

TABLE 1
Fate and Transport Screening Model Values

Parameter	Abbrev.	Value	Units	Reference
Outdoor Air Parameters				
Particulate emission factor ^a	PEF	1.94 E+9	m ³ /kg	USEPA 2002a
Off-site particulate emission factor	PEF _{off}	4.40 E+8	m ³ /kg	USEPA 2002a
Dispersion factor for volatiles emitted from soil ^b	Q/C _{vol}	83.1	g/m ² -s per kg/m ³	USEPA 2002a
Construction Dust Parameters				
Fraction of vegetative cover	V	0	--	USEPA 2002a
Mean annual wind speed	U _m	4.1	m/s	(1)
Equivalent threshold value of wind speed	U _t	11.32	m/s	USEPA 2002a
Function dependent on U/U _t	F(x)	0.194	--	USEPA 2002a
Wet soil bulk density	r _{soil}	1.88	Mg/m ³	Site-specific (2)
Percent moisture in soil	M	9	%	Site-specific (2)
Depth of site excavation	d _{excav}	--	m	Site-specific
Areal extent of site excavation	A _{excav}	--	m ²	(3)
Number of times soil is dumped	N _A	2.0	--	USEPA 2002a
Percent weight of silt in soil	s	10.8	%	Site-specific (2)
Mean dozing speed	S _{doz}	11.4	km/hr	USEPA 2002a
Areal extent of site tilling	A _{till}	--	acre	(3)
Number of times soil is tilled	N _A	2.0	--	USEPA 2002a
Average grading speed	S _{grade}	--	km/hr	Site-specific
Subchronic dispersion factor for area source-Constant A	A	2.454	--	USEPA 2002a
Subchronic dispersion factor for area source-Constant B	B	17.566	--	USEPA 2002a
Subchronic dispersion factor for area source-Constant C	C	189.043	--	USEPA 2002a
Number of vehicles for duration of construction	N _V	--	vehicles	Site-specific
Width of road segment	W _R	6.1	m	USEPA 2002a
Length of road traveled per day	L _D	--	m/day	Site-specific
Length of road segment	L _R	--	m	Site-specific
Mean vehicle weight	W	8.0	tonnes	USEPA 2002a
Number of days/year ≥ 0.01 inches	p	27.0	days	(4)
Subchronic dispersion factor for road segment-Constant A	A	12.935	--	USEPA 2002a
Subchronic dispersion factor for road segment-Constant B	B	5.738	--	USEPA 2002a
Subchronic dispersion factor for road segment-Constant C	C	71.771	--	USEPA 2002a
Areal extent of site surface contamination	A _{surf}	--	acres	Site-specific
Indoor Air Parameters				
Enclosed space air exchange rate, commercial	ER _c	0.83 and 2	1/hr and 2/hr	ASTM 2000 (same as 20/day); CalEPA 2005; Michigan Environmental Science Board 2001

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Soil/Water Partition Parameters				
Fraction of organic carbon content in soil	foc	---	mg/mg	Site-specific
Organic carbon-water partition coefficient	Koc	---chemical-specific---		USEPA 2002a
Water-filled soil porosity	q _w	---	L _{water} /L _{soil}	Site-specific
Air-filled soil porosity	q _a	---	L _{air} /L _{soil}	Site-specific
Henry's law constant (dimensionless)	H'	---chemical-specific---		USEPA 2002a
Soil bulk density	r _b	---	kg/L	Site-specific

^aFor non-construction worker exposures only. Construction worker dust exposures calculated from USEPA, 2002a.

^bCalculated using values for Las Vegas, NV in Appendix D of USEPA, 2002a.

(1) - Derived from Western Regional Climate Center (WRCC). 2010. Average wind speeds for Las Vegas. Desert Research Institute. <http://www.wrcc.dri.edu/htmlfiles/westwind.final.html#NEVADA>.

(2) - Data provided in Appendix A.

(3) - Assumed value of one fifth of the site based upon USEPA (2002a).

(4) - Based on long-term weather data for the area of interest (NDEP asbestos calculation worksheet, On-line. <http://www.ndep.nv.gov/bmi/technical.htm#asbestos>).