



## Analysis on the Natural Organic Matter and Disinfection By-Products in Full-scale Advanced Water Treatment Plant and Conventional Water Treatment Plant

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### ABSTRACT

This study aimed to compare the removal efficiencies of natural organic matter (NOM) and disinfection by-products (DBPs) in Koyang Advanced Water Treatment Plant or KAWTP, Ilsan Conventional Water Treatment Plant or ICWTP, and a mixed-water point in the distribution system. Aside from doing conventional water treatment, KAWTP also carries out postozonation and granular activated carbon adsorption followed by chlorination. NOM removal efficiencies of advanced treated water, conventional finished water, and blended water were 74, 22, and 31%, respectively. Biodegradable dissolved organic carbon (BDOC) removal efficiencies of advanced treated water, conventional finished water, and blended water were 78, 66, and 52%, respectively. The removal efficiencies of DBPs in comparison with conventional finished water were also analyzed. Trihalomethans, chloral hydrate, and haloacetic acids in the advanced treated water had removal efficiencies of 88, 97, and 98%, respectively. Their removal efficiencies in the conventional treated water were 77, 78, and 87%, respectively. It was concluded that DBPs are efficiently controlled by advanced water treatment process. Blending can be applied to other distribution systems to which water is supplied from both conventional treatment plants and advanced treatment plants

*Keywords:* Ozone; NOM; BDOC; DBPs; Blending

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