

Maximum Contaminant Level's in EPA's Preliminary Remediation Goal and Dose Compliance Concentration Calculators

Revised: December 2016

The table below presents the MCLs used in the PRG and DCC calculators' soil to groundwater scenario. A reference for the MCLs, used in the PRG and DCC calculators, is also presented. In general the EPA 815-R-02-001 and Directive no. 9283.1-14 are the main sources for the MCLs. Directive no. 9283.1-14 gives credence for how Uranium standards were determined by converting from ug/L to pCi/L using specific activity taken from ICRP 107.

ELEMENT	MCL	MCL_UNITS	REFERENCE
Ac-225	15	pCi/L	Directive no. 9283.1-14
Ac-227	15	pCi/L	Directive no. 9283.1-14
Ag-105	300	pCi/L	EPA 815-R-02-001
Ag-110m	90	pCi/L	EPA 815-R-02-001
Ag-111	100	pCi/L	EPA 815-R-02-001
Am-241	15	pCi/L	Directive no. 9283.1-14
Am-243	15	pCi/L	Directive no. 9283.1-14
As-73	1000	pCi/L	EPA 815-R-02-001
As-74	100	pCi/L	EPA 815-R-02-001
As-76	60	pCi/L	EPA 815-R-02-001
As-77	200	pCi/L	EPA 815-R-02-001
At-217	15	pCi/L	Directive no. 9283.1-14
At-218	15	pCi/L	Directive no. 9283.1-14
Au-196	600	pCi/L	EPA 815-R-02-001
Au-198	100	pCi/L	EPA 815-R-02-001
Au-199	600	pCi/L	EPA 815-R-02-001
Ba-131	600	pCi/L	EPA 815-R-02-001
Ba-140	90	pCi/L	EPA 815-R-02-001
Be-7	6000	pCi/L	EPA 815-R-02-001
Bi-206	100	pCi/L	EPA 815-R-02-001
Bi-207	200	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Bi-210	15	pCi/L	Directive no. 9283.1-14
Bi-211	15	pCi/L	Directive no. 9283.1-14
Bi-212	15	pCi/L	Directive no. 9283.1-14
Bi-213	15	pCi/L	Directive no. 9283.1-14
Bi-214	15	pCi/L	Directive no. 9283.1-14
Bk-248	15	pCi/L	Directive no. 9283.1-14
Bk-249	2000	pCi/L	EPA 815-R-02-001
Br-82	100	pCi/L	EPA 815-R-02-001
C-14	2000	pCi/L	EPA 815-R-02-001
Ca-45	10	pCi/L	EPA 815-R-02-001
Ca-47	80	pCi/L	EPA 815-R-02-001
Cd-109	600	pCi/L	EPA 815-R-02-001
Cd-115	90	pCi/L	EPA 815-R-02-001
Cd-115m	90	pCi/L	EPA 815-R-02-001
Ce-141	300	pCi/L	EPA 815-R-02-001
Ce-143	100	pCi/L	EPA 815-R-02-001
Ce-144	30	pCi/L	EPA 815-R-02-001
Cf-250	15	pCi/L	Directive no. 9283.1-14
Cl-36	700	pCi/L	EPA 815-R-02-001
Cl-38	1000	pCi/L	EPA 815-R-02-001
Cm-242	15	pCi/L	Directive no. 9283.1-14
Cm-243	15	pCi/L	EPA/540-R-00-007
Cm-244	15	pCi/L	Directive no. 9283.1-14
Cm-245	15	pCi/L	Directive no. 9283.1-14
Cm-248	15	pCi/L	Directive no. 9283.1-14
Co-57	1000	pCi/L	EPA 815-R-02-001
Co-58	300	pCi/L	EPA 815-R-02-001
Co-58m	9000	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Co-60	100	pCi/L	EPA 815-R-02-001
Cr-51	6000	pCi/L	EPA 815-R-02-001
Cs-131	20000	pCi/L	EPA 815-R-02-001
Cs-134	80	pCi/L	EPA 815-R-02-001
Cs-134m	20000	pCi/L	EPA 815-R-02-001
Cs-135	900	pCi/L	EPA 815-R-02-001
Cs-136	800	pCi/L	EPA 815-R-02-001
Cs-137	200	pCi/L	EPA 815-R-02-001
Cu-64	900	pCi/L	EPA 815-R-02-001
Dy-165	1000	pCi/L	EPA 815-R-02-001
Dy-166	100	pCi/L	EPA 815-R-02-001
Er-169	300	pCi/L	EPA 815-R-02-001
Er-171	300	pCi/L	EPA 815-R-02-001
Eu-152	200	pCi/L	EPA 815-R-02-001
Eu-154	60	pCi/L	EPA 815-R-02-001
Eu-155	600	pCi/L	EPA 815-R-02-001
F-18	2000	pCi/L	EPA 815-R-02-001
Fe-55	2000	pCi/L	EPA 815-R-02-001
Fe-59	200	pCi/L	EPA 815-R-02-001
Fr-221	15	pCi/L	Directive no. 9283.1-14
Fr-223	15	pCi/L	Directive no. 9283.1-14
Ga-72	100	pCi/L	EPA 815-R-02-001
Gd-153	600	pCi/L	EPA 815-R-02-001
Gd-159	200	pCi/L	EPA 815-R-02-001
Ge-71	6000	pCi/L	EPA 815-R-02-001
H-3	20000	pCi/L	EPA 815-R-02-001
Hf-181	200	pCi/L	EPA 815-R-02-001
Hg-197	900	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Hg-197m	600	pCi/L	EPA 815-R-02-001
Hg-203	60	pCi/L	EPA 815-R-02-001
Ho-166	90	pCi/L	EPA 815-R-02-001
I-126	3	pCi/L	EPA 815-R-02-001
I-129	1	pCi/L	EPA 815-R-02-001
I-131	3	pCi/L	EPA 815-R-02-001
I-132	90	pCi/L	EPA 815-R-02-001
I-133	10	pCi/L	EPA 815-R-02-001
I-134	100	pCi/L	EPA 815-R-02-001
I-135	30	pCi/L	EPA 815-R-02-001
In-113m	3000	pCi/L	EPA 815-R-02-001
In-114m	60	pCi/L	EPA 815-R-02-001
In-115	300	pCi/L	EPA 815-R-02-001
In-115m	1000	pCi/L	EPA 815-R-02-001
Ir-190	600	pCi/L	EPA 815-R-02-001
Ir-192	100	pCi/L	EPA 815-R-02-001
Ir-194	90	pCi/L	EPA 815-R-02-001
K-42	900	pCi/L	EPA 815-R-02-001
La-140	60	pCi/L	EPA 815-R-02-001
Lu-177	300	pCi/L	EPA 815-R-02-001
Mn-52	90	pCi/L	EPA 815-R-02-001
Mn-54	300	pCi/L	EPA 815-R-02-001
Mn-56	300	pCi/L	EPA 815-R-02-001
Mo-99	600	pCi/L	EPA 815-R-02-001
Na-22	400	pCi/L	EPA 815-R-02-001
Na-24	600	pCi/L	EPA 815-R-02-001
Nb-93m	1000	pCi/L	EPA 815-R-02-001
Nb-95	300	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Nb-97	3000	pCi/L	EPA 815-R-02-001
Nd-144	15	pCi/L	Directive no. 9283.1-14
Nd-147	200	pCi/L	EPA 815-R-02-001
Nd-149	900	pCi/L	EPA 815-R-02-001
Ni-59	300	pCi/L	EPA 815-R-02-001
Ni-63	50	pCi/L	EPA 815-R-02-001
Ni-65	300	pCi/L	EPA 815-R-02-001
Np-237	15	pCi/L	Directive no. 9283.1-14
Np-239	300	pCi/L	EPA 815-R-02-001
Os-185	200	pCi/L	EPA 815-R-02-001
Os-191	600	pCi/L	EPA 815-R-02-001
Os-191m	9000	pCi/L	EPA 815-R-02-001
Os-193	200	pCi/L	EPA 815-R-02-001
P-32	30	pCi/L	EPA 815-R-02-001
Pa-230	600	pCi/L	EPA 815-R-02-001
Pa-231	15	pCi/L	Directive no. 9283.1-14
Pa-233	300	pCi/L	EPA 815-R-02-001
Pb-203	1000	pCi/L	EPA 815-R-02-001
Pd-103	900	pCi/L	EPA 815-R-02-001
Pd-109	300	pCi/L	EPA 815-R-02-001
Pm-147	600	pCi/L	EPA 815-R-02-001
Pm-149	100	pCi/L	EPA 815-R-02-001
Po-208	15	pCi/L	Directive no. 9283.1-14
Po-210	15	pCi/L	Directive no. 9283.1-14
Po-212	15	pCi/L	Directive no. 9283.1-14
Po-213	15	pCi/L	Directive no. 9283.1-14
Po-214	15	pCi/L	Directive no. 9283.1-14
Po-215	15	pCi/L	Directive no. 9283.1-14

ELEMENT	MCL	MCL_UNITS	REFERENCE
Po-216	15	pCi/L	Directive no. 9283.1-14
Po-218	15	pCi/L	Directive no. 9283.1-14
Pr-142	90	pCi/L	EPA 815-R-02-001
Pr-143	100	pCi/L	EPA 815-R-02-001
Pt-191	300	pCi/L	EPA 815-R-02-001
Pt-193	3000	pCi/L	EPA 815-R-02-001
Pt-193m	3000	pCi/L	EPA 815-R-02-001
Pt-197	300	pCi/L	EPA 815-R-02-001
Pt-197m	3000	pCi/L	EPA 815-R-02-001
Pu-236	15	pCi/L	Directive no. 9283.1-14
Pu-238	15	pCi/L	Directive no. 9283.1-14
Pu-239	15	pCi/L	Directive no. 9283.1-14
Pu-240	15	pCi/L	Directive no. 9283.1-14
Pu-241	300	pCi/L	EPA 815-R-02-001
Pu-242	15	pCi/L	Directive no. 9283.1-14
Pu-244	15	pCi/L	EPA/540-R-00-007
Ra-219	15	pCi/L	Directive no. 9283.1-14
Ra-223	15	pCi/L	Directive no. 9283.1-14
Ra-224	15	pCi/L	Directive no. 9283.1-14
Ra-226	5	pCi/L	Directive no. 9283.1-14
Ra-228	5	pCi/L	Directive no. 9283.1-14
Rb-86	600	pCi/L	EPA 815-R-02-001
Rb-87	300	pCi/L	EPA 815-R-02-001
Re-186	300	pCi/L	EPA 815-R-02-001
Re-187	9000	pCi/L	EPA 815-R-02-001
Re-188	200	pCi/L	EPA 815-R-02-001
Rh-103m	30000	pCi/L	EPA 815-R-02-001
Rh-105	300	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Ru-103	200	pCi/L	EPA 815-R-02-001
Ru-105	200	pCi/L	EPA 815-R-02-001
Ru-106	30	pCi/L	EPA 815-R-02-001
Ru-97	1000	pCi/L	EPA 815-R-02-001
S-35 inorg	500	pCi/L	EPA 815-R-02-001
Sb-122	90	pCi/L	EPA 815-R-02-001
Sb-124	60	pCi/L	EPA 815-R-02-001
Sb-125	300	pCi/L	EPA 815-R-02-001
Sc-46	100	pCi/L	EPA 815-R-02-001
Sc-47	300	pCi/L	EPA 815-R-02-001
Sc-48	80	pCi/L	EPA 815-R-02-001
Se-75	900	pCi/L	EPA 815-R-02-001
Si-31	3000	pCi/L	EPA 815-R-02-001
Sm-147	15	pCi/L	Directive no. 9283.1-14
Sm-148	15	pCi/L	Directive no. 9283.1-14
Sm-151	1000	pCi/L	EPA 815-R-02-001
Sm-153	200	pCi/L	EPA 815-R-02-001
Sn-113	300	pCi/L	EPA 815-R-02-001
Sn-125	60	pCi/L	EPA 815-R-02-001
Sr-85	900	pCi/L	EPA 815-R-02-001
Sr-85 m	20000	pCi/L	EPA 815-R-02-001
Sr-89	20	pCi/L	EPA 815-R-02-001
Sr-90	8	pCi/L	EPA 815-R-02-001
Sr-91	200	pCi/L	EPA 815-R-02-001
Sr-92	200	pCi/L	EPA 815-R-02-001
Ta-182	100	pCi/L	EPA 815-R-02-001
Tb-160	100	pCi/L	EPA 815-R-02-001
Tc-96	300	pCi/L	EPA 815-R-02-001

ELEMENT	MCL	MCL_UNITS	REFERENCE
Tc-96m	30000	pCi/L	EPA 815-R-02-001
Tc-97	6000	pCi/L	EPA 815-R-02-001
Tc-97m	1000	pCi/L	EPA 815-R-02-001
Tc-99	900	pCi/L	EPA 815-R-02-001
Tc-99m	20000	pCi/L	EPA 815-R-02-001
Te-125m	600	pCi/L	EPA 815-R-02-001
Te-127	900	pCi/L	EPA 815-R-02-001
Te-127m	200	pCi/L	EPA 815-R-02-001
Te-129	2000	pCi/L	EPA 815-R-02-001
Te-129m	90	pCi/L	EPA 815-R-02-001
Te-131m	200	pCi/L	EPA 815-R-02-001
Te-132	90	pCi/L	EPA 815-R-02-001
Th-228	15	pCi/L	Directive no. 9283.1-14
Th-229	15	pCi/L	Directive no. 9283.1-14
Th-230	15	pCi/L	Directive no. 9283.1-14
Th-232	15	pCi/L	Directive no. 9283.1-14
Tl-200	1000	pCi/L	EPA 815-R-02-001
Tl-201	900	pCi/L	EPA 815-R-02-001
Tl-202	300	pCi/L	EPA 815-R-02-001
Tl-204	300	pCi/L	EPA 815-R-02-001
Tm-170	100	pCi/L	EPA 815-R-02-001
Tm-171	1000	pCi/L	EPA 815-R-02-001
U-230	8.17457E+11	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-231	4.03083E+12	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-232	641420361.2	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-233	289207.9174	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-234	186887.942	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-235	64.76236529	pCi/L	Directive no. 9283.1-14 and ICRP 107

ELEMENT	MCL	MCL_UNITS	REFERENCE
U-236	1940.150245	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-237	2.44458E+12	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-238	10.07114255	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-239	1.00266E+15	pCi/L	Directive no. 9283.1-14 and ICRP 107
U-240	2.77356E+13	pCi/L	Directive no. 9283.1-14 and ICRP 107
V-48	90	pCi/L	EPA 815-R-02-001
W-181	1000	pCi/L	EPA 815-R-02-001
W-185	300	pCi/L	EPA 815-R-02-001
W-187	200	pCi/L	EPA 815-R-02-001
Y-90	60	pCi/L	EPA 815-R-02-001
Y-91	90	pCi/L	EPA 815-R-02-001
Y-91m	9000	pCi/L	EPA 815-R-02-001
Y-92	200	pCi/L	EPA 815-R-02-001
Y-93	90	pCi/L	EPA 815-R-02-001
Yb-175	300	pCi/L	EPA 815-R-02-001
Zn-65	300	pCi/L	EPA 815-R-02-001
Zn-69	6000	pCi/L	EPA 815-R-02-001
Zn-69m	200	pCi/L	EPA 815-R-02-001
Zr-93	2000	pCi/L	EPA 815-R-02-001
Zr-95	200	pCi/L	EPA 815-R-02-001
Zr-97	60	pCi/L	EPA 815-R-02-001

References:

ICRP, 2008. Nuclear Decay Data for Dosimetric Calculations. [ICRP Publication 107](#). Ann. ICRP 38 (3).

U.S. EPA 2000. Soil Screening Guidance for Radionuclides: User's Guide. Office of Solid Waste and Emergency Response, Washington, DC.
[EPA/540-R-00-007](#)

U.S. EPA 2001. [Directive no. 9283.1-14](#). Office of Emergency and Remedial Response, Office of Solid Waste and Emergency Response, Office of Radiation and Indoor Air, Office of Air and Radiation; Washington, DC.

U.S. EPA 2002. Radionuclides in Drinking Water: A Small Entity Compliance Guide. Office of Ground Water and Drinking Water, Washington, DC.
[EPA 815-R-02-001](#)