Virtual Drinking Water Treatment Plant Tour
Individual Assignment

Due Friday, March 12, 2020 at 11:59 pm

1. Draw a process flow diagram of the main treatment process at the St. Joseph Drinking Water Treatment Plant presented in the virtual tour. A process flow diagram is a diagram that depicts the flow of water through various treatment processes of a treatment plant should be drawn using a computer program (for example, Powerpoint or Autocad) and plotted in landscape view where each process is labelled. See Figures 6-4 and 6-5 from your textbook for examples. You can use various boxes and basic shapes to represent different treatment processes but the textbook figures noted above will provide examples of typical diagrams. Be sure to indicate all chemicals that were added throughout the treatment process in your diagram. (15 points)

2. Create a table or list of the chemicals added during the treatment process. For each, explain why that chemical is added during treatment. (10 points)

3. Create a table summarizing key analyses conducted by the Morgantown Utility Board (MUB) and reported on in their 2019 CCR in compliance with the Safe Drinking Water Act (SDWA). Your table should include the parameters listed below and the following columns that should be completed for each parameter: Parameter, Units, Type of Data Reported (for example, this may be range, average, maximum daily reading, 90^{th} percentile, number of positive samples, etc. as specified by the MCL/MCLG for that parameter), Maximum Contaminant Level (MCL), Maximum Contaminant Level Goal (MCLG), and whether MUB is in compliance (yes or no). While much of this data is provided in the CCR in the form of various figures and tables, you may also wish to refer to Table 6-2 in your textbook for help identifying regulatory requirements for the SDWA. In cases where a column is not relevant to a particular parameter, enter N/A to indicate not applicable. (25 points)

   Your table should include the following parameters:

   - nitrate
   - antimony
   - barium
   - chromium
   - fluoride
   - turbidity
   - alkalinity
   - hardness
   - iron
   - manganese
   - pH
   - total dissolved solids
   - chlorine
   - lead
   - copper
   - coliform bacteria
   - total organic carbon
   - total trihalomethanes (TTHMs) (averaged across sites)
   - haloacetic acids (HAA5s) (averaged across sites)