

**Effect of Roof Material on Water Quality for Rainwater Harvesting Systems –  
Quarterly Report to the Texas Water Development Board (TWDB)**

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**The main objective of this research is to provide recommendations to the rainwater harvesting community in Texas regarding the selection of roofing material for rainwater harvesting and to support these recommendations with scientific data.** In Task 5, we will sample harvested rainwater from our five pilot-scale roofs at the Lady Bird Johnson Wildflower Center and from a coated full-scale roof. In Task 6, we will examine the microbial composition of harvested rainwater from the five pilot-scale roofs. In Task 7, we will examine the impact of roofing material age on the harvested rainwater quality via lab-scale experiments. In Task 8, we will prepare and submit a final report on the research. The following is a summary of our quarterly progress.

**Task 5. Additional sampling of pilot- and full-scale roofs** (*currently underway and on schedule*)

A rain event is currently being collected (June 30, 2010) from the five pilot-scale roofs (asphalt shingle, metal, concrete tile, green, and cool roofs) at the Lady Bird Johnson Wildflower Center. As previously, each roof is equipped with three sequentially filled tanks (i.e., first-flush, tank 1, tank 2). Analyses will include pH, conductivity, dissolved organic carbon, total solids, turbidity, selected metals, nitrite/nitrate, and total and fecal coliform.

We have identified a coated full-scale roof that will be sampled for two rain events. The roof, which is a Kynar-coated Galvalume®, is located at the University of Texas at Austin Child Development Center on Comal Street.

**Task 7. Lab-scale studies of roofing materials** (*currently underway and on schedule*)

Coupons of asphalt shingle, metal, and concrete tile (i.e., the same materials in use at the pilot-scale site) will be used in lab-scale studies to examine the potential for the roofing materials to release contaminants into the water as they age. We have procured the roofing materials and designed the bench-scale system that will house the coupons and recirculate the water.

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