

Helicopter Emissions Calculations - Air Quality

Activity	Qty.	Equip.	Mode	Days/ Week	Hours/ Day	Duration (weeks)	Power (shp)	Fuel Consumption (lb/hr)	Emission Factors (lb/hr)					Emissions									
									HC	Nox	CO	SOx	PM10	total (tons)					Peak daily (lbs/day)				
									HC	Nox	CO	SOx	PM10	HC	Nox	CO	SOx	PM10	HC	Nox	CO	SOx	PM10
Pole Installation	2	light duty - Hughes 500	LTO	7	0.68	17	317	36.2	4.4	0.6	5.7	0.0	0.0	0.35	0.05	0.46	0.00	0.00	5.9	0.8	7.7	0.1	0.0
Pole Installation	2	light duty - Hughes 500	Operation	7	9.33	17	317	218.3	2.1	1.1	2.6	0.2	0.0	2.35	1.17	2.94	0.26	0.04	39.5	19.7	49.3	4.4	0.7
Pole Installation	1	heavy duty - Bell 214B	LTO	7	0.68	9	1850	87.3	2.7	3.2	3.5	0.1	0.1	0.06	0.07	0.07	0.00	0.00	1.8	2.2	2.3	0.1	0.1
Pole Installation	1	heavy duty - Bell 214B	Operation	7	9.33	9	1850	613.0	1.2	7.0	1.4	0.7	0.2	0.35	2.04	0.42	0.20	0.06	11.2	64.9	13.4	6.2	1.8
Total									3.111	3.33	3.89	0.46	0.10	58.4	87.6	72.8	10.8	2.5					

Notes

Emission factors were obtained from the *FOCA Guidance on Determination of Helicopter Emissions, Edition 1, March 2009*

Emission factors for Bell 214B (single engine @ 1,850 shp) were derived from the emission factors for the Bell 412 (twin engines @ 1,800 shp each)

LTO = Landing and take-off cycle

Each day of 10-hour helicopter operations assumes 3 LTOs at 13/5 minutes each. The remaining time is assumed to be operational (no idle time has been assumed).

Jet Fuel assumed to contain an average 0.054% wt. sulfur per the FAA's Aviation Emissions, Impacts & Mitigation: a Primer, dated January 2015