**Effects of Drying Technique and Time on Moisture and Density Analyses**

Two simple experiments were conducted to evaluate how drying technique and drying time affected the bulk physical property values that are calculated as part of the standard Moisture and Density (MAD) analyses. This work was prompted by some observed changes in grain density and porosity at Site U1480, and is similar to experiments conducted by ODP Information Technology and Data Services (2007).

In the first experiment, eight samples were initially freeze dried for 24 hours and then the dry mass and dry volume of the samples were measured. The same eight samples were then oven dried for 24 hours at 105±5oC and then the dry mass and dry volume were measured. Porosity and grain density were calculated after each drying phase. For comparison each of these samples was taken next to a sample that was processed using standard MAD procedures. Calculated porosity differed by -1.7 to 3.6 porosity units. Calculated grain density differed by -0.04 to 0.13 g/cm3. All data are provided in Supp\_Mat\_PP\_MAD\_Freeze\_Dry.xlsx

In the second experiment, 26 samples were oven dried for 24 hours at 105±5oC and then the dry mass and dry volume of the samples were measured. The same 26 samples were then oven dried for an additional 168 hours at 105±5oC and the dry mass and dry volume were measured again. Porosity and grain density were calculated after each drying phase. Calculated porosity differed by 0.14 to 1.8 porosity units. Calculated grain density differed by -0.01 to 0.12 g/cm3. All data are provided in Supp\_Mat\_PP\_Multi\_Day\_Oven\_Dry.xlsx

Together these experiments show that drying technique and duration can have small effects on calculated physical properties. The magnitude of these effects is likely influenced by clay mineralogy and total clay content. Postcruise research will further constrain clay content and mineralogy.

Reference

ODP Information Technology and Data Services, 2007. ODP Prime Scientific Data: Collection, Archive, and Quality. ODP Tech. Note, 37. doi:10.2973/odp.tn.37.2007