

Stream Water Chemistry Report Summary

Stream Name: Black Creek (Control Site)

Water Chemistry Parameters	Annual Average Value	Recommended Standard
Total Suspended Solids	6.2 mg/L	N/A
Alkalinity	179.86 mg/L	N/A
Chloride	6.86 mg/L	
Total Phosphorus	0.011 mg/L	< 0.01 - 0.03 mg/L
Chlorophyll <i>a</i> Content	0.343mg/L	
Temperature	15.15 C	N/A
pH	7.93	Between 6.5-8.5
Conductivity	0.268 spc	N/A
Dissolved Oxygen	6.17mg/L	> 6.0 mg/L
Total Organic Nitrogen	0.557mg/L	< 1.1mg/L

The annual average water chemistry at the Black Creek control site demonstrates high water quality conditions. Of particular notice is the low total phosphorus and total organic nitrogen content at the study site which is well below the provincial standard of 0.01- 0.03mg/L and 1.1mg/L respectively. This indicates that on average this stream has a level of both phosphorus and organic nitrogen which is not conducive to the growth of nuisance vegetation or downstream algal blooms. As such it is not surprising that the dissolved oxygen value at this site indicates that the stream is well oxygenated. This means that the water is carrying the expected amount of oxygen given its temperature; oxygen which can be utilized by dependant organisms such as fish. The pH values fall within the provincial recommendations for fresh water systems as well. In the case of this stream, the water is slightly basic (<7) opposed to acidic (<7) or neutral (7) and are as expected considering local geological conditions.

For the remaining parameters recommended standards have yet to be developed or are not applicable as this is a reference site and is indicative of the natural conditions in the region. Nonetheless, in comparison to the five other monitored streams, all relevant parameters indicate a lower human impact at this site. For example, the total suspended solids (TSS), or amount of material suspended in the water column is the lowest at Black Creek. Higher values are common in streams which drain lands with higher erosion rates, such as a freshly tilled field, or in streams with soft bottoms which are used to water cattle. Like the TSS the chlorophyll *a* content is also the lowest at the Black Creek site. This measure is often a good indicator of suspended algae in the water of the stream. The low values are as expected considering the low total phosphorus and organic nitrogen content in the stream. Finally this stream has the lowest conductivity values recorded. When the local geology is considered, this value suggests that this stream has a larger input of water from rainfall events which then drain into the stream, opposed to a ground water source.