

Table 3

Groundwater Standards and Risked-Based Screening Levels (RBSLs)

Table applies to groundwater and consists of current DEQ-7 Human Health Standards, where available. For compounds without DEQ-7 standards, the risk-based screening levels (RBSLs) have been developed using EPA's RSL equations and information found in Appendix D. For EPH compounds, a total extractable hydrocarbon (TEH) concentration of 1,000 µg/L is used to determine if fractionation is needed. For surface water, see Appendix D.

Chemical / Analyte / Compound	Effects - carcinogenicity	Basis	Groundwater Standard or RBSL, µg/L
For Gasoline and Light Hydrocarbons measured using the Massachusetts Method for Volatile Petroleum Hydrocarbons (VPH)			
MTBE	n	DEQ-7	30
Benzene	c	DEQ-7	5
Toluene	n	DEQ-7	1,000
Ethylbenzene	n	DEQ-7	700
Xylenes	n	DEQ-7	10,000
Naphthalene	c	DEQ-7	100
C9-C10 Aromatics	n	rbsl	980
C5-C8 Aliphatics	n	rbsl	700
C9-C12 Aliphatics	n	rbsl	3,000
Lead Scavengers			
1,2-Dichloroethane (DCA)	c	DEQ-7	4
Ethylene dibromide (EDB)	c	DEQ-7	0.017
For Diesel and Heavy Hydrocarbons measured using the Massachusetts Method for Extractable Petroleum Hydrocarbons (EPH)			
EPH / TEH Screen fractionation required ^(a)			1,000
C9-C18 Aliphatics	n	rbsl	3,000
C19-C36 Aliphatics	n	rbsl/bu	100,000/bu
C11-C22 Aromatics	n	rbsl	1,100
Acenaphthene	n	DEQ-7	70
Anthracene	n	DEQ-7	2,100
Benz(a)anthracene	c	DEQ-7	0.5
Benzo(a)pyrene	c	DEQ-7	0.05*
Benzo(b)fluoranthene	c	DEQ-7	0.5
Benzo(k)fluoranthene	c	DEQ-7	5
Chrysene	c	DEQ-7	50
Dibenzo(a,h)anthracene	c	DEQ-7	0.05*
Fluoranthene	n	DEQ-7	20
Fluorene	n	DEQ-7	50
Indeno(1,2,3-cd)pyrene	c	DEQ-7	0.5
Naphthalene	c	DEQ-7	100
Pyrene	n	DEQ-7	20
1-Methylnaphthalene	c	rsl	11
2-Methylnaphthalene	n	rsl	36

Notes: (a) = An exceedance of the 1,000 µg/l EPH/TEH screen value indicates only that fractionation is required. If none of the fractions exceed, EPH/TEH does not need to be identified as a Contaminant of Potential Concern exceeding RBSLs.
µg/L = micrograms per liter

Effect: n = non-carcinogenic RBSLs and DEQ-7 standards are based on a hazard quotient of 1.

c = carcinogenic DEQ-7 standards are based on a cancer risk 1×10^{-5} .

bu = beneficial use ceiling - if taste/odor or any other parameters that render a water harmful, detrimental or injurious to the beneficial uses for that water are violated, the site cannot be closed

Basis: rbsl = MT DEQ Petroleum Tank Cleanup program groundwater risk-based screening level;

rsl = Regional Screening Level from US EPA, May 2023

DEQ-7 = Human Health Groundwater Standard (refer to DEQ's most recent Circular DEQ-7 Montana Numeric Water Quality Standards);

* = The best achievable practical quantitation limit (0.1 µg/L) may be greater than the DEQ-7 human health standard; therefore, if the compound is detected, additional evaluation may be necessary.