to limit drilling and well testing during the period 1 October to 31 March. Environmental permitting for future operations will commence immediately. In between time there is much analysis work to do on the data recovered to date from drilling, coring and logging to commence the evaluation of the resource potential at Welchau. The intervening period gives us the time to plan a testing program with a smaller, lower-cost workover rig that is appropriate for running testing equipment in cased hole at Welchau, as well assessing the undrilled deeper potential that may be accessed from this well. In addition to Welchau, more detailed mapping will be undertaken on follow up structures already recognised within ADX’ acreage.*

ADX Energy Ltd (**ASX Code: ADX**) is pleased to advise that the logging program has confirmed open fracture networks and vuggy porosity essential for well productivity coincident with hydrocarbon shows between the depths of 1346 metres measured depth (MD) and 1702 metres MD (a 356 metres gross interval) across three interpreted lithological sequences. Operations at 6.00 am CET on the 24<sup>th</sup> of March 2024 were retrieving the MDT tool which was previously stuck in the well and conditioning the well bore prior to running 7-inch casing. The well was drilled and is evaluated using the RED E200 drill rig in the ADX-AT-II exploration licence in Upper Austria.

Since the last report on the 18<sup>th</sup> of March 2024, a program of wireline logs, down hole pressure recording and sampling tools have been run in the 8 ½ inch hole section from well TD at 1733 metres MD up to the 9 ⅝ inch casing shoe (refer to Preliminary Well Log on Figure 1).

Future well operations include the casing, cementing and suspension of the well, followed by rig down and demobilisation of the RED E200 drill rig. Future testing and potential deepening of the well can be done with a cost-effective workover rig.

### **Gas and Liquids Inflow to Well**

Liquid hydrocarbon and gas inflow to the wellbore was observed at surface following downhole sampling operations.

Mud gas readings for C1 of up to 20% were recorded from the well bore with heavier components up to C5 recorded. Following the observation of gas seen at surface, liquid hydrocarbons were also observed in the mud at surface exhibiting florescence. The inflow of hydrocarbons to the well bore is further confirmation of the existence of mobile hydrocarbons.

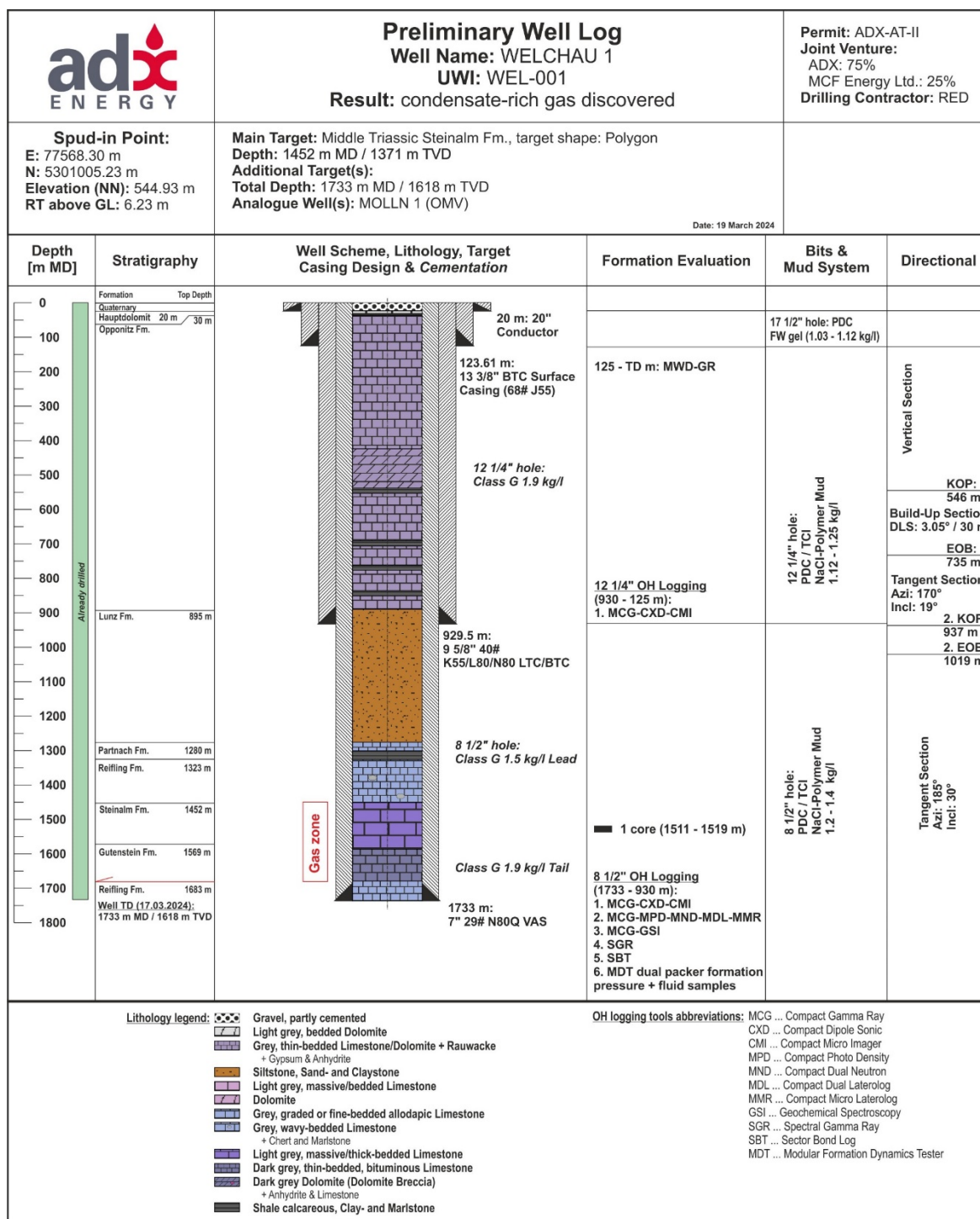


Figure 1: Preliminary Well Log for the Welchau-1 well

### Logging results

An extensive logging programme was run in the 8 ½" section, which included an image log and cross-dipole sonic in addition to standard logs for well evaluation. A quick look interpretation of these logs clearly demonstrates the presence of different types of porosity (vuggy and open fractures). Intervals with good hydrocarbon shows clearly correlate to either fractured zones or zones with vuggy porosity. A summary of this quick look interpretation across a 356-metre gross interval and three interpreted lithological sequences is shown in Table 1 below.

Zone of Interest	Formation	Top	Bottom	Thickness	Permiability Indicators				
		(m MD)	(m MD)	m MD	Sonic Porosity	Fractures	Vugs	Perm. Index	Fluid loss
Zone 1	Reifling	1346,8	1348,8	2,0	◇	◇	◇		
Zone 2	Reifling	1375,2	1376,9	1,7	◇		◇		
Zone 3	Reifling	1419,1	1421	1,9	◇	◇	◇		
Zone 4	Steinalm	1458	1460,5	2,5	◇	◇		◇	
Zone 5	Steinalm	1476	1477,5	1,5		◇		◇	
Zone 6	Steinalm	1478	1480,3	2,3	◇	◇		◇	
Zone 7	Steinalm	1483,4	1484,5	1,1	◇	◇		◇	
Zone 8	Steinalm	1485,8	1486,7	0,9	◇	◇	◇		◇
Zone 9	Steinalm	1493,3	1496,5	3,2	◇	◇	◇	◇	
Zone 10	Steinalm	1497,7	1499	1,3	◇	◇	◇	◇	
Zone 11	Steinalm	1505,8	1509	3,2	◇	◇	◇	◇	
Zone 12	Steinalm	1513	1514,7	1,7	◇	◇		◇	◇
Zone 13	Steinalm	1531,5	1533,3	1,8	◇			◇	
Zone 14	Steinalm	1537,4	1538,1	0,7	◇	◇			
Zone 15	Steinalm	1550,4	1553,6	3,2	◇	◇			
Zone 16	Steinalm	1554,6	1557,4	2,8	◇	◇			
Zone 17	Gutenstein	1596,2	1597,2	1,0		◇	◇		
Zone 18	Gutenstein	1638,3	1641	2,7	◇	◇			
Zone 19	Gutenstein	1666,9	1667,8	0,9	◇		◇	◇	
Zone 20	Reichenhall	1690	1692,4	2,4	◇		◇		
Zone 21	Reichenhall	1700,5	1702,1	1,6	◇		◇		

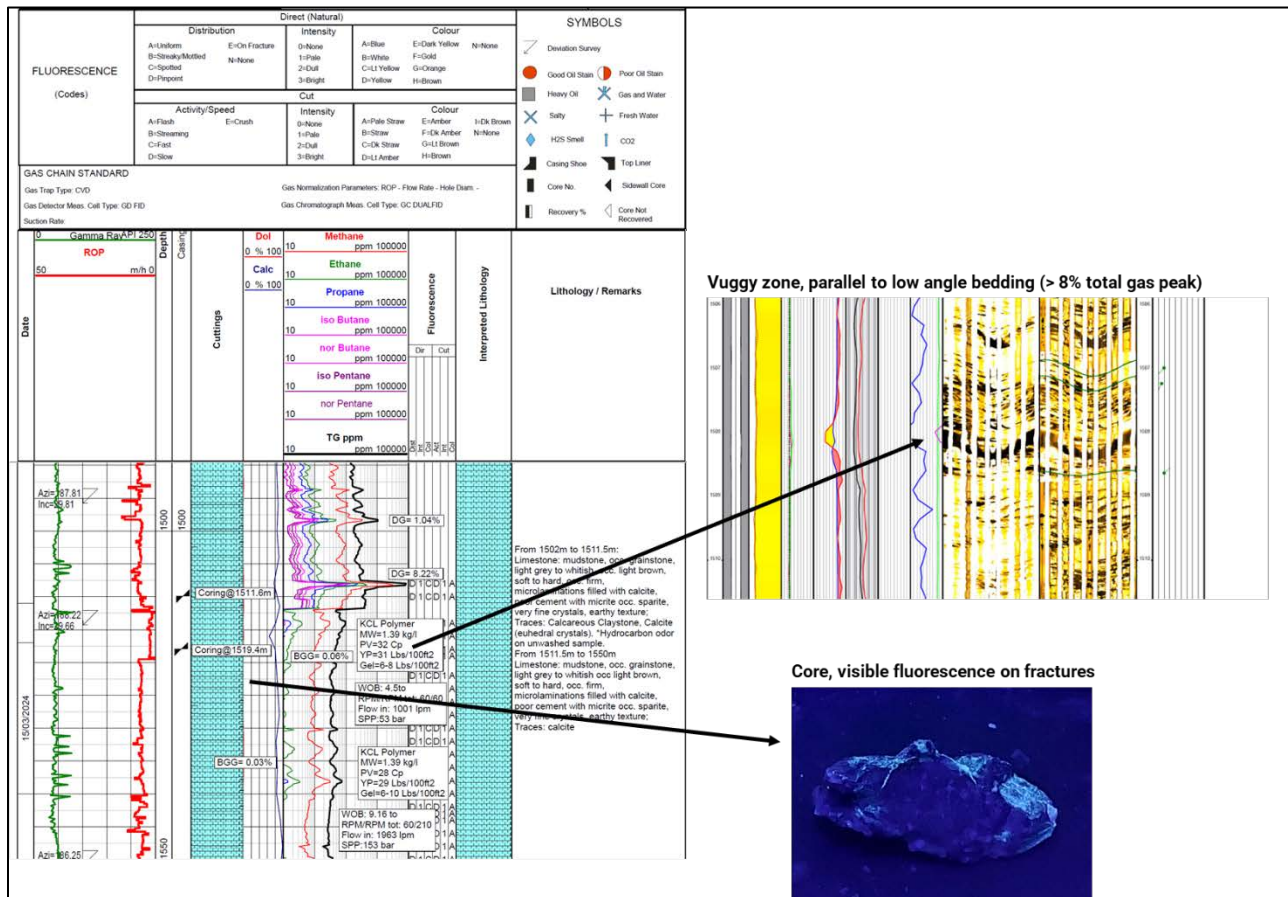
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Table 1: Shows reservoir intervals indicating permeability based on indicators from the log interpretation (image log, sonic, density, neutron and resistivity)

### Hydrocarbon Shows

Good hydrocarbon shows have been encountered below the sealing Lunz and Partnach Formations. Several gas peaks as high as 8.22% have been recorded in the reservoir formations below the seal. In addition to the gas shows, liquid hydrocarbon shows were also observed. Those include direct and cut fluorescence on cuttings and core fragments. In core fragments, the fluorescence is clearly associated with the presence of fractures.





**Figure 2: left: The Welchau-1 mudlog with several distinct gas peaks in the area from 1490 to 1550 m MD. The zone of the highest gas peak (> 8%) can clearly be identified on the image log (top right) where large vugs (dark coloured due to conductive mud entering the formation) are present.**

**Bottom right: A piece of rock recovered during coring, which shows intense, light blue fluorescence on naturally occurring fractures.**

### Formation Sampling

The well was planned to be pressure recorded and downhole sampled by running the Modular Formation Dynamic Tester (MDT) in a dual packer operations mode. The objective of acquiring downhole samples of reservoir fluids was not achieved.

Five pressure recordings from the interval 1479 metres to 1597 metres MD revealed a complex carbonate reservoir setting in an over pressurised hydraulic system at an equivalent formation density of 1.28 SG. The corresponding permeability of the pressure tested levels show medium to very high permeability which is in agreement with fracture density and petrophysical log interpretation.

The inability to sample reservoir fluids using the MDT from the zones of interest was primarily due to the extensive mud losses into the open fractures of the well. Furthermore operational difficulties hindered the sampling procedures due to tool sticking and the inability to recover representative samples from the zones of interest.

The recovery of the stuck MDT tool string required 72 hours of rig time and three attempts to retrieve the tool string from the well bore and bring it safely back to surface.

### ***Economic Participation in the Welchau Investment Area***

ADX has executed an Energy Investment Agreement with MCF Energy Ltd. via its subsidiary MCF Energy GmbH (MCF) to fund 50% of Welchau-1 well costs up to a well cost cap of EUR 5.1 million to earn a 25% economic interest in the Welchau Investment Area which is part of ADX's ADX-AT-II licence in Upper Austria. The Welchau Investment Area contains the Welchau Gas Prospect and other emerging oil and gas prospects. Upon completion of MCF's funding obligations ADX will hold a 75% economic interest in the Welchau Investment Area. ADX holds a 100% economic interest in the remainder of the ADX-AT-II license other than the Anshof Discovery Area.

### **For further details please contact:**

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### **Authorised for lodgement by Ian Tchacos, Executive Chairman**

### **Persons compiling information about Hydrocarbons:**

Pursuant to the requirements of the ASX Listing Rule 5.41 the technical and reserves information relating to Austria contained in this release has been reviewed by Paul Fink as part of the due diligence process on behalf of ADX. Mr Fink is Technical Director of ADX Energy Ltd is a qualified geophysicist with 30 years of technical, commercial and management experience in exploration for, appraisal and development of oil and gas resources. Mr Fink is a member of the EAGE (European Association of Geoscientists & Engineers) and FIDIC (Federation of Consulting Engineers).

### **Previous Estimates of Reserves and Resources:**

ADX confirms that it is not aware of any new information or data that may materially affect the information included in the relevant market announcements for reserves or resources and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

### **Reporting Standards for Resource Estimation**

Reserves and resources are reported in accordance with the definitions of reserves, contingent resources and prospective resources and guidelines set out in the Petroleum Resources Management System (PRMS) prepared by the Oil and Gas Reserves Committee of the Society of Petroleum Engineers (SPE) and reviewed and jointly sponsored by the American Association of Petroleum Geologists (AAPG), World Petroleum Council (WPC), Society of Petroleum Evaluation Engineers (SPEE), Society of Exploration Geophysicists (SEG), Society of Petrophysicists and Well Log Analysts (SPWLA) and European Association of Geoscientists and Engineers (EAGE), revised June 2018.

### **Prospective Resource Classifications**

**Low Estimate** scenario of Prospective Resources - denotes a conservative estimate of the quantity that will actually be recovered from an accumulation by an oil and gas project. When probabilistic methods are used, there should be at least a 90% probability (P90) that the quantities actually recovered will equal or exceed the low estimate.

**Best Estimate** scenario of Prospective Resources - denotes the best estimate of the quantity that will actually be recovered from an accumulation by an oil and gas project. It is the most realistic assessment of recoverable quantities if only a single result were reported. When probabilistic methods are used, there should be at least a 50% probability (P50) that the quantities actually recovered will equal or exceed the best estimate.

**High Estimate** scenario of Prospective Resources - denotes an optimistic scenario of the quantity that will actually be recovered from an accumulation by an oil and gas project. When probabilistic methods are used, there should be at least a 10% probability that the quantities actually recovered will be equal or exceed the high estimate.

## **Nomenclature and conversions used in this release**

*BBL* means US barrel

*MMBBL* means million US barrels

*MCF* means thousand cubic feet

*MMCF* means million cubic feet

*BCF* means billion cubic feet

*TCF* means trillion cubic feet

*BOE* means barrel of oil equivalent

*MMBOE* means million barrels of oil equivalent

*MMSCFPD* means million standard cubic feet per day

**End of this Release**