4.7 Calculations for Effluent Limits

4.7.1 Instream Waste Concentration (IWC):

$$IWC = \frac{Q_{Effluent}\ (ft^3/sec)}{Q_{Effluent}\ (ft^3/sec) + 7Q10\ (ft^3/sec)}\ \%$$

$$= \frac{12.4}{12.4+0.02}$$

$$= 100\ \%$$

4.7.2 Flow:

Q = Flow
C = Concentration
M = Mass

Weekly Average Flow:

Q_{Weekly} = $Q_{Monthly}$ (MGD) x 1.25

Refer to *Appendix B* for the calculated results.

4.7.3 Five-Day Biochemical Oxygen Demand:

Weekly Average Concentration:

$[C]_{Weekly}$ = $[C]_{Monthly}$ (mg/L) x 1.5

Monthly Average Mass Loading:

$M_{Monthly}$ = $Q_{Monthly}$ (MGD) × $[C]_{Monthly}$ (mg/L or ppm) × 8.34 (lbs/gal)

Weekly Average Mass Loading:

M_{Weekly} = Q_{Weekly} (MGD) × $[C]_{Monthly}$ (mg/L or ppm) × 8.34 (lbs/gal)

Refer to *Appendix B* for the calculated results.

4.7.4 Total Suspended Solids:

Weekly Average Concentration:

$[C]_{Weekly}$ = $[C]_{Monthly}$ (mg/L) x 1.5

Monthly Average Mass Loading:

$M_{Monthly}$ = $Q_{Monthly}$ (MGD) × $[C]_{Monthly}$ (mg/L or ppm) × 8.34 (lbs/gal)