POTENTIAL ZONES OF HIGH GROUND WATER TRANSMISSIVITY IN THE DAMARISCOTA QUADRANGLE, MAINE

EXPLANATION

- Bedrock well with yield ≥ 5 gallons per minute
- Bedrock well with yield < 5 gallons per minute
- Zone of potential high transmissivity based on bedrock well yield
- Zone of potential high transmissivity based on phreatic zone features and existing bedrock well yields
- Zone of potential high transmissivity based on phreatic zone features and intersections

OBJECTIVE AND METHODOLOGY

Under Federal law, the State of Maine is responsible for preparing a comprehensive overview of all known aquifers and other water resources in the state. The Maine Geological Survey, a division of the Department of Conservation, was formed in 2001 to manage the Department’s water-resource inventory and research efforts. The Maine Geological Survey is responsible for the development of a comprehensive inventory of groundwater resources in the state, including the identification of high transmissivity zones.

In addition to the phreatic zone analysis, existing bedrock and superficial deposits were also identified and mapped. This included the identification of high transmissivity zones, which were interpreted using both traditional and modern methods. These zones were identified using a combination of geological and hydrogeological data, including existing well yields and transmissivity estimates. The mapping was conducted using a Geographic Information System (GIS) and a variety of data sources, including hydrogeological maps, well logs, and previous studies. The results were then compiled into a comprehensive map of the potential high transmissivity zones in the Damariscotta Quadrangle.

SUMMARY

Based on the compilation of well yields and phreatic zone features, potential high transmissivity zones were identified and mapped. These zones were characterized by areas with high transmissivity, indicating a significant potential for groundwater movement. The mapping was conducted using a combination of traditional and modern methods, including the analysis of existing well yields, transmissivity estimates, and geological data. The results were compiled into a comprehensive map of the potential high transmissivity zones in the Damariscotta Quadrangle. Further investigation of these zones is necessary to fully understand their potential for groundwater development. Additional studies, including hydrogeological investigations and detailed well yield testing, are needed to refine the assessment and provide more accurate predictions of groundwater availability.