

less than 0.1 metres. These locations would reflect where there is an upward hydraulic gradient from the bedrock to the surficial deposits (i. e. discharge). The depth to water level for water wells completed in the upper bedrock aquifer(s) has been determined by subtracting the non-pumping water-level surface associated with all water wells completed in the upper bedrock aquifer(s) from the topographic surface. This resulting depth to water level grid was contoured to reflect the positioning of the flowing shot holes and flowing water wells (i. e. discharge). The recharge classification is used where the water level in the upper bedrock aquifer(s) is more than 15 metres below ground surface. The discharge areas are where the water level in the upper bedrock aquifer(s) is less than ten metres below ground surface. When the depth to water level in the upper bedrock aquifer(s) is between ten and 15 metres below ground surface, the area is classified as a transition, that is, no recharge and no discharge.

The adjacent map shows that, in more than 60% of the County, there is a downward hydraulic gradient from the surficial deposits toward the upper bedrock aquifer(s) (i. e. recharge). Areas where there is an upward hydraulic gradient from the bedrock to the surficial deposits (i. e. discharge) are mainly in the vicinity of creeks and river valleys and major meltwater channels. The remaining parts of the County are areas where there is a transition condition.

Because of the paucity of data, recharge/discharge maps for the individual bedrock aquifers have not been attempted.

D. Areas of Groundwater Decline

The areas of groundwater decline in both the sand and gravel aquifer(s) and in the bedrock aquifers have been determined by using a similar procedure in both situations. The available non-pumping water-level elevation for each water well completed in the sand and gravel aquifer(s)/bedrock aquifer was first sorted by location, and then by date of water-level measurement. The dates of measurements were required to differ by at least 365 days. Only the earliest and latest control points at a given location were used.

Of the 254 water wells completed in the sand and gravel aquifer(s) with a NPWL and test date, there were only 19 control points. Due to limited control points, the data were not contoured, only posted as shown on the adjacent map. The map shows that, in the vicinity of Sundre, there were approximately the same number of locations where the water level rose, as declined.

