Fort Mims Facility
Decontamination and Decommissioning Project

Additional RESRAD Modeling and Uncertainty analyses

Sigma Aldrich Company
11542 Fort Mims Drive
Maryland Heights, Missouri

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Prepared by:

Philotechnics, Ltd.
201 Renovare Boulevard
Oak Ridge, TN 37830

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1.0 Executive Summary

Philotechnics developed a RESRAD model to demonstrate the residual radioactivity in soils from licensed activities would not be likely to cause an average member of the critical group to receive a dose, from all sources, in excess of 25 mrem per year. An "industrial worker" occupancy scenario was used, consistent with current and expected land use of the site and surrounding properties. That model and report were sent to U.S. Nuclear Regulatory Commission, Region III (NRC), in December 2010.

During their review, NRC staff requested additional RESRAD modeling of plausible but unlikely occupancy scenarios. One suggested model was "suburban resident"; that model was run using the appropriate template in RESRAD with site specific parameters and maximum site radionuclide concentrations as used in the original submittal. The other model requested involved removing the soil from the fort Mims site and transferring it to farmland for use as topsoil; that was run using the "resident farmer" template, site specific parameters, and average soil concentrations at the Fort Mims site.

NRC Staff also requested additional uncertainty analyses to demonstrate the effect of soil characteristics—hydraulic conductivity (K_{sat}) and distribution coefficient (K_d)—on the migration of radioactivity to the groundwater and subsequent contribution to radiation exposure due to ingestion of contaminated drinking water.

The suburban resident scenario will bound the dose at the absolute maximum, though highly unlikely. The bounding dose using this model is 397 mrem/year at time T=0 (the time the radioactivity was first measured), which in this case was May 2009, nearly two years ago. RESRAD calculates the dose at a time T=1 as 46 mrem/year with decreasing dose in subsequent years.

Uncertainty analyses indicate changes in K_{sat} or K_d would have little to no effect on the dose to a resident now or in the future.

2.0 Suburban Resident Scenario

RESRAD Suburban Resident template was used. Site-specific parameters were set to the same values as were used for the industrial worker model which is the primary model used to demonstrate compliance with release criteria.

Using the suburban resident model, the instantaneous dose at time T=0 is 397 mrem/year (the time the radioactivity was first measured), which in this case was May 2009, nearly two years ago; this decreases to 46 mrem/year after the first year and 0.5 mrem/year after three years. The decrease is due to migration and associated dilution of radioactivity in soil.

As in the original RESRAD model, the maximum concentration of ^{14}C and the maximum concentration of ^{3}H were assumed to be present throughout the entire contaminated zone, which is a very conservative assumption.

For these reasons, the bounding dose of 397 mrem is demonstrably conservative.

The suburban resident RESRAD report is included as Appendix A to this report.

3.0 The Resident Farmer Scenario

At the request of NRC staff, we analyzed the potential dose after removal of the soils from the Fort Mims site for use as topsoil or fill over farmland. The "resident farmer" template was used. Because the soils will be dug up, transported, and spread; the average concentrations of ^{14}C and ^{3}H were used. Area and thickness of the contaminated zone, as well as all other site soil parameters, are the same as in the original RESRAD model. The instantaneous dose at time T=0 is 114 mrem/year. After the first year, the dose decreases to 0.002 mrem/year.

The resident farmer RESRAD report is included as Appendix B to this report.

4.0 Uncertainty Analyses

NRC staff requested additional uncertainty analyses on hydraulic conductivity (K_{sat}) and distribution coefficient (K_d). A total of FIVE analyses were run:

- K_{sat} of the Unsaturated Zone (Appendix C)
- K_d for carbon in the Unsaturated Zone (Appendix D)
- K_d for carbon in the Saturated Zone (Appendix E)
- K_d for hydrogen in the Unsaturated Zone (Appendix F)
- K_d for hydrogen in the Saturated Zone (Appendix G)

None of the models indicated any appreciable difference in dose.

Uncertainty analyses results are included as appendices to this report.

Appendix A

RESRAD Report
Suburban Resident

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

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Summary : RESRAD Default Parameters Suburban Resident Scenario
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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	C-14 (Source: FGR 12)	1.345E-05	1.345E-05	DCF1(1)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(2)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	C-14(p) (Class: ORGANIC)	2.090E-06	2.090E-06	DCF2(1)
B-1	C-14(g) (Class: CO2)	2.350E-08	2.350E-08	C14GInhDCF
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	C-14	2.090E-06	2.090E-06	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)
D-34	Food transfer factors:			
D-34	C-14 , plant/soil concentration ratio, dimensionless	5.500E+00	5.500E+00	RTF(1,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.100E-02	3.100E-02	RTF(1,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.200E-02	1.200E-02	RTF(1,3)
D-34				
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF(2,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(2,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(2,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	C-14 , fish	5.000E+04	5.000E+04	BIOFAC(1,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC(1,2)
D-5				
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC(2,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(2,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters Suburban Resident Scenario
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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.200E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): C-14	1.290E+03	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	4.250E+01	0.000E+00	---	S1(2)
R012	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.200E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	1.040E+01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	8.000E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	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	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.200E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.730E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	5.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL

Summary : RESRAD Default Parameters Suburban Resident Scenario
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	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)	4.400E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.200E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	3.730E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.124E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.104E-01	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
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)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	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	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	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)	not used	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)	not used	8.000E-02	---	TE(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	not used	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	not used	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	not used	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)	2.000E-05	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	3.000E-02	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	2.000E-02	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	9.800E-01	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	3.000E-01	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	7.000E-07	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	1.000E-10	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	8.000E-01	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	2.000E-01	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	1	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	12000.00 square meters	C-14	1.290E+03
Thickness:	3.00 meters	H-3	4.250E+01
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

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):	3.967E+02	4.628E+01	5.388E-01	2.345E-05	4.986E-13	1.205E-26	0.000E+00	0.000E+00
M(t):	1.587E+01	1.851E+00	2.155E-02	9.382E-07	1.994E-14	4.821E-28	0.000E+00	0.000E+00

Maximum TDOSE(t): 3.967E+02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.022E-02	0.0000	3.832E-01	0.0010	0.000E+00	0.0000	3.961E+02	0.9984	0.000E+00	0.0000	0.000E+00	0.0000	7.381E-02	0.0002
H-3	0.000E+00	0.0000	9.584E-03	0.0000	0.000E+00	0.0000	1.397E-01	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.446E-05	0.0000
Total	1.022E-02	0.0000	3.928E-01	0.0010	0.000E+00	0.0000	3.962E+02	0.9988	0.000E+00	0.0000	0.000E+00	0.0000	7.388E-02	0.0002

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	3.966E+02	0.9996
H-3	0.000E+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	1.494E-01	0.0004
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.967E+02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.095E-03	0.0000	4.104E-02	0.0009	0.000E+00	0.0000	4.617E+01	0.9975	0.000E+00	0.0000	0.000E+00	0.0000	7.904E-03	0.0002
H-3	0.000E+00	0.0000	3.984E-03	0.0001	0.000E+00	0.0000	5.980E-02	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	3.095E-05	0.0000
Total	1.095E-03	0.0000	4.502E-02	0.0010	0.000E+00	0.0000	4.623E+01	0.9988	0.000E+00	0.0000	0.000E+00	0.0000	7.935E-03	0.0002

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	4.622E+01	0.9986
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.382E-02	0.0014
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.628E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.250E-05	0.0000	4.686E-04	0.0009	0.000E+00	0.0000	5.272E-01	0.9785	0.000E+00	0.0000	0.000E+00	0.0000	9.024E-05	0.0002
H-3	0.000E+00	0.0000	6.880E-04	0.0013	0.000E+00	0.0000	1.033E-02	0.0192	0.000E+00	0.0000	0.000E+00	0.0000	5.345E-06	0.0000
Total	1.250E-05	0.0000	1.157E-03	0.0021	0.000E+00	0.0000	5.375E-01	0.9977	0.000E+00	0.0000	0.000E+00	0.0000	9.558E-05	0.0002

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.278E-01	0.9795
H-3	0.000E+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	1.102E-02	0.0205
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.388E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.897E-12	0.0000	7.112E-11	0.0000	0.000E+00	0.0000	8.004E-08	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-11	0.0000
H-3	0.000E+00	0.0000	1.459E-06	0.0622	0.000E+00	0.0000	2.190E-05	0.9339	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-08	0.0005
Total	1.897E-12	0.0000	1.459E-06	0.0622	0.000E+00	0.0000	2.198E-05	0.9373	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0005

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	8.013E-08	0.0034
H-3	0.000E+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	2.337E-05	0.9966
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	2.345E-05	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.762E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	3.112E-14	0.0624	0.000E+00	0.0000	4.672E-13	0.9371	0.000E+00	0.0000	0.000E+00	0.0000	2.418E-16	0.0005
Total	0.000E+00	0.0000	3.112E-14	0.0624	0.000E+00	0.0000	4.672E-13	0.9371	0.000E+00	0.0000	0.000E+00	0.0000	2.418E-16	0.0005

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	1.762E-27	0.0000
H-3	0.000E+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	4.986E-13	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.986E-13	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-26	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-26	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-26	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-26	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	3.074E-01	3.583E-02	4.091E-04	6.212E-11	1.368E-30	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	3.514E-03	1.502E-03	2.593E-04	5.500E-07	1.173E-14	2.836E-28	0.000E+00	0.000E+00

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	8.132E+01	6.978E+02	6.111E+04	4.025E+11	*4.455E+12	*4.455E+12	*4.455E+12	*4.455E+12
H-3	7.113E+03	1.665E+04	9.642E+04	4.546E+07	2.131E+15	*9.597E+15	*9.597E+15	*9.597E+15

*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 = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
C-14	1.290E+03	0.000E+00	3.074E-01	8.132E+01	3.074E-01	8.132E+01
H-3	4.250E+01	0.000E+00	3.514E-03	7.113E+03	3.514E-03	7.113E+03

Summary : RESRAD Default Parameters Suburban Resident Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_RESIDENT_WORST_CASE.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	3.966E+02	4.622E+01	5.278E-01	8.013E-08	1.762E-27	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	1.494E-01	6.382E-02	1.102E-02	2.337E-05	4.986E-13	1.205E-26	0.000E+00	0.000E+00

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	1.290E+03	1.381E+02	1.577E+00	2.394E-07	5.265E-27	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	4.250E+01	1.767E+01	3.051E+00	6.471E-03	1.380E-10	7.907E-38	0.000E+00	0.000E+00

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

RESCALC.EXE execution time = 3.00 seconds

Appendix B

RESRAD Report
Resident Farmer

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

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Summary : RESRAD Default Parameters Resident Farmer Scenario
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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	C-14 (Source: FGR 12)	1.345E-05	1.345E-05	DCF1(1)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(2)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	C-14(p) (Class: ORGANIC)	2.090E-06	2.090E-06	DCF2(1)
B-1	C-14(g) (Class: CO2)	2.350E-08	2.350E-08	C14GInhDCF
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	C-14	2.090E-06	2.090E-06	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)
D-34	Food transfer factors:			
D-34	C-14 , plant/soil concentration ratio, dimensionless	5.500E+00	5.500E+00	RTF(1,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.100E-02	3.100E-02	RTF(1,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.200E-02	1.200E-02	RTF(1,3)
D-34				
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF(2,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(2,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(2,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	C-14 , fish	5.000E+04	5.000E+04	BIOFAC(1,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC(1,2)
D-5				
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC(2,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(2,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.200E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): C-14	4.470E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	5.100E+00	0.000E+00	---	S1(2)
R012	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.200E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	1.040E+01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	8.000E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	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	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.200E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.730E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	5.000E+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)	1.000E-03	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)	ND	ND	---	MODEL

Summary : RESRAD Default Parameters Resident Farmer Scenario
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	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)	4.400E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.200E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	3.730E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	5.000E+00	0.000E+00	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.124E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	4.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.104E-01	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
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)

Summary : RESRAD Default Parameters Resident Farmer Scenario
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
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	5.000E-01	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
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	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	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)

Summary : RESRAD Default Parameters Resident Farmer Scenario
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	2.000E-05	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	3.000E-02	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	2.000E-02	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	9.800E-01	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	3.000E-01	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	7.000E-07	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	1.000E-10	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	8.000E-01	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	2.000E-01	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	1	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	12000.00 square meters	C-14	4.470E+01
Thickness:	3.00 meters	H-3	5.100E+00
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

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):	1.141E+02	1.505E+01	1.811E-01	2.109E-05	4.494E-13	1.228E-25	0.000E+00	0.000E+00
M(t):	4.565E+00	6.020E-01	7.246E-03	8.436E-07	1.798E-14	4.914E-27	0.000E+00	0.000E+00

Maximum TDOSE(t): 1.141E+02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	3.542E-04	0.0000	1.328E-02	0.0001	0.000E+00	0.0000	6.863E+01	0.6013	3.181E+01	0.2787	1.355E+01	0.1187	2.557E-03	0.0000
H-3	0.000E+00	0.0000	1.150E-03	0.0000	0.000E+00	0.0000	8.382E-02	0.0007	2.375E-02	0.0002	2.108E-02	0.0002	8.935E-06	0.0000
Total	3.542E-04	0.0000	1.443E-02	0.0001	0.000E+00	0.0000	6.871E+01	0.6020	3.183E+01	0.2789	1.357E+01	0.1189	2.566E-03	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	1.140E+02	0.9989
H-3	0.000E+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	1.298E-01	0.0011
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	1.141E+02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	3.793E-05	0.0000	1.422E-03	0.0001	0.000E+00	0.0000	7.999E+00	0.5315	5.070E+00	0.3369	1.922E+00	0.1277	2.739E-04	0.0000
H-3	0.000E+00	0.0000	4.781E-04	0.0000	0.000E+00	0.0000	3.588E-02	0.0024	1.143E-02	0.0008	9.717E-03	0.0006	3.714E-06	0.0000
Total	3.793E-05	0.0000	1.900E-03	0.0001	0.000E+00	0.0000	8.035E+00	0.5339	5.081E+00	0.3376	1.931E+00	0.1283	2.776E-04	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	1.499E+01	0.9962
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.751E-02	0.0038
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	1.505E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	4.330E-07	0.0000	1.624E-05	0.0001	0.000E+00	0.0000	9.134E-02	0.5042	5.791E-02	0.3197	2.195E-02	0.1212	3.127E-06	0.0000
H-3	0.000E+00	0.0000	8.255E-05	0.0005	0.000E+00	0.0000	6.196E-03	0.0342	1.973E-03	0.0109	1.678E-03	0.0093	6.414E-07	0.0000
Total	4.330E-07	0.0000	9.879E-05	0.0005	0.000E+00	0.0000	9.753E-02	0.5384	5.988E-02	0.3306	2.362E-02	0.1304	3.768E-06	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	1.712E-01	0.9452
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.930E-03	0.0548
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	1.811E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	6.572E-14	0.0000	2.464E-12	0.0000	0.000E+00	0.0000	1.387E-08	0.0007	8.806E-09	0.0004	3.335E-09	0.0002	4.746E-13	0.0000
H-3	0.000E+00	0.0000	1.751E-07	0.0083	0.000E+00	0.0000	1.314E-05	0.6231	4.186E-06	0.1985	3.560E-06	0.1688	1.360E-09	0.0001
Total	6.572E-14	0.0000	1.751E-07	0.0083	0.000E+00	0.0000	1.316E-05	0.6238	4.195E-06	0.1989	3.563E-06	0.1689	1.361E-09	0.0001

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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	2.601E-08	0.0012
H-3	0.000E+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	2.106E-05	0.9988
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	2.109E-05	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.053E-28	0.0000	1.947E-28	0.0000	7.363E-29	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	3.734E-15	0.0083	0.000E+00	0.0000	2.803E-13	0.6238	8.937E-14	0.1988	7.597E-14	0.1690	2.901E-17	0.0001
Total	0.000E+00	0.0000	3.734E-15	0.0083	0.000E+00	0.0000	2.803E-13	0.6238	8.937E-14	0.1988	7.597E-14	0.1690	2.901E-17	0.0001

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-28	0.0000
H-3	0.000E+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	4.494E-13	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.494E-13	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	9.738E-26	0.7927	7.317E-30	0.0001	0.000E+00	0.0000	7.630E-27	0.0621	4.736E-27	0.0386	1.310E-26	0.1066	1.228E-25	1.0000
Total	9.738E-26	0.7927	7.317E-30	0.0001	0.000E+00	0.0000	7.630E-27	0.0621	4.736E-27	0.0386	1.310E-26	0.1066	1.228E-25	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.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)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

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

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+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
H-3	0.000E+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
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	2.550E+00	3.354E-01	3.830E-03	5.819E-10	1.284E-29	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	2.545E-02	1.128E-02	1.947E-03	4.130E-06	8.813E-14	2.409E-26	0.000E+00	0.000E+00

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	9.803E+00	7.454E+01	6.527E+03	4.296E+10	*4.455E+12	*4.455E+12	*4.455E+12	*4.455E+12
H-3	9.822E+02	2.217E+03	1.284E+04	6.053E+06	2.837E+14	*9.597E+15	*9.597E+15	*9.597E+15

*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 = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
C-14	4.470E+01	0.000E+00	2.550E+00	9.803E+00	2.550E+00	9.803E+00
H-3	5.100E+00	0.000E+00	2.545E-02	9.822E+02	2.545E-02	9.822E+02

Summary : RESRAD Default Parameters Resident Farmer Scenario
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_FARMER_AVG_CASE.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	1.140E+02	1.499E+01	1.712E-01	2.601E-08	5.737E-28	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	1.298E-01	5.751E-02	9.930E-03	2.106E-05	4.494E-13	1.228E-25	0.000E+00	0.000E+00

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

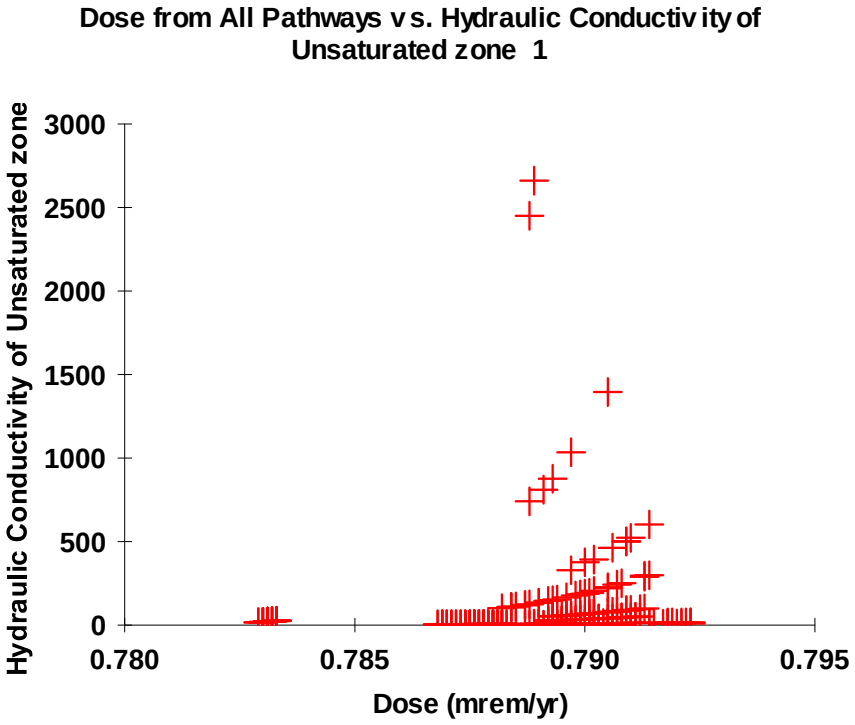
Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	4.470E+01	4.787E+00	5.465E-02	8.295E-09	1.824E-28	0.000E+00	0.000E+00	0.000E+00
H-3	H-3	1.000E+00	5.100E+00	2.120E+00	3.661E-01	7.765E-04	1.656E-11	9.488E-39	0.000E+00	0.000E+00

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

RESCALC.EXE execution time = 2.75 seconds

Appendix C

Uncertainty Analysis
Hydraulic Conductivity of the Unsaturated Zone


Dose from All Pathways vs. Hydraulic Conductivity of Unsaturated zone 1
Hydraulic Conductivity of Unsaturated zone
3000
2500
2000
1500
1000
500
0
0.780
0.785
0.790
0.795
Dose (mrem/yr)

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	HCUZ(1)	BOUNDED LOGNORMAL-N	2.3	2.11	.004	9250

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Total Dose Summary

Nuclide	Peak	Peak	DOSE(j,t), mrem/yr							
(j)	Time	Dose	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14										
Min	6.23E+02	7.83E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	7.21E+02	7.92E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	6.51E+02	7.89E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	2.54E+01	2.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3										
Min	3.09E+01	6.91E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	2.34E-26	0.00E+00	0.00E+00
Max	4.09E+01	1.21E-01	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.17E-01	9.72E-23	0.00E+00	0.00E+00
Avg	3.70E+01	8.66E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	4.00E-03	1.73E-23	0.00E+00	0.00E+00
Std	2.35E+00	1.15E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-02	2.87E-23	0.00E+00	0.00E+00
∑ALL										
Min	6.23E+02	7.83E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.34E-26	0.00E+00	0.00E+00
Max	7.21E+02	7.92E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.17E-01	9.72E-23	0.00E+00	0.00E+00
Avg	6.51E+02	7.89E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	4.00E-03	1.73E-23	0.00E+00	0.00E+00
Std	2.54E+01	2.21E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-02	2.87E-23	0.00E+00	0.00E+00

∑ALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Risk Summary

Nuclide	RISK(j,t)							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	6.43E-40	0.00E+00	0.00E+00
Avg	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	2.17E-42	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	1.33E-06	5.52E-07	9.53E-08	2.02E-10	5.13E-06	4.25E-27	0.00E+00	0.00E+00
Avg	1.33E-06	5.52E-07	9.53E-08	2.02E-10	1.75E-07	7.54E-28	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.66E-07	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	5.30E-06	9.77E-07	1.00E-07	2.02E-10	5.13E-06	4.25E-27	0.00E+00	0.00E+00
Avg	5.30E-06	9.77E-07	1.00E-07	2.02E-10	1.75E-07	7.54E-28	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.66E-07	0.00E+00	0.00E+00	0.00E+00

∑ALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Ground External

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.34E-26	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-01	9.72E-23	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-03	1.73E-23	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-02	2.87E-23	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.34E-26	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-01	9.72E-23	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-03	1.73E-23	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-02	2.87E-23	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_HYDCON_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
0.025	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.08E-26	0.00E+00	0.00E+00
0.050	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.37E-25	0.00E+00	0.00E+00
0.075	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.09E-25	0.00E+00	0.00E+00
0.100	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.79E-25	0.00E+00	0.00E+00
0.125	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.73E-25	0.00E+00	0.00E+00
0.150	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.48E-25	0.00E+00	0.00E+00
0.175	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.63E-25	0.00E+00	0.00E+00
0.200	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.58E-25	0.00E+00	0.00E+00
0.225	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.80E-25	0.00E+00	0.00E+00
0.250	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	9.25E-25	0.00E+00	0.00E+00
0.275	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.06E-24	0.00E+00	0.00E+00
0.300	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.25E-24	0.00E+00	0.00E+00
0.325	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.48E-24	0.00E+00	0.00E+00
0.350	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.68E-24	0.00E+00	0.00E+00
0.375	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.92E-24	0.00E+00	0.00E+00
0.400	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.14E-24	0.00E+00	0.00E+00
0.425	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.52E-24	0.00E+00	0.00E+00
0.450	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.94E-24	0.00E+00	0.00E+00
0.475	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.24E-24	0.00E+00	0.00E+00
0.500	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.82E-24	0.00E+00	0.00E+00
0.525	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.34E-24	0.00E+00	0.00E+00
0.550	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.89E-24	0.00E+00	0.00E+00
0.575	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.70E-24	0.00E+00	0.00E+00
0.600	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.46E-24	0.00E+00	0.00E+00
0.625	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.56E-24	0.00E+00	0.00E+00
0.650	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.97E-24	0.00E+00	0.00E+00
0.675	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.02E-23	0.00E+00	0.00E+00
0.700	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.21E-23	0.00E+00	0.00E+00
0.725	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.43E-23	0.00E+00	0.00E+00
0.750	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.73E-23	0.00E+00	0.00E+00
0.775	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.07E-23	0.00E+00	0.00E+00
0.800	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.41E-23	0.00E+00	0.00E+00
0.825	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.09E-23	0.00E+00	0.00E+00
0.850	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.80E-23	0.00E+00	0.00E+00
0.875	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.00E-23	0.00E+00	0.00E+00
0.900	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.26E-23	0.00E+00	0.00E+00
0.925	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	9.72E-23	0.00E+00	0.00E+00
0.950	1.89E-01	2.15E-02	5.14E-04	6.11E-07	3.08E-02	9.72E-23	0.00E+00	0.00E+00
0.975	1.89E-01	2.15E-02	5.14E-04	6.11E-07	7.32E-02	9.72E-23	0.00E+00	0.00E+00
1.000	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.17E-01	9.72E-23	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Summary of dose at graphical times, reptition 1

Time — Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.05E-01	3.87E-03	1.30E-14	1.30E-14	4.14E-02	7.99E-02	1.04E-01
4.00E+01	5.29E-03	7.74E-02	6.79E-02	7.63E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	2.27E-18	5.27E-15	9.44E-16	2.11E-16	3.91E-15	5.27E-15	5.27E-15	5.27E-15
1.00E+02	3.97E-26	9.72E-23	1.73E-23	3.80E-24	7.20E-23	9.72E-23	9.72E-23	9.72E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.74E-01	7.91E-01	7.83E-01	7.83E-01	7.89E-01	7.90E-01	7.91E-01	7.91E-01
6.80E+02	7.71E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.67E-01	7.84E-01	7.80E-01	7.81E-01	7.83E-01	7.83E-01	7.83E-01	7.84E-01
7.60E+02	3.03E-10	3.45E-01	3.70E-02	6.02E-05	1.55E-01	3.45E-01	3.45E-01	3.45E-01
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Summary of dose at graphical times, reptition 2

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.16E-01	3.91E-03	1.30E-14	1.30E-14	3.03E-02	7.98E-02	1.16E-01
4.00E+01	3.36E-03	7.74E-02	6.78E-02	7.63E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	1.44E-18	5.27E-15	9.41E-16	2.10E-16	3.95E-15	5.27E-15	5.27E-15	5.27E-15
1.00E+02	2.50E-26	9.72E-23	1.73E-23	3.79E-24	7.28E-23	9.72E-23	9.72E-23	9.72E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.74E-01	7.91E-01	7.83E-01	7.83E-01	7.89E-01	7.90E-01	7.91E-01	7.91E-01
6.80E+02	7.71E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.67E-01	7.84E-01	7.80E-01	7.81E-01	7.83E-01	7.83E-01	7.83E-01	7.84E-01
7.60E+02	8.80E-11	3.45E-01	3.69E-02	5.97E-05	1.61E-01	3.45E-01	3.45E-01	3.45E-01
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Summary of dose at graphical times, reptition 3

Time	Dose statistics at graphical times, mrem/yr							
Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.17E-01	4.21E-03	1.30E-14	1.30E-14	4.43E-02	8.65E-02	1.17E-01
4.00E+01	3.15E-03	7.74E-02	6.78E-02	7.63E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	1.34E-18	5.27E-15	9.41E-16	2.10E-16	4.09E-15	5.27E-15	5.27E-15	5.27E-15
1.00E+02	2.34E-26	9.72E-23	1.73E-23	3.79E-24	7.53E-23	9.72E-23	9.72E-23	9.72E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.74E-01	7.91E-01	7.83E-01	7.83E-01	7.89E-01	7.90E-01	7.91E-01	7.91E-01
6.80E+02	7.71E-01	7.73E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.67E-01	7.84E-01	7.80E-01	7.81E-01	7.83E-01	7.83E-01	7.83E-01	7.84E-01
7.60E+02	7.36E-11	3.45E-01	3.69E-02	5.95E-05	1.75E-01	3.45E-01	3.45E-01	3.45E-01
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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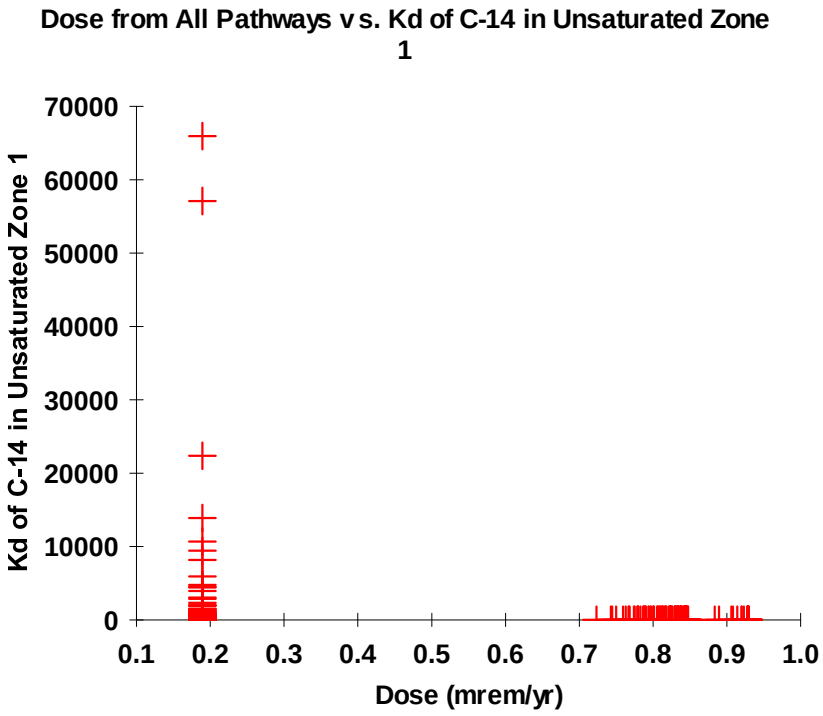
Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	6.400E+02	7.828E-01
2	6.400E+02	7.827E-01
3	6.400E+02	7.827E-01

Appendix D

Uncertainty Analysis
Distribution Coefficient of Carbon in the Unsaturated Zone


Dose from All Pathways vs. Kd of C-14 in Unsaturated Zone 1
Kd of C-14 in Unsaturated Zone 1
70000
60000
50000
40000
30000
20000
10000
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Dose (mrem/yr)

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters
1	DCACTU1(1)	LOGNORMAL-N	2.4 3.22

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Total Dose Summary

Nuclide	Peak	Peak	DOSE(j,t), mrem/yr							
(j)	Time	Dose	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14										
Min	0.00E+00	1.85E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	1.00E+03	8.51E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	8.32E-01	8.44E-01	8.20E-01	7.50E-01
Avg	1.46E+02	4.83E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	2.39E-02	1.55E-01	5.93E-02	1.48E-02
Std	2.37E+02	3.19E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-01	3.23E-01	2.11E-01	1.04E-01
H-3										
Min	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Max	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Avg	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL										
Min	0.00E+00	1.89E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Max	1.00E+03	9.30E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	8.32E-01	8.44E-01	8.20E-01	7.50E-01
Avg	1.42E+02	4.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	2.39E-02	1.55E-01	5.93E-02	1.48E-02
Std	2.38E+02	3.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-01	3.23E-01	2.11E-01	1.04E-01

∑ALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Risk Summary

Nuclide		RISK(j,t)							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		3.97E-06	4.25E-07	4.85E-09	7.36E-16	1.54E-05	1.56E-05	1.52E-05	1.39E-05
Avg		3.97E-06	4.25E-07	4.85E-09	7.36E-16	4.43E-07	2.87E-06	1.10E-06	2.75E-07
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-06	6.00E-06	3.91E-06	1.92E-06
H-3									
Min		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Max		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Avg		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Max		5.30E-06	9.77E-07	1.00E-07	2.02E-10	1.54E-05	1.56E-05	1.52E-05	1.39E-05
Avg		5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.43E-07	2.87E-06	1.10E-06	2.75E-07
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-06	6.00E-06	3.91E-06	1.92E-06

∑ALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Ground External

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.32E-01	8.44E-01	8.20E-01	7.50E-01
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-02	1.55E-01	5.93E-02	1.48E-02
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-01	3.23E-01	2.11E-01	1.04E-01
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.32E-01	8.44E-01	8.20E-01	7.50E-01
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-02	1.55E-01	5.93E-02	1.48E-02
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-01	3.23E-01	2.11E-01	1.04E-01

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD
Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
0.025	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.050	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.075	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.100	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.125	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.150	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.175	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.200	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.225	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.250	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.275	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.300	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.325	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.350	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.375	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.400	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.425	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.450	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.475	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.500	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.525	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.550	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.575	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.600	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.625	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.650	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.675	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.700	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.725	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.750	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.775	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.800	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.825	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.27E-01	0.00E+00	0.00E+00
0.850	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.27E-01	0.00E+00	0.00E+00
0.875	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.28E-01	0.00E+00	0.00E+00
0.900	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.28E-01	2.97E-25	0.00E+00
0.925	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.29E-01	2.75E-05	0.00E+00
0.950	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.30E-01	8.08E-01	0.00E+00
0.975	1.89E-01	2.15E-02	5.14E-04	6.11E-07	7.60E-01	8.35E-01	8.12E-01	1.65E-19
1.000	1.89E-01	2.15E-02	5.14E-04	6.11E-07	8.32E-01	8.44E-01	8.20E-01	7.50E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

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Summary of dose at graphical times, reptition 1

Time — Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	8.30E-01	2.40E-02	1.30E-14	1.30E-14	1.30E-14	7.83E-01	8.30E-01
4.00E+01	7.74E-02	9.22E-01	1.44E-01	7.74E-02	7.74E-02	9.11E-01	9.18E-01	9.22E-01
8.00E+01	4.31E-17	8.44E-01	1.34E-01	4.31E-17	8.33E-01	8.40E-01	8.43E-01	8.44E-01
1.00E+02	7.69E-25	8.43E-01	1.58E-01	7.69E-25	8.29E-01	8.32E-01	8.37E-01	8.43E-01
1.20E+02	0.00E+00	8.36E-01	1.74E-01	0.00E+00	8.30E-01	8.32E-01	8.33E-01	8.36E-01
1.60E+02	0.00E+00	8.36E-01	1.98E-01	0.00E+00	8.23E-01	8.29E-01	8.34E-01	8.36E-01
2.00E+02	0.00E+00	8.31E-01	1.16E-01	0.00E+00	8.18E-01	8.22E-01	8.28E-01	8.30E-01
2.40E+02	0.00E+00	8.30E-01	8.19E-02	0.00E+00	7.33E-01	8.15E-01	8.23E-01	8.30E-01
2.80E+02	0.00E+00	8.23E-01	5.71E-02	0.00E+00	1.09E-23	8.10E-01	8.19E-01	8.23E-01
3.00E+02	0.00E+00	8.20E-01	6.43E-02	0.00E+00	1.13E-22	8.09E-01	8.13E-01	8.20E-01
3.20E+02	0.00E+00	8.22E-01	4.86E-02	0.00E+00	0.00E+00	8.06E-01	8.11E-01	8.21E-01
3.60E+02	0.00E+00	8.15E-01	4.03E-02	0.00E+00	0.00E+00	7.62E-01	8.05E-01	8.15E-01
4.00E+02	0.00E+00	8.10E-01	4.01E-02	0.00E+00	0.00E+00	7.58E-01	8.01E-01	8.10E-01
4.40E+02	0.00E+00	8.06E-01	3.45E-02	0.00E+00	0.00E+00	2.46E-01	7.97E-01	8.06E-01
4.80E+02	0.00E+00	8.02E-01	3.62E-02	0.00E+00	0.00E+00	4.23E-01	7.90E-01	8.02E-01
5.20E+02	0.00E+00	7.98E-01	2.43E-02	0.00E+00	0.00E+00	3.12E-14	7.87E-01	7.98E-01
5.60E+02	0.00E+00	7.91E-01	3.51E-02	0.00E+00	0.00E+00	3.46E-01	7.85E-01	7.91E-01
6.00E+02	0.00E+00	7.85E-01	3.12E-02	0.00E+00	0.00E+00	0.00E+00	7.80E-01	7.85E-01
6.40E+02	0.00E+00	7.79E-01	2.33E-02	0.00E+00	0.00E+00	0.00E+00	7.75E-01	7.79E-01
6.80E+02	0.00E+00	7.87E-01	2.33E-02	0.00E+00	0.00E+00	0.00E+00	7.71E-01	7.87E-01
7.20E+02	0.00E+00	7.75E-01	1.54E-02	0.00E+00	0.00E+00	0.00E+00	3.65E-01	7.75E-01
7.60E+02	0.00E+00	7.71E-01	2.30E-02	0.00E+00	0.00E+00	0.00E+00	7.64E-01	7.71E-01
8.00E+02	0.00E+00	7.63E-01	1.52E-02	0.00E+00	0.00E+00	0.00E+00	3.61E-01	7.63E-01
8.40E+02	0.00E+00	7.69E-01	1.53E-02	0.00E+00	0.00E+00	0.00E+00	3.59E-01	7.69E-01
8.80E+02	0.00E+00	7.63E-01	1.52E-02	0.00E+00	0.00E+00	0.00E+00	3.60E-01	7.63E-01
9.20E+02	0.00E+00	7.52E-01	2.25E-02	0.00E+00	0.00E+00	0.00E+00	7.50E-01	7.52E-01
9.60E+02	0.00E+00	7.46E-01	1.49E-02	0.00E+00	0.00E+00	0.00E+00	3.54E-01	7.46E-01
1.00E+03	0.00E+00	7.50E-01	7.50E-03	0.00E+00	0.00E+00	0.00E+00	1.70E-19	7.43E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

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Summary of dose at graphical times, reptition 2

Time — Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	8.32E-01	2.36E-02	1.30E-14	1.30E-14	1.30E-14	7.60E-01	8.32E-01
4.00E+01	7.74E-02	9.24E-01	1.44E-01	7.74E-02	7.74E-02	9.11E-01	9.18E-01	9.24E-01
8.00E+01	4.31E-17	8.46E-01	1.31E-01	4.31E-17	8.35E-01	8.42E-01	8.45E-01	8.46E-01
1.00E+02	7.69E-25	8.44E-01	1.49E-01	7.69E-25	8.28E-01	8.31E-01	8.36E-01	8.44E-01
1.20E+02	0.00E+00	8.41E-01	1.72E-01	0.00E+00	8.30E-01	8.33E-01	8.37E-01	8.41E-01
1.60E+02	0.00E+00	8.38E-01	1.98E-01	0.00E+00	8.25E-01	8.33E-01	8.36E-01	8.38E-01
2.00E+02	0.00E+00	8.31E-01	1.23E-01	0.00E+00	8.18E-01	8.21E-01	8.26E-01	8.31E-01
2.40E+02	0.00E+00	8.29E-01	9.02E-02	0.00E+00	8.13E-01	8.18E-01	8.28E-01	8.29E-01
2.80E+02	0.00E+00	8.17E-01	5.68E-02	0.00E+00	2.74E-20	8.10E-01	8.12E-01	8.17E-01
3.00E+02	0.00E+00	8.20E-01	5.68E-02	0.00E+00	2.67E-25	8.09E-01	8.14E-01	8.20E-01
3.20E+02	0.00E+00	8.20E-01	5.66E-02	0.00E+00	0.00E+00	8.06E-01	8.10E-01	8.20E-01
3.60E+02	0.00E+00	8.12E-01	4.02E-02	0.00E+00	0.00E+00	7.61E-01	8.04E-01	8.12E-01
4.00E+02	0.00E+00	8.07E-01	4.80E-02	0.00E+00	0.00E+00	7.98E-01	8.00E-01	8.07E-01
4.40E+02	0.00E+00	7.95E-01	3.97E-02	0.00E+00	0.00E+00	7.54E-01	7.95E-01	7.95E-01
4.80E+02	0.00E+00	8.03E-01	3.18E-02	0.00E+00	0.00E+00	3.51E-18	7.96E-01	8.03E-01
5.20E+02	0.00E+00	7.92E-01	3.15E-02	0.00E+00	0.00E+00	3.82E-12	7.87E-01	7.92E-01
5.60E+02	0.00E+00	7.97E-01	2.36E-02	0.00E+00	0.00E+00	0.00E+00	7.83E-01	7.97E-01
6.00E+02	0.00E+00	7.91E-01	2.35E-02	0.00E+00	0.00E+00	0.00E+00	7.79E-01	7.91E-01
6.40E+02	0.00E+00	7.85E-01	1.61E-02	0.00E+00	0.00E+00	0.00E+00	3.93E-01	7.85E-01
6.80E+02	0.00E+00	7.77E-01	3.09E-02	0.00E+00	0.00E+00	0.00E+00	7.72E-01	7.77E-01
7.20E+02	0.00E+00	7.74E-01	3.08E-02	0.00E+00	0.00E+00	0.00E+00	7.69E-01	7.74E-01
7.60E+02	0.00E+00	7.80E-01	2.32E-02	0.00E+00	0.00E+00	0.00E+00	7.70E-01	7.80E-01
8.00E+02	0.00E+00	7.67E-01	1.53E-02	0.00E+00	0.00E+00	0.00E+00	3.61E-01	7.67E-01
8.40E+02	0.00E+00	7.58E-01	1.52E-02	0.00E+00	0.00E+00	0.00E+00	3.60E-01	7.58E-01
8.80E+02	0.00E+00	7.53E-01	1.51E-02	0.00E+00	0.00E+00	0.00E+00	3.58E-01	7.53E-01
9.20E+02	0.00E+00	7.57E-01	1.50E-02	0.00E+00	0.00E+00	0.00E+00	3.55E-01	7.57E-01
9.60E+02	0.00E+00	7.51E-01	1.50E-02	0.00E+00	0.00E+00	0.00E+00	3.56E-01	7.51E-01
1.00E+03	0.00E+00	7.46E-01	2.23E-02	0.00E+00	0.00E+00	0.00E+00	7.43E-01	7.46E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

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Summary of dose at graphical times, reptition 3

Time — Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	8.28E-01	2.41E-02	1.30E-14	1.30E-14	1.30E-14	7.91E-01	8.28E-01
4.00E+01	7.74E-02	9.21E-01	1.39E-01	7.74E-02	7.74E-02	9.11E-01	9.19E-01	9.21E-01
8.00E+01	4.31E-17	8.44E-01	1.34E-01	4.31E-17	8.33E-01	8.39E-01	8.43E-01	8.44E-01
1.00E+02	7.69E-25	8.42E-01	1.58E-01	7.69E-25	8.28E-01	8.29E-01	8.37E-01	8.42E-01
1.20E+02	0.00E+00	8.40E-01	1.66E-01	0.00E+00	8.31E-01	8.33E-01	8.35E-01	8.40E-01
1.60E+02	0.00E+00	8.36E-01	1.98E-01	0.00E+00	8.23E-01	8.30E-01	8.34E-01	8.36E-01
2.00E+02	0.00E+00	8.33E-01	1.23E-01	0.00E+00	8.18E-01	8.24E-01	8.30E-01	8.33E-01
2.40E+02	0.00E+00	8.29E-01	8.15E-02	0.00E+00	6.93E-01	8.20E-01	8.26E-01	8.29E-01
2.80E+02	0.00E+00	8.17E-01	6.50E-02	0.00E+00	5.13E-19	8.10E-01	8.15E-01	8.17E-01
3.00E+02	0.00E+00	8.20E-01	5.67E-02	0.00E+00	2.78E-25	8.07E-01	8.10E-01	8.20E-01
3.20E+02	0.00E+00	8.22E-01	5.66E-02	0.00E+00	0.00E+00	8.06E-01	8.08E-01	8.22E-01
3.60E+02	0.00E+00	8.11E-01	4.02E-02	0.00E+00	0.00E+00	7.61E-01	8.03E-01	8.11E-01
4.00E+02	0.00E+00	8.04E-01	4.00E-02	0.00E+00	0.00E+00	7.58E-01	8.01E-01	8.04E-01
4.40E+02	0.00E+00	8.07E-01	4.55E-02	0.00E+00	0.00E+00	7.82E-01	7.95E-01	8.06E-01
4.80E+02	0.00E+00	7.97E-01	3.17E-02	0.00E+00	0.00E+00	2.86E-11	7.93E-01	7.97E-01
5.20E+02	0.00E+00	7.90E-01	3.15E-02	0.00E+00	0.00E+00	5.34E-11	7.87E-01	7.90E-01
5.60E+02	0.00E+00	7.86E-01	2.35E-02	0.00E+00	0.00E+00	0.00E+00	7.83E-01	7.86E-01
6.00E+02	0.00E+00	7.90E-01	2.35E-02	0.00E+00	0.00E+00	0.00E+00	7.78E-01	7.90E-01
6.40E+02	0.00E+00	7.82E-01	2.34E-02	0.00E+00	0.00E+00	0.00E+00	7.78E-01	7.82E-01
6.80E+02	0.00E+00	7.76E-01	2.32E-02	0.00E+00	0.00E+00	0.00E+00	7.72E-01	7.76E-01
7.20E+02	0.00E+00	7.83E-01	2.32E-02	0.00E+00	0.00E+00	0.00E+00	7.68E-01	7.83E-01
7.60E+02	0.00E+00	7.64E-01	1.53E-02	0.00E+00	0.00E+00	0.00E+00	3.63E-01	7.64E-01
8.00E+02	0.00E+00	7.75E-01	2.30E-02	0.00E+00	0.00E+00	0.00E+00	7.61E-01	7.75E-01
8.40E+02	0.00E+00	7.58E-01	1.51E-02	0.00E+00	0.00E+00	0.00E+00	3.59E-01	7.58E-01
8.80E+02	0.00E+00	7.56E-01	1.51E-02	0.00E+00	0.00E+00	0.00E+00	3.57E-01	7.56E-01
9.20E+02	0.00E+00	7.52E-01	7.52E-03	0.00E+00	0.00E+00	0.00E+00	2.13E-10	7.45E-01
9.60E+02	0.00E+00	7.46E-01	7.46E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.38E-01
1.00E+03	0.00E+00	7.45E-01	1.47E-02	0.00E+00	0.00E+00	0.00E+00	3.44E-01	7.44E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

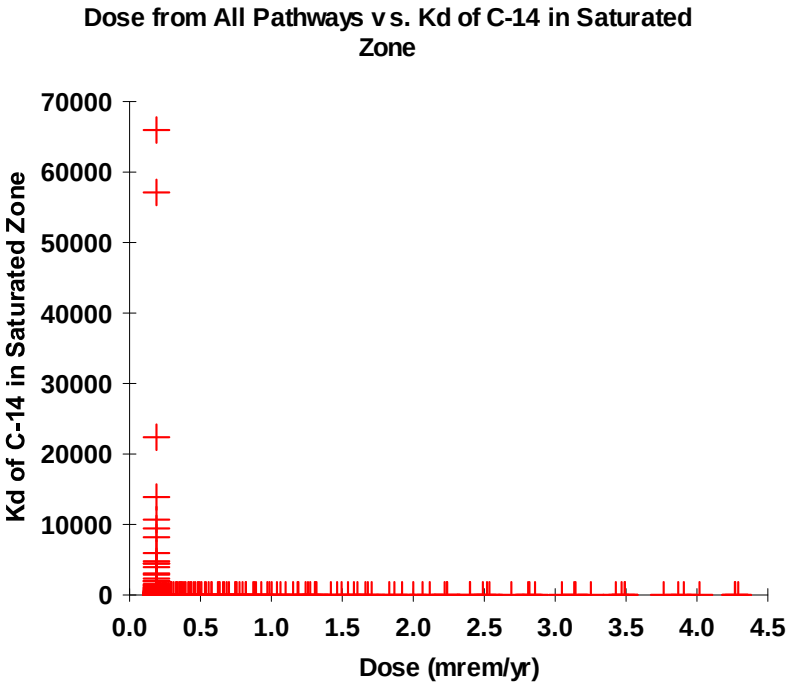
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_UNSAT-ZONE.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	1.600E+02	1.980E-01
2	1.600E+02	1.982E-01
3	1.600E+02	1.980E-01

Appendix E

Uncertainty Analysis
Distribution Coefficient of Carbon in the Saturated Zone


Dose from All Pathways vs. Kd of C-14 in Saturated Zone
Kd of C-14 in Saturated Zone
70000
60000
50000
40000
30000
20000
10000
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Dose (mrem/yr)

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

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Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters
1	DCACTS(1)	LOGNORMAL-N	2.4 3.22

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Total Dose Summary

Nuclide	Peak	Peak	DOSE(j,t), mrem/yr							
(j)	Time	Dose	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14										
Min	0.00E+00	1.85E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	6.40E+02	4.29E+00	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	2.60E-01
Avg	2.54E+02	6.37E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	2.94E-02
Std	3.13E+02	9.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.72E-02
H-3										
Min	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Max	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Avg	3.51E+01	9.55E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL										
Min	0.00E+00	1.89E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
Max	6.40E+02	4.29E+00	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.60E-01
Avg	2.54E+02	6.39E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.94E-02
Std	3.13E+02	9.06E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.72E-02

∑ALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Risk Summary

Nuclide		RISK(j,t)							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	6.43E-40	0.00E+00	4.83E-06
Avg		3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	2.17E-42	0.00E+00	5.45E-07
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-06
H-3									
Min		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Max		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Avg		1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	3.37E-29	0.00E+00	0.00E+00
Max		5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	3.37E-29	0.00E+00	4.83E-06
Avg		5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	3.37E-29	0.00E+00	5.45E-07
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-06

∑ALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Ground External

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-01
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-02
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.72E-02
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	2.60E-01
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.69E-25	0.00E+00	2.94E-02
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.72E-02

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr							
t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
0.025	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.050	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.075	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.100	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.125	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.150	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.175	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.200	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.225	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.250	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.275	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.300	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.325	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.350	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.375	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.400	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.425	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.450	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.475	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.500	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	0.00E+00
0.525	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.40E-11
0.550	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	3.72E-04
0.575	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.30E-03
0.600	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.60E-03
0.625	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	4.45E-03
0.650	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	8.13E-03
0.675	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.09E-02
0.700	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.57E-02
0.725	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.12E-02
0.750	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.90E-02
0.775	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	3.62E-02
0.800	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	4.59E-02
0.825	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	5.83E-02
0.850	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	7.70E-02
0.875	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	9.28E-02
0.900	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.15E-01
0.925	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.44E-01
0.950	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	1.81E-01
0.975	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.18E-01
1.000	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.69E-25	0.00E+00	2.60E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 1

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17
1.00E+02	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	2.44E-18	4.02E+00	5.15E-01	7.63E-02	1.85E+00	2.85E+00	3.59E+00	4.02E+00
6.80E+02	0.00E+00	1.57E+00	2.01E-01	2.47E-02	7.54E-01	1.12E+00	1.33E+00	1.57E+00
7.20E+02	0.00E+00	1.03E+00	1.37E-01	1.17E-02	5.26E-01	7.65E-01	9.53E-01	1.03E+00
7.60E+02	0.00E+00	7.24E-01	8.90E-02	4.96E-03	3.39E-01	5.18E-01	6.20E-01	7.23E-01
8.00E+02	0.00E+00	5.61E-01	6.95E-02	2.42E-03	2.64E-01	4.15E-01	4.93E-01	5.61E-01
8.40E+02	0.00E+00	4.59E-01	5.78E-02	1.21E-03	2.23E-01	3.36E-01	4.26E-01	4.59E-01
8.80E+02	0.00E+00	3.76E-01	4.45E-02	2.32E-04	1.73E-01	2.60E-01	3.29E-01	3.75E-01
9.20E+02	0.00E+00	3.34E-01	4.06E-02	8.87E-05	1.63E-01	2.42E-01	2.99E-01	3.34E-01
9.60E+02	0.00E+00	2.78E-01	3.40E-02	0.00E+00	1.42E-01	2.16E-01	2.51E-01	2.78E-01
1.00E+03	0.00E+00	2.60E-01	3.13E-02	0.00E+00	1.25E-01	1.91E-01	2.32E-01	2.60E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 2

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17
1.00E+02	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	2.03E-18	3.91E+00	5.06E-01	7.61E-02	1.82E+00	2.80E+00	3.48E+00	3.90E+00
6.80E+02	0.00E+00	1.62E+00	2.16E-01	2.48E-02	7.94E-01	1.22E+00	1.50E+00	1.62E+00
7.20E+02	0.00E+00	9.62E-01	1.25E-01	1.04E-02	4.86E-01	7.34E-01	8.45E-01	9.61E-01
7.60E+02	0.00E+00	7.30E-01	9.61E-02	5.57E-03	3.70E-01	5.38E-01	6.90E-01	7.30E-01
8.00E+02	0.00E+00	5.41E-01	6.90E-02	2.56E-03	2.78E-01	4.04E-01	4.97E-01	5.41E-01
8.40E+02	0.00E+00	4.33E-01	5.29E-02	1.31E-03	2.03E-01	3.13E-01	3.83E-01	4.33E-01
8.80E+02	0.00E+00	3.67E-01	4.49E-02	5.46E-04	1.80E-01	2.75E-01	3.26E-01	3.66E-01
9.20E+02	0.00E+00	3.40E-01	4.06E-02	3.47E-05	1.62E-01	2.44E-01	3.02E-01	3.40E-01
9.60E+02	0.00E+00	2.93E-01	3.40E-02	0.00E+00	1.33E-01	2.03E-01	2.59E-01	2.93E-01
1.00E+03	0.00E+00	2.45E-01	2.84E-02	0.00E+00	1.14E-01	1.80E-01	2.19E-01	2.45E-01

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 3

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17	4.31E-17
1.00E+02	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25	7.69E-25
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	2.65E-18	3.87E+00	5.06E-01	7.78E-02	1.90E+00	2.81E+00	3.37E+00	3.86E+00
6.80E+02	0.00E+00	1.50E+00	2.04E-01	2.49E-02	7.67E-01	1.15E+00	1.35E+00	1.50E+00
7.20E+02	0.00E+00	9.76E-01	1.24E-01	1.04E-02	4.77E-01	6.91E-01	8.38E-01	9.75E-01
7.60E+02	0.00E+00	6.78E-01	8.79E-02	5.21E-03	3.51E-01	4.89E-01	6.27E-01	6.78E-01
8.00E+02	0.00E+00	5.62E-01	6.88E-02	2.39E-03	2.78E-01	4.00E-01	4.82E-01	5.61E-01
8.40E+02	0.00E+00	4.66E-01	5.74E-02	1.10E-03	2.24E-01	3.49E-01	4.06E-01	4.66E-01
8.80E+02	0.00E+00	3.94E-01	4.84E-02	4.29E-04	1.98E-01	2.81E-01	3.53E-01	3.94E-01
9.20E+02	0.00E+00	3.13E-01	3.73E-02	3.01E-05	1.47E-01	2.24E-01	2.78E-01	3.12E-01
9.60E+02	0.00E+00	2.81E-01	3.41E-02	0.00E+00	1.37E-01	2.05E-01	2.61E-01	2.81E-01
1.00E+03	0.00E+00	2.48E-01	2.86E-02	0.00E+00	1.12E-01	1.83E-01	2.15E-01	2.48E-01

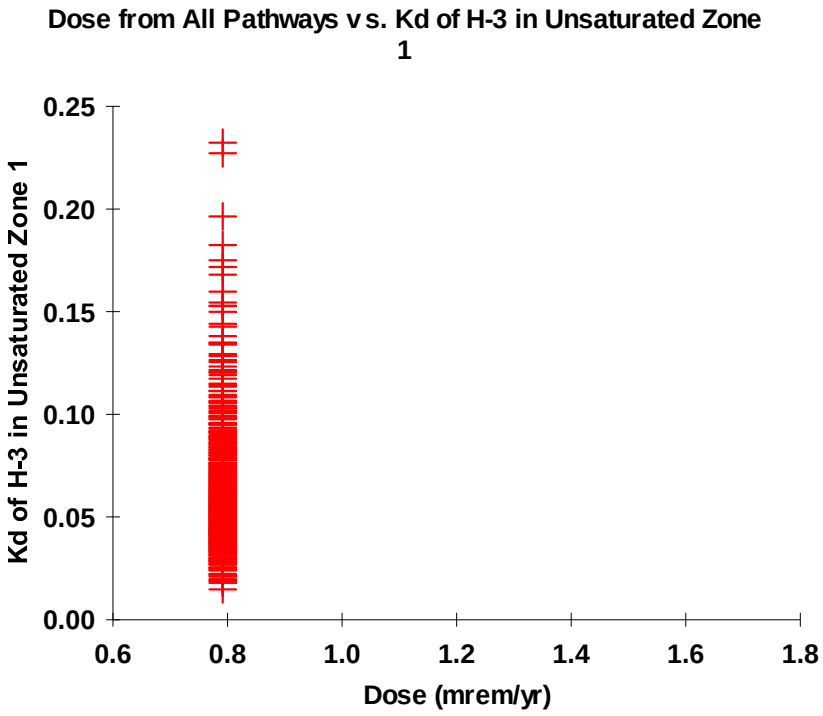
Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-C_SAT-ZONE.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	6.400E+02	5.148E-01
2	6.400E+02	5.056E-01
3	6.400E+02	5.057E-01

Appendix F

Uncertainty Analysis
Distribution Coefficient of Hydrogen in the Unsaturated Zone


Dose from All Pathways vs. Kd of H-3 in Unsaturated Zone 1
Kd of H-3 in Unsaturated Zone 1
0.25
0.20
0.15
0.10
0.05
0.00
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Dose (mrem/yr)

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

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Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
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Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters
1	DCACTU1(2)	LOGNORMAL-N	-2.81 .5

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Total Dose Summary

Nuclide	Peak	Peak	DOSE(j,t), mrem/yr							
(j)	Time	Dose	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14										
Min	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3										
Min	0.00E+00	4.01E-03	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	6.39E-26	0.00E+00	0.00E+00
Max	4.32E+01	1.13E-01	4.01E-03	1.67E-03	2.88E-04	6.11E-07	8.61E-02	1.17E-16	0.00E+00	0.00E+00
Avg	3.32E+01	7.64E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.71E-03	6.46E-19	0.00E+00	0.00E+00
Std	1.19E+01	2.80E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.66E-03	7.88E-18	0.00E+00	0.00E+00
∑ALL										
Min	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.39E-26	0.00E+00	0.00E+00
Max	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	8.61E-02	1.17E-16	0.00E+00	0.00E+00
Avg	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.71E-03	6.46E-19	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.66E-03	7.88E-18	0.00E+00	0.00E+00

∑ALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Risk Summary

Nuclide		RISK(j,t)						
(j)	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	6.43E-40	0.00E+00	0.00E+00
Avg	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	2.17E-42	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	1.33E-06	5.52E-07	9.53E-08	2.02E-10	3.77E-06	5.12E-21	0.00E+00	0.00E+00
Avg	1.33E-06	5.52E-07	9.53E-08	2.02E-10	7.49E-08	2.83E-23	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.23E-07	3.45E-22	0.00E+00	0.00E+00
∑ALL								
Min	5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	5.30E-06	9.77E-07	1.00E-07	2.02E-10	3.77E-06	5.12E-21	0.00E+00	0.00E+00
Avg	5.30E-06	9.77E-07	1.00E-07	2.02E-10	7.49E-08	2.83E-23	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.23E-07	3.45E-22	0.00E+00	0.00E+00

∑ALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Ground External

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Max	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Avg	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg	2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.39E-26	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.61E-02	1.17E-16	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03	6.46E-19	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.66E-03	7.88E-18	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.39E-26	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.61E-02	1.17E-16	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03	6.46E-19	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.66E-03	7.88E-18	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD
Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
0.025	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.28E-25	0.00E+00	0.00E+00
0.050	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.84E-25	0.00E+00	0.00E+00
0.075	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.60E-25	0.00E+00	0.00E+00
0.100	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.32E-25	0.00E+00	0.00E+00
0.125	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.26E-25	0.00E+00	0.00E+00
0.150	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.96E-25	0.00E+00	0.00E+00
0.175	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.11E-25	0.00E+00	0.00E+00
0.200	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.12E-25	0.00E+00	0.00E+00
0.225	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.54E-25	0.00E+00	0.00E+00
0.250	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.04E-24	0.00E+00	0.00E+00
0.275	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.20E-24	0.00E+00	0.00E+00
0.300	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.41E-24	0.00E+00	0.00E+00
0.325	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.69E-24	0.00E+00	0.00E+00
0.350	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.01E-24	0.00E+00	0.00E+00
0.375	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.35E-24	0.00E+00	0.00E+00
0.400	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.75E-24	0.00E+00	0.00E+00
0.425	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.28E-24	0.00E+00	0.00E+00
0.450	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.97E-24	0.00E+00	0.00E+00
0.475	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.64E-24	0.00E+00	0.00E+00
0.500	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.65E-24	0.00E+00	0.00E+00
0.525	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.93E-24	0.00E+00	0.00E+00
0.550	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.00E-24	0.00E+00	0.00E+00
0.575	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.01E-23	0.00E+00	0.00E+00
0.600	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.24E-23	0.00E+00	0.00E+00
0.625	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.55E-23	0.00E+00	0.00E+00
0.650	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.02E-23	0.00E+00	0.00E+00
0.675	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.45E-23	0.00E+00	0.00E+00
0.700	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.34E-23	0.00E+00	0.00E+00
0.725	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.53E-23	0.00E+00	0.00E+00
0.750	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.01E-23	0.00E+00	0.00E+00
0.775	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.57E-23	0.00E+00	0.00E+00
0.800	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.18E-22	0.00E+00	0.00E+00
0.825	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.79E-22	0.00E+00	0.00E+00
0.850	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.96E-22	0.00E+00	0.00E+00
0.875	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.05E-22	0.00E+00	0.00E+00
0.900	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.14E-21	0.00E+00	0.00E+00
0.925	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.76E-21	0.00E+00	0.00E+00
0.950	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.17E-20	0.00E+00	0.00E+00
0.975	1.89E-01	2.15E-02	5.14E-04	6.11E-07	3.74E-02	9.80E-20	0.00E+00	0.00E+00
1.000	1.89E-01	2.15E-02	5.14E-04	6.11E-07	8.61E-02	1.17E-16	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Summary of dose at graphical times, reptition 1

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	6.82E-02	1.67E-03	1.30E-14	1.30E-14	1.30E-14	4.13E-02	6.80E-02
4.00E+01	1.82E-18	7.74E-02	5.84E-02	7.50E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	4.97E-18	1.77E-10	2.30E-12	3.08E-16	6.30E-14	9.33E-13	2.32E-11	1.76E-10
1.00E+02	8.74E-26	3.51E-18	4.54E-20	5.57E-24	1.18E-21	1.78E-20	4.54E-19	3.49E-18
1.20E+02	0.00E+00	6.21E-26	7.98E-28	0.00E+00	0.00E+00	3.04E-28	7.94E-27	6.16E-26
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

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Summary of dose at graphical times, reptition 2

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	8.61E-02	1.86E-03	1.30E-14	1.30E-14	1.69E-04	4.38E-02	8.58E-02
4.00E+01	1.82E-18	7.74E-02	5.84E-02	7.49E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	3.64E-18	3.51E-09	3.54E-11	3.09E-16	7.92E-14	6.04E-13	1.04E-11	3.48E-09
1.00E+02	6.39E-26	7.10E-17	7.15E-19	5.58E-24	1.49E-21	1.15E-20	2.01E-19	7.03E-17
1.20E+02	0.00E+00	1.28E-24	1.29E-26	0.00E+00	0.00E+00	1.96E-28	3.49E-27	1.27E-24
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

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Summary of dose at graphical times, reptition 3

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	6.28E-02	1.62E-03	1.30E-14	1.30E-14	1.30E-14	4.76E-02	6.28E-02
4.00E+01	1.82E-18	7.74E-02	5.85E-02	7.49E-02	7.73E-02	7.74E-02	7.74E-02	7.74E-02
8.00E+01	5.38E-18	5.77E-09	5.81E-11	3.09E-16	5.93E-14	1.07E-12	1.65E-11	5.71E-09
1.00E+02	9.46E-26	1.17E-16	1.18E-18	5.58E-24	1.11E-21	2.04E-20	3.22E-19	1.16E-16
1.20E+02	0.00E+00	2.12E-24	2.13E-26	0.00E+00	0.00E+00	3.47E-28	5.61E-27	2.10E-24
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-

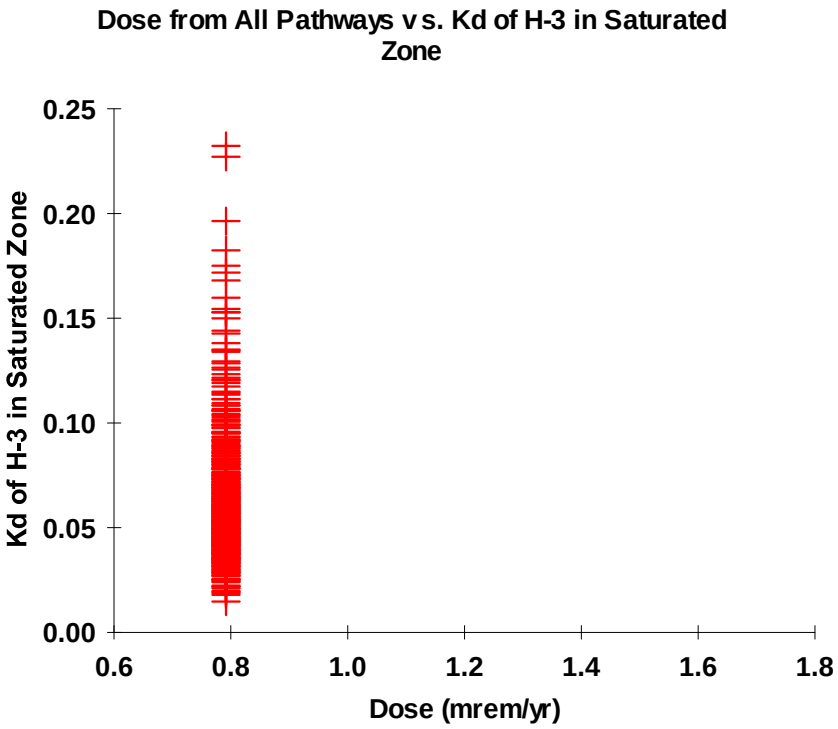
: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_UNSAT-ZONE.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	6.400E+02	7.904E-01
2	6.400E+02	7.904E-01
3	6.400E+02	7.904E-01

Appendix G

Uncertainty Analysis
Distribution Coefficient of Hydrogen in the Saturated Zone


Dose from All Pathways vs. Kd of H-3 in Saturated Zone
Kd of H-3 in Saturated Zone
0.25
0.20
0.15
0.10
0.05
0.00
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Dose (mrem/yr)

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

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Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters
1	DCACTS(2)	LOGNORMAL-N	-2.81 .5

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Total Dose Summary

Nuclide	Peak	Peak	DOSE(j,t), mrem/yr							
(j)	Time	Dose	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14										
Min	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	6.40E+02	7.90E-01	1.85E-01	1.98E-02	2.26E-04	3.44E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3										
Min	3.51E+01	5.97E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	4.74E-25	0.00E+00	0.00E+00
Max	3.51E+01	1.04E-01	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	3.53E-23	0.00E+00	0.00E+00
Avg	3.51E+01	8.86E-02	4.01E-03	1.67E-03	2.88E-04	6.11E-07	1.30E-14	1.92E-24	0.00E+00	0.00E+00
Std	8.73E-03	8.15E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-24	0.00E+00	0.00E+00
∑ALL										
Min	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	4.74E-25	0.00E+00	0.00E+00
Max	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.53E-23	0.00E+00	0.00E+00
Avg	6.27E+02	7.91E-01	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.92E-24	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-24	0.00E+00	0.00E+00

∑ALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Risk Summary

Nuclide		RISK(j,t)						
(j)	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	6.43E-40	0.00E+00	0.00E+00
Avg	3.97E-06	4.25E-07	4.85E-09	7.36E-16	0.00E+00	2.17E-42	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	1.54E-27	0.00E+00	0.00E+00
Avg	1.33E-06	5.52E-07	9.53E-08	2.02E-10	4.31E-18	8.34E-29	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	0.00E+00	0.00E+00	0.00E+00
Max	5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	1.54E-27	0.00E+00	0.00E+00
Avg	5.30E-06	9.77E-07	1.00E-07	2.02E-10	4.31E-18	8.34E-29	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Ground External

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	3.05E-03	3.27E-04	3.73E-06	5.66E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
	Min	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Max	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Avg	1.59E-01	1.71E-02	1.95E-04	2.96E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
	Min	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Max	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Avg	3.99E-03	1.66E-03	2.86E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
	Min	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Max	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Avg	1.63E-01	1.87E-02	4.81E-04	6.07E-07	1.30E-14	0.00E+00	0.00E+00	0.00E+00
	Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		2.26E-02	2.42E-03	2.77E-05	4.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max		2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg		2.28E-05	9.49E-06	1.64E-06	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Max		2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Avg		2.27E-02	2.43E-03	2.93E-05	3.48E-09	7.41E-17	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.74E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-23	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-24	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-24	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.74E-25	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-23	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.92E-24	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-24	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide		DOSE(i,j,t), mrem/yr							
(j)	t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Sce-
le: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide	DOSE(i,j,t), mrem/yr							
(j) t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
C-14								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
∑ALL								
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

∑ALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr							
t=	0.00E+00	1.00E+00	3.00E+00	1.00E+01	3.00E+01	1.00E+02	3.00E+02	1.00E+03
0.025	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.43E-25	0.00E+00	0.00E+00
0.050	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.82E-25	0.00E+00	0.00E+00
0.075	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.23E-25	0.00E+00	0.00E+00
0.100	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.53E-25	0.00E+00	0.00E+00
0.125	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	6.85E-25	0.00E+00	0.00E+00
0.150	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.06E-25	0.00E+00	0.00E+00
0.175	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.35E-25	0.00E+00	0.00E+00
0.200	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.58E-25	0.00E+00	0.00E+00
0.225	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	7.85E-25	0.00E+00	0.00E+00
0.250	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.16E-25	0.00E+00	0.00E+00
0.275	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.40E-25	0.00E+00	0.00E+00
0.300	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.66E-25	0.00E+00	0.00E+00
0.325	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.98E-25	0.00E+00	0.00E+00
0.350	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	9.28E-25	0.00E+00	0.00E+00
0.375	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	9.57E-25	0.00E+00	0.00E+00
0.400	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	9.88E-25	0.00E+00	0.00E+00
0.425	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.02E-24	0.00E+00	0.00E+00
0.450	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.06E-24	0.00E+00	0.00E+00
0.475	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.10E-24	0.00E+00	0.00E+00
0.500	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.14E-24	0.00E+00	0.00E+00
0.525	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.19E-24	0.00E+00	0.00E+00
0.550	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.22E-24	0.00E+00	0.00E+00
0.575	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.28E-24	0.00E+00	0.00E+00
0.600	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.33E-24	0.00E+00	0.00E+00
0.625	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.39E-24	0.00E+00	0.00E+00
0.650	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.47E-24	0.00E+00	0.00E+00
0.675	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.52E-24	0.00E+00	0.00E+00
0.700	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.62E-24	0.00E+00	0.00E+00
0.725	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.72E-24	0.00E+00	0.00E+00
0.750	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.82E-24	0.00E+00	0.00E+00
0.775	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	1.96E-24	0.00E+00	0.00E+00
0.800	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.09E-24	0.00E+00	0.00E+00
0.825	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.27E-24	0.00E+00	0.00E+00
0.850	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.51E-24	0.00E+00	0.00E+00
0.875	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	2.79E-24	0.00E+00	0.00E+00
0.900	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.29E-24	0.00E+00	0.00E+00
0.925	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.93E-24	0.00E+00	0.00E+00
0.950	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	5.27E-24	0.00E+00	0.00E+00
0.975	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	8.14E-24	0.00E+00	0.00E+00
1.000	1.89E-01	2.15E-02	5.14E-04	6.11E-07	1.30E-14	3.53E-23	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 1

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	5.20E-02	7.97E-02	7.11E-02	7.21E-02	7.80E-02	7.89E-02	7.94E-02	7.97E-02
8.00E+01	2.83E-17	9.31E-16	1.01E-16	6.34E-17	1.83E-16	3.17E-16	5.45E-16	9.29E-16
1.00E+02	5.04E-25	1.70E-23	1.81E-24	1.14E-24	3.31E-24	5.74E-24	9.93E-24	1.70E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 2

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	4.88E-02	7.96E-02	7.10E-02	7.22E-02	7.81E-02	7.88E-02	7.94E-02	7.96E-02
8.00E+01	2.67E-17	1.73E-15	1.08E-16	6.35E-17	1.92E-16	2.90E-16	5.05E-16	1.72E-15
1.00E+02	4.74E-25	3.18E-23	1.95E-24	1.14E-24	3.47E-24	5.26E-24	9.19E-24	3.15E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Summary of dose at graphical times, reptition 3

Dose statistics at graphical times, mrem/yr

Time Years	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01	1.89E-01
1.00E+00	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02	2.15E-02
3.00E+00	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04	5.14E-04
1.00E+01	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07	6.11E-07
3.00E+01	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14	1.30E-14
4.00E+01	4.83E-02	7.98E-02	7.10E-02	7.23E-02	7.80E-02	7.89E-02	7.95E-02	7.98E-02
8.00E+01	2.88E-17	1.92E-15	1.11E-16	6.35E-17	1.81E-16	3.25E-16	5.66E-16	1.91E-15
1.00E+02	5.12E-25	3.53E-23	2.01E-24	1.14E-24	3.27E-24	5.89E-24	1.03E-23	3.50E-23
1.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.40E+02	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01	7.90E-01
6.80E+02	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01	7.72E-01
7.20E+02	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01	7.83E-01
7.60E+02	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07	8.40E-07
8.00E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.40E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.80E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.20E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.60E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Probabilistic results summary : RESRAD Default Parameters Industrial Worker Scenario: C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\SIGMA_ALDRICH_UNCER_KD-H_SAT-ZONE.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	6.400E+02	7.904E-01
2	6.400E+02	7.904E-01
3	6.400E+02	7.904E-01