

Ecology Northwest Regional Office

MEMORANDUM

April 21, 1989

TO: Roy Bishop

FROM: Jerry Liszak

SUBJECT: White River Fish Hatchery - Ground Water Application GI-25114

Investigation:

The investigation pertaining to this water right application is based primarily on electromagnetic surveys, a number of wells drilled and aquifer tests conducted by Golder Associates. The aquifer system drilled to supply the Hatchery consists of fluvial sediments which were deposited by numerous meandering or braided channels within the White River flood plain. This aquifer system is not homogeneous and is complicated by differing sediment types and grain sizes over short vertical and lateral distances. The system was deposited within an erosional channel cut into the Osceola Mudflow deposits which form a regional aquitard up to 75 feet thick. Thereby mudflow deposits are adjacent to the system and form about a 30 foot layer below the aquifer system deposits. The Osceola Mudflow is underlain by both glacial sediments and volcanic bedrock. Therefore the mudflow deposits areally confine the fluvial aquifer system. The aquifer system sediments are breached by the White River which acts as a recharge boundary to the system.

Three production wells and one test well were installed and a long term constant-rate pump test is being performed on their combined use. Also, a second test well was recently installed and pumped for 32 hours. Production well No. 1 is producing 200 gpm and is about 112 feet from the White River. According to "Guidelines for Determining Significant Hydraulic Continuity," Office Report No. 86, there is no significant hydraulic continuity with the White River based on the well location further than a distance of 1/2 foot for each gallon per minute of maximum pumping rate with no impervious material separating the well from the stream. The well would have to be 12 feet closer to the stream to be classified as having significant hydraulic continuity.

Production well No. 2 is producing 550 gpm and is about 125 feet from the river. By the same guidelines, it does have significant hydraulic continuity with the White River.

Production well No. 4 produces 750 gpm and is about 125 feet from the river. This well also has significant hydraulic continuity with the White River using these guidelines.