Technical Memorandum_____

Significant BOD Point and Nonpoint Sources in the Unnamed Tributary of La Trappe Creek (UTLTC) Watershed

The U.S. Environmental Protection Agency (EPA) requires that Total Maximum Daily Load (TMDL) allocations account for all significant sources of the impairing pollutant. The TMDL analysis for the UTLTC addresses biochemical oxygen demand (BOD) loads during the stream flow period of May 1 – September 30. This technical memorandum identifies the significant point sources of BOD used as modeling input for simulating all potentially significant sources when computing the TMDL. BOD reflects the amount of oxygen consumed through two processes: carbonaceous biochemical oxygen demand (CBOD) and nitrogenous biochemical oxygen demand (NBOD). The water quality goal of the TMDL is to establish allowable CBOD and NBOD inputs at a level that will ensure the maintenance of the dissolved oxygen (DO) standard. The table below provides CBOD and NBOD loads for the point source during 7Q10 low-flow conditions.

Point Sources

Table 1 provides the key point source CBOD and NBOD effluent inputs used in the water quality model to determine the maximum CBOD and NBOD loads that the UTLTC can accept during low-flow conditions.

Point Source Name Trappe WWTP MD0020486	**CBOD Load** *lbs/month*	**NBOD Load** *lbs/month*	**Flow** *mgd*	**CBOD Conc.** *mg/l*	**NBOD Conc** *mg/l*
Waste Load Allocation	540	497	0.144	15	13.8
Future Waste Load Alloc.	210	193	0.056	15	13.8
TOTAL	750	690	0.20	15	13.8

Table 1: CBOD and NBOD Loads Attributed to Significant Point Sources Used to Compute the Low-Flow TMDL[a] (May – September)

[a] These loadings correspond to model Scenario 1and 2 in the Draft TMDL Total Maximum Daily Load of Biochemical Oxygen Demand (BOD) for unnamed tributary of La Trappe Creek.

It should be noted that various other point source allocations are feasible within the bounds of the TMDLs. The loadings, concentrations, and flows represented in the table above are for illustrative purposes only. Actual effluent limits and related permit conditions will be established at the time of permit issuance or renewal and will be based upon conditions present at that time, as reflected in population projections, infrastructure needs, and appropriate concentrations and loadings needed to assure the maintenance of water quality standards.

The Maryland Department of the Environment (MDE) expressly reserves the right to allocate the TMDLs among different sources in any manner that is reasonably calculated to achieve water quality standards.

Nonpoint Sources

Nonpoint sources were assumed to be negligible during 7Q10 flow conditions. Model runs for average flow conditions using assumed values of CBOD and NBOD (Scenario 2) indicate no violations of water quality standards. Thus, nonpoint source contributions are assumed negligible for these TMDLs.