Table A-1. RAO-Based Soil Concentrations.

Constituent	Half-Life	Organic Carbon Partition Coefficient	Waste Soils K_d	Clean Alluvium K_d	Clay Materials K_d	Interbeds Materials K_d	Vadose Zone Basalt K_d	Vadose Zone Weighted Average K_d	Carcinogenic 10^{-4} Preliminary RBC	Non-carcinogenic HI=1 Preliminary RBC	MCL
	(yr)	(mL/g)	(mL/g)					(mL/g)	pCi/L or mg/L	mg/L	pCi/L or mg/L
La-138	1.35E+11	NA	1200	1200	1200	1200	0	316.800	8.90E+00	NA	NA
La-140	4.60E-03	NA	1200	1200	1200	1200	0	316.800	2.86E+00	NA	60
Mn-54	8.58E-01	NA	50	50	180	50	0	13.980	1.38E+01	NA	300
Nb-92	3.70E+07	NA	100	100	900	100	0	31.200	NA	NA	NA
Nb-93m	1.36E+01	NA	100	100	900	100	0	31.200	3.91E+01	NA	1000
Nb-94	2.03E+04	NA	100	100	900	100	0	31.200	4.04E+00	NA	NA
Nb-95	9.64E-02	NA	100	100	900	100	0	31.200	1.28E+01	NA	300
Nb-95m	9.89E-03	NA	100	100	900	100	0	31.200	8.59E+00	NA	NA
Nd-144	2.10E+15	NA	240	240	240	240	0	63.360	NA	NA	15
Nd-147	3.01E-02	NA	240	240	240	240	0	63.360	4.52E+00	NA	NA
Np-235	1.08E+00	NA	8	8	55	8	0	2.394	9.08E+01	NA	15
Np-236	1.15E+05	NA	8	8	55	8	0	2.394	2.99E+00	NA	NA
Np-237	2.14E+06	NA	8	8	55	8	0	2.394	5.09E-01	NA	15
Np-238	5.81E-03	NA	8	8	55	8	0	2.394	5.82E+00	NA	NA
Np-239	6.47E-03	NA	8	8	55	8	0	2.394	6.11E+00	NA	NA
Np-240	1.24E-04	NA	8	8	55	8	0	2.394	1.41E+02	NA	NA
Np-240m	1.41E-05	NA	8	8	55	8	0	2.394	NA	NA	NA
Pa-231	3.28E+04	NA	550	550	2700	550	0	158.100	1.82E-01	NA	15
Pa-233	7.40E-02	NA	550	550	2700	550	0	158.100	5.66E+00	NA	300
Pa-234	7.65E-04	NA	550	550	2700	550	0	158.100	1.23E+01	NA	NA
Pa-234m	2.23E-06	NA	550	550	2700	550	0	158.100	NA	NA	NA
Pb-209	3.71E-04	NA	100	100	710	100	0	30.060	1.31E+02	NA	NA
Pb-210	2.23E+01	NA	100	100	710	100	0	30.060	3.57E-02	NA	NA
Pb-211	6.87E-05	NA	100	100	710	100	0	30.060	7.66E+01	NA	NA
Pb-212	1.21E-03	NA	100	100	710	100	0	30.060	1.26E+00	NA	NA
Pb-214	5.10E-05	NA	100	100	710	100	0	30.060	9.15E+01	NA	NA
Pd-107	6.50E+06	NA	55	55	270	55	0	15.810	1.26E+02	NA	NA
Pm-146	5.53E+00	NA	240	240	240	240	0	63.360	7.52E+00	NA	NA
Pm-147	2.62E+00	NA	240	240	240	240	0	63.360	1.86E+01	NA	NA
Pm-148	1.47E-02	NA	240	240	240	240	0	63.360	1.83E+00	NA	NA
Pm-148m	1.13E-01	NA	240	240	240	240	0	63.360	3.93E+00	NA	NA
Po-210	3.78E-01	NA	150	150	3000	150	0	56.700	8.34E-02	NA	15
Po-211	1.64E-08	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-212	9.67E-15	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-213	1.33E-13	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-214	5.20E-12	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-215	5.64E-11	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-216	4.76E-09	NA	150	150	3000	150	0	56.700	NA	NA	15
Po-218	5.80E-06	NA	150	150	3000	150	0	56.700	NA	NA	15

Table A-1. RAO-Based Soil Concentrations.

Constituent	Design Inventory	Arrival Time of Peak Concentration	Simulated Long Term Groundwater Contaminant Peak Concentration (Dilution/ Attenuation Factor)	Carcinogenic RBC based Waste Soil Concentration	Non-carcinogenic RBC-based Waste Soil Concentration	MCL-based Waste Soil Concentration	Carcinogenic RBC based Waste Soil Concentration	Count Number of Carcinogenic Constituents	DI/Carcinogenic RBC-based Waste Soil Conc.	Fractional Carcinogenic Risk at Preliminary RBC	Available Carcinogenic Risk to be Added (Redistributed) to Preliminary Risk
	Ci/kg or mg/kg	years	kg/L	pCi/kg or mg/kg	mg/kg	pCi/kg or mg/kg	Ci/kg or mg/kg		Ratio		
La-138	0.00E+00	1.00E+06	3.18E-15	2.80E+15	NA	NA	2.80E+03	1	0.00E+00	5.00E-07	7.47E-08
La-140	2.65E-114	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Mn-54	1.93E-17	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Nb-92	6.35E-28	1.00E+06	3.58E-07	NA	NA	NA	NA		NA	NA	NA
Nb-93m	1.35E-11	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Nb-94	8.83E-15	1.80E+05	1.47E-12	2.75E+12	NA	NA	2.75E+00	1	3.21E-15	5.00E-07	7.47E-08
Nb-95	4.80E-42	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Nb-95m	1.84E-44	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Nd-144	3.27E-19	1.00E+06	3.64E-07	NA	NA	4.12E+07	NA		NA	NA	NA
Nd-147	0.00E+00	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Np-235	6.80E-20	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Np-236	6.93E-17	3.80E+05	4.41E-07	6.78E+06	NA	NA	6.78E-06	1	1.02E-11	5.00E-07	7.47E-08
Np-237	6.43E-10	1.00E+06	1.27E-05	3.99E+04	NA	1.18E+06	3.99E-08	1	1.61E-02	5.00E-07	7.47E-08
Np-238	2.18E-16	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Np-239	3.34E-13	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Np-240	2.79E-23	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Np-240m	2.54E-20	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Pa-231	6.98E-14	3.80E+05	5.18E-22	3.51E+20	NA	2.89E+22	3.51E+08	1	1.99E-22	5.00E-07	7.47E-08
Pa-233	4.36E-11	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Pa-234	2.74E-15	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pa-234m	1.71E-12	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Pb-209	4.85E-17	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pb-210	1.09E-15	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pb-211	1.83E-14	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pb-212	5.53E-13	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pb-214	5.62E-15	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pd-107	6.12E-12	1.00E+06	1.19E-06	1.06E+08	NA	NA	1.06E-04	1	5.78E-08	5.00E-07	7.47E-08
Pm-146	5.81E-12	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pm-147	3.82E-07	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pm-148	3.97E-68	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pm-148m	8.23E-67	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Po-210	1.02E-15	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Po-211	6.84E-19	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-212	3.28E-13	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-213	4.34E-17	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-214	5.62E-15	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-215	1.83E-14	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-216	5.53E-13	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Po-218	5.62E-15	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Adjusted Fractional Carcinogenic Risk	Adjusted Carcinogenic RBC based Waste Soil Concentration	Carcinogenic Risk at Design Inventory	Is the Adjusted Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, "No Limit"	Count Number of Non-carcinogenic Constituents	DI/Non-carcinogenic RBC-based Waste Soil Conc.	Non-Carcinogenic Hazard Index at Preliminary RBC	Available Non-carcinogenic Fractional Hazard Index to be Added (Redistributed) to Preliminary Hazard Index	Adjusted Non-carcinogenic Fractional Hazard Index	Adjusted Non-Carcinogenic RBC based Waste Soil Concentration
		Ci/kg or mg/kg				Ratio				mg/kg
La-138	5.75E-07	3.22E+03	0.00E+00	No Limit		NA	NA	NA	NA	NA
La-140	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Mn-54	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Nb-92	NA	NA	NA	NA		NA	NA	NA	NA	NA
Nb-93m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Nb-94	5.75E-07	3.16E+00	3.21E-19	3.16E+00		NA	NA	NA	NA	NA
Nb-95	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Nb-95m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Nd-144	NA	NA	NA	NA		NA	NA	NA	NA	NA
Nd-147	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Np-235	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Np-236	5.75E-07	7.79E-06	1.02E-15	7.79E-06		NA	NA	NA	NA	NA
Np-237	5.75E-07	4.59E-08	1.61E-06	4.59E-08		NA	NA	NA	NA	NA
Np-238	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Np-239	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Np-240	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Np-240m	NA	NA	NA	NA		NA	NA	NA	NA	NA
Pa-231	5.75E-07	4.03E+08	1.99E-26	No Limit		NA	NA	NA	NA	NA
Pa-233	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pa-234	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pa-234m	NA	NA	NA	NA		NA	NA	NA	NA	NA
Pb-209	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pb-210	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pb-211	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pb-212	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pb-214	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pd-107	5.75E-07	1.22E-04	5.78E-12	1.22E-04		NA	NA	NA	NA	NA
Pm-146	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pm-147	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pm-148	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pm-148m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Po-210	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Po-211	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-212	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-213	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-214	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-215	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-216	NA	NA	NA	NA		NA	NA	NA	NA	NA
Po-218	NA	NA	NA	NA		NA	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Non-carcinogenic HI at DI	Is the Adjusted Non-Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, then "No Limit"	MCL-based Waste Soil Concentration	Is the MCL-based Waste Soil Concentration greater than unity? If so, then "No Limit"
			Ci/kg or mg/kg	
La-138	NA	NA	NA	NA
La-140	NA	NA	No Limit	No Limit
Mn-54	NA	NA	No Limit	No Limit
Nb-92	NA	NA	NA	NA
Nb-93m	NA	NA	No Limit	No Limit
Nb-94	NA	NA	NA	NA
Nb-95	NA	NA	No Limit	No Limit
Nb-95m	NA	NA	NA	NA
Nd-144	NA	NA	4.12E-05	No Limit
Nd-147	NA	NA	NA	NA
Np-235	NA	NA	No Limit	No Limit
Np-236	NA	NA	NA	NA
Np-237	NA	NA	1.18E-06	1.18E-06
Np-238	NA	NA	NA	NA
Np-239	NA	NA	NA	NA
Np-240	NA	NA	NA	NA
Np-240m	NA	NA	NA	NA
Pa-231	NA	NA	2.89E+10	No Limit
Pa-233	NA	NA	No Limit	No Limit
Pa-234	NA	NA	NA	NA
Pa-234m	NA	NA	NA	NA
Pb-209	NA	NA	NA	NA
Pb-210	NA	NA	NA	NA
Pb-211	NA	NA	NA	NA
Pb-212	NA	NA	NA	NA
Pb-214	NA	NA	NA	NA
Pd-107	NA	NA	NA	NA
Pm-146	NA	NA	NA	NA
Pm-147	NA	NA	NA	NA
Pm-148	NA	NA	NA	NA
Pm-148m	NA	NA	NA	NA
Po-210	NA	NA	No Limit	No Limit
Po-211	NA	NA	No Limit	No Limit
Po-212	NA	NA	No Limit	No Limit
Po-213	NA	NA	No Limit	No Limit
Po-214	NA	NA	No Limit	No Limit
Po-215	NA	NA	No Limit	No Limit
Po-216	NA	NA	No Limit	No Limit
Po-218	NA	NA	No Limit	No Limit

Table A-1. RAO-Based Soil Concentrations.

Constituent	Half-Life	Organic Carbon Partition Coefficient	Waste Soils K_d	Clean Alluvium K_d	Clay Materials K_d	Interbeds Materials K_d	Vadose Zone Basalt K_d	Vadose Zone Weighted Average K_d	Carcinogenic 10^{-4} Preliminary RBC	Non-carcinogenic HI=1 Preliminary RBC	MCL
	(yr)	(mL/g)	(mL/g)					(mL/g)	pCi/L or mg/L	mg/L	pCi/L or mg/L
Pr-143	3.73E-02	NA	240	240	240	240	0	63.360	3.97E+00	NA	100
Pr-144	3.29E-05	NA	240	240	240	240	0	63.360	3.88E+02	NA	NA
Pr-144m	1.37E-05	NA	240	240	240	240	0	63.360	NA	NA	NA
Pu-236	2.85E+00	NA	140	140	1700	22	0	27.204	4.21E-01	NA	15
Pu-237	1.24E-01	NA	140	140	1700	22	0	27.204	5.45E+01	NA	15
Pu-238	8.77E+01	NA	140	140	1700	22	0	27.204	2.40E-01	NA	15
Pu-239	2.41E+04	NA	140	140	1700	22	0	27.204	2.33E-01	NA	15
Pu-240	6.54E+03	NA	140	140	1700	22	0	27.204	2.33E-01	NA	15
Pu-241	1.44E+01	NA	140	140	1700	22	0	27.204	1.79E+01	NA	NA
Pu-242	3.76E+05	NA	140	140	1700	22	0	27.204	2.46E-01	NA	15
Pu-243	5.66E-04	NA	140	140	1700	22	0	27.204	6.63E+01	NA	NA
Pu-244	8.26E+07	NA	140	140	1700	22	0	27.204	2.29E-01	NA	15
Pu-246	2.99E-02	NA	140	140	1700	22	0	27.204	1.82E+00	NA	NA
Ra-222	1.20E-06	NA	100	100	9100	100	0	80.400	NA	NA	15
Ra-223	3.12E-02	NA	100	100	9100	100	0	80.400	1.32E-01	NA	15
Ra-224	1.00E-02	NA	100	100	9100	100	0	80.400	1.88E-01	NA	15
Ra-225	4.05E-02	NA	100	100	9100	100	0	80.400	2.76E-01	NA	NA
Ra-226	1.60E+03	NA	100	100	9100	100	0	80.400	8.16E-02	NA	15
Ra-228	5.75E+00	NA	100	100	9100	100	0	80.400	3.02E-02	NA	NA
Rb-86	5.12E-02	NA	55	55	270	55	0	15.810	3.18E+00	NA	600
Rb-87	4.70E+10	NA	55	55	270	55	0	15.810	6.02E+00	NA	300
Rh-102	2.90E+00	NA	52	52	52	52	0	13.728	4.08E+00	NA	NA
Rh-103m	1.07E-04	NA	52	52	52	52	0	13.728	3.34E+03	NA	NA
Rh-106	9.48E-07	NA	52	52	52	52	0	13.728	NA	NA	NA
Ru-103	1.08E-01	NA	55	55	800	55	0	18.990	8.16E+00	NA	200
Ru-106	1.01E+00	NA	55	55	800	55	0	18.990	7.45E-01	NA	30
Sb-124	1.65E-01	NA	50	50	250	50	0	14.400	2.44E+00	NA	60
Sb-125	2.77E+00	NA	50	50	250	50	0	14.400	7.19E+00	NA	300
Sb-126	3.40E-02	NA	50	50	250	50	0	14.400	2.83E+00	NA	NA
Sb-126m	3.61E-05	NA	50	50	250	50	0	14.400	4.72E+02	NA	NA
Sc-46	2.30E-01	NA	310	310	310	310	0	81.840	5.05E+00	NA	100
Se-79	6.50E+04	NA	4	4	740	4	0	5.472	4.31E+00	NA	NA
Sm-146	1.03E+08	NA	240	240	1300	240	0	69.720	7.65E-01	NA	15
Sm-147	1.06E+11	NA	240	240	1300	240	0	69.720	8.40E-01	NA	15
Sm-148	7.00E+15	NA	240	240	1300	240	0	69.720	NA	NA	15
Sm-149	1.00E+16	NA	240	240	1300	240	0	69.720	NA	NA	15
Sm-151	9.00E+01	NA	240	240	1300	240	0	69.720	5.66E+01	NA	1000
Sn-117m	3.73E-02	NA	130	130	670	130	0	37.560	7.19E+00	NA	NA
Sn-119m	8.03E-01	NA	130	130	670	130	0	37.560	1.42E+01	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Design Inventory	Arrival Time of Peak Concentration	Simulated Long Term Groundwater Contaminant Peak Concentration (Dilution/ Attenuation Factor)	Carcinogenic RBC based Waste Soil Concentration	Non-carcinogenic RBC-based Waste Soil Concentration	MCL-based Waste Soil Concentration	Carcinogenic RBC based Waste Soil Concentration	Count Number of Carcinogenic Constituents	DI/Carcinogenic RBC-based Waste Soil Conc.	Fractional Carcinogenic Risk at Preliminary RBC	Available Carcinogenic Risk to be Added (Redistributed) to Preliminary Risk
	Ci/kg or mg/kg	years	kg/L	pCi/kg or mg/kg	mg/kg	pCi/kg or mg/kg	Ci/kg or mg/kg		Ratio		
Pr-143	0.00E+00	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Pr-144	1.77E-12	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pr-144m	2.53E-14	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Pu-236	5.53E-15	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Pu-237	1.21E-67	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Pu-238	2.33E-07	4.65E+04	1.60E-177	1.50E+176	NA	9.37E+177	1.50E+164	1	1.56E-171	5.00E-07	7.47E-08
Pu-239	6.66E-09	1.80E+05	3.88E-12	6.00E+10	NA	3.87E+12	6.00E-02	1	1.11E-07	5.00E-07	7.47E-08
Pu-240	1.50E-09	1.00E+05	5.06E-18	4.61E+16	NA	2.97E+18	4.61E+04	1	3.26E-14	5.00E-07	7.47E-08
Pu-241	6.39E-08	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pu-242	2.41E-13	1.00E+06	5.77E-08	4.26E+06	NA	2.60E+08	4.26E-06	1	5.65E-08	5.00E-07	7.47E-08
Pu-243	6.39E-25	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Pu-244	2.54E-20	1.00E+06	3.61E-07	6.35E+05	NA	4.15E+07	6.35E-07	1	4.00E-14	5.00E-07	7.47E-08
Pu-246	1.38E-34	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Ra-222	1.17E-125	No Arrival	0.00E+00	NA	NA	No Limit	NA		NA	NA	NA
Ra-223	2.03E-14	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Ra-224	5.53E-13	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Ra-225	5.12E-17	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Ra-226	4.74E-10	4.65E+04	1.26E-26	6.49E+24	NA	1.19E+27	6.49E+12	1	7.29E-23	5.00E-07	7.47E-08
Ra-228	1.52E-19	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Rb-86	0.00E+00	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Rb-87	1.11E-14	1.00E+06	1.32E-06	4.56E+06	NA	2.27E+08	4.56E-06	1	2.45E-09	5.00E-07	7.47E-08
Rh-102	2.97E-14	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Rh-103m	2.83E-67	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Rh-106	1.14E-11	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Ru-103	2.01E-38	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Ru-106	1.21E-11	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Sb-124	2.07E-49	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Sb-125	9.27E-09	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Sb-126	2.06E-11	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Sb-126m	1.47E-10	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Sc-46	2.85E-29	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Se-79	1.66E-10	3.80E+05	9.08E-10	4.75E+09	NA	NA	4.75E-03	1	3.49E-08	5.00E-07	7.47E-08
Sm-146	4.26E-19	1.00E+06	3.62E-07	2.11E+06	NA	4.14E+07	2.11E-06	1	2.01E-13	5.00E-07	7.47E-08
Sm-147	4.10E-15	1.00E+06	3.64E-07	2.31E+06	NA	4.12E+07	2.31E-06	1	1.78E-09	5.00E-07	7.47E-08
Sm-148	1.01E-21	1.00E+06	3.64E-07	NA	NA	4.12E+07	NA		NA	NA	NA
Sm-149	5.12E-21	1.00E+06	3.64E-07	NA	NA	4.12E+07	NA		NA	NA	NA
Sm-151	3.38E-07	4.65E+04	1.92E-173	2.94E+174	NA	5.20E+175	2.94E+162	1	1.15E-169	5.00E-07	7.47E-08
Sn-117m	0.00E+00	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Sn-119m	1.48E-16	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit

Table A-1. RAO-Based Soil Concentrations.

Constituent	Adjusted Fractional Carcinogenic Risk	Adjusted Carcinogenic RBC based Waste Soil Concentration	Carcinogenic Risk at Design Inventory	Is the Adjusted Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, "No Limit"	Count Number of Non-carcinogenic Constituents	DI/Non-carcinogenic RBC-based Waste Soil Conc.	Non-Carcinogenic Hazard Index at Preliminary RBC	Available Non-carcinogenic Fractional Hazard Index to be Added (Redistributed) to Preliminary Hazard Index	Adjusted Non-carcinogenic Fractional Hazard Index	Adjusted Non-Carcinogenic RBC based Waste Soil Concentration
		Ci/kg or mg/kg				Ratio				mg/kg
Pr-143	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pr-144	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pr-144m	NA	NA	NA	NA		NA	NA	NA	NA	NA
Pu-236	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pu-237	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pu-238	5.75E-07	1.72E+164	1.56E-175	No Limit		NA	NA	NA	NA	NA
Pu-239	5.75E-07	6.90E-02	1.11E-11	6.90E-02		NA	NA	NA	NA	NA
Pu-240	5.75E-07	5.29E+04	3.26E-18	No Limit		NA	NA	NA	NA	NA
Pu-241	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pu-242	5.75E-07	4.89E-06	5.65E-12	4.89E-06		NA	NA	NA	NA	NA
Pu-243	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Pu-244	5.75E-07	7.30E-07	4.00E-18	7.30E-07		NA	NA	NA	NA	NA
Pu-246	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Ra-222	NA	NA	NA	NA		NA	NA	NA	NA	NA
Ra-223	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Ra-224	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Ra-225	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Ra-226	5.75E-07	7.47E+12	7.29E-27	No Limit		NA	NA	NA	NA	NA
Ra-228	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Rb-86	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Rb-87	5.75E-07	5.24E-06	2.45E-13	5.24E-06		NA	NA	NA	NA	NA
Rh-102	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Rh-103m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Rh-106	NA	NA	NA	NA		NA	NA	NA	NA	NA
Ru-103	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Ru-106	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sb-124	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sb-125	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sb-126	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sb-126m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sc-46	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Se-79	5.75E-07	5.46E-03	3.49E-12	5.46E-03		NA	NA	NA	NA	NA
Sm-146	5.75E-07	2.43E-06	2.01E-17	2.43E-06		NA	NA	NA	NA	NA
Sm-147	5.75E-07	2.65E-06	1.78E-13	2.65E-06		NA	NA	NA	NA	NA
Sm-148	NA	NA	NA	NA		NA	NA	NA	NA	NA
Sm-149	NA	NA	NA	NA		NA	NA	NA	NA	NA
Sm-151	5.75E-07	3.38E+162	1.15E-173	No Limit		NA	NA	NA	NA	NA
Sn-117m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sn-119m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Non-carcinogenic HI at DI	Is the Adjusted Non-Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, then "No Limit"	MCL-based Waste Soil Concentration	Is the MCL-based Waste Soil Concentration greater than unity? If so, then "No Limit"
			Ci/kg or mg/kg	
Pr-143	NA	NA	No Limit	No Limit
Pr-144	NA	NA	NA	NA
Pr-144m	NA	NA	NA	NA
Pu-236	NA	NA	No Limit	No Limit
Pu-237	NA	NA	No Limit	No Limit
Pu-238	NA	NA	9.37E+165	No Limit
Pu-239	NA	NA	3.87E+00	3.87E+00
Pu-240	NA	NA	2.97E+06	No Limit
Pu-241	NA	NA	NA	NA
Pu-242	NA	NA	2.60E-04	2.60E-04
Pu-243	NA	NA	NA	NA
Pu-244	NA	NA	4.15E-05	4.15E-05
Pu-246	NA	NA	NA	NA
Ra-222	NA	NA	No Limit	No Limit
Ra-223	NA	NA	No Limit	No Limit
Ra-224	NA	NA	No Limit	No Limit
Ra-225	NA	NA	NA	NA
Ra-226	NA	NA	1.19E+15	No Limit
Ra-228	NA	NA	NA	NA
Rb-86	NA	NA	No Limit	No Limit
Rb-87	NA	NA	2.27E-04	No Limit
Rh-102	NA	NA	NA	NA
Rh-103m	NA	NA	NA	NA
Rh-106	NA	NA	NA	NA
Ru-103	NA	NA	No Limit	No Limit
Ru-106	NA	NA	No Limit	No Limit
Sb-124	NA	NA	No Limit	No Limit
Sb-125	NA	NA	No Limit	No Limit
Sb-126	NA	NA	NA	NA
Sb-126m	NA	NA	NA	NA
Sc-46	NA	NA	No Limit	No Limit
Se-79	NA	NA	NA	NA
Sm-146	NA	NA	4.14E-05	4.14E-05
Sm-147	NA	NA	4.12E-05	No Limit
Sm-148	NA	NA	4.12E-05	No Limit
Sm-149	NA	NA	4.12E-05	No Limit
Sm-151	NA	NA	5.20E+163	No Limit
Sn-117m	NA	NA	NA	NA
Sn-119m	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Half-Life	Organic Carbon Partition Coefficient	Waste Soils K_d	Clean Alluvium K_d	Clay Materials K_d	Interbeds Materials K_d	Vadose Zone Basalt K_d	Vadose Zone Weighted Average K_d	Carcinogenic 10^{-4} Preliminary RBC	Non-carcinogenic HI=1 Preliminary RBC	MCL
	(yr)	(mL/g)	(mL/g)					(mL/g)	pCi/L or mg/L	mg/L	pCi/L or mg/L
Sn-121m	5.50E+01	NA	130	130	670	130	0	37.560	1.34E+01	NA	NA
Sn-123	3.53E-01	NA	130	130	670	130	0	37.560	2.24E+00	NA	NA
Sn-125	2.64E-02	NA	130	130	670	130	0	37.560	1.56E+00	NA	60
Sn-126	1.00E+05	NA	130	130	670	130	0	37.560	1.23E+00	NA	NA
Sr-89	1.38E-01	NA	12	24	200	12	0	4.524	2.46E+00	NA	20
Sr-90	2.91E+01	NA	12	24	200	12	0	4.524	5.62E-01	NA	8
Tb-160	1.98E-01	NA	240	240	240	240	0	63.360	3.61E+00	NA	100
Tb-161	1.89E-02	NA	240	240	240	240	0	63.360	6.59E+00	NA	NA
Te-123	1.00E+13	NA	125	125	720	125	0	36.570	7.65E+00	NA	NA
Te-123m	3.29E-01	NA	125	125	720	125	0	36.570	7.59E+00	NA	NA
Te-125m	1.59E-01	NA	125	125	720	125	0	36.570	9.44E+00	NA	600
Te-127	1.07E-03	NA	125	125	720	125	0	36.570	3.14E+01	NA	900
Te-127m	2.99E-01	NA	125	125	720	125	0	36.570	3.65E+00	NA	200
Te-129	1.32E-04	NA	125	125	720	125	0	36.570	1.84E+02	NA	2000
Te-129m	9.21E-02	NA	125	125	720	125	0	36.570	2.05E+00	NA	90
Th-226	5.88E-05	NA	100	100	1700	100	0	36.000	4.72E+01	NA	15
Th-227	5.12E-02	NA	100	100	1700	100	0	36.000	6.63E-01	NA	15
Th-228	1.91E+00	NA	100	100	1700	100	0	36.000	2.94E-01	NA	15
Th-229	7.34E+03	NA	100	100	1700	100	0	36.000	1.40E-01	NA	15
Th-230	7.70E+04	NA	100	100	1700	100	0	36.000	3.45E-01	NA	15
Th-231	2.91E-03	NA	100	100	1700	100	0	36.000	1.42E+01	NA	NA
Th-232	1.41E+10	NA	100	100	1700	100	0	36.000	3.11E-01	NA	15
Th-234	6.60E-02	NA	100	100	1700	100	0	36.000	1.36E+00	NA	NA
Tl-207	9.08E-06	NA	100	100	100	100	0	26.400	NA	NA	NA
Tl-208	5.84E-06	NA	100	100	100	100	0	26.400	NA	NA	NA
Tl-209	4.19E-06	NA	100	100	100	100	0	26.400	NA	NA	NA
Tm-170	3.53E-01	NA	240	240	240	240	0	63.360	3.52E+00	NA	100
Tm-171	1.92E+00	NA	240	240	240	240	0	63.360	4.50E+01	NA	1000
U-230	5.70E-02	NA	6	6	63	6	0	1.926	1.50E-01	NA	15
U-232	7.20E+01	NA	6	6	63	6	0	1.926	1.08E-01	NA	15
U-233	1.59E+05	NA	6	6	63	6	0	1.926	4.38E-01	NA	15
U-234	2.45E+05	NA	6	6	63	6	0	1.926	4.45E-01	NA	15
U-235	7.04E+08	NA	6	6	63	6	0	1.926	4.52E-01	NA	15
U-236	2.34E+07	NA	6	6	63	6	0	1.926	4.69E-01	NA	15
U-237	1.85E-02	NA	6	6	63	6	0	1.926	6.44E+00	NA	NA
U-238	4.47E+09	NA	6	6	63	6	0	1.926	4.91E-01	NA	15
U-240	1.61E-03	NA	6	6	63	6	0	1.926	4.47E+00	NA	NA
Y-90	7.31E-03	NA	170	170	1000	170	0	49.860	1.74E+00	NA	60
Y-91	1.60E-01	NA	170	170	1000	170	0	49.860	1.96E+00	NA	90

Table A-1. RAO-Based Soil Concentrations.

Constituent	Design Inventory	Arrival Time of Peak Concentration	Simulated Long Term Groundwater Contaminant Peak Concentration (Dilution/ Attenuation Factor)	Carcinogenic RBC based Waste Soil Concentration	Non-carcinogenic RBC-based Waste Soil Concentration	MCL-based Waste Soil Concentration	Carcinogenic RBC based Waste Soil Concentration	Count Number of Carcinogenic Constituents	DI/Carcinogenic RBC-based Waste Soil Conc.	Fractional Carcinogenic Risk at Preliminary RBC	Available Carcinogenic Risk to be Added (Redistributed) to Preliminary Risk
	Ci/kg or mg/kg	years	kg/L	pCi/kg or mg/kg	mg/kg	pCi/kg or mg/kg	Ci/kg or mg/kg		Ratio		
Sn-121m	2.69E-11	4.65E+04	1.94E-272	6.92E+272	NA	NA	6.92E+260	1	3.88E-272	5.00E-07	7.47E-08
Sn-123	8.42E-26	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Sn-125	0.00E+00	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Sn-126	1.47E-10	4.80E+05	1.48E-09	8.28E+08	NA	NA	8.28E-04	1	1.78E-07	5.00E-07	7.47E-08
Sr-89	5.99E-53	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Sr-90	2.29E-05	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Tb-160	3.18E-43	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Tb-161	0.00E+00	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Te-123	4.52E-24	1.00E+06	3.64E-07	2.10E+07	NA	NA	2.10E-05	1	2.15E-19	5.00E-07	7.47E-08
Te-123m	2.95E-32	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Te-125m	2.27E-09	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Te-127	9.36E-29	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Te-127m	9.50E-29	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Te-129	6.75E-80	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Te-129m	1.07E-79	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Th-226	2.18E-126	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Th-227	1.82E-14	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Th-228	3.29E-11	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Th-229	5.12E-17	1.80E+05	2.85E-17	4.92E+15	NA	5.26E+17	4.92E+03	1	1.04E-20	5.00E-07	7.47E-08
Th-230	1.73E-10	3.80E+05	5.90E-10	5.86E+08	NA	2.54E+10	5.86E-04	1	2.96E-07	5.00E-07	7.47E-08
Th-231	1.61E-10	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Th-232	1.56E-10	1.00E+06	3.64E-07	8.54E+05	NA	4.12E+07	8.54E-07	1	1.82E-04	5.00E-07	7.47E-08
Th-234	1.71E-12	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Tl-207	1.83E-14	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Tl-208	1.98E-13	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Tl-209	1.05E-18	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Tm-170	6.38E-35	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Tm-171	1.59E-21	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
U-230	0.00E+00	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
U-232	5.35E-13	1.34E+04	2.10E-73	5.13E+71	NA	7.15E+73	5.13E+59	1	1.04E-72	5.00E-07	7.47E-08
U-233	2.56E-14	4.15E+05	1.65E-06	2.65E+05	NA	9.10E+06	2.65E-07	1	9.65E-08	5.00E-07	7.47E-08
U-234	6.03E-09	5.35E+05	3.40E-06	1.31E+05	NA	4.41E+06	1.31E-07	1	4.62E-02	5.00E-07	7.47E-08
U-235	1.10E-10	8.95E+05	2.23E-05	2.03E+04	NA	6.74E+05	2.03E-08	1	5.43E-03	5.00E-07	7.47E-08
U-236	2.02E-10	8.95E+05	2.17E-05	2.16E+04	NA	6.92E+05	2.16E-08	1	9.35E-03	5.00E-07	7.47E-08
U-237	0.00E+00	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
U-238	1.95E-09	8.95E+05	2.23E-05	2.20E+04	NA	6.74E+05	2.20E-08	1	8.85E-02	5.00E-07	7.47E-08
U-240	2.54E-20	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Y-90	2.29E-05	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Y-91	4.14E-46	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit

Table A-1. RAO-Based Soil Concentrations.

Constituent	Adjusted Fractional Carcinogenic Risk	Adjusted Carcinogenic RBC based Waste Soil Concentration	Carcinogenic Risk at Design Inventory	Is the Adjusted Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, "No Limit"	Count Number of Non-carcinogenic Constituents	DI/Non-carcinogenic RBC-based Waste Soil Conc.	Non-Carcinogenic Hazard Index at Preliminary RBC	Available Non-carcinogenic Fractional Hazard Index to be Added (Redistributed) to Preliminary Hazard Index	Adjusted Non-carcinogenic Fractional Hazard Index	Adjusted Non-Carcinogenic RBC based Waste Soil Concentration
		Ci/kg or mg/kg				Ratio				mg/kg
Sn-121m	5.75E-07	7.96E+260	3.88E-276	No Limit		NA	NA	NA	NA	NA
Sn-123	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sn-125	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sn-126	5.75E-07	9.52E-04	1.78E-11	9.52E-04		NA	NA	NA	NA	NA
Sr-89	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Sr-90	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Tb-160	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Tb-161	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-123	5.75E-07	2.41E-05	2.15E-23	No Limit		NA	NA	NA	NA	NA
Te-123m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-125m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-127	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-127m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-129	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Te-129m	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Th-226	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Th-227	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Th-228	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Th-229	5.75E-07	5.66E+03	1.04E-24	No Limit		NA	NA	NA	NA	NA
Th-230	5.75E-07	6.73E-04	2.96E-11	6.73E-04		NA	NA	NA	NA	NA
Th-231	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Th-232	5.75E-07	9.82E-07	1.82E-08	9.82E-07		NA	NA	NA	NA	NA
Th-234	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Tl-207	NA	NA	NA	NA		NA	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA		NA	NA	NA	NA	NA
Tl-209	NA	NA	NA	NA		NA	NA	NA	NA	NA
Tm-170	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Tm-171	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
U-230	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
U-232	5.75E-07	5.90E+59	1.04E-76	No Limit		NA	NA	NA	NA	NA
U-233	5.75E-07	3.05E-07	9.65E-12	3.05E-07		NA	NA	NA	NA	NA
U-234	5.75E-07	1.50E-07	4.62E-06	1.50E-07		NA	NA	NA	NA	NA
U-235	5.75E-07	2.33E-08	5.43E-07	2.33E-08		NA	NA	NA	NA	NA
U-236	5.75E-07	2.49E-08	9.35E-07	2.49E-08		NA	NA	NA	NA	NA
U-237	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
U-238	5.75E-07	2.53E-08	8.85E-06	2.53E-08		NA	NA	NA	NA	NA
U-240	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Y-90	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Y-91	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Non-carcinogenic HI at DI	Is the Adjusted Non-Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, then "No Limit"	MCL-based Waste Soil Concentration	Is the MCL-based Waste Soil Concentration greater than unity? If so, then "No Limit"
			Ci/kg or mg/kg	
Sn-121m	NA	NA	NA	NA
Sn-123	NA	NA	NA	NA
Sn-125	NA	NA	No Limit	No Limit
Sn-126	NA	NA	NA	NA
Sr-89	NA	NA	No Limit	No Limit
Sr-90	NA	NA	No Limit	No Limit
Tb-160	NA	NA	No Limit	No Limit
Tb-161	NA	NA	NA	NA
Te-123	NA	NA	NA	NA
Te-123m	NA	NA	NA	NA
Te-125m	NA	NA	No Limit	No Limit
Te-127	NA	NA	No Limit	No Limit
Te-127m	NA	NA	No Limit	No Limit
Te-129	NA	NA	No Limit	No Limit
Te-129m	NA	NA	No Limit	No Limit
Th-226	NA	NA	No Limit	No Limit
Th-227	NA	NA	No Limit	No Limit
Th-228	NA	NA	No Limit	No Limit
Th-229	NA	NA	5.26E+05	No Limit
Th-230	NA	NA	2.54E-02	2.54E-02
Th-231	NA	NA	NA	NA
Th-232	NA	NA	4.12E-05	4.12E-05
Th-234	NA	NA	NA	NA
Tl-207	NA	NA	NA	NA
Tl-208	NA	NA	NA	NA
Tl-209	NA	NA	NA	NA
Tm-170	NA	NA	No Limit	No Limit
Tm-171	NA	NA	No Limit	No Limit
U-230	NA	NA	No Limit	No Limit
U-232	NA	NA	7.15E+61	No Limit
U-233	NA	NA	9.10E-06	9.10E-06
U-234	NA	NA	4.41E-06	4.41E-06
U-235	NA	NA	6.74E-07	6.74E-07
U-236	NA	NA	6.92E-07	6.92E-07
U-237	NA	NA	NA	NA
U-238	NA	NA	6.74E-07	6.74E-07
U-240	NA	NA	NA	NA
Y-90	NA	NA	No Limit	No Limit
Y-91	NA	NA	No Limit	No Limit

Table A-1. RAO-Based Soil Concentrations.

Constituent	Half-Life	Organic Carbon Partition Coefficient	Waste Soils K_d	Clean Alluvium K_d	Clay Materials K_d	Interbeds Materials K_d	Vadose Zone Basalt K_d	Vadose Zone Weighted Average K_d	Carcinogenic 10^{-4} Preliminary RBC	Non-carcinogenic HI=1 Preliminary RBC	MCL
	(yr)	(mL/g)	(mL/g)					(mL/g)	pCi/L or mg/L	mg/L	pCi/L or mg/L
Zn-65	6.68E-01	NA	16	16	2400	16	0	18.528	2.69E+00	NA	300
Zr-93	1.53E+06	NA	600	600	3300	600	0	174.600	2.83E+01	NA	2000
Zr-95	1.75E-01	NA	600	600	3300	600	0	174.600	6.85E+00	NA	200
3-Methyl Butanal	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	17000.00	42.5	42.5	0	8.5	0	5.457	NA	NA	NA
Acenaphthene	3.1E-01	7080.00	17.7	17.7	0	3.54	0	2.273	NA	3.08E-03	NA
Anthracene	1.4E+00	29500.00	73.75	73.75	0	14.75	0	9.470	NA	1.55E-02	NA
Aramite	NA	15500.00	38.75	38.75	0	7.75	0	4.976	7.8E-03	NA	NA
Aroclor-1016	7.0E+00	33000.00	82.5	82.5	0	16.5	0	10.593	NA	9.47E-06	5.00E-04
Aroclor-1254	7.0E+00	33000.00	82.5	82.5	0	16.5	0	10.593	NA	4.03E-06	5.00E-04
Aroclor-1260	7.0E+00	33000.00	82.5	82.5	0	16.5	0	10.593	3.5E-05	NA	5.00E-04
Aroclor-1268	7.0E+00	33000.00	82.5	82.5	0	16.5	0	10.593	3.5E-05	NA	5.00E-04
Benzo(a)anthracene	2.1E+00	398000.00	995	995	0	199	0	127.758	1.2E-04	NA	NA
Benzo(a)pyrene	1.6E+00	1020000.00	2550	2550	0	510	0	327.420	9.0E-06	NA	2.00E-04
Benzo(b)fluoranthene	2.7E+00	1230000.00	3075	3075	0	615	0	394.830	9.0E-05	NA	NA
Benzo(g,h,i)perylene	3.4E+00	3858157.92	9645.394801	9645.394801	0	1929.07896	0	1238.469	NA	2.31E-03	NA
Benzo(k)fluoranthene	8.4E+00	1230000.00	3075	3075	0	615	0	394.830	1.4E-03	NA	NA
bis(2-Ethylhexyl)phthalate	5.5E-01	15100000.00	37750	37750	0	7550	0	4847.100	1.4E-02	NA	6.00E-03
Butylbenzylphthalate	2.5E-01	57500.00	143.75	143.75	0	28.75	0	18.458	NA	5.86E-02	NA
Chrysene	3.8E+00	398000.00	995	995	0	199	0	127.758	2.8E-02	NA	NA
Decane, 3,4-Dimethyl	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	3.6E+00	3800000.00	9500	9500	0	1900	0	1219.800	4.8E-06	NA	NA
Dibenzofuran	4.8E-02	7760.00	19.4	19.4	0	3.88	0	2.491	NA	2.11E-04	NA
Dimethyl Disulfide	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	5.0E-01	33900.00	84.75	84.75	0	16.95	0	10.882	NA	5.47E-03	NA
Di-n-octylphthalate	5.2E-01	83200000.00	208000	208000	0	41600	0	26707.200	NA	1.19E-04	NA
Eicosane	7.2E-02	NA	NA	NA	562000	NA	NA	562000.000	NA	NA	NA
Ethyl cyanide	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Fluoranthene	1.6E+00	107000.00	267.5	267.5	0	53.5	0	34.347	NA	7.98E-03	NA
Fluorene	2.5E-01	13800.00	34.5	34.5	0	6.9	0	4.430	NA	9.08E-03	NA
Heptadecane, 2,6,10,15-Tetra	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	8.4E+00	55000.00	137.5	137.5	0	27.5	0	17.655	9.5E-05	NA	1.00E-03
Hexachlorobutadiene	5.3E-01	53700.00	134.25	134.25	0	26.85	0	17.238	NA	8.14E-05	NA
Hexachlorocyclopentadiene	3.3E-01	200000.00	500	500	0	100	0	64.200	NA	2.20E-03	5.00E-02
Indeno(1,2,3-cd)pyrene	8.7E-02	3470000.00	8675	8675	0	1735	0	1113.870	6.4E-05	NA	NA
Kepone	1.4E+00	55000.00	137.5	137.5	0	27.5	0	17.655	NA	NA	NA
Octane,2,3,7-Trimethyl	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
o-Toluenesulfonamide	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Design Inventory	Arrival Time of Peak Concentration	Simulated Long Term Groundwater Contaminant Peak Concentration (Dilution/ Attenuation Factor)	Carcinogenic RBC based Waste Soil Concentration	Non-carcinogenic RBC-based Waste Soil Concentration	MCL-based Waste Soil Concentration	Carcinogenic RBC based Waste Soil Concentration	Count Number of Carcinogenic Constituents	DI/Carcinogenic RBC-based Waste Soil Conc.	Fractional Carcinogenic Risk at Preliminary RBC	Available Carcinogenic Risk to be Added (Redistributed) to Preliminary Risk
	Ci/kg or mg/kg	years	kg/L	pCi/kg or mg/kg	mg/kg	pCi/kg or mg/kg	Ci/kg or mg/kg		Ratio		
Zn-65	2.70E-18	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Zr-93	8.57E-10	1.00E+06	2.02E-15	1.40E+16	NA	9.90E+17	1.40E+04	1	6.11E-14	5.00E-07	7.47E-08
Zr-95	2.93E-34	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
3-Methyl Butanal	2.23E-04	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
4-Bromophenyl-phenylether	1.14E-02	1000000	1.32E-06	NA	NA	NA	NA		NA	NA	NA
Acenaphthene	2.02E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Anthracene	3.20E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Aramite	1.15E-04	1000000	1.32E-06	5.87E+03	NA	NA	5.87E+03	1	1.95E-08	5.00E-07	7.47E-08
Aroclor-1016	7.69E-03	No Arrival	0.00E+00	NA	No Limit	No Limit	NA		NA	NA	NA
Aroclor-1254	1.28E-01	No Arrival	0.00E+00	NA	No Limit	No Limit	NA		NA	NA	NA
Aroclor-1260	7.21E-01	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Aroclor-1268	6.22E-02	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Benzo(a)anthracene	2.53E-01	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Benzo(a)pyrene	1.05E-01	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Benzo(b)fluoranthene	1.79E-01	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Benzo(g,h,i)perylene	1.14E-02	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Benzo(k)fluoranthene	1.86E-02	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
bis(2-Ethylhexyl)phthalate	1.47E-01	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Butylbenzylphthalate	6.79E-02	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Chrysene	2.65E-01	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Decane, 3,4-Dimethyl	1.61E-04	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Dibenz(a,h)anthracene	1.14E-02	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Dibenzofuran	3.24E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Dimethyl Disulfide	2.96E-03	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Di-n-butylphthalate	2.39E-02	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Di-n-octylphthalate	2.62E-02	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Eicosane	2.83E-03	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Ethyl cyanide	1.88E-05	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Fluoranthene	7.62E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Fluorene	1.84E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Heptadecane, 2,6,10,15-Tetra	3.44E-03	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Hexachlorobenzene	1.14E-02	No Arrival	0.00E+00	No Limit	NA	No Limit	No Limit	1	No Limit	No Limit	No Limit
Hexachlorobutadiene	2.07E-02	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Hexachlorocyclopentadiene	1.14E-02	No Arrival	0.00E+00	NA	No Limit	No Limit	NA		NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.14E-02	No Arrival	0.00E+00	No Limit	NA	NA	No Limit	1	No Limit	No Limit	No Limit
Kepone	9.92E-02	No Arrival	0.00E+00	NA	NA	NA	NA		NA	NA	NA
Octane,2,3,7-Trimethyl	1.61E-04	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
o-Toluenesulfonamide	5.06E-03	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Adjusted Fractional Carcinogenic Risk	Adjusted Carcinogenic RBC based Waste Soil Concentration	Carcinogenic Risk at Design Inventory	Is the Adjusted Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, "No Limit"	Count Number of Non-carcinogenic Constituents	DI/Non-carcinogenic RBC-based Waste Soil Conc.	Non-Carcinogenic Hazard Index at Preliminary RBC	Available Non-carcinogenic Fractional Hazard Index to be Added (Redistributed) to Preliminary Hazard Index	Adjusted Non-carcinogenic Fractional Hazard Index	Adjusted Non-Carcinogenic RBC based Waste Soil Concentration
		Ci/kg or mg/kg				Ratio				mg/kg
Zn-65	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Zr-93	5.75E-07	1.61E+04	6.11E-18	No Limit		NA	NA	NA	NA	NA
Zr-95	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
3-Methyl Butanal	NA	NA	NA	NA		NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA		NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Anthracene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Aramite	5.75E-07	6.74E+03	1.95E-12	6.74E+03		NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Aroclor-1254	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Aroclor-1260	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Aroclor-1268	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Benzo(a)anthracene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Benzo(a)pyrene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Benzo(b)fluoranthene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Benzo(k)fluoranthene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Chrysene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Decane, 3,4-Dimethyl	NA	NA	NA	NA		NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Dimethyl Disulfide	NA	NA	NA	NA		NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Di-n-octylphthalate	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Eicosane	NA	NA	NA	NA		NA	NA	NA	NA	NA
Ethyl cyanide	NA	NA	NA	NA		NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Fluorene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Heptadecane, 2,6,10,15-Tetra	NA	NA	NA	NA		NA	NA	NA	NA	NA
Hexachlorobenzene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Hexachlorocyclopentadiene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Indeno(1,2,3-cd)pyrene	No Limit	No Limit	No Limit	No Limit		NA	NA	NA	NA	NA
Kepone	NA	NA	NA	NA		NA	NA	NA	NA	NA
Octane,2,3,7-Trimethyl	NA	NA	NA	NA		NA	NA	NA	NA	NA
o-Toluenesulfonamide	NA	NA	NA	NA		NA	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Non-carcinogenic HI at DI	Is the Adjusted Non-Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, then "No Limit"	MCL-based Waste Soil Concentration	Is the MCL-based Waste Soil Concentration greater than unity? If so, then "No Limit"
			Ci/kg or mg/kg	
Zn-65	NA	NA	No Limit	No Limit
Zr-93	NA	NA	9.90E+05	No Limit
Zr-95	NA	NA	No Limit	No Limit
3-Methyl Butanal	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA
Acenaphthene	No Limit	No Limit	NA	NA
Anthracene	No Limit	No Limit	NA	NA
Aramite	NA	NA	NA	NA
Aroclor-1016	No Limit	No Limit	No Limit	No Limit
Aroclor-1254	No Limit	No Limit	No Limit	No Limit
Aroclor-1260	NA	NA	No Limit	No Limit
Aroclor-1268	NA	NA	No Limit	No Limit
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	No Limit	No Limit
Benzo(b)fluoranthene	NA	NA	NA	NA
Benzo(g,h,i)perylene	No Limit	No Limit	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	No Limit	No Limit
Butylbenzylphthalate	No Limit	No Limit	NA	NA
Chrysene	NA	NA	NA	NA
Decane, 3,4-Dimethyl	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA
Dibenzofuran	No Limit	No Limit	NA	NA
Dimethyl Disulfide	NA	NA	NA	NA
Di-n-butylphthalate	No Limit	No Limit	NA	NA
Di-n-octylphthalate	No Limit	No Limit	NA	NA
Eicosane	NA	NA	NA	NA
Ethyl cyanide	NA	NA	NA	NA
Fluoranthene	No Limit	No Limit	NA	NA
Fluorene	No Limit	No Limit	NA	NA
Heptadecane, 2,6,10,15-Tetra	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	No Limit	No Limit
Hexachlorobutadiene	No Limit	No Limit	NA	NA
Hexachlorocyclopentadiene	No Limit	No Limit	No Limit	No Limit
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA
Kepone	NA	NA	NA	NA
Octane,2,3,7-Trimethyl	NA	NA	NA	NA
o-Toluenesulfonamide	NA	NA	NA	NA

Table A-1. RAO-Based Soil Concentrations.

Constituent	Half-Life	Organic Carbon Partition Coefficient	Waste Soils K_d	Clean Alluvium K_d	Clay Materials K_d	Interbeds Materials K_d	Vadose Zone Basalt K_d	Vadose Zone Weighted Average K_d	Carcinogenic 10^{-4} Preliminary RBC	Non-carcinogenic HI=1 Preliminary RBC	MCL
	(yr)	(mL/g)	(mL/g)					(mL/g)	pCi/L or mg/L	mg/L	pCi/L or mg/L
p-Toluenesulfonamide	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Pyrene	5.8E+00	105000.00	262.5	262.5	0	52.5	0	33.705	NA	6.26E-03	NA
Tributylphosphate	1.2E+00	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Undecane,4,6-Dimethyl-	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA
Aluminum	NA	NA	250	250	250	250	0	66	NA	3.31E-01	5.00E-02
Antimony	NA	NA	50	50	250	50	0	14.400	NA	1.31E-04	6.00E-03
Barium	NA	NA	50	50	50	50	0	13.200	NA	2.26E-02	2.00E+00
Beryllium	NA	NA	250	250	1300	250	0	72.300	NA	5.25E-04	4.00E-03
Cadmium	NA	NA	6	6	560	6	0	4.908	NA	1.60E-04	5.00E-03
Chromium	NA	NA	30	30	1500	30	0	16.740	NA	NA	0.1
Cobalt	NA	NA	10	10	550	10	0	5.880	NA	1.98E-02	NA
Copper	NA	NA	20	20	20	20	0	5.280	NA	1.23E-02	1.00E+00
Dysprosium	NA	NA	240	240	240	240	0	63.360	NA	NA	NA
Iron	NA	NA	220	220	165	220	0	57.750	NA	9.92E-02	3.00E-01
Lead	NA	NA	100	100	710	100	0	30.060	NA	NA	1.50E-02
Manganese	NA	NA	50	50	180	50	0	13.980	NA	7.71E-03	5.00E-02
Mercury	NA	NA	100	100	710	100	0	30.060	NA	9.68E-05	2.00E-03
Molybdenum	NA	NA	10	10	90	10	0	3.120	NA	1.65E-03	NA
Nickel	NA	NA	100	100	650	100	0	29.700	NA	6.33E-03	NA
Potassium	NA	NA	15	15	75	15	0	4.320	NA	NA	NA
Selenium	NA	NA	4	4	740	4	0	5.472	NA	1.65E-03	5.00E-02
Silver	NA	NA	90	90	180	90	0	24.300	NA	1.58E-03	0.1
Sodium	NA	NA	76	76	76	76	0	20.064	NA	NA	NA
Strontium	NA	NA	12	24	200	12	0	4.524	NA	1.98E-01	NA
Terbium	NA	NA	240	240	240	240	0	63.360	NA	NA	NA
Thallium	NA	NA	100	100	100	100	0	26.400	NA	2.18E-05	2.00E-02
Ytterbium	NA	NA	240	240	240	240	0	63.360	NA	NA	NA
Zinc	NA	NA	16	16	2400	16	0	18.528	NA	9.92E-02	5.00E+00
Zirconium	NA	NA	600	600	3300	600	0	174.600	NA	NA	NA

NA= Not available

(a) Water ingestion slope factor values taken from slope factor document. http://www.epa.gov/radiation/heast/

(b) Radioactive half-lives taken from slope factor document. All values converted to years. http://www.epa.gov/radiation/heast/

(c) Radioactive half-lives from CRC Handbook of Chemistry and Physics, "Table of Isotopes", CRC Press, 77th Edition, 1996-1997. All values converted to years.

(d) Atomic masses from CRC Handbook of Chemistry and Physics, "Table of Isotopes", CRC Press, 77th Edition, 1996-1997.

(e) EPA guidance recommends using a default Kp of $1x10^{-3}$ cm/hr for inorganic compounds unless otherwise noted. Source: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual, Supplemental Guidance, Dermal Risk Assessment, Inter

(f) Modified design inventory with analytical data - radionuclides (revision 1)

Table A-1. RAO-Based Soil Concentrations.

Constituent	Design Inventory	Arrival Time of Peak Concentration	Simulated Long Term Groundwater Contaminant Peak Concentration (Dilution/ Attenuation Factor)	Carcinogenic RBC based Waste Soil Concentration	Non-carcinogenic RBC-based Waste Soil Concentration	MCL-based Waste Soil Concentration	Carcinogenic RBC based Waste Soil Concentration	Count Number of Carcinogenic Constituents	DI/Carcinogenic RBC-based Waste Soil Conc.	Fractional Carcinogenic Risk at Preliminary RBC	Available Carcinogenic Risk to be Added (Redistributed) to Preliminary Risk
	Ci/kg or mg/kg	years	kg/L	pCi/kg or mg/kg	mg/kg	pCi/kg or mg/kg	Ci/kg or mg/kg		Ratio		
p-Toluenesulfonamide	5.06E-03	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Pyrene	2.53E-01	No Arrival	0.00E+00	NA	No Limit	NA	NA		NA	NA	NA
Tributylphosphate	3.64E-01	17.7174	5.95109E-19	NA	NA	NA	NA		NA	NA	NA
Undecane,4,6-Dimethyl-	1.61E-04	32605.3	0.00080427	NA	NA	NA	NA		NA	NA	NA
Aluminum	7.08E+03	1000000	3.64E-07	NA	9.07E+05	1.37E+05	NA		NA	NA	NA
Antimony	5.83E+00	1000000	1.32E-06	NA	9.91E+01	4.54E+03	NA		NA	NA	NA
Barium	1.79E+02	1000000	1.32E-06	NA	1.71E+04	1.51E+06	NA		NA	NA	NA
Beryllium	2.87E-01	1000000	3.64E-07	NA	1.44E+03	1.10E+04	NA		NA	NA	NA
Cadmium	3.59E+00	1000000	1.32E-06	NA	1.21E+02	3.78E+03	NA		NA	NA	NA
Chromium	4.12E+01	1000000	1.32E-06	NA	NA	7.57E+04	NA		NA	NA	NA
Cobalt	6.04E+00	1000000	1.32E-06	NA	1.50E+04	NA	NA		NA	NA	NA
Copper	2.99E+01	1000000	1.32E-06	NA	9.29E+03	7.57E+05	NA		NA	NA	NA
Dysprosium	5.93E+01	1000000	3.64E-07	NA	NA	NA	NA		NA	NA	NA
Iron	1.02E+04	1000000	3.64E-07	NA	2.72E+05	8.23E+05	NA		NA	NA	NA
Lead	5.76E+01	1000000	3.64E-07	NA	NA	4.12E+04	NA		NA	NA	NA
Manganese	2.07E+02	1000000	1.32E-06	NA	5.84E+03	3.78E+04	NA		NA	NA	NA
Mercury	9.45E+00	1000000	3.64E-07	NA	2.66E+02	5.49E+03	NA		NA	NA	NA
Molybdenum	1.02E+01	1000000	1.76E-05	NA	9.39E+01	NA	NA		NA	NA	NA
Nickel	1.97E+01	1000000	3.64E-07	NA	1.74E+04	NA	NA		NA	NA	NA
Potassium	1.13E+03	1000000	1.76E-05	NA	NA	NA	NA		NA	NA	NA
Selenium	8.46E-01	1000000	1.32E-06	NA	1.25E+03	3.78E+04	NA		NA	NA	NA
Silver	9.84E+00	1000000	3.64E-07	NA	4.35E+03	2.74E+05	NA		NA	NA	NA
Sodium	2.11E+02	1000000	3.64E-07	NA	NA	NA	NA		NA	NA	NA
Strontium	1.82E+01	1000000	1.32E-06	NA	1.50E+05	NA	NA		NA	NA	NA
Terbium	5.73E+02	1000000	3.64E-07	NA	NA	NA	NA		NA	NA	NA
Thallium	3.70E-01	1000000	3.64E-07	NA	5.99E+01	5.49E+04	NA		NA	NA	NA
Ytterbium	1.95E+02	1000000	3.64E-07	NA	NA	NA	NA		NA	NA	NA
Zinc	2.08E+02	1000000	3.64E-07	NA	2.72E+05	1.37E+07	NA		NA	NA	NA
Zirconium	6.91E+01	1000000	3.18E-15	NA	NA	NA	NA		NA	NA	NA

NA= Not available

(a) Water ingestion slope facto

(b) Radioactive half-lives taker

(c) Radioactive half-lives from

(d) Atomic masses from CRC I

(e) EPA guidance recommendsim Guidance, EPA, November 6, 1998..

(f) Modified design inventory v

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Table A-1. RAO-Based Soil Concentrations.

Constituent	Adjusted Fractional Carcinogenic Risk	Adjusted Carcinogenic RBC based Waste Soil Concentration	Carcinogenic Risk at Design Inventory	Is the Adjusted Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, "No Limit"	Count Number of Non-carcinogenic Constituents	DI/Non-carcinogenic RBC-based Waste Soil Conc.	Non-Carcinogenic Hazard Index at Preliminary RBC	Available Non-carcinogenic Fractional Hazard Index to be Added (Redistributed) to Preliminary Hazard Index	Adjusted Non-carcinogenic Fractional Hazard Index	Adjusted Non-Carcinogenic RBC based Waste Soil Concentration
		Ci/kg or mg/kg				Ratio				mg/kg
p-Toluenesulfonamide	NA	NA	NA	NA		NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	1	No Limit	No Limit	No Limit	No Limit	No Limit
Tributylphosphate	NA	NA	NA	NA		NA	NA	NA	NA	NA
Undecane,4,6-Dimethyl-	NA	NA	NA	NA		NA	NA	NA	NA	NA
Aluminum	NA	NA	NA	NA	1	7.80E-03	1.15E-02	2.08E-02	3.23E-02	2.55E+06
Antimony	NA	NA	NA	NA	1	5.88E-02	1.15E-02	2.08E-02	3.23E-02	2.78E+02
Barium	NA	NA	NA	NA	1	1.05E-02	1.15E-02	2.08E-02	3.23E-02	4.80E+04
Beryllium	NA	NA	NA	NA	1	1.99E-04	1.15E-02	2.08E-02	3.23E-02	4.04E+03
Cadmium	NA	NA	NA	NA	1	2.97E-02	1.15E-02	2.08E-02	3.23E-02	3.39E+02
Chromium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	1	4.02E-04	1.15E-02	2.08E-02	3.23E-02	4.21E+04
Copper	NA	NA	NA	NA	1	3.22E-03	1.15E-02	2.08E-02	3.23E-02	2.61E+04
Dysprosium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	1	3.76E-02	1.15E-02	2.08E-02	3.23E-02	7.64E+05
Lead	NA	NA	NA	NA		NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	1	3.54E-02	1.15E-02	2.08E-02	3.23E-02	1.64E+04
Mercury	NA	NA	NA	NA	1	3.55E-02	1.15E-02	2.08E-02	3.23E-02	7.46E+02
Molybdenum	NA	NA	NA	NA	1	1.08E-01	1.15E-02	2.08E-02	3.23E-02	2.64E+02
Nickel	NA	NA	NA	NA	1	1.13E-03	1.15E-02	2.08E-02	3.23E-02	4.88E+04
Potassium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	1	6.76E-04	1.15E-02	2.08E-02	3.23E-02	3.51E+03
Silver	NA	NA	NA	NA	1	2.26E-03	1.15E-02	2.08E-02	3.23E-02	1.22E+04
Sodium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Strontium	NA	NA	NA	NA	1	1.21E-04	1.15E-02	2.08E-02	3.23E-02	4.21E+05
Terbium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	1	6.18E-03	1.15E-02	2.08E-02	3.23E-02	1.68E+02
Ytterbium	NA	NA	NA	NA		NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	1	7.64E-04	1.15E-02	2.08E-02	3.23E-02	7.64E+05
Zirconium	NA	NA	NA	NA		NA	NA	NA	NA	NA

NA= Not available

1.92E-05

3.10E+01

(a) Water ingestion slope facto

(b) Radioactive half-lives taker

2nd group major constituents sum of risk

(c) Radioactive half-lives from

1.66E-05

(d) Atomic masses from CRC I

(e) EPA guidance recommends

(f) Modified design inventory

Table A-1. RAO-Based Soil Concentrations.

Constituent	Non-carcinogenic HI at DI	Is the Adjusted Non-Carcinogenic RBC-based Waste Soil Concentration greater than unity? If so, then "No Limit"	MCL-based Waste Soil Concentration	Is the MCL-based Waste Soil Concentration greater than unity? If so, then "No Limit"
			Ci/kg or mg/kg	
p-Toluenesulfonamide	NA	NA	NA	NA
Pyrene	No Limit	No Limit	NA	NA
Tributylphosphate	NA	NA	NA	NA
Undecane,4,6-Dimethyl-	NA	NA	NA	NA
Aluminum	7.80E-03	No Limit	1.37E+05	1.37E+05
Antimony	5.88E-02	2.78E+02	4.54E+03	4.54E+03
Barium	1.05E-02	4.80E+04	1.51E+06	No Limit
Beryllium	1.99E-04	4.04E+03	1.10E+04	1.10E+04
Cadmium	2.97E-02	3.39E+02	3.78E+03	3.78E+03
Chromium	NA	NA	7.57E+04	7.57E+04
Cobalt	4.02E-04	4.21E+04	NA	NA
Copper	3.22E-03	2.61E+04	7.57E+05	7.57E+05
Dysprosium	NA	NA	NA	NA
Iron	3.76E-02	7.64E+05	8.23E+05	8.23E+05
Lead	NA	NA	4.12E+04	4.12E+04
Manganese	3.54E-02	1.64E+04	3.78E+04	3.78E+04
Mercury	3.55E-02	7.46E+02	5.49E+03	5.49E+03
Molybdenum	1.08E-01	2.64E+02	NA	NA
Nickel	1.13E-03	4.88E+04	NA	NA
Potassium	NA	NA	NA	NA
Selenium	6.76E-04	3.51E+03	3.78E+04	3.78E+04
Silver	2.26E-03	1.22E+04	2.74E+05	2.74E+05
Sodium	NA	NA	NA	NA
Strontium	1.21E-04	4.21E+05	NA	NA
Terbium	NA	NA	NA	NA
Thallium	6.18E-03	1.68E+02	5.49E+04	5.49E+04
Ytterbium	NA	NA	NA	NA
Zinc	7.64E-04	7.64E+05	1.37E+07	No Limit
Zirconium	NA	NA	NA	NA

NA= Not available
(a) Water ingestion slope facto
(b) Radioactive half-lives taker
(c) Radioactive half-lives from
(d) Atomic masses from CRC I
(e) EPA guidance recommends
(f) Modified design inventory