

APPENDIX B

PROJECTED AIR EMISSION LEVEL CALCULATIONS

**Locomotive Emissions Estimates
Commonwealth Rail Relocation Project**

Build Alternative:

Operating Year Condition	Emission Factor		Engine Horsepower Rating	Engines per Train	Hours per Train Trip	Trains per Day	Trains per Year	Maximum Expected Emissions			
	VOC [g/bhP-hr]	NOx [g/bhP-hr]						VOC (tons/day)	NOx (tons/day)	VOC (tons/yr)	NOx (tons/yr)
2010 Condition - Line Haul Duty	0.55	7.4	3000	3	0.275	5.41	1,976	0.0081	0.109	2.96	39.89
2018 Condition - Line Haul Duty	0.3	5.5	3000	3	0.275	7.41	2,704	0.0061	0.111	2.21	40.57

No-Build Alternative:

Operating Year Condition	Emission Factor		Engine Horsepower Rating	Engines per Train	Hours per Train Trip	Trains per Day	Trains per Year	Maximum Expected Emissions			
	VOC [g/bhP-hr]	NOx [g/bhP-hr]						VOC (tons/day)	NOx (tons/day)	VOC (tons/yr)	NOx (tons/yr)
2010 Condition - Line Haul Duty	0.55	7.4	3000	3	0.430	5.41	1,976	0.0127	0.171	4.64	62.38
2018 Condition - Line Haul Duty	0.3	5.5	3000	3	0.430	7.41	2,704	0.0095	0.174	3.46	63.44

Notes:

1. Emission factors for the 2010 and 2018 Conditions are equivalent to the Tier 1 and Tier 2 federal emission standards for locomotives and locomotive engines under 40 CFR Part 92 (Section 92.8), respectively.
2. Engine horsepower rating and engines per train values are assumptions based on a review of EIS documents for port facilities.
3. Trains per day and trains per year rail usage values are based on weekly rail traffic projections provided by Moffatt & Nichol Engineers (Moffatt & Nichol 2007)