

## Powder Property Concerning Wet Mud-grinding Engineering of Viscous Soil Containing Humus and its Absorption Property of Cations

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● **Summary** ● Organic matters in viscous soil are a problem in volume reduction of decontamination soil caused by the accident of Fukushima Dai-ichi Nuclear Power Plant. To investigate powder property concerning wet mud-grinding engineering of viscous soil containing humus and its absorption property, we selected Kuroboku soil as a sample of viscous soil containing much humus and clay in order to investigate effective treatment measurements for the viscous soil. We confirmed that Kuroboku soil has aggregate structure forming Al (Fe)-humus aggregate (clay-humus aggregate) and three kinds of soil in Fukushima has similar structure, through SEM observation and particle-size distribution analysis. To reduce elution of humus in alkaline solution by combining with cation, we added Ca, Al, Mg dodecylammonium (DAC) and hexadecyltrimethylammonium (HTAC) to Kuroboku soil suspension. In the solution including Ca and HTAC, elution of humus was reduced in the pH range below 12.8 and in the all pH range investigated. Otherwise, in the solution including Al, Mg, Ca, DAC and HTAC below pH's, below which the species as the form of cation are predominant. Those results revealed that above cations in the alkaline pH solution cannot combine with carboxylic ion of humus and humin in soil elute.

**Key Words:** kuroboku soil, humus, mud grinding engineering, absorption of cation, Fukushima.

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