CITY OF PORT ANGELES WATER SOURCE INFORMATION

ELWHA RANNEY COLLECTOR (PRIMARY) SUPPLY
(From the Water System Plan- 2002 Developed by CH2MHill)

Changes in Water Quality Regulations resulting in the City's GWI Classification and the removal of the Elwha Dams have placed the City in a challenging position with respect to planning to meet current and future needs. The City uses a Ranney collector as the source of supply.

The Ranney collection method was first conceived in the 1930s by Leo Ranney of Northwestern University to extract clean water from shallow alluvial deposits. A reinforced concrete caisson is used in conjunction with screened pipes extending like spokes from the unit to collect water, which is then pumped to the reservoirs and the distribution system. The City's Ranney collector is constructed adjacent to a side channel of the Elwha River. It consists of a 13 foot diameter caisson extending to a depth of 62 feet below ground surface. From the bottom of the caisson several laterals of varying lengths extend toward the river and 2-600 Horsepower intake pumps move the water to the City of Port Angeles from this well.

The capacity of the Elwha Ranney collector is dependent on quantity of flow in the Elwha River and Temperature. It is estimated to have a 10.7 Million Gallon per Day (MGD) capacity at river flow conditions of 1,100cfs and 48 degrees Fahrenheit. During seasonal low and high flows the flow rate is estimated at slightly below or above this capacity. It should be noted that additional supply capacity is planned by the federal government as part of the Elwha dam removal to mitigate potential adverse impacts to the collector from the dam removal process. The new supply capacity, whether an additional collector or another means of withdrawal, would serve as redundant, back-up capacity in the event the existing Elwha Ranney collector becomes plugged with sediment or suffers from reduced capacity because of accelerated river migration or river bed aggradations.