



COLORADO
Oil & Gas Conservation
Commission
Department of Natural Resources

1120 Lincoln Street, Suite 801
Denver, CO 80203

MEMORANDUM

November 11, 2016

TO: Robert P. (Bob) Koehler, PhD.
Oil and Gas Conservation Commission

FROM: Chris Eisinger
Colorado Oil & Gas Conservation Commission

SUBJECT: Seismic Evaluation, Windy Hill Water Operations, LLC: Windy Hill # 3-17D, API # 087-08145

The location for the proposed injection well was reviewed using public maps and data; no site-specific subsurface data was evaluated.

The proposed formation of injection is the J-Sandstone of the Dakota Group. The bottom hole for this well has an estimated MD of 5,433 feet. Based on the regional stratigraphy, the bottom hole is many thousands of feet above the Precambrian basement.

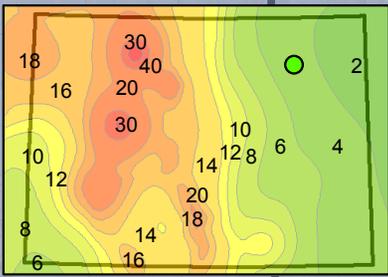
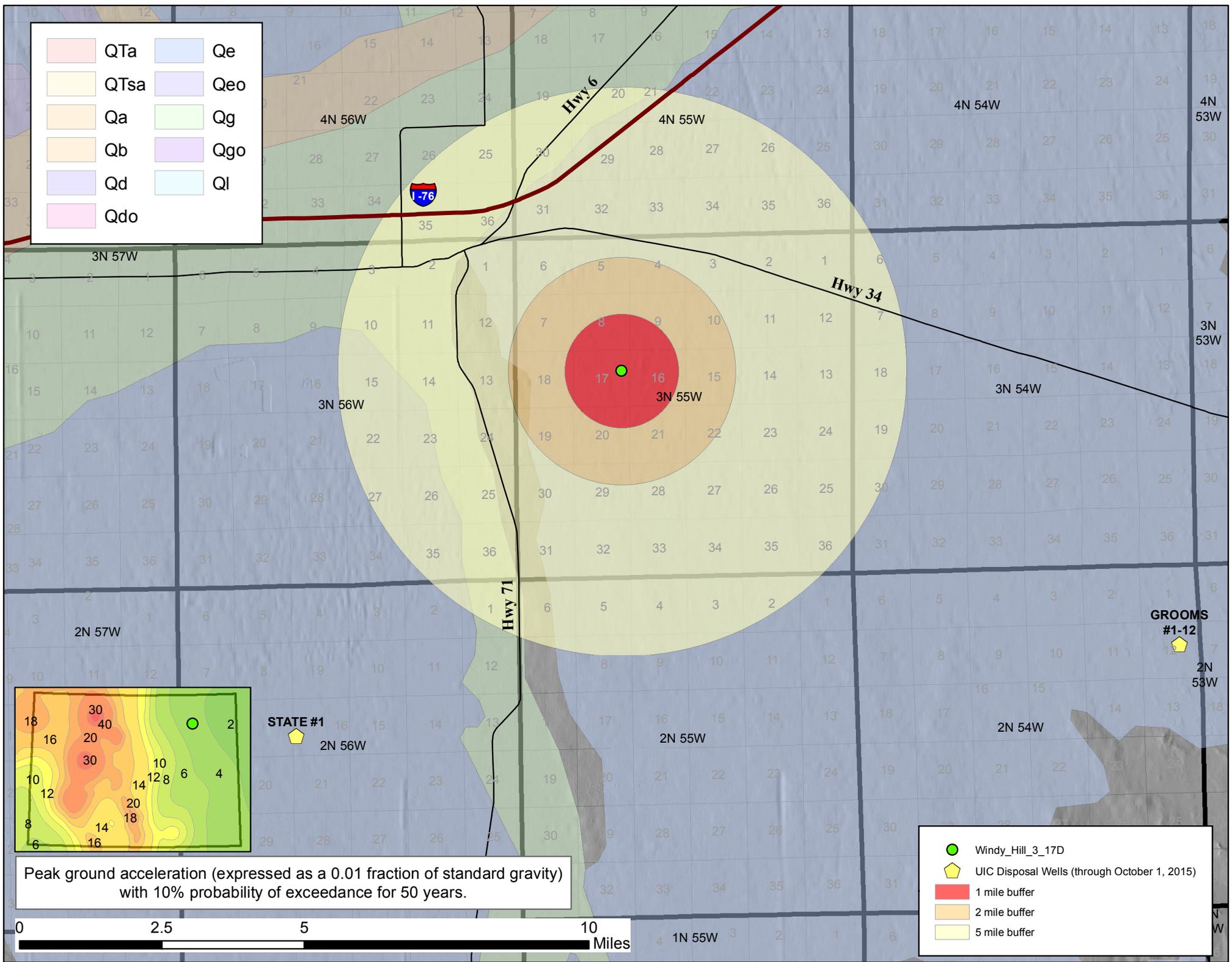
The USGS National Earthquake Hazard Map shows areas susceptible to ground shaking during fifty year intervals. This part of Colorado is an area that has been designated as being susceptible to a lower PGA (~0.04 g) than most parts of the state.

There are no existing disposal or injection wells within five miles of the proposed site.

No earthquakes or mapped faults are within ten miles of the proposed well according to published geologic maps.

The likelihood of triggering earthquakes at this location associated with the proposed injection interval appears low. If any seismic activity is detected subsequent to the initiation of injection, a local seismometer would help determine whether activity is related to the injection, and allow for possible management of injection volumes and rates.





STATE #1
 2N 56W

GROOMS
 #1-12
 2N 53W

Peak ground acceleration (expressed as a 0.01 fraction of standard gravity) with 10% probability of exceedance for 50 years.

