APPENDIX B: MODIFICATIONS TO THE GEOMORPHOLOGICAL DATA FOR MIGRATION INTO MDE'S AMBIENT WATER QUALITY MONITORING SYSTEM (AWQMS)

One of the current project goals was to make the geomorphological data compatible with MDE's Ambient Water Quality Monitoring System (AWQMS). AWQMS is a data management system used by MDE to store the State's water quality, habitat, and benthic monitoring data and is fully compatible with the Environmental Protection Agency's (EPA) Water Quality Exchange (WQX) schema.

Working closely with MDE's data managers, ICPRB modified the geomorphological data stored in the MS4 Access database to make it compatible for upload to MDE's AWQMS structure. As a first step, MDE's database managers supplied a Microsoft Excel workbook entitled *Habitat Template_Results_for counties* (see accompanying folder), which contained the AWQMS information best matched to the geomorphic data. After a thorough review of the *Result Value Picklist*, it became clear that many geomorphic characteristics were not include in the template. Therefore, MDE requested several additional characteristics names and associated units from the EPA WQX Helpdesk. A lookup table was then created to best match the geomorphological parameters to the habitat characteristics in AWQMS (see the accompanying Excess worksheet *wqx_matchparameters.xlsx*).

Not all data recorded in the MS4 database were suitable for addition to the AWQMS because some required information was not available as outlined below.

Several cross-sections in the Peter Pan Run monitoring in Frederick County, were missing coordinates, which are required attributes.

Some parameters were only reported sporadically during the survey period and did not warrant addition to AWQMS. Below is a table listing the excluded parameters.

Parameter Code	Parameter Name
AER	Annual erosion rate
D50mea	Median particle size of meander within reach
D50rif	Median particle size of riffle within reach
D84mea	84th percentile of the particle-size distribution of the meander within reach
D84rif	84th percentile of the particle-size distribution of the riffle within reach
DomPc	Dominant particle size class at cross-section
DomPs	Cross section percent of dominant particle size
NBS	Near bank stress
Vbkf	Bankfull flow velocity
Wtb	Top of bank width
WWave	Average wetted width

Other required but information that was missing had to be dealt with but did not prevent the migration of the geomorphological data into AWQMS. These problems included:

Unknown/uncertain collection and/or calculation methods. To circumvent this problem, a cavate was added to the "Result Comment" field: *Historical data. Equipment could not be determined*.

Survey dates were often incomplete. As explained in the main report, frequently, only the survey year or the year and month were provided but not the actual date. In these cases, likely dates were chosen either based on the narratives provided in the annual NPDES reports or the known dates of surveys conducted in prior or subsequent years. This action was noted in the "Result Comment" field, for example, as *Full date not provided, only year; used month = June and day = 15*.

The final modified data tables for upload into AWQMS can be found in the enclosed Excel workbook entitled *wqx_final.xlsx.*