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EARTH: Managing the Seismic Risk Posed by Wastewater Disposal

Alexandria, VA – The debate over hydraulic fracturing has recently focused on the rise in seismicity throughout the primarily stable interior of the United States. These intraplate regions, though not unfamiliar with earthquakes, have been experiencing an increased amount of seismic activity in the last decade. This unusual increase is likely to be caused in part by wastewater disposal practices related to natural gas production. With such a sensitive issue it is important to keep the facts in perspective: No earthquake triggered by fluid injection has ever caused serious injury or significant damage. Moreover, approximately 140,000 wastewater disposal wells have been operating safely and without incident in the U.S. for many decades. Nevertheless, minor seismicity can occur, and it is important to recognize that with proper planning, monitoring and response the occurrence of small-to-moderate earthquakes associated with fluid injection can be reduced and the risks associated with such events effectively managed.

What steps can we take in order to safely practice wastewater injection? In the April issue of EARTH Magazine, Mark D. Zoback, professor of geophysics at Stanford University puts forward five steps that can be taken to reduce the probability of triggering seismicity associated with fluid injection. Zoback argues that through proper study and planning prior to injection, careful monitoring in areas where seismicity might be triggered, and careful training of operators and regulators will help to manage the seismic risk posed by wastewater disposal. To learn more, read the full article online at http://www.earthmagazine.org/article/managing-seismic-risk-posed-wastewater-disposal.

Read this story and more in the April issue of EARTH magazine, available online at http://www.earthmagazine.org/. Explore the archaeology, volcanoes and hot springs of the Northern Atacama Desert; Probe the limits of the solar system with Voyager 1; and, unearth the mechanics of crustal thinning.

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