5.1.4.4 Dispersion Model Results

5.1.4.4.1 Criteria Pollutants

The criteria pollutant concentrations predicted using AERMOD to evaluate Facility operations are presented in Table 5.1-21. All maximum modeled concentrations occurred within 1 km of the Facility. In order to assess the significance of the predicted values, the maximum predicted criteria pollutant concentrations attributable to the Facility are compared with the EPA SILs; concentrations below the SILs are considered to be insignificant, and these pollutants do not require cumulative modeling with other sources to demonstrate compliance with ambient air quality standards.

Table 5.1-21. Project-only Modeling Results

Pollutant	Averaging Period	Design Concentration[1] ($\mu g/m^3$)	UTM Easting[2] (m)	UTM Northing[2] (m)	SIL[3] ($\mu g/m^3$)
CO	1-hour	90.6	520704	5055515	2,000
	8-hour	76.8	520704	5055515	500
NO_2	1-hour	22.1	520704	5055515	7.5
	Annual	0.588	520701	5055505	1
PM_{10}	24-hour	13.2	520698	5055496	5
$PM_{2.5}$	24-hour	10.5	520701	5055505	1.2
	Annual	0.295	520701	5055505	0.3
SO_2	1-hour	18.2	520704	5055515	7.8
	3-hour	17.2	520704	5055515	25
	24-hour	12.8	520704	5055515	5
	Annual	0.207	520701	5055505	1

Notes:
[1] Maximum concentration (highest 1st high) except for 1-hour NO_2, 24-hour $PM_{2.5}$, annual $PM_{2.5}$, and 1-hour SO_2, which are the highest of the 5-year averages of the maximum modeled concentrations predicted each year at each receptor.
[2] UTM Zone 10
[3] From WAC 173-400-113(4)(a)

Predicted CO, 3-hour average SO_2, and annual NO_2, $PM_{2.5}$, and SO_2 concentrations attributable to Facility emissions units are less than the SILs. A concentration less than the SIL indicates that emissions of that pollutant attributable to the Facility does not have the potential to significantly affect ambient air concentrations.

Short-term concentrations of NO_2, $PM_{2.5}$, PM_{10}, and SO_2 exceed their respective SILs; it is common to evaluate cumulative concentrations by adding existing "background" concentrations to the predicted concentrations attributable to the Facility. The background concentrations summarized in section 5.1.4.2.2, provide a conservative assessment of background air quality. Table 5.1-22 identifies cumulative concentrations based on the sum of these conservative background concentrations and the modeled design concentrations attributable to the Facility. The analysis indicates that when predicted design concentrations are added to the background concentrations, the resulting total concentrations comply with NAAQS/WAAQS.