



Environmental Screening Levels

San Francisco Bay Regional Water Quality Control Board



GOVERNOR NEWSOM'S
OFFICE



JARED BILLINGSFIELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Tier 1 ESLs ¹

January 2019

Based on a generic conceptual site model designed for use at most sites²

Chemicals	CAS No.	Groundwater (µg/L)	Soil (mg/kg)	Subslab / Soil Gas (µg/m ³)	Indoor Air (µg/m ³)
Acenaphthene [PAH]	83-32-9	1.5E+01	1.2E+01	1.7E+04	5.1E+02
Acenaphthylene [PAH]	208-96-8	1.5E+01	6.4E+00	--	--
Acetone	67-64-1	1.5E+03	9.2E-01	1.0E+06	3.1E+04
Aldrin	309-00-2	1.4E-04	2.4E-03	1.9E-02	5.7E-04
Anthracene [PAH]	120-12-7	7.3E-01	1.9E+00	--	--
Antimony	7440-36-0	6.0E+00	1.1E+01	--	--
Arsenic	7440-38-2	1.0E+01	6.7E-02	--	--
Barium	7440-39-3	1.0E+03	3.9E+02	--	--
Benzene	71-43-2	4.2E-01	2.5E-02	3.2E+00	9.7E-02
Benzo[a]anthracene [PAH]	56-55-3	1.7E-02	6.3E-01	3.1E-01	9.2E-03
Benzo[b]fluoranthene [PAH]	205-99-2	4.9E-02	1.1E+00	--	--
Benzo[k]fluoranthene [PAH]	207-08-9	4.9E-02	2.8E+00	--	--
Benzo[g,h,i]perylene [PAH]	191-24-2	1.0E-01	2.5E+00	--	--
Benzo[a]pyrene [PAH]	50-32-8	1.4E-02	1.1E-01	--	--
Beryllium	7440-41-7	2.7E+00	5.0E+00	--	--
1,1-Biphenyl	92-52-4	5.0E-01	4.2E-01	1.4E+01	4.2E-01
Bis(2-chloroethyl) ether	111-44-4	6.3E-03	3.4E-05	1.3E-01	4.0E-03
Bis(2-chloro-1-methylethyl) ether	108-60-1	3.6E-01	5.1E-03	9.4E+00	2.8E-01
Bis(2-ethylhexyl) phthalate	117-81-7	4.0E+00	8.0E-01	--	--
Boron	7440-42-8	1.6E+00	1.2E+02	--	--
Bromodichloromethane	75-27-4	8.7E-01	1.6E-02	2.5E+00	7.6E-02
Bromoform (Tribromomethane)	75-25-2	8.0E+01	6.9E-01	8.5E+01	2.6E+00
Bromomethane	74-83-9	7.5E+00	3.6E-01	1.7E+02	5.2E+00
Cadmium (soil)	7440-43-9	--	1.9E+00	--	--
Cadmium (water)	7440-43-9	2.5E-01	--	--	--
Carbon tetrachloride	56-23-5	6.1E-02	1.1E-02	2.2E+00	6.7E-02
Chlordane	12789-03-6	5.9E-04	8.5E-03	2.8E-01	8.3E-03
p-Chloroaniline	106-47-8	3.6E-01	6.7E-03	--	--
Chlorobenzene	108-90-7	2.5E+01	1.4E+00	1.7E+03	5.2E+01
Chloroethane	75-00-3	1.6E+01	1.2E+00	3.5E+05	1.0E+04
Chloroform	67-66-3	8.1E-01	2.3E-02	4.1E+00	1.2E-01
Chloromethane	74-87-3	1.9E+02	1.1E+01	3.1E+03	9.4E+01
2-Chlorophenol	95-57-8	1.8E-01	1.2E-02	6.3E+02	1.9E+01
Chromium (total)	7440-47-3	5.0E+01	1.6E+02	--	--
Chromium III	16065-83-1	1.8E+02	1.2E+05	--	--
Chromium VI	18540-29-9	2.0E-02	3.0E-01	--	--
Chrysene [PAH]	218-01-9	4.9E-02	2.2E+00	--	--
Cobalt	7440-48-4	3.0E+00	2.3E+01	--	--
Copper	7440-50-8	3.1E+00	1.8E+02	--	--
Cyanide	57-12-5	1.0E+00	3.4E-03	2.8E+01	8.3E-01
Dibenz[a,h]anthracene [PAH]	53-70-3	2.5E-02	1.1E-01	--	--
Dibromochloromethane	124-48-1	4.6E+01	4.7E-01	--	--
1,2-dibromo-3-chloropropane	96-12-8	2.8E-02	5.9E-04	5.6E-03	1.7E-04
1,2-Dibromoethane	106-93-4	5.0E-02	5.3E-04	1.6E-01	4.7E-03
1,2-Dichlorobenzene	95-50-1	1.4E+01	1.0E+00	7.0E+03	2.1E+02
1,3-Dichlorobenzene	541-73-1	6.5E+01	6.0E+00	--	--
1,4-Dichlorobenzene	106-46-7	2.6E+00	2.0E-01	8.5E+00	2.6E-01
3,3-Dichlorobenzidine	91-94-1	4.6E-02	2.5E-02	--	--
DDD	72-54-8	8.4E-04	2.7E+00	--	--
DDE	72-55-9	5.9E-04	3.3E-01	9.6E-01	2.9E-02
DDT	50-29-3	5.9E-04	1.1E-03	--	--
1,1-Dichloroethane	75-34-3	5.0E+00	2.0E-01	5.8E+01	1.8E+00
1,2-Dichloroethane	107-06-2	5.0E-01	7.0E-03	3.6E+00	1.1E-01
1,1-Dichloroethene	75-35-4	3.2E+00	5.4E-01	2.4E+03	7.3E+01
cis-1,2-Dichloroethene	156-59-2	6.0E+00	1.9E-01	2.8E+02	8.3E+00
trans-1,2-Dichloroethene	156-60-5	1.0E+01	6.5E-01	2.8E+03	8.3E+01
2,4-Dichlorophenol	120-83-2	3.0E-01	7.5E-03	4.7E+04	1.4E+03
1,2-Dichloropropane	78-87-5	2.3E+00	6.5E-02	9.4E+00	2.8E-01



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Based on a generic conceptual site model designed for use at most sites²

Chemicals	CAS No.	Groundwater (µg/L)	Soil (mg/kg)	Subslab / Soil Gas (µg/m ³)	Indoor Air (µg/m ³)
1,3-Dichloropropene	542-75-6	5.0E-01	1.7E-02	5.8E+00	1.8E-01
Dieldrin	60-57-1	1.4E-04	4.6E-04	2.0E-02	6.1E-04
Diethyl phthalate	84-66-2	1.5E+00	2.5E-02	--	--
Dimethyl phthalate	131-11-3	1.5E+00	3.5E-02	--	--
2,4-Dimethylphenol	105-67-9	1.0E+02	8.1E+00	3.3E+01	1.0E+00
2,4-Dinitrophenol	51-28-5	3.9E+01	3.0E+00	--	--
2,4-Dinitrotoluene	121-14-2	2.4E-01	2.3E-02	--	--
1,4-Dioxane	123-91-1	3.8E-01	1.7E-04	1.2E+01	3.6E-01
Dioxin (2,3,7,8-TCDD)	1746-01-6	1.4E-08	4.8E-06	2.5E-06	7.4E-08
Endosulfan	115-29-7	8.7E-03	9.8E-03	--	--
Endrin	72-20-8	2.3E-03	1.1E-03	--	--
Ethylbenzene	100-41-4	3.5E+00	4.3E-01	3.7E+01	1.1E+00
Fluoranthene [PAH]	206-44-0	8.0E+00	6.9E-01	--	--
Fluorene [PAH]	86-73-7	3.9E+00	6.0E+00	--	--
Heptachlor	76-44-8	2.1E-04	1.2E-01	7.2E-02	2.2E-03
Heptachlor epoxide	1024-57-3	1.1E-04	1.8E-04	3.6E-02	1.1E-03
Hexachlorobenzene	118-74-1	7.7E-04	8.0E-04	1.8E-01	5.5E-03
Hexachlorobutadiene	87-68-3	1.4E-01	2.8E-02	4.3E+00	1.3E-01
g-Hexachlorocyclohexane (Lindane)	58-89-9	1.6E-02	7.4E-03	--	--
Hexachloroethane	67-72-1	3.3E-01	1.9E-02	8.5E+00	2.6E-01
Indeno[1,2,3-c,d]pyrene [PAH]	193-39-5	4.9E-02	4.8E-01	--	--
Lead	7439-92-1	2.5E+00	3.2E+01	--	--
Mercury (elemental)	7439-97-6	2.5E-02	1.3E+01	1.0E+00	3.1E-02
Methoxychlor	72-43-5	3.0E-03	1.3E-02	--	--
Methylene chloride	75-09-2	5.0E+00	1.2E-01	3.4E+01	1.0E+00
Methyl ethyl ketone	78-93-3	5.6E+03	6.1E+00	1.7E+05	5.2E+03
Methyl isobutyl ketone	108-10-1	1.2E+02	3.6E-01	1.4E+04	4.2E+02
Methyl mercury	22967-92-6	3.0E-03	3.4E-02	--	--
2-Methylnaphthalene	91-57-6	2.1E+00	8.8E-01	2.3E+03	6.8E+01
Methyl tertiary butyl ether (MTBE)	1634-04-4	5.0E+00	2.8E-02	3.6E+02	1.1E+01
Molybdenum	7439-98-7	1.0E+02	6.9E+00	--	--
Naphthalene [PAH]	91-20-3	1.7E-01	4.2E-02	2.8E+00	8.3E-02
Nickel	7440-02-0	8.2E+00	8.6E+01	--	--
Pentachlorophenol	87-86-5	1.0E+00	1.3E-02	--	--
Perchlorate	7790-98-9	6.0E+00	5.5E+01	--	--
Petroleum - Gasoline	--	1.0E+02	1.0E+02	3.3E+03	1.0E+02
Petroleum - Stoddard Solvent	--	1.0E+02	1.0E+02	1.1E+04	3.3E+02
Petroleum - Jet Fuel	--	1.0E+02	1.0E+02	1.1E+04	3.3E+02
Petroleum - Diesel	--	1.0E+02	2.6E+02	8.9E+03	2.7E+02
Petroleum - HOPs	--	1.0E+02	--	--	--
Petroleum - Motor Oil	--	--	1.0E+02	--	--
Phenanthrene [PAH]	85-01-8	4.6E+00	7.8E+00	1.8E+03	5.5E+01
Phenol	108-95-2	5.0E+00	1.6E-01	5.2E+03	1.6E+02
Polychlorinated biphenyls (PCBs)	1336-36-3	1.7E-04	2.3E-01	1.6E-01	4.9E-03
Pyrene [PAH]	129-00-0	2.0E+00	4.5E+01	--	--
Selenium	7782-49-2	5.0E-01	2.4E+00	--	--
Silver	7440-22-4	1.9E-01	2.5E+01	--	--
Styrene	100-42-5	1.0E+01	9.2E-01	3.1E+04	9.4E+02
tert-Butyl alcohol	75-65-0	1.2E+01	7.5E-02	--	--
1,1,1,2-Tetrachloroethane	630-20-6	5.7E-01	1.7E-02	1.3E+01	3.8E-01
1,1,2,2-Tetrachloroethane	79-34-5	1.0E+00	1.8E-02	1.6E+00	4.8E-02
Tetrachloroethene	127-18-4	6.4E-01	8.0E-02	1.5E+01	4.6E-01
Thallium	7440-28-0	2.0E+00	7.8E-01	--	--
Toluene	108-88-3	4.0E+01	3.2E+00	1.0E+04	3.1E+02
Toxaphene	8001-35-2	2.0E-04	5.1E-01	--	--
1,2,4-Trichlorobenzene	120-82-1	5.0E+00	1.2E+00	7.0E+01	2.1E+00
1,1,1-Trichloroethane	71-55-6	6.2E+01	7.0E+00	3.5E+04	1.0E+03



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Based on a generic conceptual site model designed for use at most sites²

Chemicals	CAS No.	Groundwater (µg/L)	Soil (mg/kg)	Subslab / Soil Gas (µg/m ³)	Indoor Air (µg/m ³)
1,1,2-Trichloroethane	79-00-5	5.0E+00	7.6E-02	5.8E+00	1.8E-01
Trichloroethene	79-01-6	1.2E+00	8.5E-02	1.6E+01	4.8E-01
2,4,5-Trichlorophenol	95-95-4	1.1E+01	2.9E+00	--	--
2,4,6-Trichlorophenol	88-06-2	6.3E-01	4.0E-02	1.0E+01	3.0E-01
1,2,3-Trichloropropane	96-18-4	5.0E-03	1.1E-04	1.0E+01	3.1E-01
Vanadium	7440-62-2	1.9E+01	1.8E+01	--	--
Vinyl chloride	75-01-4	8.6E-03	1.5E-03	3.2E-01	9.5E-03
Xylenes	1330-20-7	2.0E+01	2.1E+00	3.5E+03	1.0E+02
Zinc	7440-66-6	8.1E+01	3.4E+02	--	--

Notes:

- ESLs are developed based on methodologies discussed in the User's Guide. Evaluation of laboratory detection limits and naturally occurring background or ambient concentrations should be independently conducted. See User's Guide Chapter 12 (Additional Considerations) for further information.
- Generic Conceptual Site Model - See User's Guide Chapter 2. Input settings are:
 Land Use = Residential
 Groundwater Use = Drinking Water Resource
 MCL Priority over Risk-Based Levels = Yes
 Discharge to Surface Water = Saltwater & Freshwater
 Vegetation Level = Substantial
 Soil Exposure Depth = Shallow

Abbreviations:

- DDD - Dichlorodiphenyldichloroethane
- DDE - Dichlorodiphenyldichloroethene
- DDT - Dichlorodiphenyltrichloroethane
- HOPs - Hydrocarbon Oxidation Products (biodegradation metabolites and photo-oxidation products of petroleum hydrocarbons). See User's Guide Chapter 4 for further information.
- PAH - Polycyclic aromatic hydrocarbon
- TCDD - Tetrachlorodibenzodioxin

January 2019 **Summary of Groundwater ESLs (µg/L)**

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table GW-1)			Aquatic Habitat Goal Levels (Table GW-2)			Groundwater Vapor Intrusion Human Health Risk Levels (Table GW-3)				Gross Contamination Levels (GW-4)	Odor Nuisance Levels (Table GW-5)		GW Tier 1 ESL	Basis
		MCL Priority ¹	Tapwater Cancer Risk	Tapwater Non-cancer Hazard	Fresh Water Ecotox	Saltwater Ecotox	Seafood Ingestion Human Health	Residential		Commercial/Industrial			Drinking Water	Non-Drinking Water		
								Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard					
Acenaphthene [PAH]	83-32-9	5.3E+02	--	5.3E+02	2.3E+01	1.5E+01	2.7E+03	--	--	--	--	2.0E+03	2.0E+01	2.0E+02	1.5E+01	Aquatic Habitat
Acenaphthylene [PAH]	208-96-8	--	--	--	--	1.5E+01	--	--	--	--	--	2.0E+03	--	--	1.5E+01	Aquatic Habitat
Acetone	67-64-1	1.4E+04	--	1.4E+04	1.5E+03	--	--	--	2.3E+07	--	9.7E+07	5.0E+04	2.0E+04	2.0E+05	1.5E+03	Aquatic Habitat
Aldrin	309-00-2	9.2E-04	9.2E-04	2.0E-03	3.0E-01	1.3E-01	1.4E-04	3.2E-01	--	1.4E+00	--	8.5E+00	1.7E+01	1.7E+02	1.4E-04	Aquatic Habitat
Anthracene [PAH]	120-12-7	1.8E+03	--	1.8E+03	7.3E-01	1.5E+01	1.1E+05	--	--	--	--	2.2E+01	--	--	7.3E-01	Aquatic Habitat
Antimony	7440-36-0	6.0E+00	--	1.0E+00	3.0E+01	5.0E+02	4.3E+03	--	--	--	--	5.0E+04	--	--	6.0E+00	MCL
Arsenic	7440-38-2	1.0E+01	4.0E-03	7.0E-02	1.5E+02	3.6E+01	--	--	--	--	--	5.0E+04	--	--	1.0E+01	MCL
Barium	7440-39-3	1.0E+03	--	2.0E+03	--	--	--	--	--	--	--	5.0E+04	--	--	1.0E+03	MCL
Benzene	71-43-2	1.0E+00	1.5E-01	5.7E+00	4.6E+01	3.5E+02	7.1E+01	4.2E-01	1.4E+01	1.8E+00	5.7E+01	5.0E+04	1.7E+02	2.0E+04	4.2E-01	Vapor Intrusion
Benzo[a]anthracene [PAH]	56-55-3	1.7E-02	1.7E-02	--	2.7E-02	1.5E+01	4.9E-02	1.9E+01	--	2.3E+02	--	4.7E+00	--	--	1.7E-02	Tap Canc-Risk
Benzo[b]fluoranthene [PAH]	205-99-2	2.5E-01	2.5E-01	--	--	1.5E+01	4.9E-02	--	--	--	--	7.5E-01	--	--	4.9E-02	Aquatic Habitat
Benzo[k]fluoranthene [PAH]	207-08-9	2.5E+00	2.5E+00	--	3.7E+00	1.5E+01	4.9E-02	--	--	--	--	4.0E-01	--	--	4.9E-02	Aquatic Habitat
Benzo[g,h,i]perylene [PAH]	191-24-2	--	--	--	1.0E-01	1.5E+01	--	--	--	--	--	1.3E-01	--	--	1.0E-01	Aquatic Habitat
Benzo[a]pyrene [PAH]	50-32-8	2.0E-01	7.0E-03	6.0E+00	1.4E-02	1.5E+01	4.9E-02	--	--	--	--	8.0E-01	--	--	1.4E-02	Aquatic Habitat
Beryllium	7440-41-7	4.0E+00	--	1.0E+00	2.7E+00	--	--	--	--	--	--	5.0E+04	--	--	2.7E+00	Aquatic Habitat
1,1-Biphenyl	92-52-4	8.3E-01	3.8E+00	8.3E-01	1.4E+01	--	--	--	3.2E+01	--	1.3E+02	3.8E+03	5.0E-01	5.0E+00	5.0E-01	Odor/Nuis
Bis(2-chloroethyl) ether	111-44-4	6.3E-03	6.3E-03	--	6.1E+01	--	1.4E+00	5.6E+00	--	2.5E+01	--	5.0E+04	3.6E+02	3.6E+03	6.3E-03	Tap Canc-Risk
Bis(2-chloro-1-methylethyl) ether	108-60-1	3.6E-01	3.6E-01	7.1E+02	6.1E+01	--	1.7E+05	9.4E+01	--	4.1E+02	--	5.0E+04	3.2E+02	3.2E+03	3.6E-01	Tap Canc-Risk
Bis(2-ethylhexyl) phthalate	117-81-7	4.0E+00	5.6E+00	4.0E+02	3.2E+01	--	5.9E+00	--	--	--	--	1.4E+02	--	--	4.0E+00	MCL
Boron	7440-42-8	1.0E+03	--	1.0E+03	1.6E+00	--	--	--	--	--	--	5.0E+04	--	--	1.6E+00	Aquatic Habitat
Bromodichloromethane	75-27-4	8.0E+01	1.2E-01	3.8E+02	1.1E+03	3.2E+03	--	8.7E-01	--	3.8E+00	--	5.0E+04	--	--	8.7E-01	Vapor Intrusion
Bromoform (Tribromomethane)	75-25-2	8.0E+01	2.9E+00	3.8E+02	1.1E+03	3.2E+03	3.6E+02	1.2E+02	--	5.1E+02	--	5.0E+04	5.1E+02	5.1E+03	8.0E+01	MCL
Bromomethane	74-83-9	7.5E+00	--	7.5E+00	1.6E+02	3.2E+03	4.0E+03	--	1.7E+01	--	7.3E+01	5.0E+04	--	--	7.5E+00	Tap NC-Hazard
Cadmium (soil)	7440-43-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium (water)	7440-43-9	5.0E+00	--	4.0E-02	2.5E-01	9.3E+00	--	--	--	--	--	5.0E+04	--	--	2.5E-01	Aquatic Habitat
Carbon tetrachloride	56-23-5	5.0E-01	1.0E-01	3.6E+01	2.4E+02	3.2E+03	4.4E+00	6.1E-02	3.8E+01	2.7E-01	1.6E+02	5.0E+04	5.2E+02	5.2E+03	6.1E-02	Vapor Intrusion
Chlordane	12789-03-6	1.0E-01	1.3E-02	1.3E+00	4.3E-03	4.0E-03	5.9E-04	4.1E+00	3.7E+02	1.8E+01	1.5E+03	2.8E+01	2.5E+00	2.5E+01	5.9E-04	Aquatic Habitat
p-Chloroaniline	106-47-8	3.6E-01	3.6E-01	7.6E+01	5.0E+00	--	--	--	--	--	--	5.0E+04	--	--	3.6E-01	Tap Canc-Risk
Chlorobenzene	108-90-7	7.0E+01	--	7.0E+01	2.5E+01	6.5E+01	2.1E+04	--	4.0E+02	--	1.7E+03	5.0E+04	5.0E+01	5.0E+02	2.5E+01	Aquatic Habitat
Chloroethane	75-00-3	2.1E+04	--	2.1E+04	--	--	--	--	2.3E+04	--	9.7E+04	5.0E+04	1.6E+01	1.6E+02	1.6E+01	Odor/Nuis
Chloroform	67-66-3	8.0E+01	2.2E-01	9.7E+01	6.2E+02	3.2E+03	4.7E+02	8.1E-01	6.8E+02	3.6E+00	2.9E+03	5.0E+04	2.4E+03	2.4E+04	8.1E-01	Vapor Intrusion
Chloromethane	74-87-3	1.9E+02	--	1.9E+02	1.1E+03	3.2E+03	--	--	2.6E+02	--	1.1E+03	5.0E+04	--	--	1.9E+02	Tap NC-Hazard
2-Chlorophenol	95-57-8	9.1E+01	--	9.1E+01	4.4E+02	--	4.0E+02	--	--	--	--	5.0E+04	1.8E-01	1.8E+00	1.8E-01	Odor/Nuis
Chromium (total)	7440-47-3	5.0E+01	--	--	1.8E+02	--	--	--	--	--	--	5.0E+04	--	--	5.0E+01	MCL
Chromium III	16065-83-1	2.2E+04	--	2.2E+04	1.8E+02	1.0E+03	--	--	--	--	--	5.0E+04	--	--	1.8E+02	Aquatic Habitat
Chromium VI	18540-29-9	2.0E-02	2.0E-02	4.4E+01	1.1E+01	5.0E+01	--	--	--	--	--	5.0E+04	--	--	2.0E-02	Tap Canc-Risk
Chrysene [PAH]	218-01-9	2.5E+01	2.5E+01	--	3.5E-01	1.5E+01	4.9E-02	--	--	--	--	1.0E+00	--	--	4.9E-02	Aquatic Habitat
Cobalt	7440-48-4	6.0E+00	--	6.0E+00	3.0E+00	--	--	--	--	--	--	5.0E+04	--	--	3.0E+00	Aquatic Habitat
Copper	7440-50-8	1.0E+03	--	3.0E+02	9.0E+00	3.1E+00	--	--	--	--	--	5.0E+04	1.0E+03	--	3.1E+00	Aquatic Habitat

January 2019		Summary of Groundwater ESLs (µg/L)														
Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table GW-1)			Aquatic Habitat Goal Levels (Table GW-2)			Groundwater Vapor Intrusion Human Health Risk Levels (Table GW-3)				Gross Contamination Levels (GW-4)	Odor Nuisance Levels (Table GW-5)		GW Tier 1 ESL	Basis
		MCL Priority ¹	Tapwater Cancer Risk	Tapwater Non-cancer Hazard	Fresh Water Ecotox	Saltwater Ecotox	Seafood Ingestion Human Health	Residential		Commercial/Industrial			Drinking Water	Non-Drinking Water		
								Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard					
Cyanide	57-12-5	1.5E+02	--	1.5E+00	5.2E+00	1.0E+00	2.2E+05	--	2.0E+02	--	8.3E+02	5.0E+04	1.7E+02	1.7E+03	1.0E+00	Aquatic Habitat
Dibenz[a,h]anthracene [PAH]	53-70-3	2.5E-02	2.5E-02	--	7.5E+00	1.5E+01	4.9E-02	--	--	--	--	1.3E+00	--	--	2.5E-02	Tap Canc-Risk
Dibromochloromethane	124-48-1	8.0E+01	8.7E-01	3.8E+02	1.1E+03	3.2E+03	4.6E+01	--	--	--	--	5.0E+04	--	--	4.6E+01	Aquatic Habitat
1,2-dibromo-3-chloropropane	96-12-8	2.0E-01	3.0E-04	3.7E-01	--	--	--	2.8E-02	3.5E+01	3.4E-01	1.5E+02	5.0E+04	1.0E+01	1.0E+02	2.8E-02	Vapor Intrusion
1,2-Dibromoethane	106-93-4	5.0E-02	7.5E-03	1.7E+00	1.4E+03	--	--	1.7E-01	3.1E+01	7.6E-01	1.3E+02	5.0E+04	--	--	5.0E-02	MCL
1,2-Dichlorobenzene	95-50-1	1.0E+02	--	3.0E+02	1.4E+01	6.5E+01	1.7E+04	--	2.7E+03	--	1.1E+04	5.0E+04	1.0E+02	1.0E+02	1.4E+01	Aquatic Habitat
1,3-Dichlorobenzene	541-73-1	6.0E+02	--	6.0E+02	7.1E+01	6.5E+01	2.6E+03	--	--	--	--	5.0E+04	--	--	6.5E+01	Aquatic Habitat
1,4-Dichlorobenzene	106-46-7	5.0E+00	4.8E-01	5.7E+02	1.5E+01	6.5E+01	2.6E+03	2.6E+00	8.4E+03	1.1E+01	3.5E+04	4.1E+04	5.0E+00	1.1E+02	2.6E+00	Vapor Intrusion
3,3-Dichlorobenzidine	91-94-1	4.6E-02	4.6E-02	--	2.5E+02	--	7.7E-02	--	--	--	--	1.6E+03	--	--	4.6E-02	Tap Canc-Risk
DDD	72-54-8	3.1E-02	3.1E-02	--	1.0E-03	1.0E-03	8.4E-04	--	--	--	--	4.5E+01	--	--	8.4E-04	Aquatic Habitat
DDE	72-55-9	4.6E-02	4.6E-02	--	1.0E-03	1.0E-03	5.9E-04	1.7E+01	--	7.4E+01	--	2.0E+01	--	--	5.9E-04	Aquatic Habitat
DDT	50-29-3	2.3E-01	2.3E-01	1.0E+01	1.0E-03	1.0E-03	5.9E-04	--	--	--	--	2.8E+00	3.5E+02	3.5E+03	5.9E-04	Aquatic Habitat
1,1-Dichloroethane	75-34-3	5.0E+00	2.7E+00	3.8E+03	4.7E+01	--	--	7.6E+00	--	3.3E+01	--	5.0E+04	--	--	5.0E+00	MCL
1,2-Dichloroethane	107-06-2	5.0E-01	1.7E-01	1.3E+01	1.0E+04	1.1E+04	9.9E+01	2.2E+00	1.5E+02	9.8E+00	6.4E+02	5.0E+04	7.0E+03	2.0E+05	5.0E-01	MCL
1,1-Dichloroethene	75-35-4	6.0E+00	--	1.0E+01	2.5E+01	2.2E+04	3.2E+00	--	6.6E+01	--	2.8E+02	5.0E+04	1.5E+03	1.5E+04	3.2E+00	Aquatic Habitat
cis-1,2-Dichloroethene	156-59-2	6.0E+00	--	1.1E+01	5.9E+02	2.2E+04	--	--	4.9E+01	--	2.1E+02	5.0E+04	--	--	6.0E+00	MCL
trans-1,2-Dichloroethene	156-60-5	1.0E+01	--	5.0E+01	5.9E+02	2.2E+04	1.4E+05	--	2.2E+02	--	9.2E+02	5.0E+04	2.6E+02	2.6E+03	1.0E+01	MCL
2,4-Dichlorophenol	120-83-2	4.6E+01	--	4.6E+01	1.8E+02	--	7.9E+02	--	--	--	--	5.0E+04	3.0E-01	3.0E+00	3.0E-01	Odor/Nuis
1,2-Dichloropropane	78-87-5	5.0E+00	4.4E-01	8.3E+00	2.9E+03	1.5E+03	3.9E+01	2.3E+00	3.5E+01	1.0E+01	1.5E+02	5.0E+04	1.0E+01	1.0E+02	2.3E+00	Vapor Intrusion
1,3-Dichloropropene	542-75-6	5.0E-01	2.0E-01	3.9E+01	1.2E+02	7.9E+01	1.7E+03	1.2E+00	1.4E+02	5.1E+00	5.8E+02	5.0E+04	--	--	5.0E-01	MCL
Dieldrin	60-57-1	7.1E-04	7.1E-04	2.0E-03	5.6E-02	1.9E-03	1.4E-04	1.5E+00	--	6.5E+00	--	1.0E+02	4.1E+01	4.1E+02	1.4E-04	Aquatic Habitat
Diethyl phthalate	84-66-2	1.5E+04	--	1.5E+04	1.5E+00	1.7E+00	1.2E+54	--	--	--	--	5.0E+04	--	--	1.5E+00	Aquatic Habitat
Dimethyl phthalate	131-11-3	--	--	--	1.5E+00	1.7E+00	2.9E+06	--	--	--	--	5.0E+04	--	--	1.5E+00	Aquatic Habitat
2,4-Dimethylphenol	105-67-9	1.0E+02	--	1.0E+02	5.3E+02	1.1E+02	2.3E+03	--	--	--	--	5.0E+04	4.0E+02	4.0E+03	1.0E+02	Tap NC-Hazard
2,4-Dinitrophenol	51-28-5	3.9E+01	--	3.9E+01	7.5E+01	4.9E+02	1.4E+04	--	--	--	--	5.0E+04	--	--	3.9E+01	Tap NC-Hazard
2,4-Dinitrotoluene	121-14-2	2.4E-01	2.4E-01	3.8E+01	1.2E+02	1.9E+02	9.1E+00	--	--	--	--	5.0E+04	--	--	2.4E-01	Tap Canc-Risk
1,4-Dioxane	123-91-1	3.8E-01	3.8E-01	5.7E+01	3.4E+05	5.0E+05	--	1.8E+03	1.6E+05	8.0E+03	6.6E+05	5.0E+04	2.3E+05	--	3.8E-01	Tap Canc-Risk
Dioxin (2,3,7,8-TCDD)	1746-01-6	3.0E-05	1.2E-07	1.2E-05	5.0E-06	--	1.4E-08	3.7E-05	2.1E-02	1.6E-04	8.8E-02	1.0E-01	--	--	1.4E-08	Aquatic Habitat
Endosulfan	115-29-7	1.0E+02	--	1.0E+02	5.6E-02	8.7E-03	2.4E+02	--	--	--	--	1.7E+02	--	--	8.7E-03	Aquatic Habitat
Endrin	72-20-8	2.0E+00	--	3.0E-01	3.6E-02	2.3E-03	8.1E-01	--	--	--	--	1.3E+02	4.1E+01	4.1E+02	2.3E-03	Aquatic Habitat
Ethylbenzene	100-41-4	3.0E+01	1.5E+00	3.0E+02	2.9E+02	4.3E+01	2.9E+04	3.5E+00	3.3E+03	1.5E+01	1.4E+04	5.0E+04	3.0E+01	3.0E+02	3.5E+00	Vapor Intrusion
Fluoranthene [PAH]	206-44-0	8.0E+02	--	8.0E+02	8.1E+00	8.0E+00	3.7E+02	--	--	--	--	1.3E+02	--	--	8.0E+00	Aquatic Habitat
Fluorene [PAH]	86-73-7	2.9E+02	--	2.9E+02	3.9E+00	1.5E+01	1.4E+04	--	--	--	--	8.5E+02	--	--	3.9E+00	Aquatic Habitat
Heptachlor	76-44-8	1.0E-02	1.4E-03	1.3E+00	3.8E-03	3.6E-03	2.1E-04	1.8E-01	--	7.9E-01	--	9.0E+01	2.0E+01	2.0E+02	2.1E-04	Aquatic Habitat
Heptachlor epoxide	1024-57-3	1.0E-02	1.4E-03	1.2E-01	3.8E-03	3.6E-03	1.1E-04	1.3E+00	--	5.5E+00	--	1.0E+02	--	--	1.1E-04	Aquatic Habitat
Hexachlorobenzene	118-74-1	1.0E+00	8.8E-03	1.6E+01	3.7E+00	6.5E+01	7.7E-04	7.9E-02	--	3.4E-01	--	3.1E+00	3.0E+03	3.0E+04	7.7E-04	Aquatic Habitat
Hexachlorobutadiene	87-68-3	1.4E-01	1.4E-01	6.5E+00	4.7E+00	3.2E+00	5.0E+01	3.0E-01	--	1.3E+00	--	1.6E+03	6.0E+00	6.0E+01	1.4E-01	Tap Canc-Risk
g-Hexachlorocyclohexane (Lindane)	58-89-9	2.0E-01	3.2E-02	3.6E+00	8.0E-02	1.6E-02	6.3E-02	--	--	--	--	3.7E+03	1.2E+04	1.2E+05	1.6E-02	Aquatic Habitat
Hexachloroethane	67-72-1	3.3E-01	3.3E-01	6.2E+00	1.2E+01	9.4E+01	8.9E+00	1.6E+00	2.0E+02	7.0E+00	8.2E+02	2.5E+04	1.0E+01	1.0E+02	3.3E-01	Tap Canc-Risk

January 2019		Summary of Groundwater ESLs (µg/L)														
Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table GW-1)			Aquatic Habitat Goal Levels (Table GW-2)			Groundwater Vapor Intrusion Human Health Risk Levels (Table GW-3)				Gross Contamination Levels (GW-4)	Odor Nuisance Levels (Table GW-5)		GW Tier 1 ESL	Basis
		MCL Priority ¹	Tapwater Cancer Risk	Tapwater Non-cancer Hazard	Fresh Water Ecotox	Saltwater Ecotox	Seafood Ingestion Human Health	Residential		Commercial/Industrial			Drinking Water	Non-Drinking Water		
								Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard					
Indeno[1,2,3-c,d]pyrene [PAH]	193-39-5	2.5E-01	2.5E-01	--	--	1.5E+01	4.9E-02	--	--	--	--	9.5E-02	--	--	4.9E-02	Aquatic Habitat
Lead	7439-92-1	1.5E+01	9.2E+00	2.0E-01	2.5E+00	8.1E+00	--	--	--	--	--	5.0E+04	--	--	2.5E+00	Aquatic Habitat
Mercury (elemental)	7439-97-6	2.0E+00	--	6.1E-02	2.5E-02	2.5E-02	5.1E-02	--	8.9E-02	--	3.8E-01	3.0E+01	--	--	2.5E-02	Aquatic Habitat
Methoxychlor	72-43-5	3.0E+01	--	9.0E-02	1.9E-02	3.0E-03	--	--	--	--	--	5.0E+01	4.7E+03	4.7E+04	3.0E-03	Aquatic Habitat
Methylene chloride	75-09-2	5.0E+00	9.3E-01	1.0E+02	2.2E+03	3.2E+03	1.6E+03	7.8E+00	3.2E+03	9.4E+01	1.3E+04	5.0E+04	9.1E+03	9.1E+04	5.0E+00	MCL
Methyl ethyl ketone	78-93-3	5.6E+03	--	5.6E+03	1.4E+04	--	--	--	2.3E+06	--	9.5E+06	5.0E+04	8.4E+03	8.4E+04	5.6E+03	Tap NC-Hazard
Methyl isobutyl ketone	108-10-1	1.2E+02	--	1.2E+02	1.7E+02	--	--	--	5.6E+05	--	2.3E+06	5.0E+04	1.3E+03	1.3E+04	1.2E+02	Tap NC-Hazard
Methyl mercury	22967-92-6	2.0E+00	--	2.0E+00	3.0E-03	--	--	--	--	--	--	5.0E+04	--	--	3.0E-03	Aquatic Habitat
2-Methylnaphthalene	91-57-6	3.6E+01	--	3.6E+01	2.1E+00	3.0E+01	--	--	--	--	--	1.3E+04	1.0E+01	1.0E+02	2.1E+00	Aquatic Habitat
Methyl tertiary butyl ether (MTBE)	1634-04-4	5.0E+00	1.3E+01	6.3E+03	6.6E+04	8.0E+03	--	4.5E+02	1.3E+05	2.0E+03	5.5E+05	5.0E+04	5.0E+00	1.8E+03	5.0E+00	Odor/Nuis
Molybdenum	7439-98-7	1.0E+02	--	1.0E+02	2.4E+02	--	--	--	--	--	--	5.0E+04	--	--	1.0E+02	Tap NC-Hazard
Naphthalene [PAH]	91-20-3	1.7E-01	1.7E-01	6.1E+00	2.4E+01	1.5E+01	--	4.6E+00	1.7E+02	2.0E+01	7.3E+02	1.6E+04	2.1E+01	2.1E+02	1.7E-01	Tap Canc-Risk
Nickel	7440-02-0	1.0E+02	1.2E+01	2.2E+02	5.2E+01	8.2E+00	4.6E+03	--	--	--	--	5.0E+04	--	--	8.2E+00	Aquatic Habitat
Pentachlorophenol	87-86-5	1.0E+00	4.0E-02	2.3E+01	1.5E+01	7.9E+00	8.2E+00	--	--	--	--	7.0E+03	3.0E+01	5.9E+03	1.0E+00	MCL
Perchlorate	7790-98-9	6.0E+00	--	1.0E+00	6.0E+02	--	--	--	--	--	--	5.0E+04	--	--	6.0E+00	MCL
Petroleum - Gasoline	--	7.6E+02	--	7.6E+02	4.4E+02	3.7E+03	--	--	--	--	--	5.0E+04	1.0E+02	5.0E+03	1.0E+02	Odor/Nuis
Petroleum - Stoddard Solvent	--	2.1E+02	--	2.1E+02	6.4E+02	6.4E+02	--	--	--	--	--	2.5E+03	1.0E+02	5.0E+03	1.0E+02	Odor/Nuis
Petroleum - Jet Fuel	--	2.1E+02	--	2.1E+02	6.4E+02	6.4E+02	--	--	--	--	--	2.5E+03	1.0E+02	5.0E+03	1.0E+02	Odor/Nuis
Petroleum - Diesel	--	2.0E+02	--	2.0E+02	6.4E+02	6.4E+02	--	--	--	--	--	2.5E+03	1.0E+02	5.0E+03	1.0E+02	Odor/Nuis
Petroleum - HOPs	--	4.1E+02	--	4.1E+02	5.1E+02	5.1E+02	--	--	--	--	--	5.0E+04	1.0E+02	5.0E+03	1.0E+02	Odor/Nuis
Petroleum - Motor Oil	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene [PAH]	85-01-8	--	--	--	6.3E+00	4.6E+00	--	--	--	--	--	4.1E+02	1.0E+03	1.0E+04	4.6E+00	Aquatic Habitat
Phenol	108-95-2	4.2E+03	--	4.2E+03	1.3E+03	5.8E+02	4.6E+06	--	--	--	--	5.0E+04	5.0E+00	7.9E+04	5.0E+00	Odor/Nuis
Polychlorinated biphenyls (PCBs)	1336-36-3	5.0E-01	1.9E-03	--	1.4E-02	3.0E-02	1.7E-04	2.9E-01	--	1.3E+00	--	3.5E+02	--	--	1.7E-04	Aquatic Habitat
Pyrene [PAH]	129-00-0	1.2E+02	--	1.2E+02	2.0E+00	1.5E+01	1.1E+04	--	--	--	--	7.0E+01	--	--	2.0E+00	Aquatic Habitat
Selenium	7782-49-2	5.0E+01	--	3.0E+01	5.0E+00	5.0E-01	--	--	--	--	--	5.0E+04	--	--	5.0E-01	Aquatic Habitat
Silver	7440-22-4	1.0E+02	--	9.4E+01	3.4E+00	1.9E-01	--	--	--	--	--	5.0E+04	1.0E+02	--	1.9E-01	Aquatic Habitat
Styrene	100-42-5	1.0E+01	5.0E-01	1.1E+03	--	--	--	--	8.5E+03	--	3.6E+04	5.0E+04	1.0E+01	1.1E+02	1.0E+01	Odor/Nuis
tert-Butyl alcohol	75-65-0	1.2E+01	1.2E+01	--	1.8E+04	--	--	--	--	--	--	5.0E+04	--	--	1.2E+01	Tap Canc-Risk
1,1,1,2-Tetrachloroethane	630-20-6	5.7E-01	5.7E-01	4.8E+02	9.3E+02	--	--	3.8E+00	--	1.7E+01	--	5.0E+04	--	--	5.7E-01	Tap Canc-Risk
1,1,2,2-Tetrachloroethane	79-34-5	1.0E+00	7.6E-02	3.6E+02	4.2E+02	9.0E+02	1.1E+01	3.2E+00	--	1.4E+01	--	5.0E+04	5.0E+02	5.0E+03	1.0E+00	MCL
Tetrachloroethene	127-18-4	5.0E+00	6.0E-02	4.1E+01	1.2E+02	2.3E+02	8.9E+00	6.4E-01	5.8E+01	2.8E+00	2.4E+02	5.0E+04	1.7E+02	3.0E+03	6.4E-01	Vapor Intrusion
Thallium	7440-28-0	2.0E+00	--	1.0E-01	2.0E+01	2.1E+02	6.3E+00	--	--	--	--	5.0E+04	--	--	2.0E+00	MCL
Toluene	108-88-3	4.0E+01	--	1.5E+02	1.3E+02	2.5E+03	2.0E+05	--	1.2E+03	--	4.9E+03	5.0E+04	4.0E+01	4.0E+02	4.0E+01	Odor/Nuis
Toxaphene	8001-35-2	3.0E+00	3.0E-02	--	2.0E-04	2.0E-04	7.5E-04	--	--	--	--	2.8E+02	1.4E+02	1.4E+02	2.0E-04	Aquatic Habitat
1,2,4-Trichlorobenzene	120-82-1	5.0E+00	1.1E+00	4.0E+00	2.5E+01	6.5E+01	--	--	3.6E+01	--	1.5E+02	2.5E+04	3.0E+03	3.0E+04	5.0E+00	MCL
1,1,1-Trichloroethane	71-55-6	2.0E+02	--	1.0E+03	6.2E+01	3.1E+03	--	--	1.5E+03	--	6.3E+03	5.0E+04	9.7E+02	5.0E+05	6.2E+01	Aquatic Habitat
1,1,2-Trichloroethane	79-00-5	5.0E+00	2.8E-01	4.1E-01	4.7E+03	--	4.2E+01	5.2E+00	6.1E+00	2.3E+01	2.6E+01	5.0E+04	--	--	5.0E+00	MCL
Trichloroethene	79-01-6	5.0E+00	4.9E-01	2.8E+00	3.6E+02	2.0E+02	8.1E+01	1.2E+00	5.2E+00	7.5E+00	2.2E+01	5.0E+04	3.1E+02	1.0E+05	1.2E+00	Vapor Intrusion

January 2019 **Summary of Groundwater ESLs (µg/L)**

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table GW-1)			Aquatic Habitat Goal Levels (Table GW-2)			Groundwater Vapor Intrusion Human Health Risk Levels (Table GW-3)				Gross Contamination Levels (GW-4)	Odor Nuisance Levels (Table GW-5)		GW Tier 1 ESL	Basis
		MCL Priority ¹	Tapwater Cancer Risk	Tapwater Non-cancer Hazard	Fresh Water Ecotox	Saltwater Ecotox	Seafood Ingestion Human Health	Residential		Commercial/Industrial			Drinking Water	Non-Drinking Water		
								Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard					
2,4,5-Trichlorophenol	95-95-4	--	--	1.2E+03	6.3E+01	1.1E+01	--	--	--	--	5.0E+04	2.0E+02	2.0E+03	1.1E+01	Aquatic Habitat	
2,4,6-Trichlorophenol	88-06-2	6.3E-01	6.3E-01	1.2E+01	4.9E+02	--	6.5E+00	--	--	--	5.0E+04	1.0E+02	1.0E+03	6.3E-01	Tap Canc-Risk	
1,2,3-Trichloropropane	96-18-4	5.0E-03	7.0E-04	6.2E-01	2.7E+03	6.0E-03	--	--	2.2E+01	--	9.4E+01	5.0E+04	--	5.0E-03	MCL	
Vanadium	7440-62-2	--	--	5.0E+01	1.9E+01	--	--	--	--	--	5.0E+04	--	--	1.9E+01	Aquatic Habitat	
Vinyl chloride	75-01-4	5.0E-01	9.7E-03	4.4E+01	7.8E+02	--	5.3E+02	8.6E-03	9.5E+01	1.4E-01	4.0E+02	5.0E+04	3.4E+03	3.4E+04	8.6E-03	Vapor Intrusion
Xylenes	1330-20-7	2.0E+01	--	1.9E+02	--	1.0E+02	--	--	3.9E+02	--	1.6E+03	5.0E+04	2.0E+01	5.3E+03	2.0E+01	Odor/Nuis
Zinc	7440-66-6	5.0E+03	--	6.0E+03	1.2E+02	8.1E+01	--	--	--	--	5.0E+04	5.0E+03	--	8.1E+01	Aquatic Habitat	

Notes:
 1 - "MCL Priority" lists all available MCL values. If no MCL values are available, the lower of the cancer and noncancer tapwater direct exposure levels is listed.
 - Cadmium (Soil) - No groundwater values are listed since groundwater ESLs only apply to dissolved chemicals.
 - Petroleum Motor Oil is composed of large carbon chain compounds (C24-C36+) having negligible solubility. Detections in water samples typically are Petroleum HOPs, nonaqueous phase liquid (NAPL or free product), contaminated sediment entrained in the water sample, or naturally occurring compounds. Review the chromatograms to help determine the nature of the compounds being detected. See User's Guide Chapter 4.

Abbreviations:
 Canc - Cancer
 Contam - Contamination
 DDD - Dichlorodiphenyldichloroethane
 DDE - Dichlorodiphenyldichloroethene
 DDT - Dichlorodiphenyltrichloroethane
 HOPs - Hydrocarbon Oxidation Products (biodegradation metabolites and photo-oxidation products of petroleum hydrocarbons). See User's Guide Chapter 4 for further information.
 MCL - Maximum Contaminant Level
 NC - Noncancer
 Odor/Nuis - Odor Nuisance
 PAH - Polycyclic aromatic hydrocarbon
 Tap - Tapwater
 TCDD - Tetrachlorodibenzodioxin

January 2019

Summary of Soil ESLs (mg/kg)

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/industrial areas								
Acenaphthene [PAH]	83-32-9	--	3.6E+03	--	4.5E+04	--	1.0E+04	6.6E+03	4.6E+04	1.2E+01	1.2E+01	1.2E+02	1.0E+03	2.5E+03	2.5E+03	1.2E+01	Leaching
Acenaphthylene [PAH]	208-96-8	--	--	--	--	--	--	--	--	6.4E+00	6.4E+00	5.9E+01	5.0E+02	1.0E+03	1.0E+03	6.4E+00	Leaching
Acetone	67-64-1	--	6.1E+04	--	6.7E+05	--	2.7E+05	5.6E+01	5.6E+01	9.2E-01	9.2E-01	1.1E+05	5.0E+02	1.0E+03	1.0E+03	9.2E-01	Leaching
Aldrin	309-00-2	3.5E-02	2.1E+00	1.5E-01	2.9E+01	1.0E+00	7.4E+00	2.4E-03	1.0E-01	8.4E+00	8.4E+00	8.4E+00	1.0E+03	2.5E+03	2.5E+03	2.4E-03	Terr Habitat
Anthracene [PAH]	120-12-7	--	1.8E+04	--	2.3E+05	--	5.0E+04	3.1E+00	4.0E+01	1.9E+00	1.9E+00	4.1E+00	5.0E+02	1.0E+03	1.0E+03	1.9E+00	Leaching
Antimony	7440-36-0	--	1.1E+01	--	1.6E+02	--	5.0E+01	2.5E+01	5.0E+01	--	--	--	--	--	--	1.1E+01	NC-Hazard
Arsenic	7440-38-2	6.7E-02	2.6E-01	3.1E-01	3.6E+00	2.0E+00	9.8E-01	2.5E+01	5.0E+01	--	--	--	--	--	--	6.7E-02	Canc-Risk
Barium	7440-39-3	--	1.5E+04	--	2.2E+05	--	3.0E+03	3.9E+02	6.7E+02	--	--	--	--	--	--	3.9E+02	Terr Habitat
Benzene	71-43-2	3.3E-01	1.1E+01	1.4E+00	4.7E+01	3.3E+01	4.5E+01	6.0E+01	3.1E+02	2.5E-02	2.5E-02	1.9E+03	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching
Benzo[a]anthracene [PAH]	56-55-3	1.1E+00	--	2.0E+01	--	1.1E+02	--	6.3E-01	1.3E+00	1.0E+01	1.0E+01	1.0E+01	5.0E+02	1.0E+03	1.0E+03	6.3E-01	Terr Habitat
Benzo[a]pyrene [PAH]	50-32-8	1.1E-01	1.8E+01	2.1E+00	2.2E+02	1.1E+01	1.0E+01	2.5E+01	9.0E+01	5.7E+00	5.7E+00	5.7E+00	5.0E+02	1.0E+03	1.0E+03	1.1E-01	Canc-Risk
Benzo[b]fluoranthene [PAH]	205-99-2	1.1E+00	--	2.1E+01	--	1.1E+02	--	--	--	5.4E+00	7.5E+01	5.4E+00	5.0E+02	1.0E+03	1.0E+03	1.1E+00	Canc-Risk
Benzo[g,h,i]perylene [PAH]	191-24-2	--	--	--	--	--	--	8.3E+00	1.7E+01	2.7E+01	2.7E+01	2.5E+00	5.0E+02	1.0E+03	1.0E+03	2.5E+00	Gross Contam
Benzo[k]fluoranthene [PAH]	207-08-9	1.1E+01	--	2.1E+02	--	9.1E+02	--	9.5E+00	1.9E+01	4.8E+00	3.9E+01	2.8E+00	5.0E+02	1.0E+03	1.0E+03	2.8E+00	Gross Contam
Beryllium	7440-41-7	1.6E+03	1.6E+01	6.9E+03	2.3E+02	1.8E+02	2.7E+01	5.0E+00	1.0E+01	--	--	--	--	--	--	5.0E+00	Terr Habitat
1,1-Biphenyl	92-52-4	6.8E+01	4.7E+01	2.9E+02	2.0E+02	1.7E+03	1.8E+02	--	--	4.2E-01	4.2E+00	2.3E+02	5.0E+02	1.0E+03	1.0E+03	4.2E-01	Leaching
Bis(2-chloroethyl) ether	111-44-4	1.0E-01	--	4.7E-01	--	6.4E+00	--	--	--	3.4E-05	3.1E-02	5.0E+03	5.0E+02	1.0E+03	1.0E+03	3.4E-05	Leaching
Bis(2-chloro-1-methylethyl) ether	108-60-1	5.0E+00	3.1E+03	2.3E+01	4.7E+04	2.7E+02	1.4E+04	--	--	5.1E-03	8.7E-01	1.0E+03	5.0E+02	1.0E+03	1.0E+03	5.1E-03	Leaching
Bis(2-ethylhexyl) phthalate	117-81-7	3.9E+01	1.3E+03	1.6E+02	1.6E+04	9.5E+02	3.8E+03	8.0E-01	3.5E+01	1.9E+02	6.4E+02	1.9E+02	5.0E+02	1.0E+03	1.0E+03	8.0E-01	Terr Habitat
Boron	7440-42-8	--	1.6E+04	--	2.3E+05	--	4.5E+04	1.2E+02	1.2E+02	--	--	--	--	--	--	1.2E+02	Terr Habitat
Bromodichloromethane	75-27-4	2.9E-01	1.6E+03	1.3E+00	2.3E+04	2.8E+01	7.1E+03	--	--	1.6E-02	1.6E-02	9.3E+02	1.0E+03	2.5E+03	2.5E+03	1.6E-02	Leaching
Bromoform (Tribromomethane)	75-25-2	1.8E+01	1.6E+03	8.0E+01	2.3E+04	1.2E+03	7.1E+03	--	--	6.9E-01	1.0E+00	9.2E+02	5.0E+02	1.0E+03	1.0E+03	6.9E-01	Leaching
Bromomethane	74-83-9	--	6.9E+00	--	3.0E+01	--	2.9E+01	--	--	3.6E-01	8.3E-01	3.5E+03	5.0E+02	1.0E+03	1.0E+03	3.6E-01	Leaching
Cadmium (soil)	7440-43-9	9.1E+02	7.8E+01	4.0E+03	1.1E+03	1.1E+02	5.1E+01	1.9E+00	1.9E+00	--	--	--	--	--	--	1.9E+00	Terr Habitat
Cadmium (water)	7440-43-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	1.0E-01	5.3E+01	4.4E-01	2.5E+02	1.0E+01	2.2E+02	7.3E+00	1.5E+01	1.1E-02	1.1E-02	4.5E+02	5.0E+02	1.0E+03	1.0E+03	1.1E-02	Leaching
Chlordane	12789-03-6	4.8E-01	3.6E+01	2.2E+00	5.0E+02	1.4E+01	1.3E+02	8.5E-03	8.5E-03	2.3E+01	2.3E+01	2.3E+01	1.0E+03	2.5E+03	2.5E+03	8.5E-03	Terr Habitat
p-Chloroaniline	106-47-8	3.5E+00	3.1E+02	1.6E+01	4.7E+03	1.2E+02	1.4E+03	2.5E+01	5.0E+01	6.7E-03	9.1E-02	3.0E+03	5.0E+02	1.0E+03	1.0E+03	6.7E-03	Leaching
Chlorobenzene	108-90-7	--	2.7E+02	--	1.3E+03	--	1.2E+03	7.5E+00	1.5E+01	1.4E+00	1.4E+00	7.5E+02	5.0E+02	1.0E+03	1.0E+03	1.4E+00	Leaching
Chloroethane	75-00-3	--	1.4E+04	--	5.9E+04	--	5.9E+04	--	--	1.2E+00	1.2E+01	2.1E+03	5.0E+02	1.0E+03	1.0E+03	1.2E+00	Leaching
Chloroform	67-66-3	3.2E-01	2.0E+02	1.4E+00	1.0E+03	3.4E+01	8.6E+02	4.3E+01	8.5E+01	2.3E-02	2.3E-02	2.6E+03	5.0E+02	1.0E+03	1.0E+03	2.3E-02	Leaching
Chloromethane	74-87-3	--	1.1E+02	--	4.7E+02	--	4.7E+02	--	--	1.1E+01	1.5E+01	1.3E+03	1.0E+02	5.0E+02	5.0E+02	1.1E+01	Leaching
2-Chlorophenol	95-57-8	--	3.9E+02	--	5.8E+03	--	1.8E+03	2.0E+00	3.9E+00	1.2E-02	1.2E-01	2.7E+04	1.0E+02	5.0E+02	5.0E+02	1.2E-02	Leaching
Chromium (total)	7440-47-3	--	--	--	--	--	--	1.6E+02	1.6E+02	--	--	--	--	--	--	1.6E+02	Terr Habitat
Chromium III	16065-83-1	--	1.2E+05	--	1.8E+06	--	5.3E+05	--	--	--	--	--	--	--	--	1.2E+05	NC-Hazard
Chromium VI	18540-29-9	3.0E-01	2.3E+02	6.2E+00	3.5E+03	2.8E+00	4.0E+02	1.0E+01	1.0E+01	--	--	--	--	--	--	3.0E-01	Canc-Risk
Chrysene [PAH]	218-01-9	1.1E+02	--	2.1E+03	--	9.1E+03	--	8.8E+00	1.8E+01	2.2E+00	1.0E+01	2.2E+00	5.0E+02	1.0E+03	1.0E+03	2.2E+00	Gross Contam
Cobalt	7440-48-4	4.2E+02	2.3E+01	1.9E+03	3.5E+02	4.9E+01	2.8E+01	5.0E+01	1.0E+02	--	--	--	--	--	--	2.3E+01	NC-Hazard
Copper	7440-50-8	--	3.1E+03	--	4.7E+04	--	1.4E+04	1.8E+02	3.0E+02	--	--	--	--	--	--	1.8E+02	Terr Habitat

January 2019

Summary of Soil ESLs (mg/kg)

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/ Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/ Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/ industrial areas								
Cyanide	57-12-5	--	5.5E+00	--	2.5E+01	--	2.2E+01	1.1E-01	1.1E-01	3.4E-03	3.4E-03	1.9E+04	1.0E+02	5.0E+02	5.0E+02	3.4E-03	Leaching
Dibenz[a,h]anthracene [PAH]	53-70-3	1.1E-01	--	2.1E+00	--	1.1E+01	--	--	--	2.9E+01	3.9E+02	2.9E+01	5.0E+02	1.0E+03	1.0E+03	1.1E-01	Canc-Risk
Dibromochloromethane	124-48-1	8.3E+00	1.6E+03	3.9E+01	2.3E+04	2.9E+02	7.1E+03	--	--	4.7E-01	1.1E+01	8.0E+02	1.0E+02	5.0E+02	5.0E+02	4.7E-01	Leaching
1,2-dibromo-3-chloropropane	96-12-8	4.4E-03	4.8E+00	5.9E-02	2.6E+01	1.1E+00	2.0E+01	--	--	5.9E-04	5.9E-04	9.9E+02	5.0E+02	1.0E+03	1.0E+03	5.9E-04	Leaching
1,2-Dibromoethane	106-93-4	3.6E-02	7.2E+00	1.6E-01	3.0E+01	3.3E+00	3.0E+01	--	--	5.3E-04	1.9E-03	1.3E+03	5.0E+02	1.0E+03	1.0E+03	5.3E-04	Leaching
1,2-Dichlorobenzene	95-50-1	--	1.8E+03	--	9.4E+03	--	7.8E+03	4.3E+00	8.5E+00	1.0E+00	1.0E+00	3.8E+02	1.0E+03	2.5E+03	2.5E+03	1.0E+00	Leaching
1,3-Dichlorobenzene	541-73-1	--	--	--	--	--	--	6.0E+00	1.2E+01	7.4E+00	7.4E+00	6.1E+02	1.0E+02	5.0E+02	5.0E+02	6.0E+00	Terr Habitat
1,4-Dichlorobenzene	106-46-7	2.6E+00	3.4E+03	1.2E+01	2.6E+04	2.8E+02	1.5E+04	4.5E+00	9.0E+00	2.0E-01	2.0E-01	1.9E+02	5.0E+02	1.0E+03	1.0E+03	2.0E-01	Leaching
3,3-Dichlorobenzidine	91-94-1	5.8E-01	--	2.7E+00	--	2.0E+01	--	--	--	2.5E-02	1.3E+02	6.0E+01	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching
DDD	72-54-8	2.7E+00	--	1.2E+01	--	8.1E+01	--	8.5E+00	1.7E+01	6.5E+01	6.5E+01	6.5E+01	5.0E+02	1.0E+03	1.0E+03	2.7E+00	Canc-Risk
DDE	72-55-9	1.8E+00	--	8.3E+00	--	5.7E+01	--	3.3E-01	6.5E-01	2.9E+01	2.9E+01	2.9E+01	5.0E+02	1.0E+03	1.0E+03	3.3E-01	Terr Habitat
DDT	50-29-3	1.9E+00	3.7E+01	8.5E+00	5.2E+02	5.7E+01	1.4E+02	1.1E-03	7.8E+00	5.6E+00	5.6E+00	5.6E+00	5.0E+02	1.0E+03	1.0E+03	1.1E-03	Terr Habitat
1,1-Dichloroethane	75-34-3	3.6E+00	1.6E+04	1.6E+01	2.3E+05	3.7E+02	7.1E+04	1.1E+01	2.1E+01	2.0E-01	3.1E-01	1.7E+03	5.0E+02	1.0E+03	1.0E+03	2.0E-01	Leaching
1,2-Dichloroethane	107-06-2	4.7E-01	3.2E+01	2.1E+00	1.4E+02	4.5E+01	1.3E+02	2.9E+01	2.9E+01	7.0E-03	3.1E-02	3.0E+03	1.0E+02	5.0E+02	5.0E+02	7.0E-03	Leaching
1,1-Dichloroethene	75-35-4	--	8.3E+01	--	3.5E+02	--	3.5E+02	4.3E+01	1.3E+02	5.4E-01	4.2E+00	1.2E+03	5.0E+02	1.0E+03	1.0E+03	5.4E-01	Leaching
cis-1,2-Dichloroethene	156-59-2	--	1.9E+01	--	8.5E+01	--	7.8E+01	8.4E+01	9.4E+02	1.9E-01	1.6E+00	2.4E+03	1.0E+02	5.0E+02	5.0E+02	1.9E-01	Leaching
trans-1,2-Dichloroethene	156-60-5	--	1.3E+02	--	6.0E+02	--	5.7E+02	8.4E+01	9.4E+02	6.5E-01	1.4E+01	1.9E+03	5.0E+02	1.0E+03	1.0E+03	6.5E-01	Leaching
2,4-Dichlorophenol	120-83-2	--	2.3E+02	--	3.5E+03	--	1.1E+03	2.1E+00	--	7.5E-03	7.5E-02	5.6E+03	5.0E+02	1.0E+03	1.0E+03	7.5E-03	Leaching
1,2-Dichloropropane	78-87-5	1.0E+00	1.6E+01	4.4E+00	6.6E+01	9.9E+01	6.6E+01	3.1E+01	6.3E+01	6.5E-02	6.5E-02	1.4E+03	1.0E+02	5.0E+02	5.0E+02	6.5E-02	Leaching
1,3-Dichloropropene	542-75-6	5.7E-01	7.2E+01	2.5E+00	3.1E+02	5.3E+01	3.0E+02	3.1E+01	6.3E+01	1.7E-02	4.0E-02	1.6E+03	5.0E+02	1.0E+03	1.0E+03	1.7E-02	Leaching
Dieldrin	60-57-1	3.7E-02	3.5E+00	1.6E-01	4.8E+01	1.1E+00	1.2E+01	9.6E-04	1.1E-01	4.6E-04	6.3E-03	2.4E+01	5.0E+02	1.0E+03	1.0E+03	4.6E-04	Leaching
Diethyl phthalate	84-66-2	--	5.1E+04	--	6.6E+05	--	1.5E+05	1.3E+01	2.7E+01	2.5E-02	2.5E-02	7.7E+02	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching
Dimethyl phthalate	131-11-3	--	--	--	--	--	--	2.1E+01	4.2E+01	3.5E-02	3.5E-02	4.7E+03	5.0E+02	1.0E+03	1.0E+03	3.5E-02	Leaching
2,4-Dimethylphenol	105-67-9	--	1.6E+03	--	2.3E+04	--	7.1E+03	--	--	8.1E+00	8.9E+00	2.4E+04	1.0E+02	5.0E+02	5.0E+02	8.1E+00	Leaching
2,4-Dinitrophenol	51-28-5	--	1.6E+02	--	2.3E+03	--	7.1E+02	--	--	3.0E+00	5.7E+00	8.0E+03	5.0E+02	1.0E+03	1.0E+03	3.0E+00	Leaching
2,4-Dinitrotoluene	121-14-2	2.2E+00	1.6E+02	1.1E+01	2.3E+03	7.9E+01	7.1E+02	--	--	2.3E-02	1.1E+01	7.2E+02	5.0E+02	1.0E+03	1.0E+03	2.3E-02	Leaching
1,4-Dioxane	123-91-1	4.7E+00	8.1E+02	2.2E+01	4.5E+03	2.1E+02	3.4E+03	1.8E+00	1.8E+00	1.7E-04	8.4E-01	1.2E+05	5.0E+02	1.0E+03	1.0E+03	1.7E-04	Leaching
Dioxin (2,3,7,8-TCDD)	1746-01-6	4.8E-06	5.1E-05	2.2E-05	7.2E-04	1.5E-04	2.0E-04	1.3E-05	9.9E-05	3.0E-01	3.0E-01	3.0E-01	5.0E+02	1.0E+03	1.0E+03	4.8E-06	Canc-Risk
Endosulfan	115-29-7	--	4.2E+02	--	5.8E+03	--	1.5E+03	2.3E-02	3.8E-01	9.8E-03	9.8E-03	1.3E+01	5.0E+02	1.0E+03	1.0E+03	9.8E-03	Leaching
Endrin	72-20-8	--	2.1E+01	--	2.9E+02	--	7.4E+01	1.1E-03	1.1E-03	7.6E-03	7.6E-03	3.0E+01	5.0E+02	1.0E+03	1.0E+03	1.1E-03	Terr Habitat
Ethylbenzene	100-41-4	5.9E+00	3.4E+03	2.6E+01	2.1E+04	5.4E+02	1.5E+04	9.0E+01	4.3E+02	4.3E-01	4.3E-01	4.9E+02	5.0E+02	1.0E+03	1.0E+03	4.3E-01	Leaching
Fluoranthene [PAH]	206-44-0	--	2.4E+03	--	3.0E+04	--	6.7E+03	6.9E-01	1.2E+05	8.6E+01	8.6E+01	8.6E+01	5.0E+02	1.0E+03	1.0E+03	6.9E-01	Terr Habitat
Fluorene [PAH]	86-73-7	--	2.4E+03	--	3.0E+04	--	6.7E+03	--	--	6.0E+00	6.0E+00	9.4E+01	5.0E+02	1.0E+03	1.0E+03	6.0E+00	Leaching
Heptachlor	76-44-8	1.2E-01	3.5E+01	5.3E-01	4.8E+02	3.7E+00	1.2E+02	2.5E-01	5.0E-01	4.4E+01	4.4E+01	4.4E+01	1.0E+03	2.5E+03	2.5E+03	1.2E-01	Canc-Risk
Heptachlor epoxide	1024-57-3	6.2E-02	9.1E-01	2.8E-01	1.3E+01	1.9E+00	3.2E+00	--	--	1.8E-04	6.0E-03	1.2E+01	1.0E+03	2.5E+03	2.5E+03	1.8E-04	Leaching
Hexachlorobenzene	118-74-1	1.8E-01	5.6E+01	7.8E-01	7.7E+02	7.7E+00	2.0E+02	1.3E+02	2.5E+02	8.0E-04	8.2E-02	2.3E-01	5.0E+02	1.0E+03	1.0E+03	8.0E-04	Leaching
Hexachlorobutadiene	87-68-3	1.2E+00	7.8E+01	5.3E+00	1.2E+03	1.0E+02	3.5E+02	--	--	2.8E-02	6.2E-02	1.7E+01	5.0E+02	1.0E+03	1.0E+03	2.8E-02	Leaching
g-Hexachlorocyclohexane (Lindane)	58-89-9	5.5E-01	2.1E+01	2.5E+00	2.9E+02	1.6E+01	7.4E+01	7.4E+00	1.5E+01	7.4E-03	7.4E-03	1.2E+02	5.0E+02	1.0E+03	1.0E+03	7.4E-03	Leaching
Hexachloroethane	67-72-1	1.8E+00	3.8E+01	7.8E+00	3.7E+02	1.3E+02	1.2E+02	--	--	1.9E-02	9.2E-02	6.7E+01	5.0E+02	1.0E+03	1.0E+03	1.9E-02	Leaching

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Summary of Soil ESLs (mg/kg)

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/ Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/ Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/ industrial areas								
Indeno[1,2,3-c,d]pyrene [PAH]	193-39-5	1.1E+00	--	2.1E+01	--	1.1E+02	--	4.8E-01	9.5E-01	1.6E+01	3.2E+01	2.3E+00	5.0E+02	1.0E+03	1.0E+03	4.8E-01	Terr Habitat
Lead	7439-92-1	8.2E+01	8.0E+01	3.8E+02	3.2E+02	2.7E+03	1.6E+02	3.2E+01	3.2E+01	--	--	--	--	--	--	3.2E+01	Terr Habitat
Mercury (elemental)	7439-97-6	--	1.3E+01	--	1.9E+02	--	4.4E+01	1.5E+01	2.0E+01	--	--	--	5.0E+02	1.0E+03	1.0E+03	1.3E+01	NC-Hazard
Methoxychlor	72-43-5	--	3.5E+02	--	4.8E+03	--	1.2E+03	1.3E-01	4.1E+03	1.3E-02	1.3E-02	1.6E+01	5.0E+02	1.0E+03	1.0E+03	1.3E-02	Leaching
Methylene chloride	75-09-2	1.9E+00	3.1E+02	2.5E+01	2.5E+03	4.9E+02	1.4E+03	9.8E-01	2.0E+00	1.2E-01	1.9E-01	3.3E+03	5.0E+02	1.0E+03	1.0E+03	1.2E-01	Leaching
Methyl ethyl ketone	78-93-3	--	2.7E+04	--	2.0E+05	--	1.2E+05	4.4E+01	8.8E+01	6.1E+00	1.5E+01	2.8E+04	5.0E+02	1.0E+03	1.0E+03	6.1E+00	Leaching
Methyl isobutyl ketone	108-10-1	--	3.4E+04	--	1.4E+05	--	1.4E+05	--	--	3.6E-01	5.1E-01	3.4E+03	1.0E+02	5.0E+02	5.0E+02	3.6E-01	Leaching
Methyl mercury	22967-92-6	--	6.3E+00	--	8.2E+01	--	1.9E+01	3.4E-02	3.4E-02	--	--	--	1.0E+02	5.0E+02	5.0E+02	3.4E-02	Terr Habitat
2-Methylnaphthalene	91-57-6	--	2.4E+02	--	3.0E+03	--	6.7E+02	--	--	8.8E-01	8.8E-01	3.8E+02	5.0E+02	1.0E+03	1.0E+03	8.8E-01	Leaching
Methyl tertiary butyl ether (MTBE)	1634-04-4	4.7E+01	1.6E+04	2.1E+02	6.6E+04	4.1E+03	6.5E+04	3.1E+01	6.3E+01	2.8E-02	2.5E+00	9.0E+03	1.0E+02	5.0E+02	5.0E+02	2.8E-02	Leaching
Molybdenum	7439-98-7	--	3.9E+02	--	5.8E+03	--	1.8E+03	6.9E+00	4.0E+01	--	--	--	--	--	--	6.9E+00	Terr Habitat
Naphthalene [PAH]	91-20-3	3.8E+00	1.3E+02	1.7E+01	5.8E+02	4.0E+02	5.0E+02	7.5E-01	2.8E+01	4.2E-02	1.2E+00	2.8E+02	5.0E+02	1.0E+03	1.0E+03	4.2E-02	Leaching
Nickel	7440-02-0	1.5E+04	8.2E+02	6.4E+04	1.1E+04	1.7E+03	8.6E+01	1.3E+02	3.4E+02	--	--	--	--	--	--	8.6E+01	NC-Hazard
Pentachlorophenol	87-86-5	1.0E+00	2.5E+02	4.0E+00	2.8E+03	2.0E+01	5.6E+02	1.3E-02	3.9E+01	9.8E-02	7.7E-01	5.1E+01	5.0E+02	1.0E+03	1.0E+03	1.3E-02	Terr Habitat
Perchlorate	7790-98-9	--	5.5E+01	--	8.2E+02	--	2.5E+02	--	--	--	--	--	--	--	--	5.5E+01	NC-Hazard
Petroleum - Gasoline	--	--	4.3E+02	--	2.0E+03	--	1.8E+03	1.2E+02	1.2E+02	1.1E+03	4.9E+03	1.0E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Stoddard Solvent	--	--	2.6E+02	--	1.4E+03	--	1.1E+03	2.6E+02	2.6E+02	1.3E+03	8.0E+03	2.3E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Jet Fuel	--	--	2.7E+02	--	1.4E+03	--	1.1E+03	2.6E+02	2.6E+02	1.3E+03	8.0E+03	2.3E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Diesel	--	--	2.6E+02	--	1.2E+03	--	1.1E+03	2.6E+02	2.6E+02	1.1E+03	7.3E+03	2.3E+03	5.0E+02	1.0E+03	1.0E+03	2.6E+02	NC-Hazard
Petroleum - HOPs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum - Motor Oil	--	--	1.2E+04	--	1.8E+05	--	5.4E+04	1.6E+03	1.6E+03	--	--	5.1E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Phenanthrene [PAH]	85-01-8	--	--	--	--	--	--	7.8E+00	1.6E+01	1.1E+01	1.1E+01	6.9E+01	5.0E+02	1.0E+03	1.0E+03	7.8E+00	Terr Habitat
Phenol	108-95-2	--	2.3E+04	--	3.5E+05	--	9.8E+04	9.4E+00	9.4E+00	1.6E-01	1.8E+01	1.0E+05	5.0E+02	1.0E+03	1.0E+03	1.6E-01	Leaching
Polychlorinated biphenyls (PCBs)	1336-36-3	2.3E-01	--	9.4E-01	--	5.5E+00	--	1.1E+00	1.1E+00	3.3E+02	3.3E+02	3.3E+02	5.0E+02	1.0E+03	1.0E+03	2.3E-01	Canc-Risk
Pyrene [PAH]	129-00-0	--	1.8E+03	--	2.3E+04	--	5.0E+03	4.7E+03	9.9E+04	4.5E+01	4.5E+01	4.5E+01	5.0E+02	1.0E+03	1.0E+03	4.5E+01	Gross Contam
Selenium	7782-49-2	--	3.9E+02	--	5.8E+03	--	1.7E+03	2.4E+00	5.5E+00	--	--	--	--	--	--	2.4E+00	Terr Habitat
Silver	7440-22-4	--	3.9E+02	--	5.8E+03	--	1.8E+03	2.5E+01	5.0E+01	--	--	--	--	--	--	2.5E+01	Terr Habitat
Styrene	100-42-5	--	5.7E+03	--	3.3E+04	--	2.5E+04	2.2E+01	4.3E+01	9.2E-01	1.0E+01	8.7E+02	5.0E+02	1.0E+03	1.0E+03	9.2E-01	Leaching
tert-Butyl alcohol	75-65-0	--	--	--	--	--	--	--	--	7.5E-02	1.1E+02	3.2E+05	1.0E+02	5.0E+02	5.0E+02	7.5E-02	Leaching
1,1,1,2-Tetrachloroethane	630-20-6	2.0E+00	2.3E+03	8.9E+00	3.5E+04	1.9E+02	1.1E+04	--	--	1.7E-02	1.1E-01	7.0E+02	1.0E+02	5.0E+02	5.0E+02	1.7E-02	Leaching
1,1,2,2-Tetrachloroethane	79-34-5	6.1E-01	1.6E+03	2.7E+00	2.3E+04	4.9E+01	7.1E+03	--	--	1.8E-02	5.8E-02	1.9E+03	5.0E+02	1.0E+03	1.0E+03	1.8E-02	Leaching
Tetrachloroethene	127-18-4	5.9E-01	8.2E+01	2.7E+00	3.9E+02	3.3E+01	3.5E+02	4.5E+00	4.3E+01	8.0E-02	8.0E-02	1.7E+02	5.0E+02	1.0E+03	1.0E+03	8.0E-02	Leaching
Thallium	7440-28-0	--	7.8E-01	--	1.2E+01	--	3.5E+00	1.8E+00	4.5E+00	--	--	--	--	--	--	7.8E-01	NC-Hazard
Toluene	108-88-3	--	1.1E+03	--	5.3E+03	--	4.7E+03	1.4E+02	6.6E+02	3.2E+00	1.0E+01	8.1E+02	5.0E+02	1.0E+03	1.0E+03	3.2E+00	Leaching
Toxaphene	8001-35-2	5.1E-01	--	2.2E+00	--	1.4E+01	--	--	--	2.5E+02	2.5E+02	2.5E+02	5.0E+02	1.0E+03	1.0E+03	5.1E-01	Canc-Risk
1,2,4-Trichlorobenzene	120-82-1	2.4E+01	5.9E+01	1.1E+02	2.6E+02	8.5E+02	2.4E+02	1.6E+01	3.0E+01	1.2E+00	6.0E+00	4.2E+02	5.0E+02	1.0E+03	1.0E+03	1.2E+00	Leaching
1,1,1-Trichloroethane	71-55-6	--	1.7E+03	--	7.3E+03	--	7.2E+03	2.2E+01	4.4E+01	7.0E+00	7.0E+00	6.5E+02	5.0E+02	1.0E+03	1.0E+03	7.0E+00	Leaching
1,1,2-Trichloroethane	79-00-5	1.2E+00	1.5E+00	5.1E+00	6.4E+00	1.1E+02	6.3E+00	1.0E+02	2.0E+02	7.6E-02	7.9E-02	2.2E+03	1.0E+02	5.0E+02	5.0E+02	7.6E-02	Leaching
Trichloroethene	79-01-6	9.5E-01	4.2E+00	6.1E+00	1.9E+01	1.3E+02	1.8E+01	8.1E+00	2.5E+02	8.5E-02	8.5E-02	7.0E+02	5.0E+02	1.0E+03	1.0E+03	8.5E-02	Leaching

January 2019	Summary of Soil ESLs (mg/kg)															
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Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commerical/ Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/ Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/ industrial areas				Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
2,4,5-Trichlorophenol	95-95-4	--	7.8E+03	--	1.2E+05	--	3.5E+04	5.5E+00	1.0E+01	2.9E+00	2.9E+00	1.2E+04	5.0E+02	1.0E+03	1.0E+03	2.9E+00	Leaching
2,4,6-Trichlorophenol	88-06-2	9.9E+00	7.8E+01	4.7E+01	1.2E+03	3.5E+02	3.5E+02	5.5E+00	1.0E+01	4.0E-02	3.1E+01	1.9E+03	1.0E+02	5.0E+02	5.0E+02	4.0E-02	Leaching
1,2,3-Trichloropropane	96-18-4	2.3E-02	4.9E+00	1.1E-01	2.1E+01	8.3E-01	2.0E+01	--	--	1.1E-04	1.3E-04	1.4E+03	1.0E+02	5.0E+02	5.0E+02	1.1E-04	Leaching
Vanadium	7440-62-2	--	3.9E+02	--	5.8E+03	--	4.7E+02	1.8E+01	1.8E+01	--	--	--	--	--	--	1.8E+01	Terr Habitat
Vinyl chloride	75-01-4	8.3E-03	7.0E+01	1.5E-01	3.8E+02	3.4E+00	3.0E+02	4.3E+00	8.5E+00	1.5E-03	1.5E-03	3.9E+03	5.0E+02	1.0E+03	1.0E+03	1.5E-03	Leaching
Xylenes	1330-20-7	--	5.8E+02	--	2.5E+03	--	2.4E+03	5.5E+01	2.1E+02	2.1E+00	1.0E+01	2.7E+02	5.0E+02	1.0E+03	1.0E+03	2.1E+00	Leaching
Zinc	7440-66-6	--	2.3E+04	--	3.5E+05	--	1.1E+05	3.4E+02	3.4E+02	--	--	--	--	--	--	3.4E+02	Terr Habitat

Notes:
 - Cadmium (Water): Groundwater levels do not apply to cadmium in soil so no soil level are listed.
 - Petroleum - HOPs: Soil ESLs have not been developed at this time.

Abbreviations:
 Canc - Cancer
 Com/Ind - Commercial/Industrial
 Contam - Contamination
 CW - Construction Worker
 DDD - Dichlorodiphenyldichloroethane
 DDE - Dichlorodiphenyldichloroethene
 DDT - Dichlorodiphenyltrichloroethane
 Exp - Exposure
 HOPs - Hydrocarbon Oxidation Products (biodegradation metabolites and photo-oxidation products of petroleum hydrocarbons). See User's Guide Chapter 4 for further information.
 NC - Noncancer
 Odor/Nuis - Odor Nuisance
 PAH - Polycyclic aromatic hydrocarbon
 Res - Residential
 TCDD - Tetrachlorodibenzodioxin
 Terr - Terrestrial

January 2019		Summary of Vapor ESLs													
Chemicals	CAS No.	Subslab/ Soil Gas ($\mu\text{g}/\text{m}^3$)						Indoor Air ($\mu\text{g}/\text{m}^3$)							
		Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels (Table SG-1)				Subslab/ Soil Gas Vapor Intrusion: Odor Nuisance Levels (Table SG-2)	Tier 1 ESL	Basis	Direct Exposure Human Health Risk Levels (Table IA-1)				Odor Nuisance Levels (Table IA-2)	Tier 1 ESL	Basis
		Residential		Commercial/ Industrial					Residential		Commercial/ Industrial				
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard				Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard			
Acenaphthene [PAH]	83-32-9	--	--	--	--	1.7E+04	1.7E+04	Odor/Nuis	--	--	--	--	5.1E+02	5.1E+02	Nuis/Odor
Acenaphthylene [PAH]	208-96-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	67-64-1	--	1.1E+06	--	4.5E+06	1.0E+06	1.0E+06	Odor/Nuis	--	3.2E+04	--	1.4E+05	3.1E+04	3.1E+04	Nuis/Odor
Aldrin	309-00-2	1.9E-02	--	8.3E-02	--	8.8E+03	1.9E-02	Canc-Risk	5.7E-04	--	2.5E-03	--	2.6E+02	5.7E-04	Canc-Risk
Anthracene [PAH]	120-12-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	7440-36-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	3.2E+00	1.0E+02	1.4E+01	4.4E+02	1.6E+05	3.2E+00	Canc-Risk	9.7E-02	3.1E+00	4.2E-01	1.3E+01	4.9E+03	9.7E-02	Canc-Risk
Benzo[a]anthracene [PAH]	56-55-3	3.1E-01	--	3.7E+00	--	--	3.1E-01	Canc-Risk	9.2E-03	--	1.1E-01	--	--	9.2E-03	Canc-Risk
Benzo[a]pyrene [PAH]	50-32-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo[b]fluoranthene [PAH]	205-99-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo[g,h,i]perylene [PAH]	191-24-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo[k]fluoranthene [PAH]	207-08-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Biphenyl	92-52-4	--	1.4E+01	--	5.8E+01	2.0E+03	1.4E+01	NC-Hazard	--	4.2E-01	--	1.8E+00	6.0E+01	4.2E-01	NC-Hazard
Bis(2-chloroethyl) ether	111-44-4	1.3E-01	--	5.8E-01	--	9.6E+03	1.3E-01	Canc-Risk	4.0E-03	--	1.7E-02	--	2.9E+02	4.0E-03	Canc-Risk
Bis(2-chloro-1-methylethyl) ether	108-60-1	9.4E+00	--	4.1E+01	--	7.5E+04	9.4E+00	Canc-Risk	2.8E-01	--	1.2E+00	--	2.2E+03	2.8E-01	Canc-Risk
Bis(2-ethylhexyl) phthalate	117-81-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	7440-42-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	2.5E+00	--	1.1E+01	--	3.7E+08	2.5E+00	Canc-Risk	7.6E-02	--	3.3E-01	--	1.1E+07	7.6E-02	Canc-Risk
Bromoform (Tribromomethane)	75-25-2	8.5E+01	--	3.7E+02	--	4.5E+05	8.5E+01	Canc-Risk	2.6E+00	--	1.1E+01	--	1.3E+04	2.6E+00	Canc-Risk
Bromomethane	74-83-9	--	1.7E+02	--	7.3E+02	2.7E+06	1.7E+02	NC-Hazard	--	5.2E+00	--	2.2E+01	8.0E+04	5.2E+00	NC-Hazard
Cadmium (soil)	7440-43-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium (water)	7440-43-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	2.2E+00	1.4E+03	9.7E+00	5.8E+03	2.1E+06	2.2E+00	Canc-Risk	6.7E-02	4.2E+01	2.9E-01	1.8E+02	6.3E+04	6.7E-02	Canc-Risk
Chlordane	12789-03-6	2.8E-01	2.4E+01	1.2E+00	1.0E+02	2.8E+02	2.8E-01	Canc-Risk	8.3E-03	7.3E-01	3.6E-02	3.1E+00	8.4E+00	8.3E-03	Canc-Risk
p-Chloroaniline	106-47-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	--	1.7E+03	--	7.3E+03	3.3E+04	1.7E+03	NC-Hazard	--	5.2E+01	--	2.2E+02	1.0E+03	5.2E+01	NC-Hazard
Chloroethane	75-00-3	--	3.5E+05	--	1.5E+06	1.3E+07	3.5E+05	NC-Hazard	--	1.0E+04	--	4.4E+04	3.8E+05	1.0E+04	NC-Hazard
Chloroform	67-66-3	4.1E+00	3.4E+03	1.8E+01	1.4E+04	1.4E+07	4.1E+00	Canc-Risk	1.2E-01	1.0E+02	5.3E-01	4.3E+02	4.2E+05	1.2E-01	Canc-Risk
Chloromethane	74-87-3	--	3.1E+03	--	1.3E+04	--	3.1E+03	NC-Hazard	--	9.4E+01	--	3.9E+02	--	9.4E+01	NC-Hazard
2-Chlorophenol	95-57-8	--	--	--	--	6.3E+02	6.3E+02	Odor/Nuis	--	--	--	--	1.9E+01	1.9E+01	Nuis/Odor
Chromium (total)	7440-47-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium III	16065-83-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	18540-29-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--

January 2019		Summary of Vapor ESLs													
Chemicals	CAS No.	Subslab/ Soil Gas ($\mu\text{g}/\text{m}^3$)						Indoor Air ($\mu\text{g}/\text{m}^3$)							
		Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels (Table SG-1)				Subslab/ Soil Gas Vapor Intrusion: Odor Nuisance Levels (Table SG-2)	Tier 1 ESL	Basis	Direct Exposure Human Health Risk Levels (Table IA-1)				Odor Nuisance Levels (Table IA-2)	Tier 1 ESL	Basis
		Residential		Commercial/ Industrial					Residential		Commercial/ Industrial				
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard				Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard			
Chrysenes [PAH]	218-01-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	7440-50-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide	57-12-5	--	2.8E+01	--	1.2E+02	2.2E+04	2.8E+01	NC-Hazard	--	8.3E-01	--	3.5E+00	6.5E+02	8.3E-01	NC-Hazard
Dibenz[a,h]anthracene [PAH]	53-70-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	124-48-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-dibromo-3-chloropropane	96-12-8	5.6E-03	7.0E+00	6.8E-02	2.9E+01	--	5.6E-03	Canc-Risk	1.7E-04	2.1E-01	2.0E-03	8.8E-01	--	1.7E-04	Canc-Risk
1,2-Dibromoethane	106-93-4	1.6E-01	2.8E+01	6.8E-01	1.2E+02	6.7E+06	1.6E-01	Canc-Risk	4.7E-03	8.3E-01	2.0E-02	3.5E+00	2.0E+05	4.7E-03	Canc-Risk
1,2-Dichlorobenzene	95-50-1	--	7.0E+03	--	2.9E+04	1.0E+07	7.0E+03	NC-Hazard	--	2.1E+02	--	8.8E+02	3.1E+05	2.1E+02	NC-Hazard
1,3-Dichlorobenzene	541-73-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	8.5E+00	2.8E+04	3.7E+01	1.2E+05	3.7E+04	8.5E+00	Canc-Risk	2.6E-01	8.3E+02	1.1E+00	3.5E+03	1.1E+03	2.6E-01	Canc-Risk
3,3-Dichlorobenzidine	91-94-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDD	72-54-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDE	72-55-9	9.6E-01	--	4.2E+00	--	--	9.6E-01	Canc-Risk	2.9E-02	--	1.3E-01	--	--	2.9E-02	Canc-Risk
DDT	50-29-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	5.8E+01	--	2.6E+02	--	4.2E+06	5.8E+01	Canc-Risk	1.8E+00	--	7.7E+00	--	1.3E+05	1.8E+00	Canc-Risk
1,2-Dichloroethane	107-06-2	3.6E+00	2.4E+02	1.6E+01	1.0E+03	8.1E+04	3.6E+00	Canc-Risk	1.1E-01	7.3E+00	4.7E-01	3.1E+01	2.4E+03	1.1E-01	Canc-Risk
1,1-Dichloroethene	75-35-4	--	2.4E+03	--	1.0E+04	6.7E+07	2.4E+03	NC-Hazard	--	7.3E+01	--	3.1E+02	2.0E+06	7.3E+01	NC-Hazard
cis-1,2-Dichloroethene	156-59-2	--	2.8E+02	--	1.2E+03	--	2.8E+02	NC-Hazard	--	8.3E+00	--	3.5E+01	--	8.3E+00	NC-Hazard
trans-1,2-Dichloroethene	156-60-5	--	2.8E+03	--	1.2E+04	2.2E+06	2.8E+03	NC-Hazard	--	8.3E+01	--	3.5E+02	6.7E+04	8.3E+01	NC-Hazard
2,4-Dichlorophenol	120-83-2	--	--	--	--	4.7E+04	4.7E+04	Odor/Nuis	--	--	--	--	1.4E+03	1.4E+03	Odor/Nuis
1,2-Dichloropropane	78-87-5	9.4E+00	1.4E+02	4.1E+01	5.8E+02	4.0E+04	9.4E+00	Canc-Risk	2.8E-01	4.2E+00	1.2E+00	1.8E+01	1.2E+03	2.8E-01	Canc-Risk
1,3-Dichloropropene	542-75-6	5.8E+00	7.0E+02	2.6E+01	2.9E+03	1.4E+05	5.8E+00	Canc-Risk	1.8E-01	2.1E+01	7.7E-01	8.8E+01	4.2E+03	1.8E-01	Canc-Risk
Dieldrin	60-57-1	2.0E-02	--	8.9E-02	--	--	2.0E-02	Canc-Risk	6.1E-04	--	2.7E-03	--	--	6.1E-04	Canc-Risk
Diethyl phthalate	84-66-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	--	--	--	--	3.3E+01	3.3E+01	Odor/Nuis	--	--	--	--	1.0E+00	1.0E+00	Odor/Nuis
2,4-Dinitrophenol	51-28-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dioxane	123-91-1	1.2E+01	1.0E+03	5.3E+01	4.4E+03	2.0E+07	1.2E+01	Canc-Risk	3.6E-01	3.1E+01	1.6E+00	1.3E+02	6.1E+05	3.6E-01	Canc-Risk
Dioxin (2,3,7,8-TCDD)	1746-01-6	2.5E-06	1.4E-03	1.1E-05	5.8E-03	--	2.5E-06	Canc-Risk	7.4E-08	4.2E-05	3.2E-07	1.8E-04	--	7.4E-08	Canc-Risk
Endosulfan	115-29-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	72-20-8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	3.7E+01	3.5E+04	1.6E+02	1.5E+05	6.7E+04	3.7E+01	Canc-Risk	1.1E+00	1.0E+03	4.9E+00	4.4E+03	2.0E+03	1.1E+00	Canc-Risk
Fluoranthene [PAH]	206-44-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene [PAH]	86-73-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--

January 2019		Summary of Vapor ESLs													
Chemicals	CAS No.	Subslab/ Soil Gas ($\mu\text{g}/\text{m}^3$)						Indoor Air ($\mu\text{g}/\text{m}^3$)							
		Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels (Table SG-1)				Subslab/ Soil Gas Vapor Intrusion: Odor Nuisance Levels (Table SG-2)	Tier 1 ESL	Basis	Direct Exposure Human Health Risk Levels (Table IA-1)				Odor Nuisance Levels (Table IA-2)	Tier 1 ESL	Basis
		Residential		Commercial/ Industrial					Residential		Commercial/ Industrial				
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard				Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard			
Heptachlor	76-44-8	7.2E-02	--	3.1E-01	--	1.0E+04	7.2E-02	Canc-Risk	2.2E-03	--	9.4E-03	--	3.0E+02	2.2E-03	Canc-Risk
Heptachlor epoxide	1024-57-3	3.6E-02	--	1.6E-01	--	1.0E+04	3.6E-02	Canc-Risk	1.1E-03	--	4.7E-03	--	3.0E+02	1.1E-03	Canc-Risk
Hexachlorobenzene	118-74-1	1.8E-01	--	8.0E-01	--	--	1.8E-01	Canc-Risk	5.5E-03	--	2.4E-02	--	--	5.5E-03	Canc-Risk
Hexachlorobutadiene	87-68-3	4.3E+00	--	1.9E+01	--	4.0E+05	4.3E+00	Canc-Risk	1.3E-01	--	5.6E-01	--	1.2E+04	1.3E-01	Canc-Risk
g-Hexachlorocyclohexane (Lindane)	58-89-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	8.5E+00	1.0E+03	3.7E+01	4.4E+03	--	8.5E+00	Canc-Risk	2.6E-01	3.1E+01	1.1E+00	1.3E+02	--	2.6E-01	Canc-Risk
Indeno[1,2,3-c,d]pyrene [PAH]	193-39-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	7439-92-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury (elemental)	7439-97-6	--	1.0E+00	--	4.4E+00	--	1.0E+00	NC-Hazard	--	3.1E-02	--	1.3E-01	--	3.1E-02	NC-Hazard
Methoxychlor	72-43-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	75-09-2	3.4E+01	1.4E+04	4.1E+02	5.8E+04	1.9E+07	3.4E+01	Canc-Risk	1.0E+00	4.2E+02	1.2E+01	1.8E+03	5.6E+05	1.0E+00	Canc-Risk
Methyl ethyl ketone	78-93-3	--	1.7E+05	--	7.3E+05	1.1E+06	1.7E+05	NC-Hazard	--	5.2E+03	--	2.2E+04	3.2E+04	5.2E+03	NC-Hazard
Methyl isobutyl ketone	108-10-1	--	1.0E+05	--	4.4E+05	1.4E+04	1.4E+04	Odor/Nuis	--	3.1E+03	--	1.3E+04	4.2E+02	4.2E+02	Odor/Nuis
Methyl mercury	22967-92-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	--	--	--	--	2.3E+03	2.3E+03	Odor/Nuis	--	--	--	--	6.8E+01	6.8E+01	Odor/Nuis
Methyl tertiary butyl ether (MTBE)	1634-04-4	3.6E+02	1.0E+05	1.6E+03	4.4E+05	1.8E+04	3.6E+02	Canc-Risk	1.1E+01	3.1E+03	4.7E+01	1.3E+04	5.3E+02	1.1E+01	Canc-Risk
Molybdenum	7439-98-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene [PAH]	91-20-3	2.8E+00	1.0E+02	1.2E+01	4.4E+02	1.5E+04	2.8E+00	Canc-Risk	8.3E-02	3.1E+00	3.6E-01	1.3E+01	4.4E+02	8.3E-02	Canc-Risk
Nickel	7440-02-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perchlorate	7790-98-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum - Gasoline	--	--	2.0E+04	--	8.3E+04	3.3E+03	3.3E+03	Odor/Nuis	--	6.0E+02	--	2.5E+03	1.0E+02	1.0E+02	Odor/Nuis
Petroleum - Stoddard Solvent	--	--	1.1E+04	--	4.6E+04	3.3E+04	1.1E+04	NC-Hazard	--	3.3E+02	--	1.4E+03	1.0E+03	3.3E+02	NC-Hazard
Petroleum - Jet Fuel	--	--	1.1E+04	--	4.6E+04	3.3E+04	1.1E+04	NC-Hazard	--	3.3E+02	--	1.4E+03	1.0E+03	3.3E+02	NC-Hazard
Petroleum - Diesel	--	--	8.9E+03	--	3.7E+04	3.3E+04	8.9E+03	NC-Hazard	--	2.7E+02	--	1.1E+03	1.0E+03	2.7E+02	NC-Hazard
Petroleum - HOPs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum - Motor Oil	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene [PAH]	85-01-8	--	--	--	--	1.8E+03	1.8E+03	Odor/Nuis	--	--	--	--	5.5E+01	5.5E+01	Odor/Nuis
Phenol	108-95-2	--	--	--	--	5.2E+03	5.2E+03	Odor/Nuis	--	--	--	--	1.6E+02	1.6E+02	Odor/Nuis
Polychlorinated biphenyls (PCBs)	1336-36-3	1.6E-01	--	7.2E-01	--	--	1.6E-01	Canc-Risk	4.9E-03	--	2.2E-02	--	--	4.9E-03	Canc-Risk
Pyrene [PAH]	129-00-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	7440-22-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	100-42-5	--	3.1E+04	--	1.3E+05	4.5E+04	3.1E+04	NC-Hazard	--	9.4E+02	--	3.9E+03	1.4E+03	9.4E+02	NC-Hazard
tert-Butyl alcohol	75-65-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	630-20-6	1.3E+01	--	5.5E+01	--	--	1.3E+01	Canc-Risk	3.8E-01	--	1.7E+00	--	--	3.8E-01	Canc-Risk

January 2019		Summary of Vapor ESLs													
Chemicals	CAS No.	Subslab/ Soil Gas ($\mu\text{g}/\text{m}^3$)							Indoor Air ($\mu\text{g}/\text{m}^3$)						
		Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels (Table SG-1)				Subslab/ Soil Gas Vapor Intrusion: Odor Nuisance Levels (Table SG-2)	Tier 1 ESL	Basis	Direct Exposure Human Health Risk Levels (Table IA-1)				Odor Nuisance Levels (Table IA-2)	Tier 1 ESL	Basis
		Residential		Commercial/ Industrial					Residential		Commercial/ Industrial				
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard				Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard			
1,1,2,2-Tetrachloroethane	79-34-5	1.6E+00	--	7.0E+00	--	3.5E+05	1.6E+00	Canc-Risk	4.8E-02	--	2.1E-01	--	1.0E+04	4.8E-02	Canc-Risk
Tetrachloroethene	127-18-4	1.5E+01	1.4E+03	6.7E+01	5.8E+03	1.1E+06	1.5E+01	Canc-Risk	4.6E-01	4.2E+01	2.0E+00	1.8E+02	3.2E+04	4.6E-01	Canc-Risk
Thallium	7440-28-0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	--	1.0E+04	--	4.4E+04	1.0E+06	1.0E+04	NC-Hazard	--	3.1E+02	--	1.3E+03	3.0E+04	3.1E+02	NC-Hazard
Toxaphene	8001-35-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	--	7.0E+01	--	2.9E+02	7.3E+05	7.0E+01	NC-Hazard	--	2.1E+00	--	8.8E+00	2.2E+04	2.1E+00	NC-Hazard
1,1,1-Trichloroethane	71-55-6	--	3.5E+04	--	1.5E+05	2.2E+06	3.5E+04	NC-Hazard	--	1.0E+03	--	4.4E+03	6.5E+04	1.0E+03	NC-Hazard
1,1,2-Trichloroethane	79-00-5	5.8E+00	7.0E+00	2.6E+01	2.9E+01	--	5.8E+00	Canc-Risk	1.8E-01	2.1E-01	7.7E-01	8.8E-01	--	1.8E-01	Canc-Risk
Trichloroethene	79-01-6	1.6E+01	7.0E+01	1.0E+02	2.9E+02	4.5E+07	1.6E+01	Canc-Risk	4.8E-01	2.1E+00	3.0E+00	8.8E+00	1.4E+06	4.8E-01	Canc-Risk
2,4,5-Trichlorophenol	95-95-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	--	--	--	--	1.0E+01	1.0E+01	Odor/Nuis	--	--	--	--	3.0E-01	3.0E-01	Odor/Nuis
1,2,3-Trichloropropane	96-18-4	--	1.0E+01	--	4.4E+01	--	1.0E+01	NC-Hazard	--	3.1E-01	--	1.3E+00	--	3.1E-01	NC-Hazard
Vanadium	7440-62-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	3.2E-01	3.5E+03	5.2E+00	1.5E+04	2.6E+07	3.2E-01	Canc-Risk	9.5E-03	1.0E+02	1.6E-01	4.4E+02	7.7E+05	9.5E-03	Canc-Risk
Xylenes	1330-20-7	--	3.5E+03	--	1.5E+04	1.5E+04	3.5E+03	NC-Hazard	--	1.0E+02	--	4.4E+02	4.4E+02	1.0E+02	NC-Hazard
Zinc	7440-66-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Abbreviations:
Canc-Risk - Cancer
DDD - Dichlorodiphenyldichloroethane
DDE - Dichlorodiphenyldichloroethene
DDT - Dichlorodiphenyltrichloroethane
HOPs - Hydrocarbon Oxidation Products (biodegradation metabolites and photo-oxidation products of petroleum hydrocarbons). See User's Guide Chapter 4 for further information.
NC - Noncancer
Odor/Nuis - Odor Nuisance
PAH - Polycyclic aromatic hydrocarbon
TCDD - Tetrachlorodibenzodioxin

January 2019	Short-Term Action Levels for Trichloroethene (TCE)						
Land Use	Groundwater Trigger Level (µg/L)	Subslab/ Soil Gas Trigger Level (µg/m ³)	Trigger Level Response Action	Indoor Air Accelerated Response Level (µg/m ³)	Accelerated Response Action	Indoor Air Urgent Response Level (µg/m ³)	Urgent Response Action
Residential	5.0E+00	6.7E+01	Expedite Indoor Air Sampling	2.0E+00	Mitigation* within Weeks	6.0E+00	Mitigation* within Days
Commercial	2.0E+01	2.7E+02		8.0E+00		2.4E+01	
<p>Notes:</p> <p>User's Guide Chapter 6 presents the basis for the short-term action levels for TCE in groundwater, soil gas, and indoor air.</p> <p>Also see the USEPA Region 9 Memorandum Response Action Levels and Recommendations to Address Near-Term Inhalation Exposures to TCE in Air from Subsurface Vapor Intrusion (USEPA 2014d).</p> <p>*Mitigation - Responses include but are not limited to the following:</p> <ul style="list-style-type: none"> - Residential: prompt mitigation such as increasing ventilation, sealing potential conduits, or treating indoor air - Commercial: prompt mitigation such as increasing use of HVAC (e.g., increasing outdoor air intake, increasing building pressurization), sealing potential conduits, or treating indoor air 							