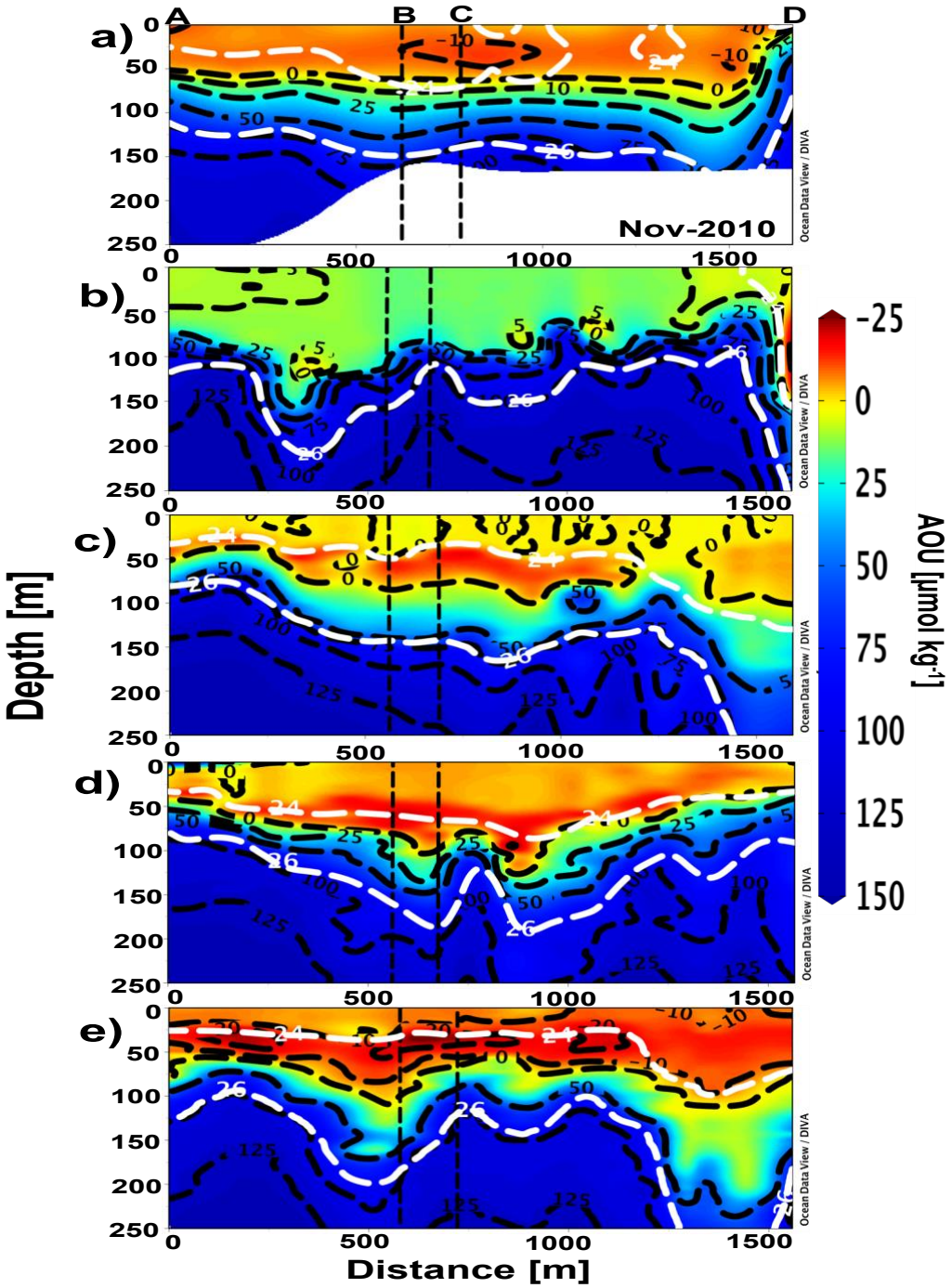
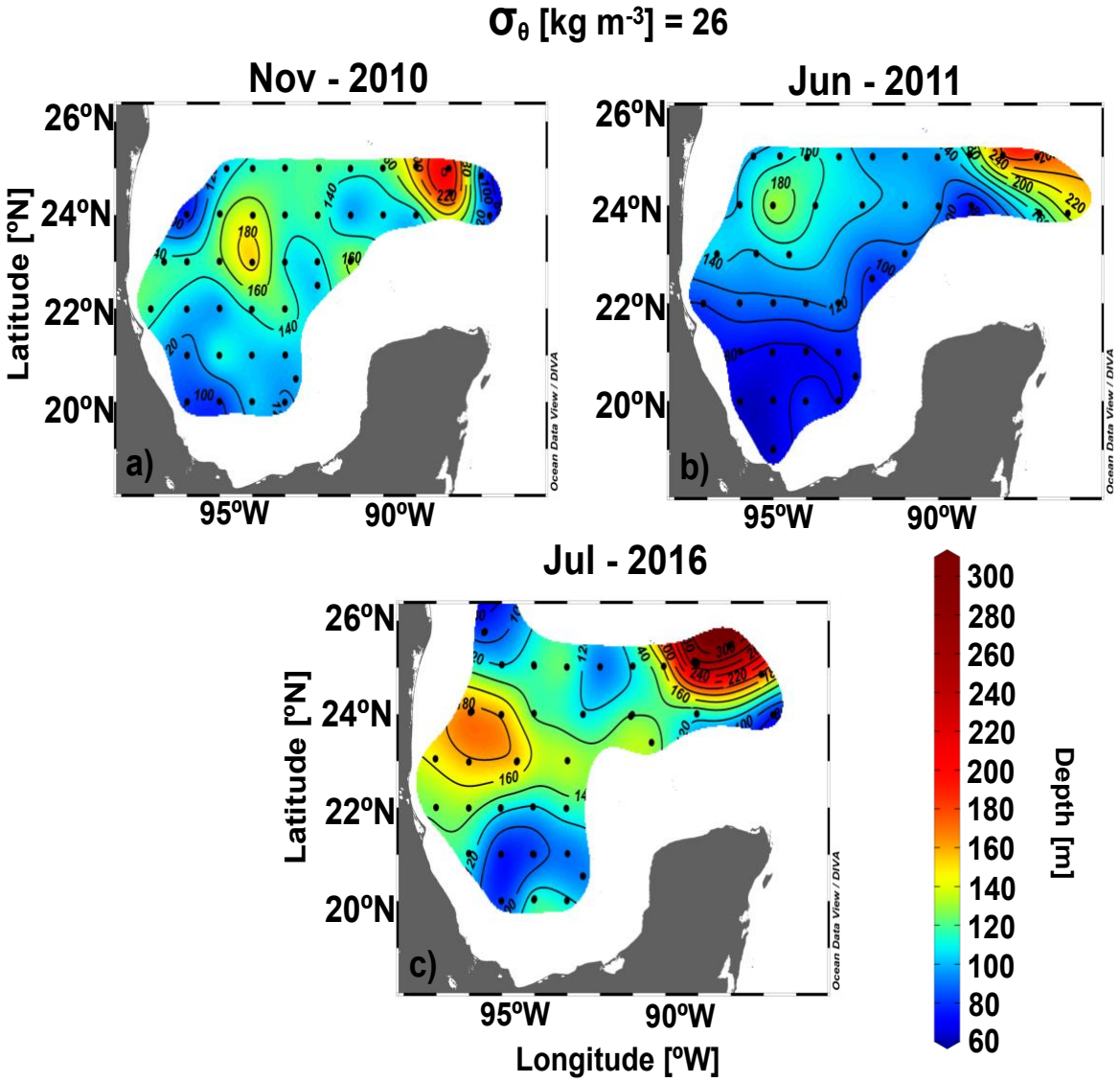
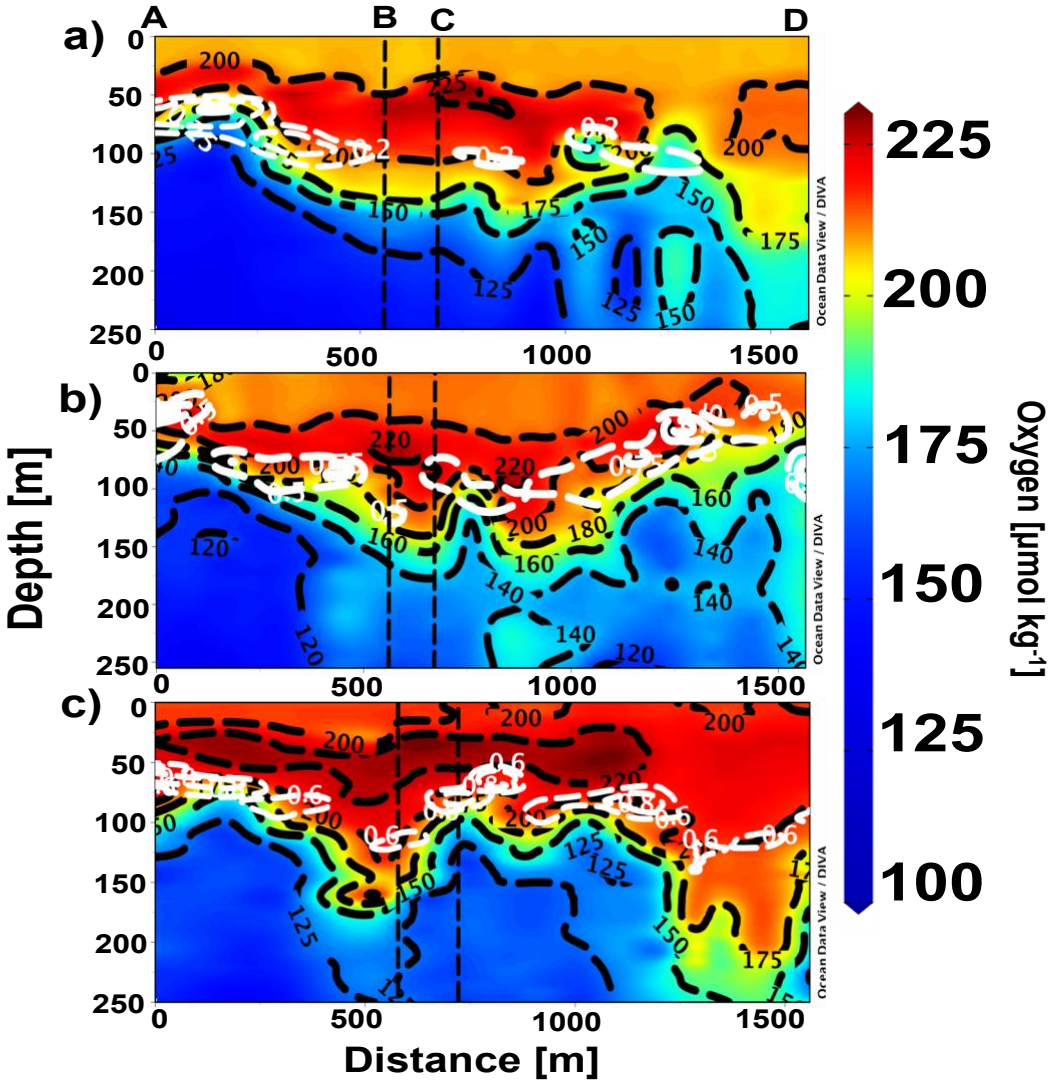
SUPPLEMENTARY MATERIAL

Supplementary Figure 1: The vertical distribution [250 m] of apparent oxygen utilization [μmol·kg^{-1}] are shown for the late fall of 2010 (a), winter of 2103 (b) and summers of 2011 (c), 2015 (d), and 2016 (e). The white contours indicate the lower limit of CSW [24 kg·m^{-3}] and GCW [26 kg·m^{-3}] in all sections. The location of the transect is shown in figure 1c.



Supplementary Figure 2: A comparison of later fall (a) and summers (b and c) conditions of the variability of the depth of 26 kg·m^{-3} density field in the GoM (in situ hydrographic data collected in November 2013, July 2011 and June 2016, respectively).



Supplementary Figure 3: The vertical distribution [250 m] of apparent oxygen utilization [µmol·kg^{-1}] are shown for the summers of 2011 (a), 2015 (b), and 2016 (c). The white contours indicate the maximum of the fluorescence. The location of the transect is shown in figure 1c.