

assignment of wells for fluid or heat injection and extraction is also simple. The complex array of multiphase-fluid and heat-transport parameters is arranged in a remarkably intuitive manner. Output can be visualized in PetraSim without importing the output text files into an external graphics program. This software will likely result in increased use of the TOUGH2-T2VOC codes. A free demo version of PetraSim is available for a limited time at www.thunderheadeng.com/ where numerous example problems are also provided. The most recent version must be purchased, and includes integrated TOUGH2 and T2VOC solvers at no extra cost. Prices range from \$500 for a single, one-month license to \$5,000 for unlimited use. An educational package is also available for a reduced price.

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Review of PetraSim

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PetraSim is an interactive pre-processor and post-processor for the TOUGH2, T2VOC, and TETRAD codes. PetraSim is the only fully integrated interface for TOUGH2 and T2VOC and the only modern interface for TETRAD. This review focuses on use of PetraSim for TOUGH2 and T2VOC, which simulate multiphase transport of fluids (gas, water, NAPLs) and heat in porous and fractured media. TOUGH2 and T2VOC have been used for more than a decade to simulate problems ranging from unsaturated zone transport and heat transfer at Yucca Mountain, geothermal-reservoir engineering, density-driven gas transport of VOCs, partitioning-tracer tests, and various remediation schemes (such as SVE, air sparging, pump and treat). The input for these codes is complex, and data entry is generally accomplished through text-based input files. While some firms have developed proprietary GUIs, they have not earned the broad support of the TOUGH2-user community. PetraSim, a product of Thunderhead Engineering, makes use of the TOUGH2 codes much easier. Users can construct and run a TOUGH2-T2VOC

simulation and view the results entirely within PetraSim. PetraSim allows development of complex three-dimensional grids, boundary conditions, and initial conditions. Construction and