

**Title:**

**Shell's Freeze Wall Test**

**Abstract:** (Your abstract must use 10pt Arial font and must not be longer than this box)

Shell's Freeze Wall Test (FWT), located on a 25-acre parcel of Shell's private property in Rio Blanco County, Colorado, is an environmental study to demonstrate groundwater can be kept out of subsurface shale oil production areas using a frozen underground barrier. The surface facilities for the freeze wall include refrigeration systems, access points to a closed-loop pipe system, monitoring wells, and dewatering wells that will pump out the groundwater from inside the production zone once the freeze wall is built. Aqueous ammonia, a common refrigerant, is circulated through the closed-loop pipe system causing the water in the surrounding rock to freeze and form the underground impermeable barrier. Building on the successful results from the much smaller and shallower Mahogany Isolation Test, the FWT consists of a rectangular pattern of 157 freeze holes spaced approximately eight feet apart. Each freeze well is equipped with an optical fiber to monitor the freezing process. The circulation of refrigerant was started in March, 2007. This paper will discuss the FWT and the results to date.

**Important notes:**

Do **NOT** enter author and affiliation information on this document. You will be able to enter this information online when you submit the abstract.

Do **NOT** write outside the boxes. Any text or images outside the boxes **will** be deleted.

Do **NOT** alter the structure of this document. Simply enter your title and abstract in the boxes. The document will be automatically processed – if you alter its structure your submission will not be processed correctly.