The Earth's plasmasphere contains cold (~eV energy) dense (>100 cm$^{-3}$) plasma of ionospheric origin. The primary ion constituents of the plasmasphere are H$^+$ and He$^+$, and a lower concentration of O$^+$. The outer part of the plasmasphere, especially on the duskside of the Earth, drains away into the dayside outer magnetosphere when geomagnetic activity increases. Because of its high density and low temperature, this plasma has the potential to modify magnetic reconnection at the magnetopause. To investigate the effect of plasmaspheric material at the magnetopause, Magnetospheric Multiscale (MMS) data are surveyed to identify magnetopause crossings with the highest He$^+$ densities. Plasma wave, ion, and ion composition data are used to determine densities and mass densities of this plasmaspheric material and the magnetosheath plasma adjacent to the magnetopause. These measurements are combined with magnetic field measurements to determine how the highest density plasmaspheric material in the MMS era may affect reconnection at the magnetopause.