

Department of Environmental Quality – Office of Geologic Survey (DEQ-OGS)

Water Withdrawal Analysis for High Volume Hydraulic-fracturing

The review and evaluation of the potential for Adverse Resource Impacts (ARI) related to large volume water withdrawals for hydraulic-fracturing is divided into a two phase process. The first phase is a screening process by the Office of Geological Survey (OGS) permitting and field staff during the permit application review. The second phase is required to be done by the operator once they have developed the actual specific parameters for the water withdrawal needed for completion. Under no circumstances will water withdrawals that are determined to create an actual ARI be approved.

During the first phase, when the OGS receives a permit application for a well intended for formations where high volume hydraulic fracturing well completions may occur, staff of the permit unit and the area geologist use the Water Withdrawal Analysis Tool (WWAT) to screen the site for any potential for an ARI from the high volume water withdrawal. Several withdrawal volumes, water well depths, and time frames are used to evaluate the maximum or “worst case” ranges of potential adverse impacts. This is done as part of the permit application review before the permit is issued. If the WWAT evaluation indicates that there is the potential for causing an ARI, then OGS staff supplies the pertinent information to Department of Environmental Quality - Water Resources Division staff and requests that a preliminary site specific review be conducted to insure that the withdrawal does not create an actual ARI. Potential issues that are identified during this review must be resolved before the permitting process may proceed.

During the second phase, the operator must submit a completed WWAT no less than 14 days before the water withdrawal begins, using the actual withdrawal volumes, time frames, water well locations, and water withdrawal well depths. The results of this evaluation are supplied either with the permit application or to the OGS district supervisor if the permit is issued. OGS staff use the data submitted to verify the results of the WWAT. If the operator run WWAT evaluation indicates that there is the potential for causing an ARI, then OGS staff will once again supply the pertinent information to Department of Environmental Quality - Water Resources Division staff and request that a final site specific review be conducted to insure that the withdrawal does not create an actual ARI. The water withdrawals are approved, modified, or denied based on this final review.