

Client Requested Supplemental Information to the Preliminary Assessment for the Cabot Corporation Revere Slag
Pile Sites, Revere, Pennsylvania.

Supplement to Letter Report for NRC Project JCN J5131

March 12, 2000

Contents

Remark Concerning Case D

Minor revision to Table 8 in our January Report

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RESRAD CONCENT Report for Cases B, C and D

Case B: Scenario Specific Dose Conversion Factors From DandD 1.0. Groundwater Concentrations from RESRAD 5.82 CONCENT
Report. Groundwater Pathway Doses

Case B DandD 1.0 NRC Report

Case B DandD 1.0 FORTRAN Report

Case C: Scenario Specific Dose Conversion Factors From DandD 1.0. Groundwater Concentrations from RESRAD 5.82 CONCENT
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Case C DandD 1.0 NRC Report

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Remark Concerning Case D.

The Case D doses are obtained directly from the Case C doses in Table 8 of our January Report. Case D agriculture and soil ingestion doses are 3.1% of the corresponding Case C doses.

Table 8 (Continued). Summary of Doses for Different Scenarios Based on STEP's Concentration Estimates (9 pCi/g U-238, 1 pCi/g Th-232 chain, 0.41 pCi/g U-235) and no cover.

Pathway	Case C. Same as case B, but with the following changes: regional garden produce ingestion rates, default animal ingestion rates, NCRP 129 plant mass loading for human diet	Case D. Same as case C with the following changes: agriculture and soil ingestion pathway adjusted by the percent available uranium (3.1%)
External	49	49
Inhalation	0.66	0.66
Agriculture	60.	1.9
Soil	1.5	0.05
Drinking	2.9	2.9
Irrigated	0.84	0.84
Aquatic	Excluded	Excluded
TEDE	115	56
25 mrem/y U-238 soil concentration	1.94	3.94 pCi/g

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Summary : Cabot Groundwater Model+ MB+30D Cutoff      File: CABOTGW1.RAD
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Summary : Cabot Groundwater Model+ MR130D Cutoff      File: CABOTGW1.RAD

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Dose Conversion Factor (and Related) Parameter Summary			
File: DOSFAC30.BIN			
Menu	Parameter	Current Value	Default Value
Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.720E+00	6.720E+00
B-1	Pa-231	1.280E+00	1.280E+00
B-1	Pb-210+D	1.380E-02	1.380E-02
B-1	Po-210	9.400E-03	9.400E-03
B-1	Ra-226+D	8.600E-03	8.600E-03
B-1	Ra-228+D	5.080E-03	5.080E-03
B-1	Th-228+D	3.450E-01	3.450E-01
B-1	Th-230	3.260E-01	3.260E-01
B-1	Th-232	1.640E+00	1.640E+00
B-1	U-234	1.320E-01	1.320E-01
B-1	U-235+D	1.230E-01	1.230E-01
B-1	U-238+D	1.180E-01	1.180E-01
Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.480E-02
D-1	Pa-231	1.060E-02	1.060E-02
D-1	Pb-210+D	5.370E-03	5.370E-03

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

D-1	Po-210	1.900E-03	1.900E-03	DCF3(4)
D-1	Ra-226+D	1.330E-03	1.330E-03	DCF3(5)
D-1	Ra-228+D	1.440E-03	1.440E-03	DCF3(6)
D-1	Th-228+D	8.080E-04	8.080E-04	DCF3(7)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(8)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(9)
D-1	U-234	2.830E-04	2.830E-04	DCF3(10)
D-1	U-235+D	2.670E-04	2.670E-04	DCF3(11)
D-1	U-238+D	2.690E-04	2.690E-04	DCF3(12)
Food transfer factors:				
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-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-05	2.000E-05	RTF(1,3)
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)

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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: DOSFAC30.BIN

Menu	Parameter	Current Value	Default	Parameter Name
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(6,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(6,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(6,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

D-34	Th-232	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Th-232	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Th-232	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	U-234	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-234	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-234	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-235+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-235+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-235+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5					
D-5		Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D	fish	1.500E+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	Pa-231	fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Po-210	fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210	crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(4,2)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Ra-228+D	fish	5.000E+01	5.000E+01	BIOFAC(6,1)
D-5	Ra-228+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(6,2)
D-5					
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD					

Dose Conversion Factor (and Related) Parameter Summary (continued)					
File: DOSFAC30.BIN					
Menu	Parameter	Current Value	Default	Parameter Name	
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)	
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)	
D-5					
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(9,1)	
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(9,2)	

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D-5      ,
D-5      U-234      , fish
D-5      U-234      , crustacea and mollusks
D-5      ,
D-5      U-235+D    , fish
D-5      U-235+D    , crustacea and mollusks
D-5      ,
D-5      U-238+D    , fish
D-5      U-238+D    , crustacea and mollusks
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Summary : Cabot Groundwater Model+ MB+30D Cutoff      File: CABOTGW.LRAD
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			Site-Specific Parameter Summary				
Menu	Parameter		User Input	Default	Used by RESRAD (If different from user input)	Parameter Name	
AA							
R011	Area of contaminated zone (m**2)		1.500E+03	1.000E+04	---	AREA	
R011	Thickness of contaminated zone (m)		6.000E-01	2.000E+00	---	THICK0	
R011	Length parallel to aquifer flow (m)		1.000E+02	1.000E+02	---	LCZPAQ	
R011	Basic radiation dose limit (mrem/yr)		3.000E+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):	Ac-227	4.100E-01	0.000E+00	---	SI (1)	
R012	Initial principal radionuclide (pCi/g):	Pa-231	4.100E-01	0.000E+00	---	SI (2)	
R012	Initial principal radionuclide (pCi/g):	Pb-210	9.000E+00	0.000E+00	---	SI (3)	
R012	Initial principal radionuclide (pCi/g):	Ra-226	9.000E+00	0.000E+00	---	SI (5)	
R012	Initial principal radionuclide (pCi/g):	Ra-228	1.000E+00	0.000E+00	---	SI (6)	
R012	Initial principal radionuclide (pCi/g):	Th-230	1.000E+00	0.000E+00	---	SI (8)	
R012	Initial principal radionuclide (pCi/g):	Th-232	9.000E+00	0.000E+00	---	SI (9)	
R012	Initial principal radionuclide (pCi/g):	U-234	1.000E+00	0.000E+00	---	SI(10)	
R012	Initial principal radionuclide (pCi/g):	U-235	9.000E+00	0.000E+00	---	SI(11)	
R012	Initial principal radionuclide (pCi/g):	U-238	4.100E-01	0.000E+00	---	SI(12)	
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	WI (1)	
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	WI (2)	
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	WI (3)	
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	WI (5)	
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	WI (6)	
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	WI (8)	
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	WI (9)	
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	WI(10)	
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	WI(11)	

		Site-Specific Parameter Summary (continued)				
		User	Default	Used by RESRAD	Parameter	
Menu	Parameter	Input		(If different from user input)	Name	
AA						
R013	Runoff coefficient	0.000E+00	2.000E-01	---	RUNOFF	
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA	
R013	Accuracy for water/soil computations	0.000E+00	1.000E-03	Zero shows Simpson's rule.	EPS	
R014	Density of saturated zone (g/cm**3)	2.000E+00	1.500E+00	---	DENSAQ	
R014	Saturated zone total porosity	5.000E-02	4.000E-01	---	TPSZ	
R014	Saturated zone effective porosity	4.000E-02	2.000E-01	---	EPSZ	
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+02	---	HCSZ	
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT	
R014	Saturated zone b parameter	5.300E+00	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)	1.000E+01	1.000E+01	---	DWIBWT	
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL	
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW	
R015	Number of unsaturated zone strata	1	1	---	NS	
R015	Unsat. zone 1, thickness (m)	1.000E-02	4.000E+00	---	H(1)	
R015	Unsat. zone 1, soil density (g/cm**3)	1.630E+00	1.500E+00	---	DENSUZ(1)	
R015	Unsat. zone 1, total porosity	3.000E-01	4.000E-01	---	TPUZ(1)	
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)	
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)	
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)	
R016	Distribution coefficients for Ac-227					
R016	Contaminated zone (cm**3/g)	1.700E+04	1.500E+03	---	DCNUCC(1)	
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	1.500E+03	---	DCNUCU(1,1)	
R016	Saturated zone (cm**3/g)	0.000E+00	1.500E+03	---	DCNUCS(1)	

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	1.700E+04	1.800E+03	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	1.800E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.800E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.700E+04	1.600E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.600E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.600E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.700E+04	3.600E+04	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	3.600E+04	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	0.000E+00	3.600E+04	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-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 (If different from user input)	Used by RESRAD	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.700E+04	3.600E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	3.600E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	0.000E+00	3.600E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.700E+04	3.300E+03	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	3.300E+03	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	0.000E+00	3.300E+03	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.700E+04	3.300E+03	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	3.300E+03	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	0.000E+00	3.300E+03	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

R016	Distribution coefficients for U-234						
R016	Contaminated zone (cm**3/g)	1.700E+04	1.500E+01	---		DCNUCC(10)	
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	1.500E+01	---		DCNUCU(10,1)	
R016	Saturated zone (cm**3/g)	0.000E+00	1.500E+01	---		DCNUCS(10)	
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05		ALEACH(10)	
R016	Solubility constant	0.000E+00	0.000E+00	not used		SOLUBK(10)	
R016	Distribution coefficients for U-235						
R016	Contaminated zone (cm**3/g)	1.700E+04	1.500E+01	---		DCNUCC(11)	
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	1.500E+01	---		DCNUCU(11,1)	
R016	Saturated zone (cm**3/g)	0.000E+00	1.500E+01	---		DCNUCS(11)	
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05		ALEACH(11)	
R016	Solubility constant	0.000E+00	0.000E+00	not used		SOLUBK(11)	
R016	Distribution coefficients for U-238						
R016	Contaminated zone (cm**3/g)	1.700E+04	1.500E+01	---		DCNUCC(12)	
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	1.500E+01	---		DCNUCU(12,1)	
R016	Saturated zone (cm**3/g)	0.000E+00	1.500E+01	---		DCNUCS(12)	
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05		ALEACH(12)	
R016	Solubility constant	0.000E+00	0.000E+00	not used		SOLUBK(12)	
R016	Distribution coefficients for daughter Po-210						
R016	Contaminated zone (cm**3/g)	1.000E+01	4.000E+02	---		DCNUCC(4)	
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	4.000E+02	---		DCNUCU(4,1)	
R016	Saturated zone (cm**3/g)	1.000E+01	4.000E+02	---		DCNUCS(4)	
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.309E-02		ALEACH(4)	
R016	Solubility constant	0.000E+00	0.000E+00	not used		SOLUBK(4)	
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Site-Specific Parameter Summary (continued)							
0	Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name	
		AAAAA				AAAAA	
R016		Distribution coefficients for daughter Th-228					
R016		Contaminated zone (cm**3/g)	1.700E+04	3.300E+03	---	DCNUCC(7)	
R016		Unsaturated zone 1 (cm**3/g)	6.000E+04	3.300E+03	---	DCNUCU(7,1)	
R016		Saturated zone (cm**3/g)	0.000E+00	3.300E+03	---	DCNUCS(7)	
R016		Leach rate (/yr)	0.000E+00	0.000E+00	5.573E-05	ALEACH(7)	
R016		Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)	
R017		Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR	
R017		Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH	
R017		Exposure duration	3.000E+01	3.000E+01	---	ED	
R017		Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3	
R017		Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1	
R017		Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND	
R017		Fraction of time spent outdoors (on site)	2.500E-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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.400E+00	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)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	5.100E+02	5.100E+02	---	DWI
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Site-Specific Parameter Summary (continued)					
		User	Default	Used by RESRAD	Parameter
Menu	Parameter	Input	(If different from user input)		Name
AA					
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	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.750E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.750E-01	FMILK

R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LEI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m^3)	1.000E-04	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	1.000E+00	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	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)	7.000E-01	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	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	2.500E-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	2.000E+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 (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/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
STOR	Storage times of contaminated foodstuffs (days):	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Fruits, non-leafy vegetables, and grain				
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Site-Specific Parameter Summary (continued)					
	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
Menu	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)

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

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	---	FLOOR
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	---	HMX
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)

Summary of Pathway Selections		
Pathway	User Selection	
AA		
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		suppressed
ff		
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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1500.00 square meters	Ac-227	4.100E-01
Thickness:	0.60 meters	Pa-231	4.100E-01
Cover Depth:	0.15 meters	Pb-210	9.000E+00
		Ra-226	9.000E+00

Cases B, C, D: RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

Ra-228	1.000E+00
Th-230	1.000E+00
Th-232	9.000E+00
U-234	1.000E+00
U-235	9.000E+00
U-238	4.100E-01

0

```

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 30 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
t (years): 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
TDOSE(t): 7.045E+01 6.234E+02 7.635E+02 7.805E+02 7.882E+02 7.730E+02 7.218E+02 5.642E+02
M(t): 2.348E+00 2.078E+01 2.545E+01 2.602E+01 2.627E+01 2.577E+01 2.406E+01 1.881E+01
OMaximum TDOSE(t): 7.883E+02 mrem/yr at t = 27.70 ± 0.06 years

```

C

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)														
As mrem/yr and Fraction of Total Dose At t = 2.770E+01 years														
Water Independent Pathways (Inhalation excludes radon)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	6.723E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.638E-01	0.0005	2.687E-05	0.0000	3.174E-05	0.0000	0.000E+00	0.0000
Pa-231	1.111E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.033E+00	0.0038	4.660E-02	0.0001	1.007E-04	0.0000	0.000E+00	0.0000
Pb-210	7.879E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.248E+01	0.0158	5.574E-02	0.0001	1.724E-02	0.0000	0.000E+00	0.0000
Ra-226	5.194E+00	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	4.439E+01	0.0563	1.781E-01	0.0002	1.433E-01	0.0002	0.000E+00	0.0000
Ra-228	4.511E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.217E-01	0.0002	4.439E-04	0.0000	5.167E-04	0.0000	0.000E+00	0.0000
Th-230	6.968E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.143E-02	0.0001	2.060E-04	0.0000	1.787E-04	0.0000	0.000E+00	0.0000
Th-232	8.046E+00	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	3.085E+01	0.0391	1.067E-01	0.0001	1.245E-01	0.0002	0.000E+00	0.0000
U-234	1.562E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.098E-02	0.0001	5.147E-05	0.0000	1.072E-04	0.0000	0.000E+00	0.0000
U-235	7.435E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.841E-01	0.0005	1.033E-03	0.0000	9.116E-04	0.0000	0.000E+00	0.0000
U-238	2.106E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.597E-02	0.0000	2.005E-05	0.0000	4.179E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.339E+01	0.0170	0.000E+00	0.0000	0.000E+00	0.0000	9.176E+01	0.1164	3.889E-01	0.0005	2.870E-01	0.0004	0.000E+00	0.0000

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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 = 2.770E+01 years															
		Water Dependent Pathways													
		Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227		7.526E-02	0.0001	1.086E-04	0.0000	0.000E+00	0.0000	5.790E-03	0.0000	2.418E-06	0.0000	5.290E-06	0.0000	4.517E-01	0.0006
Pa-231		2.386E-01	0.0003	1.857E-04	0.0000	0.000E+00	0.0000	1.837E-02	0.0000	1.051E-03	0.0000	9.912E-06	0.0000	3.349E+00	0.0042
Pb-210		2.662E+02	0.3377	7.031E+00	0.0089	0.000E+00	0.0000	1.948E+01	0.0247	1.660E+00	0.0021	2.923E-01	0.0004	3.072E+02	0.3897
Ra-226		3.483E+02	0.4419	9.184E+00	0.0116	0.000E+00	0.0000	2.545E+01	0.0323	2.155E+00	0.0027	3.825E-01	0.0005	4.354E+02	0.5523
Ra-228		1.533E-03	0.0000	1.121E-06	0.0000	0.000E+00	0.0000	1.197E-04	0.0000	2.492E-06	0.0000	5.385E-06	0.0000	1.694E-01	0.0002
Th-230		2.593E-01	0.0003	6.814E-03	0.0000	0.000E+00	0.0000	1.893E-02	0.0000	1.592E-03	0.0000	2.858E-04	0.0000	3.757E-01	0.0005

Th-232	1.481E+00	0.0019	1.079E-03	0.0000	0.000E+00	0.0000	1.152E-01	0.0001	2.357E-03	0.0000	5.164E-03	0.0000	4.074E+01	0.0517
U-234	8.497E-03	0.0000	1.878E-06	0.0000	0.000E+00	0.0000	6.535E-04	0.0000	4.752E-06	0.0000	1.790E-05	0.0000	5.032E-02	0.0001
U-235	7.446E-02	0.0001	1.298E-05	0.0000	0.000E+00	0.0000	5.728E-03	0.0000	5.279E-05	0.0000	1.519E-04	0.0000	5.408E-01	0.0007
U-238	3.304E-03	0.0000	5.247E-07	0.0000	0.000E+00	0.0000	2.542E-04	0.0000	1.804E-06	0.0000	6.967E-06	0.0000	2.170E-02	0.0000
ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff
Total	6.166E+02	0.7823	1.622E+01	0.0206	0.000E+00	0.0000	4.510E+01	0.0572	3.820E+00	0.0048	6.805E-01	0.0009	7.883E+02	1.0000

0* Sum of all water independent and dependent pathways.

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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.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)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAA	AAAAAA	AAAA	AAAAAA	AAAA	AAAAAA	AAAA	AAAAAA	AAAA	AAAAAA	AAAA	AAAAAA	AAAA
Ac-227	1.626E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	8.799E-01	0.0125	6.499E-05	0.0000	7.676E-05	0.0000	0.000E+00	0.0000
Pa-227	1.602E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.521E+00	0.0358	4.659E-02	0.0007	5.498E-05	0.0000	0.000E+00	0.0000
Pb-210	1.672E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.803E+01	0.3979	8.282E-02	0.0012	3.668E-02	0.0005	0.000E+00	0.0000
Ra-226	5.264E+00	0.0747	0.000E+00	0.0000	0.000E+00	0.0000	2.777E+01	0.3942	1.026E-01	0.0015	1.211E-01	0.0017	0.000E+00	0.0000
Ra-228	2.708E-01	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	3.341E+00	0.0474	1.234E-02	0.0002	1.475E-02	0.0002	0.000E+00	0.0000
Th-230	3.037E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.178E-02	0.0005	1.174E-05	0.0000	6.932E-07	0.0000	0.000E+00	0.0000
Th-232	6.108E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.425E+00	0.0202	5.263E-04	0.0000	3.108E-05	0.0000	0.000E+00	0.0000
U-234	6.923E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.104E-02	0.0006	5.153E-05	0.0000	1.074E-04	0.0000	0.000E+00	0.0000
U-235	7.437E-02	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	3.484E-01	0.0049	4.375E-04	0.0000	9.119E-04	0.0000	0.000E+00	0.0000
U-238	2.109E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.0002	2.008E-05	0.0000	4.186E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.630E+00	0.0799	0.000E+00	0.0000	0.000E+00	0.0000	6.441E+01	0.9141	2.454E-01	0.0035	1.736E-01	0.0025	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														
	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+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	8.963E-01	0.0127
Pa-231	0.000E+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	2.569E+00	0.0365
Pb-210	0.000E+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	2.815E+01	0.3996
Ra-226	0.000E+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	3.326E+01	0.4721
Ra-228	0.000E+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	3.639E+00	0.0516
Th-230	0.000E+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	1.426E+00	0.0202
Th-232	0.000E+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	4.119E-02	0.0006
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	4.242E-01	0.0060
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	1.816E-02	0.0003
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	7.045E+01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	7.045E+01	1.0000
0* Sum of all water independent and dependent pathways.														
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Water Independent Pathways (Inhalation excludes radon)										
0	Ground		Inhalation		Radon		Plant		Milk	Soil
0										
Radio-	AAAAAAAAAAAAAA		AAAAAAAAAAAAAA		AAAAAAAAAAAAAA		AAAAAAAAAAAAAA		AAAAAAAAAAAAAA	AAAAAAAAAAAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ac-227	1.478E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.996E-01	0.0010	5.906E-05	0.0000	6.976E-05	0.0000	0.000E+00	0.0000
Pa-231	3.083E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.603E+00	0.0034	4.666E-02	0.0001	6.286E-05	0.0000	0.000E+00	0.0000
Pb-210	1.699E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.691E+01	0.0353	1.202E-01	0.0002	3.719E-02	0.0000	0.000E+00	0.0000
Ra-226	5.257E+00	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	3.044E+01	0.0399	1.155E-01	0.0002	1.250E-01	0.0002	0.000E+00	0.0000
Ra-228	5.492E-01	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	2.368E+00	0.0031	8.717E-03	0.0000	1.016E-02	0.0000	0.000E+00	0.0000
Th-230	7.626E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.594E-02	0.0000	2.672E-05	0.0000	1.778E-05	0.0000	0.000E+00	0.0000
Th-232	1.489E+00	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	1.054E+01	0.0138	3.234E-02	0.0000	3.793E-02	0.0000	0.000E+00	0.0000
U-234	7.025E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.103E-02	0.0001	5.152E-05	0.0000	1.074E-04	0.0000	0.000E+00	0.0000
U-235	7.437E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.519E-01	0.0005	4.993E-04	0.0000	9.119E-04	0.0000	0.000E+00	0.0000
U-238	2.109E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.0000	2.008E-05	0.0000	4.185E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	7.390E+00	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	7.411E+01	0.0971	3.241E-01	0.0004	2.115E-01	0.0003	0.000E+00	0.0000

0

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

0

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	1.654E-01	0.0002	2.387E-04	0.0000	0.000E+00	0.0000	1.273E-02	0.0000	5.314E-06	0.0000	1.163E-05	0.0000	9.929E-01	0.0013
Pa-231	1.490E-01	0.0002	5.606E-05	0.0000	0.000E+00	0.0000	1.148E-02	0.0000	1.050E-03	0.0000	3.599E-06	0.0000	2.815E+00	0.0037
Pb-210	5.717E+02	0.7488	1.510E+01	0.0198	0.000E+00	0.0000	4.183E+01	0.0548	3.561E+00	0.0047	6.276E-01	0.0008	6.599E+02	0.8643
Ra-226	4.339E+01	0.0568	1.128E+00	0.0015	0.000E+00	0.0000	3.139E+00	0.0041	2.527E-01	0.0003	4.761E-02	0.0001	8.390E+01	0.1099
Ra-228	3.012E-02	0.0000	2.201E-05	0.0000	0.000E+00	0.0000	2.353E-03	0.0000	4.898E-05	0.0000	1.058E-04	0.0000	2.969E+00	0.0039
Th-230	2.643E-03	0.0000	6.677E-05	0.0000	0.000E+00	0.0000	1.895E-04	0.0000	1.433E-05	0.0000	2.984E-06	0.0000	3.967E-02	0.0001
Th-232	1.807E-01	0.0002	1.308E-04	0.0000	0.000E+00	0.0000	1.390E-02	0.0000	2.718E-04	0.0000	6.182E-04	0.0000	1.229E+01	0.0161
U-234	8.489E-03	0.0000	1.348E-06	0.0000	0.000E+00	0.0000	6.530E-04	0.0000	4.635E-06	0.0000	1.790E-05	0.0000	5.035E-02	0.0001
U-235	7.228E-02	0.0001	1.151E-05	0.0000	0.000E+00	0.0000	5.560E-03	0.0000	4.080E-05	0.0000	1.520E-04	0.0000	5.057E-01	0.0007
U-238	3.308E-03	0.0000	5.254E-07	0.0000	0.000E+00	0.0000	2.545E-04	0.0000	1.807E-06	0.0000	6.976E-06	0.0000	2.173E-02	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	6.157E+02	0.8065	1.623E+01	0.0213	0.000E+00	0.0000	4.502E+01	0.0590	3.815E+00	0.0050	6.761E-01	0.0009	7.635E+02	1.0000

0*Sum of all water independent and dependent pathways.

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T" Limit = 30 days

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Summary : Cabot Groundwater Model+ MB+30D Cutoff

File: CABOTGW1.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 = 1.000E+01 years

0

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	1.182E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.396E-01	0.0008	4.724E-05	0.0000	5.580E-05	0.0000	0.000E+00	0.0000
Pa-231	6.032E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.0035	4.664E-02	0.0001	7.675E-05	0.0000	0.000E+00	0.0000
Pb-210	1.367E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.165E+01	0.0277	9.670E-02	0.0001	2.991E-02	0.0000	0.000E+00	0.0000
Ra-226	5.239E+00	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	3.559E+01	0.0456	1.386E-01	0.0002	1.319E-01	0.0002	0.000E+00	0.0000
Ra-228	3.548E-01	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0013	3.750E-03	0.0000	4.366E-03	0.0000	0.000E+00	0.0000
Th-230	2.530E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.708E-02	0.0001	6.965E-05	0.0000	6.109E-05	0.0000	0.000E+00	0.0000
Th-232	5.107E+00	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	2.273E+01	0.0291	7.705E-02	0.0001	8.999E-02	0.0001	0.000E+00	0.0000

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

U-234	8.060E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0001	5.150E-05	0.0000	1.073E-04	0.0000	0.000E+00	0.0000
U-235	7.435E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.605E-01	0.0005	6.507E-04	0.0000	9.117E-04	0.0000	0.000E+00	0.0000
U-238	2.108E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.598E-02	0.0000	2.007E-05	0.0000	4.183E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.080E+01	0.0138	0.000E+00	0.0000	0.000E+00	0.0000	8.486E+01	0.1087	3.636E-01	0.0005	2.574E-01	0.0003	0.000E+00	0.0000

0

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														
Water			Fish			Radon			Plant			Meat		
Radio- Nuclide			mrem/yr fract.			mrem/yr fract.			mrem/yr fract.			mrem/yr fract.		
AAAAAAA			AAAAAAA			AAAAAAA			AAAAAAA			AAAAAAA		
Ac-227	1.323E-01	0.0002	1.909E-04	0.0000	0.000E+00	0.0000	1.018E-02	0.0000	4.251E-06	0.0000	9.302E-06	0.0000	7.943E-01	0.0010
Pa-231	1.819E-01	0.0002	1.037E-04	0.0000	0.000E+00	0.0000	1.401E-02	0.0000	1.051E-03	0.0000	5.919E-06	0.0000	3.011E+00	0.0039
Pb-210	4.618E+02	0.5917	1.220E+01	0.0156	0.000E+00	0.0000	3.380E+01	0.0433	2.881E+00	0.0037	5.072E-01	0.0006	5.330E+02	0.6829
Ra-226	1.553E+02	0.1990	4.084E+00	0.0052	0.000E+00	0.0000	1.133E+01	0.0145	9.506E-01	0.0012	1.705E-01	0.0002	2.129E+02	0.2728
Ra-228	1.295E-02	0.0000	9.470E-06	0.0000	0.000E+00	0.0000	1.012E-03	0.0000	2.106E-05	0.0000	4.550E-05	0.0000	1.403E+00	0.0018
Th-230	3.693E-02	0.0000	9.631E-04	0.0000	0.000E+00	0.0000	2.687E-03	0.0000	2.215E-04	0.0000	4.091E-05	0.0000	9.058E-02	0.0001
Th-232	6.304E-01	0.0008	4.591E-04	0.0000	0.000E+00	0.0000	4.896E-02	0.0001	9.950E-04	0.0000	2.192E-03	0.0000	2.869E+01	0.0368
U-234	8.485E-03	0.0000	1.348E-06	0.0000	0.000E+00	0.0000	6.527E-04	0.0000	4.634E-06	0.0000	1.789E-05	0.0000	5.034E-02	0.0001
U-235	7.279E-02	0.0001	1.177E-05	0.0000	0.000E+00	0.0000	5.599E-03	0.0000	4.420E-05	0.0000	1.520E-04	0.0000	5.150E-01	0.0007
U-238	3.307E-03	0.0000	5.252E-07	0.0000	0.000E+00	0.0000	2.544E-04	0.0000	1.806E-06	0.0000	6.974E-06	0.0000	2.172E-02	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	6.182E+02	0.7921	1.629E+01	0.0209	0.000E+00	0.0000	4.621E+01	0.0579	3.834E+00	0.0049	6.802E-01	0.0009	7.805E+02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)														
Ground			Inhalation			Radon			Plant			Meat		
Radio- Nuclide			mrem/yr fract.			mrem/yr fract.			mrem/yr fract.			mrem/yr fract.		
AAAAAAA			AAAAAAA			AAAAAAA			AAAAAAA			AAAAAAA		
Ac-227	6.247E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.380E-01	0.0004	2.497E-05	0.0000	2.949E-05	0.0000	0.000E+00	0.0000
Pa-231	1.158E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.058E+00	0.0039	4.659E-02	0.0001	1.029E-04	0.0000	0.000E+00	0.0000
Pb-210	7.334E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E+01	0.0147	5.188E-02	0.0001	1.605E-02	0.0000	0.000E+00	0.0000
Ra-226	5.188E+00	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	4.520E+01	0.0573	1.817E-01	0.0002	1.444E-01	0.0002	0.000E+00	0.0000
Ra-228	3.418E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.216E-02	0.0001	3.362E-04	0.0000	3.914E-04	0.0000	0.000E+00	0.0000
Th-230	7.542E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.639E-02	0.0001	2.259E-04	0.0000	1.946E-04	0.0000	0.000E+00	0.0000
Th-232	8.143E+00	0.0103	0.000E+00	0.0000	0.000E+00	0.0000	3.112E+01	0.0395	1.077E-01	0.0001	1.256E-01	0.0002	0.000E+00	0.0000
U-234	1.712E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.098E-02	0.0001	5.147E-05	0.0000	1.072E-04	0.0000	0.000E+00	0.0000
U-235	7.435E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.873E-01	0.0005	1.083E-03	0.0000	9.116E-04	0.0000	0.000E+00	0.0000
U-238	2.106E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.597E-02	0.0000	2.005E-05	0.0000	4.179E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.347E+01	0.0171	0.000E+00	0.0000	0.000E+00	0.0000	9.195E+01	0.1166	3.896E-01	0.0005	2.878E-01	0.0004	0.000E+00	0.0000

0

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

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

Water Dependent Pathways											
Water		Fish		Radon		Plant		Meat		Milk	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	6.993E-02	0.0001	1.009E-04	0.0000	0.000E+00	0.0000	5.379E-03	0.0000	2.246E-06	0.0000	4.197E-01
Pa-231	2.439E-01	0.0003	1.933E-04	0.0000	0.000E+00	0.0000	1.878E-02	0.0000	1.051E-03	0.0000	1.028E-05
Pb-210	2.478E+02	0.3143	6.545E+00	0.0083	0.000E+00	0.0000	1.813E+01	0.0230	1.545E+00	0.0020	2.721E-01
Ra-226	3.663E+02	0.4647	9.659E+00	0.0123	0.000E+00	0.0000	2.677E+01	0.0340	2.267E+00	0.0029	4.023E-01
Ra-228	1.161E-03	0.0000	8.488E-07	0.0000	0.000E+00	0.0000	9.069E-05	0.0000	1.887E-06	0.0000	4.079E-06
Th-230	2.990E-01	0.0004	7.858E-03	0.0000	0.000E+00	0.0000	2.183E-02	0.0000	1.837E-03	0.0000	3.295E-04
Th-232	1.581E+00	0.0020	1.153E-03	0.0000	0.000E+00	0.0000	1.230E-01	0.0002	2.518E-03	0.0000	5.516E-03
U-234	8.501E-03	0.0000	2.029E-06	0.0000	0.000E+00	0.0000	6.539E-04	0.0000	4.787E-06	0.0000	1.790E-05
U-235	7.471E-02	0.0001	1.318E-05	0.0000	0.000E+00	0.0000	5.748E-03	0.0000	5.390E-05	0.0000	1.519E-04
U-238	3.304E-03	0.0000	5.247E-07	0.0000	0.000E+00	0.0000	2.541E-04	0.0000	1.804E-06	0.0000	6.966E-06
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	6.164E+02	0.7819	1.621E+01	0.0206	0.000E+00	0.0000	4.508E+01	0.0572	3.818E+00	0.0048	6.804E-01
0*Sum of all water independent and dependent pathways.											
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 09:38 Page 18											
Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.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 = 1.000E+02 years											
Water Independent Pathways (Inhalation excludes radon)											
Ground		Inhalation		Radon		Plant		Meat		Milk	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	6.702E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-02	0.0000	2.678E-06	0.0000	3.163E-06
Pa-231	1.707E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.342E+00	0.0043	4.636E-02	0.0001	1.285E-04
Pb-210	8.293E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.313E+00	0.0017	5.866E-03	0.0000	1.815E-03
Ra-226	5.013E+00	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	5.373E+01	0.0695	2.205E-01	0.0003	1.534E-01
Ra-228	7.373E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-05	0.0000	7.248E-08	0.0000	8.436E-08
Th-230	2.465E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.582E-01	0.0003	9.275E-04	0.0000	7.023E-04
Th-232	8.418E+00	0.0109	0.000E+00	0.0000	0.000E+00	0.0000	3.182E+01	0.0412	1.103E-01	0.0001	1.286E-01
U-234	1.187E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.092E-02	0.0001	5.161E-05	0.0000	1.071E-04
U-235	7.456E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.913E-01	0.0006	2.587E-03	0.0000	9.119E-04
U-238	2.098E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-02	0.0000	1.998E-05	0.0000	4.164E-05
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.355E+01	0.0175	0.000E+00	0.0000	0.000E+00	0.0000	9.105E+01	0.1178	3.866E-01	0.0004	2.857E-01

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											
Water		Fish		Radon		Plant		Meat		Milk	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	7.502E-03	0.0000	1.082E-05	0.0000	0.000E+00	0.0000	5.771E-04	0.0000	2.410E-07	0.0000	5.273E-07
Pa-231	3.047E-01	0.0004	2.819E-04	0.0000	0.000E+00	0.0000	2.346E-02	0.0000	1.047E-03	0.0000	1.459E-05
Pb-210	2.801E+01	0.0362	7.400E-01	0.0010	0.000E+00	0.0000	2.050E+00	0.0027	1.747E-01	0.0002	3.077E-02

Ra-226	5.684E+02	0.7353	1.500E+01	0.0194	0.000E+00	0.0000	4.156E+01	0.0538	3.528E+00	0.0046	6.242E-01	0.0008	6.882E+02	0.8903
Ra-228	2.502E-07	0.0000	1.829E-10	0.0000	0.000E+00	0.0000	1.954E-08	0.0000	4.069E-10	0.0000	8.792E-10	0.0000	2.767E-05	0.0000
Th-230	1.996E+00	0.0026	5.261E-02	0.0001	0.000E+00	0.0000	1.460E-01	0.0002	1.236E-02	0.0000	2.197E-03	0.0000	2.494E+00	0.0032
Th-232	4.563E+00	0.0059	3.328E-03	0.0000	0.000E+00	0.0000	3.551E-01	0.0005	7.284E-03	0.0000	1.593E-02	0.0000	4.542E+01	0.0588
U-234	9.156E-03	0.0000	2.018E-05	0.0000	0.000E+00	0.0000	7.016E-04	0.0000	9.029E-06	0.0000	1.859E-05	0.0000	5.099E-02	0.0001
U-235	8.367E-02	0.0001	2.134E-05	0.0000	0.000E+00	0.0000	6.437E-03	0.0000	8.775E-05	0.0000	1.517E-04	0.0000	6.597E-01	0.0009
U-238	3.291E-03	0.0000	5.227E-07	0.0000	0.000E+00	0.0000	2.532E-04	0.0000	1.797E-06	0.0000	6.940E-06	0.0000	2.162E-02	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	6.034E+02	0.7806	1.579E+01	0.0204	0.000E+00	0.0000	4.415E+01	0.0571	3.724E+00	0.0048	6.733E-01	0.0009	7.730E+02	1.0000
0*Sum of all water independent and dependent pathways.														
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 09:38 Page 19														
Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.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 = 3.000E+02 years														
Water Independent Pathways (Inhalation excludes radon)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.138E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.157E-05	0.0000	4.548E-09	0.0000	5.372E-09	0.0000	0.000E+00	0.0000
Pa-231	1.747E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.326E-00	0.0046	4.566E-02	0.0001	1.297E-04	0.0000	0.000E+00	0.0000
Pb-210	1.637E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0000	1.158E-05	0.0000	3.582E-06	0.0000	0.000E+00	0.0000
Ra-226	4.546E+00	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	4.993E+01	0.0692	2.054E-01	0.0003	1.408E-01	0.0002	0.000E+00	0.0000
Ra-228	2.467E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.648E-16	0.0000	2.425E-18	0.0000	2.823E-18	0.0000	0.000E+00	0.0000
Th-230	7.001E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.545E-01	0.0010	2.970E-03	0.0000	2.105E-03	0.0000	0.000E+00	0.0000
Th-232	8.325E+00	0.0115	0.000E+00	0.0000	0.000E+00	0.0000	3.147E+01	0.0436	1.090E-01	0.0002	1.272E-01	0.0002	0.000E+00	0.0000
U-234	9.729E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.136E-02	0.0001	5.453E-05	0.0000	1.084E-04	0.0000	0.000E+00	0.0000
U-235	7.535E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.950E-01	0.0011	6.808E-03	0.0000	9.138E-04	0.0000	0.000E+00	0.0000
U-238	2.074E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.574E-02	0.0000	1.977E-05	0.0000	4.120E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.304E+01	0.0181	0.000E+00	0.0000	0.000E+00	0.0000	8.633E+01	0.1196	3.699E-01	0.0005	2.713E-01	0.0004	0.000E+00	0.0000

[illegible]

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

Total 5.620E+02 0.7787 1.448E+01 0.0201 0.000E+00 0.0000 4.117E+01 0.0570 3.427E+00 0.0047 6.485E-01 0.0009 7.218E+02 1.0000
0*Sum of all water independent and dependent pathways.
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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.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 = 1.000E+03 years														
Water Independent Pathways (Inhalation excludes radon)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ac-227	2.297E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-14	0.0000	9.179E-19	0.0000	1.084E-18	0.0000	0.000E+00	0.0000
Pa-231	1.655E-02	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.152E+00	0.0056	4.327E-02	0.0001	1.229E-04	0.0000	0.000E+00	0.0000
Pb-210	5.594E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.857E-13	0.0000	3.957E-15	0.0000	1.224E-15	0.0000	0.000E+00	0.0000
Ra-226	3.229E+00	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	3.546E+01	0.0629	1.458E-01	0.0003	9.997E-02	0.0002	0.000E+00	0.0000
Ra-228	0.000E+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	0.000E+00	0.0000
Th-230	1.936E-01	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.112E+00	0.0037	8.560E-03	0.0000	5.933E-03	0.0000	0.000E+00	0.0000
Th-232	8.006E+00	0.0142	0.000E+00	0.0000	0.000E+00	0.0000	3.026E+01	0.0536	1.049E-01	0.0002	1.223E-01	0.0002	0.000E+00	0.0000
U-234	9.353E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.885E-02	0.0001	8.921E-05	0.0000	1.297E-04	0.0000	0.000E+00	0.0000
U-235	7.789E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.797E+00	0.0032	2.072E-02	0.0000	9.191E-04	0.0000	0.000E+00	0.0000
U-238	1.995E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.517E-02	0.0000	1.906E-05	0.0000	3.972E-05	0.0000	0.000E+00	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.153E+01	0.0204	0.000E+00	0.0000	0.000E+00	0.0000	7.285E+01	0.1291	3.234E-01	0.0006	2.295E-01	0.0004	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														
	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ac-227	2.571E-15	0.0000	3.708E-18	0.0000	0.000E+00	0.0000	1.977E-16	0.0000	8.257E-20	0.0000	1.807E-19	0.0000	1.543E-14	0.0000
Pa-231	2.913E-01	0.0005	2.731E-04	0.0000	0.000E+00	0.0000	2.243E-02	0.0000	9.779E-04	0.0000	1.411E-05	0.0000	3.527E+00	0.0063
Pb-210	1.890E-11	0.0000	4.994E-13	0.0000	0.000E+00	0.0000	1.384E-12	0.0000	1.179E-13	0.0000	2.076E-14	0.0000	2.182E-11	0.0000
Ra-226	3.845E+02	0.6815	1.015E+01	0.0180	0.000E+00	0.0000	2.812E+01	0.0498	2.387E+00	0.0042	4.222E-01	0.0007	4.645E+02	0.8233
Ra-228	0.000E+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	0.000E+00	0.0000
Th-230	2.215E+01	0.0393	5.838E-01	0.0010	0.000E+00	0.0000	1.620E+00	0.0029	1.373E-01	0.0002	2.433E-02	0.0000	2.683E+01	0.0476
Th-232	2.632E+01	0.0467	1.972E-02	0.0000	0.000E+00	0.0000	2.048E+00	0.0036	4.104E-02	0.0001	8.942E-02	0.0002	6.702E+01	0.1188
U-234	1.113E-01	0.0002	2.724E-03	0.0000	0.000E+00	0.0000	8.171E-03	0.0000	6.449E-04	0.0000	1.304E-04	0.0000	1.730E-01	0.0003
U-235	2.024E-01	0.0004	1.354E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0000	4.962E-04	0.0000	1.503E-04	0.0000	2.115E+00	0.0037
U-238	3.180E-03	0.0000	1.553E-06	0.0000	0.000E+00	0.0000	2.445E-04	0.0000	1.963E-06	0.0000	6.665E-06	0.0000	2.066E-02	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.336E+02	0.7685	1.075E+01	0.0191	0.000E+00	0.0000	3.183E+01	0.0564	2.568E+00	0.0046	5.363E-01	0.0010	5.642E+02	1.0000

0*Sum of all water independent and dependent pathways.
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 09:38 Page 21
Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated
0Parent Product Branch DSR(j,t) (mrem/yr)/(pCi/g)

(i)	(j)	Fraction*	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
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	Ac-227	1.000E+00	2.186E+00	2.581E+00	2.422E+00	1.937E+00	1.024E+00	1.098E-01	1.865E-04	3.764E-14
OPa-231	Pa-231	1.000E+00	6.266E+00	6.610E+00	6.609E+00	6.606E+00	6.596E+00	6.506E+00	6.460E+00	6.122E+00
Pa-231	Ac-227	1.000E+00	0.000E+00	9.643E-02	2.556E-01	7.390E-01	1.649E-01	2.549E-01	2.618E+00	2.481E+00
Pa-231	ADSR(j)		6.266E+00	6.707E+00	6.865E+00	7.345E+00	8.245E+00	9.109E+00	9.078E+00	8.603E+00
OPb-210	Pb-210	1.000E+00	3.128E+00	3.032E+00	3.008E+00	2.419E+00	1.297E+00	1.467E-01	2.896E-04	9.897E-14
Pb-210	Po-210	1.000E+00	0.000E+00	5.993E+01	7.031E+01	5.680E+01	3.047E+01	3.446E+00	6.800E-03	2.325E-12
Pb-210	ADSR(j)		3.128E+00	6.296E+01	7.332E+01	5.922E+01	3.177E+01	3.592E+00	7.090E-03	2.424E-12
ORa-226	Ra-226	1.000E+00	3.695E+00	3.737E+00	3.733E+00	3.720E+00	3.684E+00	3.506E+00	3.229E+00	2.293E+00
Ra-226	Pb-210	1.000E+00	0.000E+00	1.096E-01	3.029E-01	8.889E-01	1.993E+00	3.049E+00	2.900E+00	2.059E+00
Ra-226	Po-210	1.000E+00	0.000E+00	9.989E-01	5.286E+00	1.905E+01	4.500E+01	6.986E+01	6.650E+01	4.726E+01
Ra-226	ADSR(j)		3.695E+00	4.845E+00	9.322E+00	2.366E+01	5.068E+01	7.647E+01	7.262E+01	5.161E+01
ORa-228	Ra-228	1.000E+00	3.639E+00	3.267E+00	2.567E+00	1.103E+00	9.889E-02	2.132E-05	7.134E-16	0.000E+00
Ra-228	Th-228	1.000E+00	0.000E+00	2.254E-01	4.022E-01	2.999E-01	2.943E-02	6.349E-06	2.125E-16	0.000E+00
Ra-228	ADSR(j)		3.639E+00	3.492E+00	2.969E+00	1.403E-01	1.283E-01	2.767E-05	9.258E-16	0.000E+00
OTh-230	Th-230	1.000E+00	3.180E-02	3.180E-02	3.179E-02	3.178E-02	3.174E-02	3.159E-02	3.119E-02	4.699E-02
Th-230	Ra-226	1.000E+00	0.000E+00	1.562E-03	4.835E-03	1.626E-02	4.866E-02	1.593E-01	4.529E-01	1.248E+00
Th-230	Pb-210	1.000E+00	0.000E+00	2.555E-05	2.089E-04	2.061E-03	1.508E-02	9.736E-02	3.565E-01	1.068E+00
Th-230	Po-210	1.000E+00	0.000E+00	1.395E-04	2.829E-03	4.048E-02	3.297E-01	2.206E+00	8.143E+00	2.447E+01
Th-230	ADSR(j)		3.180E-02	3.352E-02	3.967E-02	9.058E-02	4.252E-01	2.494E+00	8.983E+00	2.683E+01
OTh-232	Th-232	1.000E+00	1.584E-01	1.584E-01	1.584E-01	1.583E-01	1.581E-01	1.575E-01	1.558E-01	2.362E-01
Th-232	Ra-228	1.000E+00	0.000E+00	4.013E-01	1.111E+00	2.609E+00	3.711E+00	4.153E+00	5.148E+00	6.505E+00
Th-232	Th-228	1.000E+00	0.000E+00	1.593E-02	9.614E-02	4.207E-01	7.097E-01	7.369E-01	7.305E-01	7.052E-01
Th-232	ADSR(j)		1.584E-01	5.756E-01	1.736E+00	3.188E+00	4.578E+00	5.047E+00	6.035E+00	7.446E+00
OU-234	U-234	1.000E+00	4.119E-02	5.036E-02	5.035E-02	5.033E-02	5.027E-02	5.007E-02	4.948E-02	4.750E-02
U-234	Th-230	1.000E+00	0.000E+00	3.024E-07	8.751E-07	2.878E-06	8.592E-06	2.848E-05	8.437E-05	3.306E-04
U-234	Ra-226	1.000E+00	0.000E+00	6.827E-09	6.460E-08	7.299E-07	6.577E-06	7.218E-05	6.	

[illegible]

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j). The DSR includes contributions from associated (half-life > 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g								
Basic Radiation Dose Limit = 30 mrem/yr								
ONuclide	(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ac-227	1.372E+01	1.162E+01	1.239E+01	1.549E+01	2.931E+01	2.732E+02	1.609E+05	*7.230E+13
Pa-231	4.788E+00	4.473E+00	4.370E+00	4.085E+00	3.639E+00	3.293E+00	3.305E+00	3.487E+00
Pb-210	9.591E+00	4.765E-01	4.092E-01	5.066E-01	9.443E-01	8.351E+00	4.232E+03	1.238E+13
Ra-226	8.118E+00	6.192E+00	3.218E+00	1.268E+00	5.919E-01	3.923E-01	4.131E-01	5.813E-01
Ra-228	8.245E+00	8.591E+00	1.011E+01	2.138E+01	2.338E+02	1.084E+06	*2.726E+14	*2.726E+14
Th-230	9.434E+02	8.949E+02	7.563E+02	3.312E+02	7.056E+01	1.203E+01	3.340E+00	1.118E+00
Th-232	1.894E+02	5.212E+01	2.196E+01	9.411E+00	6.552E+00	5.944E+00	4.971E+00	4.029E+00
U-234	7.283E+02	5.957E+02	5.958E+02	5.960E+02	5.962E+02	5.883E+02	4.938E+02	1.734E+02
U-235	6.366E+02	5.366E+02	5.339E+02	5.243E+02	4.961E+02	4.093E+02	2.705E+02	1.276E+02
U-238	6.772E+02	5.659E+02	5.660E+02	5.662E+02	5.668E+02	5.689E+02	5.750E+02	5.953E+02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*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 = 27.70 ± 0.06 years						
ONuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	pCi/g	(years)		(pCi/g)		(pCi/g)
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ac-227	4.100E-01	0.3602 ± 0.0007	2.639E+00	1.137E+01	1.102E+00	2.723E+01
Pa-231	4.100E-01	150.5 ± 0.3	9.162E+00	3.275E+00	8.168E+00	3.673E+00
Pb-210	9.000E+00	2.314 ± 0.005	7.402E+01	4.053E-01	3.413E+01	8.789E-01
Ra-226	9.000E+00	134.8 ± 0.3	7.753E+01	3.869E-01	4.838E+01	6.201E-01
Ra-228	1.000E+00	0.000E+00	3.639E+00	8.245E+00	1.694E-01	1.771E+02
Th-230	1.000E+00	1.000E+03	2.683E+01	1.118E+00	3.757E-01	7.985E+01
Th-232	9.000E+00	604 ± 1	7.612E+00	3.941E+00	4.526E+00	6.628E+00
U-234	1.000E+00	1.000E+03	1.730E-01	1.734E+02	5.032E-02	5.962E+02
U-235	9.000E+00	1.000E+03	2.350E-01	1.276E+02	6.009E-02	4.993E+02
U-238	4.100E-01	0.799 ± 0.002	5.301E-02	5.659E+02	5.294E-02	5.667E+02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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Summary : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Individual Nuclide Dose Summed Over All Pathways									
Parent Nuclide and Branch Fraction Indicated									
ONuclide	Parent	BRF(i)	DOSE(j,t), mrem/yr						
(j)	(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ac-227	Ac-227	1.000E+00	8.963E-01	1.058E+00	9.929E-01	7.943E-01	4.197E-01	4.503E-02	7.646E-05
Ac-227	Pa-231	1.000E+00	0.000E+00	3.954E-02	1.048E-01	3.030E-01	6.761E-01	1.045E+00	1.073E+00
Ac-227	U-235	1.000E+00	0.000E+00	1.030E-05	7.764E-05	7.524E-04	5.480E-03	3.548E-02	1.344E-01

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

Ac-227	aDOSE(j):	8.963E-01	1.098E+00	1.098E+00	1.098E+00	1.101E+00	1.126E+00	1.208E+00	1.480E+00
OPa-231	Pa-231	1.000E+00	2.569E+00	2.710E+00	2.710E+00	2.708E+00	2.704E+00	2.690E+00	2.649E+00
Pa-231	U-235	1.000E+00	0.000E+00	1.225E-03	3.742E-03	1.255E-02	3.766E-02	1.250E-01	3.702E-01
Pa-231	aDOSE(j):	2.569E+00	2.711E+00	2.714E+00	2.721E+00	2.742E+00	2.815E+00	3.019E+00	3.688E+00
OPb-210	Pb-210	1.000E+00	2.815E+01	2.729E+01	2.707E+01	2.177E+01	1.168E+01	1.320E+00	2.606E-03
Pb-210	Ra-226	1.000E+00	0.000E+00	9.868E-01	2.726E+00	8.000E+00	1.794E+01	2.744E+01	2.610E+01
Pb-210	Th-230	1.000E+00	0.000E+00	2.555E-05	2.089E-04	2.061E-03	1.508E-02	9.736E-02	3.565E-01
Pb-210	U-234	1.000E+00	0.000E+00	8.337E-11	1.929E-09	6.367E-08	1.463E-06	3.530E-05	4.446E-04
Pb-210	U-238	1.000E+00	0.000E+00	2.430E-17	1.562E-15	1.803E-13	1.264E-11	1.090E-09	4.523E-08
Pb-210	aDOSE(j):	2.815E+01	2.827E+01	2.980E+01	2.977E+01	2.963E+01	2.886E+01	2.646E+01	1.961E+01
OPo-210	Pb-210	1.000E+00	0.000E+00	5.394E+02	6.328E+02	5.112E+02	2.743E+02	3.101E+01	6.120E-02
Po-210	Ra-226	1.000E+00	0.000E+00	8.990E+00	4.757E+01	1.714E+02	4.050E+02	6.287E+02	5.985E+02
Po-210	Th-230	1.000E+00	0.000E+00	1.395E-04	2.829E-03	4.048E-02	3.297E-01	2.206E+00	8.143E+00
Po-210	U-234	1.000E+00	0.000E+00	2.229E-12	7.292E-11	4.034E-09	2.867E-05	7.899E-04	1.012E-02
Po-210	U-238	1.000E+00	0.000E+00	9.999E-19	5.918E-17	8.587E-15	6.635E-13	5.936E-11	8.862E-07
Po-210	aDOSE(j):	0.000E+00	5.484E+02	6.804E+02	6.827E+02	6.796E+02	6.619E+02	6.067E+02	4.499E+02
ORa-226	Ra-226	1.000E+00	3.326E+01	3.363E+01	3.360E+01	3.348E+01	3.316E+01	3.204E+01	2.906E+01
Ra-226	Th-230	1.000E+00	0.000E+00	1.562E-03	4.835E-03	1.626E-02	4.866E-02	1.593E-01	4.529E-01
Ra-226	U-234	1.000E+00	0.000E+00	6.827E-09	6.460E-08	7.299E-07	6.577E-06	7.218E-05	6.245E-04
Ra-226	U-238	1.000E+00	0.000E+00	2.430E-15	7.298E-14	2.762E-12	7.478E-11	2.743E-09	7.180E-08
Ra-226	aDOSE(j):	3.326E+01	3.363E+01	3.360E+01	3.350E+01	3.321E+01	3.220E+01	2.951E+01	2.189E+01
ORa-228	Ra-228	1.000E+00	3.639E+00	3.267E+00	2.567E+00	1.103E+00	9.889E-02	2.132E-05	7.134E-16
Ra-228	Th-232	1.000E+00	0.000E+00	3.611E+00	1.000E+01	2.348E+01	3.340E+01	3.737E+01	4.634E+01
Ra-228	aDOSE(j):	3.639E+00	6.878E+00	1.257E+01	2.458E+01	3.349E+01	3.737E+01	4.634E+01	5.854E+01
OTh-228	Ra-228	1.000E+00	0.000E+00	2.254E-01	4.022E-01	2.999E-01	2.943E-02	6.349E-06	2.125E-16
Th-228	Th-232	1.000E+00	0.000E+00	1.433E-01	8.653E-01	3.787E+00	6.387E+00	6.632E+00	6.575E+00
Th-228	aDOSE(j):	0.000E+00	3.687E-01	1.268E+00	4.087E+00	6.417E+00	6.632E+00	6.575E+00	6.347E+00
OTh-230	Th-230	1.000E+00	3.180E-02	3.180E-02	3.179E-02	3.178E-02	3.174E-02	3.159E-02	3.119E-02
Th-230	U-234	1.000E+00	0.000E+00	3.024E-07	8.751E-07	2.878E-06	8.592E-06	2.848E-05	8.437E-05
Th-230	U-238	1.000E+00	0.000E+00	1.848E-13	1.553E-12	1.682E-11	1.501E-10	1.656E-09	1.472E-08
Th-230	aDOSE(j):	3.180E-02	3.180E-02	3.179E-02	3.178E-02	3.175E-02	3.162E-02	3.127E-02	4.732E-02
OTh-232	Th-232	1.000E+00	1.426E+00	1.426E+00	1.425E+00	1.425E+00	1.423E+00	1.418E+00	1.402E+00
OU-234	U-234	1.000E+00	4.119E-02	5.036E-02	5.035E-02	5.033E-02	5.027E-02	5.007E-02	4.948E-02
U-234	U-238	1.000E+00	0.000E+00	5.860E-08	1.756E-07	5.851E-07	1.753E-06	5.820E-06	1.726E-05
U-234	aDOSE(j):	4.119E-02	5.036E-02	5.035E-02	5.033E-02	5.028E-02	5.007E-02	4.950E-02	4.756E-02
OU-235	U-235	1.000E+00	4.242E-01	5.020E-01	5.019E-01	5.017E-01	5.012E-01	4.992E-01	4.937E-01
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 09:38 Page 24									
Summary : Cabot Groundwater Model+ MB+30D Cutoff					File: CABOTGW1.RAD				

Individual Nuclide Dose Summed Over All Pathways									
Parent Nuclide and Branch Fraction Indicated									
ONuclide	Parent	BRF(i)	DOSE(j,t), mrem/yr						
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
U-238	U-238	1.000E+00	1.816E-02	2.173E-02	2.173E-02	2.172E-02	2.170E-02	2.162E-02	2.137E-02
iiiiif	iiiiif	iiiiif	iiiiif	iiiiif	iiiiif	iiiiif	iiiiif	iiiiif	iiiiif
BRF(i) is the branch fraction of the parent nuclide.									
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 09:38 Page 25									
Summary : Cabot Groundwater Model+ MB+30D Cutoff					File: CABOTGW1.RAD				

Individual Nuclide Soil Concentration

ONuclide	Parent	BRF(i)	Parent Nuclide and Branch Fraction Indicated								
(j)	(i)		S(j,t), pCi/g								
AAAAAA	AAAAAA	AAAAAA	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	
Ac-227	Ac-227	1.000E+00	4.100E-01	3.971E-01	3.726E-01	2.980E-01	1.575E-01	1.690E-02	2.869E-05	5.791E-15	
Ac-227	Pa-231	1.000E+00	0.000E+00	1.285E-02	2.734E-02	1.117E-01	2.517E-01	3.902E-01	4.009E-01	3.799E-01	
Ac-227	U-235	1.000E+00	0.000E+00	2.999E-06	2.643E-05	2.732E-04	2.029E-03	1.322E-02	5.015E-02	1.727E-01	
Ac-227	As(j):		4.100E-01	4.100E-01	4.100E-01	4.100E-01	4.113E-01	4.203E-01	4.511E-01	5.526E-01	
OPa-231	Pa-231	1.000E+00	4.100E-01	4.100E-01	4.099E-01	4.097E-01	4.091E-01	4.069E-01	4.007E-01	3.797E-01	
Pa-231	U-235	1.000E+00	0.000E+00	1.904E-04	5.712E-04	1.903E-03	5.701E-03	1.892E-02	5.600E-02	1.782E-01	
Pa-231	As(j):		4.100E-01	4.102E-01	4.105E-01	4.116E-01	4.148E-01	4.258E-01	4.567E-01	5.579E-01	
OPb-210	Pb-210	1.000E+00	9.000E+00	8.724E+00	8.197E+00	6.592E+00	3.536E+00	3.999E-01	7.893E-04	2.697E-13	
Pb-210	Ra-226	1.000E+00	0.000E+00	2.754E-01	8.006E-01	2.398E+00	5.408E+00	8.286E+00	7.881E+00	5.597E+00	
Pb-210	Th-230	1.000E+00	0.000E+00	6.662E-06	5.872E-05	6.074E-04	4.515E-03	2.932E-02	1.075E-01	3.223E-01	
Pb-210	U-234	1.000E+00	0.000E+00	2.004E-11	5.327E-10	1.869E-08	4.365E-07	1.062E-05	1.340E-04	1.505E-03	
Pb-210	U-238	1.000E+00	0.000E+00	1.647E-17	4.283E-16	5.513E-14	3.972E-12	3.460E-10	1.440E-08	5.852E-07	
Pb-210	As(j):		9.000E+00	8.999E+00	8.998E+00	8.990E+00	8.949E+00	8.715E+00	7.990E+00	5.921E+00	
OPo-210	Pb-210	1.000E+00	0.000E+00	7.165E+00	7.902E+00	6.376E+00	3.420E+00	3.868E-01	7.635E-04	2.609E-13	
Po-210	Ra-226	1.000E+00	0.000E+00	1.462E-01	6.343E-01	2.179E+00	5.092E+00	7.881E+00	7.501E+00	5.328E+00	
Po-210	Th-230	1.000E+00	0.000E+00	2.679E-06	4.000E-05	2.234E-04	4.169E-03	2.770E-02	1.021E-01	3.066E-01	
Po-210	U-234	1.000E+00	0.000E+00	6.531E-12	3.197E-10	1.534E-08	3.959E-07	9.973E-06	1.271E-04	1.430E-03	
Po-210	U-238	1.000E+00	0.000E+00	1.452E-17	2.521E-16	4.320E-14	3.541E-12	3.232E-10	1.362E-08	5.560E-07	
Po-210	As(j):		0.000E+00	7.312E+00	8.536E+00	8.556E+00	8.517E+00	8.295E+00	7.604E+00	5.636E+00	
ORa-226	Ra-226	1.000E+00	9.000E+00	8.996E+00	8.987E+00	8.956E+00	8.869E+00	8.571E+00	7.772E+00	5.519E+00	
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	1.299E-03	4.320E-03	1.289E-02	4.214E-02	1.197E-01	3.309E-01	
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	1.754E-08	1.946E-07	1.744E-06	1.911E-05	1.651E-04	1.598E-03	
Ra-226	U-238	1.000E+00	0.000E+00	6.820E-16	2.035E-14	7.542E-13	2.030E-11	7.430E-10	1.941E-08	6.414E-07	
Ra-226	As(j):		9.000E+00	8.996E+00	8.988E+00	8.960E+00	8.882E+00	8.6			

Cases B, C, D. RESRAD 5.82 Summary Report. Cabot GW model with following changes: mass balance model used, 30 day cutoff.

U-238	U-238	1.000E+00	4.100E-01	4.100E-01	4.099E-01	4.098E-01	4.093E-01	4.077E-01	4.032E-01	3.878E-01
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

BRF(i) is the branch fraction of the parent nuclide.

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media at t = 0.000E+00 years*									
	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	0.000E+00	6.833E-01	6.833E-01	6.833E-01	6.833E-01	9.293E-04	7.517E-04	0.000E+00	0.000E+00
Pa-231	0.000E+00	2.733E+00	2.733E+00	2.733E+00	2.733E+00	9.293E-01	7.517E-04	0.000E+00	0.000E+00
Pb-210	0.000E+00	6.000E+01	6.000E+01	6.000E+01	6.000E+01	3.264E+00	9.900E-01	0.000E+00	0.000E+00
Po-210	0.000E+00	6.000E+00	6.000E+00	6.000E+00	6.000E+00	2.040E+00	1.122E-01	0.000E+00	0.000E+00
Ra-226	0.000E+00	2.400E+02	2.400E+02	2.400E+02	2.400E+02	1.632E+01	1.320E+01	0.000E+00	0.000E+00
Ra-228	0.000E+00	2.667E+01	2.667E+01	2.667E+01	2.667E+01	1.813E+00	1.467E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	6.667E-01	6.667E-01	6.667E-01	6.667E-01	4.533E-03	1.833E-04	0.000E+00	0.000E+00
Th-230	0.000E+00	6.000E+00	6.000E+00	6.000E+00	6.000E+00	4.080E-02	1.650E-03	0.000E+00	0.000E+00
Th-232	0.000E+00	6.667E-01	6.667E-01	6.667E-01	6.667E-01	4.533E-03	1.833E-04	0.000E+00	0.000E+00
U-234	0.000E+00	1.500E+01	1.500E+01	1.500E+01	1.500E+01	3.468E-01	4.950E-01	0.000E+00	0.000E+00
U-235	0.000E+00	6.833E-01	6.833E-01	6.833E-01	6.833E-01	1.580E-02	2.255E-02	0.000E+00	0.000E+00
U-238	0.000E+00	1.500E+01	1.500E+01	1.500E+01	1.500E+01	3.468E-01	4.950E-01	0.000E+00	0.000E+00
fffff	fffff	fffff	fffff	fffff	fffff	fffff	fffff	fffff	fffff

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,

i.e. using parameters appearing in the input screen when the pathways are active.
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 3
Concent : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Concentration of radionuclides in environmental media
at t = 1.000E+00 years

	Contaminat- ted Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
Radio- Nuclide	AAAAA pCi/g	AAAAA pCi/g	AAAAA pCi/m**3	AAAAA pCi/l	AAAAA pCi/l
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	4.100E-01	0.000E+00	0.000E+00	2.412E-02	3.617E-05
Pa-231	4.100E-01	0.000E+00	0.000E+00	2.412E-02	3.617E-05
Pb-210	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04
Po-210	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

Ra-226	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04
Ra-228	9.999E-01	0.000E+00	0.000E+00	5.882E-02	8.823E-05
Th-228	9.999E-01	0.000E+00	0.000E+00	5.882E-02	8.823E-05
Th-230	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04
Th-232	9.999E-01	0.000E+00	0.000E+00	5.882E-02	8.823E-05
U-234	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04
U-235	4.100E-01	0.000E+00	0.000E+00	2.412E-02	3.617E-05
U-238	8.999E+00	0.000E+00	0.000E+00	5.294E-01	7.941E-04
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+00 years*

	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	2.412E-02	6.941E-01	7.234E-01	7.351E-01	7.351E-01	2.677E-03	8.857E-04	5.425E-04	3.615E-02
Pa-231	2.412E-02	2.742E+00	2.773E+00	2.777E+00	2.777E+00	9.502E-01	7.830E-04	3.617E-04	3.979E-03
Pb-210	5.294E-01	6.039E+01	6.089E+01	6.165E+01	6.165E+01	3.397E+00	1.044E+00	2.381E-01	7.948E-02
Po-210	5.294E-01	9.847E+00	7.146E+00	1.793E+01	1.793E+01	5.957E+00	3.675E-01	8.488E-02	1.534E+01
Ra-226	5.294E-01	2.402E+02	2.409E+02	2.409E+02	2.409E+02	1.641E+01	1.334E+01	3.970E-02	1.985E-01
Ra-228	5.882E-02	2.657E+01	2.675E+01	2.639E+01	2.639E+01	1.786E+00	1.460E+00	4.422E-03	2.211E-02
Th-228	5.882E-02	1.045E+00	7.898E-01	1.900E+00	1.900E+00	4.815E-02	2.017E-03	8.792E-03	4.396E-02
Th-230	5.294E-01	6.182E+00	6.876E+00	6.960E+00	6.960E+00	4.998E-02	2.338E-03	7.941E-02	3.970E-01
Th-232	5.882E-02	6.869E-01	7.640E-01	7.733E-01	7.733E-01	5.553E-03	2.597E-04	8.823E-03	4.411E-02
U-234	5.294E-01	1.518E+01	1.588E+01	1.596E+01	1.596E+01	3.780E-01	5.775E-01	7.941E-03	4.764E-02
U-235	2.412E-02	6.916E-01	7.232E-01	7.270E-01	7.270E-01	1.722E-02	2.631E-02	3.617E-04	2.170E-03
U-238	5.294E-01	1.518E+01	1.588E+01	1.596E+01	1.596E+01	3.780E-01	5.775E-01	7.941E-03	4.764E-02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 3.000E+00 years

	Contaminat- ed Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
Radio- Nuclide	AAAAA pCi/g	AAAAA pCi/g	AAAAA pCi/m*3	AAAAA pCi/l	AAAAA pCi/l
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	4.099E-01	0.000E+00	0.000E+00	2.411E-02	3.617E-05
Pa-231	4.099E-01	0.000E+00	0.000E+00	2.411E-02	3.617E-05
Pb-210	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
Po-210	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
Ra-226	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
Ra-228	9.998E-01	0.000E+00	0.000E+00	5.881E-02	8.822E-05
Th-228	9.998E-01	0.000E+00	0.000E+00	5.881E-02	8.822E-05
Th-230	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
Th-232	9.998E-01	0.000E+00	0.000E+00	5.881E-02	8.822E-05
U-234	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
U-235	4.099E-01	0.000E+00	0.000E+00	2.411E-02	3.617E-05
U-238	8.998E+00	0.000E+00	0.000E+00	5.293E-01	7.940E-04
iiiiii	iiiiii	iiiiii	iiiiii	iiiiii	iiiiii

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+00 years*

	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	2.411E-02	6.941E-01	7.233E-01	7.350E-01	7.350E-01	2.677E-03	8.856E-04	5.424E-04	3.615E-02
Pa-231	2.411E-02	2.741E+00	2.773E+00	2.777E+00	2.777E+00	9.501E-01	7.829E-04	3.617E-04	3.979E-03
Pb-210	5.293E-01	6.039E+01	6.088E+01	6.164E+01	6.164E+01	3.396E+00	1.043E+00	2.381E-01	7.947E-02
Po-210	5.293E-01	9.846E+00	7.145E+00	1.793E+01	1.793E+01	5.957E+00	3.674E-01	8.487E-02	1.534E+01
Ra-226	5.293E-01	2.401E+02	2.408E+02	2.409E+02	2.409E+02	1.641E+01	1.333E+01	3.970E-02	1.985E-01
Ra-228	5.881E-02	2.656E+01	2.675E+01	2.639E+01	2.639E+01	1.785E+00	1.460E+00	4.421E-03	2.211E-02
Th-228	5.881E-02	1.045E+00	7.897E-01	1.900E+00	1.900E+00	4.814E-02	2.017E-03	8.792E-03	4.396E-02
Th-230	5.293E-01	6.182E+00	6.875E+00	6.959E+00	6.959E+00	4.997E-02	2.337E-03	7.940E-02	3.970E-01

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

Th-232	5.881E-02	6.869E-01	7.639E-01	7.732E-01	7.732E-01	5.552E-03	2.597E-04	8.822E-03	4.411E-02
U-234	5.293E-01	1.518E+01	1.587E+01	1.596E+01	1.596E+01	3.779E-01	5.774E-01	7.940E-03	4.764E-02
U-235	2.411E-02	6.916E-01	7.231E-01	7.270E-01	7.270E-01	1.722E-02	2.630E-02	3.617E-04	2.170E-03
U-238	5.293E-01	1.518E+01	1.587E+01	1.596E+01	1.596E+01	3.779E-01	5.774E-01	7.940E-03	4.764E-02
ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 5
Concent : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Concentration of radionuclides in environmental media
at t = 1.000E+01 years

Radio- Nuclide	Contaminat- ed Zone pCi/g	Surface Soil* pCi/g	Air Par- ticulate pCi/m**3	Well Water pCi/l	Surface Water pCi/l
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ac-227	4.098E-01	0.000E+00	0.000E+00	2.410E-02	3.616E-05
Pa-231	4.098E-01	0.000E+00	0.000E+00	2.410E-02	3.616E-05
Pb-210	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
Po-210	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
Ra-226	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
Ra-228	9.994E-01	0.000E+00	0.000E+00	5.879E-02	8.818E-05
Th-228	9.994E-01	0.000E+00	0.000E+00	5.879E-02	8.818E-05
Th-230	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
Th-232	9.994E-01	0.000E+00	0.000E+00	5.879E-02	8.818E-05
U-234	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
U-235	4.098E-01	0.000E+00	0.000E+00	2.410E-02	3.616E-05
U-238	8.995E+00	0.000E+00	0.000E+00	5.291E-01	7.937E-04
ffffff	ffffff	ffffff	ffffff	ffffff	ffffff

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+01 years*

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	2.410E-02	6.938E-01	7.230E-01	7.347E-01	7.347E-01	2.676E-03	8.853E-04	5.422E-04	3.614E-02
Pa-231	2.410E-02	2.740E+00	2.772E+00	2.776E+00	2.776E+00	9.497E-01	7.826E-04	3.616E-04	3.977E-03
Pb-210	5.291E-01	6.036E+01	6.086E+01	6.161E+01	6.161E+01	3.395E+00	1.043E+00	2.380E-01	7.944E-02
Po-210	5.291E-01	9.842E+00	7.142E+00	1.792E+01	1.792E+01	5.954E+00	3.673E-01	8.483E-02	1.533E+01
Ra-226	5.291E-01	2.400E+02	2.407E+02	2.408E+02	2.408E+02	1.640E+01	1.333E+01	3.968E-02	1.984E-01
Ra-228	5.879E-02	2.655E+01	2.674E+01	2.638E+01	2.638E+01	1.785E+00	1.460E+00	4.419E-03	2.210E-02
Th-228	5.879E-02	1.044E+00	7.894E-01	1.899E+00	1.899E+00	4.812E-02	2.016E-03	8.788E-03	4.394E-02
Th-230	5.291E-01	6.179E+00	6.873E+00	6.957E+00	6.956E+00	4.995E-02	2.336E-03	7.937E-02	3.968E-01
Th-232	5.879E-02	6.866E-01	7.636E-01	7.729E-01	7.729E-01	5.550E-03	2.596E-04	8.819E-03	4.409E-02
U-234	5.291E-01	1.517E+01	1.587E+01	1.595E+01	1.595E+01	3.778E-01	5.772E-01	7.937E-03	4.762E-02
U-235	2.410E-02	6.913E-01	7.229E-01	7.267E-01	7.267E-01	1.721E-02	2.629E-02	3.616E-04	2.169E-03
U-238	5.291E-01	1.517E+01	1.587E+01	1.595E+01	1.595E+01	3.778E-01	5.772E-01	7.937E-03	4.762E-02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 6
Concent : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

	Contaminat- ed Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
Radio- Nuclide	AAAAA pCi/g	AAAAA pCi/g	AAAAA pCi/m*3	AAAAA pCi/l	AAAAA pCi/l
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	4.093E-01	0.000E+00	0.000E+00	2.408E-02	3.612E-05
Pa-231	4.093E-01	0.000E+00	0.000E+00	2.408E-02	3.612E-05
Pb-210	8.985E+00	0.000E+00	0.000E+00	5.285E-01	7.928E-04
Po-210	8.985E+00	0.000E+00	0.000E+00	5.285E-01	7.928E-04
Ra-226	8.985E+00	0.000E+00	0.000E+00	5.285E-01	7.928E-04
Ra-228	9.983E-01	0.000E+00	0.000E+00	5.873E-02	8.809E-05
Th-228	9.983E-01	0.000E+00	0.000E+00	5.873E-02	8.809E-05
Th-230	8.985E+00	0.000E+00	0.000E+00	5.285E-01	7.928E-04
Th-232	9.983E-01	0.000E+00	0.000E+00	5.873E-02	8.809E-05
U-234	8.985E+00	0.000E+00	0.000E+00	5.285E-01	7.928E-04

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

U-235 4.093E-01 0.000E+00 0.000E+00 2.408E-02 3.612E-05
U-238 8.985E+00 0.000E+00 0.000E+00 5.285E-01 7.928E-04
ffffff fffffff fffffff fffffff fffffff fffffff
*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+01 years*

	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
Ac-227	2.408E-02	6.930E-01	7.222E-01	7.339E-01	7.339E-01	2.673E-03	8.843E-04	5.416E-04	3.610E-02
Pa-231	2.408E-02	2.737E+00	2.769E+00	2.772E+00	2.772E+00	9.487E-01	7.817E-04	3.612E-04	3.973E-03
Pb-210	5.285E-01	6.030E+01	6.079E+01	6.155E+01	6.155E+01	3.391E+00	1.042E+00	2.377E-01	7.935E-02
Po-210	5.285E-01	9.831E+00	7.134E+00	1.790E+01	1.790E+01	5.948E+00	3.669E-01	8.474E-02	1.531E+01
Ra-226	5.285E-01	2.398E+02	2.405E+02	2.405E+02	2.405E+02	1.638E+01	1.331E+01	3.964E-02	1.982E-01
Ra-228	5.873E-02	2.652E+01	2.671E+01	2.635E+01	2.635E+01	1.783E+00	1.458E+00	4.415E-03	2.207E-02
Th-228	5.873E-02	1.043E+00	7.885E-01	1.897E+00	1.897E+00	4.807E-02	2.014E-03	8.778E-03	4.389E-02
Th-230	5.285E-01	6.173E+00	6.865E+00	6.949E+00	6.949E+00	4.989E-02	2.334E-03	7.928E-02	3.964E-01
Th-232	5.873E-02	6.858E-01	7.628E-01	7.721E-01	7.721E-01	5.544E-03	2.593E-04	8.809E-03	4.404E-02
U-234	5.285E-01	1.516E+01	1.585E+01	1.593E+01	1.593E+01	3.774E-01	5.766E-01	7.928E-03	4.757E-02
U-235	2.408E-02	6.905E-01	7.221E-01	7.259E-01	7.259E-01	1.719E-02	2.627E-02	3.612E-04	2.167E-03
U-238	5.285E-01	1.516E+01	1.585E+01	1.593E+01	1.593E+01	3.774E-01	5.766E-01	7.928E-03	4.757E-02
ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff	ffffff

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 7
Concent : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Concentration of radionuclides in environmental media
at t = 1.000E+02 years

Contaminat- ed Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
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[illegible]

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 8
Concent : Cabot Groundwater Model+.MB+30D Cutoff File: CABOTGW1.RAD

Concentration of radionuclides in environmental media
at t = 3.000E+02 years

	Contaminat- ed Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
Radio- Nuclide	AAAAA pCi/g	AAAAA pCi/g	AAAAA pCi/m**3	AAAAA pCi/l	AAAAA pCi/l
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	4.032E-01	0.000E+00	0.000E+00	2.371E-02	3.557E-05
Pa-231	4.032E-01	0.000E+00	0.000E+00	2.371E-02	3.557E-05
Pb-210	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
Po-210	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
Ra-226	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
Ra-228	9.834E-01	0.000E+00	0.000E+00	5.783E-02	8.675E-05
Th-228	9.834E-01	0.000E+00	0.000E+00	5.783E-02	8.675E-05
Th-230	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
Th-232	9.834E-01	0.000E+00	0.000E+00	5.783E-02	8.675E-05
U-234	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
U-235	4.032E-01	0.000E+00	0.000E+00	2.371E-02	3.557E-05
U-238	8.851E+00	0.000E+00	0.000E+00	5.205E-01	7.808E-04
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+02 years*

	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	2.371E-02	6.827E-01	7.114E-01	7.229E-01	7.229E-01	2.633E-03	8.711E-04	5.334E-04	3.555E-02

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

Pa-231	2.371E-02	2.696E+00	2.727E+00	2.731E+00	2.731E+00	9.345E-01	7.700E-04	3.557E-04	3.912E-03
Pb-210	5.205E-01	5.940E+01	5.988E+01	6.063E+01	6.063E+01	3.341E+00	1.026E+00	2.341E-01	7.815E-02
Po-210	5.205E-01	9.684E+00	7.028E+00	1.763E+01	1.763E+01	5.859E+00	3.614E-01	8.345E-02	1.508E+01
Ra-226	5.205E-01	2.362E+02	2.369E+02	2.370E+02	2.370E+02	1.614E+01	1.312E+01	3.904E-02	1.952E-01
Ra-228	5.783E-02	2.613E+01	2.631E+01	2.595E+01	2.595E+01	1.756E+00	1.436E+00	4.348E-03	2.174E-02
Th-228	5.783E-02	1.027E+00	7.767E-01	1.868E+00	1.868E+00	4.735E-02	1.984E-03	8.645E-03	4.323E-02
Th-230	5.205E-01	6.080E+00	6.762E+00	6.845E+00	6.845E+00	4.915E-02	2.299E-03	7.808E-02	3.904E-01
Th-232	5.783E-02	6.756E-01	7.514E-01	7.605E-01	7.605E-01	5.461E-03	2.554E-04	8.675E-03	4.338E-02
U-234	5.205E-01	1.493E+01	1.561E+01	1.570E+01	1.570E+01	3.717E-01	5.679E-01	7.808E-03	4.685E-02
U-235	2.371E-02	6.802E-01	7.113E-01	7.150E-01	7.150E-01	1.693E-02	2.587E-02	3.557E-04	2.134E-03
U-238	5.205E-01	1.493E+01	1.561E+01	1.570E+01	1.570E+01	3.717E-01	5.679E-01	7.808E-03	4.685E-02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.									
For livestock fodder, consumption time is t minus meat or milk storage time.									

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.
1RESRAD, Version 5.82 T" Limit = 30 days 01/20/00 11:36 Page 9
Concent : Cabot Groundwater Model+ MB+30D Cutoff File: CABOTGW1.RAD

Concentration of radionuclides in environmental media
at t = 1.000E+03 years

	Contaminat- ed Zone	Surface Soil*	Air Par- ticulate	Well Water	Surface Water
Radio- Nuclide	AAAAA pCi/g	AAAAA pCi/g	AAAAA pCi/m**3	AAAAA pCi/l	AAAAA pCi/l
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	3.878E-01	0.000E+00	0.000E+00	2.280E-02	3.421E-05
Pa-231	3.878E-01	0.000E+00	0.000E+00	2.280E-02	3.421E-05
Pb-210	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
Po-210	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
Ra-226	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
Ra-228	9.458E-01	0.000E+00	0.000E+00	5.562E-02	8.343E-05
Th-228	9.458E-01	0.000E+00	0.000E+00	5.562E-02	8.343E-05
Th-230	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
Th-232	9.458E-01	0.000E+00	0.000E+00	5.562E-02	8.343E-05
U-234	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
U-235	3.878E-01	0.000E+00	0.000E+00	2.280E-02	3.421E-05
U-238	8.512E+00	0.000E+00	0.000E+00	5.006E-01	7.509E-04
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Cases B, C, D. RESRAD 5.82 Concentration Report. Cabot GW model with following changes: Mass Balance model used, 30 day cutoff.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media at t = 1.000E+03 years*									
	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
Radio- Nuclide	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/kg	AAAAA pCi/l	AAAAA pCi/kg	AAAAA pCi/kg
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ac-227	2.280E-02	6.565E-01	6.842E-01	6.953E-01	6.953E-01	2.532E-03	8.377E-04	5.130E-04	3.419E-02
Pa-231	2.280E-02	2.593E+00	2.623E+00	2.627E+00	2.627E+00	8.987E-01	7.406E-04	3.421E-04	3.763E-03
Pb-210	5.006E-01	5.712E+01	5.759E+01	5.831E+01	5.831E+01	3.213E+00	9.871E-01	2.252E-01	7.516E-02
Po-210	5.006E-01	9.314E+00	6.759E+00	1.696E+01	1.696E+01	5.635E+00	3.476E-01	8.026E-02	1.450E+01
Ra-226	5.006E-01	2.272E+02	2.278E+02	2.279E+02	2.279E+02	1.552E+01	1.261E+01	3.754E-02	1.877E-01
Ra-228	5.562E-02	2.513E+01	2.531E+01	2.496E+01	2.496E+01	1.689E+00	1.381E+00	4.181E-03	2.091E-02
Th-228	5.562E-02	9.881E-01	7.470E-01	1.797E+00	1.797E+00	4.554E-02	1.908E-03	8.314E-03	4.157E-02
Th-230	5.006E-01	5.848E+00	6.504E+00	6.583E+00	6.583E+00	4.727E-02	2.211E-03	7.509E-02	3.754E-01
Th-232	5.562E-02	6.497E-01	7.226E-01	7.314E-01	7.314E-01	5.252E-03	2.456E-04	8.343E-03	4.172E-02
U-234	5.006E-01	1.436E+01	1.502E+01	1.510E+01	1.510E+01	3.575E-01	5.462E-01	7.509E-03	4.505E-02
U-235	2.280E-02	6.542E-01	6.841E-01	6.877E-01	6.877E-01	1.629E-02	2.488E-02	3.421E-04	2.052E-03
U-238	5.006E-01	1.436E+01	1.502E+01	1.510E+01	1.510E+01	3.575E-01	5.462E-01	7.509E-03	4.505E-02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters,
i.e. using parameters appearing in the input screen when the pathways are active.
OC:\MODELS\RESRAD~1\RESMAIN3.EXE execution time = 9.77 seconds

Case B: Scenario Specific Dose Conversion Factors From DandD 1.0. Groundwater Concentrations from RESRAD 5.82 CONCENT Report.

Nuclide	These factors are taken from the Case B DandD 1.0 Fortran Report				Note: These factors are derived from the values given in the columns to the left.						
	Drinking	Irrigated	Aquatic	Water Ave.	DCF, Drinking	Irrigation DCF	Aquatic DCF	Concentrations	Drinking	Irrigated	Aquatic
	Water	Food	Food	Activity				from RESRAD	Water	Food	Food
	Ingestion	Ingestion	Ingestion					CONCENT Report	Ingestion	Ingestion	Ingestion
	Dose	Dose	Dose						Dose	Dose	Dose
	(mrem/y)	(mrem/y)	(mrem/y)	(pCi/l)					(mrem/y)	(mrem/y)	(mrem/y)
232Th	6.47E-02	3.60E-02	8.86E-02	4.95E-02	1.31E+00	7.26E-01	1.79E+00	5.87E-02	7.67E-02	4.26E-02	1.05E-01
228Ra	9.40E-04	1.82E-03	9.01E-04	1.37E-03	6.87E-01	1.33E+00	6.58E-01	5.87E-02	4.03E-02	7.80E-02	3.87E-02
228Ac	1.42E-06	2.74E-06	1.36E-06	1.37E-03	1.04E-03	2.00E-03	9.93E-04	5.87E-02	6.08E-05	1.18E-04	5.83E-05
228Th	7.99E-03	3.71E-03	1.09E-02	4.22E-02	1.89E-01	8.80E-02	2.59E-01	5.87E-02	1.11E-02	5.17E-03	1.52E-02
224Ra	7.02E-03	3.60E-03	6.73E-03	4.01E-02	1.75E-01	8.97E-02	1.68E-01	5.87E-02	1.03E-02	5.27E-03	9.86E-03
220Rn	0.00E+00	0.00E+00	0.00E+00	4.01E-02	0.00E+00	0.00E+00	0.00E+00	5.87E-02	0.00E+00	0.00E+00	0.00E+00
216Po	0.00E+00	0.00E+00	0.00E+00	4.01E-02	0.00E+00	0.00E+00	0.00E+00	5.87E-02	0.00E+00	0.00E+00	0.00E+00
212Pb	8.68E-04	4.51E-04	1.19E-03	3.99E-02	2.18E-02	1.13E-02	2.98E-02	5.87E-02	1.28E-03	6.64E-04	1.75E-03
212Bi	2.03E-05	1.05E-05	2.77E-05	3.99E-02	5.08E-04	2.64E-04	6.96E-04	5.87E-02	2.98E-05	1.55E-05	4.09E-05
212Po	0.00E+00	0.00E+00	0.00E+00	2.55E-02	0.00E+00	0.00E+00	0.00E+00	3.82E-02	0.00E+00	0.00E+00	0.00E+00
208Tl	0.00E+00	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00	0.00E+00	2.06E-02	0.00E+00	0.00E+00	0.00E+00
235U	2.94E+00	2.17E+00	2.01E+00	2.31E+01	1.27E-01	9.39E-02	8.71E-02	2.41E-02	3.07E-03	2.26E-03	2.10E-03
231Th	1.47E-02	1.04E-02	2.01E-02	2.28E+01	6.46E-04	4.58E-04	8.85E-04	2.41E-02	1.56E-05	1.10E-05	2.13E-05
231Pa	3.89E+01	2.16E+01	5.85E+00	7.68E+00	5.06E+00	2.81E+00	7.63E-01	2.41E-02	1.22E-01	6.78E-02	1.84E-02
227Ac	3.79E-01	7.16E-01	1.30E-01	5.64E-02	6.73E+00	1.27E+01	2.30E+00	2.41E-02	1.62E-01	3.06E-01	5.55E-02
223Fr	3.21E-06	6.06E-06	1.10E-06	7.78E-04	4.12E-03	7.79E-03	1.41E-03	3.37E-04	1.39E-06	2.62E-06	4.76E-07
227Th	7.86E-04	1.74E-03	1.08E-03	4.31E-02	1.82E-02	4.03E-02	2.50E-02	2.41E-02	4.39E-04	9.71E-04	6.01E-04
223Ra	1.14E-02	2.90E-02	1.10E-02	3.63E-02	3.15E-01	7.99E-01	3.02E-01	2.41E-02	7.59E-03	1.92E-02	7.27E-03
219Rn	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
215Po	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
211Pb	9.12E-06	2.31E-05	8.74E-06	3.63E-02	2.51E-04	6.38E-04	2.41E-04	2.41E-02	6.05E-06	1.54E-05	5.80E-06
211Bi	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
211Po	0.00E+00	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00
207Tl	0.00E+00	0.00E+00	0.00E+00	3.62E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
238U	6.17E+01	4.55E+01	4.22E+01	5.06E+02	1.22E-01	8.99E-02	8.34E-02	5.29E-01	6.44E-02	4.75E-02	4.41E-02
234Th	2.51E+00	2.14E+00	3.44E+00	3.85E+02	6.53E-03	5.57E-03	8.94E-03	5.29E-01	3.45E-03	2.94E-03	4.73E-03

Case B.

Program : DandD Version 1.0
Session : Case B.
Description :
Case B.

Executed : 03/12/00 at 12:31:43

NRC Report

Residential Input Section

Execution Options

=====
History file will be generated.
Implicit progeny doses will not be included with explicit parent.
Concentration data will be calculated.
Concentrations of radionuclides in equilibrium chains will be
equilibrated based on initial concentration of parent.

Initial Radionuclide Activities

=====
Chain pCi/gram
=====

232Th+C	1.0000
235U+C	0.4100
238U+C	9.0000

Code-Generated Radionuclide Activities

=====
Chain pCi/gram
=====

232Th	1.0000E+000
228Ra	1.0000E+000
228Ac	1.0000E+000
228Th	1.0000E+000
224Ra	1.0000E+000
220Rn	1.0000E+000
216Po	1.0000E+000
212Pb	1.0000E+000
212Bi	1.0000E+000
212Po	6.4070E-001
208Tl	3.5930E-001
235U	4.1000E-001
231Th	4.1000E-001
231Pa	4.1002E-001
227Ac	4.1002E-001
223Fr	5.6583E-003
227Th	4.0436E-001
223Ra	4.1002E-001

Case B.

219Rn	4.1002E-001
215Po	4.1002E-001
211Pb	4.1002E-001
211Bi	4.1002E-001
211Po	1.1481E-003
207Tl	4.0887E-001
238U	9.0000E+000
234Th	9.0000E+000
234mPa	8.9820E+000
234Pa	1.8000E-002
234U	9.0005E+000
230Th	9.0006E+000
226Ra	9.0007E+000
222Rn	9.0007E+000
218Po	9.0007E+000
214Pb	8.9989E+000
218At	1.8001E-003
214Bi	9.0007E+000
214Po	8.9989E+000
210Pb	9.0007E+000
210Bi	9.0007E+000
210Po	9.0007E+000

Basic Parameters

Name	Value	Units	Default
'Floor Dust'	0.1599	g/m^2	0.1599
'Unsaturated Zone'	1.2288	m	1.2288
'Layer Porosity'	0.4599	None	0.4599
'Unsaturated Porosity'	0.4599	None	0.4599
'Surface Layer Ratio'	0.1626	None	0.1626
'Unsaturated Ratio'	0.1626	None	0.1626
'Infiltration Rate'	0.2526	m/year	0.2526
'Irrigation Rate'	0.4380	L/m^2*days	1.2900
'End Time'	365.2500	days	365250.0000

Residential Output Section

Maximum Annual TEDE

This scenario started 0.00 year(s) from now
and ran for 1.00 year(s).

The peak dose of 9.50E+002 TEDE (mrem) occurred 1.00 year(s) after
license termination.

Case B.

Pathway Component of
Maximum Annual Dose

=====

Pathway	TEDE (mrem)	Percentage
External	4.91E+001	5.17
Inhalation	6.64E-001	0.07
Agricult.	4.61E+002	48.53
Soil	1.45E+000	0.15
Drinking	1.81E+002	19.08
Irrigated	1.26E+002	13.29
Aquatic	1.30E+002	13.70
Total	9.50E+002	100.00

Radionuclide Component of
Maximum Annual Dose

=====

Radionuclide	TEDE (mrem)	Percentage
232Th	1.07E+001	1.12
228Ra	5.90E+000	0.62
228Ac	2.52E+000	0.27
228Th	1.56E+000	0.16
224Ra	1.48E+000	0.16
220Rn	1.01E-003	0.00
216Po	4.44E-005	0.00
212Pb	5.13E-001	0.05
212Bi	4.93E-001	0.05
212Po	0.00E+000	0.00
208Tl	3.17E+000	0.33
235U	7.77E+000	0.82
231Th	5.50E-002	0.01
231Pa	8.29E+001	8.74
227Ac	2.35E+001	2.47
223Fr	7.19E-004	0.00
227Th	1.61E-001	0.02
223Ra	1.23E+000	0.13
219Rn	5.76E-002	0.01
215Po	1.86E-004	0.00
211Pb	5.54E-002	0.01
211Bi	4.76E-002	0.01
211Po	2.35E-005	0.00
207Tl	3.54E-003	0.00
238U	1.60E+002	16.87
234Th	8.74E+000	0.92
234mPa	3.43E-001	0.04
234Pa	9.11E-002	0.01
234U	1.78E+002	18.78
230Th	1.93E+001	2.03
226Ra	4.92E+001	5.19
222Rn	9.32E-003	0.00
218Po	2.16E-004	0.00

Case B.

214Pb	5.54E+000	0.58
218At	0.00E+000	0.00
214Bi	3.58E+001	3.77
214Po	1.97E-003	0.00
210Pb	2.28E+002	24.01
210Bi	2.88E-001	0.03
210Po	1.22E+002	12.80

Total	9.50E+002	100.00

Case B DandD 1.0 Fortran Report

Output From Program 'RESIDE'

Residential Scenario

Run Date: 03/12/2000

Run Time: 12:26:42

INPUT DATA:

Title: Case B.

Notes:

History file will be generated.

Implicit progeny doses will not be included with explicit parent.

Concentration data will be calculated.

Concentrations of radionuclides in equilibrium chains will be
equilibrated based on initial concentration of parent.

PARAMETER DATA:

Time Spent Indoors	: 2.4000E+02 d/y
Time Spent Outdoors	: 4.0200E+01 d/y
Time Spent Gardening	: 2.9200E+00 d/y
Total Time in One Year Exposure Period	: 3.6525E+02 d
Total Time in Gardening Period	: 9.0000E+01 d
Weathering Rate for Activity Removal from Plants	: 4.9500E-02 /d
Indoor Shielding Factor	: 5.5200E-01
Outdoor Shielding Factor	: 1.0000E+00
Floor Dust Loading	: 1.5990E-01 g/m ²
Resuspension Factor for Indoor Dust	: 2.8200E-06 /m
Indoor Air-Dust Loading Factor	: 1.4100E-06 g/m ³
Outdoor Air-Dust Loading Factor	: 3.1400E-06 g/m ³
Gardening Air-Dust Loading Factor	: 4.0000E-04 g/m ³
Indoor Volumetric Breathing Rate	: 9.0000E-01 m ³ /h
Outdoor Volumetric Breathing Rate	: 1.4000E+00 m ³ /h
Gardening Volumetric Breathing Rate	: 1.7000E+00 m ³ /h
Soil Ingestion Transfer Rate	: 5.0000E-02 g/d
Drinking Water Ingestion Rate	: 1.3100E+00 L/d
Drinking Water Consumption Period	: 3.6525E+02 d
Surface Soil Layer Thickness	: 1.5000E-01 m
Unsaturated Zone Layer Thickness	: 1.2288E+00 m
Number of Unsaturated Zone Layers	: 1
Surface Soil Porosity	: 4.5990E-01
Unsaturated Zone Porosity	: 4.5990E-01
Surface Soil Saturation	: 1.6260E-01
Unsaturated Zone Saturation	: 1.6260E-01
Surface Soil Bulk Soil Density	: 1.4312E+00 g/cm ³
Unsaturated Zone Bulk Soil Density	: 1.4312E+00 g/cm ³
Water Volume Removed From Aquifer Per Year	: 1.1800E+05 L
Volume of Surface Water Pond	: 1.3000E+06 L
Infiltration Rate	: 2.5260E-01 m/y
Area of Cultivated Land	: 2.4000E+03 m ²
Irrigation Water Application Rate	: 4.3800E-01 L/m ² -d
Soil Areal Density of Surface Plow Layer	: 2.1468E+02 kg/m ²
Fraction of Diet From Garden	: 1.0000E+00
Human Diet of Leafy Vegetables	: 2.1400E+01 kg/y
Human Diet of Other Vegetables	: 4.4600E+01 kg/y
Human Diet of Fruits	: 5.2800E+01 kg/y

Case B DandD 1.0 Fortran Report

Human Diet of Grains	: 1.4400E+01 kg/y
Human Diet of Beef	: 3.9800E+01 kg/y
Human Diet of Poultry	: 2.5300E+01 kg/y
Human Diet of Milk	: 2.3300E+02 L/y
Human Diet of Eggs	: 1.9100E+01 kg/y
Human Diet of Fish	: 2.0600E+01 kg/y
Consumption Period for Fish	: 3.6525E+02 d
Food Consumption Period for Leafy Vegetables	: 3.6525E+02 d
Food Consumption Period for Other Vegetables	: 3.6525E+02 d
Food Consumption Period for Fruits	: 3.6525E+02 d
Food Consumption Period for Grains	: 3.6525E+02 d
Food Consumption Period for Beef	: 3.6525E+02 d
Food Consumption Period for Poultry	: 3.6525E+02 d
Food Consumption Period for Milk	: 3.6525E+02 d
Food Consumption Period for Eggs	: 3.6525E+02 d
Holdup Period For Leafy Vegetables	: 1.0000E+00 d
Holdup Period For Other Vegetables	: 1.4000E+01 d
Holdup Period For Fruits	: 1.4000E+01 d
Holdup Period For Grains	: 1.4000E+01 d
Holdup Period For Beef	: 2.0000E+01 d
Holdup Period For Poultry	: 1.0000E+00 d
Holdup Period For Milk	: 1.0000E+00 d
Holdup Period For Eggs	: 1.0000E+00 d
Minimum Growing Period For Leafy Vegetables	: 4.5000E+01 d
Minimum Growing Period For Other Vegetables	: 9.0000E+01 d
Minimum Growing Period For Fruits	: 9.0000E+01 d
Minimum Growing Period For Grains	: 9.0000E+01 d
Minimum Growing Period For Beef Forage	: 3.0000E+01 d
Minimum Growing Period For Poultry Forage	: 3.0000E+01 d
Minimum Growing Period For Milk Cow Forage	: 3.0000E+01 d
Minimum Growing Period For Layer Hen Forage	: 3.0000E+01 d
Minimum Growing Period For Beef Grain	: 9.0000E+01 d
Minimum Growing Period For Poultry Grain	: 9.0000E+01 d
Minimum Growing Period For Milk Cow Grain	: 9.0000E+01 d
Minimum Growing Period For Layer Hen Grain	: 9.0000E+01 d
Minimum Growing Period For Beef Hay	: 4.5000E+01 d
Minimum Growing Period For Poultry Hay	: 4.5000E+01 d
Minimum Growing Period For Milk Cow Hay	: 4.5000E+01 d
Minimum Growing Period For Layer Hen Hay	: 4.5000E+01 d
Time Period For Feeding Forage to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Forage to Poultry	: 3.6525E+02 d
Time Period For Feeding Forage to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Forage to Layer Hens	: 3.6525E+02 d
Time Period For Feeding Grain to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Grain to Poultry	: 3.6525E+02 d
Time Period For Feeding Grain to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Grain to Layer Hens	: 3.6525E+02 d
Time Period For Feeding Hay to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Hay to Poultry	: 3.6525E+02 d
Time Period For Feeding Hay to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Hay to Layer Hens	: 3.6525E+02 d
Interception Fraction For Leafy Vegetables	: 3.4950E-01

Case B DandD 1.0 Fortran Report

Interception Fraction For Other Vegetables	: 3.4980E-01
Interception Fraction For Fruits	: 3.4970E-01
Interception Fraction For Grains	: 3.4990E-01
Interception Fraction For Beef Forage	: 3.4950E-01
Interception Fraction For Poultry Forage	: 3.4950E-01
Interception Fraction For Milk Cow Forage	: 3.4950E-01
Interception Fraction For Layer Hen Forage	: 3.4950E-01
Interception Fraction For Beef Grain	: 3.4970E-01
Interception Fraction For Poultry Grain	: 3.4970E-01
Interception Fraction For Milk Cow Grain	: 3.4970E-01
Interception Fraction For Layer Hen Grain	: 3.4970E-01
Interception Fraction For Beef Hay	: 3.4950E-01
Interception Fraction For Poultry Hay	: 3.4950E-01
Interception Fraction For Milk Cow Hay	: 3.4950E-01
Interception Fraction For Layer Hen Hay	: 3.4950E-01
Translocation Factor For Leafy Vegetables	: 1.0000E+00
Translocation Factor For Other Vegetables	: 1.0000E-01
Translocation Factor For Fruits	: 1.0000E-01
Translocation Factor For Grains	: 1.0000E-01
Translocation Factor For Beef Forage	: 1.0000E+00
Translocation Factor For Poultry Forage	: 1.0000E+00
Translocation Factor For Milk Cow Forage	: 1.0000E+00
Translocation Factor For Layer Hen Forage	: 1.0000E+00
Translocation Factor For Beef Grain	: 1.0000E-01
Translocation Factor For Poultry Grain	: 1.0000E-01
Translocation Factor For Milk Cow Grain	: 1.0000E-01
Translocation Factor For Layer Hen Grain	: 1.0000E-01
Translocation Factor For Beef Hay	: 1.0000E+00
Translocation Factor For Poultry Hay	: 1.0000E+00
Translocation Factor For Milk Cow Hay	: 1.0000E+00
Translocation Factor For Layer Hen Hay	: 1.0000E+00
Forage Fraction Consumed By Beef Cattle	: 1.0000E+00
Forage Fraction Consumed By Poultry	: 1.0000E+00
Forage Fraction Consumed By Milk Cows	: 1.0000E+00
Forage Fraction Consumed By Layer Hens	: 1.0000E+00
Grain Fraction Consumed By Beef Cattle	: 1.0000E+00
Grain Fraction Consumed By Poultry	: 1.0000E+00
Grain Fraction Consumed By Milk Cows	: 1.0000E+00
Grain Fraction Consumed By Layer Hens	: 1.0000E+00
Hay Fraction Consumed By Beef Cattle	: 1.0000E+00
Hay Fraction Consumed By Poultry	: 1.0000E+00
Hay Fraction Consumed By Milk Cows	: 1.0000E+00
Hay Fraction Consumed By Layer Hens	: 1.0000E+00
Water Fraction Consumed By Beef Cattle	: 1.0000E+00
Water Fraction Consumed By Poultry	: 1.0000E+00
Water Fraction Consumed By Milk Cows	: 1.0000E+00
Water Fraction Consumed By Layer Hens	: 1.0000E+00
Crop Yield For Leafy Vegetables	: 2.8892E+00 kg/m^2
Crop Yield For Other Vegetables	: 2.4000E+00 kg/m^2
Crop Yield For Fruits	: 2.3673E+00 kg/m^2
Crop Yield For Grains	: 3.9040E-01 kg/m^2
Crop Yield For Beef Cattle Forage	: 1.8868E+00 kg/m^2

Case B DandD 1.0 Fortran Report

Crop Yield For Poultry Forage	: 1.8868E+00 kg/m^2
Crop Yield For Milk Cow Forage	: 1.8868E+00 kg/m^2
Crop Yield For Layer Hen Forage	: 1.8868E+00 kg/m^2
Crop Yield For Beef Cattle Grain	: 6.5680E-01 kg/m^2
Crop Yield For Poultry Grain	: 6.5680E-01 kg/m^2
Crop Yield For Milk Cow Grain	: 6.5680E-01 kg/m^2
Crop Yield For Layer Hen Grain	: 6.5680E-01 kg/m^2
Crop Yield For Beef Cattle Hay	: 1.8868E+00 kg/m^2
Crop Yield For Poultry Hay	: 1.8868E+00 kg/m^2
Crop Yield For Milk Cow Hay	: 1.8868E+00 kg/m^2
Crop Yield For Layer Hen Hay	: 1.8868E+00 kg/m^2
Wet-to-Dry Weight Conversion Factor For Leafy Vegetables	: 1.3360E-01
Wet-to-Dry Weight Conversion Factor For Other Vegetables	: 1.6200E-01
Wet-to-Dry Weight Conversion Factor For Fruits	: 2.8490E-01
Wet-to-Dry Weight Conversion Factor For Grains	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Poultry Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Poultry Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Poultry Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Hay	: 2.5180E-01
Animal Feed Intake Rate For Forage Consumed By Beef Cattle	: 8.1330E+00 kg/d
Animal Feed Intake Rate For Forage Consumed By Poultry	: 5.6200E-02 kg/d
Animal Feed Intake Rate For Forage Consumed By Milk Cows	: 3.5165E+01 kg/d
Animal Feed Intake Rate For Forage Consumed By Layer Hens	: 7.5500E-02 kg/d
Animal Feed Intake Rate For Grain Consumed By Beef Cattle	: 2.4188E+00 kg/d
Animal Feed Intake Rate For Grain Consumed By Poultry	: 6.3000E-02 kg/d
Animal Feed Intake Rate For Grain Consumed By Milk Cows	: 1.9466E+00 kg/d
Animal Feed Intake Rate For Grain Consumed By Layer Hens	: 6.1000E-02 kg/d
Animal Feed Intake Rate For Hay Consumed By Beef Cattle	: 1.6253E+01 kg/d
Animal Feed Intake Rate For Hay Consumed By Poultry	: 0.0000E+00 kg/d
Animal Feed Intake Rate For Hay Consumed By Milk Cows	: 2.6109E+01 kg/d
Animal Feed Intake Rate For Hay Consumed By Layer Hens	: 0.0000E+00 kg/d
Water Intake Rate For Beef Cattle	: 5.0000E+01 L/d
Water Intake Rate For Poultry	: 3.0000E-01 L/d
Water Intake Rate For Milk Cows	: 6.0000E+01 L/d
Water Intake Rate For Layer Hens	: 3.0000E-01 L/d
Water Intake Consumption Period for Beef Cattle	: 3.6525E+02 d
Water Intake Consumption Period for Poultry	: 3.6525E+02 d
Water Intake Consumption Period for Milk Cows	: 3.6525E+02 d
Water Intake Consumption Period for Layer Hens	: 3.6525E+02 d
Soil Intake Fraction For Beef Cattle	: 2.0000E-02
Soil Intake Fraction For Poultry	: 1.0000E-01
Soil Intake Fraction For Milk Cows	: 2.0000E-02
Soil Intake Fraction For Layer Hens	: 1.0000E-01
Plant Mass Loading Factor For Leafy Vegetables	: 1.0000E-01 g/g

Case B DandD 1.0 Fortran Report

Plant Mass Loading Factor For Other Vegetables	: 1.0000E-01 g/g
Plant Mass Loading Factor For Fruits	: 1.0000E-01 g/g
Plant Mass Loading Factor For Grains	: 1.0000E-01 g/g
Plant Mass Loading Factor For Beef Cattle Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Beef Cattle Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Beef Cattle Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Hay	: 1.0000E-01 g/g
Fraction of Carbon in Beef	: 3.6000E-01
Fraction of Carbon in Poultry	: 1.8000E-01
Fraction of Carbon in Milk	: 6.0000E-02
Fraction of Carbon in Eggs	: 1.6000E-01
Fraction of Carbon in Beef Cattle Forage	: 1.1000E-01
Fraction of Carbon in Poultry Forage	: 1.1000E-01
Fraction of Carbon in Milk Cow Forage	: 1.1000E-01
Fraction of Carbon in Layer Hen Forage	: 1.1000E-01
Fraction of Carbon in Beef Cattle Grain	: 4.0000E-01
Fraction of Carbon in Poultry Grain	: 4.0000E-01
Fraction of Carbon in Milk Cow Grain	: 4.0000E-01
Fraction of Carbon in Layer Hen Grain	: 4.0000E-01
Fraction of Carbon in Beef Cattle Hay	: 7.0000E-02
Fraction of Carbon in Poultry Hay	: 7.0000E-02
Fraction of Carbon in Milk Cow Hay	: 7.0000E-02
Fraction of Carbon in Layer Hen Hay	: 7.0000E-02
Fraction of Carbon in Soil	: 3.0000E-02
Specific Activity Equivalence of Animal	: 1.0000E+00
Fraction of Hydrogen in Leafy Vegetables	: 1.0000E-01
Fraction of Hydrogen in Other Vegetables	: 1.0000E-01
Fraction of Hydrogen in Fruits	: 1.0000E-01
Fraction of Hydrogen in Grains	: 6.8000E-02
Fraction of Hydrogen in Beef	: 1.0000E-01
Fraction of Hydrogen in Poultry	: 1.0000E-01
Fraction of Hydrogen in Milk	: 1.1000E-01
Fraction of Hydrogen in Eggs	: 1.1000E-01
Fraction of Hydrogen in Beef Cattle Forage	: 1.0000E-01
Fraction of Hydrogen in Poultry Forage	: 1.0000E-01
Fraction of Hydrogen in Milk Cow Forage	: 1.0000E-01
Fraction of Hydrogen in Layer Hen Forage	: 1.0000E-01
Fraction of Hydrogen in Beef Cattle Grain	: 6.8000E-02
Fraction of Hydrogen in Poultry Grain	: 6.8000E-02
Fraction of Hydrogen in Milk Cow Grain	: 6.8000E-02
Fraction of Hydrogen in Layer Hen Grain	: 6.8000E-02
Fraction of Hydrogen in Beef Cattle Hay	: 1.0000E-01
Fraction of Hydrogen in Poultry Hay	: 1.0000E-01
Fraction of Hydrogen in Milk Cow Hay	: 1.0000E-01

Case B DandD 1.0 Fortran Report

Fraction of Hydrogen in Layer Hen Hay : 1.0000E-01
Fraction of Hydrogen in Soil : 5.8000E-03
Tritium Equivalence Between Animal and Food : 1.0000E+00
Tritium Equivalence Between Plant and Soil : 1.0000E+00
Tritium Equivalence Between Plant and Water : 1.0000E+00
Moisture Content of Soil : 5.2200E-02 L/kg
TIME DATA:
Start Time : 0.0000E+00 d
End Time : 3.6525E+02 d
DT Size : 3.6525E+02 d
Time Step Size : 3.6525E+02 d
Write results every : 1 calculation times

INITIAL ACTIVITIES:

Number of chains: 3
Chain Chain Initial
Number Name Activity
(pCi/g)
1 232Th+C 1.0000E+00
2 235U+C 4.1000E-01
3 238U+C 9.0000E+00

Chain No. 1: 232Th in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor (Sv/d)/ (Bq/m**2)	15 cm Dose Rate Factor (Sv/d)/ (Bq/m**3)
Nuclides in chain : 11											
232Th	1	5.1300E+12	1.0000E+00	0	.00000	0	.00000	7.38E-07	4.43E-04	4.76E-14	2.40E-16
228Ra	2	2.1000E+03	1.0000E+00	1	1.00000	0	.00000	3.88E-07	1.29E-06	0.00E+00	0.00E+00
228Ac	Implicit		1.0000E+00	2	1.00000			5.85E-10	8.33E-08	8.01E-11	2.38E-12
228Th	3	6.9900E+02	1.0000E+00	2	1.00000	0	.00000	1.07E-07	9.23E-05	2.03E-13	3.60E-15
224Ra	4	3.6600E+00	1.0000E+00	3	1.00000	0	.00000	9.89E-08	8.53E-07	8.26E-13	2.26E-14
220Rn	Implicit		1.0000E+00	4	1.00000			0.00E+00	0.00E+00	3.29E-14	9.52E-16
216Po	Implicit		1.0000E+00	4	1.00000			0.00E+00	0.00E+00	1.43E-15	4.21E-17
212Pb	5	4.4300E-01	1.0000E+00	4	1.00000	0	.00000	1.23E-08	4.56E-08	1.23E-11	3.13E-13
212Bi	Implicit		1.0000E+00	5	1.00000			2.87E-10	5.83E-09	1.54E-11	4.63E-13
212Po	Implicit		6.4070E-01	5	.64070			0.00E+00	0.00E+00	0.00E+00	0.00E+00
208Tl	Implicit		3.5930E-01	5	.35930			0.00E+00	0.00E+00	2.58E-10	8.36E-12

Chain No. 2: 235U in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor (Sv/d)/ (Bq/m**2)	15 cm Dose Rate Factor (Sv/d)/ (Bq/m**3)
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Case B DandD 1.0 Fortran Report

Nuclides in chain : 13

235U	1	2.5700E+11	4.1000E-01	0	.00000	0	.00000	7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.0600E+00	4.1000E-01	1	1.00000	0	.00000	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.2000E+07	4.1002E-01	2	1.00000	0	.00000	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.9500E+03	4.1002E-01	3	1.00000	0	.00000	3.80E-06	1.81E-03	1.36E-14	2.26E-16
223Fr	Implicit		5.6583E-03	4	.01380			2.33E-09	1.68E-09	4.88E-12	8.74E-14
227Th	5	1.8700E+01	4.0436E-01	4	.98620	0	.00000	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.1400E+01	4.1002E-01	5	1.00000	4	.01380	1.78E-07	2.12E-06	1.11E-11	2.67E-13
219Rn	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	4.74E-12	1.33E-13
215Po	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	1.51E-14	4.30E-16
211Pb	Implicit		4.1002E-01	6	1.00000			1.42E-10	2.35E-09	4.38E-12	1.26E-13
211Bi	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	3.96E-12	1.10E-13
211Po	Implicit		1.1481E-03	6	.00280			0.00E+00	0.00E+00	6.57E-13	1.94E-14
207Tl	Implicit		4.0887E-01	6	.99720			0.00E+00	0.00E+00	3.25E-13	8.19E-15

Chain No. 3: 238U in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m**2))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m**3))
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Nuclides in chain : 16

238U	1	1.6300E+12	9.0000E+00	0	.00000	0	.00000	6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.4100E+01	9.0000E+00	1	1.00000	0	.00000	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234mPa	Implicit		8.9820E+00	2	.99800			0.00E+00	0.00E+00	1.32E-12	3.62E-14
234Pa	Implicit		1.8000E-02	2	.00200			5.84E-10	2.20E-10	1.59E-10	4.65E-12
234U	3	8.9300E+07	9.0005E+00	2	1.00000	0	.00000	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.8100E+07	9.0006E+00	3	1.00000	0	.00000	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.8400E+05	9.0007E+00	4	1.00000	0	.00000	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.8200E+00	9.0007E+00	5	1.00000	0	.00000	0.00E+00	0.00E+00	3.41E-14	9.81E-16
218Po	Implicit		9.0007E+00	6	1.00000			0.00E+00	0.00E+00	7.67E-16	2.27E-17
214Pb	Implicit		8.9989E+00	6	.99980			1.69E-10	2.11E-09	2.10E-11	5.78E-13
218At	Implicit		1.8001E-03	6	.00020			0.00E+00	0.00E+00	0.00E+00	0.00E+00
214Bi	Implicit		9.0007E+00	6	1.00000			7.64E-11	1.78E-09	1.22E-10	3.77E-12
214Po	Implicit		8.9989E+00	6	.99980			0.00E+00	0.00E+00	7.02E-15	2.07E-16
210Pb	7	8.1500E+03	9.0007E+00	6	1.00000	0	.00000	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.0100E+00	9.0007E+00	7	1.00000	0	.00000	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.3800E+02	9.0007E+00	8	1.00000	0	.00000	5.14E-07	2.54E-06	7.16E-16	2.11E-17

TIMESTEP DATA:

Number of nuclides :	40
Number of time steps :	1
Number of print steps:	1
Timestep of maximum :	1
Day of maximum :	.3652500000E+03
Year of maximum :	.1000000000E+01

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For Period 1: 0.000000000E+00 days to 3.652500000E+02 days
0.000000000E+00 years to 1.000000000E+00 years

Dose Components of Maximum TEDE

Nuclide	External Dose	Inhalation Dose	Agricult. Food Ingestion Dose	Soil Ingestion Dose	Drinking Water Ingestion Dose	Irrigated Food Ingestion Dose	Aquatic Food Ingestion Dose	Total Nuclide Dose	Soil Activity	Water Ave. Activity
	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(pCi/g)	(pCi/l)
Dose Components										
232Th	2.53370E-04	1.00875E-01	1.03460E+01	3.86544E-02	6.47094E-02	3.59600E-02	8.86012E-02	1.06751E+01	1.00000E+00	4.95276E-02
228Ra	0.00000E+00	2.93743E-04	5.87615E+00	2.03224E-02	9.40163E-04	1.81729E-03	9.01102E-04	5.90043E+00	1.00000E+00	1.36870E-03
228Ac	2.51258E+00	1.89681E-05	8.85966E-03	3.06407E-05	1.41751E-06	2.73999E-06	1.35862E-06	2.52150E+00	1.00000E+00	1.36870E-03
228Th	3.80055E-03	2.10174E-02	1.51182E+00	5.60436E-03	7.98575E-03	3.71023E-03	1.09342E-02	1.56488E+00	1.00000E+00	4.21569E-02
224Ra	2.38590E-02	1.94235E-04	1.43581E+00	5.18011E-03	7.02345E-03	3.60000E-03	6.73164E-03	1.48240E+00	1.00000E+00	4.01135E-02
220Rn	1.00503E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.00503E-03	1.00000E+00	4.01135E-02
216Po	4.44453E-05	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	4.44453E-05	1.00000E+00	4.01135E-02
212Pb	3.30436E-01	1.03835E-05	1.79505E-01	6.44240E-04	8.68233E-04	4.50967E-04	1.18880E-03	5.13104E-01	1.00000E+00	3.98720E-02
212Bi	4.88792E-01	1.32754E-06	4.18845E-03	1.50323E-05	2.02588E-05	1.05226E-05	2.77387E-05	4.93056E-01	1.00000E+00	3.98720E-02
212Po	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	6.40700E-01	2.55460E-02
208Tl	3.17108E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.17108E+00	3.59300E-01	1.43260E-02
235U	1.40240E-01	3.09956E-03	5.10011E-01	1.54403E-03	2.93533E+00	2.16642E+00	2.00955E+00	7.76620E+00	4.10000E-01	2.30603E+01
231Th	7.27171E-03	2.21264E-08	2.49587E-03	7.83825E-06	1.47098E-02	1.04185E-02	2.01409E-02	5.50447E-02	4.10000E-01	2.27641E+01
231Pa	3.59274E-02	3.23975E-02	1.64857E+01	6.14204E-02	3.88720E+01	2.16065E+01	5.85467E+00	8.29486E+01	4.10019E-01	7.67729E+00
227Ac	9.78264E-05	1.68990E-01	2.19816E+01	8.16075E-02	3.79235E-01	7.15856E-01	1.29814E-01	2.34572E+01	4.10019E-01	5.63717E-02
223Fr	5.22081E-04	2.16456E-09	1.85999E-04	6.90528E-07	3.20893E-06	6.05727E-06	1.09843E-06	7.19138E-04	5.65826E-03	7.77930E-04
227Th	9.77571E-02	4.02373E-04	5.86831E-02	2.18147E-04	7.86163E-04	1.73799E-03	1.07643E-03	1.60661E-01	4.04361E-01	4.31134E-02
223Ra	1.15574E-01	1.97933E-04	1.06206E+00	3.82267E-03	1.14324E-02	2.90017E-02	1.09574E-02	1.23305E+00	4.10019E-01	3.62789E-02
219Rn	5.75704E-02	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	5.75704E-02	4.10019E-01	3.62789E-02
215Po	1.86130E-04	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.86130E-04	4.10019E-01	3.62789E-02
211Pb	5.45404E-02	2.19407E-07	8.47262E-04	3.04954E-06	9.12022E-06	2.31362E-05	8.74130E-06	5.54319E-02	4.10019E-01	3.62789E-02
211Bi	4.76146E-02	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	4.76146E-02	4.10019E-01	3.62789E-02
211Pa	2.35130E-05	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	2.35130E-05	1.14805E-03	1.01581E-04
207Tl	3.53520E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.53520E-03	4.08871E-01	3.61773E-02
228U	4.52265E-04	6.55799E-02	1.07127E+01	3.24320E-02	6.16559E+01	4.55053E+01	4.22102E+01	1.60183E+02	9.00000E+00	5.06201E+02
234Th	1.06415E-01	1.94075E-05	5.30095E-01	1.73945E-03	2.51339E+00	2.14317E+00	3.44138E+00	8.73620E+00	9.00000E+00	3.84742E+02
234mPa	3.43262E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.43262E-01	8.98200E+00	3.83973E+02
234Pa	8.83627E-02	9.01723E-10	1.67792E-04	5.50589E-07	7.95566E-04	6.78379E-04	1.08930E-03	9.10943E-02	1.80000E-02	7.69485E-01
234U	1.75785E-03	7.33715E-02	1.19278E+01	3.61108E-02	6.86497E+01	5.06671E+01	4.69982E+01	1.78354E+02	9.00049E+00	5.06229E+02
230Th	5.24513E-03	1.80358E-01	1.86747E+01	6.97715E-02	1.17099E-01	6.55110E-02	1.60334E-01	1.92730E+01	9.00065E+00	4.46919E-01
226Ra	1.34929E-01	4.75488E-03	4.89325E+01	1.68772E-01	3.55900E-04	2.71884E-04	3.41113E-04	4.92419E+01	9.00065E+00	5.61541E-04
222Rn	9.32151E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	9.32151E-03	9.00065E+00	7.43972E+01
214Po	2.15697E-04	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	2.15697E-04	9.00065E+00	7.43972E+01
214Pb	5.49109E+00	4.32362E-06	2.24854E-02	7.96556E-05	2.22546E-02	2.46305E-05	0.00000E+00	5.53594E+00	8.99885E+00	7.43824E+01
218At	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.80013E-03	1.48794E-02

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214Bi	3.58227E+01	3.64814E-06	1.01670E-02	3.60172E-05	1.00627E-02	1.11369E-05	0.00000E+00	3.58430E+01	9.00065E+00	7.43972E+01
214Po	1.96653E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.96653E-03	8.99885E+00	7.43824E+01
210Pb	1.07373E-02	7.52173E-03	2.20897E+02	6.83572E-01	2.13239E+00	1.38774E+00	2.91971E+00	2.28039E+02	9.00065E+00	8.30684E-01
210Bi	1.52983E-02	1.08420E-04	2.66699E-01	8.15572E-04	2.41480E-03	1.68084E-03	4.95959E-04	2.87513E-01	9.00065E+00	7.88447E-01
210Po	2.00493E-04	5.20578E-03	8.93972E+01	2.42314E-01	3.82682E+00	1.88713E+00	2.61987E+01	1.21558E+02	9.00065E+00	4.20544E+00
Totals	4.91247E+01	6.64425E-01	4.60835E+02	1.45472E+00	1.81226E+02	1.26234E+02	1.30065E+02	9.49605E+02		

Component Maximums and Time of Occurrence

Type	Time Step	Maximum Value	Time of Occurrence (days)	(years)	
External	1	4.91247E+01	0.00000E+00	0.00000E+00	
Inhalation	1	6.64425E-01	0.00000E+00	0.00000E+00	
Agricultur	1	4.60835E+02	0.00000E+00	0.00000E+00	
Soil	1	1.45472E+00	0.00000E+00	0.00000E+00	
Drinking	1	1.81226E+02	0.00000E+00	0.00000E+00	
Irrigated	1	1.26234E+02	0.00000E+00	0.00000E+00	
Aquatic	1	1.30065E+02	0.00000E+00	0.00000E+00	
TEDE	1	9.49605E+02	0.00000E+00	0.00000E+00	
232Th	1	2.53370E-04	0.00000E+00	0.00000E+00	Maximum External
232Th	1	1.00875E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
232Th	1	1.03460E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
232Th	1	3.86544E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
232Th	1	6.47094E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
232Th	1	3.59600E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
232Th	1	8.86012E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
232Th	1	1.06751E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
228Ra	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
228Ra	1	2.93743E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
228Ra	1	5.87615E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Ra	1	2.03224E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Ra	1	9.40163E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Ra	1	1.81729E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Ra	1	9.01102E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
228Ra	1	5.90043E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
228Ac	1	2.51258E+00	0.00000E+00	0.00000E+00	Maximum External
228Ac	1	1.89681E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
228Ac	1	8.85966E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Ac	1	3.06407E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Ac	1	1.41751E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Ac	1	2.73999E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Ac	1	1.35862E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
228Ac	1	2.52150E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
228Th	1	3.80055E-03	0.00000E+00	0.00000E+00	Maximum External
228Th	1	2.10174E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
228Th	1	1.51182E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Th	1	5.60436E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Th	1	7.98575E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Th	1	3.71023E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Th	1	1.09342E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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228Th	1	1.56488E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
224Ra	1	2.38590E-02	0.00000E+00	0.00000E+00	Maximum External
224Ra	1	1.94235E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
224Ra	1	1.43581E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
224Ra	1	5.18011E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
224Ra	1	7.02345E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
224Ra	1	3.60000E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
224Ra	1	6.73164E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
224Ra	1	1.48240E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
220Rn	1	1.00503E-03	0.00000E+00	0.00000E+00	Maximum External
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
220Rn	1	1.00503E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
216Po	1	4.44453E-05	0.00000E+00	0.00000E+00	Maximum External
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
216Po	1	4.44453E-05	0.00000E+00	0.00000E+00	Maximum Nuclide
212Pb	1	3.30436E-01	0.00000E+00	0.00000E+00	Maximum External
212Pb	1	1.03835E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
212Pb	1	1.79505E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Pb	1	6.44240E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Pb	1	8.68233E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Pb	1	4.50967E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Pb	1	1.18880E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Pb	1	5.13104E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
212Bi	1	4.88792E-01	0.00000E+00	0.00000E+00	Maximum External
212Bi	1	1.32754E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
212Bi	1	4.18845E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Bi	1	1.50323E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Bi	1	2.02588E-05	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Bi	1	1.05226E-05	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Bi	1	2.77387E-05	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Bi	1	4.93056E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
208Tl	1	3.17108E+00	0.00000E+00	0.00000E+00	Maximum External
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
208Tl	1	3.17108E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
235U	1	1.40240E-01	0.00000E+00	0.00000E+00	Maximum External
235U	1	3.09956E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
235U	1	5.10011E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
235U	1	1.54403E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
235U	1	2.93533E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
235U	1	2.16642E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
235U	1	2.00955E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
235U	1	7.76620E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
231Th	1	7.27171E-03	0.00000E+00	0.00000E+00	Maximum External
231Th	1	2.21264E-08	0.00000E+00	0.00000E+00	Maximum Inhalation
231Th	1	2.49587E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
231Th	1	7.83825E-06	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
231Th	1	1.47098E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
231Th	1	1.04185E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
231Th	1	2.01409E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
231Th	1	5.50447E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
231Pa	1	3.59274E-02	0.00000E+00	0.00000E+00	Maximum External
231Pa	1	3.23975E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
231Pa	1	1.64857E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
231Pa	1	6.14204E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
231Pa	1	3.88720E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
231Pa	1	2.16065E+01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
231Pa	1	5.85467E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
231Pa	1	8.29486E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
227Ac	1	9.78264E-05	0.00000E+00	0.00000E+00	Maximum External
227Ac	1	1.68990E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
227Ac	1	2.19816E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
227Ac	1	8.16075E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
227Ac	1	3.79235E-01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
227Ac	1	7.15856E-01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
227Ac	1	1.29814E-01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
227Ac	1	2.34572E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
223Fr	1	5.22081E-04	0.00000E+00	0.00000E+00	Maximum External
223Fr	1	2.16456E-09	0.00000E+00	0.00000E+00	Maximum Inhalation
223Fr	1	1.85999E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
223Fr	1	6.90528E-07	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
223Fr	1	3.20893E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
223Fr	1	6.05727E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
223Fr	1	1.09843E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
223Fr	1	7.19138E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
227Th	1	9.77571E-02	0.00000E+00	0.00000E+00	Maximum External
227Th	1	4.02373E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
227Th	1	5.86831E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
227Th	1	2.18147E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
227Th	1	7.86163E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
227Th	1	1.73799E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
227Th	1	1.07643E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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227Th	1	1.60661E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
223Ra	1	1.15574E-01	0.00000E+00	0.00000E+00	Maximum External
223Ra	1	1.97933E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
223Ra	1	1.06206E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
223Ra	1	3.82267E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
223Ra	1	1.14324E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
223Ra	1	2.90017E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
223Ra	1	1.09574E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
223Ra	1	1.23305E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
219Rn	1	5.75704E-02	0.00000E+00	0.00000E+00	Maximum External
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
219Rn	1	5.75704E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
215Po	1	1.86130E-04	0.00000E+00	0.00000E+00	Maximum External
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
215Po	1	1.86130E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
211Pb	1	5.45404E-02	0.00000E+00	0.00000E+00	Maximum External
211Pb	1	2.19407E-07	0.00000E+00	0.00000E+00	Maximum Inhalation
211Pb	1	8.47262E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Pb	1	3.04954E-06	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Pb	1	9.12022E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Pb	1	2.31362E-05	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Pb	1	8.74130E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Pb	1	5.54319E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
211Bi	1	4.76146E-02	0.00000E+00	0.00000E+00	Maximum External
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Bi	1	4.76146E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
211Po	1	2.35130E-05	0.00000E+00	0.00000E+00	Maximum External
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Po	1	2.35130E-05	0.00000E+00	0.00000E+00	Maximum Nuclide
207Tl	1	3.53520E-03	0.00000E+00	0.00000E+00	Maximum External
207Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
207Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
207T1	1	3.53520E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
238U	1	4.52265E-04	0.00000E+00	0.00000E+00	Maximum External
238U	1	6.55799E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
238U	1	1.07127E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
238U	1	3.24320E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
238U	1	6.16559E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
238U	1	4.55053E+01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
238U	1	4.22102E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
238U	1	1.60183E+02	0.00000E+00	0.00000E+00	Maximum Nuclide
234Th	1	1.06415E-01	0.00000E+00	0.00000E+00	Maximum External
234Th	1	1.94075E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
234Th	1	5.30095E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234Th	1	1.73945E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234Th	1	2.51339E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234Th	1	2.14317E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234Th	1	3.44138E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234Th	1	8.73620E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
234mPa	1	3.43262E-01	0.00000E+00	0.00000E+00	Maximum External
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234mPa	1	3.43262E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
234Pa	1	8.83627E-02	0.00000E+00	0.00000E+00	Maximum External
234Pa	1	9.01723E-10	0.00000E+00	0.00000E+00	Maximum Inhalation
234Pa	1	1.67792E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234Pa	1	5.50589E-07	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234Pa	1	7.95566E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234Pa	1	6.78379E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234Pa	1	1.08930E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234Pa	1	9.10943E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
234U	1	1.75785E-03	0.00000E+00	0.00000E+00	Maximum External
234U	1	7.33715E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
234U	1	1.19278E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234U	1	3.61108E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234U	1	6.86497E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234U	1	5.06671E+01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234U	1	4.69982E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234U	1	1.78354E+02	0.00000E+00	0.00000E+00	Maximum Nuclide
230Th	1	5.24513E-03	0.00000E+00	0.00000E+00	Maximum External
230Th	1	1.80358E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
230Th	1	1.86747E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
230Th	1	6.97715E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
230Th	1	1.17099E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
230Th	1	6.55110E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
230Th	1	1.60334E-01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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230Th	1	1.92730E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
226Ra	1	1.34929E-01	0.00000E+00	0.00000E+00	Maximum External
226Ra	1	4.75488E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
226Ra	1	4.89325E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
226Ra	1	1.68772E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
226Ra	1	3.55900E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
226Ra	1	2.71884E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
226Ra	1	3.41113E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
226Ra	1	4.92419E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
222Rn	1	9.32151E-03	0.00000E+00	0.00000E+00	Maximum External
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
222Rn	1	9.32151E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
218Po	1	2.15697E-04	0.00000E+00	0.00000E+00	Maximum External
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
218Po	1	2.15697E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
214Pb	1	5.49109E+00	0.00000E+00	0.00000E+00	Maximum External
214Pb	1	4.32362E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
214Pb	1	2.24854E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
214Pb	1	7.96556E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Pb	1	2.22546E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Pb	1	2.46305E-05	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Pb	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Pb	1	5.53594E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
214Bi	1	3.58227E+01	0.00000E+00	0.00000E+00	Maximum External
214Bi	1	3.64814E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
214Bi	1	1.01670E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
214Bi	1	3.60172E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Bi	1	1.00627E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Bi	1	1.11369E-05	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Bi	1	3.58430E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
214Po	1	1.96653E-03	0.00000E+00	0.00000E+00	Maximum External
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Po	1	1.96653E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
210Pb	1	1.07373E-02	0.00000E+00	0.00000E+00	Maximum External
210Pb	1	7.52173E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
210Pb	1	2.20897E+02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Pb	1	6.83572E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Pb	1	2.13239E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Pb	1	1.38774E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Pb	1	2.91971E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Pb	1	2.28039E+02	0.00000E+00	0.00000E+00	Maximum Nuclide
210Bi	1	1.52983E-02	0.00000E+00	0.00000E+00	Maximum External
210Bi	1	1.08420E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
210Bi	1	2.66699E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Bi	1	8.15572E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Bi	1	2.41480E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Bi	1	1.68084E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Bi	1	4.95959E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Bi	1	2.87513E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
210Po	1	2.00493E-04	0.00000E+00	0.00000E+00	Maximum External
210Po	1	5.20578E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
210Po	1	8.93972E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Po	1	2.42314E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Po	1	3.82602E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Po	1	1.88713E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Po	1	2.61987E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Po	1	1.21558E+02	0.00000E+00	0.00000E+00	Maximum Nuclide

Case C: Scenario Specific Dose Conversion Factors From DandD 1.0. Groundwater Concentrations from RESRAD 5.82 CONCENT Report.

Nuclide	Note: These factors are taken from the Case C DandD 1.0 Fortran report				Note: these factors are derived from the values given in the columns to the left						
	Drinking	Irrigated	Aquatic	Water Ave.	DCF, Drinking	Irrigation DCF	Aquatic DCF	Concentrations	Drinking	Irrigated	Aquatic
	Water	Food	Food	Activity				from RESRAD	Water	Food	Food
	Ingestion Dose	Ingestion Dose	Ingestion Dose					Concent Report	Ingestion Dose	Ingestion Dose	Ingestion Dose
	(mrem/y)	(mrem/y)	(mrem/y)	(pCi/l)					(mrem/y)	(mrem/y)	(mrem/y)
232Th	6.47E-02	1.13E-02	8.86E-02	4.95E-02	1.31E+00	2.27E-01	1.79E+00	5.87E-02	7.67E-02	1.33E-02	1.05E-01
228Ra	9.40E-04	6.37E-04	9.01E-04	1.37E-03	6.87E-01	4.66E-01	6.58E-01	5.87E-02	4.03E-02	2.74E-02	3.87E-02
228Ac	1.42E-06	9.61E-07	1.36E-06	1.37E-03	1.04E-03	7.02E-04	9.93E-04	5.87E-02	6.08E-05	4.12E-05	5.83E-05
228Th	7.99E-03	1.16E-03	1.09E-02	4.22E-02	1.89E-01	2.76E-02	2.59E-01	5.87E-02	1.11E-02	1.62E-03	1.52E-02
224Ra	7.02E-03	1.24E-03	6.73E-03	4.01E-02	1.75E-01	3.08E-02	1.68E-01	5.87E-02	1.03E-02	1.81E-03	9.86E-03
220Rn	0.00E+00	0.00E+00	0.00E+00	4.01E-02	0.00E+00	0.00E+00	0.00E+00	5.87E-02	0.00E+00	0.00E+00	0.00E+00
216Po	0.00E+00	0.00E+00	0.00E+00	4.01E-02	0.00E+00	0.00E+00	0.00E+00	5.87E-02	0.00E+00	0.00E+00	0.00E+00
212Pb	8.68E-04	1.57E-04	1.19E-03	3.99E-02	2.18E-02	3.94E-03	2.98E-02	5.87E-02	1.28E-03	2.31E-04	1.75E-03
212Bi	2.03E-05	3.66E-06	2.77E-05	3.99E-02	5.08E-04	9.18E-05	6.96E-04	5.87E-02	2.98E-05	5.39E-06	4.09E-05
212Po	0.00E+00	0.00E+00	0.00E+00	2.55E-02	0.00E+00	0.00E+00	0.00E+00	3.82E-02	0.00E+00	0.00E+00	0.00E+00
208Tl	0.00E+00	0.00E+00	0.00E+00	1.43E-02	0.00E+00	0.00E+00	0.00E+00	2.06E-02	0.00E+00	0.00E+00	0.00E+00
235U	2.94E+00	1.05E+00	2.01E+00	2.31E+01	1.27E-01	4.53E-02	8.71E-02	2.41E-02	3.07E-03	1.09E-03	2.10E-03
231Th	1.47E-02	4.73E-03	2.01E-02	2.28E+01	6.46E-04	2.08E-04	8.85E-04	2.41E-02	1.56E-05	5.00E-06	2.13E-05
231Pa	3.89E+01	6.77E+00	5.85E+00	7.68E+00	5.06E+00	8.81E-01	7.63E-01	2.41E-02	1.22E-01	2.12E-02	1.84E-02
227Ac	3.79E-01	2.24E-01	1.30E-01	5.64E-02	6.73E+00	3.98E+00	2.30E+00	2.41E-02	1.62E-01	9.58E-02	5.55E-02
223Fr	3.21E-06	1.90E-06	1.10E-06	7.78E-04	4.12E-03	2.44E-03	1.41E-03	3.37E-04	1.39E-06	8.23E-07	4.76E-07
227Th	7.86E-04	5.44E-04	1.08E-03	4.31E-02	1.82E-02	1.26E-02	2.50E-02	2.41E-02	4.39E-04	3.04E-04	6.01E-04
223Ra	1.14E-02	9.32E-03	1.10E-02	3.63E-02	3.15E-01	2.57E-01	3.02E-01	2.41E-02	7.59E-03	6.18E-03	7.27E-03
219Rn	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
215Po	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
211Pb	9.12E-06	7.43E-06	8.74E-06	3.63E-02	2.51E-04	2.05E-04	2.41E-04	2.41E-02	6.05E-06	4.93E-06	5.80E-06
211Bi	0.00E+00	0.00E+00	0.00E+00	3.63E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
211Po	0.00E+00	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00
207Tl	0.00E+00	0.00E+00	0.00E+00	3.62E-02	0.00E+00	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00
238U	6.17E+01	2.20E+01	4.22E+01	5.06E+02	1.22E-01	4.34E-02	8.34E-02	5.29E-01	6.44E-02	2.29E-02	4.41E-02
234Th	2.51E+00	8.97E-01	3.44E+00	3.85E+02	6.53E-03	2.33E-03	8.94E-03	5.29E-01	3.45E-03	1.23E-03	4.73E-03
234mP	0.00E+00	0.00E+00	0.00E+00	3.84E+02	0.00E+00	0.00E+00	0.00E+00	5.29E-01	0.00E+00	0.00E+00	0.00E+00

Case C: Scenario Specific Dose Conversion Factors From DandD 1.0. Groundwater Concentrations from RESRAD 5.82 CONCENT Report.

234Pa	7.96E-04	2.84E-04	1.09E-03	7.69E-01	1.03E-03	3.69E-04	1.42E-03	8.46E-04	8.74E-07	3.12E-07	1.20E-06
234U	6.86E+01	2.44E+01	4.70E+01	5.06E+02	1.36E-01	4.83E-02	9.28E-02	5.29E-01	7.17E-02	2.55E-02	4.91E-02
230Th	1.17E-01	2.06E-02	1.60E-01	4.47E-01	2.62E-01	4.60E-02	3.59E-01	5.29E-01	1.38E-01	2.43E-02	1.90E-01
226Ra	3.56E-04	1.10E-04	3.41E-04	5.62E-04	6.34E-01	1.95E-01	6.07E-01	5.29E-01	3.35E-01	1.03E-01	3.21E-01
222Rn	0.00E+00	0.00E+00	0.00E+00	7.44E+01	0.00E+00	0.00E+00	0.00E+00	5.29E-01	0.00E+00	0.00E+00	0.00E+00
218Po	0.00E+00	0.00E+00	0.00E+00	7.44E+01	0.00E+00	0.00E+00	0.00E+00	5.29E-01	0.00E+00	0.00E+00	0.00E+00
214Pb	2.23E-02	8.01E-06	0.00E+00	7.44E+01	2.99E-04	1.08E-07	0.00E+00	5.29E-01	1.58E-04	5.69E-08	0.00E+00
218At	0.00E+00	0.00E+00	0.00E+00	1.49E-02	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00
214Bi	1.01E-02	3.62E-06	0.00E+00	7.44E+01	1.35E-04	4.87E-08	0.00E+00	5.29E-01	7.15E-05	2.57E-08	0.00E+00
214Po	0.00E+00	0.00E+00	0.00E+00	7.44E+01	0.00E+00	0.00E+00	0.00E+00	5.29E-01	0.00E+00	0.00E+00	0.00E+00
210Pb	2.13E+00	5.53E-01	2.92E+00	8.31E-01	2.57E+00	6.66E-01	3.51E+00	5.29E-01	1.36E+00	3.52E-01	1.86E+00
210Bi	2.41E-03	6.85E-04	4.96E-04	7.88E-01	3.06E-03	8.69E-04	6.29E-04	5.29E-01	1.62E-03	4.59E-04	3.32E-04
210Po	3.83E+00	1.11E+00	2.62E+01	4.21E+00	9.10E-01	2.65E-01	6.23E+00	5.29E-01	4.81E-01	1.40E-01	3.29E+00

Drinking		
Water	Irrigated food	
2.89E+00	8.38E-01	6.01E+00

Case C.

Program : DandD Version 1.0
Session : Case C
Description :
Case C

Executed : 03/12/00 at 13:18:37

NRC Report

Residential Input Section

Execution Options

=====
History file will be generated.
Implicit progeny doses will not be included with explicit parent.
Concentration data will be calculated.
Concentrations of radionuclides in equilibrium chains will be
equilibrated based on initial concentration of parent.

Initial Radionuclide Activities

=====
Chain pCi/gram
=====

232Th+C	1.0000
235U+C	0.4100
238U+C	9.0000

Code-Generated Radionuclide Activities

=====
Chain pCi/gram
=====

232Th	1.0000E+000
228Ra	1.0000E+000
228Ac	1.0000E+000

Case C.

228Th	1.0000E+000
224Ra	1.0000E+000
220Rn	1.0000E+000
216Po	1.0000E+000
212Pb	1.0000E+000
212Bi	1.0000E+000
212Po	6.4070E-001
208Tl	3.5930E-001
235U	4.1000E-001
231Th	4.1000E-001
231Pa	4.1002E-001
227Ac	4.1002E-001
223Fr	5.6583E-003
227Th	4.0436E-001
223Ra	4.1002E-001
219Rn	4.1002E-001
215Po	4.1002E-001
211Pb	4.1002E-001
211Bi	4.1002E-001
211Po	1.1481E-003
207Tl	4.0887E-001
238U	9.0000E+000
234Th	9.0000E+000
234mPa	8.9820E+000
234Pa	1.8000E-002
234U	9.0005E+000
230Th	9.0006E+000
226Ra	9.0007E+000
222Rn	9.0007E+000
218Po	9.0007E+000
214Pb	8.9989E+000
218At	1.8001E-003
214Bi	9.0007E+000
214Po	8.9989E+000
210Pb	9.0007E+000
210Bi	9.0007E+000
210Po	9.0007E+000

Basic Parameters

Name	Value	Units	Default
------	-------	-------	---------

Case C.

'Floor Dust'	0.1599	g/m^2	0.1599
'Unsaturated Zone'	1.2288	m	1.2288
'Layer Porosity'	0.4599	None	0.4599
'Unsaturated Porosity'	0.4599	None	0.4599
'Surface Layer Ratio'	0.1626	None	0.1626
'Unsaturated Ratio'	0.1626	None	0.1626
'Infiltration Rate'	0.2526	m/year	0.2526
'Irrigation Rate'	0.4380	L/m^2*days	1.2900
'End Time'	365.2500	days	365250.0000

Human Diet Parameters

Name	Value	Units	Default
'Diet - Leafy'	6.9900	kg/year	21.4000
'Diet - Roots'	31.7300	kg/year	44.6000
'Diet - Fruit'	22.8000	kg/year	52.8000
'Diet - Grain'	0.0000	kg/year	14.4000

Plant Mass-Loading Parameters

Name	Value	Units	Default
'Leafy'	7.4850E-003	g/g	0.1000
'Root'	6.1730E-003	g/g	0.1000
'Fruit'	3.5100E-003	g/g	0.1000
'Grain'	1.1360E-003	g/g	0.1000

Residential Output Section

Case C.

Maximum Annual TEDE

This scenario started 0.00 year(s) from now
and ran for 1.00 year(s).

The peak dose of 4.80E+002 TEDE (mrem) occurred 1.00 year(s) after
license termination.

Pathway Component of
Maximum Annual Dose

Pathway	TEDE (mrem)	Percentage
External	4.91E+001	10.24
Inhalation	6.64E-001	0.14
Agricult.	6.01E+001	12.53
Soil	1.45E+000	0.30
Drinking	1.81E+002	37.78
Irrigated	5.71E+001	11.89
Aquatic	1.30E+002	27.12
Total	4.80E+002	100.00

Radionuclide Component of
Maximum Annual Dose

Radionuclide	TEDE (mrem)	Percentage
232Th	4.87E-001	0.10
228Ra	4.75E-001	0.10
228Ac	2.51E+000	0.52
228Th	8.50E-002	0.02
224Ra	1.14E-001	0.02
220Rn	1.01E-003	0.00
216Po	4.44E-005	0.00
212Pb	3.43E-001	0.07

Case C.

212Bi	4.89E-001	0.10
212Po	0.00E+000	0.00
208Tl	3.17E+000	0.66
235U	6.23E+000	1.30
231Th	4.72E-002	0.01
231Pa	5.19E+001	10.83
227Ac	1.44E+000	0.30
223Fr	5.33E-004	0.00
227Th	1.02E-001	0.02
223Ra	2.05E-001	0.04
219Rn	5.76E-002	0.01
215Po	1.86E-004	0.00
211Pb	5.46E-002	0.01
211Bi	4.76E-002	0.01
211Po	2.35E-005	0.00
207Tl	3.54E-003	0.00
238U	1.28E+002	26.66
234Th	7.02E+000	1.46
234mPa	3.43E-001	0.07
234Pa	9.06E-002	0.02
234U	1.42E+002	29.68
230Th	8.83E-001	0.18
226Ra	4.15E+000	0.87
222Rn	9.32E-003	0.00
218Po	2.16E-004	0.00
214Pb	5.51E+000	1.15
218At	0.00E+000	0.00
214Bi	3.58E+001	7.47
214Po	1.97E-003	0.00
210Pb	3.35E+001	6.99
210Bi	5.55E-002	0.01
210Po	5.42E+001	11.30

Total	4.80E+002	100.00

Case C DandD 1.0 Fortran Report

Output From Program 'RESIDE'

Residential Scenario

Run Date: 03/12/2000

Run Time: 13:18:21

INPUT DATA:

Title: Case C

Notes:

History file will be generated.

Implicit progeny doses will not be included with explicit parent.

Concentration data will be calculated.

Concentrations of radionuclides in equilibrium chains will be
equilibrated based on initial concentration of parent.

PARAMETER DATA:

Time Spent Indoors	: 2.4000E+02 d/y
Time Spent Outdoors	: 4.0200E+01 d/y
Time Spent Gardening	: 2.9200E+00 d/y
Total Time in One Year Exposure Period	: 3.6525E+02 d
Total Time in Gardening Period	: 9.0000E+01 d
Weathering Rate for Activity Removal from Plants	: 4.9500E-02 /d
Indoor Shielding Factor	: 5.5200E-01
Outdoor Shielding Factor	: 1.0000E+00
Floor Dust Loading	: 1.5990E-01 g/m ²
Resuspension Factor for Indoor Dust	: 2.8200E-06 /m
Indoor Air-Dust Loading Factor	: 1.4100E-06 g/m ³
Outdoor Air-Dust Loading Factor	: 3.1400E-06 g/m ³
Gardening Air-Dust Loading Factor	: 4.0000E-04 g/m ³
Indoor Volumetric Breathing Rate	: 9.0000E-01 m ³ /h
Outdoor Volumetric Breathing Rate	: 1.4000E+00 m ³ /h
Gardening Volumetric Breathing Rate	: 1.7000E+00 m ³ /h
Soil Ingestion Transfer Rate	: 5.0000E-02 g/d
Drinking Water Ingestion Rate	: 1.3100E+00 L/d
Drinking Water Consumption Period	: 3.6525E+02 d
Surface Soil Layer Thickness	: 1.5000E-01 m
Unsaturated Zone Layer Thickness	: 1.2288E+00 m
Number of Unsaturated Zone Layers	: 1
Surface Soil Porosity	: 4.5990E-01
Unsaturated Zone Porosity	: 4.5990E-01
Surface Soil Saturation	: 1.6260E-01
Unsaturated Zone Saturation	: 1.6260E-01
Surface Soil Bulk Soil Density	: 1.4312E+00 g/cm ³
Unsaturated Zone Bulk Soil Density	: 1.4312E+00 g/cm ³
Water Volume Removed From Aquifer Per Year	: 1.1800E+05 L
Volume of Surface Water Pond	: 1.3000E+06 L
Infiltration Rate	: 2.5260E-01 m/y
Area of Cultivated Land	: 2.4000E+03 m ²
Irrigation Water Application Rate	: 4.3800E-01 L/m ² -d
Soil Areal Density of Surface Flow Layer	: 2.1468E+02 kg/m ²
Fraction of Diet From Garden	: 1.0000E+00
Human Diet of Leafy Vegetables	: 6.9900E+00 kg/y
Human Diet of Other Vegetables	: 3.1730E+01 kg/y
Human Diet of Fruits	: 2.2800E+01 kg/y

Case C DandD 1.0 Fortran Report

Human Diet of Grains	: 0.0000E+00 kg/y
Human Diet of Beef	: 3.9800E+01 kg/y
Human Diet of Poultry	: 2.5300E+01 kg/y
Human Diet of Milk	: 2.3300E+02 L/y
Human Diet of Eggs	: 1.9100E+01 kg/y
Human Diet of Fish	: 2.0600E+01 kg/y
Consumption Period for Fish	: 3.6525E+02 d
Food Consumption Period for Leafy Vegetables	: 3.6525E+02 d
Food Consumption Period for Other Vegetables	: 3.6525E+02 d
Food Consumption Period for Fruits	: 3.6525E+02 d
Food Consumption Period for Grains	: 3.6525E+02 d
Food Consumption Period for Beef	: 3.6525E+02 d
Food Consumption Period for Poultry	: 3.6525E+02 d
Food Consumption Period for Milk	: 3.6525E+02 d
Food Consumption Period for Eggs	: 3.6525E+02 d
Holdup Period For Leafy Vegetables	: 1.0000E+00 d
Holdup Period For Other Vegetables	: 1.4000E+01 d
Holdup Period For Fruits	: 1.4000E+01 d
Holdup Period For Grains	: 1.4000E+01 d
Holdup Period For Beef	: 2.0000E+01 d
Holdup Period For Poultry	: 1.0000E+00 d
Holdup Period For Milk	: 1.0000E+00 d
Holdup Period For Eggs	: 1.0000E+00 d
Minimum Growing Period For Leafy Vegetables	: 4.5000E+01 d
Minimum Growing Period For Other Vegetables	: 9.0000E+01 d
Minimum Growing Period For Fruits	: 9.0000E+01 d
Minimum Growing Period For Grains	: 9.0000E+01 d
Minimum Growing Period For Beef Forage	: 3.0000E+01 d
Minimum Growing Period For Poultry Forage	: 3.0000E+01 d
Minimum Growing Period For Milk Cow Forage	: 3.0000E+01 d
Minimum Growing Period For Layer Hen Forage	: 3.0000E+01 d
Minimum Growing Period For Beef Grain	: 9.0000E+01 d
Minimum Growing Period For Poultry Grain	: 9.0000E+01 d
Minimum Growing Period For Milk Cow Grain	: 9.0000E+01 d
Minimum Growing Period For Layer Hen Grain	: 9.0000E+01 d
Minimum Growing Period For Beef Hay	: 4.5000E+01 d
Minimum Growing Period For Poultry Hay	: 4.5000E+01 d
Minimum Growing Period For Milk Cow Hay	: 4.5000E+01 d
Minimum Growing Period For Layer Hen Hay	: 4.5000E+01 d
Time Period For Feeding Forage to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Forage to Poultry	: 3.6525E+02 d
Time Period For Feeding Forage to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Forage to Layer Hens	: 3.6525E+02 d
Time Period For Feeding Grain to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Grain to Poultry	: 3.6525E+02 d
Time Period For Feeding Grain to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Grain to Layer Hens	: 3.6525E+02 d
Time Period For Feeding Hay to Beef Cattle	: 3.6525E+02 d
Time Period For Feeding Hay to Poultry	: 3.6525E+02 d
Time Period For Feeding Hay to Milk Cattle	: 3.6525E+02 d
Time Period For Feeding Hay to Layer Hens	: 3.6525E+02 d
Interception Fraction For Leafy Vegetables	: 3.4950E-01

Case C DandD 1.0 Fortran Report

Interception Fraction For Other Vegetables	: 3.4980E-01
Interception Fraction For Fruits	: 3.4970E-01
Interception Fraction For Grains	: 3.4990E-01
Interception Fraction For Beef Forage	: 3.4950E-01
Interception Fraction For Poultry Forage	: 3.4950E-01
Interception Fraction For Milk Cow Forage	: 3.4950E-01
Interception Fraction For Layer Hen Forage	: 3.4950E-01
Interception Fraction For Beef Grain	: 3.4970E-01
Interception Fraction For Poultry Grain	: 3.4970E-01
Interception Fraction For Milk Cow Grain	: 3.4970E-01
Interception Fraction For Layer Hen Grain	: 3.4970E-01
Interception Fraction For Beef Hay	: 3.4950E-01
Interception Fraction For Poultry Hay	: 3.4950E-01
Interception Fraction For Milk Cow Hay	: 3.4950E-01
Interception Fraction For Layer Hen Hay	: 3.4950E-01
Translocation Factor For Leafy Vegetables	: 1.0000E+00
Translocation Factor For Other Vegetables	: 1.0000E-01
Translocation Factor For Fruits	: 1.0000E-01
Translocation Factor For Grains	: 1.0000E-01
Translocation Factor For Beef Forage	: 1.0000E+00
Translocation Factor For Poultry Forage	: 1.0000E+00
Translocation Factor For Milk Cow Forage	: 1.0000E+00
Translocation Factor For Layer Hen Forage	: 1.0000E+00
Translocation Factor For Beef Grain	: 1.0000E-01
Translocation Factor For Poultry Grain	: 1.0000E-01
Translocation Factor For Milk Cow Grain	: 1.0000E-01
Translocation Factor For Layer Hen Grain	: 1.0000E-01
Translocation Factor For Beef Hay	: 1.0000E+00
Translocation Factor For Poultry Hay	: 1.0000E+00
Translocation Factor For Milk Cow Hay	: 1.0000E+00
Translocation Factor For Layer Hen Hay	: 1.0000E+00
Forage Fraction Consumed By Beef Cattle	: 1.0000E+00
Forage Fraction Consumed By Poultry	: 1.0000E+00
Forage Fraction Consumed By Milk Cows	: 1.0000E+00
Forage Fraction Consumed By Layer Hens	: 1.0000E+00
Grain Fraction Consumed By Beef Cattle	: 1.0000E+00
Grain Fraction Consumed By Poultry	: 1.0000E+00
Grain Fraction Consumed By Milk Cows	: 1.0000E+00
Grain Fraction Consumed By Layer Hens	: 1.0000E+00
Hay Fraction Consumed By Beef Cattle	: 1.0000E+00
Hay Fraction Consumed By Poultry	: 1.0000E+00
Hay Fraction Consumed By Milk Cows	: 1.0000E+00
Hay Fraction Consumed By Layer Hens	: 1.0000E+00
Water Fraction Consumed By Beef Cattle	: 1.0000E+00
Water Fraction Consumed By Poultry	: 1.0000E+00
Water Fraction Consumed By Milk Cows	: 1.0000E+00
Water Fraction Consumed By Layer Hens	: 1.0000E+00
Crop Yield For Leafy Vegetables	: 2.8892E+00 kg/m^2
Crop Yield For Other Vegetables	: 2.4000E+00 kg/m^2
Crop Yield For Fruits	: 2.3673E+00 kg/m^2
Crop Yield For Grains	: 3.9040E-01 kg/m^2
Crop Yield For Beef Cattle Forage	: 1.8868E+00 kg/m^2

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Crop Yield For Poultry Forage	: 1.8868E+00 kg/m^2
Crop Yield For Milk Cow Forage	: 1.8868E+00 kg/m^2
Crop Yield For Layer Hen Forage	: 1.8868E+00 kg/m^2
Crop Yield For Beef Cattle Grain	: 6.5680E-01 kg/m^2
Crop Yield For Poultry Grain	: 6.5680E-01 kg/m^2
Crop Yield For Milk Cow Grain	: 6.5680E-01 kg/m^2
Crop Yield For Layer Hen Grain	: 6.5680E-01 kg/m^2
Crop Yield For Beef Cattle Hay	: 1.8868E+00 kg/m^2
Crop Yield For Poultry Hay	: 1.8868E+00 kg/m^2
Crop Yield For Milk Cow Hay	: 1.8868E+00 kg/m^2
Crop Yield For Layer Hen Hay	: 1.8868E+00 kg/m^2
Wet-to-Dry Weight Conversion Factor For Leafy Vegetables	: 1.3360E-01
Wet-to-Dry Weight Conversion Factor For Other Vegetables	: 1.6200E-01
Wet-to-Dry Weight Conversion Factor For Fruits	: 2.8490E-01
Wet-to-Dry Weight Conversion Factor For Grains	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Poultry Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Forage	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Poultry Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Grain	: 8.8000E-01
Wet-to-Dry Weight Conversion Factor For Beef Cattle Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Poultry Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Milk Cow Hay	: 2.5180E-01
Wet-to-Dry Weight Conversion Factor For Layer Hen Hay	: 2.5180E-01
Animal Feed Intake Rate For Forage Consumed By Beef Cattle	: 8.1330E+00 kg/d
Animal Feed Intake Rate For Forage Consumed By Poultry	: 5.6200E-02 kg/d
Animal Feed Intake Rate For Forage Consumed By Milk Cows	: 3.5165E+01 kg/d
Animal Feed Intake Rate For Forage Consumed By Layer Hens	: 7.5500E-02 kg/d
Animal Feed Intake Rate For Grain Consumed By Beef Cattle	: 2.4188E+00 kg/d
Animal Feed Intake Rate For Grain Consumed By Poultry	: 6.3000E-02 kg/d
Animal Feed Intake Rate For Grain Consumed By Milk Cows	: 1.9466E+00 kg/d
Animal Feed Intake Rate For Grain Consumed By Layer Hens	: 6.1000E-02 kg/d
Animal Feed Intake Rate For Hay Consumed By Beef Cattle	: 1.6253E+01 kg/d
Animal Feed Intake Rate For Hay Consumed By Poultry	: 0.0000E+00 kg/d
Animal Feed Intake Rate For Hay Consumed By Milk Cows	: 2.6109E+01 kg/d
Animal Feed Intake Rate For Hay Consumed By Layer Hens	: 0.0000E+00 kg/d
Water Intake Rate For Beef Cattle	: 5.0000E+01 L/d
Water Intake Rate For Poultry	: 3.0000E-01 L/d
Water Intake Rate For Milk Cows	: 6.0000E+01 L/d
Water Intake Rate For Layer Hens	: 3.0000E-01 L/d
Water Intake Consumption Period for Beef Cattle	: 3.6525E+02 d
Water Intake Consumption Period for Poultry	: 3.6525E+02 d
Water Intake Consumption Period for Milk Cows	: 3.6525E+02 d
Water Intake Consumption Period for Layer Hens	: 3.6525E+02 d
Soil Intake Fraction For Beef Cattle	: 2.0000E-02
Soil Intake Fraction For Poultry	: 1.0000E-01
Soil Intake Fraction For Milk Cows	: 2.0000E-02
Soil Intake Fraction For Layer Hens	: 1.0000E-01
Plant Mass Loading Factor For Leafy Vegetables	: 7.4850E-03 g/g

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Plant Mass Loading Factor For Other Vegetables	: 6.1730E-03 g/g
Plant Mass Loading Factor For Fruits	: 3.5100E-03 g/g
Plant Mass Loading Factor For Grains	: 1.1360E-03 g/g
Plant Mass Loading Factor For Beef Cattle Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Forage	: 1.0000E-01 g/g
Plant Mass Loading Factor For Beef Cattle Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Grain	: 1.0000E-01 g/g
Plant Mass Loading Factor For Beef Cattle Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Poultry Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Milk Cow Hay	: 1.0000E-01 g/g
Plant Mass Loading Factor For Layer Hen Hay	: 1.0000E-01 g/g
Fraction of Carbon in Beef	: 3.6000E-01
Fraction of Carbon in Poultry	: 1.8000E-01
Fraction of Carbon in Milk	: 6.0000E-02
Fraction of Carbon in Eggs	: 1.6000E-01
Fraction of Carbon in Beef Cattle Forage	: 1.1000E-01
Fraction of Carbon in Poultry Forage	: 1.1000E-01
Fraction of Carbon in Milk Cow Forage	: 1.1000E-01
Fraction of Carbon in Layer Hen Forage	: 1.1000E-01
Fraction of Carbon in Beef Cattle Grain	: 4.0000E-01
Fraction of Carbon in Poultry Grain	: 4.0000E-01
Fraction of Carbon in Milk Cow Grain	: 4.0000E-01
Fraction of Carbon in Layer Hen Grain	: 4.0000E-01
Fraction of Carbon in Beef Cattle Hay	: 7.0000E-02
Fraction of Carbon in Poultry Hay	: 7.0000E-02
Fraction of Carbon in Milk Cow Hay	: 7.0000E-02
Fraction of Carbon in Layer Hen Hay	: 7.0000E-02
Fraction of Carbon in Soil	: 3.0000E-02
Specific Activity Equivalence of Animal	: 1.0000E+00
Fraction of Hydrogen in Leafy Vegetables	: 1.0000E-01
Fraction of Hydrogen in Other Vegetables	: 1.0000E-01
Fraction of Hydrogen in Fruits	: 1.0000E-01
Fraction of Hydrogen in Grains	: 6.8000E-02
Fraction of Hydrogen in Beef	: 1.0000E-01
Fraction of Hydrogen in Poultry	: 1.0000E-01
Fraction of Hydrogen in Milk	: 1.1000E-01
Fraction of Hydrogen in Eggs	: 1.1000E-01
Fraction of Hydrogen in Beef Cattle Forage	: 1.0000E-01
Fraction of Hydrogen in Poultry Forage	: 1.0000E-01
Fraction of Hydrogen in Milk Cow Forage	: 1.0000E-01
Fraction of Hydrogen in Layer Hen Forage	: 1.0000E-01
Fraction of Hydrogen in Beef Cattle Grain	: 6.8000E-02
Fraction of Hydrogen in Poultry Grain	: 6.8000E-02
Fraction of Hydrogen in Milk Cow Grain	: 6.8000E-02
Fraction of Hydrogen in Layer Hen Grain	: 6.8000E-02
Fraction of Hydrogen in Beef Cattle Hay	: 1.0000E-01
Fraction of Hydrogen in Poultry Hay	: 1.0000E-01
Fraction of Hydrogen in Milk Cow Hay	: 1.0000E-01

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Fraction of Hydrogen in Layer Hen Hay : 1.0000E-01
Fraction of Hydrogen in Soil : 5.8000E-03
Tritium Equivalence Between Animal and Food : 1.0000E+00
Tritium Equivalence Between Plant and Soil : 1.0000E+00
Tritium Equivalence Between Plant and Water : 1.0000E+00
Moisture Content of Soil : 5.2200E-02 L/kg
TIME DATA:
Start Time : 0.0000E+00 d
End Time : 3.6525E+02 d
DT Size : 3.6525E+02 d
Time Step Size : 3.6525E+02 d
Write results every : 1 calculation times

INITIAL ACTIVITIES:

Number of chains: 3
Chain Chain Initial
Number Name Activity
(pCi/g)
1 232Th+C 1.0000E+00
2 235U+C 4.1000E-01
3 238U+C 9.0000E+00

Chain No. 1: 232Th in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m**2))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m**3))
Nuclides in chain : 11											
232Th	1	5.1300E+12	1.0000E+00	0	.00000	0	.00000	7.38E-07	4.43E-04	4.76E-14	2.40E-16
228Ra	2	2.1000E+03	1.0000E+00	1	1.00000	0	.00000	3.88E-07	1.29E-06	0.00E+00	0.00E+00
228Ac	Implicit		1.0000E+00	2	1.00000			5.85E-10	8.33E-08	8.01E-11	2.38E-12
228Th	3	6.9900E+02	1.0000E+00	2	1.00000	0	.00000	1.07E-07	9.23E-05	2.03E-13	3.60E-15
224Ra	4	3.6600E+00	1.0000E+00	3	1.00000	0	.00000	9.89E-08	8.53E-07	8.26E-13	2.26E-14
220Rn	Implicit		1.0000E+00	4	1.00000			0.00E+00	0.00E+00	3.29E-14	9.52E-16
216Po	Implicit		1.0000E+00	4	1.00000			0.00E+00	0.00E+00	1.43E-15	4.21E-17
212Pb	5	4.4300E-01	1.0000E+00	4	1.00000	0	.00000	1.23E-08	4.56E-08	1.23E-11	3.13E-13
212Bi	Implicit		1.0000E+00	5	1.00000			2.87E-10	5.83E-09	1.54E-11	4.63E-13
212Po	Implicit		6.4070E-01	5	.64070			0.00E+00	0.00E+00	0.00E+00	0.00E+00
208Tl	Implicit		3.5930E-01	5	.35930			0.00E+00	0.00E+00	2.58E-10	8.36E-12

Chain No. 2: 235U in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m**2))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m**3))
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Case C DandD 1.0 Fortran Report

Nuclides in chain : 13

235U	1	2.5700E+11	4.1000E-01	0	.00000	0	.00000	7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.0600E+00	4.1000E-01	1	1.00000	0	.00000	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.2000E+07	4.1002E-01	2	1.00000	0	.00000	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.9500E+03	4.1002E-01	3	1.00000	0	.00000	3.80E-06	1.81E-03	1.36E-14	2.26E-16
223Fr	Implicit		5.6583E-03	4	.01380			2.33E-09	1.68E-09	4.88E-12	8.74E-14
227Th	5	1.8700E+01	4.0436E-01	4	.98620	0	.00000	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.1400E+01	4.1002E-01	5	1.00000	4	.01380	1.78E-07	2.12E-06	1.11E-11	2.67E-13
219Rn	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	4.74E-12	1.33E-13
215Po	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	1.51E-14	4.30E-16
211Pb	Implicit		4.1002E-01	6	1.00000			1.42E-10	2.35E-09	4.38E-12	1.26E-13
211Bi	Implicit		4.1002E-01	6	1.00000			0.00E+00	0.00E+00	3.96E-12	1.10E-13
211Po	Implicit		1.1481E-03	6	.00280			0.00E+00	0.00E+00	6.57E-13	1.94E-14
207Tl	Implicit		4.0887E-01	6	.99720			0.00E+00	0.00E+00	3.25E-13	8.19E-15

Chain No. 3: 238U in equilibrium

Nuclide	Chain Position	Half Life (d)	Initial Inventory (pCi/g)	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m**2))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m**3))
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Nuclides in chain : 16

238U	1	1.6300E+12	9.0000E+00	0	.00000	0	.00000	6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.4100E+01	9.0000E+00	1	1.00000	0	.00000	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234mPa	Implicit		8.9820E+00	2	.99800			0.00E+00	0.00E+00	1.32E-12	3.62E-14
234Pa	Implicit		1.8000E-02	2	.00200			5.84E-10	2.20E-10	1.59E-10	4.65E-12
234U	3	8.9300E+07	9.0005E+00	2	1.00000	0	.00000	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.8100E+07	9.0006E+00	3	1.00000	0	.00000	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.8400E+05	9.0007E+00	4	1.00000	0	.00000	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.8200E+00	9.0007E+00	5	1.00000	0	.00000	0.00E+00	0.00E+00	3.41E-14	9.81E-16
218Po	Implicit		9.0007E+00	6	1.00000			0.00E+00	0.00E+00	7.67E-16	2.27E-17
214Pb	Implicit		8.9989E+00	6	.99980			1.69E-10	2.11E-09	2.10E-11	5.78E-13
218At	Implicit		1.8001E-03	6	.00020			0.00E+00	0.00E+00	0.00E+00	0.00E+00
214Bi	Implicit		9.0007E+00	6	1.00000			7.64E-11	1.78E-09	1.22E-10	3.77E-12
214Po	Implicit		8.9989E+00	6	.99980			0.00E+00	0.00E+00	7.02E-15	2.07E-16
210Pb	7	8.1500E+03	9.0007E+00	6	1.00000	0	.00000	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.0100E+00	9.0007E+00	7	1.00000	0	.00000	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.3800E+02	9.0007E+00	8	1.00000	0	.00000	5.14E-07	2.54E-06	7.16E-16	2.11E-17

TIMESTEP DATA:

Number of nuclides :	40
Number of time steps :	1
Number of print steps :	1
Timestep of maximum :	1
Day of maximum :	.3652500000E+03
Year of maximum :	.1000000000E+01

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For Period 1: 0.0000000000E+00 days to 3.6525000000E+02 days
0.0000000000E+00 years to 1.0000000000E+00 years

Dose Components of Maximum TEDE

Nuclide	External Dose	Inhalation Dose	Agricult. Food Ingestion Dose	Soil Ingestion Dose	Drinking Water Ingestion Dose	Irrigated Food Ingestion Dose	Aquatic Food Ingestion Dose	Total Nuclide Dose	Soil Activity	Water Ave. Activity
	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(mrem/y)	(pCi/g)	(pCi/l)
Dose Components										
232Th	2.53370E-04	1.00875E-01	1.82744E-01	3.86544E-02	6.47094E-02	1.12563E-02	8.86012E-02	4.87094E-01	1.00000E+00	4.95276E-02
228Ra	0.00000E+00	2.93743E-04	4.51638E-01	2.03224E-02	9.40163E-04	6.37407E-04	9.01102E-04	4.74733E-01	1.00000E+00	1.36870E-03
228Ac	2.51258E+00	1.89681E-05	6.80949E-04	3.06407E-05	1.41751E-06	9.61039E-07	1.35862E-06	2.51332E+00	1.00000E+00	1.36870E-03
228Th	3.80055E-03	2.10174E-02	3.44520E-02	5.60436E-03	7.98575E-03	1.16488E-03	1.09342E-02	8.49592E-02	1.00000E+00	4.21569E-02
224Ra	2.38590E-02	1.94235E-04	7.02346E-02	5.18011E-03	7.02345E-03	1.23677E-03	6.73164E-03	1.14460E-01	1.00000E+00	4.01135E-02
220Rn	1.00503E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.00503E-03	1.00000E+00	4.01135E-02
216Po	4.44453E-05	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	4.44453E-05	1.00000E+00	4.01135E-02
212Pb	3.30436E-01	1.03835E-05	9.66916E-03	6.44240E-04	8.68233E-04	1.56898E-04	1.18880E-03	3.42974E-01	1.00000E+00	3.98720E-02
212Bi	4.88792E-01	1.32754E-06	2.25614E-04	1.50323E-05	2.02588E-05	3.66096E-06	2.77387E-05	4.89086E-01	1.00000E+00	3.98720E-02
212Po	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	6.40700E-01	2.55460E-02
208Tl	3.17108E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.17108E+00	3.59300E-01	1.43260E-02
235U	1.40240E-01	3.09956E-03	9.24874E-02	1.54403E-03	2.93533E+00	1.04534E+00	2.00955E+00	6.22759E+00	4.10000E-01	2.30603E+01
231Th	7.27171E-03	2.21264E-08	3.76332E-04	7.83825E-06	1.47098E-02	4.72731E-03	2.01409E-02	4.72340E-02	4.10000E-01	2.27641E+01
231Pa	3.59274E-02	3.23975E-02	3.06121E-01	6.14204E-02	3.88720E+01	6.76573E+00	5.85467E+00	5.19283E+01	4.10019E-01	7.67729E+00
227Ac	9.78264E-05	1.68990E-01	4.60189E-01	8.16075E-02	3.79235E-01	2.24334E-01	1.29814E-01	1.44427E+00	4.10019E-01	5.63717E-02
223Fr	5.22081E-04	2.16456E-09	3.89392E-06	6.90528E-07	3.20893E-06	1.89822E-06	1.09843E-06	5.32874E-04	5.65826E-03	7.77930E-04
227Th	9.77571E-02	4.02373E-04	1.16342E-03	2.18147E-04	7.86163E-04	5.43925E-04	1.07643E-03	1.01948E-01	4.04361E-01	4.31134E-02
223Ra	1.15574E-01	1.97933E-04	5.37605E-02	3.82267E-03	1.14324E-02	9.31790E-03	1.09574E-02	2.05062E-01	4.10019E-01	3.62789E-02
219Rn	5.75704E-02	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	5.75704E-02	4.10019E-01	3.62789E-02
215Po	1.86130E-04	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.86130E-04	4.10019E-01	3.62789E-02
211Pb	5.45404E-02	2.19407E-07	4.28876E-05	3.04954E-06	9.12022E-06	7.43338E-06	8.74130E-06	5.46118E-02	4.10019E-01	3.62789E-02
211Bi	4.76146E-02	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	4.76146E-02	4.10019E-01	3.62789E-02
211Po	2.35130E-05	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	2.35130E-05	1.14805E-03	1.01581E-04
207Tl	3.53520E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.53520E-03	4.08871E-01	3.61773E-02
238U	4.52265E-04	6.55799E-02	1.94268E+00	3.24320E-02	6.16559E+01	2.19571E+01	4.22102E+01	1.27864E+02	9.00000E+00	5.06201E+02
234Th	1.06415E-01	1.94075E-05	6.06085E-02	1.73945E-03	2.51339E+00	8.96728E-01	3.44138E+00	7.02028E+00	9.00000E+00	3.84742E+02
234mPa	3.43262E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	3.43262E-01	8.98200E+00	3.83973E+02
234Pa	8.83627E-02	9.01723E-10	1.91845E-05	5.50589E-07	7.95566E-04	2.83842E-04	1.08930E-03	9.05511E-02	1.80000E-02	7.69485E-01
234U	1.75785E-03	7.33715E-02	2.16304E+00	3.61108E-02	6.86497E+01	2.44477E+01	4.69982E+01	1.42370E+02	9.00049E+00	5.06229E+02
230Th	5.24513E-03	1.80358E-01	3.29865E-01	6.97715E-02	1.17099E-01	2.05502E-02	1.60334E-01	8.83223E-01	9.00065E+00	4.46919E-01
226Ra	1.34929E-01	4.75488E-03	3.84019E+00	1.68772E-01	3.55900E-04	1.09547E-04	3.41113E-04	4.14945E+00	9.00065E+00	5.61541E-04
222Rn	9.32151E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	9.32151E-03	9.00065E+00	7.43972E+01
218Po	2.15697E-04	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	2.15697E-04	9.00065E+00	7.43972E+01
214Pb	5.49109E+00	4.32362E-06	1.20532E-03	7.96556E-05	2.22546E-02	8.00700E-06	0.00000E+00	5.51464E+00	8.99885E+00	7.43824E+01
218At	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.80013E-03	1.48794E-02

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214Bi	3.58227E+01	3.64814E-06	5.44997E-04	3.60172E-05	1.00627E-02	3.62046E-06	0.00000E+00	3.58334E+01	9.00065E+00	7.43972E+01
214Po	1.96653E-03	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	1.96653E-03	8.99885E+00	7.43824E+01
210Pb	1.07373E-02	7.52173E-03	2.72151E+01	6.83572E-01	2.13239E+00	5.53204E-01	2.91971E+00	3.35222E+01	9.00065E+00	8.30684E-01
210Bi	1.52983E-02	1.08420E-04	3.56427E-02	8.15572E-04	2.41480E-03	6.84971E-04	4.95959E-04	5.54607E-02	9.00065E+00	7.88447E-01
210Po	2.00493E-04	5.20578E-03	2.28350E+01	2.42314E-01	3.82682E+00	1.11342E+00	2.61987E+01	5.42217E+01	9.00065E+00	4.20544E+00

Totals	4.91247E+01	6.64425E-01	6.00877E+01	1.45472E+00	1.81226E+02	5.70543E+01	1.30065E+02	4.79677E+02		

Component Maximums and Time of Occurrence

Type	Time Step	Maximum Value	Time of Occurrence		
			(days)	(years)	
External	1	4.91247E+01	0.00000E+00	0.00000E+00	
Inhalation	1	6.64425E-01	0.00000E+00	0.00000E+00	
Agricultur	1	6.00877E+01	0.00000E+00	0.00000E+00	
Soil	1	1.45472E+00	0.00000E+00	0.00000E+00	
Drinking	1	1.81226E+02	0.00000E+00	0.00000E+00	
Irrigated	1	5.70543E+01	0.00000E+00	0.00000E+00	
Aquatic	1	1.30065E+02	0.00000E+00	0.00000E+00	
TEDE	1	4.79677E+02	0.00000E+00	0.00000E+00	
232Th	1	2.53370E-04	0.00000E+00	0.00000E+00	Maximum External
232Th	1	1.00875E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
232Th	1	1.82744E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
232Th	1	3.86544E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
232Th	1	6.47094E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
232Th	1	1.12563E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
232Th	1	8.86012E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
232Th	1	4.87094E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
228Ra	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
228Ra	1	2.93743E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
228Ra	1	4.51638E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Ra	1	2.03224E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Ra	1	9.40163E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Ra	1	6.37407E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Ra	1	9.01102E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
228Ra	1	4.74733E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
228Ac	1	2.51258E+00	0.00000E+00	0.00000E+00	Maximum External
228Ac	1	1.89681E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
228Ac	1	6.80949E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Ac	1	3.06407E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Ac	1	1.41751E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Ac	1	9.61039E-07	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Ac	1	1.35862E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
228Ac	1	2.51332E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
228Th	1	3.80055E-03	0.00000E+00	0.00000E+00	Maximum External
228Th	1	2.10174E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
228Th	1	3.44520E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
228Th	1	5.60436E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
228Th	1	7.98575E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
228Th	1	1.16488E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
228Th	1	1.09342E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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228Th	1	8.49592E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
224Ra	1	2.38590E-02	0.00000E+00	0.00000E+00	Maximum External
224Ra	1	1.94235E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
224Ra	1	7.02346E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
224Ra	1	5.18011E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
224Ra	1	7.02345E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
224Ra	1	1.23677E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
224Ra	1	6.73164E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
224Ra	1	1.14460E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
220Rn	1	1.00503E-03	0.00000E+00	0.00000E+00	Maximum External
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
220Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
220Rn	1	1.00503E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
216Po	1	4.44453E-05	0.00000E+00	0.00000E+00	Maximum External
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
216Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
216Po	1	4.44453E-05	0.00000E+00	0.00000E+00	Maximum Nuclide
212Pb	1	3.30436E-01	0.00000E+00	0.00000E+00	Maximum External
212Pb	1	1.03835E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
212Pb	1	9.66916E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Pb	1	6.44240E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Pb	1	8.68233E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Pb	1	1.56898E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Pb	1	1.18880E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Pb	1	3.42974E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
212Bi	1	4.88792E-01	0.00000E+00	0.00000E+00	Maximum External
212Bi	1	1.32754E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
212Bi	1	2.25614E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Bi	1	1.50323E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Bi	1	2.02588E-05	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Bi	1	3.66096E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Bi	1	2.77387E-05	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Bi	1	4.89086E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
212Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
208Tl	1	3.17108E+00	0.00000E+00	0.00000E+00	Maximum External
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
208Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
208Tl	1	3.17108E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
235U	1	1.40240E-01	0.00000E+00	0.00000E+00	Maximum External
235U	1	3.09956E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
235U	1	9.24874E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
235U	1	1.54403E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
235U	1	2.93533E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
235U	1	1.04534E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
235U	1	2.00955E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
235U	1	6.22759E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
231Th	1	7.27171E-03	0.00000E+00	0.00000E+00	Maximum External
231Th	1	2.21264E-08	0.00000E+00	0.00000E+00	Maximum Inhalation
231Th	1	3.76332E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
231Th	1	7.83825E-06	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
231Th	1	1.47098E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
231Th	1	4.72731E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
231Th	1	2.01409E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
231Th	1	4.72340E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
231Pa	1	3.59274E-02	0.00000E+00	0.00000E+00	Maximum External
231Pa	1	3.23975E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
231Pa	1	3.06121E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
231Pa	1	6.14204E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
231Pa	1	3.88720E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
231Pa	1	6.76573E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
231Pa	1	5.85467E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
231Pa	1	5.19283E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
227Ac	1	9.78264E-05	0.00000E+00	0.00000E+00	Maximum External
227Ac	1	1.68990E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
227Ac	1	4.60189E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
227Ac	1	8.16075E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
227Ac	1	3.79235E-01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
227Ac	1	2.24334E-01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
227Ac	1	1.29814E-01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
227Ac	1	1.44427E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
223Fr	1	5.22081E-04	0.00000E+00	0.00000E+00	Maximum External
223Fr	1	2.16456E-09	0.00000E+00	0.00000E+00	Maximum Inhalation
223Fr	1	3.89392E-06	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
223Fr	1	6.90528E-07	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
223Fr	1	3.20893E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
223Fr	1	1.89822E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
223Fr	1	1.09843E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
223Fr	1	5.32874E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
227Th	1	9.77571E-02	0.00000E+00	0.00000E+00	Maximum External
227Th	1	4.02373E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
227Th	1	1.16342E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
227Th	1	2.18147E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
227Th	1	7.86163E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
227Th	1	5.43925E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
227Th	1	1.07643E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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227Th	1	1.01948E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
223Ra	1	1.15574E-01	0.00000E+00	0.00000E+00	Maximum External
223Ra	1	1.97933E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
223Ra	1	5.37605E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
223Ra	1	3.82267E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
223Ra	1	1.14324E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
223Ra	1	9.31790E-03	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
223Ra	1	1.09574E-02	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
223Ra	1	2.05062E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
219Rn	1	5.75704E-02	0.00000E+00	0.00000E+00	Maximum External
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
219Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
219Rn	1	5.75704E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
215Po	1	1.86130E-04	0.00000E+00	0.00000E+00	Maximum External
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
215Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
215Po	1	1.86130E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
211Pb	1	5.45404E-02	0.00000E+00	0.00000E+00	Maximum External
211Pb	1	2.19407E-07	0.00000E+00	0.00000E+00	Maximum Inhalation
211Pb	1	4.28876E-05	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Pb	1	3.04954E-06	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Pb	1	9.12022E-06	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Pb	1	7.43338E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Pb	1	8.74130E-06	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Pb	1	5.46118E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
211Bi	1	4.76146E-02	0.00000E+00	0.00000E+00	Maximum External
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Bi	1	4.76146E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
211Po	1	2.35130E-05	0.00000E+00	0.00000E+00	Maximum External
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
211Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
211Po	1	2.35130E-05	0.00000E+00	0.00000E+00	Maximum Nuclide
207Tl	1	3.53520E-03	0.00000E+00	0.00000E+00	Maximum External
207Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
207Tl	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
207T1	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
207T1	1	3.53520E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
238U	1	4.52265E-04	0.00000E+00	0.00000E+00	Maximum External
238U	1	6.55799E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
238U	1	1.94268E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
238U	1	3.24320E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
238U	1	6.16559E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
238U	1	2.19571E+01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
238U	1	4.22102E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
238U	1	1.27864E+02	0.00000E+00	0.00000E+00	Maximum Nuclide
234Th	1	1.06415E-01	0.00000E+00	0.00000E+00	Maximum External
234Th	1	1.94075E-05	0.00000E+00	0.00000E+00	Maximum Inhalation
234Th	1	6.06085E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234Th	1	1.73945E-03	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234Th	1	2.51339E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234Th	1	8.96728E-01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234Th	1	3.44138E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234Th	1	7.02028E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
234mPa	1	3.43262E-01	0.00000E+00	0.00000E+00	Maximum External
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234mPa	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234mPa	1	3.43262E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
234Pa	1	8.83627E-02	0.00000E+00	0.00000E+00	Maximum External
234Pa	1	9.01723E-10	0.00000E+00	0.00000E+00	Maximum Inhalation
234Pa	1	1.91845E-05	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234Pa	1	5.50589E-07	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234Pa	1	7.95566E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234Pa	1	2.83842E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234Pa	1	1.08930E-03	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234Pa	1	9.05511E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
234U	1	1.75785E-03	0.00000E+00	0.00000E+00	Maximum External
234U	1	7.33715E-02	0.00000E+00	0.00000E+00	Maximum Inhalation
234U	1	2.16304E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
234U	1	3.61108E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
234U	1	6.86497E+01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
234U	1	2.44477E+01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
234U	1	4.69982E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
234U	1	1.42370E+02	0.00000E+00	0.00000E+00	Maximum Nuclide
230Th	1	5.24513E-03	0.00000E+00	0.00000E+00	Maximum External
230Th	1	1.80358E-01	0.00000E+00	0.00000E+00	Maximum Inhalation
230Th	1	3.29865E-01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
230Th	1	6.97715E-02	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
230Th	1	1.17099E-01	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
230Th	1	2.05502E-02	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
230Th	1	1.60334E-01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion

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230Th	1	8.83223E-01	0.00000E+00	0.00000E+00	Maximum Nuclide
226Ra	1	1.34929E-01	0.00000E+00	0.00000E+00	Maximum External
226Ra	1	4.75488E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
226Ra	1	3.84019E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
226Ra	1	1.68772E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
226Ra	1	3.55900E-04	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
226Ra	1	1.09547E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
226Ra	1	3.41113E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
226Ra	1	4.14945E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
222Rn	1	9.32151E-03	0.00000E+00	0.00000E+00	Maximum External
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
222Rn	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
222Rn	1	9.32151E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
218Po	1	2.15697E-04	0.00000E+00	0.00000E+00	Maximum External
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
218Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
218Po	1	2.15697E-04	0.00000E+00	0.00000E+00	Maximum Nuclide
214Pb	1	5.49109E+00	0.00000E+00	0.00000E+00	Maximum External
214Pb	1	4.32362E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
214Pb	1	1.20532E-03	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
214Pb	1	7.96556E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Pb	1	2.22546E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Pb	1	8.00700E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Pb	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Pb	1	5.51464E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum External
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
218At	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Nuclide
214Bi	1	3.58227E+01	0.00000E+00	0.00000E+00	Maximum External
214Bi	1	3.64814E-06	0.00000E+00	0.00000E+00	Maximum Inhalation
214Bi	1	5.44997E-04	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
214Bi	1	3.60172E-05	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Bi	1	1.00627E-02	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Bi	1	3.62046E-06	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Bi	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Bi	1	3.58334E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
214Po	1	1.96653E-03	0.00000E+00	0.00000E+00	Maximum External
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Inhalation
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion

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214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
214Po	0	0.00000E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
214Po	1	1.96653E-03	0.00000E+00	0.00000E+00	Maximum Nuclide
210Pb	1	1.07373E-02	0.00000E+00	0.00000E+00	Maximum External
210Pb	1	7.52173E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
210Pb	1	2.72151E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Pb	1	6.83572E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Pb	1	2.13239E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Pb	1	5.53204E-01	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Pb	1	2.91971E+00	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Bi	1	3.35222E+01	0.00000E+00	0.00000E+00	Maximum Nuclide
210Bi	1	1.52983E-02	0.00000E+00	0.00000E+00	Maximum External
210Bi	1	1.08420E-04	0.00000E+00	0.00000E+00	Maximum Inhalation
210Bi	1	3.56427E-02	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Bi	1	8.15572E-04	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Bi	1	2.41480E-03	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Bi	1	6.84971E-04	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Bi	1	4.95959E-04	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Bi	1	5.54607E-02	0.00000E+00	0.00000E+00	Maximum Nuclide
210Po	1	2.00493E-04	0.00000E+00	0.00000E+00	Maximum External
210Po	1	5.20578E-03	0.00000E+00	0.00000E+00	Maximum Inhalation
210Po	1	2.28350E+01	0.00000E+00	0.00000E+00	Maximum Agricultural Food Ingestion
210Po	1	2.42314E-01	0.00000E+00	0.00000E+00	Maximum Soil Ingestion
210Po	1	3.82682E+00	0.00000E+00	0.00000E+00	Maximum Drinking Water Ingestion
210Po	1	1.11342E+00	0.00000E+00	0.00000E+00	Maximum Irrigated Food Ingestion
210Po	1	2.61987E+01	0.00000E+00	0.00000E+00	Maximum Aquatic Food Ingestion
210Po	1	5.42217E+01	0.00000E+00	0.00000E+00	Maximum Nuclide