

Appendix 21-G

Predicted Metal Concentrations in Berries due to Root Uptake of Metals and Direct Deposition of Metals in Dustfall for the Operation Phase of the Brucejack Gold Mine Project

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Metals	Parameters in Calculation				BJ018 <i>Sheperdia canadensis</i>				BJ019 <i>Vaccinium membranaceum</i>				BJ020 <i>Vaccinium membranaceum</i>			
	Rp for Berries	kp (year ⁻¹)	Tp (year)	Yp for Berries (kg DW/m ²)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)
Selenium	0.39	18	0.247	0.250	0.100	0.122	0.128	0.250	0.100	0.100	0.00301	0.103	0.100	0.100	0.0691	0.169

Metals	BJ024 <i>Vaccinium ovalifolium</i>				BJ028 <i>Vaccinium uliginosum</i>				BJ029 <i>Vaccinium ovalifolium</i>				BJ030 <i>Sheperdia canadensis</i>			
	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)
Selenium	0.100	0.100	0.0691	0.169	0.100	0.100	0.000474	0.100	0.100	0.100	0.000263	0.100	0.100	0.0349	0.00984	0.0448

Metals	BJ030 <i>Vaccinium membranaceum</i>				SOIL 4 <i>Vaccinium membranaceum</i>				SOIL 4 <i>Vaccinium ovalifolium</i>				12-7166 <i>Vaccinium ovalifolium</i>			
	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)
Selenium	0.100	0.0349	0.00984	0.0448	0.100	0.0602	0.0691	0.129	0.100	0.0602	0.0691	0.129	0.100	0.0787	0.0691	0.148

Metals	12-7167 <i>Vaccinium ovalifolium</i>				12-7168 <i>Vaccinium ovalifolium</i>				12-7169 <i>Vaccinium ovalifolium</i>				12-7169 <i>Vaccinium membranaceum</i>			
	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)	Baseline Concentration ¹ (mg/kg)	Predicted Concentration due to Root Uptake ² (mg/kg)	Predicted Concentration due to Dustfall ³ (mg/kg)	Predicted Concentration ⁴ (mg/kg)
Selenium	0.100	0.0712	0.0691	0.140	0.100	0.0977	0.0691	0.167	0.100	0.0524	0.0102	0.0626	0.100	0.0524	0.0102	0.0626

Notes:

¹ Baseline concentrations are from samples collected in 2012 (dry weight)

² Predicted vegetation concentration due to root uptake is calculated by multiplying the predicted total soil concentration from Appendix 21-E with the biotransferfactor. For site where soil and berry were not co-collected, it was assumed that the predicted concentration via root uptake is equivalent to the measured baseline concentration at that site.

³ Predicted vegetation concentration due to dustfall deposition is calculated using US EPA (2005).

⁴ Total predicted vegetation concentrations are the sum of concentrations due to root uptake and deposition.