Information Sheet
Proposed Total Maximum Daily Load (TMDL)
for West Branch Brandywine Creek
Business Route 30 in Coatesville to Confluence of Buck Run

What is being proposed?

A Total Maximum Daily Load or TMDL plan has been developed to improve the water quality in the main stem of West Branch Brandywine Creek, Business Route 30 in Coatesville to Confluence of Buck Run.

Who is proposing the plan? To whom? Why?

The Pennsylvania Department of Environmental Protection (DEP) is proposing to submit the plan to the US Environmental Protection Agency (EPA) for review and approval as required by the federal regulation.

In 1995, EPA was sued for not developing TMDLs when Pennsylvania did not do so. DEP has entered into an agreement with EPA to develop TMDLs for certain waters over the next several years. DEP developed this TMDL in compliance with the state/EPA agreement.

What is a TMDL?

A Total Maximum Daily Load (TMDL) sets a ceiling on the pollutant loads that can enter a waterbody so that the waterbody will meet water quality standards. The Clean Water Act requires states to list all waters that do not meet their water quality standards even after pollution controls required by law are in place. For these waters, the state must calculate how much of a substance can be put in the water without violating the standard, and then distribute that quantity to all the sources of the pollutant on that waterbody. A TMDL plan includes waste load allocations for point sources, load allocations for nonpoint sources and a margin of safety.

The Clean Water Act requires states to submit TMDLs to EPA for approval. Also, if a state does not develop the TMDL, the Clean Water Act states that EPA must do so.

What is a water quality standard?

The Clean Water Act sets a national minimum goal that all waters be "fishable" and "swimmable." To support this goal, states must adopt water quality standards.

Water quality standards are state regulations which have two components. The first component is a use, such as warm water fishes or recreation. States determine the uses supported by each of their waters. The second component relates to the instream conditions necessary to protect the uses. These conditions or criteria are physical, chemical or biological characteristics, such as temperature, the minimum concentration of dissolved oxygen, and the

maximum concentrations of toxic pollutants.

It is the combination of "uses" and "criteria" that make up water quality standards. If criteria are being exceeded, the uses are not being met, and the water is said to be violating water quality standards.

What is the purpose of the plan?

The main stem of West Branch Brandywine Creek, Business Route 30 in Coatesville to Confluence of Buck Run was determined to be impaired because excessive levels of PCB and chlordane were found in fish tissue, resulting in a fish consumption advisory. The plan includes a calculation of the loading for both PCB and chlordane that will meet the water quality objectives.

Why was West Branch Brandywine Creek, Business Route 30 in Coatesville to Confluence of Buck Run selected for a TMDL?

In 1996, DEP listed West Branch Brandywine under Section 303(d) of the federal Clean Water Act as impaired because of elevated levels of PCB and chlordane in fish tissue. West Branch Brandywine Creek was listed again for 1998 for PCB and chlordane. The 1998 listing increased the length of degraded stream reach from 2.9 miles to 5.85 miles. The TMDL applies to both the 1996 and 1998 lists.

What pollutants does this TMDL address?

The proposed plan provides calculations of the stream's total capacity to accept PCB and chlordane. Based on evaluation of the concentrations of PCB and chlordane in fish tissue, it has been determined that PCB and chlordane are a cause of impairment to West Branch Brandywine Creek.

Where do the pollutants come from?

The production and use of PCB in the United States was banned in 1979. PCB was introduced into the environment while its use was unrestricted. Insufficient PCB data on two hazardous waste sites near Coatesville (Luria Brothers Scrap Yard and the Modena Yard) were available to calculate allocations but PCB loads are assumed to be contributed by nonpoint sources and may be introduced to surface water through contaminated ground water or surface runoff. Chlordane is a man-made organochlorine compound that was widely used as a broad-spectrum agricultural pesticide before its use was restricted to termite control around building foundations. All uses of chlordane have been banned since April 1988 and there are no known sources. Once in a waterbody, PCB and chlordane become associated with solids particles and enter the sediments where they can remain for many years because they are resistant to breakdown. Fish are exposed to and accumulate PCB and chlordane from the water, through contact with or ingestion of sediments, and in the food they eat.

How was the TMDL developed?

PCB and chlordane are probable human carcinogens. The Department's water quality toxics management program controls carcinogens to an overall risk management level of one excess case of cancer in a population of 1 million. In other words, the probablity of an individual getting cancer is increased by a factor of 1 in 1 million. The TMDLs for PCB and chlordane were developed by calculating the maximum amount of the pollutant that could be discharged under design conditions, without violating the water quality criteria of 0.00004 and 0.0005 micrograms per liter respectively. The Department uses the harmonic mean flow as the design condition for dealing with carcinogens because it represents a long-term average exposure to a pollutant.

How much pollution is too much?

The maximum amounts that can be safely assimilated by the main stem of West Branch Brandywine Creek from Business Route 30 in Coatesville to the confluence of Buck Run, under design conditions is 0.0000231 lbs/day for PCB and 0.0002887 lbs/day for chlordane.

How will the loading limits be met?

PCB and chlordane levels are expected to decline due to bans on use and natural attenuation, such as the covering of contaminated sediments with newer, less contaminated materials and flushing of sediments during periods of high stream flow.

How can I get more information on the TMDL?

To request a copy of the full report, contact William Goman at 610-832-6074 or by writing to him at Pennsylvania Department of Environmental Protection, 555 North Lane, Lee Park, Suite 6010, Conshohocken, PA 19428, or e-mail at goman.william@dep.state.pa.us.

The TMDL can be viewed and printed on the DEP Website, http://www.dep.state.pa.us, by typing the acronym **TMDL** in the direct link field, and clicking **GO**.

How can I comment on the proposal?

You may provide e-mail or written comments postmarked no later than November 29, 2000 to the above address.