BY ALEXIS Flynn

LONDON—The company leading efforts to unlock the U.K.'s potentially vast shale-gas reserves suffered a setback Wednesday after a report found it was "highly probable" a controversial production technique caused two small earthquake tremors in the country earlier this year.

The report, which was financed by U.K. energy company Cuadrilla Resources Ltd., pointed to "strong evidence" that the two minor earthquakes and 48 weaker seismic events resulted from Cuadrilla's pumping drilling fluids used in hydraulic fracturing, or "fracking." At the same time, the report said the events were the result of a "rare combination of geological factors."

The report could complicate ...