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McDonald, Jeffrey

From: Gilmore, Tyler J [Tyler.Gilmore@pnnl.gov]
Sent: Friday, March 21, 2014 11:49 AM
To: McDonald, Jeffrey
Cc: Bayer, MaryRose; Greenhagen, Andrew; Lanigan, David C; Appriou, Delphine
Subject: Location of future pressure monitoring well

Jeff,
You had requested that we provide some general criteria for locating the additional pressure monitoring well that was to be located outside the CO2 plume boundary. Below is the general criteria that we came up with.
Tyler

A pressure-monitoring well will be constructed within 5 years from the start of injection. The location will be informed by any observed asymmetry in pressure front development and will be located outside the CO2 plume extent. The distance from the plume boundary will be based on the monitoring objective of providing information that will be useful for both leakage detection and model calibration within the early years of operation. It is estimated that the well will be located less than 5 miles from the projected plume extent in order to provide an intermediate-field pressure monitoring capability that would benefit leak detection capabilities and meet the EPA requirement for pressure monitoring outside the CO2 plume.

A second but less desirable approach would be to locate the well at a more distal location (e.g., 15 - 20 miles) so that there is time to install the well prior to pressure front arrival (at Waverley it is predicted to take 4 to 5 years). This location would have very limited benefit from a leak detection perspective, but it would be useful for calibrating the reservoir model.