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DEPARTMENT OF
WATER RESOURCES

Idaho Department of Water Resources
P. O. Box 83720
Boise, ID 83720-0098

Thomas Hanna
148 Timberline Dr.
Durango, CO 81301

Subject: West Ada Area of Drilling Concern

Dear Sir:

I have reviewed the report "City of Meridian Request to the Director for the Department of Water Resources for the Designation of a West Ada Area of Drilling Concern" and would like to provide the following comment for your consideration.

Based on this report in the area of the West Ada Area of Drilling Concern it appears the hydrogeology in many parts is not conducive to drill and drive drilling techniques to provide a proper seal between aquifers. The lack of consistent clay layers that act as seals along casings can result in water moving along the annulus between the casing and the formation. Differences in hydraulic heads, improperly decommissioned wells or older wells that are not decommissioned and poor annular seals can result in comingling of waters from different aquifers and zones within the same aquifer that have differences in water quality and surface contamination from entering the aquifer.

It is my experience that in areas where comingling of waters is a consideration and where there is the potential for waters to migrate along casings wells should be completed with a 2- to 4-in annular seal to prevent water from traveling along the casings – this is especially true in areas where there are not significant swelling clays that seal the annulus. The seal should be placed with either pressure grouting with grout retuned to the surface or tremied into the annulus (ANSI/NGWA-01-14). A proper grout seal will also extend the life of steel casings. Grout types and installation methods and hydrologic conditions will also influence integrity of grout seals (Nebraska Grout Task Force, 2009)

All wells not being used should be decommissioned as outlined in ANSI/NGWA-01-14.

Sincerely,

Thomas Hanna P.G.

Reference: ANSI/NGWA-01-14 Water Well Construction Standard, May 2014

Nebraska Grout Rask Force, In-Situ Study of Grout Materials 2001-2006 and 2007 Dye Tests, 2009