

(1) Development of a 3D Geological Model of the Homestake Mine Area

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This proposed work involves the development of a working 3D model of the Homestake Mine area by integration of the existing Vulcan mine planning database and other geological information into the 3D modeling and visualization software named gOcad. The goal of this proposed work is to set the framework upon which all subsequent geoscience (geology, hydrology, geophysics) and bioscience initiatives at Homestake are built.

(2) Detailed Geological Mapping of the Homestake Mine Area

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The understanding of subsurface geological features at the Homestake Mine is a complex task. The complexity arises for a number of reasons, the most important of which is undoubtedly the limited access to information (drill cores, drifts, and stopes). Detailed geological mapping on the surface affords unlimited access to exposed geological information, and is the most important component in developing a model for subsurface geology. I here propose a project to complete a detailed geological map of the Homestake DUSEL area.