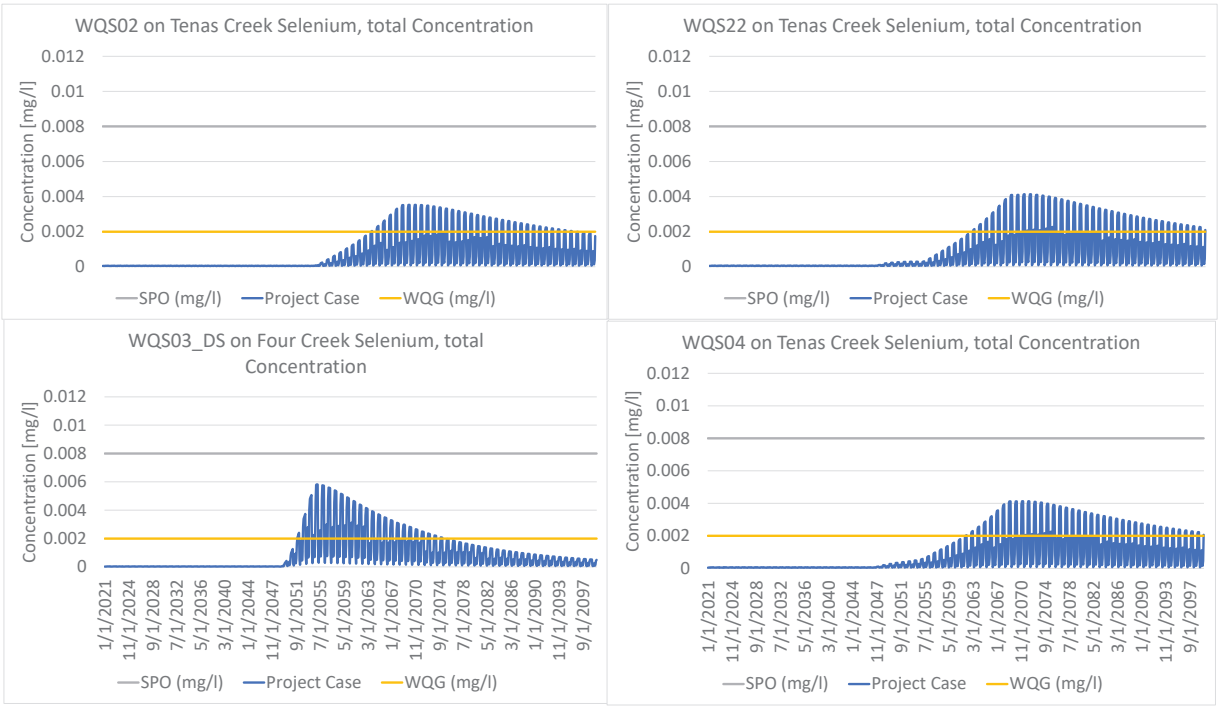

Figure 4-13: Modelled Total Selenium Concentrations for Nodes with Exceedances of WQG in Project Case.

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/ModelOutputs_WaterQualityPlots/Water%20Quality%20Plots%20-%20NewSPO_20220425.xlsx

Nitrite

The WQG for nitrite is 0.02 mg/l, which is exceeded in Tenas Creek and Four Creek because of Management Pond seepage. The SPO for nitrite is 0.0524 mg/l, which is not exceeded in any stream based on Project Case model assumptions. Table 4-8 summarizes the exceedances for nitrite.

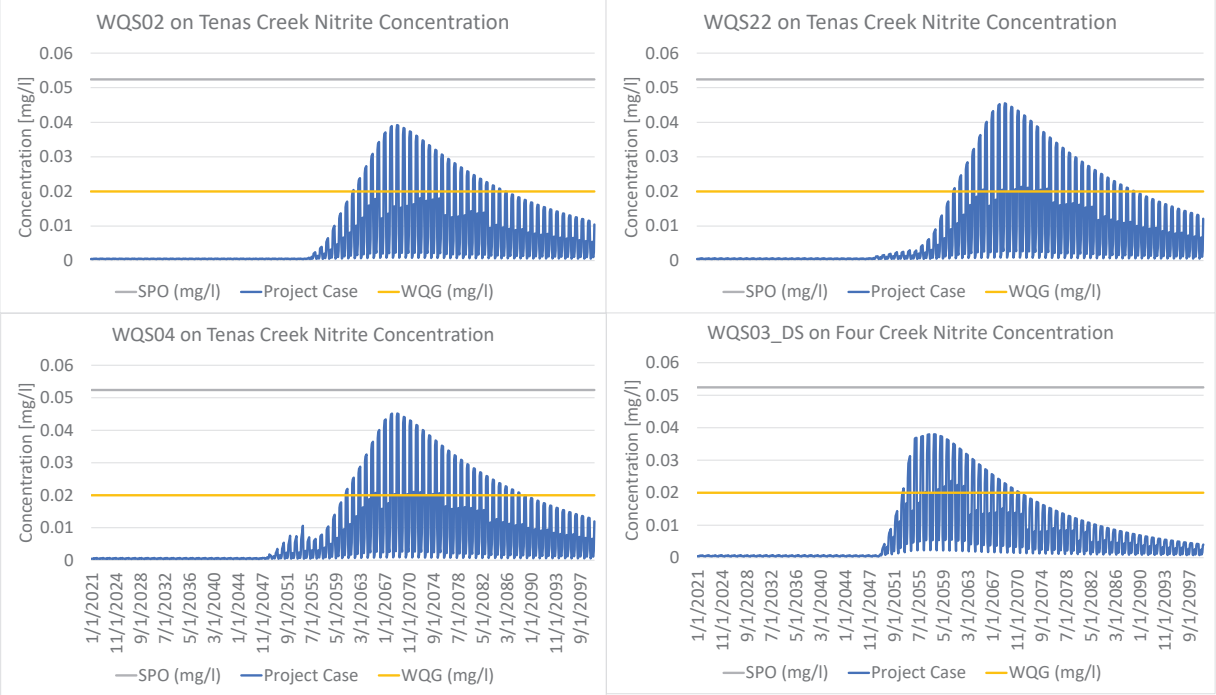

Figure 4-14: Modelled Nitrite-Nitrogen Concentrations for Nodes with Exceedances of WQG in Project Case

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/ModelOutputs_WaterQualityPlots/Water%20Quality%20Plots%20-%20NewSPO_20220425.xlsx

Dissolved Cadmium

The water quality guideline for dissolved cadmium is dependent on the baseline hardness and is 0.00017 mg/l, 0.00024 mg/l and 0.0016 mg/L for Tenas Creek, Four Creek and Goathorn Creek, respectively. The 50th percentile baseline hardness values for each creek are 73 mg/L, 111 mg/L and 69 mg/L for Tenas, Four and Goathorn creeks, respectively. Exceedances of the guideline occur in Four creek during both the summer and winter from Management Pond seepage. The SPO for dissolved cadmium varies based on the background hardness concentration in each stream. The SPO value is not exceeded in any creek. Table 4-9 summarizes the exceedances for dissolved cadmium.

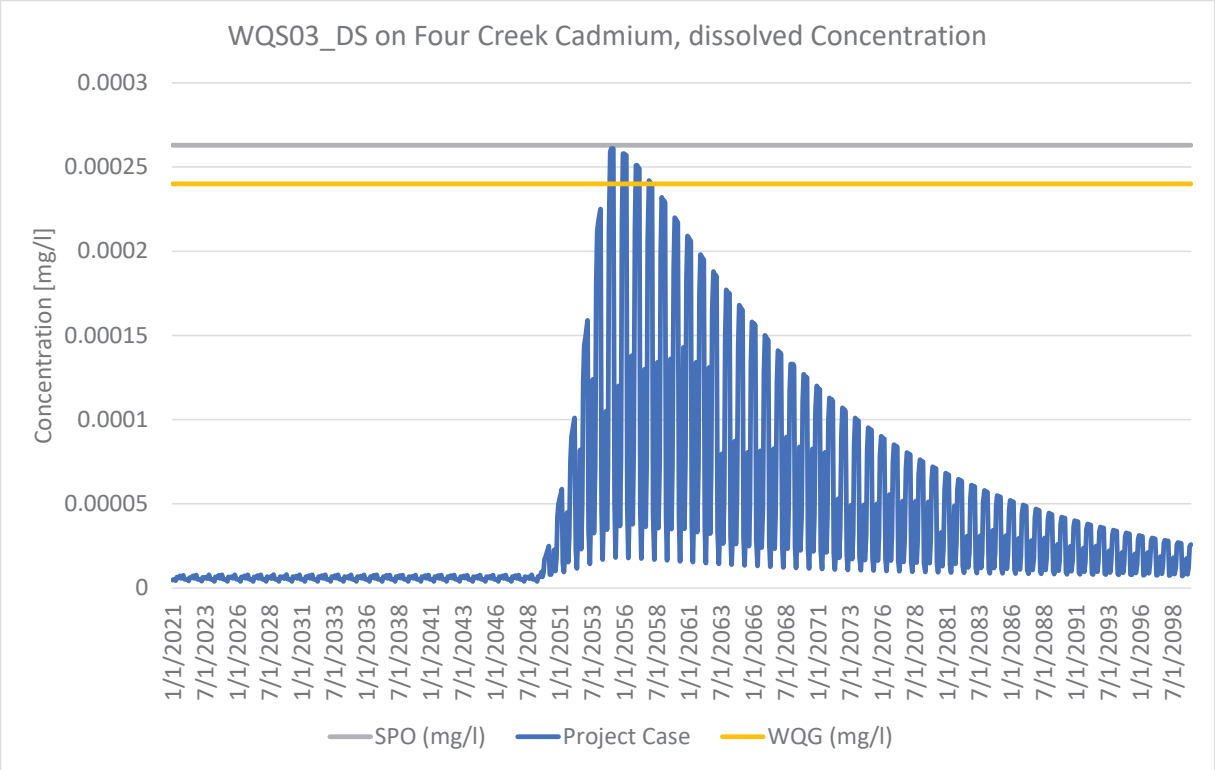

Figure 4-15: Modelled Dissolved Cadmium Concentrations for Nodes with Exceedances of WQG in Project Case

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/ModelOutputs_WaterQualityPlots/Water%20Quality%20Plots%20-%20NewSPO_20220425.xlsx

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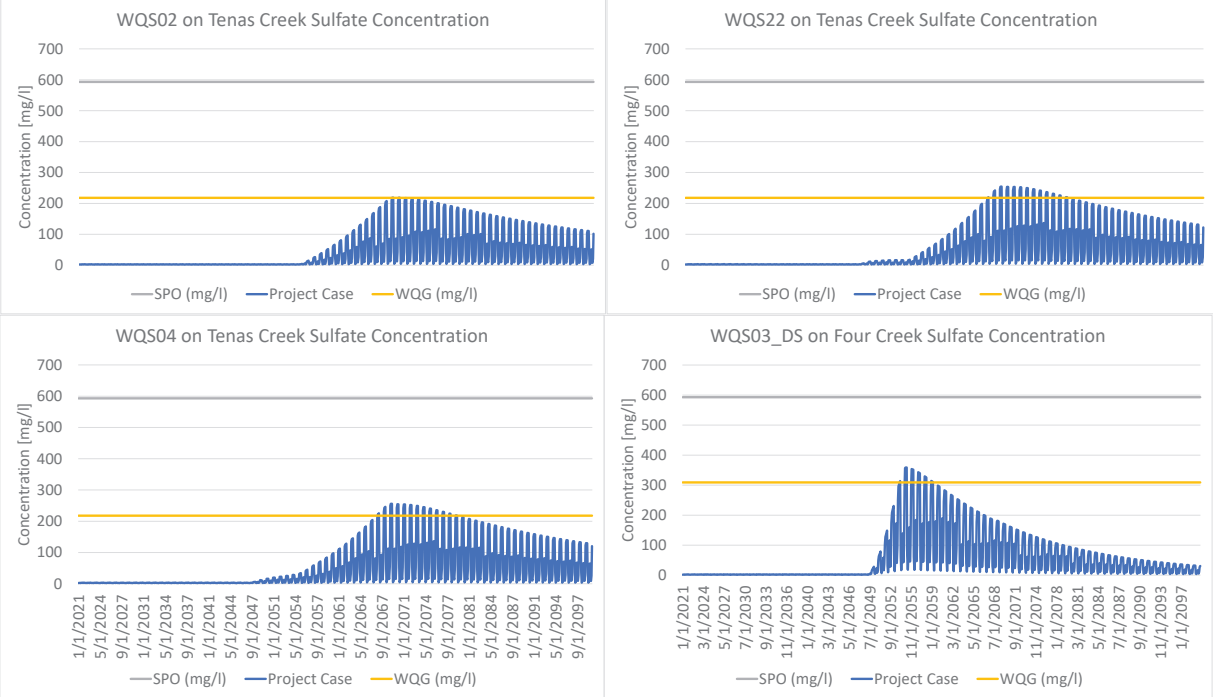

Figure 4-16: Modelled Sulphate Concentrations for Nodes with Exceedances of WQG in Project Case

Source: https://srk.sharepoint.com/sites/NA1CT027.003/Internal/500_Water_Balance/Results/ModelOutputs_WaterQualityPlots/Water%20Quality%20Plots%20-%20NewSPO_20220425.xlsx

Additional Observations

Total and dissolved aluminum modelled concentrations exceed the WQG in all streams during either maximum summer and/or maximum winter periods. In the lower part of Four Creek (WQS03DS) and in Telkwa River, the exceedances are continuous throughout long-term closure in both average summer and winter. Exceedances are predominately driven by naturally elevated concentrations.

Telkwa River and Bulkley River baseline 50th percentile concentrations are above the WQG and 95th percentile concentrations are above the SPO limit. Four Creek and Tenas Creek 95th percentile baseline concentrations are also above the SPO limits. The 95th percentile baseline concentrations in all other streams are above the WQG but below the SPO limit. The maximum monthly winter concentrations in Telkwa River and Four Creek are above the SPO limit, as well as the maximum summer concentration in the Telkwa River. The long-term model results in Telkwa River and Four Creek are below the SPO but above the guideline. Model results for all other streams and nodes are consistently below the SPO in the Project Case.

4.4.2 Alternative Assessment Case Results

Alternative assessment cases include upper and lower range inputs for groundwater, geochemical source terms and hydrology. Each alternative input has been assessed on an individual basis with expected conditions (Project Case) for other parameters. Results focus on the prediction nodes and