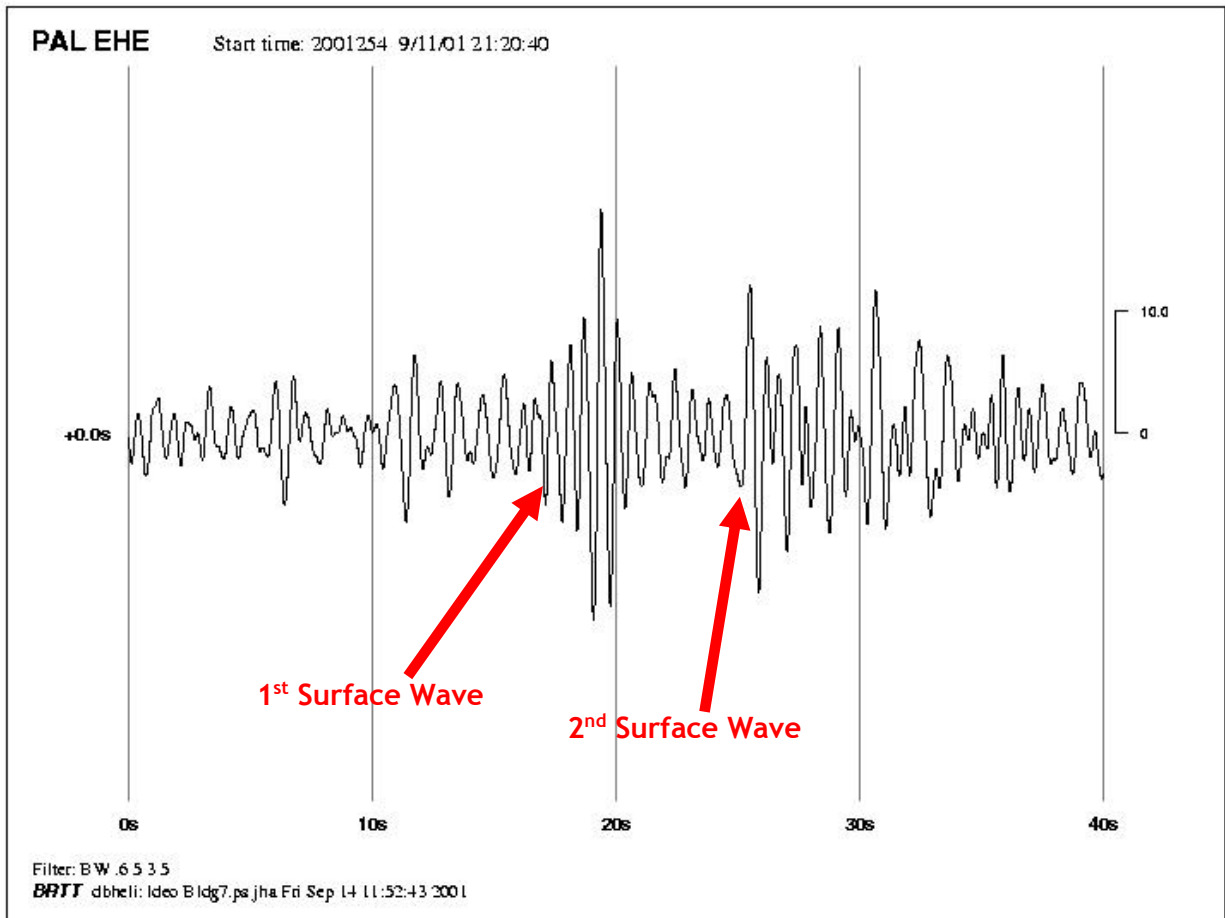


## DECLARATION OF ANDRÉ ROUSSEAU

1. My name is André Rousseau. I reside in Bègles (Gironde) in France.
2. I have the following degrees relevant to the testimony I am providing: Licence (equivalent to a bachelor's degree) in Earth Sciences, a Diplôme d'Etudes Approfondies (DEA) (equivalent to a Master's degree) in Tectonophysics, Oceanography, and a DEA in Applied Physics from the Faculté des Sciences de Paris; a Thèse 3<sup>ème</sup> Cycle (equivalent to a Ph.D.) from Université Rennes 2; and a Thèse d'Etat (roughly equivalent to a Ph.D.) from Université Bordeaux 1.
3. My training includes land and marine seismic explorations in France and northern Spain, gravity and studies of acoustic well logging in Central Massif of France, Vendee, Alsace, Germany (KTB borehole) and California (SAFOD borehole).
4. I am a retired researcher in Geology and Geophysics. My employers throughout my career were the University of Rennes, Elf Aquitaine, and the National Center of the Scientific Research (CNRS) in Bordeaux, where I worked from 1972 to 2007.
5. I have attached my curriculum vitae.
6. It is my professional opinion that NIST was incorrect in attributing the two seismic signals generated during the destruction of WTC 7 to a cascade of floor failures inside the building and to the initiation of the building's global collapse. It is my professional opinion that the two seismic signals must have been generated by two subaerial explosions that corresponded in time and location to the initiation of the collapse of WTC 7's east penthouse and to the initiation of global collapse, respectively.
7. My opinion is based in part on my analysis of the seismogram produced by the Lamont-Doherty Earth Observatory of Columbia University (LDEO) in Palisades, New York, about 34 kilometers away from Lower Manhattan, shown below.



8. The bases for my opinion are as follows:

- Seismic waves can only propagate in the ground when they are produced from a fracture (earthquake, explosion) or from a percussion on a solid ground by a solid mass (great lumps of solid rocks falling from a mountain, meteorites) or from the technique used in applied geophysics of “weight dropping,” which consists of letting a heavy mass such as a three-ton weight fall to earth, or by using vibrators attached to the ground. But the energy of the waves developed in the ground by the latter three methods is too low for the waves to go further than several hundred meters. As a result, only explosions can explain the seismic waves that correspond to the collapse of WTC 7.
- The recording of Rayleigh waves in the LDEO seismogram unaccompanied by a pressure (P) wave and a shear (S) wave indicates the occurrence of subaerial explosions taking place close to the ground, where the emitted energy splits into sound waves, mostly in the air, and surface waves in the ground.
- The example of the Alfred P. Murrah Federal Building demolition involved a powerful subaerial explosion and the emission of Rayleigh waves. While Rayleigh waves were recorded on seismometers approximately 7 km and 26 km from the

Federal Building, the falling of debris had no seismic consequences, even at distances much less than the 34 km distance between Lower Manhattan and Palisades, NY. Only the seismic equipment situated close to the source during the Federal Building demolition was able to record the seismic energy created by the collapse of the building.

- Further, the recorded frequency of about 1 Hertz (1 Hz, or one cycle per second) is consistent with the frequency of waves generated by explosions, whereas the frequencies of waves generated by percussion are above 10 Hz and often around 100 Hz.
- Further, the bell-like form in the LDEO seismogram points to an impulsive source of energy, not percussion on the ground due to the fall of debris.
- With respect to NIST's attribution of the first seismic signal to "interior debris falling onto the lower floors of WTC 7," even if there were tremendous percussion caused by the impact of several floors in the northeastern corner of the building falling onto a lower, stronger floor, any seismic wave created in the adjoining steel columns would hit the ground only in the form of seismic noise. Further, because the passage from metal to rock is a refraction that absorbs energy, there would be insufficient energy left to propagate in the ground.
- Further, NIST's Probable Collapse Sequence is inconsistent with the observed seismic activity for the following reasons:
  - There is no reason that the initial cascade of floor failures in NIST's Probable Collapse Sequence would be expected to create a larger seismic signal than the subsequent sustained, widespread debris impact occurring inside the building.
  - There is no reason why the initiation of global collapse under NIST's Probable Collapse Sequence would be expected to generate a second seismic signal. The major mechanism for the initiation of global collapse was the buckling of exterior columns, which does not involve debris impact.
  - The initiation of global collapse was quickly followed by the observed period of free fall, during which the top section of the building descended downward approximately 8 stories for 2.25 to 2.5 seconds without encountering any resistance. By definition, the top section of the building was exerting no force whatsoever on the lower section during this period.
  - The part of the collapse that would be most expected to generate seismic energy — the top section falling onto the lower section after free-falling for 8 stories, and then directly impacting the ground — did not generate a unique seismic signal.

- The hypothesis of controlled demolition involving two subaerial explosions is perfectly consistent with the recorded seismic activity for the following reasons:
  - Explosions caused by demolition charges can create seismic waves that will travel further than several hundred meters.
  - Explosions caused by demolition charges create seismic waves with frequencies around 1 Hz.
  - The bell-like form in the LDEO seismogram is consistent with an impulsive source of energy such as that generated by an explosion.
  - The occurrence of two seismic signals approximately 7 seconds apart, occurring just before the initiation of the east penthouse collapse initiation and just before the initiation of global collapse, is readily explained by the detonation of demolition charges.

Pursuant to 28 U.S.C. Section 1746, I, André Rousseau, hereby swear, under penalty of perjury, that the foregoing statements are true and correct to the best of my information and belief.

/s/ André Rousseau

Signature of Declarant André Rousseau

April 14, 2020

Date