During MEOR within sandstone core under varying temperature, salinity and pH conditions, using Microbe 3, $d_2 = 2.88 \times 10^{-2} \text{ h}^{-1}$, $\psi_{\text{pul}} = 57.6 \text{ h}$ and $k_a/k_d = 6.40$, temporal evolutions of the following parameters at $x = 0.004 \text{ m}, 0.2 \text{ m}, 0.4 \text{ m}, 0.6 \text{ m}, 0.8 \text{ m}, 1.0 \text{ m}$ and $1.1 \text{ m}$ from the influent point are provided as follows: (a) alkalinity of the brine; (b) microbial maximum specific growth rate ($\mu_{\text{max}}$); (c) microbial specific growth rate ($\mu_X$); (d) microbial concentration (mg ml$^{-1}$); (e) carbon substrate (sucrose) concentration (mg ml$^{-1}$); (f) nitrogen substrate (ammonium sulphate) concentration (mg ml$^{-1}$); (g) total volume fraction of microbes attached reversibly and irreversibly onto sandstone porous rock surface; (h) effective porosity of the sandstone core; (i) intrinsic or absolute permeability (m$^2$) of the sandstone core; and (j) In-Situ produced biosurfactant concentration (mg ml$^{-1}$).