

Summary : Hematite - Deep CSM

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: Hematite Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: FGR 12)	6.371E-02	6.371E-02	DCF1 (1)
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1 (2)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1 (3)
A-1	Am-241 (Source: FGR 12)	4.372E-02	4.372E-02	DCF1 (4)
A-1	At-217 (Source: FGR 12)	1.773E-03	1.773E-03	DCF1 (5)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (6)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (7)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (8)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1 (9)
A-1	Bi-213 (Source: FGR 12)	7.660E-01	7.660E-01	DCF1 (10)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (11)
A-1	Fr-221 (Source: FGR 12)	1.536E-01	1.536E-01	DCF1 (12)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (13)
A-1	Np-237 (Source: FGR 12)	7.790E-02	7.790E-02	DCF1 (14)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (15)
A-1	Pa-233 (Source: FGR 12)	1.020E+00	1.020E+00	DCF1 (16)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (17)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (18)
A-1	Pb-209 (Source: FGR 12)	7.734E-04	7.734E-04	DCF1 (19)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (20)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (21)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1 (22)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (23)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (24)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (25)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (26)
A-1	Po-213 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (27)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (28)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (29)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1 (30)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (31)
A-1	Pu-239 (Source: FGR 12)	2.952E-04	2.952E-04	DCF1 (32)
A-1	Pu-240 (Source: FGR 12)	1.467E-04	1.467E-04	DCF1 (33)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (34)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1 (35)
A-1	Ra-225 (Source: FGR 12)	1.102E-02	1.102E-02	DCF1 (36)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (37)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (38)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (39)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1 (40)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (41)
A-1	Tc-99 (Source: FGR 12)	1.255E-04	1.255E-04	DCF1 (42)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (43)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1 (44)
A-1	Th-229 (Source: FGR 12)	3.213E-01	3.213E-01	DCF1 (45)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (46)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (47)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1 (48)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (49)

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Hematite Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (50)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1 (51)
A-1	Tl-209 (Source: FGR 12)	1.293E+01	1.293E+01	DCF1 (52)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (53)
A-1	U-233 (Source: FGR 12)	1.397E-03	1.397E-03	DCF1 (54)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (55)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (56)
A-1	U-236 (Source: FGR 12)	2.148E-04	2.148E-04	DCF1 (57)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (58)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2 (2)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2 (3)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (4)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2 (5)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2 (6)
B-1	Pu-240	4.290E-01	4.290E-01	DCF2 (7)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (9)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2 (10)
B-1	Tc-99	8.320E-06	8.320E-06	DCF2 (11)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2 (12)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2 (13)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (14)
B-1	Th-232	1.640E+00	1.640E+00	DCF2 (15)
B-1	U-233	1.350E-01	1.350E-01	DCF2 (16)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (17)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (18)
B-1	U-236	1.250E-01	1.250E-01	DCF2 (19)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (20)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (21)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3 (2)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3 (3)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (4)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3 (5)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3 (6)
D-1	Pu-240	3.540E-03	3.540E-03	DCF3 (7)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (9)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3 (10)
D-1	Tc-99	1.460E-06	1.460E-06	DCF3 (11)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3 (12)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3 (13)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 (14)
D-1	Th-232	2.730E-03	2.730E-03	DCF3 (15)
D-1	U-233	2.890E-04	2.890E-04	DCF3 (16)
D-1	U-234	2.830E-04	2.830E-04	DCF3 (17)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3 (18)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

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Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-236	2.690E-04	2.690E-04	DCF3 (19)
D-1	U-238	2.550E-04	2.550E-04	DCF3 (20)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3 (21)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	1.000E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(3,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-05	5.000E-06	RTF(3,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-02	RTF(4,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-06	5.000E-03	RTF(4,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	7.400E-03	1.000E-02	RTF(5,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(5,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.570E-04	3.000E-04	RTF(5,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	9.900E-07	1.000E-06	RTF(6,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	9.900E-07	1.000E-06	RTF(7,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	7.400E-02	4.000E-02	RTF(9,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-04	1.000E-03	RTF(9,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	7.400E-02	4.000E-02	RTF(10,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(10,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-04	1.000E-03	RTF(10,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	9.270E+00	5.000E+00	RTF(11,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(11,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(12,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(12,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(12,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

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Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(13,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(13,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(13,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(14,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(14,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(14,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(15,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(15,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(15,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(16,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(16,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(16,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(17,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(17,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(17,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(18,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(18,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(18,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(19,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(19,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(20,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(20,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(21,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(21,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.480E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	2.970E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Np-237+D , fish	2.940E+01	3.000E+01	BIOFAC(3,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(3,2)
D-5				
D-5	Pa-231 , fish	9.900E+00	1.000E+01	BIOFAC(4,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(4,2)
D-5				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

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Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pb-210D , fish	2.930E+02	3.000E+02	BIOFAC(5,1)
D-5	Pb-210D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(5,2)
D-5				
D-5	Pu-239 , fish	2.980E+01	3.000E+01	BIOFAC(6,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-240 , fish	2.980E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Ra-226D , fish	4.930E+01	5.000E+01	BIOFAC(9,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(9,2)
D-5				
D-5	Ra-228D , fish	4.930E+01	5.000E+01	BIOFAC(10,1)
D-5	Ra-228D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(10,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(11,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(11,2)
D-5				
D-5	Th-228D , fish	9.030E+01	1.000E+02	BIOFAC(12,1)
D-5	Th-228D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(12,2)
D-5				
D-5	Th-229D , fish	9.030E+01	1.000E+02	BIOFAC(13,1)
D-5	Th-229D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(13,2)
D-5				
D-5	Th-230 , fish	9.030E+01	1.000E+02	BIOFAC(14,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(14,2)
D-5				
D-5	Th-232 , fish	9.030E+01	1.000E+02	BIOFAC(15,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	U-233 , fish	9.900E+00	1.000E+01	BIOFAC(16,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(16,2)
D-5				
D-5	U-234 , fish	9.900E+00	1.000E+01	BIOFAC(17,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(17,2)
D-5				
D-5	U-235D , fish	9.900E+00	1.000E+01	BIOFAC(18,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(18,2)
D-5				
D-5	U-236 , fish	9.900E+00	1.000E+01	BIOFAC(19,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(19,2)
D-5				
D-5	U-238 , fish	9.900E+00	1.000E+01	BIOFAC(20,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(20,2)
D-5				
D-5	U-238D , fish	9.900E+00	1.000E+01	BIOFAC(21,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Hematite - Deep CSM

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.534E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	5.200E+00	2.000E+00	---	THICKO
R011	Length parallel to aquifer flow (m)	2.910E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(11)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(20)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(11)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(20)
R013	Cover depth (m)	1.500E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	1.690E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.690E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	1.700E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.456E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	8.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.010E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	1.400E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	4.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	9.989E+05	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.500E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.520E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	2.500E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	3.338E+03	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.400E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.690E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.900E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.700E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	9.900E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.456E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	8.400E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	8.400E+03	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.021E-06	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	2.500E+01	-1.000E+00	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	2.500E+01	-1.000E+00	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.000E+00	-1.000E+00	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.732E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCC (6)
R016	Unsat. zone 1 (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.415E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.415E-05	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	1.060E+02	0.000E+00	---	DCNUCC (11)
R016	Unsaturated zone 1 (cm**3/g)	1.060E+02	0.000E+00	---	DCNUCU (11,1)
R016	Saturated zone (cm**3/g)	1.000E-01	0.000E+00	---	DCNUCS (11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.598E-04	ALEACH (11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (11)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (17)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (17,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.689E-05	ALEACH (17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (17)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.689E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.689E-05	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	1.500E+03	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.500E+03	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.132E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	1.800E+03	5.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.800E+03	5.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.431E-06	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.086E-05	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.866E-06	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC (10)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU (10,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.866E-06	ALEACH (10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (10)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.144E-06	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.144E-06	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (14)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (14,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.144E-06	ALEACH (14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (14)
R016	Distribution coefficients for daughter Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (15)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.144E-06	ALEACH (15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (15)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.689E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.689E-05	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	5.500E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	2.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.600E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.100E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	2.330E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.500E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	2.100E+01	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.820E+01	3.650E+01	---	SOIL

Summary : Hematite - Deep CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - DEEP CSM.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	4.600E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	1.200E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	9.000E+00	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	3.700E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.050E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	4.500E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	2.300E-05	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	1.750E+00	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	2.600E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	1.700E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	2.100E-01	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	6.000E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	3.300E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Summary : Hematite - Deep CSM

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	128	---	---	NPTS
TITL	Maximum number of integration points for dose	5	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.156E+02 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.807E-04	0.0000	3.023E-04	0.0000	0.000E+00	0.0000	2.687E-05	0.0000	3.978E-06	0.0000	3.343E-07	0.0000	9.142E-04	0.0000
Np-237	4.950E+01	0.6352	2.577E+01	0.3307	0.000E+00	0.0000	2.291E+00	0.0294	3.397E-01	0.0044	2.851E-02	0.0004	7.793E+01	1.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.427E-17	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-18	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.411E-24	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.991E-10	0.0000
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.508E-12	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.915E-10	0.0000
Total	4.950E+01	0.6352	2.577E+01	0.3307	0.000E+00	0.0000	2.291E+00	0.0294	3.397E-01	0.0044	2.851E-02	0.0004	7.793E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - DEEP CSM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.959E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	2.441E-14	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	8.221E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	1.262E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	1.482E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	8.161E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.098E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.797E-12	0.9936	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.821E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-21	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.441E-14	0.0064
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.221E-20	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.262E-28	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.482E-28	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.161E-18	0.0000
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.098E-16	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.797E-12	0.9936
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.821E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.199E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	2.469E-14	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	8.334E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	3.217E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	1.514E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.749E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.129E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.831E-12	0.9936	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.856E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-20	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.469E-14	0.0064
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.334E-20	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.217E-27	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.514E-28	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.749E-17	0.0000
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-16	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.831E-12	0.9936
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.856E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.859E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	2.525E-14	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	8.565E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	6.803E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	1.580E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.083E-16	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.234E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.900E-12	0.9935	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.926E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.859E-20	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.525E-14	0.0064
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.565E-20	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.803E-26	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.580E-28	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.083E-16	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-16	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.900E-12	0.9935
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.926E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	9.249E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	2.733E-14	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	9.423E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	3.227E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	1.833E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.904E-15	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.053E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.154E-12	0.9927	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.184E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.249E-20	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.733E-14	0.0065
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.423E-20	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.227E-24	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.833E-28	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.904E-15	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.053E-16	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.154E-12	0.9927
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.184E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.337E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	3.428E-14	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	1.238E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	8.734E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	2.802E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.841E-14	0.0056	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	8.305E-16	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.971E-12	0.9874	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	5.035E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.337E-19	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.428E-14	0.0068
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-19	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.734E-23	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.802E-28	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.841E-14	0.0056
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-16	0.0002
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.971E-12	0.9874
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.035E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.352E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	7.610E-14	0.0077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	3.222E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	2.443E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	1.239E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.185E-13	0.0522	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	8.823E-15	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.326E-12	0.9392	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	9.929E-12	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.352E-18	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.610E-14	0.0077
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.222E-19	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.443E-21	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.239E-27	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.185E-13	0.0522
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.823E-15	0.0009
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.326E-12	0.9392
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.929E-12	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.206E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Np-237	7.478E-13	0.0096	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	4.963E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	8.993E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	8.654E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.046E-11	0.2631	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.329E-13	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	5.631E-11	0.7242	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	7.775E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.206E-17	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.478E-13	0.0096
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.963E-18	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.993E-20	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.654E-26	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.046E-11	0.2631
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.329E-13	0.0030
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.631E-11	0.7242
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.775E-11	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	4.178E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.541E-05	0.0000	8.064E-09	0.0000	8.362E-10	0.0000	0.000E+00	0.0000
Np-237	2.026E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.439E-04	0.0000	7.935E-06	0.0000	2.446E-07	0.0000	0.000E+00	0.0000
Pu-239	6.991E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.066E-05	0.0000	5.940E-08	0.0000	1.805E-09	0.0000	0.000E+00	0.0000
Pu-240	8.990E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.541E-05	0.0000	5.499E-08	0.0000	1.679E-09	0.0000	0.000E+00	0.0000
Tc-99	2.466E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.396E-04	0.0000	1.994E-07	0.0000	6.181E-06	0.0000	0.000E+00	0.0000
U-234	4.110E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.491E-05	0.0000	2.561E-07	0.0000	3.400E-07	0.0000	0.000E+00	0.0000
U-235	9.400E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.904E-05	0.0000	2.056E-07	0.0000	2.905E-07	0.0000	0.000E+00	0.0000
U-238	3.071E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	2.061E-07	0.0000	2.920E-07	0.0000	0.000E+00	0.0000
Total	7.478E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E-03	0.0000	8.925E-06	0.0000	7.352E-06	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	4.789E-03	0.0001	2.494E-03	0.0000	0.000E+00	0.0000	2.217E-04	0.0000	3.287E-05	0.0000	2.760E-06	0.0000	7.556E-03	0.0001
Np-237	3.574E+01	0.6350	1.861E+01	0.3307	0.000E+00	0.0000	1.654E+00	0.0294	2.453E-01	0.0044	2.061E-02	0.0004	5.626E+01	0.9999
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.072E-05	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.546E-05	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-04	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.555E-05	0.0000
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.954E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-05	0.0000
Total	3.574E+01	0.6351	1.861E+01	0.3307	0.000E+00	0.0000	1.654E+00	0.0294	2.454E-01	0.0044	2.062E-02	0.0004	5.627E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Deep CSM

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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Am-241	Am-241	1.000E+00	3.247E-37	3.347E-37	3.555E-37	4.389E-37	8.019E-37	6.609E-36	2.738E-33	1.522E-05	
Am-241	Np-237+D	1.000E+00	3.959E-21	1.199E-20	2.859E-20	9.249E-20	3.336E-19	2.346E-18	6.131E-17	7.540E-03	
Am-241	U-233	1.000E+00	3.714E-32	2.630E-31	1.426E-30	1.400E-29	1.540E-28	4.244E-27	5.446E-25	9.021E-08	
Am-241	Th-229+D	1.000E+00	7.420E-28	1.120E-26	1.326E-25	3.702E-24	1.050E-22	6.321E-21	7.508E-19	1.469E-09	
Am-241	ΣDSR (j)		3.959E-21	1.199E-20	2.859E-20	9.249E-20	3.337E-19	2.352E-18	6.206E-17	7.556E-03	
Np-237+D	Np-237+D	1.000E+00	2.441E-14	2.469E-14	2.525E-14	2.733E-14	3.425E-14	7.550E-14	7.223E-13	5.626E+01	
Np-237+D	U-233	1.000E+00	3.437E-25	1.044E-24	2.502E-24	8.261E-24	3.156E-23	2.715E-22	1.260E-20	1.316E-03	
Np-237+D	Th-229+D	1.000E+00	9.162E-21	6.456E-20	3.464E-19	3.271E-18	3.221E-17	6.019E-16	2.548E-14	3.072E-05	
Np-237+D	ΣDSR (j)		2.441E-14	2.469E-14	2.525E-14	2.733E-14	3.428E-14	7.610E-14	7.478E-13	5.626E+01	
Pu-239	Pu-239	1.000E+00	8.221E-20	8.334E-20	8.565E-20	9.423E-20	1.238E-19	3.218E-19	4.930E-18	7.072E-05	
Pu-239	U-235+D	1.000E+00	5.404E-26	1.641E-25	3.936E-25	1.302E-24	4.994E-24	4.361E-23	2.112E-21	1.944E-11	
Pu-239	Pa-231	1.000E+00	2.653E-29	1.876E-28	1.014E-27	9.843E-27	1.049E-25	2.584E-24	2.401E-22	2.178E-12	
Pu-239	Ac-227+D	1.000E+00	5.815E-29	8.737E-28	1.023E-26	2.752E-25	7.080E-24	3.312E-22	3.017E-20	2.859E-12	
Pu-239	ΣDSR (j)		8.221E-20	8.334E-20	8.565E-20	9.423E-20	1.238E-19	3.222E-19	4.963E-18	7.072E-05	
Pu-240	Pu-240	4.950E-08	5.508E-37	5.631E-37	5.884E-37	6.863E-37	1.065E-36	4.964E-36	4.031E-34	3.240E-12	
Pu-240	Pu-240	1.000E+00	1.113E-29	1.138E-29	1.189E-29	1.386E-29	2.152E-29	1.003E-28	8.143E-27	6.546E-05	
Pu-240	U-236	1.000E+00	7.657E-35	2.338E-34	5.674E-34	1.957E-33	8.474E-33	1.130E-31	1.833E-29	5.657E-10	
Pu-240	Th-232	1.000E+00	0.000E+00	2.803E-45	1.401E-44	1.359E-43	1.740E-42	8.226E-41	4.921E-38	3.841E-17	
Pu-240	Ra-228+D	1.000E+00	7.197E-30	1.060E-28	1.190E-27	2.779E-26	5.252E-25	1.445E-23	7.645E-22	1.500E-15	
Pu-240	Th-228+D	1.000E+00	1.079E-28	3.100E-27	6.683E-26	3.199E-24	8.682E-23	2.428E-21	8.917E-20	1.077E-16	
Pu-240	ΣDSR (j)		1.262E-28	3.217E-27	6.803E-26	3.227E-24	8.734E-23	2.443E-21	8.993E-20	6.546E-05	
Tc-99	Tc-99	1.000E+00	1.482E-28	1.514E-28	1.580E-28	1.833E-28	2.802E-28	1.239E-27	8.654E-26	2.459E-04	
U-234	U-234	1.000E+00	3.240E-26	3.304E-26	3.436E-26	3.940E-26	5.828E-26	2.294E-25	1.150E-23	2.027E-05	
U-234	Th-230	1.000E+00	3.098E-30	9.452E-30	2.289E-29	7.837E-29	3.322E-28	4.111E-27	5.392E-25	9.662E-08	
U-234	Ra-226+D	1.000E+00	8.161E-18	5.749E-17	3.083E-16	2.904E-15	2.841E-14	5.185E-13	2.046E-11	3.402E-06	
U-234	Pb-210+D	1.000E+00	7.637E-27	1.147E-25	1.341E-24	3.594E-23	9.132E-22	4.074E-20	3.184E-18	1.780E-06	
U-234	ΣDSR (j)		8.161E-18	5.749E-17	3.083E-16	2.904E-15	2.841E-14	5.185E-13	2.046E-11	2.555E-05	
U-235+D	U-235+D	1.000E+00	1.095E-16	1.110E-16	1.142E-16	1.258E-16	1.661E-16	4.394E-16	7.078E-15	1.920E-05	
U-235+D	Pa-231	1.000E+00	8.072E-20	2.447E-19	5.842E-19	1.902E-18	6.981E-18	5.217E-17	1.619E-15	4.390E-06	
U-235+D	Ac-227+D	1.000E+00	2.357E-19	1.649E-18	8.703E-18	7.760E-17	6.574E-16	8.331E-15	2.242E-13	5.945E-06	
U-235+D	ΣDSR (j)		1.098E-16	1.129E-16	1.234E-16	2.053E-16	8.305E-16	8.823E-15	2.329E-13	2.954E-05	
U-238	U-238	5.400E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.890E-10	
U-238+D	U-238+D	9.999E-01	3.797E-12	3.831E-12	3.900E-12	4.154E-12	4.971E-12	9.326E-12	5.631E-11	1.933E-05	
U-238+D	U-234	9.999E-01	4.607E-32	1.406E-31	3.411E-31	1.173E-30	5.040E-30	6.536E-29	9.796E-27	5.758E-08	
U-238+D	Th-230	9.999E-01	2.932E-36	2.086E-35	1.144E-34	1.167E-33	1.436E-32	5.849E-31	2.287E-28	1.352E-10	
U-238+D	Ra-226+D	9.999E-01	5.786E-24	8.734E-23	1.034E-21	2.887E-20	8.194E-19	4.935E-17	5.847E-15	3.282E-09	
U-238+D	Pb-210+D	9.999E-01	4.347E-33	1.347E-31	3.413E-30	2.723E-28	2.062E-26	3.252E-24	8.321E-22	1.665E-09	
U-238+D	ΣDSR (j)		3.797E-12	3.831E-12	3.900E-12	4.154E-12	4.971E-12	9.326E-12	5.631E-11	1.939E-05	

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Hematite - Deep CSM

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	3.309E+03
Np-237	*7.047E+08	*7.047E+08	*7.047E+08	*7.047E+08	*7.047E+08	*7.047E+08	*7.047E+08	4.443E-01
Pu-239	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	3.535E+05
Pu-240	*2.278E+11	*2.278E+11	*2.278E+11	*2.278E+11	*2.278E+11	*2.278E+11	*2.278E+11	3.819E+05
Tc-99	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10	1.017E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	9.786E+05
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	8.464E+05
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 516 ± 1 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	1.000E+03	7.556E-03	3.309E+03	9.142E-04	2.735E+04
Np-237	1.000E+00	516 ± 1	7.793E+01	3.208E-01	7.793E+01	3.208E-01
Pu-239	1.000E+00	1.000E+03	7.072E-05	3.535E+05	9.427E-17	*6.214E+10
Pu-240	1.000E+00	1.000E+03	6.546E-05	3.819E+05	1.073E-18	*2.278E+11
Tc-99	1.000E+00	1.000E+03	2.459E-04	1.017E+05	8.411E-24	*1.697E+10
U-234	1.000E+00	1.000E+03	2.555E-05	9.786E+05	2.991E-10	*6.247E+09
U-235	1.000E+00	1.000E+03	2.954E-05	8.464E+05	3.508E-12	*2.161E+06
U-238	1.000E+00	1.000E+03	1.939E-05	*3.361E+05	3.915E-10	*3.361E+05

*At specific activity limit

Summary : Hematite - Deep CSM

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.522E-05
Np-237	Am-241	1.000E+00	3.959E-21	1.199E-20	2.859E-20	9.249E-20	3.336E-19	2.346E-18	6.131E-17	7.540E-03	
Np-237	Np-237	1.000E+00	2.441E-14	2.469E-14	2.525E-14	2.733E-14	3.425E-14	7.550E-14	7.223E-13	5.626E+01	
Np-237	∑DOSE(j)		2.441E-14	2.469E-14	2.525E-14	2.733E-14	3.425E-14	7.550E-14	7.224E-13	5.627E+01	
U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	1.426E-30	1.400E-29	1.540E-28	4.244E-27	5.446E-25	9.021E-08	
U-233	Np-237	1.000E+00	3.437E-25	1.044E-24	2.502E-24	8.261E-24	3.156E-23	2.715E-22	1.260E-20	1.316E-03	
U-233	∑DOSE(j)		3.437E-25	1.044E-24	2.502E-24	8.261E-24	3.156E-23	2.715E-22	1.261E-20	1.316E-03	
Th-229	Am-241	1.000E+00	7.420E-28	1.120E-26	1.326E-25	3.702E-24	1.050E-22	6.321E-21	7.508E-19	1.469E-09	
Th-229	Np-237	1.000E+00	9.162E-21	6.456E-20	3.464E-19	3.271E-18	3.221E-17	6.019E-16	2.548E-14	3.072E-05	
Th-229	∑DOSE(j)		9.162E-21	6.456E-20	3.464E-19	3.271E-18	3.221E-17	6.019E-16	2.548E-14	3.072E-05	
Pu-239	Pu-239	1.000E+00	8.221E-20	8.334E-20	8.565E-20	9.423E-20	1.238E-19	3.218E-19	4.930E-18	7.072E-05	
U-235	Pu-239	1.000E+00	5.404E-26	1.641E-25	3.936E-25	1.302E-24	4.994E-24	4.361E-23	2.112E-21	1.944E-11	
U-235	U-235	1.000E+00	1.095E-16	1.110E-16	1.142E-16	1.258E-16	1.661E-16	4.394E-16	7.078E-15	1.920E-05	
U-235	∑DOSE(j)		1.095E-16	1.110E-16	1.142E-16	1.258E-16	1.661E-16	4.394E-16	7.078E-15	1.920E-05	
Pa-231	Pu-239	1.000E+00	2.653E-29	1.876E-28	1.014E-27	9.843E-27	1.049E-25	2.584E-24	2.401E-22	2.178E-12	
Pa-231	U-235	1.000E+00	8.072E-20	2.447E-19	5.842E-19	1.902E-18	6.981E-18	5.217E-17	1.619E-15	4.390E-06	
Pa-231	∑DOSE(j)		8.072E-20	2.447E-19	5.842E-19	1.902E-18	6.981E-18	5.217E-17	1.619E-15	4.390E-06	
Ac-227	Pu-239	1.000E+00	5.815E-29	8.737E-28	1.023E-26	2.752E-25	7.080E-24	3.312E-22	3.017E-20	2.859E-12	
Ac-227	U-235	1.000E+00	2.357E-19	1.649E-18	8.703E-18	7.760E-17	6.574E-16	8.331E-15	2.242E-13	5.945E-06	
Ac-227	∑DOSE(j)		2.357E-19	1.649E-18	8.703E-18	7.760E-17	6.574E-16	8.331E-15	2.242E-13	5.945E-06	
Pu-240	Pu-240	4.950E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.240E-12
Pu-240	Pu-240	1.000E+00	1.113E-29	1.138E-29	1.189E-29	1.386E-29	2.152E-29	1.003E-28	8.143E-27	6.546E-05	
Pu-240	∑DOSE(j)		1.113E-29	1.138E-29	1.189E-29	1.386E-29	2.152E-29	1.003E-28	8.143E-27	6.546E-05	
U-236	Pu-240	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.833E-29	5.657E-10	
Th-232	Pu-240	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.841E-17	
Ra-228	Pu-240	1.000E+00	7.197E-30	1.060E-28	1.190E-27	2.779E-26	5.252E-25	1.445E-23	7.645E-22	1.500E-15	
Th-228	Pu-240	1.000E+00	1.079E-28	3.100E-27	6.683E-26	3.199E-24	8.682E-23	2.428E-21	8.917E-20	1.077E-16	
Tc-99	Tc-99	1.000E+00	1.482E-28	1.514E-28	1.580E-28	1.833E-28	2.802E-28	1.239E-27	8.654E-26	2.459E-04	
U-234	U-234	1.000E+00	3.240E-26	3.304E-26	3.436E-26	3.940E-26	5.828E-26	2.294E-25	1.150E-23	2.027E-05	
U-234	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	1.173E-30	5.040E-30	6.536E-29	9.796E-27	5.758E-08	
U-234	∑DOSE(j)		3.240E-26	3.304E-26	3.436E-26	3.940E-26	5.829E-26	2.294E-25	1.150E-23	2.033E-05	
Th-230	U-234	1.000E+00	3.098E-30	9.452E-30	2.289E-29	7.837E-29	3.322E-28	4.111E-27	5.392E-25	9.662E-08	
Th-230	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.287E-28	1.352E-10	
Th-230	∑DOSE(j)		3.098E-30	9.452E-30	2.289E-29	7.837E-29	3.322E-28	4.111E-27	5.394E-25	9.675E-08	

Summary : Hematite - Deep CSM

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-234	1.000E+00	8.161E-18	5.749E-17	3.083E-16	2.904E-15	2.841E-14	5.185E-13	2.046E-11	3.402E-06
Ra-226	U-238	9.999E-01	5.786E-24	8.734E-23	1.034E-21	2.887E-20	8.194E-19	4.935E-17	5.847E-15	3.282E-09
Ra-226	ΣDOSE(j)		8.161E-18	5.749E-17	3.083E-16	2.904E-15	2.841E-14	5.186E-13	2.047E-11	3.406E-06
Pb-210	U-234	1.000E+00	7.637E-27	1.147E-25	1.341E-24	3.594E-23	9.132E-22	4.074E-20	3.184E-18	1.780E-06
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	3.413E-30	2.723E-28	2.062E-26	3.252E-24	8.321E-22	1.665E-09
Pb-210	ΣDOSE(j)		7.637E-27	1.147E-25	1.341E-24	3.594E-23	9.132E-22	4.075E-20	3.185E-18	1.781E-06
U-238	U-238	5.400E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.890E-10
U-238	U-238	9.999E-01	3.797E-12	3.831E-12	3.900E-12	4.154E-12	4.971E-12	9.326E-12	5.631E-11	1.933E-05
U-238	ΣDOSE(j)		3.797E-12	3.831E-12	3.900E-12	4.154E-12	4.971E-12	9.326E-12	5.631E-11	1.933E-05

THF(i) is the thread fraction of the parent nuclide.

Summary : Hematite - Deep CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - DEEP CSM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Am-241	Am-241	1.000E+00	1.000E+00	9.984E-01	9.952E-01	9.841E-01	9.530E-01	8.517E-01	6.177E-01	2.007E-01	
Np-237	Am-241	1.000E+00	0.000E+00	3.235E-07	9.684E-07	3.202E-06	9.391E-06	2.891E-05	6.926E-05	1.074E-04	
Np-237	Np-237	1.000E+00	1.000E+00	9.993E-01	9.980E-01	9.933E-01	9.800E-01	9.349E-01	8.170E-01	5.099E-01	
Np-237	ΣS(j):		1.000E+00	9.993E-01	9.980E-01	9.933E-01	9.800E-01	9.349E-01	8.171E-01	5.100E-01	
U-233	Am-241	1.000E+00	0.000E+00	7.077E-13	6.359E-12	7.026E-11	6.224E-10	6.545E-09	5.045E-08	3.356E-07	
U-233	Np-237	1.000E+00	0.000E+00	4.371E-06	1.310E-05	4.356E-05	1.297E-04	4.208E-04	1.169E-03	3.009E-03	
U-233	ΣS(j):		0.000E+00	4.371E-06	1.310E-05	4.356E-05	1.297E-04	4.208E-04	1.169E-03	3.010E-03	
Th-229	Am-241	1.000E+00	0.000E+00	2.228E-17	6.008E-16	2.216E-14	5.909E-13	2.096E-11	5.014E-10	1.243E-08	
Th-229	Np-237	1.000E+00	0.000E+00	2.064E-10	1.857E-09	2.059E-08	1.842E-07	2.006E-06	1.704E-05	1.557E-04	
Th-229	ΣS(j):		0.000E+00	2.064E-10	1.857E-09	2.059E-08	1.842E-07	2.006E-06	1.704E-05	1.557E-04	
Pu-239	Pu-239	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.996E-01	9.987E-01	9.957E-01	9.872E-01	9.580E-01	
U-235	Pu-239	1.000E+00	0.000E+00	9.848E-10	2.954E-09	9.842E-09	2.948E-08	9.780E-08	2.893E-07	9.185E-07	
U-235	U-235	1.000E+00	1.000E+00	9.999E-01	9.997E-01	9.990E-01	9.971E-01	9.904E-01	9.713E-01	9.077E-01	
U-235	ΣS(j):		1.000E+00	9.999E-01	9.997E-01	9.990E-01	9.971E-01	9.904E-01	9.714E-01	9.077E-01	
Pa-231	Pu-239	1.000E+00	0.000E+00	1.042E-14	9.376E-14	1.041E-12	9.361E-12	1.036E-10	9.219E-10	9.845E-09	
Pa-231	U-235	1.000E+00	0.000E+00	2.116E-05	6.346E-05	2.114E-04	6.335E-04	2.102E-03	6.227E-03	1.986E-02	
Pa-231	ΣS(j):		0.000E+00	2.116E-05	6.346E-05	2.114E-04	6.335E-04	2.102E-03	6.227E-03	1.986E-02	
Ac-227	Pu-239	1.000E+00	0.000E+00	1.097E-16	2.915E-15	1.022E-13	2.386E-12	5.815E-11	7.499E-10	9.258E-09	
Ac-227	U-235	1.000E+00	0.000E+00	3.332E-07	2.936E-06	3.036E-05	2.255E-04	1.471E-03	5.583E-03	1.926E-02	
Ac-227	ΣS(j):		0.000E+00	3.332E-07	2.936E-06	3.036E-05	2.255E-04	1.471E-03	5.583E-03	1.926E-02	
Pu-240	Pu-240	4.950E-08	4.950E-08	4.949E-08	4.948E-08	4.944E-08	4.932E-08	4.891E-08	4.775E-08	4.389E-08	
Pu-240	Pu-240	1.000E+00	1.000E+00	9.999E-01	9.996E-01	9.988E-01	9.964E-01	9.881E-01	9.646E-01	8.868E-01	
Pu-240	ΣS(j):		1.000E+00	9.999E-01	9.996E-01	9.988E-01	9.964E-01	9.881E-01	9.646E-01	8.868E-01	
U-236	Pu-240	1.000E+00	0.000E+00	2.960E-08	8.878E-08	2.957E-07	8.852E-07	2.928E-06	8.596E-06	2.656E-05	
Th-232	Pu-240	1.000E+00	0.000E+00	7.302E-19	6.570E-18	7.297E-17	6.557E-16	7.248E-15	6.428E-14	6.783E-13	
Ra-228	Pu-240	1.000E+00	0.000E+00	2.848E-20	7.254E-19	2.225E-17	3.908E-16	6.149E-15	6.085E-14	6.675E-13	
Th-228	Pu-240	1.000E+00	0.000E+00	2.417E-21	1.634E-19	1.165E-17	3.133E-16	5.794E-15	5.973E-14	6.639E-13	
Tc-99	Tc-99	1.000E+00	1.000E+00	9.998E-01	9.995E-01	9.984E-01	9.951E-01	9.838E-01	9.522E-01	8.495E-01	
U-234	U-234	1.000E+00	1.000E+00	9.999E-01	9.997E-01	9.990E-01	9.970E-01	9.901E-01	9.705E-01	9.051E-01	
U-234	U-238	9.999E-01	0.000E+00	2.835E-06	8.502E-06	2.832E-05	8.479E-05	2.807E-04	8.257E-04	2.569E-03	
U-234	ΣS(j):		1.000E+00	9.999E-01	9.997E-01	9.990E-01	9.971E-01	9.904E-01	9.713E-01	9.077E-01	
Th-230	U-234	1.000E+00	0.000E+00	9.001E-06	2.700E-05	8.997E-05	2.696E-04	8.951E-04	2.655E-03	8.506E-03	
Th-230	U-238	9.999E-01	0.000E+00	1.276E-11	1.148E-10	1.275E-09	1.146E-08	1.267E-07	1.124E-06	1.190E-05	
Th-230	ΣS(j):		0.000E+00	9.001E-06	2.700E-05	8.997E-05	2.696E-04	8.952E-04	2.656E-03	8.518E-03	

Summary : Hematite - Deep CSM

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-234	1.000E+00	0.000E+00	1.950E-09	1.754E-08	1.946E-07	1.745E-06	1.915E-05	1.662E-04	1.630E-03
Ra-226	U-238	9.999E-01	0.000E+00	1.842E-15	4.972E-14	1.840E-12	4.951E-11	1.813E-09	4.741E-08	1.572E-06
Ra-226	ΣS(j):		0.000E+00	1.950E-09	1.754E-08	1.946E-07	1.745E-06	1.915E-05	1.662E-04	1.632E-03
Pb-210	U-234	1.000E+00	0.000E+00	2.004E-11	5.328E-10	1.870E-08	4.368E-07	1.064E-05	1.349E-04	1.536E-03
Pb-210	U-238	9.999E-01	0.000E+00	1.423E-17	1.138E-15	1.345E-13	9.690E-12	8.446E-10	3.518E-08	1.435E-06
Pb-210	ΣS(j):		0.000E+00	2.004E-11	5.328E-10	1.870E-08	4.368E-07	1.064E-05	1.349E-04	1.537E-03
U-238	U-238	5.400E-05	5.400E-05	5.399E-05	5.398E-05	5.395E-05	5.384E-05	5.348E-05	5.245E-05	4.901E-05
U-238	U-238	9.999E-01	9.999E-01	9.998E-01	9.997E-01	9.990E-01	9.970E-01	9.903E-01	9.713E-01	9.076E-01
U-238	ΣS(j):		1.000E+00	9.999E-01	9.997E-01	9.990E-01	9.971E-01	9.904E-01	9.713E-01	9.077E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 3.38 seconds