

567—114.18(455B) Evaluation of hydrogeologic conditions.

114.18(1) Based on soil boring and other available information, a description of the site geology shall be made. This description shall include preparation of geologic cross sections of sufficient number and spacing (no fewer than four at every site) to adequately define all areas of the site and of sufficient detail to adequately depict major stratigraphic and structural trends and reflect geologic structural features in relation to groundwater flow. Each pair of cross sections must be as near to perpendicular as possible to adequately portray the site geology.

114.18(2) A description of the hydrogeologic unit(s) within the saturated zone shall be made including thickness; depth; hydraulic properties, such as transmissivity and storage coefficient or specific yield; description of the role of each as confining bed, aquifer, or perched saturated zone and its actual or potential use as a water supply aquifer.

114.18(3) All groundwater flow paths from the site shall be identified, including both horizontal and vertical components of flow. A contour map of the water table shall be presented showing horizontal flow paths. A potentiometric surface map of the uppermost aquifer showing horizontal flow paths shall also be presented, if different from the water table. Vertical flow paths shall be shown in at least two profiles approximately parallel to the direction of horizontal flow. Vertical flow paths shall be determined by water level measurements from clustered wells at different depths, if possible. An evaluation of vertical groundwater flow based on the hydrologic properties of the various strata encountered at the site, estimated groundwater flow and recharge rates, and known information on hydraulic head shall also be made.

114.18(4) The seasonal, temporal and artificially induced variations in groundwater flow shall be evaluated. Temporal variations occur due to natural events, such as rainfall. The addition of tile lines, removal of overburden, or deposition of wastes would constitute artificially induced variations.

114.18(5) Surface water flow paths from the site shall be identified on topographic contour maps.