Dear Committee Members,

My field of research is rock mechanics and ground control. The Kimballton site offers a suitable location for this research to be pursued, and I will work as a member of the Kimballton team to help make this a reality.

The features of Kimballton which appeal to me are:

1) It is in a limestone formation. I have been studying rock yielding and creeping properties for sometime. Understanding rock yielding and creeping properties will help the design of so-called yield pillars for stress control. This technique will be a very effective tool for deep underground mine ground control. Often time in deep underground mines, high stress concentration and excessive creep become a critical issue that may determine the survivability of a mining panel or even the entire mine. The limestone formation possesses the desirable properties for various experiments. Limestone will creep significantly under stress and may also yield under high stress concentration. An in-situ laboratory in such a formation will be ideal for pillar yielding and stress control study.

2) It is in a sedimentary formation with a syncline structure. Wellbore stability and oil well productivity are important subjects being studied for oil exploration and production. A deep underground laboratory in such a formation will provide unique conditions for wellbore stability and surround rock mass conductivity studies.

The rock mechanics and mining engineering community in which I am a member of should be represented in DUSEL. The deep underground laboratory will provide unique and extremely valuable conditions to conduct experiments and tests that are of high importance to mining and construction industry and that are very difficult to achieve otherwise. Examples of these studies may include rock yielding and rock creeping as mentioned above as well as rock burst under high stress concentration. Some of these are critical issues facing the industry and some others will help us better understand the behavior of the earth materials at great depth under high stress. In-depth understanding of these phenomena will help us to improve our design of structures and have better control of the environments. The conducting of these experiments and studies will require the knowledge, experience and expertise of scientists and engineers in various fields, which may include: mining engineers, civil engineers, physicists, geologists, geophysicists and others.

Sincerely,

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