Table 2.1
Preliminary Site-Specific Remediation Goals (PSSRGs)
Pemaco Superfund Site, Maywood, California

Zone	Chemical of Concern	Preliminary Site-Specific Remediation Goals (PSSRGs)[1] (IN BOLD)						
		ARARs/TBCs[2]		10^{-6} Cancer Risk				
		Primary MCLs	Region IX PRGs *(type of PRG)*	Park User Exposure[3]		Excavation Worker Exposure[4]		Remediation Goal Option[5]
Surface/Near Surface Soil COCs	***SVOCs (µg/kg)***		*Residential*					
	Benzo (a) anthracene	--	**620 µg/kg**	528 µg/kg	ca	2,610 µg/kg	ca	**620 µg/kg**
	Benzo (a) pyrene	--	**62 µg/kg**	52.8 µg/kg	ca	261 µg/kg	ca	**62 µg/kg**
	Benzo (b) fluoranthene	--	**620 µg/kg**	528 µg/kg	ca	2,610 µg/kg	ca	**620 µg/kg**
	Benzo (k) fluoranthene	--	6,200/380 µg/kg*	528 µg/kg	ca	2,610 µg/kg	ca	**380 µg/kg**
	Chrysene	--	62,000/3,800 µg/kg*	5,280 µg/kg	ca	26,100 µg/kg	ca	--
	Dibenzo (a,h) anthracene	--	**62 µg/kg**	155 µg/kg	ca	762 µg/kg	ca	**62 µg/kg**
	Indeno (1,2,3-cd) pyrene	--	**620 µg/kg**	528 µg/kg	ca	2,610 µg/kg	ca	--
	Metals (mg/kg)		*Residential*					
	Arsenic	--	*22*/**0.39 mg/kg***	30.3 mg/kg	nc	274 mg/kg	nc	**0.39 mg/kg**
	Iron	--	**23,000 mg/kg**	32,900 mg/kg	nc	285,000 mg/kg	nc	--
	Lead	**--**	**150 mg/kg**	400 mg/kg	+	362 mg/kg	++	--
	Manganese	--	**1,800 mg/kg**	4,880 mg/kg	nc	5,690 mg/kg	nc	--
Upper Vadose Zone Soil COCs	***VOCs (µg/kg)***		*DAF 20 SSL*					
	1,1-Dichloroethene	--	**60 µg/kg**	--		722 µg/kg	ca	--
	Acetone	--	**16,000 µg/kg**	--		--		--
	Benzene	--	**30 µg/kg**	--		2,380 µg/kg	ca	--
	cis-1,2-Dichloroethene	--	**400 µg/kg**	--		--		--
	Ethylbenzene	--	**13,000 µg/kg**	--		--		--
	Methylene Chloride	--	**20 µg/kg**	--		--		--
	Tetrachloroethene	--	**60 µg/kg**	--		11,300 µg/kg	ca	--
	Toluene	--	**12,000 µg/kg**	--		--		--
	Trichloroethene	--	**60 µg/kg**	--		29,900 µg/kg	ca	--
	Vinyl Chloride	--	**10 µg/kg**	--		--		--
	Xylenes (total)	--	**210,000 µg/kg**	--		--		--
	SVOCs (µg/kg)		*DAF 20 SSL*					
	Benzo (a) anthracene	--	**2000 µg/kg**	--		2,610 µg/kg	ca	--
	Benzo (a) pyrene	--	8,000 µg/kg	--		**261 µg/kg**	ca	--
	Benzo (b) fluoranthene	--	5,000 µg/kg	--		**2,610 µg/kg**	ca	--
	Carbazole	--	**600 µg/kg**	--		--		--
	Dibenzo (a,h) anthracene	--	2,000 µg/kg	--		**762 µg/kg**	ca	--
	Indeno (1,2,3-cd) pyrene	--	14,000 µg/kg	--		**2,610 µg/kg**	ca	--
	Isophorone	--	**500 µg/kg**	--		--		--
	NHVOCs (µg/kg)		*DAF 20 SSL*			--		
	Acetone	--	**16,000**	--		--		--
	Metals (mg/kg)		*DAF 20 SSL*			--		
	Arsenic	--	**29 mg/kg**	--		274,000 mg/kg	nc	--
	Chromium (total)	--	**38 mg/kg**	--		--		--

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		ARARs/TBCs[2]		10^{-6} Cancer Risk				
		Primary MCLs	Region IX PRGs *(type of PRG)*	Park User Exposure[3]		Excavation Worker Exposure[4]		Remediation Goal Option[5]
Lower Vadose Zone Soil COCs[6]	***VOCs (µg/kg) DAF 20***		*DAF 20 SSL*					
	Benzene	--	30 µg/kg	--		--		--
	1,2-Dichloroethane	--	20 µg/kg	--		--		--
	cis-1,2-Dichloroethene	--	400 µg/kg	--		--		--
	Methylene chloride	--	20 µg/kg	--		--		--
	Trichloroethene	--	60 µg/kg	--		--		--
	Vinyl Chloride	--	10 µg/kg	--		--		--
	Metals (mg/kg) DAF 20		*DAF 20 SSL*					
	Chromium (total)	--	38 mg/kg	--		--		--
	VOCs (µg/kg) DAF 1		*DAF 1 SSL*					
	Benzene	--	**2 µg/kg**	--		--		--
	1,2-Dichloroethane	--	**1 µg/kg**	--		--		--
	cis-1,2-Dichloroethene	--	**20 µg/kg**	--		--		--
	Methylene chloride	--	**1 µg/kg**	--		--		--
	Trichloroethene	--	**3 µg/kg**	--		--		--
	Vinyl Chloride	--	**0.7 µg/kg**	--		--		--
	Metals (mg/kg) DAF 1		*DAF 1 SSL*					
	Antimony	--	**0.3 mg/kg**	--		--		--
	Arsenic	--	**1 mg/kg**	--		--		--
	Barium	--	**82 mg/kg**	--		--		--
	Cadmium	--	**0.4 mg/kg**	--		--		--
	Chromium (total)	--	**2 mg/kg**	--		--		--
	Nickel	--	**7 mg/kg**	--		--		--
Perched Groundwater Zone COCs	***VOCs (µg/L)***		*Tap Water*					
	1,1-Dichloroethane	5 µg/L	810/**0.2 µg/L***	--		--		--
	1,1-Dichloroethene	**6 µg/L**	340 µg/L	--		--		--
	1,2-Dibromo-3-chloropropane	0.2 µg/L	0.048/**0.0016 µg/L***	--		--		--
	1,2-Dichloroethane	0.5 µg/L	**0.12 µg/L**	--		--		--
	1,1,2-Trichloroethane	5 µg/L	**0.2 µg/L**	--		--		--
	Acetone	--	**610 µg/L**	--		--		--
	Benzene	1 µg/L	0.34 µg/L	--		--		**0.31 µg/L**
	Chloroform	--	6.2/0.53 µg/L*	--		--		**0.5 µg/L**
	Chloroethane	--	**4.6 µg/L**	--				--
	cis-1,2-Dichloroethene	**6 µg/L**	61 µg/L	--		--		--
	Dibromochloromethane	--	**0.13 µg/L**	--		--		--
	Ethylbenzene	300 µg/L	2.9 µg/L	--				**2.6 µg/L**
	Methyl tert butyl ether	13 µg/L	13/**6.2***	--				--
	Tetrachloroethene	5 µg/L	0.66 µg/L	--		--		**0.48 µg/L**
	trans-1,2-Dichloroethene	**10 µg/L**	120 µg/L	--		--		--
	Toluene	**150 µg/L**	720 µg/L	--				--
	Trichloroethene	5 µg/L	0.028 µg/L	--		--		**0.026 µg/L**
	Vinyl Chloride	0.5 µg/L	**0.02 µg/L**	--		--		0.033 µg/L
	NHVOCs (µg/L)		*Tap Water*					
	Acetonitrile (Coelute w/MIBK)	--	**100 µg/L**	--		--		--
	Acrylonitrile	--	**0.039 µg/L**	--		--		--
	Methyl isobutyl ketone (MIBK)	--	**160 µg/L**	--		--		--
	SVOCs (µg/L)		*Tap Water*					
	1,4-Dioxane	**0.003 µg/L****	6.1 µg/L	--		--		--
	bis(2-Ethylhexyl)phthalate	**4 µg/L**	4.8 µg/L	--		--		--
	Naphthalene	--	6.2 µg/L	--		--		**1.8 µg/L**
	Metals (µg/L)		*Tap Water*					
	Aluminum	**1000 µg/L**	36,000 µg/L	--		--		--
	Arsenic	50 µg/L	0.045 µg/L	--		--		**0.038 µg/L**
	Chromium (total)	**50 µg/L**	--	--		--		--
	Iron	--	**11,000 µg/L**	--		--		--
	Lead	**15 µg/L****	--	--		--		--
	Manganese	--	**880 µg/L**	--		--		--
	Selenium	**50 µg/L**	180 µg/L	--		--		--
	Thallium	**2 µg/L**	2.4 µg/L	--		--		--

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		ARARs/TBCs[2]		10^{-6} Cancer Risk				
		Primary MCLs	Region IX PRGs *(type of PRG)*	Park User Exposure[3]		Excavation Worker Exposure[4]		Remediation Goal Option[5]
Exposition Groundwater Zones COCs	***VOCs (µg/L)***		*Tap Water*					
	1,1-Dichloroethene	**6 µg/L**	340 µg/L	--		--		--
	1,2-Dibromo-3-chloropropane	0.2 µg/L	0.048/0.**0016 µg/L***	--		--		--
	1,2-Dichloroethane	0.5 µg/L	**0.12 µg/L**	--		--		--
	Acetone	--	**610 µg/L**	--		--		--
	Benzene	1 µg/L	0.34 µg/L	--		--		**0.31 µg/L**
	Chloroform	--	6.2/0.53 µg/L*	--		--		**0.5 µg/L**
	cis-1,2-Dichloroethene	**6 µg/L**	61 µg/L	--		--		--
	Dibromochloromethane	--	**0.13 µg/L**	--		--		--
	Methylene Chloride	5 µg/L	**4.3 µg/L**	--		--		--
	Methyl tert butyl ether	13 µg/L	13/**6.2 µg/L***	--				--
	Tetrachloroethene	5 µg/L	**0.66 µg/L**	--		--		--
	trans-1,2-Dichloroethene	**10 µg/L**	120 µg/L	--		--		--
	Trichloroethene	5 µg/L	0.028 µg/L	--		--		**0.026 µg/L**
	Vinyl Chloride	0.5 µg/L	**0.02 µg/L**	--		--		0.033 µg/L
	NHVOCs (µg/L)		*Tap Water*					
	Acetone	--	**610 µg/L**	--		--		--
	Acrylonitrile	--	**0.039 µg/L**	--		--		--
	Metals (µg/L)		*Tap Water*					
	Aluminum	**1000 µg/L**	36,000 µg/L	--		--		--
	Arsenic	50 µg/L	0.045 µg/L	--		--		**0.038 µg/L**
	Manganese	--	**880 µg/L**	--		--		--
	Thallium	**2 µg/L**	2.4 µg/L	--		--		--
	Anions (µg/L)		*Tap Water*					
	Sulfide	--	**110 µg/L#**	--		--		--

Notes:

(1) Concentrations in bold represent PSSRGs (most conservative of numbers 2 through 5).

(2) Most conservative concentration listed based on USEPA and CalEPA MCLs and USEPA Region IX PRGs.

(3) Park user exposure scenario calculated at 10-6 cancer risk (from MRP Risk Assessment).

(4) Excavation worker exposure scenario calculated at 10-6 cancer risk (from MRP Risk Assessment).

(5) Remediation goal options are risk-based values which were developed during the Pemaco baseline risk assessment (still in progress). These goals are calculated by rearranging the equations used to calculate each COC's hazard quotient or incremental cancer risk so that the equations can be used to solve for a concentration that will result in target hazard indexes of 1.0 or target cancer risk of 1E-06. Remediation goal options for each risk driver. Due to the numerous receptor scenarios, the most conservative goal was listed when COCs overlapped from one receptor to another.

(6) Subsurface soils were screened against Dilution Attenuation Factor (DAF) Soil Screening Levels or PRGs. DAF 20 PRGs are used when the contaminated soil is not directly adjacent to a drinking water source and dilution of the contaminant is occurring before it reaches the drinking water source. DAF 1 PRGs assume that the contaminated soil is directly adjacent to a drinking water source and no dilution of the contaminant is occurring along the pathway between the source soil and the drinking water source.

(7) Department of Toxic Substances Control recommended clean up levels based on background or ambient levels in Los Angeles for arsenic are 10-12 mg/kg and for benzo(a)pyrene are 900 µg/kg.

'µg/kg' - microgram per kilogram.

'mg/kg' - milligram per kilogram.

'µg/L' - microgram per liter.

'ca' - carcinogenic

'nc' - noncarcinogenic

'*' - State of California modified PRG.

'**' - State of California Action Level, no available MCL

'+' - The value of lead is the USEPA remediation goal for residential exposure.

'++' - The lead value was derived using the Adult Lead Model for non-residential exposure using parameters for a Mexican American Population.

'#' - 110 µg/L is the Region IX Tap Water PRG for hydrogen sulfide.