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March 17, 2010

Mr. Von Shipman, P.E.
City Engineer
City of Valdosta
300 North Lee Street
Valdosta, Georgia 31603

Subject: Baytree Road Culvert Improvements - Preliminary Design Evaluation

Dear Mr. Shipman:

Camp Dresser & McKee Inc. (CDM) evaluated several alternatives for controlling stormwater litter and sediment load at Baytree Road by improving the existing culvert. In July 2009 CDM discussed several alternatives with the City of Valdosta (City), which included trash racks, baffle boxes, and the SNOUT. Based on the City's feedback, CDM evaluated in greater detail the benefits and potential impacts related to the installation of a SNOUT box. This letter summarizes the engineering analysis and results.

Project Description

The culvert upgrade consists of the addition of a sump at the culvert outlet and the construction of a concrete box that will house three SNOUTs. The SNOUT is a commercial skimmer that has been in use for litter and sediment control for many years in many parts of the United States. The proposed structure is 15 feet long, 23 feet wide and 15 feet deep, with a sump depth of 8 feet. The final design includes truck access and slope stability, as well as safety considerations.

Hydrologic Evaluation

CDM used the available topographic information, consisting of 10-ft topographic contours, combined with 2-ft interpolated contours to delineate the tributary area to the project site. A first draft delineation was verified against the National Pollutant Discharge Elimination System (NPDES) pipe survey shapefile, to consider underground drainage structures and confirm the tributary area. The results are shown on **Figure 1**, which corresponds to 189.3 acres of tributary area. The land use is mostly commercial, and highly impervious with an average percent of directly connected impervious area of 57 percent. The soil infiltration classification, based on the NRCS hydrologic groups, resulted in the majority of the soils being type "B" (45 percent) and "C" (34 percent).