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### **Francis Egan, MD of Cuadrilla address to AJ Lucas shareholder**

Hi I'm Francis Egan, CEO of Cuadrilla. I'd like to thank you for the opportunity to give you a update on our operations over the course of the last year. In particular, I'd like to thank all the AJ Lucas shareholders for your continuing support of our company and Cuadrilla. It is very much appreciated.

In January this year we completed the flow testing of the Preston New Road 1z well which was drilled into the Lower Bowland Shale. In February we announced the results of that testing. We were very encouraged indeed by what we saw - natural gas flowed to surface and the quality of that gas was exceptional. The flow rate was measured at a peak of over 200k standard cubic feet per day and a stable rate of around 100,000 standard cubic feet a day – which given the very limited number of fracks that we were able to put in the ground was an excellent outcome.

Having finished the flow test of the PNR 1 well we then moved to prepare for the fracking and flow testing of the second of the two horizontal wells - the PNR 2 well - which has been completed in the Upper Bowland Shale.

One of the key differences of those two wells was the composition of the fracturing fluid used for the second well. In order to change that composition we had to apply to the Environment Agency for a new permit and we successfully did that over the course of February through April of this year.

By July we were ready to mobilise the equipment needed on site to complete the fracturing of the PNR 2 well. That mobilisation went successfully, completely to plan and without any significant disruption to local communities. I think that speaks volumes for our operations team, the planning that went into that mobilisation and we were all set up to commence fracturing in August of this year.

Hydraulic fracturing operations on the PNR2 well commenced in mid-August. We completed the first five stages of that fracturing operation without any issue. In each stage we pumped the designed volume of water and sand and the shale responded exactly as we would have expected with a very nice fracture network being developed.

The pumping of stages six and seven proved a little more challenging. Stage six was pumped as per plan and, like stages one to five, we saw no induced seismicity during the pumping itself. However, after pumping had been completed a micro seismic event measuring 1.55 on the Richter Scale was detected. That is not significant enough to be felt at surface but it did cause us to take stock and discuss our handling of stage seven with the regulatory authorities.

We then pumped stage seven with a much-reduced volume of sand and water. It was completed without again any induced seismicity during pumping, but two events of note followed in the days after. One measuring 2.1 on the Richter scale and the second 2.9 on the



Richter scale. The 2.9 event occurred some two days after pumping on Bank Holiday Monday here in the UK. It happened at about 8.30am, when most people were still at home with their families. It was widely felt throughout the local area but to put the 2.9 event into perspective - it lasted for about five seconds and the associated ground motion vibration averaged some 5mm per second. This is below the levels typically felt and in fact allowed for in construction or mining projects here in the UK.

Whilst the 2.9 event was within the range of possibilities modelled within our approved Hydraulic Fracture Plan, where the upper expectation was set at 3.1, it was clearly towards the upper end of that expectation and we agreed with the reg to suspend operations. Since then our technical teams have been working with the regulator and external consultants analysing the huge amount of data that we have accumulated from Preston New Road 1 and 2 wells. You will no doubt have seen that the suspension evolved into a moratorium, announced earlier this month by the Government.

We then moved into a flow test of the PNR2 well. As had been the case with PNR 1 natural gas flowed to surf and the quality was the best we have seen to date from the Bowland shale so good in fact that little if any additional processing would be required to pipe that gas to UK industrial or domestic customers.

Flow rates from just six fractures peaked at 275,000 cubic feet per day and stabilised at rates of between 60 and 100 cubic feet per day.

Cuadrilla, as the leading shale gas operator in the UK and in fact a company that now has unrivalled data on induced low magnitude seismicity through our measurement and monitoring of the Preston New Road 1 and 2 wells, will now work with the regulator and other shale exploration companies here in the UK to reach a sensible, technical resolution.

As part of this focus, we have scaled back the business in recent months to reflect the reduced operations and our need for a technical focus on the management and mitigation of reduced seismicity.

That team will also be re-evaluating and appraising Cuadrilla's existing sites, whilst taking emerging data to assess any new ones.

The reason we are doing all of this is because natural gas is critical for the UK's future. The Committee on Climate Change has made it clear that the UK will need natural gas for many decades to come, this will be coupled with carbon capture and storage and most sensible energy commentators and analysts agree with that.

Our contention is that shale gas properly developed in the UK, will be a more environmentally friendly and economically beneficial alternative to increasing long distance imports by sea or by pipeline.

So, in summary, 2019 has been a year of many accomplishments but we end it with several challenges to resolve. It is very clear the UK is sitting on a high-quality resource of natural gas and Cuadrilla has been the leading company in demonstrating that. Nonetheless, we do need to resolve how to manage and mitigate induced seismicity. Cuadrilla is a technically driven



company and we, other companies like us and the UK regulator can and will, I'm sure, find an answer to those questions.

It's very important, not just for Cuadrilla but the UK as a whole that we do, and I look forward to working and updating you in 2020 as we progress towards achieving those goals.