An anti-cyclonical baroclinic eddy was intensively observed in the southwest corner of the Canada Basin in August, 2010. The eddy has some characteristic features. At first, the eddy has even larger horizontal scale of 60 km in diameter relative to those in earlier studies, and it is also characterized by high temperature maximum at $S = 30.5$ psu isohaline surface, reaching 6$^\circ$C regardless of its location nearby ice edge. The central depth of eddy is also dynamically characterized by low potential vorticity on its center core at $S = 32.0 – 33.5$ psu. The eddy was attached to an intensified westward jet established on the western Beaufort Slope. Additionally, we found that the extremely warm temperature of the eddy is delivered by the westward jet on the isohaline surface of $S = 30.5$ psu from the Chukchi Shelf. The interleaving was observed overall depths of the eddy, meaning that the heat contained inside the eddy is rapidly dissipated for the surrounding water.