Water Analysis of the Heat Melt Compactor

Janine Young¹ *KBR*, *Houston*, *TX*, 77002

Jurek Parodi²
Bionetics Corporation, Yorktown, VA, 23693

Serena Trieu³
Logyx LLC, Mountain View, CA, 94043

Tra-My Justine Richardson⁴, Jeffrey M. Lee⁵, Kevin R. Martin⁶ NASA Ames Research Center, Moffett Field, CA, 94035

and

Gregory S. Pace⁷ KBR, Houston, TX, 77002

The Heat Melt Compactor (HMC) recovers water from trash at low temperatures and under vacuum conditions to obtain relatively cleaner water with less contaminants. The effluent water vapor is condensed and collected for analysis. The objectives of the analysis are to identify chemical components in the water sample, evaluate water quality, and assess the compatibility of the liquid effluent with the International Space Station (ISS) water systems. The evaluation of water quality includes total organic carbon (TOC) concentrations which provide a general indication of overall water quality, other defining characteristics such as pH and conductivity, and comparison with previous ISS water analytical data as a baseline for the evaluation.

¹ Chemical Engineer, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.

² Aerospace Engineer, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.

³ Engineer, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.

⁴ Research Physical Scientist, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.

⁵ Solid Waste Management Lead, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.

⁶ Science Payload Project Manager, Flight Systems Implementation Branch, M/S 240A-3, NASA ARC, Moffett Field, CA 94035.

⁷ Senior Mechanical Engineer, Bioengineering Branch, M/S 239-15, NASA ARC, Moffett Field, CA 94035.