ICRP30 Radionuclide Dose Conversion Factors and Dose Cleanup Concentrations in Mass for Superfund

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Actinium	Ac-223			2.15E-02	2.02E-06	2.70E-06	2.75E-06	6.19E-06		
Actinium	Ac-223+D			3.18E-01	1.37E-07	1.82E-07	1.86E-07	4.19E-07		
Actinium	Ac-223+E			3.18E-01	1.37E-07	1.82E-07	1.86E-07	4.19E-07		
Actinium	Ac-224	2.97E-06	1.20E-04	8.48E-01	5.14E-08	4.67E-08	7.00E-08	1.57E-07	9.98E-14	3.70E-12
Actinium	Ac-224+D	3.74E-04	3.13E-03	1.10E+01	3.95E-09	9.54E-10	5.39E-09	1.21E-08	7.94E-16	2.94E-14
Actinium	Ac-224+E	3.74E-04	3.13E-03	1.10E+01	3.95E-09	9.54E-10	5.39E-09	1.21E-08	7.94E-16	2.94E-14
Actinium	Ac-225	1.11E-04	8.58E-03	6.37E-02	4.78E-07	3.92E-09	7.69E-07	1.66E-06	2.22E-13	8.23E-12
Actinium	Ac-225+D	1.11E-04	8.58E-03	1.26E+00	3.39E-08	3.62E-09	4.66E-08	1.05E-07	2.22E-13	8.23E-12
Actinium	Ac-225+E	1.11E-04	8.58E-03	1.26E+00	3.39E-08	3.62E-09	4.66E-08	1.05E-07	2.22E-13	8.23E-12
Actinium	Ac-226	4.26E-05	1.21E-03	6.18E-01	7.00E-08	9.30E-09	9.60E-08	2.16E-07	7.03E-14	2.60E-12
Actinium	Ac-226+D	4.26E-05	1.21E-03	6.91E-01	6.27E-08	9.19E-09	8.60E-08	1.93E-07	7.03E-14	2.60E-12
Actinium	Ac-226+E	4.26E-05	1.21E-03	6.91E-01	6.27E-08	9.19E-09	8.60E-08	1.93E-07	7.03E-14	2.60E-12
Actinium	Ac-227	1.41E-02	1.72E+00	4.95E-04	2.03E-08	4.35E-11	6.23E-08	1.13E-07	1.41E-12	5.21E-11
Actinium	Ac-227+D	1.41E-02	1.72E+00	2.02E+00	1.29E-08	4.35E-11	2.90E-08	5.86E-08	1.41E-12	5.21E-11
Actinium	Ac-227+E	1.41E-02	1.72E+00	2.02E+00	1.29E-08	4.35E-11	2.90E-08	5.86E-08	1.41E-12	5.21E-11
Actinium	Ac-228	2.16E-06	9.10E-05	5.98E+00	7.43E-09	9.45E-09	1.01E-08	2.27E-08	2.95E-13	1.09E-11
Actinium	Ac-228+D	8.10E-04	2.53E-01	1.62E+01	2.71E-09	4.75E-10	3.71E-09	8.34E-09	7.88E-16	2.92E-14
Actinium	Ac-228+E	8.10E-04	2.53E-01	1.62E+01	2.71E-09	4.75E-10	3.71E-09	8.34E-09	7.88E-16	2.92E-14
Aluminum	Al-26	1.46E-05	7.22E-05	1.74E+01	1.00E-05	9.01E-06	1.64E-05	3.68E-05	5.11E-06	1.89E-04
Aluminum	Al-28			1.21E+01	4.51E-10	6.02E-10	6.14E-10	1.38E-09		
Americium	Am-237	6.59E-08	2.39E-08	1.85E+00	2.49E-08	3.31E-08	3.39E-08	7.63E-08	2.00E-12	7.40E-11
Americium	Am-237+D	6.59E-08	1.75E-06	1.85E+00	2.49E-08	3.31E-08	3.39E-08	7.63E-08	2.00E-12	7.40E-11
Americium	Am-237+E	6.59E-08	1.75E-06	1.85E+00	2.49E-08	3.31E-08	3.39E-08	7.63E-08	2.00E-12	7.40E-11
Americium	Am-238	1.32E-07	8.58E-07	5.32E+00	8.71E-09	1.16E-08	1.18E-08	2.67E-08	1.35E-12	4.99E-11
Americium	Am-238+E	1.32E-07	3.92E-01	5.32E+00	8.71E-09	1.16E-08	1.18E-08	2.66E-08	1.35E-12	4.99E-11
Americium	Am-239	9.88E-07	4.59E-07	9.69E-01	4.80E-08	5.64E-08	6.53E-08	1.47E-07	1.31E-12	4.87E-11
Americium	Am-240	2.53E-06	1.84E-06	6.20E+00	7.54E-09	9.53E-09	1.03E-08	2.31E-08	2.20E-12	8.16E-11
Americium	Am-241	3.64E-03	4.44E-01	4.37E-02	1.39E-06	2.07E-09	3.26E-06	5.98E-06	1.14E-10	4.24E-09
Americium	Am-242	1.41E-06	5.85E-05	4.99E-02	9.40E-07	2.64E-07	1.28E-06	2.88E-06	1.26E-12	4.65E-11
Americium	Am-242+D									
Americium	Am-242+E	1.41E-06	7.66E-01	1.96E-03	7.44E-06	3.23E-07	4.05E-06	9.08E-06	1.26E-12	4.65E-11
Americium	Am-242m	3.52E-03	4.26E-01	1.69E-03	5.64E-07	8.02E-10	1.35E-06	2.44E-06	4.19E-11	1.55E-09
Americium	Am-242m+D	3.52E-03	8.47E-01	6.76E-02	5.10E-07	8.01E-10	1.16E-06	2.15E-06	4.19E-11	1.55E-09
Americium	Am-242m+E	3.52E-03	8.62E-01	6.78E-02	5.10E-07	8.01E-10	1.16E-06	2.15E-06	4.19E-11	1.55E-09
Americium	Am-243	3.62E-03	4.40E-01	1.42E-01	2.07E-05	3.47E-08	4.61E-05	8.75E-05	1.98E-09	7.33E-08
Americium	Am-243+D	3.62E-03	4.40E-01	8.95E-01	1.07E-05	3.47E-08	2.04E-05	4.23E-05	1.98E-09	7.33E-08
Americium	Am-243+E	3.62E-03	4.40E-01	8.95E-01	1.07E-05	3.47E-08	2.04E-05	4.23E-05	1.98E-09	7.33E-08
Americium	Am-244	1.99E-06	1.65E-05	4.76E+00	9.98E-09	1.26E-08	1.36E-08	3.05E-08	5.65E-13	2.09E-11
Americium	Am-244+E	2.02E-03	2.48E-01	4.76E+00	9.25E-09	2.31E-10	1.29E-08	2.86E-08	5.58E-16	2.07E-14
Americium	Am-244m	7.77E-08	7.03E-07	6.54E-03	7.26E-06	3.74E-06	9.87E-06	2.22E-05	6.21E-13	2.30E-11
Americium	Am-244m+E	2.02E-03	2.48E-01	6.54E-03	1.25E-07	2.35E-10	2.50E-07	4.54E-07	2.39E-17	8.87E-16
Americium	Am-245	1.81E-07	8.07E-08	1.45E-01	3.30E-07	3.77E-07	4.48E-07	1.01E-06	1.27E-12	4.70E-11
Americium	Am-246	1.68E-07	6.33E-08	3.92E+00	1.22E-08	1.62E-08	1.66E-08	3.74E-08	4.35E-13	1.61E-11
Americium	Am-246m	9.40E-08	3.34E-08	6.37E+00	7.52E-09	1.00E-08	1.02E-08	2.30E-08	4.98E-13	1.84E-11
Antimony	Sb-115	7.22E-08	2.03E-08	5.31E+00	4.22E-09	5.62E-09	5.74E-09	1.29E-08	3.86E-13	1.43E-11
Antimony	Sb-116	7.03E-08	1.88E-08	1.38E+01	1.64E-09	2.19E-09	2.23E-09	5.02E-09	1.98E-13	7.35E-12
Antimony	Sb-116m	2.45E-07	5.33E-08	1.94E+01	1.16E-09	1.55E-09	1.58E-09	3.56E-09	2.17E-13	8.05E-12
Antimony	Sb-117	7.44E-08	2.10E-08	8.01E-01	2.84E-08	3.75E-08	3.87E-08	8.70E-08	2.01E-12	7.45E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Antimony	Sb-118m	9.03E-07	2.35E-07	1.60E+01	1.44E-09	1.90E-09	1.95E-09	4.39E-09	2.98E-13	1.11E-11
Antimony	Sb-119	3.32E-07	2.11E-07	6.41E-03	3.51E-06	6.05E-07	4.89E-06	1.10E-05	6.24E-12	2.31E-10
Antimony	Sb-120a	3.51E-08	1.10E-08	2.62E+00	8.94E-09	1.19E-08	1.22E-08	2.74E-08	4.13E-13	1.53E-11
Antimony	Sb-120b	5.40E-06	4.07E-06	1.51E+01	1.55E-09	1.97E-09	2.10E-09	4.73E-09	1.40E-12	5.19E-11
Antimony	Sb-122	6.77E-06	5.14E-06	2.65E+00	8.95E-09	8.89E-09	1.22E-08	2.74E-08	5.33E-13	1.97E-11
Antimony	Sb-124	9.81E-06	2.52E-05	1.17E+01	2.07E-09	2.48E-09	2.81E-09	6.32E-09	8.34E-12	3.09E-10
Antimony	Sb-124m			2.11E+00	1.14E-08	1.53E-08	1.56E-08	3.50E-08		
Antimony	Sb-124m+D			1.15E+01	2.11E-09	2.81E-09	2.86E-09	6.45E-09		
Antimony	Sb-124m+E			1.15E+01	2.11E-09	2.81E-09	2.86E-09	6.45E-09		
Antimony	Sb-124n	2.18E-08	1.04E-08	1.98E-05	7.43E-04	1.09E-05	1.46E-03	3.19E-03	8.76E-13	3.25E-11
Antimony	Sb-124n+D	2.18E-08	1.86E-08	1.15E+01	2.11E-09	2.81E-09	2.86E-09	6.45E-09	8.76E-13	3.25E-11
Antimony	Sb-124n+E	2.18E-08	1.86E-08	1.15E+01	2.11E-09	2.81E-09	2.86E-09	6.45E-09	8.76E-13	3.25E-11
Antimony	Sb-125	2.81E-06	1.22E-05	2.45E+00	9.95E-09	1.15E-08	1.36E-08	3.05E-08	4.93E-10	1.83E-08
Antimony	Sb-125+D	2.81E-06	1.39E-05	2.45E+00	9.95E-09	1.15E-08	1.36E-08	3.05E-08	4.93E-10	1.83E-08
Antimony	Sb-125+E	2.81E-06	1.39E-05	2.45E+00	9.95E-09	1.15E-08	1.36E-08	3.05E-08	4.93E-10	1.83E-08
Antimony	Sb-126	1.02E-05	1.17E-05	1.71E+01	1.43E-09	1.77E-09	1.95E-09	4.39E-09	1.68E-12	6.21E-11
Antimony	Sb-126m	9.36E-08	2.86E-08	9.30E+00	2.64E-09	3.51E-09	3.59E-09	8.07E-09	1.95E-13	7.21E-12
Antimony	Sb-126m+D	9.36E-08	3.26E-08	1.17E+01	2.10E-09	2.80E-09	2.85E-09	6.42E-09	1.95E-13	7.21E-12
Antimony	Sb-126m+E	9.36E-08	3.26E-08	1.17E+01	2.10E-09	2.80E-09	2.85E-09	6.42E-09	1.95E-13	7.21E-12
Antimony	Sb-127	6.70E-06	6.03E-06	4.11E+00	6.02E-09	6.58E-09	8.19E-09	1.84E-08	8.00E-13	2.96E-11
Antimony	Sb-127+D	6.70E-06	3.12E-05	4.11E+00	6.02E-09	6.58E-09	8.19E-09	1.84E-08	8.00E-13	2.96E-11
Antimony	Sb-127+E	6.70E-06	3.12E-05	4.11E+00	6.02E-09	6.58E-09	8.19E-09	1.84E-08	8.00E-13	2.96E-11
Antimony	Sb-128a	5.88E-08	1.45E-08	1.20E+01	2.07E-09	2.76E-09	2.82E-09	6.34E-09	1.72E-13	6.38E-12
Antimony	Sb-128b	4.18E-06	1.69E-06	1.87E+01	1.33E-09	1.73E-09	1.82E-09	4.08E-09	1.26E-13	4.66E-12
Antimony	Sb-129	1.71E-06	6.44E-07	9.04E+00	2.78E-09	3.61E-09	3.78E-09	8.51E-09	1.49E-13	5.53E-12
Antimony	Sb-129+D	1.71E-06	2.81E-05	9.04E+00	2.78E-09	3.61E-09	3.78E-09	8.51E-09	1.49E-13	5.53E-12
Antimony	Sb-129+E	1.71E-06	2.81E-05	9.04E+00	2.78E-09	3.61E-09	3.78E-09	8.51E-09	1.49E-13	5.53E-12
Antimony	Sb-130	2.87E-07	7.96E-08	2.00E+01	1.27E-09	1.69E-09	1.72E-09	3.88E-09	1.38E-13	5.10E-12
Antimony	Sb-131	3.03E-07	1.31E-07	1.19E+01	2.14E-09	2.84E-09	2.91E-09	6.54E-09	7.58E-14	2.81E-12
Antimony	Sb-131+D	5.40E-05	3.89E-05	1.71E+01	1.49E-09	1.40E-09	2.03E-09	4.57E-09	4.24E-16	1.57E-14
Antimony	Sb-131+E	5.40E-05	3.89E-05	1.71E+01	1.49E-09	1.40E-09	2.03E-09	4.57E-09	4.24E-16	1.57E-14
Argon	Ar-37			0.00E+00						
Argon	Ar-39			8.63E-04	1.18E-04	1.20E-04	1.92E-04	4.32E-04		
Argon	Ar-41			8.35E+00	9.57E-10	1.28E-09	1.30E-09	2.93E-09		
Arsenic	As-69	1.34E-07	4.88E-08	5.98E+00	2.25E-09	2.99E-09	3.06E-09	6.88E-09	5.96E-14	2.21E-12
Arsenic	As-69+D	5.07E-07	8.88E-07	1.13E+01	1.19E-09	1.57E-09	1.62E-09	3.63E-09	1.57E-14	5.83E-13
Arsenic	As-69+E	5.07E-07	8.88E-07	1.13E+01	1.19E-09	1.57E-09	1.62E-09	3.63E-09	1.57E-14	5.83E-13
Arsenic	As-70	4.18E-07	1.27E-07	2.60E+01	5.25E-10	6.99E-10	7.14E-10	1.61E-09	6.70E-14	2.48E-12
Arsenic	As-71	1.51E-06	1.27E-06	3.21E+00	4.30E-09	5.38E-09	5.85E-09	1.32E-08	1.40E-12	5.17E-11
Arsenic	As-72	6.07E-06	4.07E-06	1.10E+01	1.28E-09	1.58E-09	1.74E-09	3.91E-09	1.41E-13	5.22E-12
Arsenic	As-73	7.07E-07	3.46E-06	9.41E-03	1.18E-06	1.74E-07	2.04E-06	4.57E-06	9.09E-11	3.37E-09
Arsenic	As-74	3.96E-06	7.96E-06	4.52E+00	3.18E-09	3.78E-09	4.34E-09	9.76E-09	3.64E-12	1.35E-10
Arsenic	As-76	5.22E-06	3.74E-06	2.67E+00	5.50E-09	5.79E-09	7.54E-09	1.70E-08	1.75E-13	6.48E-12
Arsenic	As-77	1.27E-06	1.05E-06	4.89E-02	2.80E-07	8.76E-08	4.16E-07	9.34E-07	1.07E-12	3.97E-11
Arsenic	As-78	6.70E-07	2.67E-07	8.05E+00	1.89E-09	2.49E-09	2.57E-09	5.78E-09	8.04E-14	2.98E-12
Astatine	At-207	8.73E-07	2.42E-06	8.09E+00	4.99E-09	6.55E-09	6.78E-09	1.53E-08	1.95E-13	7.22E-12
Astatine	At-207+D	1.76E-06	2.72E-06	1.70E+01	2.37E-09	3.12E-09	3.23E-09	7.26E-09	9.68E-14	3.59E-12
Astatine	At-207+E	6.70E-06	2.07E-05	2.54E+01	1.59E-09	2.04E-09	2.16E-09	4.86E-09	2.54E-14	9.41E-13

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Astatine	At-211	3.96E-05	1.02E-04	1.16E-01	3.38E-07	1.01E-08	4.63E-07	1.03E-06	1.76E-14	6.50E-13
Astatine	At-211+D	3.96E-05	1.02E-04	1.44E-01	2.75E-07	1.01E-08	3.76E-07	8.39E-07	1.76E-14	6.50E-13
Astatine	At-211+E	3.96E-05	1.02E-04	4.05E+00	1.01E-08	5.87E-09	1.38E-08	3.10E-08	1.76E-14	6.50E-13
Astatine	At-215			1.10E-03	3.81E-05	5.08E-05	5.18E-05	1.16E-04		
Astatine	At-215+D			2.76E-01	1.52E-07	2.02E-07	2.06E-07	4.64E-07		
Astatine	At-215+E			2.76E-01	1.52E-07	2.02E-07	2.06E-07	4.64E-07		
Astatine	At-216			4.52E-03	9.31E-06	1.24E-05	1.27E-05	2.85E-05		
Astatine	At-216+D			9.43E+00	4.46E-09	5.95E-09	6.07E-09	1.37E-08		
Astatine	At-216+E			9.43E+00	4.46E-09	5.95E-09	6.07E-09	1.37E-08		
Astatine	At-217			1.77E-03	2.38E-05	3.18E-05	3.24E-05	7.30E-05		
Astatine	At-217+D			1.05E+00	4.03E-08	5.38E-08	5.49E-08	1.23E-07		
Astatine	At-217+E			1.05E+00	4.03E-08	5.38E-08	5.49E-08	1.23E-07		
Astatine	At-218			5.85E-03	7.26E-06	9.69E-06	9.88E-06	2.22E-05		
Astatine	At-218+D			9.83E+00	4.32E-09	5.76E-09	5.88E-09	1.32E-08		
Astatine	At-218+E			9.83E+00	4.32E-09	5.76E-09	5.88E-09	1.32E-08		
Barium	Ba-126	9.10E-07	3.67E-07	7.96E-01	3.08E-08	3.56E-08	4.19E-08	9.44E-08	1.02E-13	3.77E-12
Barium	Ba-126+D	9.10E-07	3.67E-07	7.21E+00	3.40E-09	4.46E-09	4.63E-09	1.04E-08	1.02E-13	3.77E-12
Barium	Ba-126+E	9.10E-07	3.67E-07	7.21E+00	3.40E-09	4.46E-09	4.63E-09	1.04E-08	1.02E-13	3.77E-12
Barium	Ba-128	1.05E-05	3.03E-06	2.91E-01	8.45E-08	1.94E-08	1.16E-07	2.60E-07	3.24E-13	1.20E-11
Barium	Ba-128+D	1.05E-05	3.03E-06	5.59E+00	4.46E-09	4.75E-09	6.07E-09	1.37E-08	3.24E-13	1.20E-11
Barium	Ba-128+E	1.05E-05	3.03E-06	5.59E+00	4.46E-09	4.75E-09	6.07E-09	1.37E-08	3.24E-13	1.20E-11
Barium	Ba-131	1.84E-06	6.70E-07	2.41E+00	1.06E-08	1.28E-08	1.44E-08	3.24E-08	9.19E-12	3.41E-10
Barium	Ba-131+D	2.59E-07	1.71E-07	2.41E+00	1.06E-08	1.39E-08	1.44E-08	3.24E-08	6.54E-11	2.42E-09
Barium	Ba-131+E	2.59E-07	1.71E-07	2.41E+00	1.06E-08	1.39E-08	1.44E-08	3.24E-08	6.54E-11	2.42E-09
Barium	Ba-131m	1.21E-08	4.63E-09	2.41E-01	1.06E-07	1.40E-07	1.44E-07	3.24E-07	1.20E-12	4.44E-11
Barium	Ba-131m+D	2.10E-06	1.76E-07	2.65E+00	9.62E-09	1.16E-08	1.31E-08	2.94E-08	6.93E-15	2.57E-13
Barium	Ba-131m+E	2.10E-06	1.76E-07	2.65E+00	9.62E-09	1.16E-08	1.31E-08	2.94E-08	6.93E-15	2.57E-13
Barium	Ba-133	3.40E-06	7.81E-06	1.98E+00	1.53E-08	1.53E-08	2.22E-08	5.00E-08	1.68E-09	6.22E-08
Barium	Ba-133m	2.09E-06	6.22E-07	2.73E-01	9.48E-08	6.22E-08	1.29E-07	2.90E-07	1.13E-12	4.18E-11
Barium	Ba-133m+E	5.48E-06	1.24E-06	2.26E+00	1.15E-08	1.15E-08	1.56E-08	3.51E-08	4.31E-13	1.60E-11
Barium	Ba-135m	1.70E-06	5.03E-07	2.37E-01	1.11E-07	7.51E-08	1.51E-07	3.39E-07	1.04E-12	3.85E-11
Barium	Ba-137m			3.61E+00	7.40E-09	9.87E-09	1.01E-08	2.27E-08		
Barium	Ba-139	4.00E-07	1.72E-07	2.26E-01	1.20E-07	1.29E-07	1.63E-07	3.67E-07	2.19E-13	8.11E-12
Barium	Ba-140	9.47E-06	3.74E-06	1.03E+00	2.64E-08	1.57E-08	3.59E-08	8.08E-08	2.06E-12	7.64E-11
Barium	Ba-140+D	1.79E-05	8.58E-06	1.61E+01	1.70E-09	1.97E-09	2.31E-09	5.19E-09	1.09E-12	4.04E-11
Barium	Ba-140+E	1.79E-05	8.58E-06	1.61E+01	1.70E-09	1.97E-09	2.31E-09	5.19E-09	1.09E-12	4.04E-11
Barium	Ba-141	2.09E-07	8.07E-08	5.06E+00	5.43E-09	7.20E-09	7.38E-09	1.66E-08	9.38E-14	3.47E-12
Barium	Ba-141+D	4.48E-06	8.95E-06	5.70E+00	4.82E-09	5.81E-09	6.56E-09	1.48E-08	4.38E-15	1.62E-13
Barium	Ba-141+E	4.48E-06	8.95E-06	5.70E+00	4.82E-09	5.81E-09	6.56E-09	1.48E-08	4.38E-15	1.62E-13
Barium	Ba-142	1.11E-07	4.11E-08	6.41E+00	4.32E-09	5.74E-09	5.87E-09	1.32E-08	1.03E-13	3.81E-12
Barium	Ba-142+D	7.73E-07	2.45E-07	2.50E+01	1.11E-09	1.47E-09	1.50E-09	3.38E-09	1.48E-14	5.49E-13
Barium	Ba-142+E	7.73E-07	2.45E-07	2.50E+01	1.11E-09	1.47E-09	1.50E-09	3.38E-09	1.48E-14	5.49E-13
Berkelium	Bk-245	2.41E-06	4.40E-06	9.90E-01	4.82E-08	4.85E-08	6.55E-08	1.47E-07	5.50E-12	2.04E-10
Berkelium	Bk-246	2.10E-06	1.71E-06	5.64E+00	8.50E-09	1.08E-08	1.16E-08	2.60E-08	2.35E-12	8.69E-11
Berkelium	Bk-247	4.70E-03	5.74E-01	4.35E-01	2.93E-06	5.13E-09	5.13E-06	1.01E-05	2.90E-10	1.07E-08
Berkelium	Bk-249	1.20E-05	1.39E-03	4.65E-06	2.86E-05	4.04E-08	4.39E-05	7.93E-05	7.28E-11	2.70E-09
Berkelium	Bk-249+D	1.20E-05	1.39E-03	6.74E-06	2.85E-05	4.04E-08	4.38E-05	7.92E-05	7.28E-11	2.70E-09
Berkelium	Bk-249+E	1.20E-05	1.39E-03	6.74E-06	2.85E-05	4.04E-08	4.38E-05	7.92E-05	7.28E-11	2.70E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Berkelium	Bk-250	5.81E-07	7.55E-06	5.55E+00	8.78E-09	1.15E-08	1.19E-08	2.69E-08	6.33E-13	2.35E-11
Berkelium	Bk-250+E	2.13E-03	2.62E-01	5.55E+00	8.33E-09	2.24E-10	1.14E-08	2.53E-08	1.73E-16	6.39E-15
Beryllium	Be-10	4.66E-06	3.61E-05	1.08E-03	5.86E-02	2.40E-04	1.48E-01	3.07E-01	1.37E-05	5.08E-04
Beryllium	Be-7	1.28E-07	2.36E-07	2.88E-01	4.74E-09	5.97E-09	6.45E-09	1.45E-08	3.20E-11	1.19E-09
Bismuth	Bi-200	1.82E-07	5.99E-08	1.41E+01	2.76E-09	3.67E-09	3.75E-09	8.43E-09	3.04E-13	1.13E-11
Bismuth	Bi-200+D	2.58E-06	1.32E-06	2.28E+01	1.71E-09	2.24E-09	2.33E-09	5.23E-09	2.15E-14	7.95E-13
Bismuth	Bi-200+E	2.58E-06	1.32E-06	2.28E+01	1.71E-09	2.24E-09	2.33E-09	5.23E-09	2.15E-14	7.95E-13
Bismuth	Bi-201	4.70E-07	1.58E-07	8.03E+00	4.87E-09	6.45E-09	6.63E-09	1.49E-08	3.52E-13	1.30E-11
Bismuth	Bi-201+D	1.48E-06	6.55E-07	1.26E+01	3.11E-09	4.08E-09	4.23E-09	9.52E-09	1.12E-13	4.13E-12
Bismuth	Bi-201+E	1.48E-06	6.55E-07	1.26E+01	3.11E-09	4.08E-09	4.23E-09	9.52E-09	1.12E-13	4.13E-12
Bismuth	Bi-202	3.59E-07	8.14E-08	1.65E+01	2.38E-09	3.17E-09	3.24E-09	7.29E-09	4.29E-13	1.59E-11
Bismuth	Bi-203	2.15E-06	8.29E-07	1.52E+01	2.60E-09	3.40E-09	3.54E-09	7.96E-09	5.08E-13	1.88E-11
Bismuth	Bi-203+D	3.23E-06	1.36E-06	1.52E+01	2.60E-09	3.37E-09	3.54E-09	7.96E-09	3.37E-13	1.25E-11
Bismuth	Bi-203+E	3.23E-06	1.36E-06	1.52E+01	2.60E-09	3.37E-09	3.54E-09	7.96E-09	3.37E-13	1.25E-11
Bismuth	Bi-205	4.00E-06	4.33E-06	1.08E+01	3.71E-09	4.70E-09	5.05E-09	1.14E-08	8.61E-12	3.19E-10
Bismuth	Bi-206	8.40E-06	6.55E-06	2.02E+01	1.99E-09	2.50E-09	2.71E-09	6.09E-09	1.68E-12	6.21E-11
Bismuth	Bi-207	5.48E-06	2.00E-05	9.38E+00	1.02E-08	1.02E-08	1.60E-08	3.59E-08	5.75E-09	2.13E-07
Bismuth	Bi-210	6.40E-06	1.96E-04	3.61E-03	1.24E-06	5.94E-08	1.27E-05	2.73E-05	1.80E-12	6.67E-11
Bismuth	Bi-210+D	2.00E-03	1.62E-02	3.61E-03	4.46E-09	1.91E-10	2.23E-07	4.03E-07	5.77E-15	2.14E-13
Bismuth	Bi-210+E	2.00E-03	1.62E-02	3.61E-03	4.46E-09	1.91E-10	2.23E-07	4.03E-07	5.77E-15	2.14E-13
Bismuth	Bi-210m	9.58E-05	7.59E-03	1.38E+00	3.25E-03	3.92E-04	6.94E-03	1.56E-02	2.63E-05	9.74E-04
Bismuth	Bi-211			2.56E-01	1.61E-07	2.14E-07	2.18E-07	4.92E-07		
Bismuth	Bi-212	1.06E-06	1.91E-05	1.17E+00	3.51E-08	4.16E-08	4.80E-08	1.08E-07	9.20E-14	3.41E-12
Bismuth	Bi-212+D	1.06E-06	1.91E-05	9.43E+00	4.38E-09	5.75E-09	5.95E-09	1.34E-08	9.20E-14	3.41E-12
Bismuth	Bi-212+E	1.06E-06	1.91E-05	9.43E+00	4.38E-09	5.75E-09	5.95E-09	1.34E-08	9.20E-14	3.41E-12
Bismuth	Bi-213	7.22E-07	1.54E-05	7.66E-01	5.40E-08	6.37E-08	7.37E-08	1.66E-07	1.03E-13	3.80E-12
Bismuth	Bi-213+D	9.36E-07	1.54E-05	1.05E+00	3.95E-08	4.69E-08	5.39E-08	1.21E-07	7.91E-14	2.93E-12
Bismuth	Bi-213+E	9.36E-07	1.54E-05	1.05E+00	3.95E-08	4.69E-08	5.39E-08	1.21E-07	7.91E-14	2.93E-12
Bismuth	Bi-214	2.83E-07	6.22E-06	9.81E+00	4.25E-09	5.65E-09	5.78E-09	1.30E-08	1.15E-13	4.25E-12
Bismuth	Bi-214+E	7.29E-03	2.97E-02	9.81E+00	9.64E-10	5.29E-11	5.30E-09	1.17E-08	4.45E-18	1.65E-16
Bromine	Br-74	1.87E-07	8.62E-08	3.04E+01	4.73E-10	6.31E-10	6.44E-10	1.45E-09	7.63E-14	2.82E-12
Bromine	Br-74m	3.02E-07	1.64E-07	2.63E+01	5.47E-10	7.28E-10	7.44E-10	1.67E-09	7.74E-14	2.87E-12
Bromine	Br-75	1.83E-07	1.31E-07	7.04E+00	2.07E-09	2.75E-09	2.82E-09	6.35E-09	3.06E-13	1.13E-11
Bromine	Br-75+D	1.83E-07	8.62E-06	9.02E+00	1.62E-09	2.15E-09	2.20E-09	4.96E-09	3.06E-13	1.13E-11
Bromine	Br-75+E	1.83E-07	8.62E-06	9.02E+00	1.62E-09	2.15E-09	2.20E-09	4.96E-09	3.06E-13	1.13E-11
Bromine	Br-76	1.35E-06	1.24E-06	1.70E+01	8.69E-10	1.14E-09	1.18E-09	2.67E-09	4.15E-13	1.54E-11
Bromine	Br-77	3.05E-07	2.13E-07	1.81E+00	8.23E-09	1.07E-08	1.13E-08	2.53E-08	6.46E-12	2.39E-10
Bromine	Br-80	5.85E-08	2.82E-08	4.76E-01	3.26E-08	4.26E-08	4.45E-08	1.00E-07	1.81E-13	6.71E-12
Bromine	Br-80m	2.76E-07	3.41E-07	1.16E-02	7.44E-07	3.06E-07	1.82E-06	4.10E-06	5.86E-13	2.17E-11
Bromine	Br-80m+D	3.34E-07	6.81E-07	4.88E-01	3.12E-08	3.74E-08	4.35E-08	9.78E-08	4.83E-13	1.79E-11
Bromine	Br-80m+E	3.34E-07	6.81E-07	4.88E-01	3.12E-08	3.74E-08	4.35E-08	9.78E-08	4.83E-13	1.79E-11
Bromine	Br-82	1.71E-06	1.22E-06	1.64E+01	9.71E-10	1.27E-09	1.32E-09	2.98E-09	7.73E-13	2.86E-11
Bromine	Br-83	9.14E-08	8.62E-08	4.67E-02	3.25E-07	3.30E-07	4.71E-07	1.06E-06	9.91E-13	3.67E-11
Bromine	Br-84	1.82E-07	9.66E-08	1.21E+01	1.35E-09	1.79E-09	1.83E-09	4.12E-09	1.12E-13	4.14E-12
Cadmium	Cd-104	2.33E-07	5.18E-08	1.31E+00	1.54E-08	1.99E-08	2.10E-08	4.73E-08	1.96E-13	7.26E-12
Cadmium	Cd-104+D	4.63E-07	1.00E-07	1.79E+01	1.13E-09	1.50E-09	1.54E-09	3.46E-09	9.87E-14	3.66E-12
Cadmium	Cd-104+E	4.63E-07	1.00E-07	1.79E+01	1.13E-09	1.50E-09	1.54E-09	3.46E-09	9.87E-14	3.66E-12
Cadmium	Cd-107	2.50E-07	1.02E-07	4.99E-02	3.92E-07	2.76E-07	5.68E-07	1.28E-06	1.27E-12	4.70E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Cadmium	Cd-109	1.31E-05	3.96E-05	1.47E-02	1.11E-07	1.05E-08	1.77E-06	3.89E-06	4.22E-11	1.56E-09
Cadmium	Cd-113	1.74E-04	5.11E-04	1.13E-04	4.23E+06	2.77E+05	7.38E+08	1.33E+09	2.42E+04	8.95E+05
Cadmium	Cd-113m	1.61E-04	4.70E-04	6.48E-04	1.30E-08	1.03E-09	2.03E-06	3.68E-06	3.82E-11	1.41E-09
Cadmium	Cd-115	5.70E-06	4.22E-06	1.37E+00	1.55E-08	1.18E-08	2.23E-08	5.02E-08	4.93E-13	1.82E-11
Cadmium	Cd-115+D	5.70E-06	4.22E-06	1.00E+00	2.07E-08	1.38E-08	3.04E-08	6.83E-08	4.93E-13	1.82E-11
Cadmium	Cd-115+E	5.70E-06	4.22E-06	1.00E+00	2.07E-08	1.38E-08	3.04E-08	6.83E-08	4.93E-13	1.82E-11
Cadmium	Cd-115m	1.62E-05	4.11E-05	1.48E-01	6.12E-08	8.69E-09	2.03E-07	4.55E-07	3.48E-12	1.29E-10
Cadmium	Cd-117	1.12E-06	3.96E-07	6.89E+00	3.30E-09	4.27E-09	4.50E-09	1.01E-08	1.19E-13	4.39E-12
Cadmium	Cd-117+D	1.63E-06	5.88E-07	1.59E+01	1.43E-09	1.87E-09	1.95E-09	4.39E-09	8.15E-14	3.02E-12
Cadmium	Cd-117+E	1.63E-06	5.88E-07	1.59E+01	1.43E-09	1.87E-09	1.95E-09	4.39E-09	8.15E-14	3.02E-12
Cadmium	Cd-117m	1.19E-06	3.63E-07	1.35E+01	1.69E-09	2.22E-09	2.30E-09	5.18E-09	1.51E-13	5.60E-12
Cadmium	Cd-117m+D	1.19E-06	5.29E-07	1.74E+01	1.31E-09	1.73E-09	1.78E-09	4.02E-09	1.51E-13	5.60E-12
Cadmium	Cd-117m+E	1.19E-06	5.29E-07	1.74E+01	1.31E-09	1.73E-09	1.78E-09	4.02E-09	1.51E-13	5.60E-12
Calcium	Ca-41	1.27E-06	1.35E-06	0.00E+00	1.89E-03	2.32E-04	5.61E-01	1.01E+00	1.80E-05	6.68E-04
Calcium	Ca-45	3.16E-06	6.62E-06	6.26E-05	1.24E-07	2.02E-08	2.64E-05	4.89E-05	2.54E-11	9.41E-10
Calcium	Ca-47	6.51E-06	6.55E-06	6.87E+00	1.30E-09	1.51E-09	1.81E-09	4.08E-09	3.58E-13	1.33E-11
Calcium	Ca-47+D	8.73E-06	8.40E-06	6.87E+00	1.30E-09	1.44E-09	1.81E-09	4.08E-09	2.67E-13	9.90E-12
Calcium	Ca-47+E	8.73E-06	8.40E-06	6.87E+00	1.30E-09	1.44E-09	1.81E-09	4.08E-09	2.67E-13	9.90E-12
Calcium	Ca-49			2.26E+01	4.22E-10	5.63E-10	5.74E-10	1.29E-09		
Californium	Cf-244	1.91E-07	9.92E-06	1.81E-04	2.20E-04	2.47E-06	3.16E-04	6.91E-04	1.89E-13	7.00E-12
Californium	Cf-244+D	6.29E-05	1.53E-01	5.66E-04	3.65E-06	7.53E-09	5.86E-06	1.12E-05	5.73E-16	2.12E-14
Californium	Cf-244+E	8.70E-04	4.22E-01	1.02E+01	4.59E-09	5.01E-10	6.27E-09	1.41E-08	4.14E-17	1.53E-15
Californium	Cf-246	1.43E-05	5.96E-04	1.89E-04	1.69E-05	3.35E-08	3.33E-05	6.13E-05	2.81E-13	1.04E-11
Californium	Cf-246+D	1.29E-04	1.79E-02	3.59E-04	1.97E-06	3.70E-09	3.94E-06	7.15E-06	3.11E-14	1.15E-12
Californium	Cf-246+E	1.29E-04	4.11E-01	5.10E-04	1.80E-06	3.70E-09	2.75E-06	5.29E-06	3.11E-14	1.15E-12
Californium	Cf-248	3.34E-04	4.44E-02	1.25E-04	7.76E-07	1.44E-09	1.56E-06	2.83E-06	2.71E-12	1.00E-10
Californium	Cf-248+E	2.35E-03	2.92E-01	2.50E-04	1.11E-07	2.05E-10	2.23E-07	4.04E-07	3.86E-13	1.43E-11
Californium	Cf-249	4.74E-03	5.77E-01	1.85E+00	3.09E-07	1.34E-09	5.60E-07	1.19E-06	7.37E-11	2.73E-09
Californium	Cf-250	2.13E-03	2.62E-01	1.18E-04	1.55E-07	2.59E-10	3.38E-07	6.11E-07	6.14E-12	2.27E-10
Californium	Cf-251	4.85E-03	5.88E-01	5.27E-01	1.50E-06	3.31E-09	3.07E-06	6.11E-06	1.86E-10	6.89E-09
Californium	Cf-252	1.08E-03	1.37E-01	1.76E-04	2.44E-07	4.52E-10	4.92E-07	8.89E-07	2.45E-12	9.08E-11
Californium	Cf-253	1.40E-05	2.84E-03	7.68E-05	1.84E-05	3.51E-08	3.63E-05	6.63E-05	3.53E-12	1.31E-10
Californium	Cf-253+D	5.96E-05	8.18E-03	2.19E-03	3.72E-06	8.25E-09	6.94E-06	1.31E-05	8.29E-13	3.07E-11
Californium	Cf-253+E	5.96E-05	8.18E-03	2.19E-03	3.72E-06	8.25E-09	6.94E-06	1.31E-05	8.29E-13	3.07E-11
Californium	Cf-254	2.42E-03	2.53E-01	3.87E-07	1.10E-07	2.04E-10	2.23E-07	4.02E-07	6.95E-14	2.57E-12
Carbon	C-11	1.22E-08	7.92E-09	6.00E+00	3.57E-10	4.74E-10	4.86E-10	1.09E-09	1.40E-13	5.19E-12
Carbon	C-14	2.09E-06	2.35E-08	1.34E-05	1.48E-06	1.28E-07	4.55E-03	8.28E-03	1.46E-07	5.70E-06
Cerium	Ce-134	1.04E-05	7.88E-06	1.68E-02	1.36E-06	2.47E-08	1.96E-06	4.34E-06	4.24E-13	1.57E-11
Cerium	Ce-134+D	1.04E-05	7.88E-06	4.13E+00	6.32E-09	6.31E-09	8.60E-09	1.93E-08	4.24E-13	1.57E-11
Cerium	Ce-134+E	1.04E-05	7.88E-06	4.13E+00	6.32E-09	6.31E-09	8.60E-09	1.93E-08	4.24E-13	1.57E-11
Cerium	Ce-135	3.47E-06	1.47E-06	1.04E+01	2.52E-09	3.22E-09	3.43E-09	7.71E-09	3.13E-13	1.16E-11
Cerium	Ce-137	1.03E-07	3.85E-08	6.59E-02	4.05E-07	4.46E-07	5.50E-07	1.24E-06	5.45E-12	2.02E-10
Cerium	Ce-137m	2.20E-06	1.32E-06	1.92E-01	1.38E-07	7.31E-08	1.88E-07	4.24E-07	9.79E-13	3.63E-11
Cerium	Ce-137m+D	2.20E-06	2.64E-06	2.58E-01	1.03E-07	6.45E-08	1.41E-07	3.16E-07	9.79E-13	3.63E-11
Cerium	Ce-137m+E	2.20E-06	2.64E-06	2.58E-01	1.03E-07	6.45E-08	1.41E-07	3.16E-07	9.79E-13	3.63E-11
Cerium	Ce-139	1.14E-06	7.22E-06	6.37E-01	4.25E-08	4.57E-08	5.78E-08	1.30E-07	1.83E-10	6.79E-09
Cerium	Ce-143	4.55E-06	3.20E-06	1.48E+00	1.88E-08	1.78E-08	2.56E-08	5.75E-08	4.73E-13	1.75E-11
Cerium	Ce-143+D	9.25E-06	1.08E-05	1.48E+00	1.88E-08	1.37E-08	2.56E-08	5.75E-08	2.33E-13	8.63E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Cerium	Ce-143+E	9.25E-06	1.08E-05	1.48E+00	1.88E-08	1.37E-08	2.56E-08	5.75E-08	2.33E-13	8.63E-12
Cerium	Ce-141	2.90E-06	8.33E-06	3.18E-01	8.63E-08	5.19E-08	1.18E-07	2.64E-07	1.73E-11	6.42E-10
Cerium	Ce-144	2.10E-05	2.16E-04	7.17E-02	3.66E-07	1.30E-08	5.13E-07	1.15E-06	2.13E-11	7.91E-10
Cerium	Ce-144+D	2.10E-05	2.16E-04	3.25E-01	8.51E-08	1.19E-08	1.16E-07	2.62E-07	2.13E-11	7.91E-10
Cerium	Ce-144+E	2.10E-05	2.16E-04	3.25E-01	8.51E-08	1.19E-08	1.16E-07	2.62E-07	2.13E-11	7.91E-10
Cesium	Cs-125	7.25E-08	4.14E-08	3.94E+00	6.18E-09	8.20E-09	8.40E-09	1.89E-08	5.90E-13	2.19E-11
Cesium	Cs-125+D	3.85E-05	2.42E-05	5.25E+00	4.58E-09	2.00E-09	6.30E-09	1.42E-08	1.11E-15	4.12E-14
Cesium	Cs-125+E	3.85E-05	2.42E-05	5.25E+00	4.58E-09	2.00E-09	6.30E-09	1.42E-08	1.11E-15	4.12E-14
Cesium	Cs-126			6.41E+00	3.83E-09	5.11E-09	5.21E-09	1.17E-08		
Cesium	Cs-127	7.84E-08	5.88E-08	2.28E+00	1.09E-08	1.43E-08	1.48E-08	3.32E-08	4.62E-12	1.71E-10
Cesium	Cs-127+D	7.84E-08	5.88E-08	3.59E+00	6.90E-09	9.14E-09	9.38E-09	2.11E-08	4.62E-12	1.71E-10
Cesium	Cs-127+E	7.84E-08	5.88E-08	3.59E+00	6.90E-09	9.14E-09	9.38E-09	2.11E-08	4.62E-12	1.71E-10
Cesium	Cs-128			5.29E+00	4.72E-09	6.29E-09	6.42E-09	1.44E-08		
Cesium	Cs-129	2.18E-07	1.59E-07	1.43E+00	1.76E-08	2.24E-08	2.39E-08	5.37E-08	8.67E-12	3.21E-10
Cesium	Cs-130	5.74E-08	2.99E-08	2.99E+00	8.47E-09	1.12E-08	1.15E-08	2.59E-08	5.16E-13	1.91E-11
Cesium	Cs-131	2.47E-07	1.67E-07	1.08E-02	2.27E-06	4.20E-07	3.21E-06	7.22E-06	5.64E-11	2.09E-09
Cesium	Cs-132	1.89E-06	1.23E-06	4.15E+00	6.20E-09	7.32E-09	8.43E-09	1.90E-08	4.94E-12	1.83E-10
Cesium	Cs-134	7.33E-05	4.63E-05	9.47E+00	2.72E-09	1.15E-09	3.75E-09	8.43E-09	1.51E-11	5.59E-10
Cesium	Cs-134m	4.92E-08	4.37E-08	7.27E-02	3.59E-07	4.02E-07	4.89E-07	1.10E-06	3.61E-12	1.34E-10
Cesium	Cs-134m+D	7.33E-05	8.73E-08	9.55E+00	2.70E-09	1.15E-09	3.72E-09	8.36E-09	2.42E-15	8.97E-14
Cesium	Cs-134m+E	7.33E-05	8.73E-08	9.55E+00	2.70E-09	1.15E-09	3.72E-09	8.36E-09	2.42E-15	8.97E-14
Cesium	Cs-135	7.07E-06	4.55E-06	3.83E-05	2.14E-01	1.45E-03	5.24E+00	9.51E+00	1.76E-04	6.51E-03
Cesium	Cs-135m	5.55E-08	2.47E-08	9.77E+00	2.69E-09	3.58E-09	3.66E-09	8.24E-09	9.81E-13	3.63E-11
Cesium	Cs-136	1.12E-05	7.33E-06	1.33E+01	1.99E-09	2.14E-09	2.71E-09	6.10E-09	1.74E-12	6.43E-11
Cesium	Cs-137	5.00E-05	3.19E-05	7.51E-04	5.53E-07	4.15E-09	1.20E-05	2.21E-05	3.29E-10	1.22E-08
Cesium	Cs-137+D	5.00E-05	3.19E-05	3.42E+00	1.52E-08	3.35E-09	2.42E-08	5.43E-08	3.29E-10	1.22E-08
Cesium	Cs-137+E	5.00E-05	3.19E-05	3.42E+00	1.52E-08	3.35E-09	2.42E-08	5.43E-08	3.29E-10	1.22E-08
Cesium	Cs-138	1.94E-07	1.01E-07	1.55E+01	1.73E-09	2.30E-09	2.36E-09	5.30E-09	1.74E-13	6.45E-12
Chlorine	Cl-36	3.03E-06	2.24E-06	2.39E-03	3.77E-05	1.69E-05	6.00E-02	1.31E-01	1.43E-05	5.30E-04
Chlorine	Cl-38	2.35E-07	1.34E-07	1.03E+01	7.06E-10	9.19E-10	9.80E-10	2.21E-09	4.57E-14	1.69E-12
Chlorine	Cl-39	1.84E-07	1.13E-07	9.28E+00	8.04E-10	1.05E-09	1.11E-09	2.50E-09	8.99E-14	3.33E-12
Chromium	Cr-48	8.88E-07	7.81E-07	2.22E+00	4.21E-09	5.33E-09	5.72E-09	1.29E-08	5.67E-13	2.10E-11
Chromium	Cr-48+D	8.88E-07	1.10E-05	2.07E+01	4.51E-10	5.98E-10	6.13E-10	1.38E-09	5.67E-13	2.10E-11
Chromium	Cr-48+E	8.88E-07	1.10E-05	2.07E+01	4.51E-10	5.98E-10	6.13E-10	1.38E-09	5.67E-13	2.10E-11
Chromium	Cr-49	1.83E-07	5.81E-08	6.00E+00	1.59E-09	2.11E-09	2.17E-09	4.87E-09	8.57E-14	3.17E-12
Chromium	Cr-49+D	1.83E-07	4.03E-07	6.00E+00	1.59E-09	2.11E-09	2.17E-09	4.87E-09	8.57E-14	3.17E-12
Chromium	Cr-49+E	1.83E-07	4.03E-07	6.00E+00	1.59E-09	2.11E-09	2.17E-09	4.87E-09	8.57E-14	3.17E-12
Chromium	Cr-51	1.47E-07	2.62E-07	1.74E-01	5.69E-08	6.82E-08	7.74E-08	1.74E-07	1.05E-10	3.89E-09
Cobalt	Co-55	3.50E-06	1.89E-06	1.23E+01	8.74E-10	8.06E-10	1.19E-09	2.68E-09	1.26E-13	4.66E-12
Cobalt	Co-55+D	3.50E-06	3.22E-06	1.23E+01	8.74E-10	8.06E-10	1.19E-09	2.68E-09	1.26E-13	4.66E-12
Cobalt	Co-55+E	3.50E-06	3.22E-06	1.23E+01	8.74E-10	8.06E-10	1.19E-09	2.68E-09	1.26E-13	4.66E-12
Cobalt	Co-56	1.26E-05	2.23E-05	2.35E+01	4.63E-10	3.36E-10	6.30E-10	1.42E-09	3.83E-12	1.42E-10
Cobalt	Co-57	1.18E-06	2.63E-06	5.01E-01	2.20E-08	6.29E-09	3.02E-08	6.79E-08	1.43E-10	5.29E-09
Cobalt	Co-58	3.58E-06	6.36E-06	5.96E+00	1.89E-09	1.30E-09	2.58E-09	5.80E-09	1.26E-11	4.65E-10
Cobalt	Co-58m	8.07E-08	6.73E-08	2.56E-06	3.76E-05	1.19E-07	1.23E-03	2.31E-03	3.00E-12	1.11E-10
Cobalt	Co-58m+D	8.07E-08	1.35E-07	5.96E+00	1.90E-09	2.48E-09	2.58E-09	5.80E-09	3.00E-12	1.11E-10
Cobalt	Co-58m+E	8.07E-08	1.35E-07	5.96E+00	1.90E-09	2.48E-09	2.58E-09	5.80E-09	3.00E-12	1.11E-10
Cobalt	Co-60	2.69E-05	3.31E-05	1.62E+01	7.31E-10	2.68E-10	1.02E-09	2.29E-09	4.70E-11	1.74E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Cobalt	Co-60m	3.63E-09	1.37E-09	2.47E-02	4.74E-07	5.14E-07	6.45E-07	1.45E-06	1.32E-12	4.87E-11
Cobalt	Co-60m+D	3.63E-09	2.73E-09	1.62E+01	7.22E-10	9.62E-10	9.82E-10	2.21E-09	1.32E-12	4.87E-11
Cobalt	Co-60m+E	3.63E-09	2.73E-09	1.62E+01	7.22E-10	9.62E-10	9.82E-10	2.21E-09	1.32E-12	4.87E-11
Cobalt	Co-61	2.44E-07	9.69E-08	3.46E-01	3.43E-08	2.18E-08	4.68E-08	1.05E-07	1.88E-13	6.97E-12
Cobalt	Co-62m	1.14E-07	3.37E-08	1.77E+01	6.84E-10	9.03E-10	9.31E-10	2.09E-09	5.74E-14	2.13E-12
Copper	Cu-60	1.93E-07	5.51E-08	2.52E+01	4.64E-10	6.17E-10	6.30E-10	1.42E-09	5.50E-14	2.04E-12
Copper	Cu-61	4.37E-07	1.73E-07	4.89E+00	2.43E-09	3.20E-09	3.30E-09	7.43E-09	2.17E-13	8.05E-12
Copper	Cu-62			5.98E+00	2.02E-09	2.69E-09	2.75E-09	6.18E-09		
Copper	Cu-64	4.66E-07	2.56E-07	1.12E+00	1.11E-08	1.40E-08	1.52E-08	3.41E-08	7.96E-13	2.95E-11
Copper	Cu-66			5.66E-01	2.27E-08	3.03E-08	3.09E-08	6.95E-08		
Copper	Cu-67	1.31E-06	1.17E-06	5.32E-01	2.42E-08	2.39E-08	3.33E-08	7.50E-08	1.44E-12	5.34E-11
Curium	Cm-238	3.40E-07	5.33E-06	2.71E-01	1.71E-07	1.95E-07	2.33E-07	5.24E-07	7.66E-13	2.84E-11
Curium	Cm-238+D	7.18E-07	9.03E-06	5.96E+00	7.78E-09	1.02E-08	1.06E-08	2.38E-08	3.63E-13	1.35E-11
Curium	Cm-238+E	7.18E-07	3.53E-01	5.96E+00	7.78E-09	1.02E-08	1.06E-08	2.38E-08	3.63E-13	1.35E-11
Curium	Cm-240	6.25E-05	8.03E-03	1.57E-04	3.97E-06	7.45E-09	7.96E-06	1.44E-05	1.14E-12	4.21E-11
Curium	Cm-240+D	6.25E-05	1.53E-01	3.85E-04	3.66E-06	7.45E-09	5.89E-06	1.12E-05	1.14E-12	4.21E-11
Curium	Cm-240+E	8.70E-04	4.22E-01	1.02E+01	4.51E-09	4.93E-10	6.17E-09	1.38E-08	8.17E-14	3.02E-12
Curium	Cm-241	4.48E-06	1.47E-04	2.63E+00	1.78E-08	1.94E-08	2.42E-08	5.45E-08	1.93E-11	7.17E-10
Curium	Cm-242	1.15E-04	1.73E-02	1.71E-04	2.19E-06	4.10E-09	4.40E-06	7.97E-06	3.76E-12	1.39E-10
Curium	Cm-242+E	1.15E-04	4.11E-01	3.23E-04	1.99E-06	4.10E-09	2.95E-06	5.70E-06	3.76E-12	1.39E-10
Curium	Cm-243	2.51E-03	3.07E-01	5.83E-01	8.71E-08	3.02E-10	1.58E-07	3.26E-07	1.10E-11	4.08E-10
Curium	Cm-244	2.02E-03	2.48E-01	1.26E-04	1.86E-07	3.00E-10	4.16E-07	7.51E-07	8.77E-12	3.25E-10
Curium	Cm-245	3.74E-03	4.55E-01	3.40E-01	1.89E-05	3.91E-08	3.95E-05	7.78E-05	2.23E-09	8.26E-08
Curium	Cm-246	3.70E-03	4.51E-01	1.16E-04	1.59E-05	2.21E-08	3.85E-05	6.96E-05	1.26E-09	4.66E-08
Curium	Cm-247	3.42E-03	4.14E-01	1.78E+00	1.50E-02	7.87E-05	2.67E-02	5.73E-02	4.51E-06	1.67E-04
Curium	Cm-248	1.36E-02	1.65E+00	8.78E-05	3.20E-04	4.44E-07	7.75E-04	1.40E-03	2.54E-08	9.39E-07
Curium	Cm-249	9.99E-08	1.93E-07	1.15E-01	4.24E-07	5.06E-07	5.76E-07	1.30E-06	1.22E-12	4.51E-11
Curium	Cm-249+D	1.21E-05	1.39E-03	1.15E-01	4.16E-07	3.73E-08	5.69E-07	1.28E-06	1.00E-14	3.72E-13
Curium	Cm-249+E	1.21E-05	1.39E-03	1.15E-01	4.16E-07	3.73E-08	5.69E-07	1.28E-06	1.00E-14	3.72E-13
Curium	Cm-250	7.77E-02	9.40E+00	0.00E+00	1.58E-06	2.19E-09	3.82E-06	6.90E-06	1.25E-10	4.62E-09
Curium	Cm-250+D	7.77E-02	9.40E+00	1.73E+00	1.41E-06	2.19E-09	3.24E-06	6.04E-06	1.25E-10	4.62E-09
Curium	Cm-250+E	7.77E-02	9.40E+00	1.73E+00	1.41E-06	2.19E-09	3.24E-06	6.04E-06	1.25E-10	4.62E-09
Dysprosium	Dy-155	5.77E-07	2.22E-07	3.27E+00	9.24E-09	1.20E-08	1.26E-08	2.83E-08	1.23E-12	4.54E-11
Dysprosium	Dy-155+D	1.48E-06	9.99E-07	3.74E+00	8.08E-09	1.02E-08	1.10E-08	2.47E-08	4.78E-13	1.77E-11
Dysprosium	Dy-155+E	1.48E-06	9.99E-07	3.74E+00	8.08E-09	1.02E-08	1.10E-08	2.47E-08	4.78E-13	1.77E-11
Dysprosium	Dy-157	2.81E-07	7.99E-08	1.81E+00	1.69E-08	2.21E-08	2.30E-08	5.17E-08	2.07E-12	7.65E-11
Dysprosium	Dy-159	4.44E-07	2.43E-06	5.51E-02	5.62E-07	3.61E-07	7.64E-07	1.72E-06	5.67E-10	2.10E-08
Dysprosium	Dy-165	3.63E-07	1.34E-07	1.29E-01	2.49E-07	2.41E-07	3.38E-07	7.61E-07	4.84E-13	1.79E-11
Dysprosium	Dy-166	6.62E-06	7.47E-06	9.10E-02	3.52E-07	4.42E-08	4.79E-07	1.08E-06	9.34E-13	3.46E-11
Dysprosium	Dy-166+D	1.22E-05	7.81E-04	2.48E-01	1.29E-07	2.29E-08	1.76E-07	3.95E-07	5.07E-13	1.88E-11
Dysprosium	Dy-166+E	1.22E-05	7.81E-04	2.48E-01	1.29E-07	2.29E-08	1.76E-07	3.95E-07	5.07E-13	1.88E-11
Einsteinium	Es-250	1.18E-07	4.81E-06	2.24E+00	2.17E-08	2.88E-08	2.96E-08	6.65E-08	2.02E-12	7.50E-11
Einsteinium	Es-250+E	2.13E-03	2.62E-01	2.24E+00	1.92E-08	2.26E-10	2.64E-08	5.79E-08	1.12E-16	4.17E-15
Einsteinium	Es-251	7.40E-07	4.74E-06	3.61E-01	1.36E-07	1.42E-07	1.84E-07	4.15E-07	5.11E-12	1.89E-10
Einsteinium	Es-253	3.37E-05	3.96E-03	1.76E-03	7.57E-06	1.46E-08	1.12E-05	2.15E-05	1.69E-12	6.24E-11
Einsteinium	Es-253+D	4.55E-05	5.37E-03	1.76E-03	6.02E-06	1.08E-08	9.00E-06	1.70E-05	1.25E-12	4.62E-11
Einsteinium	Es-253+E	4.55E-05	5.37E-03	1.76E-03	6.02E-06	1.08E-08	9.00E-06	1.70E-05	1.25E-12	4.62E-11
Einsteinium	Es-254	3.13E-04	4.11E-02	1.29E-02	8.65E-07	1.57E-09	1.29E-06	2.45E-06	2.45E-12	9.07E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Einsteinium	Es-254+D	3.13E-04	4.11E-02	8.35E+00	5.90E-09	1.31E-09	8.02E-09	1.80E-08	2.45E-12	9.07E-11
Einsteinium	Es-254+E	2.15E-03	2.63E-01	8.35E+00	5.72E-09	2.23E-10	7.81E-09	1.74E-08	3.57E-13	1.32E-11
Einsteinium	Es-254m	1.79E-05	5.59E-04	2.80E+00	1.76E-08	1.27E-08	2.40E-08	5.40E-08	2.55E-13	9.45E-12
Einsteinium	Es-254m+D	1.79E-05	6.14E-04	2.80E+00	1.76E-08	1.27E-08	2.40E-08	5.40E-08	2.55E-13	9.45E-12
Einsteinium	Es-254m+E	2.11E-03	2.58E-01	2.80E+00	1.60E-08	2.32E-10	2.20E-08	4.84E-08	2.16E-15	8.00E-14
Erbium	Er-161	3.43E-07	9.07E-08	5.44E+00	5.77E-09	7.63E-09	7.85E-09	1.77E-08	6.95E-13	2.57E-11
Erbium	Er-161+D	3.92E-07	1.06E-07	5.44E+00	5.77E-09	7.62E-09	7.85E-09	1.77E-08	6.07E-13	2.25E-11
Erbium	Er-161+E	3.92E-07	1.06E-07	5.44E+00	5.77E-09	7.62E-09	7.85E-09	1.77E-08	6.07E-13	2.25E-11
Erbium	Er-165	8.25E-08	2.99E-08	5.14E-02	6.26E-07	6.87E-07	8.51E-07	1.91E-06	9.46E-12	3.50E-10
Erbium	Er-169	1.50E-06	2.09E-06	1.39E-04	9.40E-05	2.19E-07	1.38E-04	2.72E-04	1.15E-11	4.25E-10
Erbium	Er-171	1.45E-06	5.62E-07	1.96E+00	1.70E-08	2.06E-08	2.31E-08	5.20E-08	4.06E-13	1.50E-11
Erbium	Er-171+D	1.88E-06	9.69E-06	1.96E+00	1.70E-08	2.01E-08	2.31E-08	5.20E-08	3.13E-13	1.16E-11
Erbium	Er-171+E	1.88E-06	9.69E-06	1.96E+00	1.70E-08	2.01E-08	2.31E-08	5.20E-08	3.13E-13	1.16E-11
Erbium	Er-172	4.22E-06	4.11E-06	2.97E+00	1.13E-08	1.26E-08	1.53E-08	3.45E-08	9.18E-13	3.40E-11
Erbium	Er-172+D	1.11E-05	8.99E-06	6.05E+00	5.54E-09	5.93E-09	7.53E-09	1.69E-08	3.50E-13	1.30E-11
Erbium	Er-172+E	1.11E-05	8.99E-06	6.05E+00	5.54E-09	5.93E-09	7.53E-09	1.69E-08	3.50E-13	1.30E-11
Europium	Eu-145	3.37E-06	2.74E-06	9.15E+00	3.09E-09	3.92E-09	4.20E-09	9.44E-09	2.80E-12	1.04E-10
Europium	Eu-145+D	4.29E-06	1.38E-05	9.15E+00	3.09E-09	3.87E-09	4.20E-09	9.44E-09	2.20E-12	8.15E-11
Europium	Eu-145+E	4.77E-06	3.92E-05	9.15E+00	3.09E-09	3.85E-09	4.20E-09	9.44E-09	1.98E-12	7.32E-11
Europium	Eu-146	5.70E-06	3.89E-06	1.54E+01	1.85E-09	2.35E-09	2.51E-09	5.65E-09	1.29E-12	4.79E-11
Europium	Eu-147	1.98E-06	3.53E-06	2.75E+00	1.04E-08	1.27E-08	1.42E-08	3.19E-08	1.95E-11	7.22E-10
Europium	Eu-148	5.74E-06	1.43E-05	1.31E+01	2.20E-09	2.77E-09	2.99E-09	6.72E-09	1.54E-11	5.71E-10
Europium	Eu-149	4.59E-07	1.89E-06	2.02E-01	1.44E-07	1.47E-07	1.96E-07	4.40E-07	3.31E-10	1.23E-08
Europium	Eu-150a	1.50E-06	6.73E-07	2.62E-01	1.12E-07	8.43E-08	1.52E-07	3.42E-07	5.77E-13	2.14E-11
Europium	Eu-150b	6.36E-06	2.68E-04	8.72E+00	7.35E-09	7.33E-09	1.15E-08	2.58E-08	3.22E-09	1.19E-07
Europium	Eu-152	6.48E-06	2.21E-04	7.01E+00	5.35E-09	5.73E-09	7.90E-09	1.78E-08	1.25E-09	4.64E-08
Europium	Eu-152m	2.00E-06	8.18E-07	1.76E+00	1.69E-08	1.95E-08	2.29E-08	5.16E-08	3.24E-13	1.20E-11
Europium	Eu-154	9.55E-06	2.86E-04	7.68E+00	4.31E-09	4.67E-09	6.18E-09	1.39E-08	5.68E-10	2.10E-08
Europium	Eu-155	1.53E-06	4.14E-05	1.82E-01	1.68E-07	1.05E-07	2.32E-07	5.23E-07	2.01E-09	7.45E-08
Europium	Eu-156	9.18E-06	1.41E-05	8.65E+00	3.51E-09	4.10E-09	4.78E-09	1.08E-08	2.83E-12	1.05E-10
Europium	Eu-157	2.44E-06	1.11E-06	1.31E+00	2.33E-08	2.49E-08	3.17E-08	7.14E-08	4.45E-13	1.65E-11
Europium	Eu-158	2.85E-07	9.40E-08	6.65E+00	4.63E-09	6.14E-09	6.30E-09	1.42E-08	1.93E-13	7.17E-12
Fermium	Fm-252	1.15E-05	4.22E-04	1.35E-04	2.81E-05	4.27E-08	4.30E-05	7.89E-05	2.28E-13	8.43E-12
Fermium	Fm-252+D	3.46E-04	4.48E-02	2.60E-04	9.99E-07	1.42E-09	1.53E-06	2.77E-06	7.55E-15	2.80E-13
Fermium	Fm-252+E	2.36E-03	2.93E-01	3.87E-04	1.47E-07	2.07E-10	2.25E-07	4.07E-07	1.10E-15	4.09E-14
Fermium	Fm-253	5.07E-06	5.77E-04	3.18E-01	1.55E-07	6.61E-08	2.11E-07	4.74E-07	1.64E-12	6.08E-11
Fermium	Fm-253+D	4.51E-05	5.29E-03	3.18E-01	1.52E-07	1.03E-08	2.07E-07	4.65E-07	1.84E-13	6.82E-12
Fermium	Fm-253+E	4.51E-05	5.29E-03	3.18E-01	1.52E-07	1.03E-08	2.07E-07	4.65E-07	1.84E-13	6.82E-12
Fermium	Fm-254	1.74E-06	5.81E-05	2.41E-04	1.02E-04	2.84E-07	1.48E-04	2.98E-04	2.17E-13	8.02E-12
Fermium	Fm-254+E	2.13E-03	2.62E-01	3.59E-04	1.64E-07	2.32E-10	2.52E-07	4.55E-07	1.76E-16	6.53E-15
Fermium	Fm-255	1.04E-05	2.67E-04	6.11E-03	6.57E-06	4.76E-08	9.15E-06	1.97E-05	2.26E-13	8.35E-12
Fermium	Fm-257	1.51E-04	2.34E-02	4.30E-01	1.11E-07	3.24E-09	1.52E-07	3.38E-07	1.88E-12	6.94E-11
Fermium	Fm-257+D	2.11E-04	3.16E-02	4.30E-01	1.09E-07	2.34E-09	1.49E-07	3.31E-07	1.34E-12	4.98E-11
Fermium	Fm-257+E	2.11E-04	3.16E-02	4.30E-01	1.09E-07	2.34E-09	1.49E-07	3.31E-07	1.34E-12	4.98E-11
Fluorine	F-18	1.22E-07	8.36E-08	6.01E+00	5.83E-10	7.75E-10	7.93E-10	1.78E-09	1.23E-13	4.55E-12
Francium	Fr-219			1.94E-02	2.20E-06	2.93E-06	2.99E-06	6.72E-06		
Francium	Fr-219+D			2.95E-01	1.45E-07	1.93E-07	1.97E-07	4.42E-07		
Francium	Fr-219+E			2.95E-01	1.45E-07	1.93E-07	1.97E-07	4.42E-07		

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Francium	Fr-220			4.56E-02	9.40E-07	1.25E-06	1.28E-06	2.88E-06		
Francium	Fr-220+D			9.47E+00	4.53E-09	6.03E-09	6.15E-09	1.38E-08		
Francium	Fr-220+E			9.47E+00	4.53E-09	6.03E-09	6.15E-09	1.38E-08		
Francium	Fr-221			1.54E-01	2.80E-07	3.74E-07	3.81E-07	8.58E-07		
Francium	Fr-221+D			1.20E+00	3.58E-08	4.78E-08	4.88E-08	1.10E-07		
Francium	Fr-221+E			1.20E+00	3.58E-08	4.78E-08	4.88E-08	1.10E-07		
Francium	Fr-222	2.46E-06	1.23E-05	1.42E-02	2.97E-06	1.68E-07	4.05E-06	9.06E-06	9.90E-15	3.67E-13
Francium	Fr-222+D	2.46E-06	1.23E-05	6.99E-02	6.16E-07	1.45E-07	8.38E-07	1.88E-06	9.90E-15	3.67E-13
Francium	Fr-222+E	7.29E-03	2.97E-02	7.60E-02	3.93E-08	5.92E-11	6.05E-08	1.11E-07	3.34E-18	1.24E-16
Francium	Fr-223	8.62E-06	6.22E-06	1.98E-01	2.18E-07	4.29E-08	2.97E-07	6.67E-07	4.29E-15	1.59E-13
Francium	Fr-223+D	6.66E-04	7.84E-03	1.69E+00	2.43E-08	6.39E-10	3.33E-08	7.41E-08	5.56E-17	2.06E-15
Francium	Fr-223+E	6.66E-04	7.84E-03	1.69E+00	2.43E-08	6.39E-10	3.33E-08	7.41E-08	5.56E-17	2.06E-15
Gadolinium	Gd-145	1.24E-07	3.85E-08	1.47E+01	1.92E-09	2.55E-09	2.61E-09	5.87E-09	2.03E-13	7.53E-12
Gadolinium	Gd-145+D	4.40E-06	1.38E-05	2.39E+01	1.18E-09	1.54E-09	1.61E-09	3.62E-09	5.74E-15	2.13E-13
Gadolinium	Gd-145+E	4.88E-06	3.92E-05	2.39E+01	1.18E-09	1.53E-09	1.61E-09	3.62E-09	5.17E-15	1.92E-13
Gadolinium	Gd-146	4.14E-06	2.23E-05	8.01E-01	3.55E-08	2.80E-08	4.82E-08	1.09E-07	1.86E-11	6.91E-10
Gadolinium	Gd-146+D	9.84E-06	2.62E-05	1.62E+01	1.75E-09	2.16E-09	2.39E-09	5.37E-09	7.85E-12	2.91E-10
Gadolinium	Gd-146+E	9.84E-06	2.62E-05	1.62E+01	1.75E-09	2.16E-09	2.39E-09	5.37E-09	7.85E-12	2.91E-10
Gadolinium	Gd-147	2.75E-06	1.51E-06	7.85E+00	3.65E-09	4.65E-09	4.96E-09	1.12E-08	9.32E-13	3.45E-11
Gadolinium	Gd-147+D	4.74E-06	5.03E-06	1.06E+01	2.70E-09	3.40E-09	3.68E-09	8.27E-09	5.40E-13	2.00E-11
Gadolinium	Gd-147+E	4.74E-06	5.03E-06	1.06E+01	2.70E-09	3.40E-09	3.68E-09	8.27E-09	5.40E-13	2.00E-11
Gadolinium	Gd-148	2.18E-04	8.81E-02	0.00E+00	2.60E-06	5.11E-09	8.14E-06	1.48E-05	2.53E-10	9.36E-09
Gadolinium	Gd-149	2.00E-06	2.29E-06	2.15E+00	1.35E-08	1.60E-08	1.84E-08	4.13E-08	7.67E-12	2.84E-10
Gadolinium	Gd-149+D	2.46E-06	4.18E-06	2.15E+00	1.35E-08	1.56E-08	1.84E-08	4.13E-08	6.24E-12	2.31E-10
Gadolinium	Gd-149+E	2.46E-06	4.18E-06	2.15E+00	1.35E-08	1.56E-08	1.84E-08	4.13E-08	6.24E-12	2.31E-10
Gadolinium	Gd-151	8.25E-07	4.48E-06	1.74E-01	1.69E-07	1.38E-07	2.30E-07	5.17E-07	2.41E-10	8.91E-09
Gadolinium	Gd-152	1.61E-04	6.48E-02	0.00E+00	3.77E+06	7.16E+03	1.20E+07	2.19E+07	4.09E+02	1.51E+04
Gadolinium	Gd-153	1.17E-06	9.47E-06	2.45E-01	1.22E-07	9.89E-08	1.66E-07	3.72E-07	3.46E-10	1.28E-08
Gadolinium	Gd-159	1.98E-06	9.77E-07	2.39E-01	1.29E-07	8.19E-08	1.76E-07	3.96E-07	6.81E-13	2.52E-11
Gallium	Ga-65	8.95E-08	2.82E-08	6.82E+00	1.86E-09	2.47E-09	2.53E-09	5.68E-09	8.40E-14	3.11E-12
Gallium	Ga-65+D	1.45E-05	2.04E-05	1.05E+01	1.20E-09	1.36E-09	1.64E-09	3.68E-09	5.18E-16	1.92E-14
Gallium	Ga-65+E	1.45E-05	2.04E-05	1.05E+01	1.20E-09	1.36E-09	1.64E-09	3.68E-09	5.18E-16	1.92E-14
Gallium	Ga-66	4.81E-06	1.86E-06	1.65E+01	7.80E-10	1.00E-09	1.06E-09	2.39E-09	5.89E-14	2.18E-12
Gallium	Ga-67	7.84E-07	5.59E-07	7.42E-01	1.76E-08	2.06E-08	2.39E-08	5.39E-08	3.05E-12	1.13E-10
Gallium	Ga-68	3.42E-07	1.14E-07	5.62E+00	2.36E-09	3.12E-09	3.20E-09	7.21E-09	1.03E-13	3.81E-12
Gallium	Ga-70	7.51E-08	2.68E-08	5.73E-02	2.38E-07	2.70E-07	3.23E-07	7.28E-07	1.50E-13	5.56E-12
Gallium	Ga-72	4.63E-06	1.86E-06	1.78E+01	7.88E-10	1.02E-09	1.07E-09	2.41E-09	1.00E-13	3.71E-12
Gallium	Ga-73	1.03E-06	3.81E-07	1.71E+00	8.33E-09	1.03E-08	1.13E-08	2.55E-08	1.59E-13	5.87E-12
Germanium	Ge-66	2.10E-07	3.17E-07	3.87E+00	3.32E-09	4.39E-09	4.52E-09	1.02E-08	3.26E-13	1.21E-11
Germanium	Ge-66+D	5.03E-06	2.18E-06	2.04E+01	6.29E-10	8.08E-10	8.59E-10	1.93E-09	1.36E-14	5.04E-13
Germanium	Ge-66+E	5.03E-06	2.18E-06	2.04E+01	6.29E-10	8.08E-10	8.59E-10	1.93E-09	1.36E-14	5.04E-13
Germanium	Ge-67	1.30E-07	5.33E-08	8.37E+00	1.56E-09	2.07E-09	2.12E-09	4.77E-09	7.32E-14	2.71E-12
Germanium	Ge-67+D	9.14E-07	6.11E-07	8.37E+00	1.56E-09	2.04E-09	2.12E-09	4.77E-09	1.04E-14	3.86E-13
Germanium	Ge-67+E	9.14E-07	6.11E-07	8.37E+00	1.56E-09	2.04E-09	2.12E-09	4.77E-09	1.04E-14	3.86E-13
Germanium	Ge-68	1.07E-06	5.18E-05	7.96E-07	6.91E-07	9.68E-08	1.35E-04	2.44E-04	2.01E-10	7.43E-09
Germanium	Ge-68+D	1.41E-06	5.18E-05	5.62E+00	2.35E-09	3.01E-09	3.20E-09	7.21E-09	1.52E-10	5.64E-09
Germanium	Ge-68+E	1.41E-06	5.18E-05	5.62E+00	2.35E-09	3.01E-09	3.20E-09	7.21E-09	1.52E-10	5.64E-09
Germanium	Ge-69	3.74E-07	8.40E-07	5.34E+00	2.51E-09	3.32E-09	3.42E-09	7.70E-09	3.29E-12	1.22E-10

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Germanium	Ge-71	9.62E-09	1.22E-07	8.05E-07	7.99E-05	1.12E-05	9.46E-03	1.85E-02	9.54E-10	3.53E-08
Germanium	Ge-75	9.40E-08	6.77E-08	1.89E-01	7.68E-08	9.52E-08	1.05E-07	2.37E-07	5.03E-13	1.86E-11
Germanium	Ge-77	5.74E-07	1.05E-06	6.46E+00	2.32E-09	3.05E-09	3.16E-09	7.10E-09	6.93E-13	2.57E-11
Germanium	Ge-77+D	1.85E-06	2.11E-06	6.46E+00	2.31E-09	2.95E-09	3.16E-09	7.10E-09	2.15E-13	7.97E-12
Germanium	Ge-77+E	1.85E-06	2.11E-06	6.46E+00	2.31E-09	2.95E-09	3.16E-09	7.10E-09	2.15E-13	7.97E-12
Germanium	Ge-78	2.66E-07	2.87E-07	1.51E+00	1.00E-08	1.30E-08	1.37E-08	3.08E-08	1.94E-13	7.19E-12
Germanium	Ge-78+D	2.66E-07	5.55E-07	9.56E+00	1.59E-09	2.11E-09	2.16E-09	4.86E-09	1.94E-13	7.19E-12
Germanium	Ge-78+E	2.66E-07	5.55E-07	9.56E+00	1.59E-09	2.11E-09	2.16E-09	4.86E-09	1.94E-13	7.19E-12
Gold	Au-193	5.77E-07	2.64E-07	6.05E-01	6.19E-08	7.29E-08	8.45E-08	1.90E-07	2.69E-12	9.98E-11
Gold	Au-193+E	6.96E-07	1.14E-06	6.05E-01	6.18E-08	7.12E-08	8.45E-08	1.90E-07	2.24E-12	8.28E-11
Gold	Au-194	1.88E-06	9.44E-07	6.52E+00	5.79E-09	7.42E-09	7.88E-09	1.77E-08	1.86E-12	6.89E-11
Gold	Au-195	1.06E-06	4.18E-06	2.07E-01	1.79E-07	1.41E-07	2.49E-07	5.60E-07	3.68E-10	1.36E-08
Gold	Au-195m			1.01E+00	3.75E-08	4.99E-08	5.09E-08	1.15E-07		
Gold	Au-195m+D			1.22E+00	3.11E-08	4.15E-08	4.23E-08	9.52E-08		
Gold	Au-195m+E			1.22E+00	3.11E-08	4.15E-08	4.23E-08	9.52E-08		
Gold	Au-198	4.22E-06	3.03E-06	2.32E+00	1.65E-08	1.76E-08	2.26E-08	5.09E-08	1.39E-12	5.14E-11
Gold	Au-198m	5.33E-06	4.48E-06	2.63E+00	1.45E-08	1.51E-08	1.99E-08	4.48E-08	9.37E-13	3.47E-11
Gold	Au-198m+D	9.55E-06	8.95E-06	4.95E+00	7.72E-09	8.15E-09	1.06E-08	2.38E-08	5.23E-13	1.94E-11
Gold	Au-198m+E	9.55E-06	8.95E-06	4.95E+00	7.72E-09	8.15E-09	1.06E-08	2.38E-08	5.23E-13	1.94E-11
Gold	Au-199	1.78E-06	1.39E-06	3.90E-01	9.73E-08	8.01E-08	1.35E-07	3.04E-07	3.84E-12	1.42E-10
Gold	Au-200	2.02E-07	7.36E-08	1.71E+00	2.27E-08	2.98E-08	3.09E-08	6.95E-08	3.65E-13	1.35E-11
Gold	Au-200m	4.51E-06	2.01E-06	1.22E+01	3.20E-09	4.06E-09	4.36E-09	9.80E-09	3.78E-13	1.40E-11
Gold	Au-200m+D	4.51E-06	2.37E-06	1.22E+01	3.20E-09	4.06E-09	4.36E-09	9.80E-09	3.78E-13	1.40E-11
Gold	Au-200m+E	4.51E-06	2.37E-06	1.22E+01	3.20E-09	4.06E-09	4.36E-09	9.80E-09	3.78E-13	1.40E-11
Gold	Au-201	6.22E-08	2.23E-08	3.08E-01	1.27E-07	1.65E-07	1.73E-07	3.89E-07	6.50E-13	2.41E-11
Hafnium	Hf-170	2.12E-06	1.20E-06	2.78E+00	1.19E-08	1.44E-08	1.62E-08	3.64E-08	5.86E-13	2.17E-11
Hafnium	Hf-170+D	6.66E-06	3.57E-06	1.92E+01	1.72E-09	2.19E-09	2.34E-09	5.27E-09	1.87E-13	6.91E-12
Hafnium	Hf-170+E	6.66E-06	3.57E-06	1.92E+01	1.72E-09	2.19E-09	2.34E-09	5.27E-09	1.87E-13	6.91E-12
Hafnium	Hf-172	4.48E-06	1.04E-04	2.48E-01	1.35E-07	5.28E-08	1.83E-07	4.12E-07	2.87E-10	1.06E-08
Hafnium	Hf-172+D	1.01E-05	1.04E-04	1.17E+01	2.86E-09	3.41E-09	3.88E-09	8.74E-09	1.27E-10	4.70E-09
Hafnium	Hf-172+E	1.01E-05	1.04E-04	1.17E+01	2.86E-09	3.41E-09	3.88E-09	8.74E-09	1.27E-10	4.70E-09
Hafnium	Hf-173	1.00E-06	4.77E-07	1.86E+00	1.81E-08	2.25E-08	2.46E-08	5.54E-08	1.89E-12	7.00E-11
Hafnium	Hf-173+D	2.09E-06	1.32E-05	2.28E+00	1.48E-08	1.76E-08	2.01E-08	4.52E-08	9.05E-13	3.35E-11
Hafnium	Hf-173+E	2.09E-06	1.32E-05	2.28E+00	1.48E-08	1.76E-08	2.01E-08	4.52E-08	9.05E-13	3.35E-11
Hafnium	Hf-175	1.82E-06	5.11E-06	1.86E+00	1.83E-08	2.16E-08	2.49E-08	5.60E-08	7.37E-11	2.73E-09
Hafnium	Hf-177m	2.75E-07	7.44E-08	1.17E+01	2.94E-09	3.90E-09	3.99E-09	8.98E-09	2.52E-13	9.33E-12
Hafnium	Hf-178m	2.10E-05	6.62E-04	1.30E+01	5.45E-09	4.94E-09	8.46E-09	1.90E-08	1.05E-09	3.89E-08
Hafnium	Hf-179m	5.40E-06	1.01E-05	4.69E+00	7.44E-09	8.59E-09	1.01E-08	2.28E-08	9.11E-12	3.38E-10
Hafnium	Hf-180m	7.33E-07	2.19E-07	5.38E+00	6.52E-09	8.54E-09	8.87E-09	1.99E-08	6.17E-13	2.29E-11
Hafnium	Hf-181	4.70E-06	1.29E-05	3.04E+00	1.16E-08	1.28E-08	1.57E-08	3.54E-08	1.79E-11	6.63E-10
Hafnium	Hf-182	1.59E-05	8.58E-04	1.25E+00	1.23E-02	4.56E-03	2.00E-02	4.51E-02	4.13E-04	1.53E-02
Hafnium	Hf-182+E	6.66E-06	5.66E-08	1.31E+01	1.17E-03	1.10E-03	1.91E-03	4.30E-03	9.84E-04	3.64E-02
Hafnium	Hf-182m	1.45E-07	4.59E-08	5.17E+00	6.85E-09	9.10E-09	9.32E-09	2.10E-08	5.86E-13	2.17E-11
Hafnium	Hf-183	2.54E-07	1.12E-07	4.43E+00	8.05E-09	1.07E-08	1.10E-08	2.46E-08	3.51E-13	1.30E-11
Hafnium	Hf-183+D	5.66E-06	5.18E-06	5.73E+00	6.22E-09	7.32E-09	8.45E-09	1.90E-08	1.57E-14	5.83E-13
Hafnium	Hf-183+E	5.66E-06	5.18E-06	5.73E+00	6.22E-09	7.32E-09	8.45E-09	1.90E-08	1.57E-14	5.83E-13
Hafnium	Hf-184	2.15E-06	8.55E-07	1.19E+00	3.00E-08	3.23E-08	4.08E-08	9.19E-08	1.61E-13	5.95E-12
Hafnium	Hf-184+D	4.96E-06	1.89E-06	1.06E+01	3.38E-09	4.25E-09	4.60E-09	1.04E-08	6.98E-14	2.59E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Hafnium	Hf-184+E	4.96E-06	1.89E-06	1.06E+01	3.38E-09	4.25E-09	4.60E-09	1.04E-08	6.98E-14	2.59E-12
Holmium	Ho-155	1.30E-07	4.48E-08	2.07E+00	1.46E-08	1.93E-08	1.98E-08	4.46E-08	4.37E-13	1.62E-11
Holmium	Ho-155+D	1.61E-06	1.04E-06	5.81E+00	5.20E-09	6.68E-09	7.07E-09	1.59E-08	3.52E-14	1.30E-12
Holmium	Ho-155+E	1.61E-06	1.04E-06	5.81E+00	5.20E-09	6.68E-09	7.07E-09	1.59E-08	3.52E-14	1.30E-12
Holmium	Ho-157	2.01E-08	5.22E-09	2.50E+00	1.22E-08	1.63E-08	1.66E-08	3.74E-08	7.51E-13	2.78E-11
Holmium	Ho-157+D	3.01E-07	8.51E-08	4.32E+00	7.09E-09	9.36E-09	9.64E-09	2.17E-08	5.00E-14	1.85E-12
Holmium	Ho-157+E	3.01E-07	8.51E-08	4.32E+00	7.09E-09	9.36E-09	9.64E-09	2.17E-08	5.00E-14	1.85E-12
Holmium	Ho-159	2.56E-08	6.51E-09	1.60E+00	1.94E-08	2.58E-08	2.63E-08	5.93E-08	1.56E-12	5.78E-11
Holmium	Ho-159+D	4.70E-07	2.43E-06	1.60E+00	1.94E-08	2.49E-08	2.63E-08	5.93E-08	8.50E-14	3.15E-12
Holmium	Ho-159+E	4.70E-07	2.43E-06	1.60E+00	1.94E-08	2.49E-08	2.63E-08	5.93E-08	8.50E-14	3.15E-12
Holmium	Ho-161	5.00E-08	1.55E-08	8.97E-02	3.50E-07	4.34E-07	4.76E-07	1.07E-06	3.68E-12	1.36E-10
Holmium	Ho-162	8.40E-09	2.35E-09	8.13E-01	3.88E-08	5.17E-08	5.28E-08	1.19E-07	2.20E-12	8.15E-11
Holmium	Ho-162m	9.66E-08	2.52E-08	3.27E+00	9.66E-09	1.28E-08	1.31E-08	2.95E-08	8.68E-13	3.22E-11
Holmium	Ho-162m+D	9.66E-08	4.03E-08	3.77E+00	8.36E-09	1.11E-08	1.14E-08	2.56E-08	8.68E-13	3.22E-11
Holmium	Ho-162m+E	9.66E-08	4.03E-08	3.77E+00	8.36E-09	1.11E-08	1.14E-08	2.56E-08	8.68E-13	3.22E-11
Holmium	Ho-164	2.49E-08	8.70E-09	4.54E-02	7.04E-07	8.74E-07	9.57E-07	2.15E-06	1.45E-12	5.38E-11
Holmium	Ho-164m	5.33E-08	1.90E-08	6.13E-02	5.21E-07	6.23E-07	7.09E-07	1.60E-06	8.78E-13	3.25E-11
Holmium	Ho-164m+D	7.81E-08	3.81E-08	1.07E-01	3.00E-07	3.64E-07	4.07E-07	9.17E-07	6.00E-13	2.22E-11
Holmium	Ho-164m+E	7.81E-08	3.81E-08	1.07E-01	3.00E-07	3.64E-07	4.07E-07	9.17E-07	6.00E-13	2.22E-11
Holmium	Ho-166	5.59E-06	3.14E-06	1.57E-01	2.05E-07	4.77E-08	2.80E-07	6.29E-07	3.64E-13	1.35E-11
Holmium	Ho-166m	8.07E-06	7.73E-04	1.03E+01	1.83E-07	1.66E-07	2.98E-07	6.71E-07	9.88E-08	3.66E-06
Holmium	Ho-167	3.29E-07	1.09E-07	1.98E+00	1.64E-08	2.14E-08	2.23E-08	5.03E-08	7.18E-13	2.66E-11
Hydrogen	H-3	6.40E-08	6.40E-08	0.00E+00	1.74E-08	1.53E-09	1.15E-08	2.59E-08	3.86E-10	8.58E-08
Indium	In-109	2.83E-07	8.47E-08	3.87E+00	5.49E-09	7.25E-09	7.47E-09	1.68E-08	7.39E-13	2.74E-11
Indium	In-109+D	1.34E-05	3.96E-05	3.87E+00	5.49E-09	5.00E-09	7.47E-09	1.68E-08	1.56E-14	5.76E-13
Indium	In-109+E	1.34E-05	3.96E-05	3.87E+00	5.49E-09	5.00E-09	7.47E-09	1.68E-08	1.56E-14	5.76E-13
Indium	In-110a	1.06E-06	2.51E-07	9.53E+00	2.25E-09	2.96E-09	3.06E-09	6.88E-09	5.47E-14	2.02E-12
Indium	In-110b	3.47E-07	1.08E-07	1.87E+01	1.15E-09	1.53E-09	1.56E-09	3.51E-09	7.08E-13	2.62E-11
Indium	In-111	1.33E-06	8.40E-07	1.96E+00	1.10E-08	1.35E-08	1.50E-08	3.37E-08	2.59E-12	9.60E-11
Indium	In-112	2.39E-08	7.62E-09	1.55E+00	1.41E-08	1.87E-08	1.91E-08	4.30E-08	5.14E-13	1.90E-11
Indium	In-113m	1.05E-07	3.34E-08	1.43E+00	1.53E-08	2.03E-08	2.09E-08	4.70E-08	8.17E-13	3.03E-11
Indium	In-114			1.77E-02	1.25E-06	1.67E-06	1.70E-06	3.83E-06		
Indium	In-114m	1.71E-05	5.59E-05	4.84E-01	4.55E-08	1.07E-08	6.22E-08	1.40E-07	3.63E-12	1.34E-10
Indium	In-114m+D	1.71E-05	1.10E-04	4.84E-01	4.55E-08	1.07E-08	6.22E-08	1.40E-07	3.63E-12	1.34E-10
Indium	In-114m+E	1.71E-05	1.10E-04	4.84E-01	4.55E-08	1.07E-08	6.22E-08	1.40E-07	3.63E-12	1.34E-10
Indium	In-115	1.58E-04	1.02E-03	4.02E-04	1.25E+08	2.60E+05	4.47E+08	8.09E+08	1.49E+04	5.51E+05
Indium	In-115m	3.45E-07	1.26E-07	8.56E-01	2.62E-08	3.31E-08	3.56E-08	8.01E-08	6.82E-13	2.53E-11
Indium	In-116m	2.19E-07	5.62E-08	1.60E+01	1.41E-09	1.88E-09	1.92E-09	4.32E-09	2.18E-13	8.07E-12
Indium	In-117	9.58E-08	2.89E-08	3.92E+00	5.81E-09	7.72E-09	7.90E-09	1.78E-08	4.07E-13	1.51E-11
Indium	In-117+D									
Indium	In-117+E									
Indium	In-117m	4.26E-07	1.51E-07	4.60E-01	4.96E-08	5.88E-08	6.75E-08	1.52E-07	2.44E-13	9.03E-12
Indium	In-117m+D	4.74E-07	2.29E-07	2.32E+00	9.84E-09	1.28E-08	1.34E-08	3.01E-08	2.19E-13	8.11E-12
Indium	In-117m+E	4.74E-07	2.29E-07	2.32E+00	9.84E-09	1.28E-08	1.34E-08	3.01E-08	2.19E-13	8.11E-12
Indium	In-119			4.71E+00	4.93E-09	6.57E-09	6.70E-09	1.51E-08		
Indium	In-119+D	2.58E-07	7.18E-07	4.71E+00	4.93E-09	6.52E-09	6.70E-09	1.51E-08	8.42E-15	3.12E-13
Indium	In-119+E	2.58E-07	7.18E-07	4.71E+00	4.93E-09	6.52E-09	6.70E-09	1.51E-08	8.42E-15	3.12E-13
Indium	In-119m	1.07E-07	3.77E-08	7.34E-02	3.16E-07	3.53E-07	4.29E-07	9.66E-07	1.53E-13	5.67E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Indium	In-119m+D	1.07E-07	5.59E-08	1.91E-01	1.22E-07	1.51E-07	1.65E-07	3.72E-07	1.53E-13	5.67E-12
Indium	In-119m+E	1.07E-07	5.59E-08	1.91E-01	1.22E-07	1.51E-07	1.65E-07	3.72E-07	1.53E-13	5.67E-12
Iodine	I-120	7.70E-07	4.44E-07	1.75E+01	1.34E-09	1.44E-09	1.82E-09	4.09E-09	9.61E-14	3.56E-12
Iodine	I-120m	4.96E-07	2.65E-07	3.36E+01	6.95E-10	8.58E-10	9.46E-10	2.13E-09	9.76E-14	3.62E-12
Iodine	I-121	1.99E-07	1.19E-07	2.22E+00	1.06E-08	9.50E-09	1.44E-08	3.25E-08	5.87E-13	2.18E-11
Iodine	I-121+D	1.88E-06	1.49E-05	5.55E+00	4.25E-09	1.99E-09	5.78E-09	1.30E-08	6.23E-14	2.31E-12
Iodine	I-121+E	1.88E-06	1.49E-05	5.55E+00	4.25E-09	1.99E-09	5.78E-09	1.30E-08	6.23E-14	2.31E-12
Iodine	I-122			5.62E+00	4.23E-09	5.64E-09	5.75E-09	1.29E-08		
Iodine	I-123	5.29E-07	2.96E-07	7.12E-01	3.36E-08	8.89E-09	4.58E-08	1.03E-07	1.40E-12	5.19E-11
Iodine	I-124	3.18E-05	1.94E-05	6.78E+00	3.55E-09	1.79E-10	4.84E-09	1.09E-08	1.79E-13	6.61E-12
Iodine	I-125	3.85E-05	2.42E-05	1.66E-02	4.34E-07	1.55E-10	1.56E-06	3.32E-06	2.14E-12	7.93E-11
Iodine	I-126	7.10E-05	4.44E-05	2.63E+00	9.07E-09	8.41E-11	1.26E-08	2.84E-08	2.53E-13	9.37E-12
Iodine	I-128	8.99E-08	4.74E-08	5.04E-01	4.94E-08	3.35E-08	6.72E-08	1.51E-07	2.71E-13	1.00E-11
Iodine	I-129	2.76E-04	1.74E-04	1.29E-02	6.39E-02	1.26E-05	6.61E-01	1.26E+00	2.94E-05	1.09E-03
Iodine	I-130	4.74E-06	2.64E-06	1.29E+01	1.96E-09	8.72E-10	2.66E-09	6.00E-09	1.55E-13	5.74E-12
Iodine	I-131	5.33E-05	3.29E-05	2.17E+00	1.15E-08	1.16E-10	1.60E-08	3.59E-08	2.17E-13	8.02E-12
Iodine	I-132	6.73E-07	3.81E-07	1.41E+01	1.83E-09	1.93E-09	2.48E-09	5.59E-09	2.06E-13	7.62E-12
Iodine	I-132m	5.25E-07	3.00E-07	1.87E+00	1.38E-08	7.25E-09	1.87E-08	4.21E-08	1.60E-13	5.92E-12
Iodine	I-132m+D	1.11E-06	5.59E-07	1.40E+01	1.84E-09	1.71E-09	2.50E-09	5.63E-09	7.59E-14	2.81E-12
Iodine	I-132m+E	1.11E-06	5.59E-07	1.40E+01	1.84E-09	1.71E-09	2.50E-09	5.63E-09	7.59E-14	2.81E-12
Iodine	I-133	1.04E-05	5.85E-06	3.64E+00	7.09E-09	5.75E-10	9.67E-09	2.18E-08	1.22E-13	4.52E-12
Iodine	I-134	2.46E-07	1.31E-07	1.64E+01	1.59E-09	1.96E-09	2.16E-09	4.87E-09	2.18E-13	8.06E-12
Iodine	I-135	2.25E-06	1.23E-06	1.02E+01	2.57E-09	1.56E-09	3.49E-09	7.86E-09	1.81E-13	6.71E-12
Iodine	I-135+D	2.25E-06	1.23E-06	1.20E+01	2.20E-09	1.45E-09	2.99E-09	6.73E-09	1.81E-13	6.71E-12
Iodine	I-135+E	2.25E-06	1.23E-06	1.20E+01	2.20E-09	1.45E-09	2.99E-09	6.73E-09	1.81E-13	6.71E-12
Iridium	Ir-182	1.28E-07	4.55E-08	7.83E+00	4.53E-09	6.03E-09	6.16E-09	1.39E-08	1.63E-13	6.03E-12
Iridium	Ir-182+D	3.31E-06	1.69E-06	1.71E+01	2.07E-09	2.69E-09	2.81E-09	6.33E-09	6.27E-15	2.32E-13
Iridium	Ir-182+E	3.31E-06	1.69E-06	1.71E+01	2.07E-09	2.69E-09	2.81E-09	6.33E-09	6.27E-15	2.32E-13
Iridium	Ir-184	6.96E-07	1.94E-07	1.15E+01	3.12E-09	4.12E-09	4.24E-09	9.53E-09	3.65E-13	1.35E-11
Iridium	Ir-185	1.11E-06	4.81E-07	3.55E+00	1.02E-08	1.30E-08	1.38E-08	3.11E-08	1.07E-12	3.95E-11
Iridium	Ir-185+D	3.37E-06	6.99E-06	7.71E+00	4.67E-09	5.88E-09	6.35E-09	1.43E-08	3.51E-13	1.30E-11
Iridium	Ir-185+E	3.37E-06	6.99E-06	7.71E+00	4.67E-09	5.88E-09	6.35E-09	1.43E-08	3.51E-13	1.30E-11
Iridium	Ir-186a	2.17E-06		9.84E+00	3.68E-09	4.77E-09	5.01E-09	1.13E-08	6.19E-13	2.29E-11
Iridium	Ir-186b		8.25E-07	5.62E+00	6.45E-09	8.59E-09	8.77E-09	1.97E-08		
Iridium	Ir-187	5.25E-07	1.91E-07	1.92E+00	1.89E-08	2.43E-08	2.58E-08	5.79E-08	1.71E-12	6.32E-11
Iridium	Ir-188	2.86E-06	1.44E-06	1.01E+01	3.63E-09	4.66E-09	4.94E-09	1.11E-08	1.25E-12	4.61E-11
Iridium	Ir-189	1.05E-06	1.51E-06	2.45E-01	1.50E-07	1.27E-07	2.05E-07	4.60E-07	2.62E-11	9.71E-10
Iridium	Ir-190	5.44E-06	6.11E-06	8.11E+00	4.56E-09	5.58E-09	6.21E-09	1.40E-08	4.63E-12	1.72E-10
Iridium	Ir-190m	3.16E-08	2.87E-08	1.69E-06	7.67E-04	1.14E-05	9.03E-03	1.73E-02	3.29E-12	1.22E-10
Iridium	Ir-190m+D	5.48E-06	5.74E-08	8.11E+00	4.56E-09	5.57E-09	6.21E-09	1.40E-08	1.90E-14	7.04E-13
Iridium	Ir-190m+E	5.48E-06	5.74E-08	8.11E+00	4.56E-09	5.57E-09	6.21E-09	1.40E-08	1.90E-14	7.04E-13
Iridium	Ir-190n			8.78E+00	4.22E-09	5.62E-09	5.73E-09	1.29E-08		
Iridium	Ir-191m			2.30E-01	1.62E-07	2.16E-07	2.20E-07	4.96E-07		
Iridium	Ir-192	5.74E-06	1.81E-05	4.61E+00	8.09E-09	9.24E-09	1.10E-08	2.48E-08	2.72E-11	1.01E-09
Iridium	Ir-192m	1.57E-06	2.50E-05	7.51E-01	6.01E-07	4.76E-07	9.76E-07	2.20E-06	1.18E-07	4.38E-06
Iridium	Ir-192m+E	7.29E-06	5.00E-05	5.36E+00	8.43E-08	7.22E-08	1.37E-07	3.08E-07	2.54E-08	9.40E-07
Iridium	Ir-194	5.29E-06	2.64E-06	5.47E-01	6.81E-08	3.97E-08	9.38E-08	2.11E-07	3.21E-13	1.19E-11
Iridium	Ir-194m	9.10E-06	3.40E-05	1.36E+01	2.77E-09	3.39E-09	3.77E-09	8.48E-09	3.99E-11	1.48E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Iridium	Ir-195	3.42E-07	1.27E-07	1.64E-01	2.31E-07	2.40E-07	3.15E-07	7.08E-07	6.50E-13	2.41E-11
Iridium	Ir-195m	6.51E-07	2.28E-07	2.15E+00	1.77E-08	2.26E-08	2.41E-08	5.41E-08	5.20E-13	1.92E-11
Iron	Fe-52	5.59E-06	2.19E-06	4.17E+00	2.43E-09	2.56E-09	3.31E-09	7.44E-09	3.52E-14	1.30E-12
Iron	Fe-52+D	5.59E-06	2.19E-06	1.98E+01	5.12E-10	6.46E-10	6.96E-10	1.57E-09	3.52E-14	1.30E-12
Iron	Fe-52+E	5.59E-06	2.19E-06	1.98E+01	5.12E-10	6.46E-10	6.96E-10	1.57E-09	3.52E-14	1.30E-12
Iron	Fe-55	6.07E-07	1.34E-06	0.00E+00	9.55E-05	1.17E-07	1.96E-04	3.52E-04	9.79E-10	3.63E-08
Iron	Fe-59	6.70E-06	1.22E-05	7.64E+00	1.50E-09	1.71E-09	2.05E-09	4.60E-09	4.30E-12	1.59E-10
Iron	Fe-60	1.52E-04	2.70E-04	1.12E-05	1.99E-03	1.84E-06	4.89E-03	8.81E-03	1.57E-07	5.83E-06
Iron	Fe-60+D	1.52E-04	2.70E-04	2.47E-02	1.06E-03	1.84E-06	2.11E-03	4.29E-03	1.57E-07	5.83E-06
Iron	Fe-60+E	1.52E-04	2.70E-04	2.47E-02	1.06E-03	1.84E-06	2.11E-03	4.29E-03	1.57E-07	5.83E-06
Krypton	Kr-74			6.65E+00	2.17E-09	2.89E-09	2.95E-09	6.63E-09		
Krypton	Kr-74+D			3.72E+01	3.88E-10	5.17E-10	5.27E-10	1.19E-09		
Krypton	Kr-74+E			3.72E+01	3.88E-10	5.17E-10	5.27E-10	1.19E-09		
Krypton	Kr-76			2.35E+00	6.29E-09	8.39E-09	8.56E-09	1.93E-08		
Krypton	Kr-76+D			1.94E+01	7.62E-10	1.02E-09	1.04E-09	2.33E-09		
Krypton	Kr-76+E			1.94E+01	7.62E-10	1.02E-09	1.04E-09	2.33E-09		
Krypton	Kr-77			5.72E+00	2.62E-09	3.50E-09	3.57E-09	8.03E-09		
Krypton	Kr-77+D			7.53E+00	1.99E-09	2.66E-09	2.71E-09	6.10E-09		
Krypton	Kr-77+E			7.53E+00	1.99E-09	2.66E-09	2.71E-09	6.10E-09		
Krypton	Kr-79			1.46E+00	1.06E-08	1.41E-08	1.44E-08	3.23E-08		
Krypton	Kr-81			2.99E-02	5.33E-03	5.33E-03	8.70E-03	1.96E-02		
Krypton	Kr-81m			6.35E-01	2.48E-08	3.31E-08	3.38E-08	7.60E-08		
Krypton	Kr-83m			3.03E-05	5.34E-04	7.13E-04	7.27E-04	1.64E-03		
Krypton	Kr-85			1.43E-02	1.35E-06	1.67E-06	1.97E-06	4.43E-06		
Krypton	Kr-85m			7.58E-01	2.18E-08	2.91E-08	2.97E-08	6.68E-08		
Krypton	Kr-87			5.25E+00	3.23E-09	4.31E-09	4.39E-09	9.88E-09		
Krypton	Kr-88			1.32E+01	1.30E-09	1.73E-09	1.76E-09	3.97E-09		
Krypton	Kr-88+D			1.76E+01	9.74E-10	1.30E-09	1.33E-09	2.98E-09		
Krypton	Kr-88+E			1.76E+01	9.74E-10	1.30E-09	1.33E-09	2.98E-09		
Lanthanum	La-131	1.19E-07	4.11E-08	3.74E+00	6.83E-09	9.07E-09	9.29E-09	2.09E-08	4.94E-13	1.83E-11
Lanthanum	La-131+D	2.21E-06	2.12E-07	6.16E+00	4.14E-09	5.27E-09	5.63E-09	1.27E-08	2.66E-14	9.86E-13
Lanthanum	La-131+E	2.21E-06	2.12E-07	6.16E+00	4.14E-09	5.27E-09	5.63E-09	1.27E-08	2.66E-14	9.86E-13
Lanthanum	La-132	1.59E-06	5.14E-07	1.26E+01	2.04E-09	2.67E-09	2.77E-09	6.24E-09	1.82E-13	6.73E-12
Lanthanum	La-134			4.11E+00	6.35E-09	8.47E-09	8.64E-09	1.94E-08		
Lanthanum	La-135	1.35E-07	5.92E-08	7.53E-02	3.49E-07	3.75E-07	4.75E-07	1.07E-06	8.88E-12	3.29E-10
Lanthanum	La-137	4.55E-07	2.32E-05	1.41E-02	5.43E-03	1.03E-03	8.89E-03	2.00E-02	7.22E-05	2.68E-03
Lanthanum	La-138	5.88E-06	3.56E-04	7.96E+00	2.19E+01	2.00E+01	3.58E+01	8.06E+01	1.27E+01	4.69E+02
Lanthanum	La-140	8.44E-06	4.85E-06	1.51E+01	1.81E-09	2.25E-09	2.46E-09	5.54E-09	3.05E-13	1.13E-11
Lanthanum	La-141	1.38E-06	5.62E-07	3.08E-01	8.90E-08	7.42E-08	1.21E-07	2.73E-07	1.83E-13	6.77E-12
Lanthanum	La-141+D	4.29E-06	8.88E-06	6.26E-01	4.38E-08	3.05E-08	5.97E-08	1.34E-07	5.90E-14	2.18E-12
Lanthanum	La-141+E	4.29E-06	8.88E-06	6.26E-01	4.38E-08	3.05E-08	5.97E-08	1.34E-07	5.90E-14	2.18E-12
Lanthanum	La-142	6.62E-07	2.04E-07	1.87E+01	1.48E-09	1.97E-09	2.02E-09	4.54E-09	1.51E-13	5.59E-12
Lanthanum	La-143	1.39E-07	5.99E-08	6.67E-01	4.18E-08	5.42E-08	5.68E-08	1.28E-07	1.11E-13	4.11E-12
Lanthanum	La-143+D	9.40E-06	1.08E-05	2.15E+00	1.30E-08	1.09E-08	1.76E-08	3.97E-08	1.65E-15	6.10E-14
Lanthanum	La-143+E	9.40E-06	1.08E-05	2.15E+00	1.30E-08	1.09E-08	1.76E-08	3.97E-08	1.65E-15	6.10E-14
Lead	Pb-195m	9.07E-08	3.10E-08	9.27E+00	4.10E-09	5.46E-09	5.58E-09	1.25E-08	2.59E-13	9.58E-12
Lead	Pb-195m+D	1.23E-06	5.77E-06	1.84E+01	2.06E-09	2.73E-09	2.81E-09	6.32E-09	1.90E-14	7.05E-13
Lead	Pb-195m+E	1.23E-06	5.77E-06	1.84E+01	2.06E-09	2.73E-09	2.81E-09	6.32E-09	1.90E-14	7.05E-13

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Lead	Pb-198	1.64E-07	7.70E-08	2.22E+00	1.74E-08	2.29E-08	2.36E-08	5.31E-08	1.32E-12	4.90E-11
Lead	Pb-198+D	4.18E-07	1.84E-07	1.49E+01	2.58E-09	3.43E-09	3.51E-09	7.90E-09	5.19E-13	1.92E-11
Lead	Pb-198+E	4.18E-07	1.84E-07	1.49E+01	2.58E-09	3.43E-09	3.51E-09	7.90E-09	5.19E-13	1.92E-11
Lead	Pb-199	2.22E-07	7.29E-08	9.08E+00	4.27E-09	5.68E-09	5.81E-09	1.31E-08	6.13E-13	2.27E-11
Lead	Pb-199+D	3.04E-07	1.42E-07	1.03E+01	3.78E-09	5.02E-09	5.14E-09	1.16E-08	4.48E-13	1.66E-11
Lead	Pb-199+E	3.04E-07	1.42E-07	1.03E+01	3.78E-09	5.02E-09	5.14E-09	1.16E-08	4.48E-13	1.66E-11
Lead	Pb-200	1.73E-06	7.92E-07	8.41E-01	4.63E-08	4.81E-08	6.30E-08	1.42E-07	1.14E-12	4.21E-11
Lead	Pb-200+D	2.40E-06	1.26E-06	8.72E+00	4.47E-09	5.74E-09	6.07E-09	1.37E-08	8.18E-13	3.03E-11
Lead	Pb-200+E	2.40E-06	1.26E-06	8.72E+00	4.47E-09	5.74E-09	6.07E-09	1.37E-08	8.18E-13	3.03E-11
Lead	Pb-201	7.10E-07	2.62E-07	4.28E+00	9.15E-09	1.19E-08	1.24E-08	2.80E-08	1.21E-12	4.50E-11
Lead	Pb-201+D	1.01E-06	4.96E-07	4.28E+00	9.15E-09	1.18E-08	1.24E-08	2.80E-08	8.54E-13	3.16E-11
Lead	Pb-201+E	1.01E-06	4.96E-07	4.28E+00	9.15E-09	1.18E-08	1.24E-08	2.80E-08	8.54E-13	3.16E-11
Lead	Pb-202	3.89E-05	9.81E-05	6.16E-06	2.50E-02	1.05E-04	1.94E-01	3.49E-01	6.24E-06	2.31E-04
Lead	Pb-202+D	2.04E-06	1.16E-06	1.49E+01	3.81E-05	3.74E-05	6.22E-05	1.40E-04	1.19E-04	4.40E-03
Lead	Pb-202+E	2.04E-06	1.16E-06	1.49E+01	3.81E-05	3.74E-05	6.22E-05	1.40E-04	1.19E-04	4.40E-03
Lead	Pb-202m	5.66E-07	1.79E-07	1.24E+01	3.17E-09	4.20E-09	4.32E-09	9.71E-09	5.90E-13	2.18E-11
Lead	Pb-203	1.08E-06	5.29E-07	1.50E+00	2.64E-08	3.20E-08	3.59E-08	8.07E-08	4.45E-12	1.65E-10
Lead	Pb-205	1.63E-06	3.92E-06	7.06E-06	2.86E+01	1.21E-01	2.16E+02	3.91E+02	7.19E-03	2.66E-01
Lead	Pb-209	2.13E-07	9.47E-08	7.73E-04	4.54E-05	1.79E-06	6.93E-05	1.55E-04	1.46E-12	5.40E-11
Lead	Pb-210	5.37E-03	1.36E-02	2.45E-03	2.15E-08	1.03E-10	1.56E-07	2.80E-07	3.49E-12	1.29E-10
Lead	Pb-210+D	7.29E-03	2.97E-02	6.11E-03	1.58E-08	7.57E-11	1.14E-07	2.06E-07	2.57E-12	9.52E-11
Lead	Pb-210+E	7.29E-03	2.97E-02	6.11E-03	1.58E-08	7.57E-11	1.14E-07	2.06E-07	2.57E-12	9.52E-11
Lead	Pb-211	5.25E-07	8.70E-06	3.06E-01	1.34E-07	1.45E-07	1.82E-07	4.11E-07	1.10E-13	4.09E-12
Lead	Pb-211+D	5.25E-07	8.70E-06	5.83E-01	7.05E-08	8.36E-08	9.59E-08	2.16E-07	1.10E-13	4.09E-12
Lead	Pb-211+E	5.25E-07	8.70E-06	5.83E-01	7.05E-08	8.36E-08	9.59E-08	2.16E-07	1.10E-13	4.09E-12
Lead	Pb-212	4.55E-05	1.69E-04	7.04E-01	5.65E-08	7.84E-09	7.91E-08	1.78E-07	2.26E-14	8.38E-13
Lead	Pb-212+D	4.55E-05	1.88E-04	1.01E+01	4.07E-09	3.35E-09	5.55E-09	1.25E-08	2.26E-14	8.38E-13
Lead	Pb-212+E	4.55E-05	1.88E-04	1.01E+01	4.07E-09	3.35E-09	5.55E-09	1.25E-08	2.26E-14	8.38E-13
Lead	Pb-214	6.25E-07	7.81E-06	1.34E+00	3.11E-08	3.89E-08	4.23E-08	9.51E-08	6.98E-14	2.59E-12
Lead	Pb-214+D	9.07E-07	1.40E-05	1.12E+01	3.74E-09	4.93E-09	5.08E-09	1.14E-08	4.81E-14	1.78E-12
Lead	Pb-214+E	7.29E-03	2.97E-02	1.12E+01	2.70E-09	5.43E-11	4.71E-09	1.04E-08	5.99E-18	2.22E-16
Lutetium	Lu-169	2.03E-06	1.22E-06	6.26E+00	5.26E-09	6.72E-09	7.16E-09	1.61E-08	1.29E-12	4.79E-11
Lutetium	Lu-169+D	5.03E-06	8.21E-06	7.36E+00	4.47E-09	5.47E-09	6.08E-09	1.37E-08	5.22E-13	1.93E-11
Lutetium	Lu-169+E	5.03E-06	8.21E-06	7.36E+00	4.47E-09	5.47E-09	6.08E-09	1.37E-08	5.22E-13	1.93E-11
Lutetium	Lu-170	4.55E-06	2.38E-06	1.64E+01	2.02E-09	2.60E-09	2.75E-09	6.18E-09	8.19E-13	3.03E-11
Lutetium	Lu-171	2.90E-06	2.91E-06	3.89E+00	8.57E-09	1.04E-08	1.17E-08	2.62E-08	5.30E-12	1.96E-10
Lutetium	Lu-172	5.66E-06	4.81E-06	1.15E+01	2.92E-09	3.65E-09	3.97E-09	8.93E-09	2.23E-12	8.26E-11
Lutetium	Lu-173	1.09E-06	1.27E-05	4.17E-01	8.09E-08	7.99E-08	1.10E-07	2.47E-07	8.69E-10	3.22E-08
Lutetium	Lu-174	1.11E-06	2.46E-05	5.73E-01	5.92E-08	6.26E-08	8.08E-08	1.82E-07	2.07E-09	7.66E-08
Lutetium	Lu-174m	2.13E-06	1.66E-05	1.46E-01	2.31E-07	1.05E-07	3.15E-07	7.08E-07	1.27E-10	4.70E-09
Lutetium	Lu-174m+D	3.24E-06	3.31E-05	7.15E-01	4.74E-08	3.94E-08	6.44E-08	1.45E-07	8.35E-11	3.09E-09
Lutetium	Lu-174m+E	3.24E-06	3.31E-05	7.15E-01	4.74E-08	3.94E-08	6.44E-08	1.45E-07	8.35E-11	3.09E-09
Lutetium	Lu-176	7.33E-06	5.03E-04	2.52E+00	2.35E+01	1.70E+01	3.84E+01	8.64E+01	3.46E+00	1.28E+02
Lutetium	Lu-176m	6.40E-07	2.41E-07	4.09E-02	8.36E-07	3.62E-07	1.14E-06	2.56E-06	4.62E-13	1.71E-11
Lutetium	Lu-177	2.15E-06	2.45E-06	1.59E-01	2.17E-07	1.03E-07	2.95E-07	6.64E-07	6.05E-12	2.24E-10
Lutetium	Lu-177m	7.36E-06	4.55E-05	5.01E+00	6.89E-09	7.68E-09	9.37E-09	2.11E-08	4.24E-11	1.57E-09
Lutetium	Lu-177m+D	7.36E-06	5.51E-05	5.01E+00	6.89E-09	7.68E-09	9.37E-09	2.11E-08	4.24E-11	1.57E-09
Lutetium	Lu-177m+E	7.36E-06	5.51E-05	5.01E+00	6.89E-09	7.68E-09	9.37E-09	2.11E-08	4.24E-11	1.57E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Lutetium	Lu-178	1.23E-07	4.33E-08	8.85E-01	3.92E-08	5.13E-08	5.33E-08	1.20E-07	3.13E-13	1.16E-11
Lutetium	Lu-178m	1.02E-07	3.05E-08	5.85E+00	5.93E-09	7.89E-09	8.07E-09	1.81E-08	3.01E-13	1.12E-11
Lutetium	Lu-179	8.03E-07	3.04E-07	1.63E-01	2.14E-07	1.72E-07	2.91E-07	6.54E-07	4.67E-13	1.73E-11
Magnesium	Mg-28	8.07E-06	4.92E-06	8.63E+00	6.32E-10	7.49E-10	8.60E-10	1.93E-09	3.31E-14	1.23E-12
Magnesium	Mg-28+D	8.07E-06	4.92E-06	2.07E+01	2.63E-10	3.33E-10	3.58E-10	8.05E-10	3.31E-14	1.23E-12
Magnesium	Mg-28+E	8.07E-06	4.92E-06	2.07E+01	2.63E-10	3.33E-10	3.58E-10	8.05E-10	3.31E-14	1.23E-12
Manganese	Mn-51	2.78E-07	9.44E-08	5.90E+00	1.68E-09	2.23E-09	2.29E-09	5.15E-09	6.45E-14	2.39E-12
Manganese	Mn-51+D	4.26E-07	3.56E-07	5.90E+00	1.68E-09	2.22E-09	2.29E-09	5.15E-09	4.21E-14	1.56E-12
Manganese	Mn-51+E	4.26E-07	3.56E-07	5.90E+00	1.68E-09	2.22E-09	2.29E-09	5.15E-09	4.21E-14	1.56E-12
Manganese	Mn-52	7.59E-06	5.70E-06	2.19E+01	4.61E-10	5.84E-10	6.30E-10	1.42E-09	4.20E-13	1.56E-11
Manganese	Mn-52m	1.81E-07	5.55E-08	1.52E+01	6.66E-10	8.87E-10	9.06E-10	2.04E-09	4.62E-14	1.71E-12
Manganese	Mn-52m+D	3.13E-07	5.55E-08	1.52E+01	6.66E-10	8.85E-10	9.06E-10	2.04E-09	2.66E-14	9.87E-13
Manganese	Mn-52m+E	3.13E-07	5.55E-08	1.52E+01	6.66E-10	8.85E-10	9.06E-10	2.04E-09	2.66E-14	9.87E-13
Manganese	Mn-53	1.08E-07	5.00E-07	0.00E+00	1.26E+00	1.01E-01	2.26E+02	4.06E+02	7.26E-03	2.69E-01
Manganese	Mn-54	2.77E-06	6.70E-06	5.16E+00	2.03E-09	2.49E-09	2.78E-09	6.24E-09	6.68E-11	2.47E-09
Manganese	Mn-56	9.77E-07	3.30E-07	1.11E+01	9.85E-10	1.30E-09	1.34E-09	3.02E-09	6.75E-14	2.50E-12
Mendelevium	Md-257	6.99E-07	5.74E-05	5.02E-01	9.96E-08	1.12E-07	1.35E-07	3.05E-07	8.73E-13	3.23E-11
Mendelevium	Md-257+D	1.95E-04	2.90E-02	8.91E-01	5.45E-08	2.48E-09	7.44E-08	1.66E-07	3.14E-15	1.16E-13
Mendelevium	Md-257+E	1.95E-04	2.90E-02	8.91E-01	5.45E-08	2.48E-09	7.44E-08	1.66E-07	3.14E-15	1.16E-13
Mendelevium	Md-258	1.18E-04	1.65E-02	2.28E-03	2.65E-06	4.25E-09	4.00E-06	7.43E-06	1.32E-12	4.88E-11
Mendelevium	Md-258+D	1.18E-04	1.65E-02	5.57E+00	9.00E-09	3.14E-09	1.22E-08	2.75E-08	1.32E-12	4.88E-11
Mendelevium	Md-258+E	1.18E-04	1.65E-02	5.57E+00	9.00E-09	3.14E-09	1.22E-08	2.75E-08	1.32E-12	4.88E-11
Mercury	Hg-193	2.66E-07	1.33E-07	7.81E-01	4.79E-08	6.07E-08	6.55E-08	1.47E-07	1.16E-12	4.30E-11
Mercury	Hg-193+D	2.66E-07	9.66E-07	7.81E-01	4.79E-08	6.07E-08	6.55E-08	1.47E-07	1.16E-12	4.30E-11
Mercury	Hg-193+E	2.66E-07	1.84E-06	6.65E+00	5.65E-09	7.49E-09	7.69E-09	1.73E-08	1.16E-12	4.30E-11
Mercury	Hg-193m	1.27E-06	7.03E-07	6.05E+00	6.19E-09	8.00E-09	8.45E-09	1.90E-08	7.71E-13	2.85E-11
Mercury	Hg-193m+D	1.27E-06	1.02E-06	6.72E+00	5.57E-09	7.23E-09	7.60E-09	1.71E-08	7.71E-13	2.85E-11
Mercury	Hg-193m+E	1.27E-06	1.90E-06	6.72E+00	5.57E-09	7.23E-09	7.60E-09	1.71E-08	7.71E-13	2.85E-11
Mercury	Hg-194	1.15E-04	4.22E-05	1.10E-05	2.50E-07	2.55E-08	5.62E-05	1.01E-04	1.75E-09	6.47E-08
Mercury	Hg-194+D	1.15E-04	4.22E-05	6.52E+00	5.80E-08	1.91E-08	1.22E-07	2.74E-07	1.75E-09	6.47E-08
Mercury	Hg-194+E	1.15E-04	4.22E-05	6.52E+00	5.80E-08	1.91E-08	1.22E-07	2.74E-07	1.75E-09	6.47E-08
Mercury	Hg-195	3.10E-07	1.67E-07	9.94E-01	3.80E-08	4.84E-08	5.20E-08	1.17E-07	2.84E-12	1.05E-10
Mercury	Hg-195+D	3.10E-07	5.70E-06	1.26E+00	3.01E-08	3.87E-08	4.11E-08	9.25E-08	2.84E-12	1.05E-10
Mercury	Hg-195+E	3.10E-07	5.70E-06	1.26E+00	3.01E-08	3.87E-08	4.11E-08	9.25E-08	2.84E-12	1.05E-10
Mercury	Hg-195m	1.84E-06	1.50E-06	1.05E+00	3.51E-08	3.72E-08	4.92E-08	1.11E-07	2.02E-12	7.48E-11
Mercury	Hg-195m+D	1.84E-06	6.51E-06	1.80E+00	2.08E-08	2.41E-08	2.88E-08	6.47E-08	2.02E-12	7.48E-11
Mercury	Hg-195m+E	1.84E-06	6.51E-06	1.80E+00	2.08E-08	2.41E-08	2.88E-08	6.47E-08	2.02E-12	7.48E-11
Mercury	Hg-197	7.88E-07	6.88E-07	1.72E-01	2.07E-07	1.68E-07	3.04E-07	6.83E-07	7.32E-12	2.71E-10
Mercury	Hg-197m	1.43E-06	1.12E-06	3.53E-01	1.02E-07	8.61E-08	1.48E-07	3.32E-07	1.50E-12	5.55E-11
Mercury	Hg-197m+D	1.43E-06	2.16E-06	5.14E-01	7.13E-08	6.78E-08	1.02E-07	2.29E-07	1.50E-12	5.55E-11
Mercury	Hg-197m+E	1.43E-06	2.16E-06	5.14E-01	7.13E-08	6.78E-08	1.02E-07	2.29E-07	1.50E-12	5.55E-11
Mercury	Hg-199m	8.62E-08	3.15E-08	8.05E-01	4.81E-08	6.31E-08	6.55E-08	1.47E-07	7.48E-13	2.77E-11
Mercury	Hg-203	5.77E-06	5.74E-06	1.26E+00	2.91E-08	2.36E-08	4.26E-08	9.58E-08	1.80E-11	6.65E-10
Molybdenum	Mo-101	1.03E-07	4.14E-08	8.72E+00	2.26E-09	3.00E-09	3.07E-09	6.90E-09	1.09E-13	4.05E-12
Molybdenum	Mo-101+D	1.45E-07	5.59E-08	1.06E+01	1.86E-09	2.47E-09	2.53E-09	5.68E-09	7.75E-14	2.87E-12
Molybdenum	Mo-101+E	1.45E-07	5.59E-08	1.06E+01	1.86E-09	2.47E-09	2.53E-09	5.68E-09	7.75E-14	2.87E-12
Molybdenum	Mo-90	1.21E-06	7.07E-07	4.61E+00	3.79E-09	4.87E-09	5.17E-09	1.16E-08	1.93E-13	7.13E-12
Molybdenum	Mo-90+D	1.21E-06	2.80E-06	3.25E+01	5.39E-10	7.15E-10	7.34E-10	1.65E-09	1.93E-13	7.13E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Molybdenum	Mo-90+E	1.21E-06	2.80E-06	3.25E+01	5.39E-10	7.15E-10	7.34E-10	1.65E-09	1.93E-13	7.13E-12
Molybdenum	Mo-93	1.35E-06	1.01E-06	5.90E-04	3.57E-04	1.49E-05	6.60E-03	1.41E-02	9.67E-07	3.58E-05
Molybdenum	Mo-93m	5.77E-07	2.92E-07	1.43E+01	1.26E-09	1.67E-09	1.72E-09	3.86E-09	5.04E-13	1.87E-11
Molybdenum	Mo-99	3.04E-06	2.01E-06	8.87E-01	2.13E-08	1.90E-08	2.96E-08	6.65E-08	9.81E-13	3.63E-11
Molybdenum	Mo-99+D	3.04E-06	2.01E-06	1.37E+00	1.39E-08	1.40E-08	1.92E-08	4.31E-08	9.81E-13	3.63E-11
Molybdenum	Mo-99+E	3.04E-06	2.01E-06	1.37E+00	1.39E-08	1.40E-08	1.92E-08	4.31E-08	9.81E-13	3.63E-11
Neodymium	Nd-136	3.56E-07	1.04E-07	1.38E+00	1.92E-08	2.47E-08	2.61E-08	5.87E-08	1.47E-13	5.45E-12
Neodymium	Nd-136+D	4.40E-07	1.28E-07	1.43E+01	1.85E-09	2.45E-09	2.51E-09	5.65E-09	1.19E-13	4.41E-12
Neodymium	Nd-136+E	4.40E-07	1.28E-07	1.43E+01	1.85E-09	2.45E-09	2.51E-09	5.65E-09	1.19E-13	4.41E-12
Neodymium	Nd-138	2.55E-06	9.29E-07	9.84E-02	2.71E-07	8.14E-08	3.70E-07	8.32E-07	1.25E-13	4.61E-12
Neodymium	Nd-138+D	2.55E-06	1.05E-06	4.91E+00	5.47E-09	6.82E-09	7.44E-09	1.67E-08	1.25E-13	4.61E-12
Neodymium	Nd-138+E	2.55E-06	1.05E-06	4.91E+00	5.47E-09	6.82E-09	7.44E-09	1.67E-08	1.25E-13	4.61E-12
Neodymium	Nd-139	6.03E-08	1.92E-08	2.32E+00	1.17E-08	1.55E-08	1.59E-08	3.58E-08	5.21E-13	1.93E-11
Neodymium	Nd-139+D	2.36E-06	7.59E-06	1.07E+01	2.53E-09	3.28E-09	3.44E-09	7.74E-09	1.33E-14	4.93E-13
Neodymium	Nd-139+E	2.36E-06	7.59E-06	1.07E+01	2.53E-09	3.28E-09	3.44E-09	7.74E-09	1.33E-14	4.93E-13
Neodymium	Nd-139m	1.09E-06	3.33E-07	9.47E+00	2.86E-09	3.75E-09	3.89E-09	8.75E-09	3.21E-13	1.19E-11
Neodymium	Nd-139m+D	2.37E-06	7.62E-06	1.10E+01	2.47E-09	3.20E-09	3.35E-09	7.54E-09	1.47E-13	5.46E-12
Neodymium	Nd-139m+E	2.37E-06	7.62E-06	1.10E+01	2.47E-09	3.20E-09	3.35E-09	7.54E-09	1.47E-13	5.46E-12
Neodymium	Nd-141	3.40E-08	9.29E-09	3.10E-01	8.86E-08	1.16E-07	1.20E-07	2.71E-07	4.72E-12	1.75E-10
Neodymium	Nd-141m			4.63E+00	5.93E-09	7.91E-09	8.06E-09	1.81E-08		
Neodymium	Nd-147	4.37E-06	6.36E-06	6.69E-01	4.28E-08	3.04E-08	5.82E-08	1.31E-07	4.05E-12	1.50E-10
Neodymium	Nd-147+D	5.40E-06	3.22E-05	6.69E-01	4.27E-08	2.74E-08	5.82E-08	1.31E-07	3.27E-12	1.21E-10
Neodymium	Nd-147+E	5.40E-06	3.22E-05	6.69E-01	4.27E-08	2.74E-08	5.82E-08	1.31E-07	3.27E-12	1.21E-10
Neodymium	Nd-149	4.66E-07	2.06E-07	2.04E+00	1.43E-08	1.84E-08	1.94E-08	4.36E-08	2.52E-13	9.35E-12
Neodymium	Nd-149+D	4.44E-06	2.96E-06	2.04E+00	1.43E-08	1.47E-08	1.94E-08	4.36E-08	2.65E-14	9.82E-13
Neodymium	Nd-149+E	4.44E-06	2.96E-06	2.04E+00	1.43E-08	1.47E-08	1.94E-08	4.36E-08	2.65E-14	9.82E-13
Neodymium	Nd-151	7.88E-08	2.92E-08	5.45E+00	5.39E-09	7.18E-09	7.34E-09	1.65E-08	1.81E-13	6.72E-12
Neodymium	Nd-151+D	3.07E-06	1.65E-06	7.19E+00	4.09E-09	5.16E-09	5.56E-09	1.25E-08	4.66E-15	1.72E-13
Neodymium	Nd-151+E	3.46E-06	3.16E-05	7.19E+00	4.09E-09	5.12E-09	5.56E-09	1.25E-08	4.13E-15	1.53E-13
Neon	Ne-19			6.03E+00	6.14E-10	8.18E-10	8.34E-10	1.88E-09		
Neptunium	Np-232	3.74E-08	1.25E-06	7.02E+00	6.44E-09	8.57E-09	8.75E-09	1.97E-08	6.95E-13	2.57E-11
Neptunium	Np-232+E	8.07E-04	2.68E-01	1.72E+01	2.50E-09	3.79E-10	3.55E-09	7.97E-09	3.22E-17	1.19E-15
Neptunium	Np-233	7.36E-09	2.17E-09	3.25E-01	1.40E-07	1.85E-07	1.90E-07	4.27E-07	8.72E-12	3.23E-10
Neptunium	Np-234	2.75E-06	2.03E-06	9.25E+00	4.93E-09	6.25E-09	6.71E-09	1.51E-08	4.10E-12	1.52E-10
Neptunium	Np-235	2.43E-07	4.14E-06	3.23E-03	1.32E-05	1.33E-06	1.91E-05	4.29E-05	4.20E-09	1.56E-07
Neptunium	Np-236a	8.66E-04	1.04E-01	4.61E-01	1.88E-04	1.67E-06	7.29E-04	1.57E-03	1.25E-07	4.64E-06
Neptunium	Np-236b	1.37E-06	8.25E-05	1.89E-01	2.42E-07	1.43E-07	3.31E-07	7.45E-07	1.77E-12	6.56E-11
Neptunium	Np-236b+D	1.37E-06	6.96E-02	1.89E-01	2.41E-07	1.43E-07	3.29E-07	7.40E-07	1.77E-12	6.56E-11
Neptunium	Np-236b+E	1.37E-06	7.66E-02	1.89E-01	2.41E-07	1.43E-07	3.29E-07	7.40E-07	1.77E-12	6.56E-11
Neptunium	Np-237	4.44E-03	5.40E-01	7.79E-02	1.02E-03	6.09E-06	1.22E-02	2.27E-02	4.57E-07	1.69E-05
Neptunium	Np-237+E	4.44E-03	5.40E-01	1.10E+00	8.38E-04	6.09E-06	4.69E-03	9.75E-03	4.57E-07	1.69E-05
Neptunium	Np-238	4.00E-06	3.70E-05	3.44E+00	1.35E-08	1.49E-08	1.83E-08	4.13E-08	1.38E-12	5.12E-11
Neptunium	Np-238+E	4.00E-06	3.92E-01	3.44E+00	1.35E-08	1.49E-08	1.83E-08	4.12E-08	1.38E-12	5.12E-11
Neptunium	Np-239	3.26E-06	2.51E-06	7.53E-01	6.16E-08	4.68E-08	8.41E-08	1.89E-07	1.89E-12	7.00E-11
Neptunium	Np-240	2.37E-07	8.14E-08	7.73E+00	6.05E-09	8.02E-09	8.22E-09	1.85E-08	5.01E-13	1.86E-11
Neptunium	Np-240m			2.02E+00	2.32E-08	3.09E-08	3.15E-08	7.09E-08		
Nickel	Ni-56	3.89E-06	4.03E-06	1.03E+01	1.06E-09	1.31E-09	1.44E-09	3.24E-09	9.64E-13	3.57E-11
Nickel	Ni-56+D	3.89E-06	2.64E-05	3.38E+01	3.23E-10	4.21E-10	4.39E-10	9.87E-10	9.64E-13	3.57E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Nickel	Ni-56+E	3.89E-06	2.64E-05	3.38E+01	3.23E-10	4.21E-10	4.39E-10	9.87E-10	9.64E-13	3.57E-11
Nickel	Ni-57	3.77E-06	1.89E-06	1.24E+01	8.96E-10	1.13E-09	1.22E-09	2.74E-09	2.49E-13	9.22E-12
Nickel	Ni-57+D	3.77E-06	4.51E-06	1.24E+01	8.96E-10	1.13E-09	1.22E-09	2.74E-09	2.49E-13	9.22E-12
Nickel	Ni-57+E	3.77E-06	4.51E-06	1.24E+01	8.96E-10	1.13E-09	1.22E-09	2.74E-09	2.49E-13	9.22E-12
Nickel	Ni-59	2.10E-07	9.18E-07	0.00E+00	8.37E-02	1.02E-03	2.62E+00	4.72E+00	8.44E-05	3.12E-03
Nickel	Ni-63	5.77E-07	2.30E-06	0.00E+00	4.62E-05	5.81E-07	1.42E-03	2.56E-03	4.19E-08	1.55E-06
Nickel	Ni-65	6.22E-07	2.22E-07	3.59E+00	3.53E-09	4.55E-09	4.80E-09	1.08E-08	1.20E-13	4.46E-12
Nickel	Ni-66	1.20E-05	8.33E-06	4.30E-05	4.53E-07	7.36E-09	1.15E-05	2.09E-05	1.37E-13	5.08E-12
Nickel	Ni-66+D	1.20E-05	8.33E-06	5.66E-01	2.16E-08	5.92E-09	3.08E-08	6.93E-08	1.37E-13	5.08E-12
Nickel	Ni-66+E	1.20E-05	8.33E-06	5.66E-01	2.16E-08	5.92E-09	3.08E-08	6.93E-08	1.37E-13	5.08E-12
Niobium	Nb-88	8.88E-08	2.52E-08	2.52E+01	6.80E-10	9.06E-10	9.25E-10	2.08E-09	1.08E-13	3.99E-12
Niobium	Nb-88+D	7.59E-06	3.15E-05	4.52E+01	3.79E-10	4.95E-10	5.16E-10	1.16E-09	1.26E-15	4.68E-14
Niobium	Nb-88+E	7.59E-06	3.15E-05	4.52E+01	3.79E-10	4.95E-10	5.16E-10	1.16E-09	1.26E-15	4.68E-14
Niobium	Nb-89a	1.02E-06	3.81E-07	1.14E+01	1.52E-09	2.00E-09	2.07E-09	4.65E-09	4.36E-14	1.62E-12
Niobium	Nb-89a+D	4.44E-06	2.62E-06	1.85E+01	9.35E-10	1.21E-09	1.27E-09	2.86E-09	1.01E-14	3.73E-13
Niobium	Nb-89a+E	4.44E-06	2.62E-06	1.85E+01	9.35E-10	1.21E-09	1.27E-09	2.86E-09	1.01E-14	3.73E-13
Niobium	Nb-89b	4.85E-07	1.67E-07	8.80E+00	1.97E-09	2.61E-09	2.68E-09	6.03E-09	1.70E-13	6.31E-12
Niobium	Nb-89b+D	3.92E-06	2.41E-06	1.59E+01	1.09E-09	1.40E-09	1.48E-09	3.33E-09	2.11E-14	7.80E-13
Niobium	Nb-89b+E	3.92E-06	2.41E-06	1.59E+01	1.09E-09	1.40E-09	1.48E-09	3.33E-09	2.11E-14	7.80E-13
Niobium	Nb-90	5.40E-06	2.09E-06	2.78E+01	6.30E-10	8.19E-10	8.57E-10	1.93E-09	1.11E-13	4.11E-12
Niobium	Nb-93m	5.22E-07	3.21E-06	1.04E-04	5.65E-05	3.95E-07	2.03E-04	4.18E-04	9.70E-09	3.59E-07
Niobium	Nb-94	7.14E-06	3.61E-05	9.68E+00	1.85E-06	1.68E-06	3.02E-06	6.79E-06	1.07E-06	3.96E-05
Niobium	Nb-95	2.57E-06	4.77E-06	4.69E+00	3.95E-09	4.90E-09	5.37E-09	1.21E-08	1.42E-11	5.27E-10
Niobium	Nb-95m	2.30E-06	2.22E-06	3.19E-01	5.77E-08	3.92E-08	7.87E-08	1.77E-07	1.63E-12	6.05E-11
Niobium	Nb-95m+D	4.88E-06	4.44E-06	5.01E+00	3.70E-09	4.36E-09	5.03E-09	1.13E-08	7.69E-13	2.85E-11
Niobium	Nb-95m+E	4.88E-06	4.44E-06	5.01E+00	3.70E-09	4.36E-09	5.03E-09	1.13E-08	7.69E-13	2.85E-11
Niobium	Nb-96	4.70E-06	2.10E-06	1.53E+01	1.23E-09	1.57E-09	1.67E-09	3.75E-09	2.18E-13	8.07E-12
Niobium	Nb-97	2.33E-07	7.70E-08	3.98E+00	4.75E-09	6.28E-09	6.46E-09	1.45E-08	2.28E-13	8.46E-12
Niobium	Nb-97m			4.45E+00	4.25E-09	5.67E-09	5.78E-09	1.30E-08		
Niobium	Nb-97m+D			8.42E+00	2.24E-09	2.99E-09	3.05E-09	6.86E-09		
Niobium	Nb-97m+E			8.42E+00	2.24E-09	2.99E-09	3.05E-09	6.86E-09		
Niobium	Nb-98	3.77E-07	1.15E-07	1.53E+01	1.25E-09	1.66E-09	1.70E-09	3.82E-09	1.02E-13	3.77E-12
Nitrogen	N-13			6.01E+00	4.21E-10	5.61E-10	5.73E-10	1.29E-09		
Osmium	Os-180	5.25E-08	1.32E-08	1.60E-01	2.19E-07	2.80E-07	2.98E-07	6.71E-07	5.74E-13	2.12E-11
Osmium	Os-180+D	5.25E-08	1.32E-08	7.19E+00	4.88E-09	6.50E-09	6.63E-09	1.49E-08	5.74E-13	2.12E-11
Osmium	Os-180+E	5.25E-08	1.32E-08	7.19E+00	4.88E-09	6.50E-09	6.63E-09	1.49E-08	5.74E-13	2.12E-11
Osmium	Os-181	3.65E-07	1.22E-07	7.19E+00	4.90E-09	6.49E-09	6.67E-09	1.50E-08	3.96E-13	1.47E-11
Osmium	Os-181+D	1.41E-06	9.18E-07	1.15E+01	3.05E-09	4.01E-09	4.15E-09	9.35E-09	1.03E-13	3.81E-12
Osmium	Os-181+E	1.41E-06	9.18E-07	1.15E+01	3.05E-09	4.01E-09	4.15E-09	9.35E-09	1.03E-13	3.81E-12
Osmium	Os-182	2.44E-06	1.27E-06	2.24E+00	1.58E-08	1.84E-08	2.15E-08	4.84E-08	7.50E-13	2.78E-11
Osmium	Os-182+D	3.18E-06	1.65E-06	9.32E+00	3.80E-09	4.85E-09	5.17E-09	1.16E-08	5.75E-13	2.13E-11
Osmium	Os-182+E	3.18E-06	1.65E-06	9.32E+00	3.80E-09	4.85E-09	5.17E-09	1.16E-08	5.75E-13	2.13E-11
Osmium	Os-185	2.26E-06	6.51E-06	4.17E+00	8.65E-09	1.08E-08	1.18E-08	2.65E-08	8.43E-11	3.12E-09
Osmium	Os-189m	6.70E-08	2.72E-08	1.36E-06	3.42E-03	5.48E-06	5.22E-03	9.67E-03	7.73E-12	2.86E-10
Osmium	Os-190m			9.13E+00	4.05E-09	5.40E-09	5.51E-09	1.24E-08		
Osmium	Os-191	2.31E-06	3.74E-06	2.41E-01	1.54E-07	9.04E-08	2.10E-07	4.72E-07	1.40E-11	5.18E-10
Osmium	Os-191m	3.85E-07	2.70E-07	1.61E-02	2.30E-06	7.35E-07	3.13E-06	7.05E-06	2.95E-12	1.09E-10
Osmium	Os-191m+D	2.69E-06	5.40E-07	2.58E-01	1.44E-07	8.04E-08	1.96E-07	4.41E-07	4.22E-13	1.56E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Osmium	Os-191m+E	2.69E-06	5.40E-07	2.58E-01	1.44E-07	8.04E-08	1.96E-07	4.41E-07	4.22E-13	1.56E-11
Osmium	Os-193	3.24E-06	1.84E-06	3.68E-01	1.02E-07	6.25E-08	1.39E-07	3.12E-07	8.15E-13	3.02E-11
Osmium	Os-194	1.09E-05	9.77E-05	1.16E-03	1.45E-05	3.50E-08	2.18E-05	4.32E-05	4.28E-10	1.59E-08
Osmium	Os-194+D	1.62E-05	1.32E-04	5.49E-01	7.08E-08	1.88E-08	9.88E-08	2.22E-07	2.88E-10	1.07E-08
Osmium	Os-194+E	1.62E-05	1.32E-04	5.49E-01	7.08E-08	1.88E-08	9.88E-08	2.22E-07	2.88E-10	1.07E-08
Oxygen	O-15			6.01E+00	4.86E-10	6.48E-10	6.61E-10	1.49E-09		
Palladium	Pd-100	4.29E-06	3.89E-06	3.27E-01	5.62E-08	2.76E-08	8.09E-08	1.82E-07	9.27E-13	3.43E-11
Palladium	Pd-100+D	7.47E-06	5.14E-06	1.84E+01	1.06E-09	1.33E-09	1.44E-09	3.24E-09	5.32E-13	1.97E-11
Palladium	Pd-100+E	7.47E-06	5.14E-06	1.84E+01	1.06E-09	1.33E-09	1.44E-09	3.24E-09	5.32E-13	1.97E-11
Palladium	Pd-101	4.14E-07	1.71E-07	1.86E+00	1.06E-08	1.37E-08	1.44E-08	3.24E-08	9.20E-13	3.41E-11
Palladium	Pd-101+D	1.57E-06	9.25E-07	3.57E+00	5.50E-09	6.92E-09	7.50E-09	1.69E-08	2.43E-13	8.98E-12
Palladium	Pd-101+E	1.57E-06	9.25E-07	3.57E+00	5.50E-09	6.92E-09	7.50E-09	1.69E-08	2.43E-13	8.98E-12
Palladium	Pd-103	7.88E-07	1.39E-06	2.52E-03	3.27E-06	2.32E-07	1.04E-05	2.32E-05	2.43E-11	9.00E-10
Palladium	Pd-107	1.49E-07	8.10E-07	0.00E+00	9.51E+00	3.05E-01	5.79E+02	1.04E+03	1.86E-02	6.89E-01
Palladium	Pd-109	2.17E-06	1.01E-06	1.86E-02	7.44E-07	8.61E-08	1.53E-06	3.44E-06	3.08E-13	1.14E-11
Phosphorus	P-30			6.07E+00	9.63E-10	1.28E-09	1.31E-09	2.95E-09		
Phosphorus	P-32	8.77E-06	1.55E-05	1.18E-02	1.55E-08	4.17E-09	6.59E-07	1.45E-06	5.71E-13	2.12E-11
Phosphorus	P-33	9.18E-07	2.32E-06	5.90E-05	1.57E-07	4.13E-08	5.09E-05	9.84E-05	1.00E-11	3.71E-10
Platinum	Pt-186	4.07E-07	1.32E-07	4.30E+00	8.43E-09	1.11E-08	1.15E-08	2.58E-08	4.17E-13	1.55E-11
Platinum	Pt-186+D	4.07E-07	9.58E-07	9.92E+00	3.65E-09	4.84E-09	4.97E-09	1.12E-08	4.17E-13	1.55E-11
Platinum	Pt-186+E	4.07E-07	1.32E-07	9.92E+00	3.65E-09	4.84E-09	4.97E-09	1.12E-08	4.17E-13	1.55E-11
Platinum	Pt-188	3.32E-06	3.14E-06	8.42E-01	4.35E-08	3.80E-08	5.91E-08	1.33E-07	6.34E-12	2.35E-10
Platinum	Pt-188+D	6.18E-06	4.59E-06	1.09E+01	3.35E-09	4.16E-09	4.56E-09	1.03E-08	3.40E-12	1.26E-10
Platinum	Pt-188+E	6.18E-06	4.59E-06	1.09E+01	3.35E-09	4.16E-09	4.56E-09	1.03E-08	3.40E-12	1.26E-10
Platinum	Pt-189	5.29E-07	1.79E-07	1.59E+00	2.32E-08	2.96E-08	3.15E-08	7.10E-08	1.77E-12	6.57E-11
Platinum	Pt-189+D	1.59E-06	1.69E-06	1.83E+00	2.01E-08	2.40E-08	2.73E-08	6.15E-08	5.91E-13	2.19E-11
Platinum	Pt-189+E	1.59E-06	1.69E-06	1.83E+00	2.01E-08	2.40E-08	2.73E-08	6.15E-08	5.91E-13	2.19E-11
Platinum	Pt-191	1.46E-06	6.14E-07	1.36E+00	2.74E-08	3.20E-08	3.73E-08	8.39E-08	4.02E-12	1.49E-10
Platinum	Pt-193	1.19E-07	2.27E-07	5.66E-06	4.94E-03	7.42E-06	8.62E-03	1.64E-02	3.25E-07	1.20E-05
Platinum	Pt-193m	1.81E-06	8.77E-07	2.56E-02	1.45E-06	1.87E-07	1.98E-06	4.45E-06	5.05E-12	1.87E-10
Platinum	Pt-193m+E	1.81E-06	1.75E-06	2.56E-02	1.45E-06	1.87E-07	1.98E-06	4.45E-06	5.05E-12	1.87E-10
Platinum	Pt-195m	2.56E-06	1.22E-06	1.89E-01	2.01E-07	9.55E-08	2.73E-07	6.15E-07	3.36E-12	1.24E-10
Platinum	Pt-197	1.61E-06	5.66E-07	8.09E-02	4.73E-07	1.73E-07	6.44E-07	1.45E-06	1.02E-12	3.79E-11
Platinum	Pt-197m	3.13E-07	1.22E-07	3.33E-01	1.15E-07	1.37E-07	1.57E-07	3.53E-07	4.52E-13	1.67E-11
Platinum	Pt-197m+D	1.87E-06	2.41E-07	4.11E-01	9.33E-08	7.75E-08	1.27E-07	2.86E-07	7.57E-14	2.81E-12
Platinum	Pt-197m+E	1.87E-06	2.41E-07	4.11E-01	9.33E-08	7.75E-08	1.27E-07	2.86E-07	7.57E-14	2.81E-12
Platinum	Pt-199	1.08E-07	4.55E-08	1.17E+00	3.31E-08	4.36E-08	4.50E-08	1.01E-07	4.32E-13	1.60E-11
Platinum	Pt-199+D	1.89E-06	1.43E-06	1.56E+00	2.48E-08	2.85E-08	3.38E-08	7.60E-08	2.47E-14	9.14E-13
Platinum	Pt-199+E	1.89E-06	1.43E-06	1.56E+00	2.48E-08	2.85E-08	3.38E-08	7.60E-08	2.47E-14	9.14E-13
Platinum	Pt-200	4.81E-06	1.67E-06	2.24E-01	1.73E-07	5.99E-08	2.36E-07	5.30E-07	2.37E-13	8.79E-12
Platinum	Pt-200+D	4.81E-06	3.67E-06	1.94E+00	2.01E-08	2.01E-08	2.73E-08	6.14E-08	2.37E-13	8.79E-12
Platinum	Pt-200+E	4.81E-06	3.67E-06	1.94E+00	2.01E-08	2.01E-08	2.73E-08	6.14E-08	2.37E-13	8.79E-12
Plutonium	Pu-234	6.59E-07	2.74E-05	2.32E-01	1.97E-07	1.90E-07	2.68E-07	6.02E-07	1.43E-12	5.29E-11
Plutonium	Pu-234+D	6.59E-07	9.99E-04	8.93E+00	5.11E-09	6.74E-09	6.94E-09	1.56E-08	1.43E-12	5.29E-11
Plutonium	Pu-234+E	6.59E-07	9.99E-04	8.93E+00	5.11E-09	6.74E-09	6.94E-09	1.56E-08	1.43E-12	5.29E-11
Plutonium	Pu-235	6.36E-09	2.10E-09	3.36E-01	1.36E-07	1.81E-07	1.85E-07	4.17E-07	7.11E-12	2.63E-10
Plutonium	Pu-235+D	6.36E-09	4.14E-06	3.36E-01	1.36E-07	1.81E-07	1.85E-07	4.17E-07	7.11E-12	2.63E-10
Plutonium	Pu-235+E	6.36E-09	4.14E-06	3.36E-01	1.36E-07	1.81E-07	1.85E-07	4.17E-07	7.11E-12	2.63E-10

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Plutonium	Pu-236	1.17E-03	1.45E-01	2.28E-04	2.12E-07	3.93E-10	4.29E-07	7.75E-07	2.31E-12	8.55E-11
Plutonium	Pu-236+E	1.17E-03	4.14E-01	1.02E+01	4.42E-09	3.69E-10	6.06E-09	1.36E-08	2.31E-12	8.55E-11
Plutonium	Pu-237	4.44E-07	1.73E-06	1.62E-01	2.85E-07	2.78E-07	3.88E-07	8.73E-07	2.65E-10	9.81E-09
Plutonium	Pu-238	3.20E-03	3.92E-01	1.51E-04	3.70E-07	5.32E-10	8.79E-07	1.59E-06	2.61E-11	9.67E-10
Plutonium	Pu-239	3.54E-03	4.29E-01	2.95E-04	8.21E-05	1.14E-07	1.99E-04	3.59E-04	6.50E-09	2.41E-07
Plutonium	Pu-240	3.54E-03	4.29E-01	1.47E-04	2.24E-05	3.11E-08	5.43E-05	9.81E-05	1.77E-09	6.57E-08
Plutonium	Pu-241	6.85E-05	8.25E-03	5.90E-06	4.83E-06	8.00E-09	1.07E-05	1.92E-05	2.03E-10	7.51E-09
Plutonium	Pu-241+D	6.85E-05	8.25E-03	1.89E-05	4.83E-06	8.00E-09	1.06E-05	1.92E-05	2.03E-10	7.51E-09
Plutonium	Pu-241+E	6.85E-05	8.25E-03	1.89E-05	4.83E-06	8.00E-09	1.06E-05	1.92E-05	2.03E-10	7.51E-09
Plutonium	Pu-242	3.36E-03	4.11E-01	1.28E-04	1.37E-03	1.90E-06	3.31E-03	5.99E-03	1.08E-07	4.02E-06
Plutonium	Pu-243	3.34E-07	1.64E-07	7.96E-02	5.94E-07	5.08E-07	8.09E-07	1.82E-06	1.65E-12	6.10E-11
Plutonium	Pu-244	3.32E-03	4.03E-01	7.55E-05	2.97E-01	4.12E-04	7.19E-01	1.30E+00	2.35E-05	8.71E-04
Plutonium	Pu-244+D	3.32E-03	4.03E-01	2.02E+00	6.95E-02	4.10E-04	1.23E-01	2.65E-01	2.35E-05	8.71E-04
Plutonium	Pu-244+E	3.32E-03	4.03E-01	2.02E+00	6.95E-02	4.10E-04	1.23E-01	2.65E-01	2.35E-05	8.71E-04
Plutonium	Pu-245	2.72E-06	1.22E-06	2.39E+00	2.00E-08	2.31E-08	2.71E-08	6.11E-08	4.33E-13	1.60E-11
Plutonium	Pu-245+D									
Plutonium	Pu-245+E									
Plutonium	Pu-246	1.35E-05	2.19E-05	5.66E-01	8.43E-08	2.69E-08	1.15E-07	2.58E-07	2.16E-12	8.00E-11
Plutonium	Pu-246+D	1.35E-05	2.19E-05	6.93E+00	6.91E-09	7.31E-09	9.40E-09	2.12E-08	2.16E-12	8.00E-11
Plutonium	Pu-246+E	1.35E-05	2.19E-05	6.93E+00	6.91E-09	7.31E-09	9.40E-09	2.12E-08	2.16E-12	8.00E-11
Polonium	Po-203	2.00E-07	7.36E-08	1.01E+01	3.91E-09	5.20E-09	5.32E-09	1.20E-08	2.83E-13	1.05E-11
Polonium	Po-203+D	3.43E-06	1.43E-06	2.67E+01	1.48E-09	1.94E-09	2.01E-09	4.53E-09	1.65E-14	6.13E-13
Polonium	Po-203+E	3.43E-06	1.43E-06	2.67E+01	1.48E-09	1.94E-09	2.01E-09	4.53E-09	1.65E-14	6.13E-13
Polonium	Po-205	2.40E-07	1.04E-07	9.71E+00	4.11E-09	5.46E-09	5.59E-09	1.26E-08	7.02E-13	2.60E-11
Polonium	Po-205+D	4.22E-06	4.44E-06	2.05E+01	1.94E-09	2.52E-09	2.64E-09	5.95E-09	3.99E-14	1.48E-12
Polonium	Po-205+E	4.22E-06	4.44E-06	2.05E+01	1.94E-09	2.52E-09	2.64E-09	5.95E-09	3.99E-14	1.48E-12
Polonium	Po-207	6.22E-07	1.76E-07	8.05E+00	5.01E-09	6.61E-09	6.81E-09	1.53E-08	8.87E-13	3.29E-11
Polonium	Po-207+E	6.11E-06	2.02E-05	1.74E+01	2.31E-09	2.95E-09	3.15E-09	7.08E-09	9.03E-14	3.34E-12
Polonium	Po-210	1.90E-03	8.58E-03	5.23E-05	1.16E-07	2.14E-10	2.38E-07	4.28E-07	1.67E-13	6.20E-12
Polonium	Po-211			4.76E-02	8.63E-07	1.15E-06	1.17E-06	2.64E-06		
Polonium	Po-212			0.00E+00						
Polonium	Po-213			0.00E+00						
Polonium	Po-213+D			7.73E-04	5.37E-05	7.15E-05	7.30E-05	1.64E-04		
Polonium	Po-213+E			7.73E-04	5.37E-05	7.15E-05	7.30E-05	1.64E-04		
Polonium	Po-214			5.14E-04	8.12E-05	1.08E-04	1.10E-04	2.48E-04		
Polonium	Po-214+D			6.61E-03	6.31E-06	8.41E-06	8.57E-06	1.93E-05		
Polonium	Po-214+E			6.61E-03	6.31E-06	8.41E-06	8.57E-06	1.93E-05		
Polonium	Po-215			1.02E-03	4.12E-05	5.50E-05	5.61E-05	1.26E-04		
Polonium	Po-215+D			5.83E-01	7.19E-08	9.58E-08	9.77E-08	2.20E-07		
Polonium	Po-215+E			5.83E-01	7.19E-08	9.58E-08	9.77E-08	2.20E-07		
Polonium	Po-216			1.04E-04	4.04E-04	5.38E-04	5.49E-04	1.24E-03		
Polonium	Po-216+D			1.01E+01	4.16E-09	5.54E-09	5.65E-09	1.27E-08		
Polonium	Po-216+E			1.01E+01	4.16E-09	5.54E-09	5.65E-09	1.27E-08		
Polonium	Po-218			5.64E-05	7.53E-04	1.00E-03	1.02E-03	2.30E-03		
Polonium	Po-218+D			1.12E+01	3.81E-09	5.08E-09	5.18E-09	1.17E-08		
Polonium	Po-218+E			1.12E+01	3.81E-09	5.08E-09	5.18E-09	1.17E-08		
Potassium	K-38			2.11E+01	3.51E-10	4.68E-10	4.77E-10	1.07E-09		
Potassium	K-40	1.86E-05	1.24E-05	1.04E+00	3.72E-01	1.17E-01	7.51E-01	1.69E+00	1.10E-02	4.08E-01

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Potassium	K-42	1.13E-06	1.36E-06	1.89E+00	4.30E-09	5.26E-09	5.90E-09	1.33E-08	2.09E-13	7.75E-12
Potassium	K-43	7.70E-07	6.92E-07	5.70E+00	1.47E-09	1.92E-09	2.00E-09	4.50E-09	5.77E-13	2.14E-11
Potassium	K-44	1.73E-07	8.29E-08	1.54E+01	5.57E-10	7.41E-10	7.57E-10	1.70E-09	4.29E-14	1.59E-12
Potassium	K-45	1.11E-07	5.14E-08	1.24E+01	7.07E-10	9.41E-10	9.61E-10	2.16E-09	6.15E-14	2.28E-12
Potassium	K-45+D	3.27E-06	6.66E-06	1.24E+01	7.04E-10	9.03E-10	9.61E-10	2.16E-09	2.09E-15	7.75E-14
Potassium	K-45+E	3.27E-06	6.66E-06	1.24E+01	7.04E-10	9.03E-10	9.61E-10	2.16E-09	2.09E-15	7.75E-14
Praseodymium	Pr-136	8.25E-08	2.34E-08	1.30E+01	2.04E-09	2.72E-09	2.78E-09	6.25E-09	1.64E-13	6.09E-12
Praseodymium	Pr-137	1.42E-07	4.33E-08	2.88E+00	9.28E-09	1.23E-08	1.26E-08	2.84E-08	5.61E-13	2.08E-11
Praseodymium	Pr-137+D	2.46E-07	1.37E-06	2.88E+00	9.28E-09	1.22E-08	1.26E-08	2.84E-08	3.25E-13	1.20E-11
Praseodymium	Pr-137+E	2.46E-07	1.37E-06	2.88E+00	9.28E-09	1.22E-08	1.26E-08	2.84E-08	3.25E-13	1.20E-11
Praseodymium	Pr-138			4.82E+00	5.58E-09	7.44E-09	7.59E-09	1.71E-08		
Praseodymium	Pr-138m	5.14E-07	1.22E-07	1.51E+01	1.78E-09	2.37E-09	2.43E-09	5.46E-09	2.57E-13	9.53E-12
Praseodymium	Pr-139	1.30E-07	4.96E-08	5.98E-01	4.53E-08	5.87E-08	6.16E-08	1.39E-07	2.20E-12	8.14E-11
Praseodymium	Pr-139+D	1.27E-06	7.25E-06	1.23E+00	2.19E-08	2.57E-08	2.98E-08	6.71E-08	2.25E-13	8.33E-12
Praseodymium	Pr-139+E	1.27E-06	7.25E-06	1.23E+00	2.19E-08	2.57E-08	2.98E-08	6.71E-08	2.25E-13	8.33E-12
Praseodymium	Pr-142	5.25E-06	2.64E-06	4.09E-01	6.74E-08	3.31E-08	9.18E-08	2.07E-07	2.36E-13	8.74E-12
Praseodymium	Pr-142m	6.70E-08	3.38E-08	0.00E+00	1.64E-03	4.11E-06	4.57E-03	8.23E-03	2.36E-13	8.73E-12
Praseodymium	Pr-142m+D	5.33E-06	6.77E-08	4.09E-01	6.74E-08	3.29E-08	9.18E-08	2.07E-07	2.96E-15	1.10E-13
Praseodymium	Pr-142m+E	5.33E-06	6.77E-08	4.09E-01	6.74E-08	3.29E-08	9.18E-08	2.07E-07	2.96E-15	1.10E-13
Praseodymium	Pr-143	4.70E-06	7.55E-06	2.20E-03	8.23E-06	5.88E-08	1.36E-05	2.91E-05	4.52E-12	1.67E-10
Praseodymium	Pr-144	1.17E-07	4.07E-08	2.52E-01	1.11E-07	1.40E-07	1.51E-07	3.40E-07	1.62E-13	6.02E-12
Praseodymium	Pr-144m			1.44E-02	1.95E-06	2.60E-06	2.66E-06	5.98E-06		
Praseodymium	Pr-144m+D			2.67E-01	1.05E-07	1.40E-07	1.43E-07	3.21E-07		
Praseodymium	Pr-144m+E			2.67E-01	1.05E-07	1.40E-07	1.43E-07	3.21E-07		
Praseodymium	Pr-145	1.55E-06	6.11E-07	9.13E-02	3.08E-07	1.26E-07	4.20E-07	9.44E-07	2.56E-13	9.48E-12
Praseodymium	Pr-147	7.77E-08	2.86E-08	5.04E+00	5.68E-09	7.56E-09	7.72E-09	1.74E-08	1.96E-13	7.25E-12
Praseodymium	Pr-147+D	5.48E-06	3.22E-05	5.72E+00	5.01E-09	5.92E-09	6.81E-09	1.53E-08	2.78E-15	1.03E-13
Praseodymium	Pr-147+E	5.48E-06	3.22E-05	5.72E+00	5.01E-09	5.92E-09	6.81E-09	1.53E-08	2.78E-15	1.03E-13
Promethium	Pm-141	9.36E-08	2.95E-08	4.45E+00	6.18E-09	8.22E-09	8.40E-09	1.89E-08	2.40E-13	8.87E-12
Promethium	Pm-141+D	1.28E-07	3.89E-08	4.45E+00	6.18E-09	8.21E-09	8.40E-09	1.89E-08	1.76E-13	6.51E-12
Promethium	Pm-141+E	1.28E-07	3.89E-08	4.45E+00	6.18E-09	8.21E-09	8.40E-09	1.89E-08	1.76E-13	6.51E-12
Promethium	Pm-142			5.19E+00	5.33E-09	7.10E-09	7.25E-09	1.63E-08		
Promethium	Pm-143	1.03E-06	8.18E-06	1.77E+00	1.57E-08	1.95E-08	2.14E-08	4.81E-08	4.02E-10	1.49E-08
Promethium	Pm-144	4.33E-06	4.22E-05	9.25E+00	3.03E-09	3.81E-09	4.13E-09	9.28E-09	1.32E-10	4.90E-09
Promethium	Pm-145	4.74E-07	2.53E-05	2.93E-02	1.39E-06	5.13E-07	2.09E-06	4.71E-06	2.17E-08	8.03E-07
Promethium	Pm-146	3.67E-06	1.02E-04	4.41E+00	6.61E-09	7.79E-09	9.18E-09	2.06E-08	8.81E-10	3.26E-08
Promethium	Pm-147	1.05E-06	2.58E-05	5.01E-05	9.13E-05	2.72E-07	2.18E-04	4.15E-04	1.47E-09	5.46E-08
Promethium	Pm-148	1.09E-05	1.04E-05	3.68E+00	7.83E-09	7.49E-09	1.07E-08	2.40E-08	8.01E-13	2.97E-11
Promethium	Pm-148m	7.66E-06	2.02E-05	1.20E+01	2.40E-09	2.95E-09	3.26E-09	7.35E-09	8.75E-12	3.24E-10
Promethium	Pm-149	3.96E-06	2.75E-06	6.24E-02	4.58E-07	6.53E-08	6.28E-07	1.41E-06	9.12E-13	3.38E-11
Promethium	Pm-150	9.99E-07	3.27E-07	9.06E+00	3.23E-09	4.24E-09	4.39E-09	9.87E-09	1.84E-13	6.81E-12
Promethium	Pm-151	2.99E-06	1.62E-06	1.73E+00	1.70E-08	1.84E-08	2.31E-08	5.19E-08	6.54E-13	2.42E-11
Promethium	Pm-151+E	3.38E-06	3.16E-05	1.73E+00	1.70E-08	1.79E-08	2.31E-08	5.19E-08	5.79E-13	2.14E-11
Protactinium	Pa-227	1.31E-06	4.55E-05	6.37E-02	6.86E-07	2.45E-07	9.42E-07	2.12E-06	5.04E-14	1.87E-12
Protactinium	Pa-227+D	1.06E-04	3.51E-03	6.37E-01	6.33E-08	3.96E-09	9.25E-08	2.07E-07	6.25E-16	2.32E-14
Protactinium	Pa-227+E	1.06E-04	3.51E-03	6.37E-01	6.33E-08	3.96E-09	9.25E-08	2.07E-07	6.25E-16	2.32E-14
Protactinium	Pa-228	4.18E-06	2.36E-04	6.78E+00	6.55E-09	8.07E-09	8.91E-09	2.00E-08	5.48E-13	2.03E-11
Protactinium	Pa-228+D	8.03E-04	2.48E-01	1.70E+01	2.55E-09	4.74E-10	3.54E-09	7.95E-09	2.85E-15	1.06E-13

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Protactinium	Pa-228+E	8.03E-04	2.48E-01	1.70E+01	2.55E-09	4.74E-10	3.54E-09	7.95E-09	2.85E-15	1.06E-13
Protactinium	Pa-230	6.22E-06	1.14E-03	3.81E+00	1.17E-08	1.29E-08	1.60E-08	3.60E-08	7.06E-12	2.61E-10
Protactinium	Pa-230+D	6.22E-06	2.67E-03	3.81E+00	1.17E-08	1.29E-08	1.60E-08	3.60E-08	7.06E-12	2.61E-10
Protactinium	Pa-230+E	6.22E-06	2.67E-03	3.81E+00	1.17E-08	1.29E-08	1.60E-08	3.60E-08	7.06E-12	2.61E-10
Protactinium	Pa-231	1.06E-02	1.28E+00	1.91E-01	1.11E-05	4.98E-08	7.65E-05	1.42E-04	2.86E-09	1.06E-07
Protactinium	Pa-232	3.57E-06	9.14E-05	5.68E+00	7.96E-09	9.79E-09	1.08E-08	2.44E-08	9.33E-13	3.45E-11
Protactinium	Pa-232+E	8.10E-04	2.68E-01	1.59E+01	2.76E-09	4.82E-10	3.85E-09	8.64E-09	4.11E-15	1.52E-13
Protactinium	Pa-233	3.63E-06	8.29E-06	1.02E+00	4.44E-08	4.01E-08	6.05E-08	1.36E-07	1.90E-11	7.03E-10
Protactinium	Pa-234	2.16E-06	7.33E-07	1.15E+01	3.95E-09	5.14E-09	5.37E-09	1.21E-08	3.31E-13	1.23E-11
Protactinium	Pa-234m			8.97E-02	5.08E-07	6.78E-07	6.91E-07	1.56E-06		
Protactinium	Pa-234m+D			1.05E-01	4.36E-07	5.81E-07	5.93E-07	1.33E-06		
Protactinium	Pa-234m+E			1.05E-01	4.36E-07	5.81E-07	5.93E-07	1.33E-06		
Radium	Ra-222			5.06E-02	8.54E-07	1.14E-06	1.16E-06	2.61E-06		
Radium	Ra-222+D									
Radium	Ra-222+E			6.18E-02	7.00E-07	9.33E-07	9.51E-07	2.14E-06		
Radium	Ra-223	6.59E-04	7.84E-03	6.03E-01	2.33E-08	5.43E-10	8.63E-08	1.89E-07	4.24E-14	1.57E-12
Radium	Ra-223+D	6.59E-04	7.84E-03	1.49E+00	1.58E-08	5.38E-10	3.75E-08	8.33E-08	4.24E-14	1.57E-12
Radium	Ra-223+E	6.59E-04	7.84E-03	1.49E+00	1.58E-08	5.38E-10	3.75E-08	8.33E-08	4.24E-14	1.57E-12
Radium	Ra-224	3.66E-04	3.16E-03	5.12E-02	5.79E-08	9.86E-10	6.17E-07	1.24E-06	5.56E-16	9.09E-13
Radium	Ra-224+D	4.11E-04	3.16E-03	1.02E+01	3.98E-09	7.62E-10	5.80E-09	1.30E-08	2.19E-14	8.10E-13
Radium	Ra-224+E	4.11E-04	3.16E-03	1.02E+01	3.98E-09	7.62E-10	5.80E-09	1.30E-08	2.19E-14	8.10E-13
Radium	Ra-225	3.85E-04	7.77E-03	1.10E-02	5.85E-08	9.43E-10	1.02E-06	1.91E-06	9.48E-14	3.51E-12
Radium	Ra-225+D	4.96E-04	1.64E-02	1.28E+00	1.97E-08	7.20E-10	4.46E-08	9.92E-08	7.36E-14	2.73E-12
Radium	Ra-225+E	4.96E-04	1.64E-02	1.28E+00	1.97E-08	7.20E-10	4.46E-08	9.92E-08	7.36E-14	2.73E-12
Radium	Ra-226	1.32E-03	8.58E-03	3.18E-02	1.33E-06	1.60E-08	2.86E-05	5.31E-05	3.27E-11	4.04E-08
Radium	Ra-226+D	1.32E-03	8.58E-03	1.12E+01	2.48E-07	1.52E-08	4.90E-07	1.10E-06	3.27E-11	4.04E-08
Radium	Ra-226+E	1.32E-03	8.58E-03	1.12E+01	2.48E-07	1.52E-08	4.90E-07	1.10E-06	1.09E-09	4.04E-08
Radium	Ra-227	2.26E-07	2.84E-07	8.48E-01	5.21E-08	6.67E-08	7.09E-08	1.60E-07	3.23E-13	1.20E-11
Radium	Ra-227+E	1.48E-02	1.74E+00	2.86E+00	1.42E-09	2.48E-11	1.28E-08	2.62E-08	4.94E-18	1.83E-16
Radium	Ra-228	1.44E-03	4.77E-03	0.00E+00	1.66E-08	2.58E-10	3.60E-07	6.48E-07	3.65E-12	1.35E-10
Radium	Ra-228+D	2.25E-03	2.58E-01	1.62E+01	2.23E-09	1.58E-10	3.86E-09	8.65E-09	2.33E-12	8.65E-11
Radium	Ra-228+E	2.25E-03	2.58E-01	1.62E+01	2.23E-09	1.58E-10	3.86E-09	8.65E-09	2.33E-12	8.65E-11
Radon	Rn-218			4.54E-03	9.36E-06	1.25E-05	1.27E-05	2.86E-05		
Radon	Rn-218+D			1.06E-02	3.99E-06	5.32E-06	5.42E-06	1.22E-05		
Radon	Rn-218+E			1.06E-02	3.99E-06	5.32E-06	5.42E-06	1.22E-05		
Radon	Rn-219			3.08E-01	1.38E-07	1.85E-07	1.88E-07	4.24E-07		
Radon	Rn-219+D			8.91E-01	4.79E-08	6.38E-08	6.51E-08	1.47E-07		
Radon	Rn-219+E			8.91E-01	4.79E-08	6.38E-08	6.51E-08	1.47E-07		
Radon	Rn-220			2.30E-03	1.87E-05	2.49E-05	2.54E-05	5.71E-05		
Radon	Rn-220+D			1.01E+01	4.23E-09	5.64E-09	5.76E-09	1.30E-08		
Radon	Rn-220+E			1.01E+01	4.23E-09	5.64E-09	5.76E-09	1.30E-08		
Radon	Rn-222			2.35E-03	1.84E-05	2.45E-05	2.50E-05	5.62E-05		
Radon	Rn-222+D			1.12E+01	3.88E-09	5.17E-09	5.27E-09	1.19E-08		
Radon	Rn-222+E			1.12E+01	3.88E-09	5.17E-09	5.27E-09	1.19E-08		
Rhenium	Re-177	5.40E-08	1.87E-08	3.49E+00	9.87E-09	1.31E-08	1.34E-08	3.02E-08	3.49E-13	1.29E-11
Rhenium	Re-177+D	5.07E-07	3.74E-07	8.56E+00	4.03E-09	5.33E-09	5.48E-09	1.23E-08	3.72E-14	1.38E-12
Rhenium	Re-177+E	5.07E-07	3.74E-07	8.56E+00	4.03E-09	5.33E-09	5.48E-09	1.23E-08	3.72E-14	1.38E-12
Rhenium	Re-178	5.77E-08	1.88E-08	7.47E+00	4.64E-09	6.18E-09	6.31E-09	1.42E-08	3.10E-13	1.15E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Rhenium	Re-178+D	5.77E-08	2.90E-07	7.47E+00	4.64E-09	6.18E-09	6.31E-09	1.42E-08	3.10E-13	1.15E-11
Rhenium	Re-178+E	5.77E-08	2.90E-07	7.47E+00	4.64E-09	6.18E-09	6.31E-09	1.42E-08	3.10E-13	1.15E-11
Rhenium	Re-180			7.02E+00	4.99E-09	6.66E-09	6.79E-09	1.53E-08		
Rhenium	Re-181	1.04E-06	6.44E-07	4.28E+00	8.24E-09	1.06E-08	1.12E-08	2.52E-08	1.59E-12	5.89E-11
Rhenium	Re-181+D	1.04E-06	7.96E-07	4.28E+00	8.24E-09	1.06E-08	1.12E-08	2.52E-08	1.59E-12	5.89E-11
Rhenium	Re-181+E	1.04E-06	7.96E-07	4.28E+00	8.24E-09	1.06E-08	1.12E-08	2.52E-08	1.59E-12	5.89E-11
Rhenium	Re-182a	7.44E-07	3.81E-07	7.08E+00	5.01E-09	6.59E-09	6.81E-09	1.53E-08	1.42E-12	5.26E-11
Rhenium	Re-182b	3.40E-06	2.86E-06	1.09E+01	3.24E-09	4.15E-09	4.41E-09	9.93E-09	1.57E-12	5.80E-11
Rhenium	Re-184	2.19E-06	5.14E-06	5.23E+00	6.85E-09	8.66E-09	9.32E-09	2.10E-08	3.50E-11	1.30E-09
Rhenium	Re-184m	2.95E-06	1.47E-05	2.04E+00	1.76E-08	1.97E-08	2.39E-08	5.39E-08	1.13E-10	4.18E-09
Rhenium	Re-184m+D	4.59E-06	2.57E-05	5.94E+00	6.03E-09	7.29E-09	8.21E-09	1.85E-08	7.25E-11	2.69E-09
Rhenium	Re-184m+E	4.59E-06	2.57E-05	5.94E+00	6.03E-09	7.29E-09	8.21E-09	1.85E-08	7.25E-11	2.69E-09
Rhenium	Re-186	2.94E-06	3.20E-06	7.81E-02	4.62E-07	1.03E-07	6.28E-07	1.41E-06	2.62E-12	9.69E-11
Rhenium	Re-186m	4.00E-06	3.61E-05	2.76E-02	1.24E-02	6.21E-04	2.02E-02	4.53E-02	3.72E-05	1.38E-03
Rhenium	Re-186m+D	6.92E-06	7.22E-05	1.06E-01	3.27E-03	3.38E-04	5.34E-03	1.20E-02	2.15E-05	7.97E-04
Rhenium	Re-186m+E	6.92E-06	7.22E-05	1.06E-01	3.27E-03	3.38E-04	5.34E-03	1.20E-02	2.15E-05	7.97E-04
Rhenium	Re-187	9.51E-09	5.44E-08	0.00E+00	6.55E+07	6.89E+04	1.22E+08	2.20E+08	3.93E+03	1.46E+05
Rhenium	Re-188	3.07E-06	2.01E-06	3.21E-01	1.14E-07	6.67E-08	1.55E-07	3.48E-07	4.74E-13	1.76E-11
Rhenium	Re-188m	6.77E-08	4.11E-08	1.94E-01	1.89E-07	2.40E-07	2.56E-07	5.77E-07	3.93E-13	1.46E-11
Rhenium	Re-188m+D	3.14E-06	8.21E-08	5.16E-01	7.10E-08	5.22E-08	9.65E-08	2.17E-07	8.47E-15	3.14E-13
Rhenium	Re-188m+E	3.14E-06	8.21E-08	5.16E-01	7.10E-08	5.22E-08	9.65E-08	2.17E-07	8.47E-15	3.14E-13
Rhenium	Re-189	1.73E-06	1.24E-06	3.34E-01	1.10E-07	8.69E-08	1.50E-07	3.37E-07	1.21E-12	4.50E-11
Rhodium	Rh-100	3.17E-06	1.27E-06	1.81E+01	1.08E-09	1.40E-09	1.47E-09	3.30E-09	3.00E-13	1.11E-11
Rhodium	Rh-101	2.32E-06	7.77E-06	1.23E+00	1.59E-08	1.68E-08	2.19E-08	4.93E-08	5.58E-10	2.07E-08
Rhodium	Rh-101m	9.88E-07	7.03E-07	1.63E+00	1.21E-08	1.48E-08	1.65E-08	3.70E-08	4.86E-12	1.80E-10
Rhodium	Rh-101m+D	1.15E-06	7.03E-07	1.63E+00	1.21E-08	1.46E-08	1.65E-08	3.70E-08	4.16E-12	1.54E-10
Rhodium	Rh-101m+E	1.15E-06	7.03E-07	1.63E+00	1.21E-08	1.46E-08	1.65E-08	3.70E-08	4.16E-12	1.54E-10
Rhodium	Rh-102	1.04E-05	2.94E-05	1.30E+01	1.53E-09	1.83E-09	2.09E-09	4.70E-09	1.13E-10	4.20E-09
Rhodium	Rh-102m	4.70E-06	1.64E-05	2.84E+00	6.93E-09	7.52E-09	9.52E-09	2.14E-08	4.92E-11	1.82E-09
Rhodium	Rh-102m+D	5.22E-06	1.64E-05	3.49E+00	5.64E-09	6.23E-09	7.74E-09	1.74E-08	4.44E-11	1.64E-09
Rhodium	Rh-102m+E	5.22E-06	1.64E-05	3.49E+00	5.64E-09	6.23E-09	7.74E-09	1.74E-08	4.44E-11	1.64E-09
Rhodium	Rh-103m	1.16E-08	4.37E-09	2.43E-04	6.44E-05	1.38E-05	1.12E-04	2.51E-04	3.79E-12	1.40E-10
Rhodium	Rh-105	1.48E-06	8.77E-07	4.30E-01	4.67E-08	4.23E-08	6.47E-08	1.46E-07	1.15E-12	4.25E-11
Rhodium	Rh-106			1.29E+00	1.60E-08	2.13E-08	2.18E-08	4.90E-08		
Rhodium	Rh-106m	6.44E-07	1.67E-07	1.81E+01	1.14E-09	1.51E-09	1.55E-09	3.49E-09	1.65E-13	6.13E-12
Rhodium	Rh-107	6.03E-08	2.02E-08	1.74E+00	1.20E-08	1.59E-08	1.63E-08	3.66E-08	2.93E-13	1.09E-11
Rhodium	Rh-99	2.25E-06	2.79E-06	3.38E+00	5.68E-09	6.93E-09	7.76E-09	1.75E-08	7.72E-12	2.86E-10
Rhodium	Rh-99m	2.87E-07	7.62E-08	4.03E+00	4.78E-09	6.31E-09	6.50E-09	1.46E-08	7.39E-13	2.74E-11
Rubidium	Rb-79	1.03E-07	4.92E-08	7.90E+00	1.95E-09	2.59E-09	2.65E-09	5.96E-09	1.33E-13	4.94E-12
Rubidium	Rb-79+D	1.03E-07	4.92E-08	9.36E+00	1.64E-09	2.19E-09	2.24E-09	5.03E-09	1.33E-13	4.94E-12
Rubidium	Rb-79+E	1.03E-07	4.92E-08	9.36E+00	1.64E-09	2.19E-09	2.24E-09	5.03E-09	1.33E-13	4.94E-12
Rubidium	Rb-80			7.49E+00	2.08E-09	2.77E-09	2.83E-09	6.37E-09		
Rubidium	Rb-81	1.45E-07	1.30E-07	3.51E+00	4.49E-09	5.96E-09	6.11E-09	1.38E-08	1.17E-12	4.34E-11
Rubidium	Rb-81m	2.35E-08	2.01E-08	1.34E-02	1.17E-06	1.25E-06	1.61E-06	3.61E-06	8.40E-13	3.11E-11
Rubidium	Rb-81m+D	1.68E-07	4.03E-08	3.53E+00	4.47E-09	5.92E-09	6.08E-09	1.37E-08	1.17E-13	4.34E-12
Rubidium	Rb-81m+E	1.68E-07	4.03E-08	3.53E+00	4.47E-09	5.92E-09	6.08E-09	1.37E-08	1.17E-13	4.34E-12
Rubidium	Rb-82			6.52E+00	2.45E-09	3.27E-09	3.33E-09	7.50E-09		
Rubidium	Rb-82m	4.14E-07	2.90E-07	1.80E+01	8.87E-10	1.18E-09	1.21E-09	2.71E-09	5.60E-13	2.07E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Rubidium	Rb-83	7.70E-06	4.92E-06	2.93E+00	5.43E-09	5.32E-09	7.50E-09	1.69E-08	1.02E-11	3.77E-10
Rubidium	Rb-84	9.99E-06	6.51E-06	5.60E+00	2.89E-09	3.09E-09	3.97E-09	8.93E-09	3.02E-12	1.12E-10
Rubidium	Rb-86	9.36E-06	6.62E-06	6.13E-01	2.51E-08	1.13E-08	3.71E-08	8.35E-08	1.88E-12	6.96E-11
Rubidium	Rb-87	4.92E-06	3.23E-06	1.41E-04	1.31E+03	5.34E+01	8.39E+04	1.57E+05	3.32E+00	1.23E+02
Rubidium	Rb-88	1.74E-07	8.36E-08	4.37E+00	3.92E-09	5.20E-09	5.33E-09	1.20E-08	6.84E-14	2.53E-12
Rubidium	Rb-89	9.81E-08	4.29E-08	1.37E+01	1.27E-09	1.69E-09	1.72E-09	3.88E-09	1.05E-13	3.89E-12
Rubidium	Rb-89+D	9.81E-08	6.55E-06	1.37E+01	1.27E-09	1.69E-09	1.72E-09	3.88E-09	1.05E-13	3.89E-12
Rubidium	Rb-89+E	9.81E-08	6.55E-06	1.37E+01	1.27E-09	1.69E-09	1.72E-09	3.88E-09	1.05E-13	3.89E-12
Ruthenium	Ru-103	3.05E-06	6.48E-06	2.75E+00	7.30E-09	7.25E-09	9.94E-09	2.24E-08	1.45E-11	5.39E-10
Ruthenium	Ru-105	1.06E-06	4.18E-07	4.71E+00	4.34E-09	5.42E-09	5.91E-09	1.33E-08	2.00E-13	7.42E-12
Ruthenium	Ru-105+D	2.54E-06	1.30E-06	4.71E+00	4.34E-09	4.96E-09	5.91E-09	1.33E-08	8.39E-14	3.11E-12
Ruthenium	Ru-105+E	2.54E-06	1.30E-06	4.71E+00	4.34E-09	4.96E-09	5.91E-09	1.33E-08	8.39E-14	3.11E-12
Ruthenium	Ru-106	2.74E-05	1.18E-04	0.00E+00	5.12E-07	3.24E-09	8.34E-06	1.50E-05	1.56E-11	5.79E-10
Ruthenium	Ru-106+D	2.74E-05	1.18E-04	1.29E+00	1.55E-08	2.82E-09	2.17E-08	4.88E-08	1.56E-11	5.79E-10
Ruthenium	Ru-106+E	2.74E-05	1.18E-04	1.29E+00	1.55E-08	2.82E-09	2.17E-08	4.88E-08	1.56E-11	5.79E-10
Ruthenium	Ru-94	3.47E-07	1.06E-07	3.10E+00	5.91E-09	7.61E-09	8.03E-09	1.81E-08	1.07E-13	3.96E-12
Ruthenium	Ru-94+D	6.25E-07	2.08E-07	1.46E+01	1.25E-09	1.65E-09	1.70E-09	3.83E-09	5.93E-14	2.19E-12
Ruthenium	Ru-94+E	6.25E-07	2.08E-07	1.46E+01	1.25E-09	1.65E-09	1.70E-09	3.83E-09	5.93E-14	2.19E-12
Ruthenium	Ru-97	6.96E-07	4.26E-07	1.19E+00	1.59E-08	1.80E-08	2.17E-08	4.87E-08	4.43E-12	1.64E-10
Samarium	Sm-141	9.99E-08	3.07E-08	8.52E+00	3.23E-09	4.29E-09	4.39E-09	9.87E-09	1.10E-13	4.06E-12
Samarium	Sm-141+D	3.25E-07	9.73E-08	1.68E+01	1.64E-09	2.18E-09	2.23E-09	5.01E-09	3.37E-14	1.25E-12
Samarium	Sm-141+E	3.25E-07	9.73E-08	1.68E+01	1.64E-09	2.18E-09	2.23E-09	5.01E-09	3.37E-14	1.25E-12
Samarium	Sm-141m	1.97E-07	5.85E-08	1.20E+01	2.29E-09	3.04E-09	3.11E-09	7.00E-09	1.23E-13	4.55E-12
Samarium	Sm-141m+D	3.25E-07	9.73E-08	1.68E+01	1.64E-09	2.18E-09	2.22E-09	5.01E-09	7.46E-14	2.76E-12
Samarium	Sm-141m+E	3.25E-07	9.73E-08	1.68E+01	1.64E-09	2.18E-09	2.22E-09	5.01E-09	7.46E-14	2.76E-12
Samarium	Sm-142	6.25E-07	2.15E-07	4.11E-01	6.73E-08	7.46E-08	9.15E-08	2.06E-07	1.25E-13	4.64E-12
Samarium	Sm-142+D	6.25E-07	2.15E-07	5.60E+00	4.94E-09	6.49E-09	6.71E-09	1.51E-08	1.25E-13	4.64E-12
Samarium	Sm-142+E	6.25E-07	2.15E-07	5.60E+00	4.94E-09	6.49E-09	6.71E-09	1.51E-08	1.25E-13	4.64E-12
Samarium	Sm-145	9.10E-07	1.10E-05	6.82E-02	4.13E-07	1.98E-07	5.63E-07	1.27E-06	5.94E-10	2.20E-08
Samarium	Sm-145+E	1.38E-06	3.64E-05	9.75E-02	2.89E-07	1.33E-07	3.93E-07	8.85E-07	3.90E-10	1.45E-08
Samarium	Sm-146	2.04E-04	8.25E-02	0.00E+00	2.72E+00	5.16E-03	8.67E+00	1.58E+01	2.95E-04	1.09E-02
Samarium	Sm-147	1.85E-04	7.47E-02	0.00E+00	3.10E+03	5.88E+00	9.88E+03	1.80E+04	3.36E-01	1.25E+01
Samarium	Sm-151	3.89E-07	3.00E-05	9.84E-07	1.44E-03	2.85E-06	4.64E-03	8.40E-03	1.40E-07	5.18E-06
Samarium	Sm-153	2.99E-06	1.96E-06	1.58E-01	1.88E-07	7.12E-08	2.56E-07	5.75E-07	1.09E-12	4.05E-11
Samarium	Sm-155	7.14E-08	2.51E-08	3.98E-01	7.59E-08	9.88E-08	1.03E-07	2.32E-07	3.65E-13	1.35E-11
Samarium	Sm-155+D	1.60E-06	4.14E-05	5.79E-01	5.21E-08	5.08E-08	7.09E-08	1.60E-07	1.63E-14	6.04E-13
Samarium	Sm-155+E	1.60E-06	4.14E-05	5.79E-01	5.21E-08	5.08E-08	7.09E-08	1.60E-07	1.63E-14	6.04E-13
Samarium	Sm-156	1.02E-06	6.99E-07	5.31E-01	5.73E-08	6.07E-08	7.79E-08	1.75E-07	6.56E-13	2.43E-11
Samarium	Sm-156+D	1.02E-05	1.48E-05	9.17E+00	3.31E-09	3.85E-09	4.51E-09	1.01E-08	6.56E-14	2.43E-12
Samarium	Sm-156+E	1.02E-05	1.48E-05	9.17E+00	3.31E-09	3.85E-09	4.51E-09	1.01E-08	6.56E-14	2.43E-12
Scandium	Sc-43	7.62E-07	2.59E-07	6.39E+00	1.31E-09	1.72E-09	1.78E-09	4.01E-09	1.00E-13	3.71E-12
Scandium	Sc-44	1.43E-06	4.92E-07	1.32E+01	6.49E-10	8.53E-10	8.83E-10	1.99E-09	5.51E-14	2.04E-12
Scandium	Sc-44m	1.03E-05	7.59E-06	1.55E+00	5.51E-09	3.89E-09	7.50E-09	1.69E-08	1.14E-13	4.22E-12
Scandium	Sc-44m+D	1.17E-05	1.51E-05	1.46E+01	5.88E-10	7.07E-10	7.99E-10	1.80E-09	1.00E-13	3.72E-12
Scandium	Sc-44m+E	1.17E-05	1.51E-05	1.46E+01	5.88E-10	7.07E-10	7.99E-10	1.80E-09	1.00E-13	3.72E-12
Scandium	Sc-46	6.40E-06	2.96E-05	1.27E+01	7.07E-10	8.83E-10	9.61E-10	2.16E-09	6.60E-12	2.45E-10
Scandium	Sc-47	2.23E-06	1.84E-06	5.04E-01	1.81E-08	1.52E-08	2.47E-08	5.55E-08	7.72E-13	2.86E-11
Scandium	Sc-48	7.25E-06	4.11E-06	2.13E+01	4.39E-10	5.60E-10	5.97E-10	1.34E-09	1.32E-13	4.89E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Scandium	Sc-49	2.52E-07	1.02E-07	2.41E-02	3.95E-07	2.20E-07	5.38E-07	1.21E-06	8.51E-14	3.15E-12
Selenium	Se-70	3.58E-07	1.47E-07	5.70E+00	2.39E-09	3.15E-09	3.26E-09	7.32E-09	6.10E-14	2.26E-12
Selenium	Se-70+D	3.58E-07	2.73E-07	3.16E+01	4.32E-10	5.75E-10	5.88E-10	1.32E-09	6.10E-14	2.26E-12
Selenium	Se-70+E	3.58E-07	2.73E-07	3.16E+01	4.32E-10	5.75E-10	5.88E-10	1.32E-09	6.10E-14	2.26E-12
Selenium	Se-73	7.25E-07	4.59E-07	6.13E+00	2.32E-09	3.02E-09	3.16E-09	7.10E-09	3.29E-13	1.22E-11
Selenium	Se-73+D	7.25E-07	3.50E-06	6.13E+00	2.32E-09	3.02E-09	3.16E-09	7.10E-09	3.29E-13	1.22E-11
Selenium	Se-73+E	7.25E-07	3.50E-06	6.13E+00	2.32E-09	3.02E-09	3.16E-09	7.10E-09	3.29E-13	1.22E-11
Selenium	Se-73m	8.51E-08	4.63E-08	1.43E+00	9.95E-09	1.31E-08	1.35E-08	3.05E-08	2.55E-13	9.43E-12
Selenium	Se-73m+D	8.51E-08	3.54E-06	5.90E+00	2.41E-09	3.20E-09	3.28E-09	7.37E-09	2.55E-13	9.43E-12
Selenium	Se-73m+E	8.51E-08	3.54E-06	5.90E+00	2.41E-09	3.20E-09	3.28E-09	7.37E-09	2.55E-13	9.43E-12
Selenium	Se-75	9.62E-06	8.47E-06	1.98E+00	7.22E-09	5.01E-09	1.00E-08	2.26E-08	1.02E-11	3.79E-10
Selenium	Se-77m			3.98E-01	3.77E-08	5.03E-08	5.13E-08	1.15E-07		
Selenium	Se-79	8.70E-06	9.84E-06	1.86E-05	1.21E-03	2.78E-05	7.22E-02	1.30E-01	2.36E-06	8.75E-05
Selenium	Se-81	5.92E-08	2.22E-08	6.26E-02	2.51E-07	2.83E-07	3.43E-07	7.72E-07	1.93E-13	7.13E-12
Selenium	Se-81m	1.50E-07	7.88E-08	5.08E-02	3.06E-07	2.61E-07	4.22E-07	9.50E-07	2.36E-13	8.72E-12
Selenium	Se-81m+D	1.50E-07	1.58E-07	1.13E-01	1.38E-07	1.47E-07	1.89E-07	4.26E-07	2.36E-13	8.72E-12
Selenium	Se-81m+E	1.50E-07	1.58E-07	1.13E-01	1.38E-07	1.47E-07	1.89E-07	4.26E-07	2.36E-13	8.72E-12
Selenium	Se-83	1.28E-07	4.70E-08	1.53E+01	1.06E-09	1.41E-09	1.44E-09	3.24E-09	1.11E-13	4.10E-12
Selenium	Se-83+D	2.20E-07	1.33E-07	1.53E+01	1.06E-09	1.41E-09	1.44E-09	3.24E-09	6.47E-14	2.40E-12
Selenium	Se-83+E	2.20E-07	1.33E-07	1.53E+01	1.06E-09	1.41E-09	1.44E-09	3.24E-09	6.47E-14	2.40E-12
Silicon	Si-31	5.40E-07	2.04E-07	1.42E-02	4.24E-07	9.33E-08	5.77E-07	1.30E-06	6.87E-14	2.54E-12
Silicon	Si-32	2.18E-06	5.22E-05	3.55E-05	4.03E-04	4.77E-07	7.37E-04	1.36E-03	2.64E-08	9.77E-07
Silicon	Si-32+D	1.10E-05	6.77E-05	1.18E-02	1.03E-05	9.43E-08	1.70E-05	3.74E-05	5.26E-09	1.95E-07
Silicon	Si-32+E	1.10E-05	6.77E-05	1.18E-02	1.03E-05	9.43E-08	1.70E-05	3.74E-05	5.26E-09	1.95E-07
Silver	Ag-102	1.02E-07	2.79E-08	2.11E+01	9.41E-10	1.25E-09	1.28E-09	2.88E-09	9.84E-14	3.64E-12
Silver	Ag-103	1.49E-07	4.77E-08	4.46E+00	4.49E-09	5.84E-09	6.11E-09	1.38E-08	3.46E-13	1.28E-11
Silver	Ag-103+D	9.47E-07	1.44E-06	4.46E+00	4.49E-09	5.13E-09	6.11E-09	1.38E-08	5.44E-14	2.01E-12
Silver	Ag-103+E	9.47E-07	1.44E-06	4.46E+00	4.49E-09	5.13E-09	6.11E-09	1.38E-08	5.44E-14	2.01E-12
Silver	Ag-104	2.30E-07	4.77E-08	1.66E+01	1.22E-09	1.61E-09	1.66E-09	3.73E-09	2.38E-13	8.81E-12
Silver	Ag-104m	1.68E-07	4.85E-08	7.30E+00	2.77E-09	3.63E-09	3.77E-09	8.49E-09	1.57E-13	5.83E-12
Silver	Ag-104m+D	2.44E-07	6.44E-08	1.28E+01	1.59E-09	2.08E-09	2.16E-09	4.85E-09	1.09E-13	4.02E-12
Silver	Ag-104m+E	2.44E-07	6.44E-08	1.28E+01	1.59E-09	2.08E-09	2.16E-09	4.85E-09	1.09E-13	4.02E-12
Silver	Ag-105	2.04E-06	3.77E-06	2.91E+00	6.99E-09	6.02E-09	9.55E-09	2.15E-08	2.31E-11	8.56E-10
Silver	Ag-106	8.44E-08	2.70E-08	4.17E+00	4.96E-09	6.51E-09	6.74E-09	1.52E-08	2.29E-13	8.49E-12
Silver	Ag-106m	6.48E-06	5.74E-06	1.74E+01	1.19E-09	1.22E-09	1.62E-09	3.64E-09	1.51E-12	5.59E-11
Silver	Ag-108			1.14E-01	1.84E-07	2.45E-07	2.50E-07	5.63E-07		
Silver	Ag-108m	7.62E-06	2.53E-05	9.64E+00	1.44E-08	9.13E-09	2.33E-08	5.24E-08	7.20E-09	2.67E-07
Silver	Ag-109m			1.18E-02	1.79E-06	2.39E-06	2.44E-06	5.49E-06		
Silver	Ag-110			2.24E-01	9.56E-08	1.27E-07	1.30E-07	2.93E-07		
Silver	Ag-110m	1.08E-05	3.09E-05	1.72E+01	1.24E-09	1.11E-09	1.70E-09	3.82E-09	2.79E-11	1.03E-09
Silver	Ag-111	5.07E-06	5.81E-06	1.49E-01	1.18E-07	6.93E-09	1.96E-07	4.41E-07	1.79E-12	6.62E-11
Silver	Ag-112	1.63E-06	6.07E-07	4.26E+00	5.11E-09	5.24E-09	6.97E-09	1.57E-08	9.78E-14	3.62E-12
Silver	Ag-115	1.59E-07	6.66E-08	4.54E+00	4.93E-09	6.40E-09	6.71E-09	1.51E-08	1.10E-13	4.07E-12
Silver	Ag-115+D	6.88E-06	4.11E-05	6.63E+00	3.36E-09	2.47E-09	4.59E-09	1.03E-08	2.54E-15	9.42E-14
Silver	Ag-115+E	6.88E-06	4.11E-05	6.63E+00	3.36E-09	2.47E-09	4.59E-09	1.03E-08	2.54E-15	9.42E-14
Sodium	Na-22	1.15E-05	7.66E-06	1.37E+01	3.13E-10	3.72E-10	4.27E-10	9.60E-10	2.00E-11	7.39E-10
Sodium	Na-24	1.42E-06	1.21E-06	2.84E+01	1.65E-10	2.18E-10	2.24E-10	5.04E-10	1.16E-13	4.29E-12
Strontium	Sr-80	1.15E-06	5.03E-07	1.22E-04	9.94E-07	4.67E-08	8.02E-05	1.59E-04	5.27E-14	1.95E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Strontium	Sr-80+D	1.15E-06	5.03E-07	7.49E+00	2.08E-09	2.62E-09	2.83E-09	6.37E-09	5.27E-14	1.95E-12
Strontium	Sr-80+E	1.15E-06	5.03E-07	7.49E+00	2.08E-09	2.62E-09	2.83E-09	6.37E-09	5.27E-14	1.95E-12
Strontium	Sr-81	2.16E-07	8.44E-08	8.05E+00	1.96E-09	2.59E-09	2.67E-09	6.00E-09	7.26E-14	2.69E-12
Strontium	Sr-81+D	2.16E-07	1.04E-07	1.16E+01	1.36E-09	1.81E-09	1.86E-09	4.18E-09	7.26E-14	2.69E-12
Strontium	Sr-81+E	2.16E-07	1.04E-07	1.16E+01	1.36E-09	1.81E-09	1.86E-09	4.18E-09	7.26E-14	2.69E-12
Strontium	Sr-82	2.23E-05	1.34E-05	1.20E-04	5.30E-08	2.47E-09	7.58E-06	1.38E-05	1.01E-12	3.72E-11
Strontium	Sr-82+D	2.23E-05	1.34E-05	6.52E+00	2.34E-09	1.41E-09	3.33E-09	7.49E-09	1.01E-12	3.72E-11
Strontium	Sr-82+E	2.23E-05	1.34E-05	6.52E+00	2.34E-09	1.41E-09	3.33E-09	7.49E-09	1.01E-12	3.72E-11
Strontium	Sr-83	1.97E-06	7.44E-07	4.80E+00	3.35E-09	3.88E-09	4.58E-09	1.03E-08	6.23E-13	2.31E-11
Strontium	Sr-83+D	1.97E-06	5.66E-06	7.73E+00	2.08E-09	2.54E-09	2.84E-09	6.40E-09	6.23E-13	2.31E-11
Strontium	Sr-83+E	1.97E-06	5.66E-06	7.73E+00	2.08E-09	2.54E-09	2.84E-09	6.40E-09	6.23E-13	2.31E-11
Strontium	Sr-85	1.98E-06	1.92E-06	2.97E+00	5.53E-09	5.92E-09	7.58E-09	1.71E-08	3.06E-11	1.13E-09
Strontium	Sr-85m	2.31E-08	8.33E-09	1.13E+00	1.47E-08	1.94E-08	2.00E-08	4.49E-08	1.95E-12	7.22E-11
Strontium	Sr-85m+D	2.31E-08	1.57E-08	3.74E+00	4.43E-09	5.90E-09	6.03E-09	1.36E-08	1.95E-12	7.22E-11
Strontium	Sr-85m+E	2.31E-08	1.57E-08	3.74E+00	4.43E-09	5.90E-09	6.03E-09	1.36E-08	1.95E-12	7.22E-11
Strontium	Sr-87m	1.17E-07	4.29E-08	1.81E+00	9.34E-09	1.22E-08	1.27E-08	2.86E-08	9.50E-13	3.52E-11
Strontium	Sr-89	9.25E-06	6.51E-06	9.08E-03	1.30E-07	6.47E-09	2.31E-06	5.05E-06	5.32E-12	1.97E-10
Strontium	Sr-90	1.42E-04	2.39E-04	7.04E-04	1.79E-08	6.94E-10	2.92E-06	5.30E-06	7.36E-11	2.73E-09
Strontium	Sr-90+D	1.42E-04	2.39E-04	2.47E-02	1.77E-08	6.94E-10	1.26E-06	2.57E-06	7.36E-11	2.73E-09
Strontium	Sr-90+E	1.42E-04	2.39E-04	2.47E-02	1.77E-08	6.94E-10	1.26E-06	2.57E-06	7.36E-11	2.73E-09
Strontium	Sr-91	2.49E-06	9.32E-07	4.35E+00	4.04E-09	4.45E-09	5.54E-09	1.25E-08	1.58E-13	5.86E-12
Strontium	Sr-91+D	2.49E-06	9.32E-07	6.20E+00	2.84E-09	3.30E-09	3.89E-09	8.75E-09	1.58E-13	5.86E-12
Strontium	Sr-91+E	2.49E-06	9.32E-07	6.20E+00	2.84E-09	3.30E-09	3.89E-09	8.75E-09	1.58E-13	5.86E-12
Strontium	Sr-92	1.64E-06	6.29E-07	8.74E+00	2.05E-09	2.55E-09	2.79E-09	6.27E-09	6.95E-14	2.57E-12
Strontium	Sr-92+D	3.54E-06	1.34E-06	1.04E+01	1.71E-09	2.03E-09	2.34E-09	5.27E-09	3.21E-14	1.19E-12
Strontium	Sr-92+E	3.54E-06	1.34E-06	1.04E+01	1.71E-09	2.03E-09	2.34E-09	5.27E-09	3.21E-14	1.19E-12
Sulphur	S-35	4.48E-07	2.48E-06	1.49E-05	5.67E-07	1.07E-07	1.33E-04	2.49E-04	7.49E-11	2.77E-09
Tantalum	Ta-172	1.59E-07	4.81E-08	9.34E+00	3.59E-09	4.77E-09	4.88E-09	1.10E-08	3.03E-13	1.12E-11
Tantalum	Ta-172+D	1.03E-05	1.09E-04	2.11E+01	1.59E-09	1.99E-09	2.16E-09	4.86E-09	4.68E-15	1.73E-13
Tantalum	Ta-172+E	1.03E-05	1.09E-04	2.11E+01	1.59E-09	1.99E-09	2.16E-09	4.86E-09	4.68E-15	1.73E-13
Tantalum	Ta-173	7.84E-07	2.89E-07	3.19E+00	1.05E-08	1.36E-08	1.43E-08	3.23E-08	3.68E-13	1.36E-11
Tantalum	Ta-173+D	2.88E-06	1.35E-05	5.47E+00	6.16E-09	7.66E-09	8.37E-09	1.88E-08	1.00E-13	3.71E-12
Tantalum	Ta-173+E	2.88E-06	1.35E-05	5.47E+00	6.16E-09	7.66E-09	8.37E-09	1.88E-08	1.00E-13	3.71E-12
Tantalum	Ta-174	1.96E-07	6.29E-08	3.44E+00	9.86E-09	1.31E-08	1.34E-08	3.02E-08	4.87E-13	1.80E-11
Tantalum	Ta-175	9.07E-07	3.34E-07	5.51E+00	6.19E-09	8.07E-09	8.41E-09	1.89E-08	9.26E-13	3.43E-11
Tantalum	Ta-175+D	2.73E-06	5.44E-06	7.38E+00	4.62E-09	5.87E-09	6.28E-09	1.41E-08	3.08E-13	1.14E-11
Tantalum	Ta-175+E	2.73E-06	5.44E-06	7.38E+00	4.62E-09	5.87E-09	6.28E-09	1.41E-08	3.08E-13	1.14E-11
Tantalum	Ta-176	1.38E-06	4.29E-07	1.39E+01	2.47E-09	3.25E-09	3.36E-09	7.57E-09	4.69E-13	1.74E-11
Tantalum	Ta-177	4.51E-07	2.92E-07	1.77E-01	1.94E-07	1.93E-07	2.64E-07	5.95E-07	1.01E-11	3.75E-10
Tantalum	Ta-178a			4.48E-01	7.74E-08	1.03E-07	1.05E-07	2.37E-07		
Tantalum	Ta-178b	2.93E-07	7.66E-08	5.19E+00	6.68E-09	8.84E-09	9.08E-09	2.04E-08	6.09E-13	2.26E-11
Tantalum	Ta-179	2.73E-07	1.29E-06	5.77E-02	6.01E-07	4.91E-07	8.21E-07	1.85E-06	4.77E-09	1.77E-07
Tantalum	Ta-180	3.63E-06	1.79E-05	2.80E+00	6.01E+03	5.12E+03	9.82E+03	2.21E+04	1.98E+03	7.34E+04
Tantalum	Ta-180m	2.18E-07	8.55E-08	9.58E-02	3.65E-07	3.73E-07	4.98E-07	1.12E-06	3.05E-12	1.13E-10
Tantalum	Ta-182	6.51E-06	2.18E-05	7.94E+00	4.46E-09	5.36E-09	6.07E-09	1.37E-08	3.52E-11	1.30E-09
Tantalum	Ta-182m	2.78E-08	1.09E-08	1.04E+00	3.42E-08	4.54E-08	4.65E-08	1.05E-07	7.91E-13	2.93E-11
Tantalum	Ta-182m+D	6.55E-06	2.18E-08	8.97E+00	3.95E-09	4.80E-09	5.38E-09	1.21E-08	3.35E-15	1.24E-13
Tantalum	Ta-182m+E	6.55E-06	2.18E-08	8.97E+00	3.95E-09	4.80E-09	5.38E-09	1.21E-08	3.35E-15	1.24E-13

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Tantalum	Ta-183	5.40E-06	5.07E-06	1.31E+00	2.72E-08	2.33E-08	3.71E-08	8.35E-08	1.89E-12	7.01E-11
Tantalum	Ta-184	2.81E-06	1.04E-06	9.40E+00	3.81E-09	4.89E-09	5.19E-09	1.17E-08	2.60E-13	9.63E-12
Tantalum	Ta-185	2.03E-07	7.66E-08	8.63E-01	4.18E-08	5.40E-08	5.68E-08	1.28E-07	3.40E-13	1.26E-11
Tantalum	Ta-185+D	2.03E-07	8.29E-07	8.63E-01	4.18E-08	5.40E-08	5.68E-08	1.28E-07	3.40E-13	1.26E-11
Tantalum	Ta-185+E	2.03E-07	8.29E-07	8.63E-01	4.18E-08	5.40E-08	5.68E-08	1.28E-07	3.40E-13	1.26E-11
Tantalum	Ta-186	7.70E-08	2.35E-08	9.00E+00	4.02E-09	5.36E-09	5.47E-09	1.23E-08	1.93E-13	7.15E-12
Technetium	Tc-101	4.22E-08	1.46E-08	1.86E+00	1.05E-08	1.37E-08	1.44E-08	3.23E-08	2.59E-13	9.58E-12
Technetium	Tc-104	1.89E-07	6.51E-08	1.28E+01	1.58E-09	2.07E-09	2.15E-09	4.84E-09	7.62E-14	2.82E-12
Technetium	Tc-93	1.62E-07	5.03E-08	9.53E+00	1.89E-09	2.48E-09	2.59E-09	5.82E-09	7.22E-13	2.68E-11
Technetium	Tc-93m	7.40E-08	2.38E-08	4.74E+00	3.81E-09	4.98E-09	5.19E-09	1.17E-08	4.16E-13	1.54E-11
Technetium	Tc-93m+D	2.06E-07	4.33E-08	1.25E+01	1.44E-09	1.88E-09	1.97E-09	4.42E-09	1.49E-13	5.53E-12
Technetium	Tc-93m+E	2.06E-07	4.33E-08	1.25E+01	1.44E-09	1.88E-09	1.97E-09	4.42E-09	1.49E-13	5.53E-12
Technetium	Tc-94	5.77E-07	2.10E-07	1.64E+01	1.11E-09	1.42E-09	1.52E-09	3.42E-09	3.63E-13	1.34E-11
Technetium	Tc-94m	2.80E-07	1.01E-07	1.15E+01	1.58E-09	2.05E-09	2.16E-09	4.85E-09	1.33E-13	4.92E-12
Technetium	Tc-95	4.66E-07	2.50E-07	4.82E+00	3.76E-09	4.51E-09	5.22E-09	1.18E-08	1.86E-12	6.89E-11
Technetium	Tc-95m	1.45E-06	3.89E-06	3.92E+00	4.36E-09	4.15E-09	6.42E-09	1.44E-08	4.37E-11	1.62E-09
Technetium	Tc-96	2.76E-06	2.38E-06	1.54E+01	1.17E-09	1.30E-09	1.65E-09	3.71E-09	1.63E-12	6.05E-11
Technetium	Tc-96m	3.19E-08	2.32E-08	2.80E-01	6.51E-08	7.68E-08	9.08E-08	2.04E-07	1.18E-12	4.37E-11
Technetium	Tc-96m+D	2.73E-06	4.59E-08	1.54E+01	1.17E-09	1.30E-09	1.65E-09	3.72E-09	1.38E-14	5.10E-13
Technetium	Tc-96m+E	2.73E-06	4.59E-08	1.54E+01	1.17E-09	1.30E-09	1.65E-09	3.72E-09	1.38E-14	5.10E-13
Technetium	Tc-97	1.71E-07	9.92E-07	8.09E-04	6.08E-02	9.88E-03	4.65E+00	1.04E+01	5.89E-03	2.18E-01
Technetium	Tc-97m	1.24E-06	4.88E-06	1.91E-03	6.79E-08	1.45E-08	1.25E-05	2.76E-05	7.44E-11	2.76E-09
Technetium	Tc-98	4.88E-06	2.29E-05	8.59E+00	3.99E-04	2.51E-04	7.33E-04	1.65E-03	3.37E-04	1.25E-02
Technetium	Tc-99	1.46E-06	8.33E-06	1.26E-04	6.08E-04	9.72E-05	1.06E+00	2.07E+00	5.77E-05	2.14E-03
Technetium	Tc-99m	6.22E-08	2.67E-08	5.51E-01	3.41E-08	4.03E-08	4.76E-08	1.07E-07	4.38E-12	1.62E-10
Tellurium	Te-116	7.25E-07	2.26E-07	1.92E-01	1.07E-07	8.41E-08	1.60E-07	3.59E-07	1.82E-13	6.74E-12
Tellurium	Te-116+D	7.25E-07	2.79E-07	1.40E+01	1.62E-09	2.13E-09	2.20E-09	4.96E-09	1.82E-13	6.74E-12
Tellurium	Te-116+E	7.25E-07	2.79E-07	1.40E+01	1.62E-09	2.13E-09	2.20E-09	4.96E-09	1.82E-13	6.74E-12
Tellurium	Te-121	1.68E-06	1.91E-06	3.33E+00	7.00E-09	8.47E-09	9.64E-09	2.17E-08	1.34E-11	4.97E-10
Tellurium	Te-121m	7.70E-06	1.48E-05	1.07E+00	1.84E-08	1.11E-08	2.99E-08	6.72E-08	2.65E-11	9.83E-10
Tellurium	Te-121m+D	9.18E-06	2.79E-05	4.02E+00	5.53E-09	5.14E-09	7.98E-09	1.80E-08	2.23E-11	8.24E-10
Tellurium	Te-121m+E	9.18E-06	2.79E-05	4.02E+00	5.53E-09	5.14E-09	7.98E-09	1.80E-08	2.23E-11	8.24E-10
Tellurium	Te-123	4.18E-06	4.85E-06	6.56E-03	9.72E+04	1.20E+04	2.66E+06	5.88E+06	1.18E+03	4.36E+04
Tellurium	Te-123m	5.66E-06	1.06E-05	6.28E-01	3.07E-08	1.66E-08	5.19E-08	1.17E-07	2.85E-11	1.06E-09
Tellurium	Te-125m	3.67E-06	7.29E-06	1.51E-02	2.14E-07	3.80E-08	2.12E-06	4.74E-06	2.16E-11	8.02E-10
Tellurium	Te-127	6.92E-07	3.18E-07	2.86E-02	5.25E-07	1.76E-07	1.17E-06	2.64E-06	7.84E-13	2.90E-11
Tellurium	Te-127m	8.25E-06	2.15E-05	5.45E-03	1.09E-07	1.74E-08	5.20E-06	1.13E-05	1.84E-11	6.81E-10
Tellurium	Te-127m+D	8.25E-06	4.26E-05	3.34E-02	9.72E-08	1.72E-08	9.77E-07	2.18E-06	1.84E-11	6.81E-10
Tellurium	Te-127m+E	8.25E-06	4.26E-05	3.34E-02	9.72E-08	1.72E-08	9.77E-07	2.18E-06	1.84E-11	6.81E-10
Tellurium	Te-129	2.02E-07	7.73E-08	3.31E-01	7.48E-08	8.89E-08	1.03E-07	2.33E-07	3.39E-13	1.25E-11
Tellurium	Te-129m	1.07E-05	2.39E-05	1.85E-01	5.33E-08	1.27E-08	1.83E-07	4.12E-07	4.44E-12	1.65E-10
Tellurium	Te-129m+D	1.07E-05	3.96E-05	4.00E-01	3.66E-08	1.18E-08	8.52E-08	1.92E-07	4.44E-12	1.65E-10
Tellurium	Te-129m+E	1.07E-05	3.96E-05	4.00E-01	3.66E-08	1.18E-08	8.52E-08	1.92E-07	4.44E-12	1.65E-10
Tellurium	Te-131	9.03E-07	4.59E-07	2.39E+00	1.06E-08	1.31E-08	1.45E-08	3.27E-08	2.76E-14	1.02E-12
Tellurium	Te-131+D	6.25E-05	3.92E-05	1.09E+01	2.02E-09	1.35E-09	3.17E-09	7.14E-09	3.99E-16	1.48E-14
Tellurium	Te-131+E	6.25E-05	3.92E-05	1.09E+01	2.02E-09	1.35E-09	3.17E-09	7.14E-09	3.99E-16	1.48E-14
Tellurium	Te-131m	9.10E-06	6.40E-06	8.76E+00	2.83E-09	3.14E-09	3.96E-09	8.91E-09	1.97E-13	7.30E-12
Tellurium	Te-131m+D	6.25E-05	4.07E-05	1.15E+01	1.94E-09	1.32E-09	3.03E-09	6.81E-09	2.87E-14	1.06E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Tellurium	Te-131m+E	6.25E-05	4.07E-05	1.15E+01	1.94E-09	1.32E-09	3.03E-09	6.81E-09	2.87E-14	1.06E-12
Tellurium	Te-132	9.40E-06	9.44E-06	1.08E+00	1.93E-08	1.06E-08	3.22E-08	7.25E-08	5.02E-13	1.86E-11
Tellurium	Te-132+D	9.40E-06	9.44E-06	1.52E+01	1.67E-09	1.98E-09	2.31E-09	5.19E-09	5.02E-13	1.86E-11
Tellurium	Te-132+E	9.40E-06	9.44E-06	1.52E+01	1.67E-09	1.98E-09	2.31E-09	5.19E-09	5.02E-13	1.86E-11
Tellurium	Te-133	1.75E-07	8.84E-08	5.70E+00	4.54E-09	6.02E-09	6.19E-09	1.39E-08	7.20E-14	2.67E-12
Tellurium	Te-133+D	1.12E-05	6.25E-06	1.81E+01	1.41E-09	1.67E-09	1.94E-09	4.37E-09	1.12E-15	4.16E-14
Tellurium	Te-133+E	1.12E-05	6.25E-06	1.81E+01	1.41E-09	1.67E-09	1.94E-09	4.37E-09	1.12E-15	4.16E-14
Tellurium	Te-133m	8.36E-07	4.07E-07	1.44E+01	1.80E-09	2.37E-09	2.45E-09	5.51E-09	6.71E-14	2.48E-12
Tellurium	Te-133m+D	1.12E-05	6.29E-06	1.89E+01	1.35E-09	1.61E-09	1.87E-09	4.20E-09	5.00E-15	1.85E-13
Tellurium	Te-133m+E	1.12E-05	6.29E-06	1.89E+01	1.35E-09	1.61E-09	1.87E-09	4.20E-09	5.00E-15	1.85E-13
Tellurium	Te-134	2.45E-07	1.20E-07	5.10E+00	5.11E-09	6.75E-09	6.96E-09	1.57E-08	1.74E-13	6.44E-12
Tellurium	Te-134+D	4.92E-07	2.51E-07	2.15E+01	1.21E-09	1.61E-09	1.65E-09	3.72E-09	8.66E-14	3.21E-12
Tellurium	Te-134+E	4.92E-07	2.51E-07	2.15E+01	1.21E-09	1.61E-09	1.65E-09	3.72E-09	8.66E-14	3.21E-12
Terbium	Tb-147	5.96E-07	2.08E-07	9.69E+00	2.95E-09	3.91E-09	4.02E-09	9.04E-09	1.86E-13	6.89E-12
Terbium	Tb-147+D	5.33E-06	5.25E-06	2.04E+01	1.41E-09	1.81E-09	1.91E-09	4.30E-09	2.08E-14	7.70E-13
Terbium	Tb-147+E	5.33E-06	5.25E-06	2.04E+01	1.41E-09	1.81E-09	1.91E-09	4.30E-09	2.08E-14	7.70E-13
Terbium	Tb-149	1.02E-06	7.33E-06	1.00E+01	2.89E-09	3.80E-09	3.93E-09	8.84E-09	2.76E-13	1.02E-11
Terbium	Tb-149+D	3.85E-06	1.34E-05	1.38E+01	2.11E-09	2.71E-09	2.87E-09	6.45E-09	7.34E-14	2.72E-12
Terbium	Tb-149+E	3.96E-06	1.85E-05	1.38E+01	2.11E-09	2.70E-09	2.86E-09	6.44E-09	7.13E-14	2.64E-12
Terbium	Tb-150	1.01E-06	3.12E-07	1.03E+01	2.82E-09	3.72E-09	3.84E-09	8.64E-09	2.21E-13	8.18E-12
Terbium	Tb-151	1.49E-06	6.25E-07	4.93E+00	5.97E-09	7.64E-09	8.11E-09	1.83E-08	8.14E-13	3.01E-11
Terbium	Tb-151+D	2.32E-06	5.11E-06	4.93E+00	5.97E-09	7.48E-09	8.11E-09	1.83E-08	5.24E-13	1.94E-11
Terbium	Tb-151+E	2.32E-06	5.11E-06	4.93E+00	5.97E-09	7.48E-09	8.11E-09	1.83E-08	5.24E-13	1.94E-11
Terbium	Tb-153	1.08E-06	7.55E-07	9.98E-01	2.99E-08	3.48E-08	4.06E-08	9.14E-08	3.63E-12	1.35E-10
Terbium	Tb-153+D	2.25E-06	1.02E-05	1.24E+00	2.40E-08	2.57E-08	3.26E-08	7.34E-08	1.74E-12	6.45E-11
Terbium	Tb-153+E	2.25E-06	1.02E-05	1.24E+00	2.40E-08	2.57E-08	3.26E-08	7.34E-08	1.74E-12	6.45E-11
Terbium	Tb-154	2.95E-06	1.18E-06	1.54E+01	1.94E-09	2.53E-09	2.64E-09	5.95E-09	5.11E-13	1.89E-11
Terbium	Tb-155	9.03E-07	7.77E-07	4.67E-01	6.46E-08	6.85E-08	8.79E-08	1.98E-07	1.00E-11	3.71E-10
Terbium	Tb-156	5.18E-06	4.00E-06	1.11E+01	2.74E-09	3.44E-09	3.73E-09	8.40E-09	1.76E-12	6.53E-11
Terbium	Tb-156m	7.55E-07	7.62E-07	3.61E-02	8.39E-07	2.96E-07	1.14E-06	2.57E-06	2.30E-12	8.53E-11
Terbium	Tb-156m+D	5.92E-06	1.52E-06	1.11E+01	2.73E-09	3.40E-09	3.72E-09	8.37E-09	2.94E-13	1.09E-11
Terbium	Tb-156m+E	5.92E-06	1.52E-06	1.11E+01	2.73E-09	3.40E-09	3.72E-09	8.37E-09	2.94E-13	1.09E-11
Terbium	Tb-156n	3.37E-07	2.17E-07	6.44E-03	4.65E-06	7.85E-07	6.37E-06	1.43E-05	1.06E-12	3.91E-11
Terbium	Tb-156n+D	5.51E-06	9.81E-07	1.11E+01	2.74E-09	3.43E-09	3.73E-09	8.40E-09	6.46E-14	2.39E-12
Terbium	Tb-156n+E	5.51E-06	9.81E-07	1.11E+01	2.74E-09	3.43E-09	3.73E-09	8.40E-09	6.46E-14	2.39E-12
Terbium	Tb-157	1.24E-07	9.21E-06	2.90E-03	8.07E-05	1.24E-05	1.31E-04	2.94E-04	7.60E-07	2.81E-05
Terbium	Tb-158	4.40E-06	2.56E-04	4.73E+00	5.03E-08	4.58E-08	8.12E-08	1.83E-07	2.15E-08	7.97E-07
Terbium	Tb-160	6.73E-06	2.50E-05	6.91E+00	4.51E-09	5.32E-09	6.13E-09	1.38E-08	1.88E-11	6.97E-10
Terbium	Tb-161	2.92E-06	3.40E-06	5.49E-02	5.64E-07	9.38E-08	7.72E-07	1.73E-06	4.18E-12	1.55E-10
Thallium	Tl-194	2.28E-08	9.21E-09	4.39E+00	8.61E-09	1.15E-08	1.17E-08	2.63E-08	2.14E-12	7.93E-11
Thallium	Tl-194m	9.81E-08	4.48E-08	1.35E+01	2.79E-09	3.72E-09	3.80E-09	8.55E-09	4.94E-13	1.83E-11
Thallium	Tl-195	7.81E-08	4.63E-08	7.94E+00	4.79E-09	6.37E-09	6.51E-09	1.46E-08	1.32E-12	4.90E-11
Thallium	Tl-195+D	1.14E-06	5.74E-06	9.13E+00	4.15E-09	5.44E-09	5.66E-09	1.27E-08	9.06E-14	3.36E-12
Thallium	Tl-195+E	1.14E-06	5.74E-06	9.13E+00	4.15E-09	5.44E-09	5.66E-09	1.27E-08	9.06E-14	3.36E-12
Thallium	Tl-197	6.73E-08	4.96E-08	2.20E+00	1.74E-08	2.31E-08	2.37E-08	5.33E-08	3.79E-12	1.41E-10
Thallium	Tl-197+D	6.73E-08	1.17E-06	2.20E+00	1.74E-08	2.31E-08	2.37E-08	5.33E-08	3.79E-12	1.41E-10
Thallium	Tl-197+E	6.73E-08	1.17E-06	2.20E+00	1.74E-08	2.31E-08	2.37E-08	5.33E-08	3.79E-12	1.41E-10
Thallium	Tl-198	2.54E-07	1.64E-07	1.27E+01	3.03E-09	4.03E-09	4.12E-09	9.28E-09	1.89E-12	6.99E-11

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Thallium	Tl-198m	1.59E-07	1.07E-07	6.82E+00	5.66E-09	7.52E-09	7.69E-09	1.73E-08	1.06E-12	3.94E-11
Thallium	Tl-198m+D	2.78E-07	1.57E-07	1.28E+01	3.01E-09	4.01E-09	4.10E-09	9.22E-09	6.08E-13	2.25E-11
Thallium	Tl-198m+E	2.78E-07	1.57E-07	1.28E+01	3.01E-09	4.01E-09	4.10E-09	9.22E-09	6.08E-13	2.25E-11
Thallium	Tl-199	8.18E-08	6.96E-08	1.18E+00	3.29E-08	4.35E-08	4.48E-08	1.01E-07	8.25E-12	3.05E-10
Thallium	Tl-200	6.73E-07	4.70E-07	7.88E+00	4.94E-09	6.51E-09	6.72E-09	1.51E-08	3.54E-12	1.31E-10
Thallium	Tl-201	3.00E-07	2.35E-07	2.76E-01	1.40E-07	1.62E-07	1.93E-07	4.33E-07	2.23E-11	8.28E-10
Thallium	Tl-202	1.47E-06	9.84E-07	2.50E+00	1.56E-08	1.92E-08	2.14E-08	4.81E-08	1.84E-11	6.81E-10
Thallium	Tl-204	3.36E-06	2.41E-06	4.05E-03	1.16E-06	1.03E-07	1.22E-05	2.69E-05	9.18E-10	3.40E-08
Thallium	Tl-206			7.70E-03	5.22E-06	6.95E-06	7.09E-06	1.60E-05		
Thallium	Tl-207			1.98E-02	2.04E-06	2.72E-06	2.77E-06	6.23E-06		
Thallium	Tl-208			2.30E+01	1.76E-09	2.35E-09	2.40E-09	5.40E-09		
Thallium	Tl-209			1.29E+01	3.15E-09	4.20E-09	4.28E-09	9.64E-09		
Thorium	Th-226	9.25E-07	3.32E-05	3.33E-02	1.32E-06	3.74E-07	1.79E-06	4.03E-06	5.75E-14	2.13E-12
Thorium	Th-226+D	9.25E-07	3.32E-05	8.89E-02	4.94E-07	2.76E-07	6.73E-07	1.51E-06	5.75E-14	2.13E-12
Thorium	Th-226+E	7.29E-03	2.98E-02	9.51E-02	3.05E-08	6.02E-11	6.04E-08	1.11E-07	7.29E-18	2.70E-16
Thorium	Th-227	3.81E-05	1.52E-02	5.21E-01	8.37E-08	1.05E-08	1.14E-07	2.57E-07	1.22E-12	4.53E-11
Thorium	Th-227+D	6.96E-04	2.31E-02	2.02E+00	2.06E-08	6.20E-10	2.86E-08	6.37E-08	6.69E-14	2.48E-12
Thorium	Th-227+E	6.96E-04	2.31E-02	2.02E+00	2.06E-08	6.20E-10	2.86E-08	6.37E-08	6.69E-14	2.48E-12
Thorium	Th-228	3.96E-04	2.50E-01	7.94E-03	5.38E-07	1.12E-09	9.89E-07	1.86E-06	4.41E-12	1.63E-10
Thorium	Th-228+D	8.07E-04	2.50E-01	1.02E+01	4.29E-09	5.01E-10	5.86E-09	1.32E-08	2.16E-12	8.01E-11
Thorium	Th-228+E	8.07E-04	2.50E-01	1.02E+01	4.29E-09	5.01E-10	5.86E-09	1.32E-08	2.16E-12	8.01E-11
Thorium	Th-229	3.53E-03	2.15E+00	3.21E-01	1.60E-05	3.34E-08	3.24E-05	6.42E-05	1.90E-09	7.05E-08
Thorium	Th-229+D	4.03E-03	2.15E+00	1.60E+00	6.70E-06	2.92E-08	1.21E-05	2.57E-05	1.67E-09	6.17E-08
Thorium	Th-229+E	4.03E-03	2.15E+00	1.60E+00	6.70E-06	2.92E-08	1.21E-05	2.57E-05	1.67E-09	6.17E-08
Thorium	Th-230	5.48E-04	3.26E-01	1.21E-03	1.59E-03	2.27E-06	3.64E-03	6.69E-03	1.29E-07	4.79E-06
Thorium	Th-231	1.35E-06	8.62E-07	3.64E-02	1.23E-06	2.76E-07	1.67E-06	3.76E-06	1.99E-12	7.38E-11
Thorium	Th-232	2.73E-03	1.64E+00	5.21E-04	5.94E+01	8.36E-02	1.36E+02	2.50E+02	4.77E-03	1.77E-01
Thorium	Th-234	1.37E-05	2.97E-05	2.41E-02	1.71E-06	3.28E-08	2.41E-06	5.33E-06	4.53E-12	1.68E-10
Thorium	Th-234+D	1.37E-05	2.97E-05	1.52E-01	2.96E-07	3.07E-08	4.04E-07	9.07E-07	4.53E-12	1.68E-10
Thorium	Th-234+E	1.37E-05	2.97E-05	1.52E-01	2.96E-07	3.07E-08	4.04E-07	9.07E-07	4.53E-12	1.68E-10
Thulium	Tm-162	8.07E-08	2.19E-08	1.14E+01	2.77E-09	3.69E-09	3.77E-09	8.48E-09	3.32E-13	1.23E-11
Thulium	Tm-166	1.24E-06	3.77E-07	1.18E+01	2.74E-09	3.61E-09	3.73E-09	8.40E-09	4.72E-13	1.75E-11
Thulium	Tm-167	2.32E-06	2.95E-06	5.59E-01	5.82E-08	5.00E-08	7.92E-08	1.78E-07	7.30E-12	2.70E-10
Thulium	Tm-170	5.29E-06	2.63E-05	1.49E-02	2.11E-06	6.12E-08	2.89E-06	6.43E-06	4.53E-11	1.68E-09
Thulium	Tm-171	4.29E-07	9.14E-06	1.12E-03	2.83E-05	7.60E-07	3.87E-05	8.62E-05	3.06E-09	1.13E-07
Thulium	Tm-172	6.85E-06	4.88E-06	3.08E+00	1.09E-08	1.12E-08	1.48E-08	3.33E-08	7.30E-13	2.70E-11
Thulium	Tm-173	1.25E-06	4.81E-07	2.20E+00	1.53E-08	1.90E-08	2.08E-08	4.68E-08	5.22E-13	1.93E-11
Thulium	Tm-175	6.77E-08	2.32E-08	6.37E+00	5.35E-09	7.13E-09	7.28E-09	1.64E-08	2.99E-13	1.11E-11
Thulium	Tm-175+D	1.83E-06	1.61E-06	6.37E+00	5.35E-09	6.87E-09	7.28E-09	1.64E-08	1.11E-14	4.10E-13
Thulium	Tm-175+E	1.83E-06	1.61E-06	6.37E+00	5.35E-09	6.87E-09	7.28E-09	1.64E-08	1.11E-14	4.10E-13
Tin	Sn-110	1.53E-06	5.03E-07	1.54E+00	1.39E-08	1.63E-08	1.89E-08	4.24E-08	1.31E-13	4.87E-12
Tin	Sn-110+D	2.59E-06	7.55E-07	1.11E+01	1.93E-09	2.50E-09	2.63E-09	5.92E-09	7.77E-14	2.88E-12
Tin	Sn-110+E	2.59E-06	7.55E-07	1.11E+01	1.93E-09	2.50E-09	2.63E-09	5.92E-09	7.77E-14	2.88E-12
Tin	Sn-111	7.22E-08	2.55E-08	3.04E+00	7.10E-09	9.44E-09	9.66E-09	2.17E-08	4.13E-13	1.53E-11
Tin	Sn-111+D	1.40E-06	8.66E-07	5.01E+00	4.32E-09	5.55E-09	5.87E-09	1.32E-08	2.13E-14	7.90E-13
Tin	Sn-111+E	1.40E-06	8.66E-07	5.01E+00	4.32E-09	5.55E-09	5.87E-09	1.32E-08	2.13E-14	7.90E-13
Tin	Sn-113	3.08E-06	1.07E-05	2.97E-02	7.22E-07	6.64E-08	9.95E-07	2.23E-06	4.62E-11	1.71E-09
Tin	Sn-113+D	3.08E-06	1.07E-05	1.46E+00	1.50E-08	1.56E-08	2.04E-08	4.60E-08	4.62E-11	1.71E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Tin	Sn-113+E	3.08E-06	1.07E-05	1.46E+00	1.50E-08	1.56E-08	2.04E-08	4.60E-08	4.62E-11	1.71E-09
Tin	Sn-117m	2.95E-06	4.33E-06	6.56E-01	3.47E-08	2.89E-08	4.73E-08	1.06E-07	5.92E-12	2.19E-10
Tin	Sn-119m	1.39E-06	6.25E-06	3.01E-03	6.91E-06	1.63E-07	9.92E-06	2.20E-05	2.75E-10	1.02E-08
Tin	Sn-121	9.03E-07	5.11E-07	1.96E-04	5.57E-05	2.60E-07	1.04E-04	2.15E-04	1.66E-12	6.13E-11
Tin	Sn-121m	1.55E-06	1.15E-05	1.96E-03	3.18E-05	3.79E-07	5.51E-05	1.21E-04	1.72E-08	6.36E-07
Tin	Sn-121m+D	2.25E-06	2.04E-05	1.96E-03	2.96E-05	2.62E-07	5.30E-05	1.16E-04	1.18E-08	4.38E-07
Tin	Sn-121m+E	2.25E-06	2.04E-05	1.96E-03	2.96E-05	2.62E-07	5.30E-05	1.16E-04	1.18E-08	4.38E-07
Tin	Sn-123	8.40E-06	3.25E-05	5.06E-02	4.54E-07	2.72E-08	6.31E-07	1.41E-06	2.07E-11	7.68E-10
Tin	Sn-123m	1.08E-07	3.89E-08	6.43E-01	3.73E-08	4.86E-08	5.07E-08	1.14E-07	3.46E-13	1.28E-11
Tin	Sn-125	1.23E-05	1.55E-05	2.02E+00	1.21E-08	8.86E-09	1.64E-08	3.69E-08	1.07E-12	3.97E-11
Tin	Sn-125+D	1.23E-05	2.93E-05	4.46E+00	5.45E-09	5.31E-09	7.42E-09	1.67E-08	1.07E-12	3.97E-11
Tin	Sn-125+E	1.23E-05	2.93E-05	4.46E+00	5.45E-09	5.31E-09	7.42E-09	1.67E-08	1.07E-12	3.97E-11
Tin	Sn-126	1.95E-05	9.95E-05	1.47E-01	7.75E-04	4.28E-05	1.29E-03	2.88E-03	2.58E-06	9.57E-05
Tin	Sn-126+D	1.95E-05	9.95E-05	1.18E+01	9.97E-06	8.17E-06	1.63E-05	3.66E-05	2.58E-06	9.57E-05
Tin	Sn-126+E	1.95E-05	9.95E-05	1.18E+01	9.97E-06	8.17E-06	1.63E-05	3.66E-05	2.58E-06	9.57E-05
Tin	Sn-127	7.77E-07	3.24E-07	1.22E+01	2.03E-09	2.69E-09	2.77E-09	6.23E-09	1.57E-13	5.80E-12
Tin	Sn-127+D	2.92E-06	3.16E-05	1.63E+01	1.52E-09	1.98E-09	2.06E-09	4.64E-09	4.17E-14	1.55E-12
Tin	Sn-127+E	2.92E-06	3.16E-05	1.63E+01	1.52E-09	1.98E-09	2.06E-09	4.64E-09	4.17E-14	1.55E-12
Tin	Sn-128	5.51E-07	1.72E-07	3.55E+00	7.03E-09	9.18E-09	9.56E-09	2.15E-08	1.04E-13	3.87E-12
Tin	Sn-128+D	5.51E-07	1.72E-07	1.56E+01	1.60E-09	2.12E-09	2.18E-09	4.90E-09	1.04E-13	3.87E-12
Tin	Sn-128+E	5.51E-07	1.72E-07	1.56E+01	1.60E-09	2.12E-09	2.18E-09	4.90E-09	1.04E-13	3.87E-12
Titanium	Ti-44	2.31E-05	1.79E-04	3.59E-01	6.66E-08	7.47E-09	1.05E-07	2.36E-07	3.60E-10	1.33E-08
Titanium	Ti-44+D	2.31E-05	1.79E-04	1.36E+01	1.78E-09	1.55E-09	2.80E-09	6.31E-09	3.60E-10	1.33E-08
Titanium	Ti-44+E	2.31E-05	1.79E-04	1.36E+01	1.78E-09	1.55E-09	2.80E-09	6.31E-09	3.60E-10	1.33E-08
Titanium	Ti-45	5.99E-07	1.93E-07	5.14E+00	1.71E-09	2.24E-09	2.32E-09	5.22E-09	1.06E-13	3.91E-12
Tungsten	W-176	3.81E-07	1.07E-07	4.76E-01	7.19E-08	8.66E-08	9.79E-08	2.20E-07	4.85E-13	1.80E-11
Tungsten	W-176+D	3.81E-07	5.37E-07	1.43E+01	2.39E-09	3.18E-09	3.25E-09	7.31E-09	4.85E-13	1.80E-11
Tungsten	W-176+E	3.81E-07	5.37E-07	1.43E+01	2.39E-09	3.18E-09	3.25E-09	7.31E-09	4.85E-13	1.80E-11
Tungsten	W-177	2.15E-07	6.51E-08	4.89E+00	7.05E-09	9.34E-09	9.58E-09	2.16E-08	8.44E-13	3.13E-11
Tungsten	W-177+D	2.15E-07	3.57E-07	4.89E+00	7.05E-09	9.34E-09	9.58E-09	2.16E-08	8.44E-13	3.13E-11
Tungsten	W-177+E	2.15E-07	3.57E-07	4.89E+00	7.05E-09	9.34E-09	9.58E-09	2.16E-08	8.44E-13	3.13E-11
Tungsten	W-178	7.51E-07	2.71E-07	2.50E-02	1.35E-06	3.65E-07	1.88E-06	4.22E-06	5.64E-11	2.09E-09
Tungsten	W-178+D	7.51E-07	2.71E-07	4.73E-01	7.33E-08	8.05E-08	9.98E-08	2.24E-07	5.64E-11	2.09E-09
Tungsten	W-178+E	7.51E-07	2.71E-07	4.73E-01	7.33E-08	8.05E-08	9.98E-08	2.24E-07	5.64E-11	2.09E-09
Tungsten	W-179	9.77E-09	3.50E-09	9.62E-02	3.62E-07	4.77E-07	4.93E-07	1.11E-06	5.23E-12	1.94E-10
Tungsten	W-179+D	9.77E-09	1.30E-06	1.54E-01	2.27E-07	3.00E-07	3.08E-07	6.93E-07	5.23E-12	1.94E-10
Tungsten	W-179+E	9.77E-09	1.30E-06	1.54E-01	2.27E-07	3.00E-07	3.08E-07	6.93E-07	5.23E-12	1.94E-10
Tungsten	W-181	2.86E-07	1.51E-07	7.64E-02	4.60E-07	4.08E-07	6.27E-07	1.41E-06	8.39E-10	3.11E-08
Tungsten	W-185	1.58E-06	7.51E-07	4.33E-04	1.87E-05	2.24E-07	7.81E-05	1.63E-04	9.61E-11	3.56E-09
Tungsten	W-187	2.05E-06	6.18E-07	2.75E+00	1.33E-08	1.61E-08	1.80E-08	4.06E-08	9.97E-13	3.69E-11
Tungsten	W-188	7.81E-06	4.11E-06	9.68E-03	2.15E-06	4.58E-08	4.68E-06	1.03E-05	1.83E-11	6.78E-10
Tungsten	W-188+D	1.09E-05	4.11E-06	3.31E-01	1.07E-07	2.71E-08	1.50E-07	3.37E-07	1.31E-11	4.87E-10
Tungsten	W-188+E	1.09E-05	4.11E-06	3.31E-01	1.07E-07	2.71E-08	1.50E-07	3.37E-07	1.31E-11	4.87E-10
Uranium	U-230	9.03E-04	1.61E-02	4.37E-03	1.93E-07	1.98E-10	5.27E-07	9.57E-07	5.81E-14	2.15E-12
Uranium	U-230+D	9.03E-04	1.61E-02	9.32E-02	1.40E-07	1.97E-10	2.98E-07	5.91E-07	5.81E-14	2.15E-12
Uranium	U-230+E	9.03E-04	4.59E-02	9.94E-02	1.37E-07	1.97E-10	2.89E-07	5.74E-07	5.81E-14	2.15E-12
Uranium	U-231	1.17E-06	1.03E-06	2.32E-01	1.94E-07	9.65E-08	2.64E-07	5.94E-07	9.12E-12	3.38E-10
Uranium	U-232	1.31E-03	1.49E-02	9.02E-04	5.45E-07	4.30E-10	1.77E-06	3.20E-06	5.10E-11	1.89E-09

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Uranium	U-232+E	1.31E-03	2.68E-01	1.02E+01	1.71E-08	4.20E-10	2.77E-08	6.22E-08	5.10E-11	1.89E-09
Uranium	U-233	2.89E-04	7.99E-03	1.40E-03	4.67E-03	3.58E-06	1.52E-02	2.77E-02	5.11E-07	1.89E-05
Uranium	U-234	2.83E-04	7.88E-03	4.02E-04	7.47E-03	5.65E-06	2.47E-02	4.47E-02	8.07E-07	2.99E-05
Uranium	U-235	2.66E-04	7.29E-03	7.21E-01	1.97E+00	1.73E-02	3.36E+00	7.47E+00	2.49E-03	9.21E-02
Uranium	U-236	2.69E-04	7.44E-03	2.15E-04	7.63E-01	5.75E-04	2.53E+00	4.57E+00	8.23E-05	3.05E-03
Uranium	U-237	3.14E-06	3.34E-06	5.31E-01	8.69E-08	3.89E-08	1.18E-07	2.66E-07	5.59E-12	2.07E-10
Uranium	U-238	2.55E-04	7.03E-03	1.03E-04	1.55E+02	1.17E-01	5.16E+02	9.30E+02	1.67E-02	6.19E-01
Uranium	U-238+D	2.55E-04	7.03E-03	1.52E-01	4.62E+01	1.17E-01	8.88E+01	1.92E+02	1.67E-02	6.19E-01
Uranium	U-238+E	2.55E-04	7.03E-03	1.52E-01	4.62E+01	1.17E-01	8.88E+01	1.92E+02	1.67E-02	6.19E-01
Uranium	U-239	7.66E-08	3.50E-08	1.73E-01	2.69E-07	3.12E-07	3.66E-07	8.23E-07	5.59E-13	2.07E-11
Uranium	U-239+D	7.66E-08	2.54E-06	9.27E-01	5.03E-08	6.52E-08	6.83E-08	1.54E-07	5.59E-13	2.07E-11
Uranium	U-239+E	7.66E-08	2.54E-06	9.27E-01	5.03E-08	6.52E-08	6.83E-08	1.54E-07	5.59E-13	2.07E-11
Uranium	U-240	4.29E-06	2.03E-06	1.42E-03	1.87E-05	4.33E-08	3.26E-05	6.87E-05	3.60E-13	1.33E-11
Uranium	U-240+D	4.29E-06	2.03E-06	2.02E+00	2.32E-08	1.80E-08	3.15E-08	7.09E-08	3.60E-13	1.33E-11
Uranium	U-240+E	4.29E-06	2.03E-06	2.02E+00	2.32E-08	1.80E-08	3.15E-08	7.09E-08	3.60E-13	1.33E-11
Vanadium	V-47	1.75E-07	5.70E-08	5.88E+00	1.56E-09	2.07E-09	2.12E-09	4.76E-09	6.66E-14	2.47E-12
Vanadium	V-48	8.58E-06	1.02E-05	1.84E+01	5.07E-10	6.37E-10	6.90E-10	1.55E-09	9.95E-13	3.69E-11
Vanadium	V-49	6.14E-08	3.45E-07	0.00E+00	1.11E-03	1.55E-06	1.72E-03	3.09E-03	2.89E-09	1.07E-07
Xenon	Xe-120			2.30E+00	1.02E-08	1.36E-08	1.38E-08	3.11E-08		
Xenon	Xe-120+D			1.98E+01	1.18E-09	1.57E-09	1.61E-09	3.61E-09		
Xenon	Xe-120+E			1.98E+01	1.18E-09	1.57E-09	1.61E-09	3.61E-09		
Xenon	Xe-121			1.15E+01	2.05E-09	2.73E-09	2.79E-09	6.27E-09		
Xenon	Xe-121+D			1.71E+01	1.38E-09	1.84E-09	1.88E-09	4.23E-09		
Xenon	Xe-121+E			1.71E+01	1.38E-09	1.84E-09	1.88E-09	4.23E-09		
Xenon	Xe-122			2.54E-01	9.36E-08	1.25E-07	1.27E-07	2.86E-07		
Xenon	Xe-122+D			5.88E+00	4.04E-09	5.39E-09	5.49E-09	1.24E-08		
Xenon	Xe-122+E			5.88E+00	4.04E-09	5.39E-09	5.49E-09	1.24E-08		
Xenon	Xe-123			3.64E+00	6.58E-09	8.77E-09	8.95E-09	2.01E-08		
Xenon	Xe-123+D			4.35E+00	5.51E-09	7.34E-09	7.49E-09	1.68E-08		
Xenon	Xe-123+E			4.35E+00	5.51E-09	7.34E-09	7.49E-09	1.68E-08		
Xenon	Xe-125			1.29E+00	1.89E-08	2.52E-08	2.57E-08	5.79E-08		
Xenon	Xe-127			1.32E+00	1.88E-08	2.51E-08	2.56E-08	5.76E-08		
Xenon	Xe-129m			6.61E-02	3.80E-07	5.07E-07	5.17E-07	1.16E-06		
Xenon	Xe-131m			2.26E-02	1.13E-06	1.51E-06	1.54E-06	3.46E-06		
Xenon	Xe-133			1.00E-01	2.59E-07	3.45E-07	3.52E-07	7.92E-07		
Xenon	Xe-133m			1.30E-01	1.99E-07	2.66E-07	2.71E-07	6.10E-07		
Xenon	Xe-133m+D			2.30E-01	1.13E-07	1.50E-07	1.53E-07	3.45E-07		
Xenon	Xe-133m+E			2.30E-01	1.13E-07	1.50E-07	1.53E-07	3.45E-07		
Xenon	Xe-135			1.33E+00	1.98E-08	2.64E-08	2.69E-08	6.06E-08		
Xenon	Xe-135m			2.50E+00	1.05E-08	1.40E-08	1.43E-08	3.22E-08		
Xenon	Xe-135m+D			3.83E+00	6.87E-09	9.16E-09	9.34E-09	2.10E-08		
Xenon	Xe-135m+E			3.83E+00	6.87E-09	9.16E-09	9.34E-09	2.10E-08		
Xenon	Xe-138			7.36E+00	3.65E-09	4.87E-09	4.97E-09	1.12E-08		
Xenon	Xe-138+D			2.28E+01	1.18E-09	1.57E-09	1.60E-09	3.61E-09		
Xenon	Xe-138+E			2.28E+01	1.18E-09	1.57E-09	1.60E-09	3.61E-09		
Ytterbium	Yb-162	7.59E-08	2.03E-08	4.67E-01	6.76E-08	8.82E-08	9.19E-08	2.07E-07	3.07E-13	1.14E-11
Ytterbium	Yb-162+D	1.57E-07	4.22E-08	1.19E+01	2.66E-09	3.54E-09	3.62E-09	8.14E-09	1.49E-13	5.51E-12
Ytterbium	Yb-162+E	1.57E-07	4.22E-08	1.19E+01	2.66E-09	3.54E-09	3.62E-09	8.14E-09	1.49E-13	5.51E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Ytterbium	Yb-166	4.22E-06	2.78E-06	1.51E-01	2.13E-07	6.03E-08	2.90E-07	6.52E-07	1.02E-12	3.77E-11
Ytterbium	Yb-166+D	5.44E-06	3.16E-06	1.19E+01	2.71E-09	3.41E-09	3.68E-09	8.29E-09	7.90E-13	2.93E-11
Ytterbium	Yb-166+E	5.44E-06	3.16E-06	1.19E+01	2.71E-09	3.41E-09	3.68E-09	8.29E-09	7.90E-13	2.93E-11
Ytterbium	Yb-167	1.85E-08	7.96E-09	8.89E-01	3.66E-08	4.87E-08	4.98E-08	1.12E-07	1.20E-12	4.44E-11
Ytterbium	Yb-167+D	2.33E-06	2.96E-06	1.45E+00	2.25E-08	2.47E-08	3.06E-08	6.88E-08	9.53E-15	3.53E-13
Ytterbium	Yb-167+E	2.33E-06	2.96E-06	1.45E+00	2.25E-08	2.47E-08	3.06E-08	6.88E-08	9.53E-15	3.53E-13
Ytterbium	Yb-169	3.00E-06	6.99E-06	1.10E+00	2.98E-08	2.92E-08	4.05E-08	9.12E-08	1.97E-11	7.31E-10
Ytterbium	Yb-175	1.76E-06	1.59E-06	2.11E-01	1.61E-07	1.02E-07	2.19E-07	4.94E-07	4.56E-12	1.69E-10
Ytterbium	Yb-177	3.21E-07	1.34E-07	1.11E+00	3.11E-08	4.00E-08	4.23E-08	9.53E-08	4.78E-13	1.77E-11
Ytterbium	Yb-177+D	2.47E-06	4.55E-05	1.27E+00	2.72E-08	2.88E-08	3.70E-08	8.33E-08	6.21E-14	2.30E-12
Ytterbium	Yb-177+E	2.47E-06	4.55E-05	1.27E+00	2.72E-08	2.88E-08	3.70E-08	8.33E-08	6.21E-14	2.30E-12
Ytterbium	Yb-178	3.96E-07	1.47E-07	1.96E-01	1.77E-07	1.86E-07	2.40E-07	5.41E-07	2.53E-13	9.38E-12
Ytterbium	Yb-178+D	5.18E-07	1.77E-07	1.08E+00	3.21E-08	4.02E-08	4.36E-08	9.81E-08	1.94E-13	7.17E-12
Ytterbium	Yb-178+E	5.18E-07	1.77E-07	1.08E+00	3.21E-08	4.02E-08	4.36E-08	9.81E-08	1.94E-13	7.17E-12
Yttrium	Y-86	4.22E-06	1.56E-06	2.28E+01	7.35E-10	9.57E-10	1.00E-09	2.25E-09	1.37E-13	5.08E-12
Yttrium	Y-86m	2.45E-07	9.03E-08	1.15E+00	1.46E-08	1.90E-08	1.99E-08	4.48E-08	1.28E-13	4.76E-12
Yttrium	Y-86m+D	4.44E-06	1.80E-07	2.37E+01	7.06E-10	9.19E-10	9.60E-10	2.16E-09	7.08E-15	2.62E-13
Yttrium	Y-86m+E	4.44E-06	1.80E-07	2.37E+01	7.06E-10	9.19E-10	9.60E-10	2.16E-09	7.08E-15	2.62E-13
Yttrium	Y-87	2.43E-06	1.66E-06	2.62E+00	6.48E-09	7.68E-09	8.81E-09	1.98E-08	1.31E-12	4.85E-11
Yttrium	Y-87+D	2.43E-06	1.66E-06	4.43E+00	3.83E-09	4.75E-09	5.21E-09	1.17E-08	1.31E-12	4.85E-11
Yttrium	Y-87+E	2.43E-06	1.66E-06	4.43E+00	3.83E-09	4.75E-09	5.21E-09	1.17E-08	1.31E-12	4.85E-11
Yttrium	Y-88	5.99E-06	2.05E-05	1.78E+01	9.65E-10	1.23E-09	1.31E-09	2.95E-09	1.72E-11	6.35E-10
Yttrium	Y-90	1.08E-05	7.88E-06	2.39E-02	6.59E-07	1.60E-08	9.45E-07	2.10E-06	2.44E-13	9.05E-12
Yttrium	Y-90m	7.07E-07	4.40E-07	3.51E+00	4.99E-09	6.48E-09	6.79E-09	1.53E-08	1.86E-13	6.87E-12
Yttrium	Y-90m+D	1.14E-05	8.77E-07	3.51E+00	4.99E-09	4.64E-09	6.79E-09	1.53E-08	1.15E-14	4.26E-13
Yttrium	Y-90m+E	1.14E-05	8.77E-07	3.51E+00	4.99E-09	4.64E-09	6.79E-09	1.53E-08	1.15E-14	4.26E-13
Yttrium	Y-91	9.51E-06	3.23E-05	3.25E-02	5.08E-07	1.81E-08	7.16E-07	1.60E-06	6.14E-12	2.27E-10
Yttrium	Y-91m	4.14E-08	2.62E-08	3.16E+00	5.62E-09	7.48E-09	7.64E-09	1.72E-08	8.31E-13	3.08E-11
Yttrium	Y-91m+D	9.55E-06	5.25E-08	3.16E+00	5.61E-09	5.33E-09	7.63E-09	1.72E-08	3.61E-15	1.34E-13
Yttrium	Y-91m+E	9.55E-06	5.25E-08	3.16E+00	5.61E-09	5.33E-09	7.63E-09	1.72E-08	3.61E-15	1.34E-13
Yttrium	Y-92	1.91E-06	7.14E-07	1.65E+00	1.08E-08	1.25E-08	1.47E-08	3.32E-08	7.80E-14	2.89E-12
Yttrium	Y-93	4.55E-06	1.96E-06	6.05E-01	2.99E-08	1.99E-08	4.07E-08	9.15E-08	9.42E-14	3.49E-12
Yttrium	Y-94	1.97E-07	6.59E-08	7.15E+00	2.56E-09	3.40E-09	3.48E-09	7.83E-09	6.93E-14	2.57E-12
Yttrium	Y-95	1.02E-07	3.55E-08	6.20E+00	2.98E-09	3.97E-09	4.06E-09	9.13E-09	7.60E-14	2.82E-12
Yttrium	Y-95+D	6.48E-06	1.81E-05	1.54E+01	1.20E-09	1.52E-09	1.63E-09	3.67E-09	1.19E-15	4.42E-14
Yttrium	Y-95+E	6.48E-06	1.81E-05	1.54E+01	1.20E-09	1.52E-09	1.63E-09	3.67E-09	1.19E-15	4.42E-14
Zinc	Zn-62	3.64E-06	2.06E-06	2.52E+00	4.67E-09	5.02E-10	6.51E-09	1.47E-08	7.19E-14	2.66E-12
Zinc	Zn-62+D	3.64E-06	2.06E-06	8.50E+00	1.41E-09	4.23E-10	1.93E-09	4.35E-09	7.19E-14	2.66E-12
Zinc	Zn-62+E	3.64E-06	2.06E-06	8.50E+00	1.41E-09	4.23E-10	1.93E-09	4.35E-09	7.19E-14	2.66E-12
Zinc	Zn-63	2.19E-07	8.14E-08	6.56E+00	1.87E-09	1.96E-09	2.55E-09	5.73E-09	8.34E-14	3.09E-12
Zinc	Zn-65	1.44E-05	2.04E-05	3.70E+00	3.20E-09	1.40E-10	4.65E-09	1.05E-08	1.20E-11	4.46E-10
Zinc	Zn-69	8.88E-08	3.92E-08	2.26E-03	3.49E-06	2.48E-08	8.05E-06	1.81E-05	3.37E-13	1.25E-11
Zinc	Zn-69m	1.31E-06	8.14E-07	2.41E+00	5.52E-09	1.37E-09	7.59E-09	1.71E-08	3.30E-13	1.22E-11
Zinc	Zn-69m+D	1.31E-06	1.63E-06	2.41E+00	5.52E-09	1.37E-09	7.59E-09	1.71E-08	3.30E-13	1.22E-11
Zinc	Zn-69m+E	1.31E-06	1.63E-06	2.41E+00	5.52E-09	1.37E-09	7.59E-09	1.71E-08	3.30E-13	1.22E-11
Zinc	Zn-71m	8.99E-07	3.89E-07	9.19E+00	1.50E-09	1.12E-09	2.05E-09	4.61E-09	1.41E-13	5.24E-12
Zinc	Zn-72	5.51E-06	5.00E-06	6.54E-01	1.86E-08	4.12E-10	2.91E-08	6.56E-08	2.77E-13	1.03E-11
Zinc	Zn-72+D	1.01E-05	6.85E-06	1.85E+01	7.53E-10	1.86E-10	1.03E-09	2.33E-09	1.51E-13	5.59E-12

		Toxicity			Dose Cleanup Concentrations					
Element	Isotope	ICRP30 Ingestion Dose Conversion Factor (mrem/pCi)	ICRP30 Inhalation Dose Conversion Factor (mrem/pCi)	ICRP30 External Exposure Dose Conversion Factor (mrem/yr per pCi/g)	ICRP30 Residential Soil (mg/kg)	ICRP30 Agricultural Soil (mg/kg)	ICRP30 Outdoor Worker Soil (mg/kg)	ICRP30 Indoor Worker Soil (mg/kg)	ICRP30 Tapwater (mg/L)	ICRP30 Ingestion of Fish (mg/kg)
Zinc	Zn-72+E	1.01E-05	6.85E-06	1.85E+01	7.53E-10	1.86E-10	1.03E-09	2.33E-09	1.51E-13	5.59E-12
Zirconium	Zr-86	3.85E-06	2.03E-06	1.43E+00	1.18E-08	1.15E-08	1.60E-08	3.60E-08	1.68E-13	6.24E-12
Zirconium	Zr-86+D	8.07E-06	2.03E-06	2.43E+01	6.90E-10	8.81E-10	9.38E-10	2.11E-09	8.03E-14	2.98E-12
Zirconium	Zr-86+E	8.07E-06	2.03E-06	2.43E+01	6.90E-10	8.81E-10	9.38E-10	2.11E-09	8.03E-14	2.98E-12
Zirconium	Zr-88	1.49E-06	1.09E-05	2.24E+00	7.65E-09	9.37E-09	1.04E-08	2.34E-08	5.39E-11	2.00E-09
Zirconium	Zr-88+D	7.47E-06	3.14E-05	2.00E+01	8.58E-10	1.09E-09	1.17E-09	2.62E-09	1.08E-11	3.99E-10
Zirconium	Zr-88+E	7.47E-06	3.14E-05	2.00E+01	8.58E-10	1.09E-09	1.17E-09	2.62E-09	1.08E-11	3.99E-10
Zirconium	Zr-89	3.42E-06	2.24E-06	7.14E+00	2.43E-09	3.04E-09	3.30E-09	7.44E-09	9.31E-13	3.45E-11
Zirconium	Zr-93	1.66E-06	8.33E-05	0.00E+00	4.34E+00	6.02E-03	1.06E+01	1.91E+01	3.43E-04	1.27E-02
Zirconium	Zr-95	3.77E-06	1.59E-05	4.52E+00	4.09E-09	4.91E-09	5.57E-09	1.25E-08	1.76E-11	6.54E-10
Zirconium	Zr-95+D	6.36E-06	1.81E-05	9.21E+00	2.01E-09	2.45E-09	2.73E-09	6.15E-09	1.05E-11	3.88E-10
Zirconium	Zr-95+E	6.36E-06	1.81E-05	9.21E+00	2.01E-09	2.45E-09	2.73E-09	6.15E-09	1.05E-11	3.88E-10
Zirconium	Zr-97	8.44E-06	3.92E-06	1.14E+00	1.66E-08	1.11E-08	2.26E-08	5.08E-08	8.87E-14	3.29E-12
Zirconium	Zr-97+D	8.44E-06	3.92E-06	9.32E+00	2.03E-09	2.41E-09	2.76E-09	6.20E-09	8.87E-14	3.29E-12
Zirconium	Zr-97+E	8.44E-06	3.92E-06	9.32E+00	2.03E-09	2.41E-09	2.76E-09	6.20E-09	8.87E-14	3.29E-12