Appendix I

Smith Ranch Analysis of Day, Week, and Year Classification

1.0 SUMMARY

Based on discussions with the NRC and internal discussions within Cameco, an analysis of the solubility characteristics of Smith Ranch Highland yellowcake was performed and the material was classified according to the days, weeks, and years (D/W/Y) classification scheme of 10CFR20. This report provides a summary and dosimetry interpretation of the experiment performed by the Cameco Technology and Innovation Research Centre (CTI-RC)[1] to determine these solubility characteristics. This submission supersedes any previous reports submitted on this topic as it incorporates the most recent comments from the NRC and internal discussions.

The experimental results were interpreted in the context of the ICRP 30[2] solubility classifications of days, weeks, and years (D/W/Y) used by 10 CFR20. In addition, the annual limit on intake (ALI) and derived air concentrations (DAC) were calculated for each sample. The individual results were then averaged to establish the typical solubility characteristics, ALI and DAC for Smith Ranch - Highland material. In terms of the D/W/Y classification, the majority of the samples were classified as type D with a small component of type W material. The resulting ALI and DAC values are the same as the default type D material at 1 μCi and 5E-10 μCi/ml, respectively.

2.0 EXPERIMENT

The experimental circuit used in this experiment was designed specifically to study the kinetics of uranium dissolution in simulated lung fluids. Details of the experimental design and set up are found in the report Solubility of Radionuclides in Simulated Lung Fluid [1]. In brief, each site submitted several samples of their uranium concentrate for analysis. The samples were passed through a 20 μm filter and the filtered uranium powder placed between two glass fiber filters in 47-mm polypropylene filter holders that were used as extraction cells. A 20 μm filter was used to ensure that only particles of a size range, which may reach lungs and react with lung fluid, were included in the analysis; a more detailed analysis of the particulate size analysis conducted as part of this experiment is presented a CTI-RC Memo[3]. The simulated lung fluid was then passed over the sample at a predetermined flow rate. After passing over the product samples, the simulated lung fluid was collected and analyzed in a lab for uranium content. This uranium dissolution experiment was continued for 100 days. At the end of the experiment the residual uranium on a filter was analyzed using an X-Ray fluorescence method.

3.0 SOLUBILITY CLASSIFICATION

Current United States regulations in relation to internal dosimetry and solubility classifications are based on ICRP 30. ICRP 30 divides the respiratory tract into three regions and within each region are a number of compartments, each associated with a clearance pathway (absorption or particle transport). To describe the clearance of radioactive materials from the lungs, the materials are classified as D (day), W (week), and Y (year), referring to retention time (corresponding to dissolution half-time of the material) in the pulmonary region. The retention times for the classifications are as follows:

	Retention Time (Corresponds to Dissolution Half-Time)
Type D	up to 10
Type W	10 – 100
Type Y	greater than 100

4.0 RESULTS

The simulated lung fluid study conducted on the Smith Ranch – Highland uranium product by the Cameco Technology and Innovation Research Centre followed published methods in performing this experiment [Ansoborlo et al. 1999][4]. The study was run for 100 days and was followed up with an X-ray fluorescence (XRF) measurement of the residual material left on the glass fiber filter.

Table 1 shows the fraction of uranium remaining on the filter (retention fraction) at each sampling time based on ICP Mass Spectrometry analysis. Standard errors on these results vary from 5% to 10%, with the higher errors occurring later in the testing, near the 100 day mark. Table 2 shows the summary of the XRF results taken at the end of the experiment. It is important to note that though the ICP-MS indicated that between approximately 0.2% and 6% (± 10%) of the uranium remained undissolved at 100 days (Table 1), it was later shown through the XRF analysis that the majority of that material was dissolved uranium that had been reabsorbed by the filter. To determine if there had been reabsorption of uranium on the filter, first the filter was inspected visually. There were no visual traces of undissolved uranium remaining on the filter. It is relatively easy to see undissolved material (if any is present) on the filter. Following the visual inspection, the filter was dissolved and analyzed. The amount of uranium found was lower than or close to the detection limit of the method. This means that within experimental error there is essentially no material remaining undissolved at 100 days.

Table_1: Smith Ranch – Highland Material Dissolution Kinetics

Sample No	SRH 482-1	SRH 482-6	SRH 482-13	SRH 482-21	SRH 482-29	SRH 482-39	SRH 482-42	SRH 483-1	SRH 483-9	SRH 483-16
U Total in 50 mg Sample (%)	50	50	50	50	50	50	50	50	50	50
U Total (mg)	77.4	79.4	78.2	78.3	78.9	78.7	79.0	79.0	79.4	79.5
Elapsed Time (d)										
0	100	100	100	100	100	100	100	100	100	100
0.02	95.24	98.13	93.24	99.04	97.19	81.57	97.48	98.72	74.18	99.47
0.13	81.22	97.37	83.13	95.77	89.16	54.77	87.97	96.99	43.50	98.72
0.31	63.60	96.02	62.18	87.24	74.07	41.45	75.91	95.57	33.86	96.20
1.00	48.67	81.73	28.25	53.69	33.19	29.28	52.10	86.32	17.50	83.94
1.31	44.02	67.05	22.38	46.55	26.27	27.43	47.58	82.84	14.70	76.09
2.00	28.02	45.36	13.35	31.60	18.10	24.15	34.01	70.53	10.96	43.09
2.31	21.24	40.82	12.38	27.90	16.72	22.56	29.77	65.78	9.29	34.33
3.00	15.14	32.05	10.89	22.21	14.22	20.32	22.23	55.69	7.85	20.86
4.00	11.38	27.58	9.49	18.38	11.97	17.06	19.02	48.29	6.25	16.75
7.00	7.38	20.12	4.48	11.94	8.96	14.12	14.30	35.43	2.59	10.68
9.00	4.71	16.48	4.26	9.39	7.32	12.99	11.04	26.22	1.48	7.85
11.00	3.24	12.04	4.24	7.14	6.37	11.74	8.18	18.87	1.26	5.82
14.00	3.05	9.03	4.23	5.26	5.86	10.66	6.74	13.55	1.03	4.55
21	3.01	4.22	4.22	4.66	5.60	9.47	6.20	2.79	0.71	4.01
28.00	2.99	2.87	4.21	4.61	5.58	8.33	6.08	2.42	0.53	3.84
36.00	2.98	2.76	4.20	4.59	5.57	7.72	6.01	2.02	0.48	3.74
42.00	2.97	2.73	4.19	4.58	5.56	7.05	5.99	2.01	0.43	3.69
49.00	2.97	2.72	4.19	4.57	5.55	6.80	5.98	2.00	0.40	3.66
56.00	2.96	2.70	4.18	4.56	5.54	6.61	5.97	1.99	0.37	3.62
63.00	2.95	2.69	4.17	4.55	5.53	6.51	5.96	1.98	0.34	3.59
71.00	2.94	2.68	4.15	4.54	5.52	6.43	5.95	1.97	0.32	3.56
84.00	2.92	2.66	4.14	4.52	5.51	6.23	5.93	1.96	0.30	3.53
100.00	2.92	2.64	4.12	4.51	5.49	5.96	5.91	1.94	0.26	3.51

Table 2: X-Ray Fluorescence Results

Sample No.	SRH 482-1	SRH 482-6	SRH 482-13	SRH 482-21	SRH 482-29	SRH 482-39	SRH 482-42	SRH 483-1	SRH 483-9	SRH 483-16
U Total in 50 mg Sample, (%)	77.4	79.4	78.2	78.3	78.9	78.7	79.0	79.0	79.4	79.5
U in a Sample Initial (mg)	38.71	39.68	39.08	39.16	39.44	39.33	39.495	39.48	39.7	39.77
U in a Sample Calculated from Extracted U (mg)	37.6	38.6	37.5	37.4	37.3	37	37.2	38.7	39.6	38.4
U Residual on a Filter After the Completion Calculated (mg)	1.1	1.1	1.6	1.8	2.1	2.3	2.3	0.8	0.1	1.4
U Residual on a Filter XRF Analyses After the Completion (mg)	0.5	0.4	0.3	0.8	0.6	0.5	1.2	0.6	0.1	0.5
Difference	0.6	0.7	1.3	1.0	1.5	1.8	1.1	0.2	0.0	0.9
Standard Error (%)	1.6	1.7	3.3	2.5	3.9	4.7	2.8	0.5	0.0	2.2

4.1 Absorption parameters and Dosimetric Quantities

This equation and the methods used to determine the parameters are described in detail in the CTI-RC report [1].

The method that was used to determine the DWY classification is to fit a curve to the dissolution data in Table 1 and use the fit parameters from that curve to classify the material into DWY. To estimate the dissolution times and the fraction of material assigned to each category, an exponential model was used. The number of terms used in the model was based on statistical tests; the decision as to how many terms to use was based on the amount of error associated with each fit. For this experiment, the equation with the lowest error was chosen for each sample. In all but one case, for Smith Ranch – Highland samples, the equation with the lowest error was three-term equation; in the one exception a two-term equation had the lower error. The three term equation used was:

$$\frac{M}{M_0} = f_1 \exp(-0.693\frac{t}{T_1}) + f_2 \exp(-0.693\frac{t}{T_2}) + f_3 \exp(-0.693\frac{t}{T_3}) \qquad (1)$$

Where:

M - mass of undissolved uranium at time t

M_0 – initial mass of uranium

t – elapsed time

f_1 - fraction of total U with corresponding dissolution half-time T_1

f_2 - fraction of total U with corresponding dissolution half-time T_2

f_3 - fraction of total U with corresponding dissolution half-time T_3

$f_1 + f_2 + f_3 = 100\%$

Note: the two term equation was of the same format, with the term involving f_3 and T_3 removed.

The results of the X-Ray diffraction analysis performed on three of the Smith Ranch – Highland samples indicated the presence of crystalline metaschoepite, $UO_3 \bullet 2H_2O$, and uranium trioxide hydrate, $UO_3 \bullet 0.8H_2O$, in all three samples [3]. Small quantities of unidentified amorphous material might also be present in almost all samples.

A program was developed at Cameco research centre for calculation of dissolution parameters using non-linear regression analysis. The standard deviations of parameters were calculated from the inverse Hessian matrix using the MSE (Mean Square Error) calculated as the square root of F/(N-v), where **N** is the number of data points and **v** is the number of parameters used in the model. (**N - v** is the number of degrees of freedom).

The program automatically tests several kinetics models applied to the same set of experimental data. For each model, the minimization is repeated 200 to 500 times (this number is specified by the user). Then, the program selects the model that has the smallest MSE, which is considered to be the best approximation to the experimental data. Some models with a large number of adjustable parameters that show lower F are not the best description for the experiment because they have higher MSE (lower denominator).

Absolute values of standard errors for parameters are given in parenthesis. In some cases, when calculated values of uncertainties are high, an additional sampling during first day and (or) after last day of extraction is required in order to obtain lower uncertainties.

The value of the Mean Square Deviation (MSD) characterizes an average error for the curve fitting, i.e., the difference between the experimental values of uranium extraction, $(1 - M/M_0)*100\%$, and the theoretical value.

4.2 Dosimetric Quantities

The current ALI and DAC used at Smith Ranch – Highland are based on the type D Uranium Natural parameters in 10CFR20. The purpose of this experiment was to determine the site specific solubility for material at the site. Part of this assessment was to determine the breakdown of Smith Ranch – Highland uranium product into the DWY solubility types defined by ICRP 30 and 10CFR20. In addition, we needed to consider whether any mixture of isotopes existed. Isotopic analysis of the uranium product showed that only isotopes of uranium were present in fresh yellowcake. At the Cameco Crow Butte Operation, which is similar to Smith Ranch – Highland, smears from surfaces throughout the main plant were collected and analyzed for the presence of alpha (natural uranium) and beta/gamma (Th^{234} and $Pa^{234}m$) emitters. A dual channel alpha and beta/gamma counter was used to measure the emissions from the smears. These smears characterize the material that has the potential to be made airborne throughout the plant and inhaled by workers. The smears indicated that natural uranium and the short-lived decay products are in approximate equilibrium. Though this analysis has not been performed at the Smith Ranch – Highland operation as of yet, the results are expected to be similar. To account for the presence of these short-lived decay products at the time of inhalation, a mixed ALI and DAC was calculated and presented Table 3; the calculation used was $(C_{Unat}/ALI_{Unat}+C_{Th234}/ALI_{Th234}+C_{Pa234}/ALI_{Pa234})^{-1}$ and similarly for the DAC, where C represents the concentration ratio of each material assuming equilibrium. As shown, the ALI and DAC for each solubility class are unchanged from the Uranium Natural values. Note, as per standard protocol, all final results are shown to one significant digit as this is the number of significant digits shown in 10CFR20 and therefore the maximum that can be used in the final output of the equations.

Table 3: Mixed ALI and DAC Values

Isotope	Solubility	ALI (µCi)	DAC (µCi/ml)
Uranium Natural	D	1	5E-10
	W	0.8	3E-10
	Y	0.05	2E-11
^{234}Th	W*	200	8E-8
	Y	200	6E-8
^{234}Pa	W*	8000	3E-6
	Y	7000	3E-6
Final Default Mixture	D	1	5E-10
	W	0.8	3E-10
	Y	0.05	2E-11

* The solubility class for ^{234}Th and ^{234}Pa was assumed to be W, because the isotopes are not expected to be in oxide or hydroxide forms.

As part of the proposed sampling plan to the NRC, additional sampling for isotopes such as Ra226 is ongoing. Should any subsequent analysis indicate the detectable presence of additional radionuclides, the mixed ALI and DAC will be adjusted accordingly.

Table 4 shows the solubility parameter fit results following the method outlined in the report Solubility of Radionuclides in Simulated Lung Fluid [1]. The F values represent the fraction of material with the given dissolution half-time (the T value). It is again important to note that this fit was performed based on the results of Table 1 and the fraction assigned to retention times (T values) greater than 100 days should be reassigned to the time from of 10-100 days as subsequent analysis showed no measureable material remaining after 100 days, within error. This is a conservative assignment because some of that material absorbed onto the filter could have been dissolved before day 10, however we are assuming all of the absorbed material was dissolved after day 10.

Along with the solubility parameters, Table 4 also shows the subsequent DWY classification. Each sample is assigned to DWY based on the dissolution half time values, T values, and the fraction assigned to each classification is based on the F values. For example, using sample SRH 482-6, T_1 is less than 10 days, so 84.5% (the F_1 value) is assigned to class D and 15.5% (F_2) is assigned to class W because T_2 is between 10 and 100. In cases where both T_1 and T_2 are below 10 days, the fraction considered Class D is the sum of F_1 and F_2. As stated, where a T_3 exists, its associated F value is included in the Type W fraction based on XRF results. For all samples the fraction of material classed as Type D is greater than 80% and most are greater than 90%.

Finally, Table 4 includes the ALI and DAC for each sample and an overall plant average. The final ALI and DAC values were calculated by taking a weighted sum of the percent contribution of each solubility class within a sample multiplied by the appropriate mixed

ALI and DAC for that solubility class, from Table 3. One additional note is that the default ALI and DAC from 10CFR20 are based on a particle size of 1 μm. The particulate size analysis for Smith Ranch – Highland product shows that particle sizes are significantly larger than the default assumption. This means that use of default values based on a 1 μm assumption are conservative for our product; a larger particle size would be associated with a lower dose. However, the more conservative defaults have been used in determining the site specific ALI and DAC for Smith Ranch – Highland. Again, the final result is to one significant digit as this is the number of digits available in 10CFR20, with two significant digits have been carried through the intermediate calculations as per standard protocol.

Table 3: Smith Ranch – Highland Solubility Parameters and Dosimetric Quantities

Sample No. [a]	F_1 (%)	T_1 (d)	F_2 (%)	T_2 (d)	F_3 (%)	T_3 (d)	MSD (%)	Type D (%)	Type W (%)	ALI (µCi)	DAC (µCi/ml)
SRH 482-1	21.8	0.1	74.8	1.3	3.5	288.4	1.9	96.5	3.5	0.99	4.9E-10
SRH 482-6	84.5	1.6	15.5	18.2			3.8	84.5	15.5	0.97	4.7E-10
SRH 482-13	76.2	0.4	19.7	1.8	4.1	8.94E+08	1.0	95.9	4.1	0.99	4.9E-10
SRH 482-21	80.8	0.9	14.8	5.0	4.4	5.34E+08	1.6	95.6	4.4	0.99	4.9E-10
SRH 482-29	84.7	0.5	9.9	4.3	5.4	1.11E+09	1.4	94.6	5.4	0.99	4.9E-10
SRH 482-39	53.4	0.0	33.4	1.2	13.3	60.1	1.7	86.7	13.3	0.97	4.7E-10
SRH 482-42	55.7	0.5	38.0	2.7	6.3	814.6	1.5	93.7	6.3	0.99	4.9E-10
SRH 483-1	18.5	1.8	79.9	4.9	1.6	3.02E+08	1.9	98.4	1.6	1.00	5.0E-10
SRH 483-9	56.3	0.0	42.7	0.9	1.0	2033157	1.6	99.0	1.0	1.00	5.0E-10
SRH 483-16	96.6	1.7	3.4	10000			5.9	96.6	3.4	0.99	4.9E-10
									Average	**1**	**5E-10**

5.0 CONCLUSION

Cameco has completed a solubility study to analyze the solubility characteristics of the Smith Ranch – Highland yellowcake product. This study showed that the yellowcake produced at Smith Ranch – Highland was primarily of solubility type D with a relatively low type W component. The resulting ALI and DAC values are the same as the default type D material at 1 μCi and 5E-10 μCi/ml. As stated in the introduction, this analysis of the data incorporates the most recent comments from the NRC and Cameco and supersedes all previous submissions in this area.

6.0 REFERENCE LIST

1. Cameco Innovation and Technology Development Research Centre, Solubility of Radionuclides in Simulated Lung Fluid, Report Number 200183, Report Number RC-09-05, 2009

2. ICRP, Limits for Intakes of Radionuclides by Workers, ICRP Publication 30 Part 1, Ann ICRP 2(3-4), 1979.

3. Tairova, G. "Analysis of Smith Ranch - Highlandand Smith Ranch-Highland Concentrate Samples", Cameco Technology and Innovation Research Centre Memo, September, 2011.

4. Ansoborlo, E.; Hengé-Napoli, M.H.; Chazel, V.; Gibert, R.; Guilmette, L.A. *Review and Critical Analysis of Available In Vitro Dissolution Tests*, Health Physics, 77(6): 638-645; 1999.

Appendix J

Purge Storage Reservoir No. 2 Shallow Groundwater Characterization Plan

PURGE STORAGE RESERVOIR NO. 2 SHALLOW GROUNDWATER CHARACTERIZATION PLAN

Smith Ranch – Highland Uranium Project

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) has prepared this groundwater characterization plan (Plan) for Cameco Resources in response to Wyoming Department of Environmental Quality's (WDEQ) 2007-2008 Annual Report Review and an unresolved item from the Nuclear Regulatory Commission (NRC) in their May, 2011 semi-annual inspection. Specifically, in comment number 23 regarding the shallow groundwater, WDEQ states, "selenium values in the South well are very elevated." This comment is in regards to the selenium concentrations reported for the well located south of Purge Storage Reservoir No. 2 (PSR-2). Background information on PSR-2 and monitoring groundwater in the vicinity is presented in Section 1.1. Implementation of this Plan will provide the data necessary to determine whether treated wastewater from PSR-2 is leaking into shallow groundwater and/or shallow sand units and, if so, whether adverse impacts to shallow groundwater has occurred within the vicinity of PSR-2. The May, 2011 semi-annual inspection by NRC indicated that a draft version of this Plan for additional studies was reviewed by the NRC and that Cameco Resources intended to finalize this Plan and proceed with additional work. This final version of that Plan has been prepared to address that unresolved item.

This Plan is a revision of the plan reviewed during the May 4, 2010 meeting between WDEQ, Cameco Resources and Golder and the one reviewed by NRC in their May, 2011 semi-annual inspection. The changes reflect responses to WDEQ's comments, incorporate data from the first six sampling events at newly installed monitoring wells around PSR-2 and include the evaluation of hydrogeologic and water quality data from the PSR-2 area.

1.1 Background

PSR-2 is located north of Wellfield C, approximately one-half mile north-northeast of Satellite 2 of Cameco Resources' Highland Operation (Figure 1). It was originally constructed in 1979 for use by Tennessee Valley Authority as a wastewater settling pond prior to discharge in accordance with a National Pollutant Discharge Elimination System permit. In 1994, Power Resources, Inc. took over operations of the area and PSR-2 was refurbished and permitted as a storage pond for a wastewater land-application facility. While the PSR-2 facility was designed to prevent adverse impacts to shallow ground water, it was not designed to be completely impermeable and was not subject to the design criteria of Regulatory Guide 3.11 in 1994. This was acknowledged by the NRC in their technical evaluation report on the PSR-2 facility (NRC, 1994).

PSR-2 temporarily stores waste water from Satellite No. 2 and Satellite No. 3 after the water has been treated for uranium, radium and selenium removal and before the water is disposed via land application at Irrigator No. 2. Waste streams feeding PSR-2 consist of wellfield purge and groundwater restoration waters (wellfield bleed, groundwater sweep, and reverse osmosis concentrate). According to information submitted by Power Resources, Inc. for the 1994 Permit, the wastewater met the WDEQ Class of Use limitations for Class III groundwater, except for selenium (WDEQ Water Quality Rules and Regulations,

Chapter 8, Section 4(d); Cameco Resources 2009). The WDEQ Class III (livestock) limit for selenium is 0.05 milligrams per liter (mg/L), which is also the limit for Class I (domestic) waters.

Figure 2 shows selenium concentrations over time for Irrigator #2, which draws its water from PSR-2. Concentrations of selenium began decreasing in approximately 2000 and were less than 0.5 mg/L since that time except for a period during 2006 and 2007. As of September 23, 2009, a selenium treatment facility has been in operation at a location southwest of Satellite No. 2. Since that time selenium concentrations have decreased (Cameco Resources 2010) with the addition of treated water with selenium concentrations less than 0.05 mg/L as shown in measurements conducted from Irrigator #2 in 2010.

1.2 Groundwater Monitoring

The 1994 Permit (Permit No. 93-410, *Satellite #2 Wastewater Holding Pond and Land Application Facility)* required the construction of two shallow monitoring wells, known as the East and South shallow wells. The East and South wells were completed to depths of approximately 10 and 15 feet below ground surface (bgs), respectively. Baseline monitoring of these wells was not required; however, the wells have been routinely monitored since their installation. Figure 3 shows selenium concentrations at the East and South shallow wells since 2003. It should be noted that the South well had been dry for 4 out of the last 6 sampling events.

Due to concerns of water potentially leaking from PSR-2, Cameco Resources installed four new shallow monitoring wells in July 2009. Two of the new wells were installed next to the existing East and South wells (MW-4S and MW-3S, respectively). The other two wells were installed north (MW-2S) and west (MW-1S) of the reservoir.

Groundwater did not accumulate in boreholes during drilling at each of the four well locations. According to Cameco Resources (2009), each boring was dry when drilled and was then terminated at a depth of 50 feet in a gray shale. Wells were completed with a 20-foot screen section, from 29 to 49 feet bgs. After installation of wells MW-1S through MW-4S was completed, water accumulated in these wells. The wells were developed using pumps on September 10, 2009. All of the wells pumped dry after removal of one borehole volume of water at an approximate pumping rate of 2 to 3 gallons per minute (Cameco Resources, 2009). It is not clear from the available lithologic data whether the screened intervals from these four wells intersect a continuous permeable sand zone.

Based on water level data collected after installation of these four new wells (Figure 4), the groundwater flow direction in this shallow zone is assumed to be to the south-southeast (Cameco Resources 2009). However, this direction is heavily influenced by the presence of PSR-2 and may not be indicative of regional groundwater flow directions around PSR-2. Additional discussion of groundwater flow direction is provided in Section 2.0. The groundwater encountered in the shallow monitoring wells is considered to

be perched and laterally discontinuous. The uppermost, continuous water-bearing zone is postulated to be at a depth of at least approximately 50 to 60 feet bgs based upon a review of historic hydrogeologic data from wells and borings completed in the area of PSR-2.

Groundwater samples were collected from the four new monitoring wells (MW-1S through MW-4S) just after their initial development in September 2009. Groundwater samples were collected on a quarterly basis from all 6 wells (the four new wells and the South and East wells) from March through March 2011. Results of selenium analyses on these samples are presented in Table 1. As shown in Table 1, concentrations are highest in samples from the South well and well MW-1S, located west of PSR-2. Concentrations are also greater than the WDEQ Class III limit of 0.05 mg/L at wells MW-3S, located south of PSR-2, and at well MW-4S, located east of PSR-2. The analytical results suggest that selenium concentrations in groundwater are elevated in the shallow sediments surrounding the reservoir, except in areas located upgradient (north) of the reservoir.

2.0 CHARACTERIZATION PLAN

Golder proposes a phased approach to characterizing the shallow groundwater near PSR-2, in which the results of initial phases will guide the approach for following phases. Data quality objectives of the characterization plan are described in section 2.1.

2.1 Data Quality Objectives

Data quality objectives (DQOs) are qualitative and quantitative statements that define the type, quality, and quantity of data necessary to support defensible risk management decision making. DQOs are used to develop an effective sampling plan which avoids the collection of data that are inconsequential to decision making (U.S. Department of Energy 1994). The seven steps of the DQO process are presented below.

2.1.1 Step 1 - Stated Problem

Selenium has been detected in groundwater samples from wells located near PSR-2. The detected concentrations are above the WDEQ Class III standard of 0.05 mg/L and may indicate leakage that could adversely impact groundwater and/or shallow sand units that underlie PSR-2.

2.1.2 Step 2 - Decision

Data collected from this study will help determine if PSR-2 is leaking and if adverse impacts to groundwater and/or shallow sand units are occurring.

2.1.3 Step 3 - Inputs to Decision

- Background Selenium Concentrations – Background concentrations of selenium and other water quality constituents will be needed to determine whether PSR-2 is leaking and if adverse impacts to shallow groundwater have occurred. To determine background concentrations, several additional inputs are required, as described below.

- Direction of Groundwater Flow – To determine background areas, the direction of groundwater flow is needed.

- Hydraulic Conductivity and Gradient – To determine background areas and for selecting the location of additional monitoring wells, hydraulic conductivity, to be determined from aquifer testing, and gradient data are needed to determine groundwater velocity. Groundwater velocity will be used to estimate the maximum area of potential impact from PSR-2.

- Selenium Concentrations – Selenium concentration data are needed from areas surrounding PSR-2 in order to define the vertical and horizontal extent of elevated selenium.

2.1.4 Step 4 - Define the Study Boundaries

The boundary is assumed to be approximately a 1,000-foot radius from the perimeter of PSR-2. After initial testing of aquifer properties, the study boundary may be adjusted to reflect the area for potential impact from PSR-2 based on the age of the reservoir and the groundwater velocity.

All available selenium data will be used in the characterization. Data from the older South and East wells will be qualified since installation and completion of the two older wells was not documented.

Sampling of the currently installed and proposed wells will occur quarterly for a year.

2.1.5 Step 5 - Develop a Decision Rule

A threshold level to assess whether adverse impacts have occurred will be developed in later phases of work and will be based on the higher value of either the WDEQ Class III limit of 0.05 mg/L or background selenium concentrations. If concentrations are found to be greater than determined threshold level, then the need for additional investigative and/or remediation activities will be undertaken in consultation with the WDEQ and NRC.

2.1.6 Step 6 - Specify Acceptable Limits on Decision Errors

The null hypothesis, as defined by the EPA in its DQO guidance, assumes the groundwater has elevated selenium concentrations relative to the Class of Use limitation (0.05 mg/L). A rejection of this hypothesis would lead to no further investigative or remediation activities while acceptance of this hypothesis would lead to additional actions. The chance of a false rejection will be controlled by comparing the mean concentrations of each well to the greater value of either an action level based on background selenium concentration or the Class III limit of 0.05 mg/L (action level). Additional investigation and/or remediation will be recommended if the concentrations in the groundwater are greater than the relevant action level and the hypothesis cannot be rejected.

2.1.7 Step 7 - Optimize the Design

The design for data collection that will meet the DQOs is described in detail in the following sections. In summary, the design includes the following phases:

- Testing the existing wells to determine hydraulic conductivity;
- Installation of additional monitoring wells to better define the vertical and horizontal extent of elevated selenium, hydraulic gradient, and direction of groundwater flow. The specific location of these wells will be determined based on the results of the groundwater characterization (hydraulic conductivity measurements, hydrogeologic data and water quality data). One of the new wells will serve as a background well;

- Monitoring of water chemistry and water levels in the existing and newly installed monitoring wells. Four quarters of data collection are recommended before analyses can be conducted to determine areas of elevated selenium.

2.2 Physical Properties of the Shallow Groundwater

Prior to installation of additional monitoring wells, the existing wells should be tested to estimate the hydraulic conductivity of the shallow sediments screened by existing wells. Testing will consist of either pumping tests or slug tests. For pumping tests, water will be pumped from the monitoring well and the rate of decline of the water level will be measured. Additionally, the rate of increase in the water level after pumping ceases will be analyzed. For "slug" testing, a known volume will be either removed from or added to the water column and the rate at which the water level falls or rises will be measured. The collected data will be analyzed to estimate the hydraulic conductivity. In vertically paired wells (MW-4S/East, MW-3S/South), pressure responses also may be monitored in the well not being tested.

Groundwater velocities and the potential extent of impact from PSR-2 will be estimated using the hydraulic conductivity, hydraulic gradient, and an estimated porosity. The estimated velocity and potential extent of impact will then be used to select locations for additional monitoring wells.

2.3 Installation of Additional Monitoring Wells

To evaluate the horizontal extent of elevated selenium concentrations and determine background selenium concentrations, Golder recommends installation of seven additional monitoring wells. Two of these wells will be shallow wells co-located with the East and South wells. These two shallow wells will be drilled and screened to the same depth as the South and East wells and used to determine if data from these older wells can be used in the groundwater characterization. Four of the remaining five wells will be located close to the reservoir and to the north, west, south, and east of the reservoir (Figure 1). The final well will be located further to the east away from the reservoir (Figure 1). The distance of the wells from the shoreline of the reservoir will be estimated based on the results of hydraulic testing of the existing wells and the resulting estimation of groundwater velocity. Using the estimated groundwater velocity, the wells should be installed at the outer boundary of the estimated zone of influence of PSR-2.

Because the new wells will be used to more accurately assess the direction of groundwater flow, selection of a background area cannot be determined until the new wells have already been installed. It is possible that one of the new wells may function as a background well. The well established with the goal of being upgradient will be placed sufficiently far enough from the reservoir to not be influenced by it. However, the appropriateness of the well as a background well will need to be re-evaluated after installation.

Based on information provided in the Monitoring Plan for Purge Storage Reservoir No. 2 (Cameco Resources 2009), gray shale was encountered in wells MW-1S, MW-2S, MW-3S, and MW-4S, which

typically acts as a confining layer. These wells may not be completed in water bearing sand units that extend over any appreciable distance. The proposed wells, excluding the two very shallow wells, will be screened based upon geologic logging so that screened intervals are in water bearing units with appreciable transmissivity. Actual lengths and placements of screened sections for all new wells will be determined in the field based on conditions encountered during drilling.

The vertical extent of elevated selenium concentrations will be assessed using two potential well designs, which would allow samples to be collected at varying depths. One well design would involve screening the well over the entire depth of the aquifer and using a passive diffusion sampler, or snap sampler to collect samples from varying depths. The second well design option, though more expensive, would be to install nested wells that are completed at varying depths of the aquifer, but in the same general area. In the areas south and east of the reservoir, the South well and MW-3S, and the East well and MW-4S provide some data on vertical hydraulic gradients and the vertical variability of groundwater quality. The South and East wells are completed to approximately 15 feet bgs, compared to wells MW-3S and MW-4S, which are completed to approximately 50 feet bgs. Figure 1 shows the location of these existing wells.

In order to further characterize the subsurface and assess the distribution of selenium concentrations, it will be valuable to further understand if there is vertical variability in the concentrations of selenium. This information will be helpful in assessing any remediation measures that may be required.

In addition to defining the extent of elevated selenium, new and existing wells would also be used to establish the groundwater flow direction and further characterize the hydrogeologic environment near PSR-2. Figure 4 shows the groundwater elevations for selected shallow wells and the water-surface elevation of PSR-2. Based on these data, it is likely that hydraulic gradients, both horizontal and vertical, near PSR-2 are influenced by the water elevation in the reservoir. The existing monitoring wells may be located close enough to the reservoir to be influenced by the reservoir water level elevation.

Surface drainage appears to flow to the northwest, which suggests a potential for shallow groundwater to flow to the northwest if it mimics topography. Therefore, the new wells will provide additional data to more accurately evaluate groundwater flow directions. The presence of water bearing units and potential confining layers should be evaluated at the time of installing the new wells. To accomplish this, the lithology should be logged as the boreholes are advanced and this may involve drilling some wells deeper than actual screened intervals to assess geology before completing the well.

2.4 Groundwater Monitoring

Following development of the new wells, groundwater samples should be collected from the South well, East well, MW-1S, MW-2S, MW-3S, MW-4S, and the new wells using the methods described in the Monitoring Plan for Purge Storage Reservoir No. 2 (Cameco Resources 2009). In addition to the

methods described in the Monitoring Plan, additional field parameters and laboratory analyses are recommended. Although analysis of additional parameters is not related to the data quality objectives above, the additional data will provide information that is necessary to assess potential impacts to underlying sand units.

Because selenium is a redox-sensitive element, additional geochemical characterization is necessary to evaluate its fate and potential attenuation in the subsurface. Field parameters collected during sampling should include pH, specific conductance, temperature, dissolved oxygen, and oxidation/reduction potential (ORP). These parameters will help define the basic geochemical conditions in the shallow groundwater. In addition to field parameters, the groundwater sample should be analyzed by an analytical laboratory for the following general chemistry parameters, major ions, redox parameters, and additional cations:

- General Chemistry Parameters:
  - Specific Conductivity
  - Total Dissolved Solids at 180° Celsius
- Major Ions:
  - Calcium
  - Magnesium
  - Sodium
  - Potassium
  - Total alkalinity (carbonate plus bicarbonate)
  - Fluoride
  - Chloride
- Redox Indicators
  - Sulfate and sulfide
  - Nitrate, nitrite, and ammonium
- Additional Cations:
  - Selenium
  - Barium
  - Arsenic
  - Boron
  - Uranium
  - Radium 226
  - Iron

Recommended methods for laboratory analysis of selenium are presented in Biogeochemistry and Analysis of Selenium and it's Species (Ralston et al. 2008). In previous monitoring events, the selenium

detection limit was 0.001 mg/L. This detection limit is below the WDEQ limit of 0.05 mg/L and it is recommended that this detection limit be used in future monitoring events.

Four quarterly monitoring events are recommended before determining if PSR-2 is leaking and whether adverse impacts to shallow groundwater and/or shallow sand units have occurred. Four datasets will provide enough data to conduct statistical tests and evaluate seasonal variations. Tests for comparing two populations, such as the Wilcoxon Rank Sum and Welch's t-test, will be used to compare background selenium concentrations with concentrations in areas where selenium is potentially elevated.

2.5 Interpretation of Additional Data

It is anticipated that the additional data collected from the proposed monitoring efforts will help describe the hydrogeologic and geochemical environment near PSR-2 and allow for assessments of whether leakage is occurring from PSR-2 that is resulting in adverse impacts to shallow groundwater and/or shallow sand units beneath it. The data collected will allow the following work products to be developed for the PSR-2 area:

- Geologic cross-sections that show the lithology in the area beneath PSR-2;
- Potentiometric maps of sand water bearing units near PSR-2 that will show the direction of flow;
- Assessment of lateral and vertical hydraulic gradients near PSR-2 by evaluating differences in water levels in shallow wells and deeper wells and PSR-2;
- Hydraulic conductivity estimates for the sediments beneath PSR-2; and
- Plots of selenium and trilinear diagrams in specific sandy water bearing units as compared to PSR-2 to assess potential impacts from PSR-2 and background concentrations in sandy water bearing units.

3.0 SUMMARY OF CHARACTERIZATION RECOMMENDATIONS

Since 2003, selenium concentrations in the shallow well south of PSR-2 have ranged from 0.9 mg/L to 3.6 mg/L. In response to the elevated selenium concentrations in the South well, four additional monitoring wells (MW-1S, MW-2S, MW-3S, and MW-4S) were installed to the west, north, south, and east of PSR-2. Selenium concentrations in these wells in March 2010 ranged from 0.004 mg/L at well MW-2S north of the reservoir to 1.76 at well MW-1S, located west of the reservoir. For comparison, the regulatory limit for selenium in Class III groundwater is 0.05 mg/L. To determine the best strategy for determining if impacts to sand units beneath PSR-2 are occurring, additional characterization is recommended to further assess the hydrogeologic environment near PSR-2, evaluate hydraulic properties, and assess background selenium levels and the extent of groundwater potentially impacted by selenium. Included in this additional characterization will be the installation of five new monitoring wells; north, west, south and east (2 will be located east) of the reservoir and two very shallow wells collocated with the older South and East Wells. The distance of the new wells from the shoreline of the reservoir will be determined from testing of the existing wells to estimate the hydraulic conductivity of the shallow aquifer. Additionally, four quarterly monitoring events are recommended for the new and existing wells.

4.0 REFERENCES

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TABLES

TABLE 1

GROUNDWATER SAMPLING RESULTS

Parameter	East Well								
	3/5/2009	6/26/2009	9/3/2009	11/12/2009	3/23/2010	6/25/2010	9/22/2010	11/18/2010	3/17/2011
General Chemistry									
Bicarbonate as HCO_3 (mg/L)	293	339	366	282	321	427	401	331	294
Chloride (mg/L)	401	480	414	368	376	502	442	409	409
Sulfate (mg/L)	2490	2390	2310	2440	2320	2340	2420	2390	2430
Specific Conductivity (umhos/cm)	5120	5310	5240	5070	5050	5280	5210	5090	5090
pH	7.52	7.51	7.51	7.9	7.29	7.36	7.47	7.5	7.3
Dissolved Metals and Radionuclides									
Barium (mg/L)	>0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium (mg/L)	**0.046**	**0.096**	**0.045**	**<0.0025**	**0.038**	**0.065**	**0.039**	**0.036**	**0.029**
Uranium (uCi/mL)	3.78E-08	4.50E-08	5.99E-02	<6.77E-10	3.47E-08	5.57E-08	5.36E-08	4.43E-08	3.69E-08
Radium 226 (uCi/mL)	9.00E-10	9.60E-10	8.98E-10	8.1E-10	1.6E-09	7.70E-10	7.80E-10	8.40E-10	1.10E-09

ND= non-detect, detection limit not provided

NDP = no data provided

mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

uCi/mL = microcuries per liter

[1] Second value given for Se on 9/11/09 sampling date represents data from Cameco Resources Laboratory

TABLE 1

GROUNDWATER SAMPLING RESULTS

Parameter	South Well								
	3/5/2009	6/26/2009	9/3/2009	11/12/2009	3/23/2010	6/25/2010	9/22/2010	11/18/2010	3/17/2011
General Chemistry									
Bicarbonate as HCO_3 (mg/L)	352	385	384	dry well	343	310	dry well	dry well	dry well
Chloride (mg/L)	278	327	329	dry well	254	321	dry well	dry well	dry well
Sulfate (mg/L)	2370	2390	2270	dry well	2050	2190	dry well	dry well	dry well
Specific Conductivity (umhos/cm)	4740	4790	4890	dry well	4280	4400	dry well	dry well	dry well
pH	7.8	7.8	7.68	dry well	7.74	7.59	dry well	dry well	dry well
Dissolved Metals and Radionuclides									
Barium (mg/L)	<0.001	<0.001	<0.001	dry well	<0.1	<0.001	dry well	dry well	dry well
Selenium (mg/L)	**1.78**	**1.63**	**1.46**	**dry well**	**2.21**	**2.02**	**dry well**	**dry well**	**dry well**
Uranium (uCi/mL)	5.50E-07	5.37E-07	3.87E-07	dry well	2.48E-07	5.57E-08	dry well	dry well	dry well
Radium 226 (uCi/mL)	1.10E-09	7.70E-10	1.00E-09	dry well	2.40E-10	1.40E-09	dry well	dry well	dry well

ND= non-detect, detection limit not provided

NDP = no data provided

mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

uCi/mL = microcuries per liter

[1] Second value given for Se on 9/11/09 sampling date represents data from Cameco Resources Laboratory

TABLE 1

GROUNDWATER SAMPLING RESULTS

Parameter	MW-1S						MW-2S					
	9/11/2009[1]	3/23/2010	6/30/2010	9/28/2010	11/18/2010	3/16/2011	9/11/2009[1]	3/23/2010	6/30/2010	9/28/2010	11/18/2010	3/16/2011
General Chemistry												
Bicarbonate as HCO_3 (mg/L)	376	456	dry well	428	368	366	371	393	dry well	381	368	363
Chloride (mg/L)	298	269	dry well	279	307	317	64	70	dry well	69	72	73
Sulfate (mg/L)	1860	1870	dry well	1920	1930	1920	248	238	dry well	231	240	248
Specific Conductivity (umhos/cm)	NDP	4400	dry well	4340	4390	4430	NDP	1170	dry well	1160	1180	1170
pH	NDP	7.07	dry well	7.76	7.48	7.23	NDP	7.31	dry well	7.87	7.61	7.52
Dissolved Metals and Radionuclides												
Barium (mg/L)	<0.1	<0.1	dry well	ND	ND	ND	<0.1	<0.1	dry well	ND	ND	ND
Selenium (mg/L)	**1.91 / 2.16**	**1.76**	**dry well**	**2.00**	**2.08**	**2.30**	**0.006 / 0.036**	**0.004**	**dry well**	0.003	0.005	0.003
Uranium (uCi/mL)	3.22E-08	3.91E-08	dry well	4.40E-08	3.80E-08	3.40E-08	1.49E-09	8.124E-10	dry well	8.10E-10	1.20E-09	1.00E-09
Radium 226 (uCi/mL)	1.20E-09	8.1E-10	dry well	1.50E-09	2.90E-10	5.20E-10	7.80E-10	1.4E-10	dry well	7.00E-10	3.10E-10	2.00E-10

ND= non-detect, detection limit not provided

NDP = no data provided

mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

uCi/mL = microcuries per liter

[1] Second value given for Se on 9/11/09 sampling date represents data from Cameco Resources Laboratory

TABLE 1

GROUNDWATER SAMPLING RESULTS

Parameter	MW-3S						MW-4S					
	9/11/2009[1]	3/23/2010	6/30/2010	9/28/2010	11/18/2010	3/16/2011	9/11/2009[1]	3/23/2010	6/30/2010	9/28/2010	11/18/2010	3/16/2011
General Chemistry												
Bicarbonate as HCO_3 (mg/L)	382	404	dry well	408	396	402	532	590	548	553	504	497
Chloride (mg/L)	504	516	dry well	521	497	473	104	112	126	115	126	138
Sulfate (mg/L)	1080	952	dry well	972	1020	1040	1550	1790	1750	1680	1620	1730
Specific Conductivity (umhos/cm)	NDP	3490	dry well	3410	3410	3370	NDP	3840	NDP	3610	3410	3660
pH	NDP	7.4	dry well	7.85	7.6	7.51	NDP	7.03	NDP	7.8	7.59	7.24
Dissolved Metals and Radionuclides												
Barium (mg/L)	<0.1	<0.1	dry well	ND	ND	ND	<0.1	<0.1	<0.1	ND	ND	ND
Selenium (mg/L)	**0.44 / 0.437**	**0.254**	**dry well**	**0.226**	**0.198**	**0.178**	**0.377 / 0.554**	**0.895**	**0.498**	**0.900**	**0.681**	0.840
Uranium (uCi/mL)	4.70E-07	5.29E-07	dry well	5.70E-07	5.80E-07	5.60E-07	1.25E-07	1.2931E-07	8.87E-08	1.50E-07	1.90E-07	1.60E-07
Radium 226 (uCi/mL)	7.20E-10	1.2E-10	dry well	7.60E-10	2.70E-10	3.90E-10	3.50E-09	2.5E-10	2E-09	3.50E-09	2.10E-09	2.10E-09

ND= non-detect, detection limit not provided

NDP = no data provided

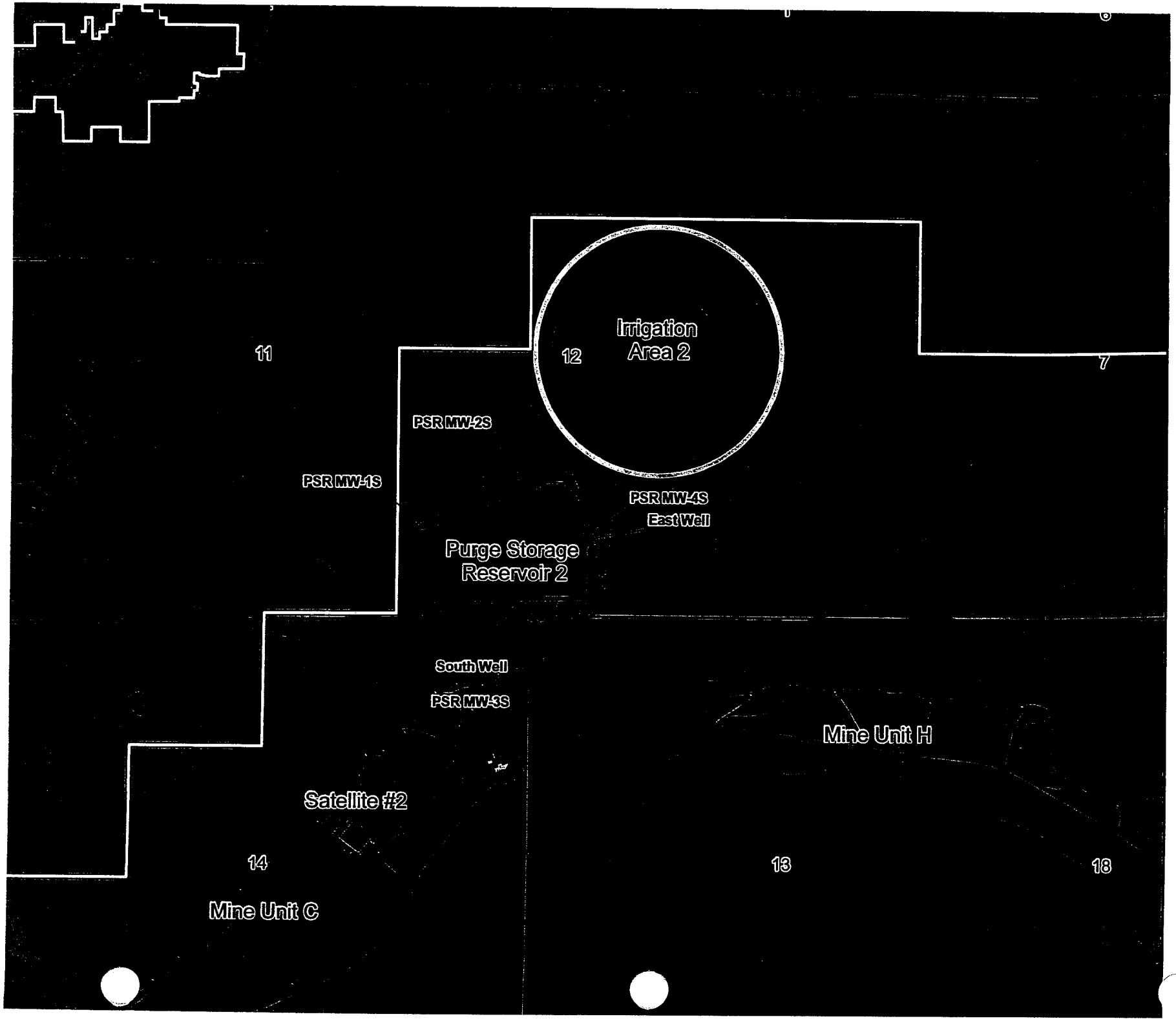
mg/L = milligrams per liter

umhos/cm = micromhos per centimeter

uCi/mL = microcuries per liter

[1] Second value given for Se on 9/11/09 sampling date represents data from Cameco Resources Laboratory

FIGURES



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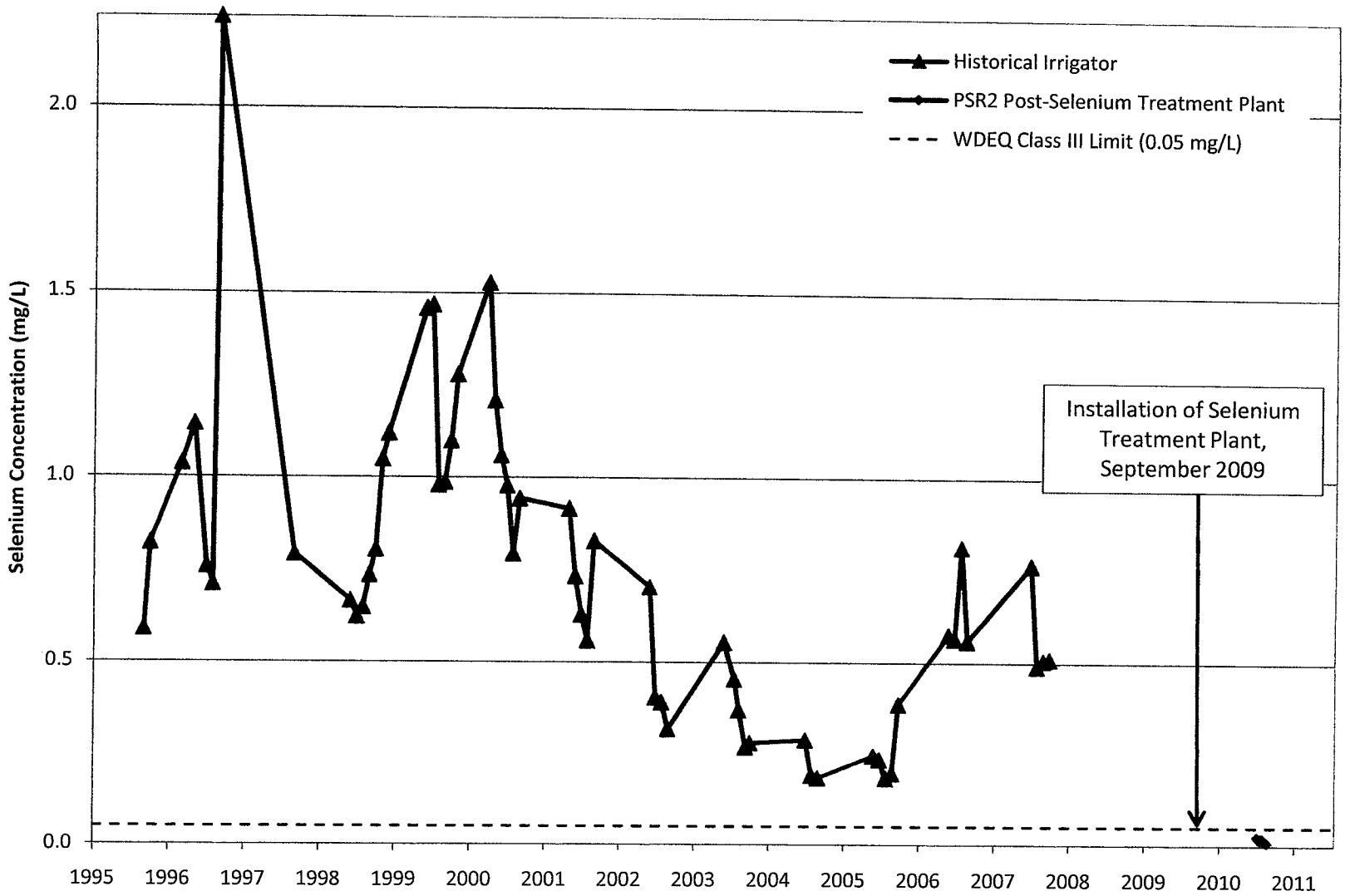
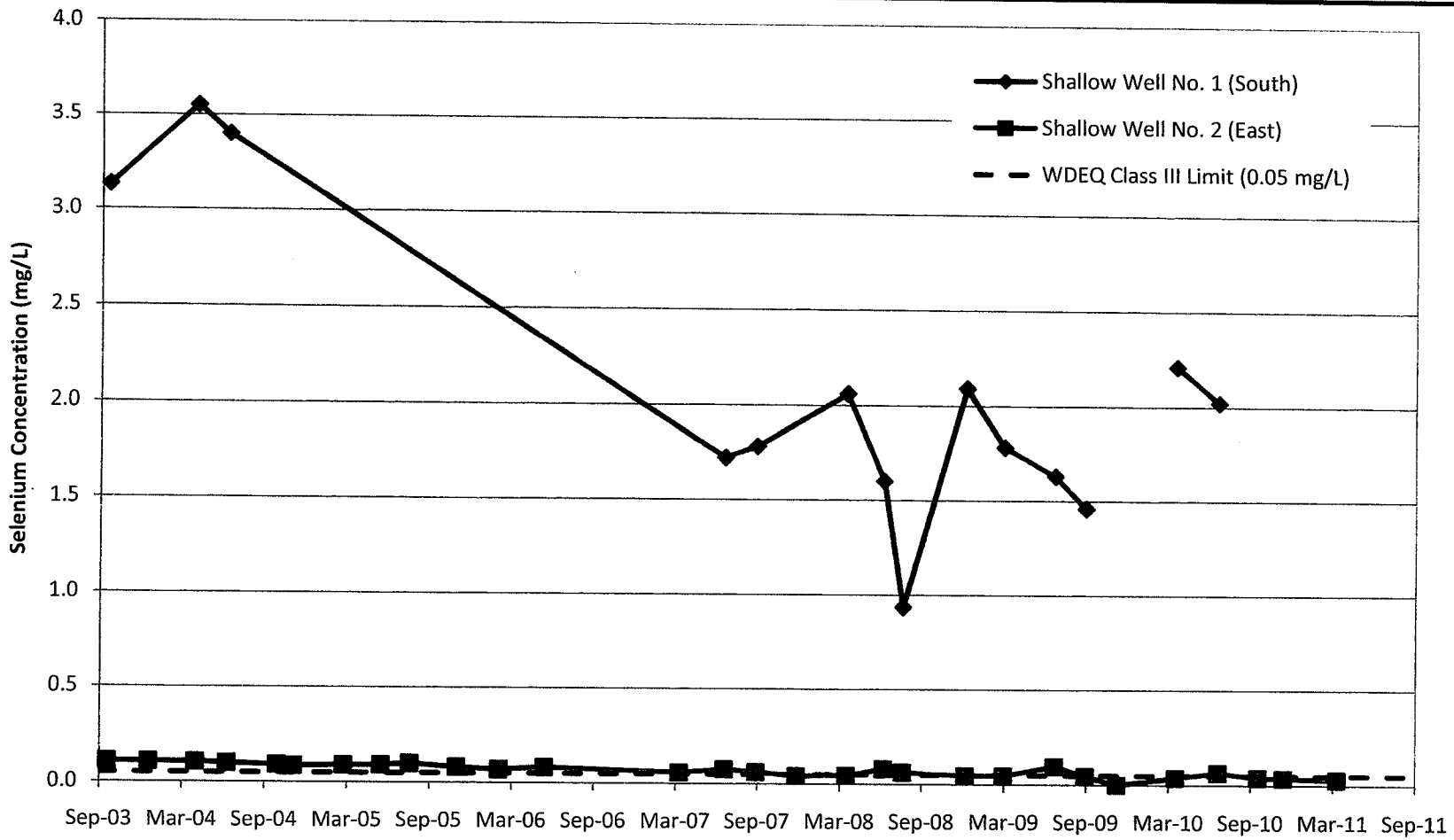


Golder Associates

DENVER, COLORADO USA

Irrigator #2
Selenium Concentrations

CLIENT/PROJECT	Date	Job No.
Cameco Resources	Aug-11	113-81734
	File name: *Cameco Master Dataset.xlsx; Source: Irrigator 2 Fluid.xls*	Figure 2



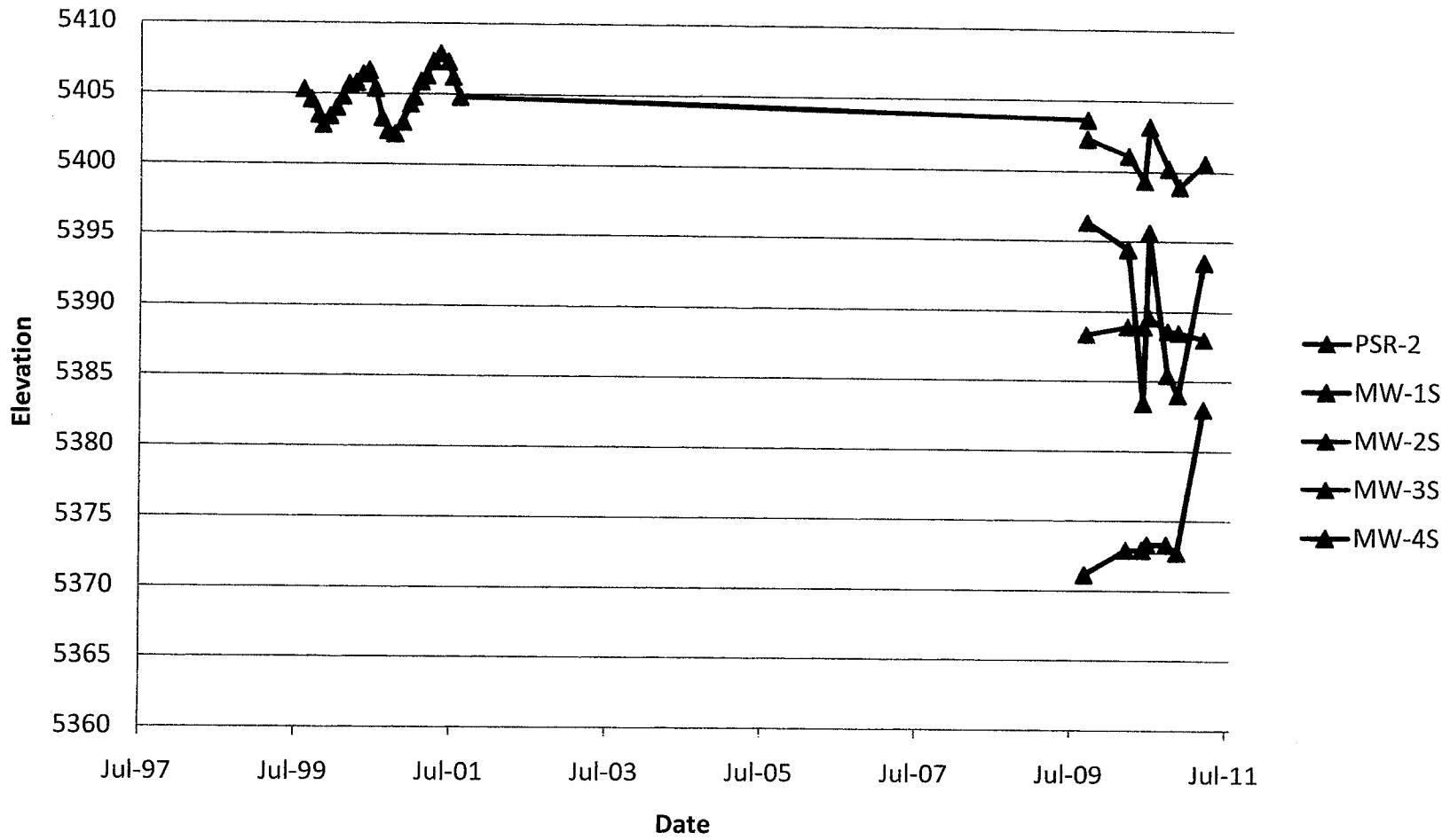
Data obtained from Semi-Annual Effluent and Environmental Monitoring Reports for SUA-1548, second half 2003 through the first half of 2009.

Golder Associates

DENVER, COLORADO USA

East and South Shallow Wells
Selenium Concentrations

CLIENT/PROJECT	Date	Job No.
Cameco Resources	Aug-11	113-81734
	File name: *ShallowAquiferFigs.xlsx*	Figure 3



Golder Associates

DENVER, COLORADO USA

PSR-2 and Shallow Monitoring Wells
Water Level Elevation

CLIENT/PROJECT	Date	Job No.
Cameco Resources	Aug-11	113-81734
	File name: *Cameco Master Dataset.xlsx*	Figure 4

MEMORANDUM

Date:	August 16, 2011	**Project No.:**	113-81734
To:	Scott Bakken	**Company:**	Cameco Resources
From:	Sanjay Advani		
cc:	Mark McClain	**Email:**	mmclain@golder.com

RE: RESPONSE TO NUCLEAR REGULATORY COMMISSION'S COMMENTS ON SOIL URANIUM CONCENTRATIONS FOR CAMECO RESOURCES' LICENSE RENEWAL APPLICATION

The following memorandum has been prepared by Golder Associates Inc. (Golder) in response to the Nuclear Regulatory Commission's (NRC) comment to provide a discussion of and perspective on the potential environmental and safety issues related to an increase in soil uranium (U) concentrations at the Cameco Resources (Cameco) Smith Ranch Satellite 2 area under irrigation.

1.0 RESPONSE TEXT

Soils under irrigation through the land application operation at Satellite 2 have experienced a slight increase in U concentrations (~0.18 mg U/kg soil per year) since data collection began in 1993 (Figure 1). This trend, however is non-significant at the α=0.05 level (p = 0.23) using a regression analysis of concentration as a function of time. Soil U concentrations have consistently been less than the EPA MCL-based Soil Screening Level SSL of 14 mg/kg (EPA 2011). This is substantially more stringent than the Wyoming Voluntary Remediation Program's soil cleanup level (WDEQ, 2011) of 49 mg/kg soil that is based on the EPA risk-based SSL. While these SSLs are not cleanup standards, they are guidelines that suggest whether chemical-specific concentrations at a given facility warrant further investigation. Were the current trend of increasing soil U concentration to continue, the soils under irrigation would not be predicted to reach the MCL-based SSL until the year 2039. Given the projected future agricultural use of the land, Cameco believes that these comparisons provide assurance that the current practices, even with the modest increases in U concentrations that have been observed, provide adequate environmental, health and safety protection.

2.0 REFERENCES

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Appendix K

Radiation Doses from Cameco's North Butte Expansion Area In-Situ Uranium Leaching Operations

RADIATION DOSES FROM CAMECO RESOURCES NORTH BUTTE EXPANSION AREA IN-SITU URANIUM LEACHING OPERATIONS

By

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January 12, 2012

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EXECUTIVE SUMMARY

Radiation dose rates were determined using the Nuclear Regulatory Commission computer code MILDOS for the Cameco Resources North Butte Expansion Area (NBEA). The code used weather data from the Antelope Coal Company weather station which was the most representative weather data for the NBEA. For typical operations, with latitude for operational flexibility, the dose rates showed that:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from the NBEA and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest NBEA boundary dose rate was 45 mrem/yr at the east property boundary.
- The highest residential dose rate was 10 mrem/yr at the Pfister Ranch.
- The highest dose rate at cities and towns within an 80 km radius from the NBEA was 0.4 mrem/yr at the town of Wright.
- The 10 CFR 20 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.
- The population effective dose rate within 80 km radius from the NBEA Project was 1.3 person-rem/yr and 0 person-rem/yr beyond 80 km.

Note: As noted in the Technical Report, the purge rate for typical operations is expected to be 155 gallons per minute. This assessment assumed that in the absence of irrigation and/or evaporation ponds, 20% of the radon is released from the purge water. This value was then applied to an "upper bound purge rate" of 222 gallons per minute for added conservatism (44 gallons per minute). The assessment also assumes a 25%/75% well/field/plant distribution of the source term.

Inclusion of the Hank unit, Moore Ranch, Nichols Ranch, and the agricultural pathway each contributed less than 0.2 mrem per year to the calculated doses at the NBEA.

A sensitivity analysis demonstrated that:

- When assuming that all the radon was released from the unrealistic upper bound purge rate of 222 gallons per minute the dose rates never exceeded 100 mrem/yr.
- Radiation doses calculated using a 25% / 75% distribution of radon released from the mine unit header houses and from the satellite plant did not appear significantly different from the doses calculated using a 10% / 90% distribution.

OBJECTIVE

Determine the radiation doses to people within an 80 km radius of the Cameco's North Butte Expansion Area (NBEA) using the Nuclear Regulatory Commission's (NRC) computer code MILDOS.

PROJECT DESCRIPTION

The North Butte Expansion Area (NBEA) project is located in the southern Power River Basin in southwest Campbell County, Wyoming. The site is approximately 50 road miles southwest from the city of Gillette and 40 miles west from the town of Wright. See Figure 1. The project consists of approximately 1039 acres.

Figure 2 is the site layout map of the project. The map shows the proposed 5 mine units (MU-1 through MU-5), the plant and office buildings, the site boundaries, and the Pfister Ranch which is the nearest residence. The wells in each mine unit will pump oxygenated water through the underground ore zone to extract uranium. The water is pumped to an ion exchange column for removal of the uranium, and then back underground to extract additional uranium. The resin loaded with uranium will be trucked to the Smith Ranch Central Processing Plant for removal of the uranium, after which the resin is returned to the NBEA.

The water balance for the NBEA may be reviewed, in detail, in the Technical Report. The purge rate is expected to peak at 155 gallons per minute during years nine through twelve.

RADIOACTIVE EFFLUENTS

Radon-222 gas and its decay products are the only effluents from the NBEA under normal operating conditions. Radon is released into the atmosphere at the following locations:

- New Well Fields - When wells are drilled into the ore body, ore cuttings are transported to the ground surface in the drilling mud. The cuttings are temporarily stored in mud pits where radon-222 is released from the radium-226 in the cuttings. The quantity radon-222 released from new well fields is much less than 1% of the radon-222 released during well field production as shown in "MILDOS Output – Radiation Dose Rates."
- Production Well Fields - Radon-222 that is dissolved in the leach solution is released from the purge water which is water in excess of the water that is injected back into the ore body. Radon-222 is only released from the purge water during storage in tanks prior to being injected down deep disposal wells. In addition radon-222 is released from occasional venting of the wellheads and from the removal of resin from the ion exchange columns.
- Restoration Well Fields - Radon-222 releases during restoration are equal to the radon releases during uranium production as shown in "MILDOS Output – Radiation Dose Rates."

Figure 1 NBEA Site Location

Figure 2 NBEA Site Layout (attached oversize document)

- Land Application – The NBEA operation plans do not include land application of process water that contains appreciable concentrations of radon or radium.

Under accident conditions where process water escapes from the process piping and/or tanks, uranium and radium-228 are released on the ground and radon into the air. Those releases are anticipated to be within the process area and are cleaned up locally.

NBEA OPERATIONS

Five mining units are present in the NBEA. Mine units will be brought into production sequentially every 2 years, each operated for 5 years and then restored for 5 years. The maximum impact at the NBEA occurs when the greatest number of mine units is in production or restoration. That maximum impact is expected to occur in years nine through twelve. For further detail please refer to the Technical Report.

MILDOS assessed the impact from all 5 mine units in operation simultaneously. Operating fewer than 5 mine units at the same time would result in a radiological impact less than the doses presented in this report.

MILDOS

The computer code MILDOS was used to determine the impact of radon-222 release on the surrounding populations. The code was originally designed to address the impacts of uranium mill operations but was subsequently updated in 1998 to include the impacts of uranium in-situ recovery operations using a MS Windows format. The code was developed by Argonne National Laboratory for the Nuclear Regulatory Commission to assess the radiological impacts and regulatory compliance of a release. The code is a Gaussian plum air dispersion model which utilizes user-provided wind frequency data. Mechanisms such as radioactive decay and ingrowth of daughter radionuclides are included in the transport code. The code allows calculation of the radiation doses at any location within an 80 km radius in 16 compass directions for a large number of radiological sources.

INPUT DATA - WEATHER

The NBEA is located in the southern Power River Basin approximately 50 miles by road southeast from the city of Gillette and 40 miles west of the town of Wright. The winds are predominately from the west to the southwest from the Great Divide Basin (Rock Springs area). A weather station has just been installed (2010) at the NBEA. When a site-specific wind rose becomes available in early 2012, Cameco will re-run the MILDOS model and provide the NRC a summary of the updated results.

Weather data is available from Casper, at the Glenrock Coal Company, and at the Antelope Coal Company. The Antelope Coal Company site is the closest site at 48 km east and 34 km south or

59 km southeast of the NBEA and is considered the most representative site for measuring the wind speed and direction applicable to the NBEA site. Figure 3 presents the seasonal wind roses for the Antelope Coal Company weather data.

The Nuclear Regulatory Commission has stated in 2006 "that the meteorological stations at the Antelope and Glenrock mines meet the standards identified in NRC Regulatory Guide 3.63, "Onsite Meteorological Measurement Program of Uranium Recovery Programs – Data Acquisition and Reporting," and are recognized as "standard installations" per NUREG 1569.

The weather data from the Antelope Coal Company were collected from 1997 -2006 and converted to the STAR (STBability ABay) format for input into the MILDOS computer code. The Antelope Coal Company data in the STAR format are in the file "CAM Antelope Coal Co.str" See Appendix A for the format of the weather data and the content of the file.

INPUT DATA - NBEA OPERATIONAL DATA

The NBEA operational data for are presented in Table 1. The mine unit locations are expressed on a grid system with the NBEA satellite facility as the center, km east as positive values, km west as negative values, km north as positive values, km south as negative values, meters elevation as positive values, and meters depression as negative values. The circulation volume is the volume of the entire extraction circuit from the injection well to the IX column and return.

Radon from the NBEA is released to the environment in the following proportions:

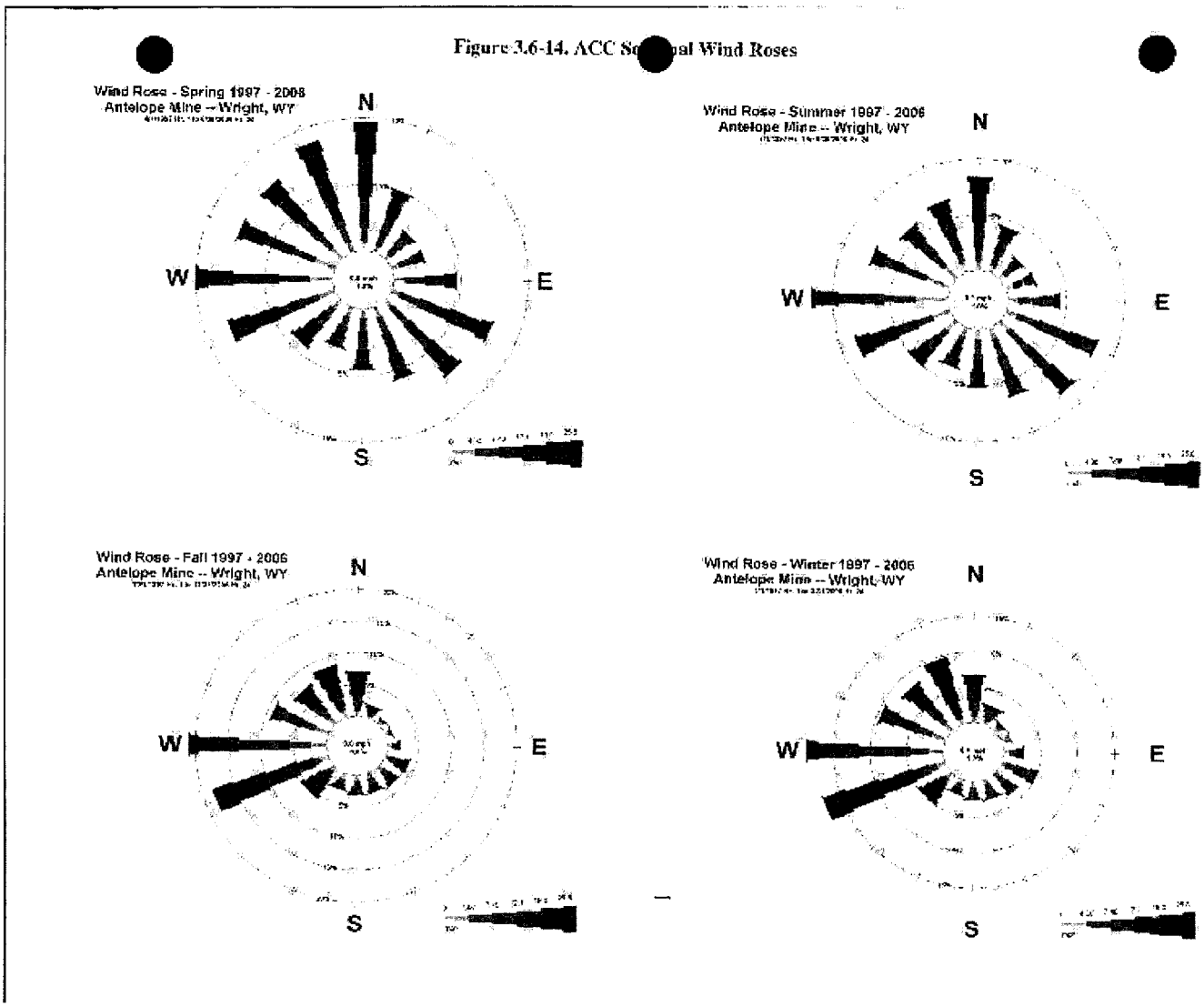
25% of the radon from the mine well field header houses, and
75% of the radon from the satellite plant vent.

This assumption is discussed in detail later in the assessment.

Radon released from the open tanks and the IX column in the satellite plant will be vented from the plant through a stack with an estimated exit velocity of 10 m/sec.

In addition, the radon releases at NBEA account for the use of deep disposal wells for management of purge water. The usual MILDOS model assumes that 100% of the radon is released to the atmosphere by disposing of the purge water using spay irrigation or evaporation ponds. In contrast, at the NBEA the MILDOS evaluation assumes that 20% of the radon in the purge water will be released, because purge water at the NBEA will be disposed in a deep disposal well. Cameco believes that 20% is a reasonable estimate since the purge water delivery system includes vents on the equalization tanks. The release of 20% of the radon from the purge water is entered into the MILDOS model as 20% of the upper bound purge rate of 222 gallon per minute for production and restoration occurring simultaneously. Twenty percent of 222 gallons per minute is 44 gallons per minute which is the purge rate used to calculate radiation doses at NBEA for typical operating conditions. As noted in the Technical Report, the purge rate for typical operations is expected to be 155 gallons per minute which is conservative compared to 222 gallons per minute

Figure 3 Seasonal Wind Roses from the Antelope Coal Company



The data in Table 1 were entered in MILDOS as source terms for new wells, production wells, or restoration wells.

It is expected that all the radon from the NBEA will be released to the environment and proportioned as:

25% of the radon will be released from the well fields, and
75% of the radon will be released from the satellite plant ventilation stack.

Radon released from the open tanks and the IX column in the satellite plant will be vented from the plant through a 10 meter high stack similar to the yellowcake dryer stack with an exit velocity of 10 m/sec.

INPUT NBEA NEW WELL DATA

The following data was used to determine the doses from the new wells:

Storage time in the pits	12 days
Ore material in the pits	3.5E6 g/yr
Number of pits	12

INPUT DATA - RADIATION DOSE LOCATIONS

Radiation doses were calculated using MILDOS at:

- Cities and towns within 80 km radius of NBEA.
- The north, south, east and west boundaries of NBEA using the grid system with the center point at the NBEA satellite facility.
- The Pfister Ranch which is the nearest downwind residence.

The X and Y coordinates in kilometers for each of those locations is shown in Table 2.

Table 1 NBEA Operations Data

Location	X km	Y km	Z m	Ra pCi/g	Em Fr	Thick m	Den g/cm*3	Area m*2	Cir Vol L	Fr Rn	Rn vent /d	Purge gpm	Col Vol L	Col util.	Por	Op days
MU-1	1.1	0.8	0	574	0.2	5	1.91	1.70E5	2.29E8	0.8	0.01	44	2.26E4	0.5	0.4	365
MU-2	0.1	1.01	0	574	0.2	5	1.91	3.16E5	4.25E8	0.8	0.01	44	2.26E4	0.5	0.4	365
MU-3	-0.4	0.3	0	574	0.2	5	1.91	2.14E5	2.99E8	0.8	0.01	44	2.26E4	0.5	0.4	365
MU-4	-0.5	-1.0	0	574	0.2	5	1.91	2.50E5	3.37E8	0.8	0.01	44	2.26E4	0.5	0.4	365
MU-5	-0.9	0.07	0	574	0.2	5	1.91	2.90E5	3.92E8	0.8	0.01	44	2.26E4	0.5	0.4	365
Hank*	1.43	-5.0	0	277	0.2	2.6	1.91	3.14E5	2.47E8	0.8	0.01	44	1.42E4	0.5	0.4	365
Moore*	7.16	-23.3	0	282	0.2	6.1	2.65	3.12E5	2E6**	0.8	0.01	44	1.42E4	0.5	0.4	365
Nichols*	-6.77	-8.9	0	311	0.2	2.2	1.91	2.29E5	1.49E5	0.8	0.01	44	1.42E4	0.5	0.4	365

Locations = Well unit
X = Km from NBEA (+) = East, (-) = West
Y = Km from NBEA (+) = North, (-) = South
Z = meters elevation
[Ra] = Radium concentration
EM. FR = Radon emanation fraction
THICK = Thickness of ore
DEN = Density of ore
AREA = Area of well unit
CIR VOL = Volume of process water in circulation

FR Rn = Fraction of Radon in process water
Rn VENT = Rate of Radon venting from process water
PURGE = Treated water purge rate
COL = Ion-Exchange column volume
COL UN = Ion-Exchange column unloading rate
POR = Porosity of ion exchange resin
Op Days = Days of operation
*= Distances from North Butte
**= Values selected to give radon emanation equal to values in the license application

Table 2 NBEA Locations from the NBEA remote satellite plant where radiation doses are calculated by MILDOS

LOCATION	KM EAST (+) WEST (-)	KM NORTH (+) SOUTH (-)	M ABOVE (+) BELOW (-)
North Boundary	-0.5	0.70	0.0
South Boundary	0.0	-0.5	0.0
East Boundary	0.1	0.0	0.0
West Boundary	-1.1	0.0	0.0
Casper	-31.0	-92.0	0.0
Douglas	-106.0	38.0	0.0
Glenrock	-17.0	-92.0	0.0
Midwest	-34.0	56.0	0.0
Gillette	34.0	56.0	0.0
Wright	38.0	0.0	0.0
Pfiester Ranch	1.0	-0.7	0.0

INPUT DATA - POPULATION DATA

Table 3 presents the population within an 80 km radius of NBEA. The largest values in Table 3 show where the cities are located. Gillette is approximately 70 km northeast of the site. The town of Wright is approximately 40 km east of the site and the nearest resident is approximately 1 km east of the site.

Table 3 Population distribution within 80 km radius of the NBEA

	Radius in Kilometers												
Sector	**0-1**	**1-2**	**2-3**	**3-4**	**4-5**	**5-10**	**10-20**	**20-30**	**30-40**	**40-50**	**50-60**	**60-70**	**70-80**
N	0	0	0	0	0	0	3	6	0	6	0	0	0
NNE	0	0	0	0	0	0	6	11	6	70	53	7393	7393
NE	0	0	0	0	0	0	11	20	6	17	53	7393	7393
ENE	0	0	0	0	0	0	0	3	0	56	0	0	11
E	0	0	0	0	0	6	0	3	1602	22	3	0	2
ESE	0	0	0	0	0	0	3	3	6	3	0	0	3
SE	0	3	0	3	0	0	0	0	3	0	3	3	0
SSE	0	0	0	0	0	0	0	0	0	3	5	0	0
S	0	0	0	0	0	0	0	0	0	0	8	0	0
SSW	0	0	0	0	0	0	3	0	0	176	0	0	0
SW	0	0	0	0	0	0	0	71	0	431	0	0	0
WSW	0	0	0	0	0	0	0	0	38	0	5	2	0
W	0	0	0	0	0	3	0	2	0	0	295	2	2
WNW	0	0	0	0	0	0	0	9	0	0	0	2	2
NW	0	0	0	0	0	0	0	0	0	0	0	19	59
NNW	0	0	0	0	0	0	0	0	0	0	0	9	17

INPUT – FOOD PRODUCTION DATA

The food production values were obtained from NUREG 3.51. "Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations" as follows for Wyoming:

Vegetables	320 kg/yr per km^2
Meat	1,400 kg/yr per km^2
Milk	230 kg/yr per km^2

OUTPUT – RADIATION DOSE RATES

Table 4 presents the dose rates calculated for the major cities and towns within 80 km radius of the NBEA, the Pfister ranch which is the nearest residence, and for the north, south, east, and west property boundaries. All those dose rate were calculated using a 44 liter per day purge rate and the Antelope Coal company weather data which is the most representative weather data of the site. Appendix B1 show the doses calculated from all the radon released from the mine fields MU 1-5. Appendix B2 shows the dose calculated for all the radon released from the central plant. Since radon is released from both the mine fields header houses and from the satellite plant, the doses were proportioned 25% from the mind fields and 75% from the satellite. Table 4 presents the **TOTAL RADIATION DOSE FROM THE NBEA** using the Antelope Coal Company weather data.

Conclusions from Table 4 dose rates are as follows:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from the NBEA, and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest NBEA boundary dose rate was 45mrem/yr at the east property boundary.
- The highest residential dose rate was 10 mrem/yr at the Pfister Ranch.
- The highest dose rate at cities and towns within an 80 km radius from the NBEA was 0.4 mrem/yr at the town of Wright.
- The 10 CFR 190 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.
- The population effective dose rate within 80 km radius from the NBEA Project was 1.3 person-rem/yr and 0 person-rem/yr beyond 80 km.

For comparison naturally occurring background radiation, from cosmic and terrestrial sources, is approximately 365 mrem/yr.

The radiation doses from the production wells and from the wells in restoration are identical. The doses from the new wells are all zero. See appendices B3 for restoration well doses, and B4 for new well doses. In contrast to Table 4, the doses presented in the appendices have not been proportioned between the mine field emissions and the satellite stack emissions.

Table 4 NBEA Radiation Dose Rates Within 80 km of the Site

Radon Sources	**Total Dose**
Location of Dose	**mrem/yr**
North Boundary	14.0
South Boundary	20.4
East Boundary	45.0
West Boundary	15.8
Casper	0.0
Douglas	0.1
Glenrock	0.1
Midwest	0.1
Gillette	0.1
Wright	0.4
Pfister Ranch	10.0

Radiation dose rates were not calculated for water from the in-situ uranium extraction operation at NBEA that will be released on the surface of the land because the releases are sporadic, and of limited duration..

HANK UNIT, MOORE RANCH AND NICHOLS RANCH ON DOSES AT NBEA

HANK UNIT – Appendix B5 shows the radiation doses from the NBEA plus the doses from the Hank Unit. A comparison of those doses to the doses from the NBEA in Appendix B1 shows that the Hank unit would contribute less than 0.2 mrem/y to the nearest resident, the boundary doses and the doses in cities and towns within an 80 km radius of NBEA.

MOORE RANCH – The operational data for Moore Ranch in the license application was not available but the calculated radon emissions were available in the license application documents. The Moore Ranch operational data was selected and recorded in Table 1 to yield radon emission that were approximate the emissions analyzed in the license application. Appendix B6 shows the radiation doses from the NBEA plus the doses from Moore Ranch. Comparing those doses to the doses from the NBEA in Appendix B1 shows that Moore Ranch would contribute less than 0.1 mrem/y to the nearest resident doses, the boundary doses and the doses in cities and towns within an 80 km radius of NBEA.

NICHOLS RANCH - Appendix B7 show the radiation doses from the NBEA plus the doses from Nichols Ranch. Comparing those doses to the doses from the NBEA in Appendix B1 shows that Nichols Ranch would contribute less than 0.2 mrem/y to the nearest resident doses, the boundary doses and the doses in cities and towns within an 80 km radius of NBEA.

AGRICULTURAL PATHWAY CONTRIBUTION TO THE DOSES AT NBEA - Appendix B8 shows the radiation doses from the NBEA plus the doses from the agricultural pathway. Comparing those doses to the doses from the NBEA in Appendix B1 shows that the agricultural pathway did not increase the radiation doses at the nearest resident, the boundary doses or at the cities and towns within an 80 km radius of NBEA. Food sampling during operation of the NBEA site is not justified based on the calculated radiation doses.

U.S. Nuclear Regulatory Commission Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills" specifies that exposure pathways should be considered important if the predicted dose to an individual would exceed 5% of the applicable radiation standard (100mrem/yr in 10 CFR 20) or 5mrem/yr.

SENSITIVITY ANALYSIS

The MILDOS sensitivity analysis identifies how input parameters affect the calculated radiation dose.

PURGE RATE

The input parameters from Table 1 for the MILDOS computer model used to calculate radiation doses to people in and around the NBEA site and the variability of each parameter are:

Parameter	Description	Variability
1.	Location in the X, Y, Z coordinate system	Constant
2.	The Radium 226 concentration in the ore	Constant
3.	The Radon emanation rate from the ore	Constant
4.	The ore thickness	Constant
5.	The ore density	Constant
6.	The area of the ore deposit	Constant
7.	The fraction of radon in process water	Constant
8.	The ion exchange column volume	Constant
9.	The ion exchange column unloading rate	Constant, set by operator
10.	The porosity of the ion exchange resin	Constant for each resin
11.	The days of operation each year	Constant, set by operator
12.	The volume of process water in circulation	Constant with some small variations
13.	Purge rate	Variable, depending on operating conditions.

All the parameters are constant, except for the purge rate which can vary depending on the operating conditions at the site. An increase in the purge rate increases the amount of radon released and the resulting dose. Table 4 presents dose rates calculated using 44 gallons per minute urge rate. As noted earlier, the conservative, upper bound purge rate at NBEA is 222 gallons per minute. The dose rates from a purge rate of 222 gallons per minute and a 25% / 75% radon release distribution are shown in Table 5. Those dose rates are not considered realistic for the operating conditions at the NBEA but are considered as the upper limit of dose rates over the range of potential purge rates. Even at the upper bound purge rates the dose rates in Table 5 do not exceed the 100 mrem/yr regulatory limit.

Table 5 Dose Rates Assuming an Upper Bound Purge Rate

Radon Sources	Dose at Maximum Purge Rate mrem/yr
Location of Dose	
North Boundary	17.5
South Boundary	25.5
East Boundary	56.1
West Boundary	19.5
Casper	0.1
Douglas	0.1
Glenrock	0.1
Midwest	0.1
Gillette	0.1
Wright	0.4
Pfister Ranch	12.5

RADON RELEASE POINTS

The radiation dose rates from typical operations are presented in Table 4 using:

25% radon released from the mine field header houses.
75% radon released from the satellite plant vent stack.

That distribution has been used in other Cameco MILDOS assessments.

To assess the circumstance where a larger portion of the source term emanates from a single location, the dose rates were also calculated using:

10% radon released from the mine field header houses.
90% radon released from the satellite plant vent stack.

The dose rates from both distributions are presented in Table 6. A comparison of the 25% / 75% distribution of radon in column 2 with the 10% / 90% distribution of radon in column 3 shows that the averages and standard distributions are nearly identical. That similarity suggests that within the range of values selected for the radon distribution between releases at the mine fields and releases at the satellite plant, the distribution is not important in assessing the doses around the NBEA site.

Table 6 Radiation Doses Calculated from Different Percentage Radon Releases from the Mine Units and Satellite Plant

Radon Distribution	**Total Dose 0.25 mine/0.75 satellite mrem/yr**	**Total Dose 0.10 mine/0.90 satellite mrem/yr**
Location of Dose		
North Boundary	14.0	11.0
South Boundary	20.4	20.3
East Boundary	45.0	47.0
West Boundary	15.8	9.9
Casper	0.0	0.0
Douglas	0.1	0.1
Glenrock	0.1	0.1
Midwest	0.1	0.1
Gillette	0.1	0.1
Wright	0.4	0.4
Pfister Ranch	10.0	9.5
Average	9.6	8.9
Std. Dev.	14.0	14.3

APPENDIX A - ANTELOPE COAL COMPANY WEATHER DATA IN STAR FORMAT

Column	1	Blank
	2-4	Wind Direction
	5	Blank
	6	Stability Category
	7	Blank
	8	Start of the Wind Speed Categories (knots)
	8-14	Wind Speed 1-3 (knots)
	15-21	Wind Speed 4-6 (knots)
	22-28	Wind Speed 7-10 (knots)
	29-35	Wind Speed 11-16 (knots)
	36-42	Wind Speed 17-21 (knots)
	43-49	Wind Speed >21 (knots)

```
  N A 0.002590.002600.001930.000130.000050.00000
NNE A 0.001830.002640.000980.000050.000020.00000
 NE A 0.001750.002040.000700.000090.000000.00000
ENE A 0.001930.002140.000390.000060.000000.00000
  E A 0.002260.002030.000760.000010.000000.00000
ESE A 0.001920.002120.000880.000160.000000.00000
 SE A 0.001750.002950.001330.000090.000010.00000
SSE A 0.001650.002890.001380.000120.000000.00000
  S A 0.001640.002730.001250.000160.000000.00000
SSW A 0.001340.002360.001110.000060.000020.00000
 SW A 0.001720.002050.001310.000310.000100.00011
WSW A 0.001900.002820.001930.000310.000100.00001
  W A 0.002710.003330.002060.000320.000020.00002
WNW A 0.003420.003600.002250.000320.000010.00000
 NW A 0.003160.003160.002170.000280.000000.00000
NNW A 0.002610.002780.001730.000210.000010.00000
  N B 0.000230.000550.001640.000630.000020.00001
NNE B 0.000150.000490.000880.000170.000010.00000
 NE B 0.000210.000240.000550.000060.000000.00000
ENE B 0.000270.000240.000380.000040.000000.00000
  E B 0.000420.000480.000490.000040.000000.00000
ESE B 0.000260.000390.000950.000180.000000.00000
 SE B 0.000330.000790.001340.000330.000000.00000
SSE B 0.000230.000780.001200.000320.000010.00000
  S B 0.000240.000550.000890.000280.000020.00000
SSW B 0.000200.000310.000590.000210.000010.00000
 SW B 0.000160.000390.000540.000480.000090.00005
WSW B 0.000390.000540.001280.001270.000150.00010
  W B 0.000660.001100.001830.000960.000040.00000
WNW B 0.000870.000900.001660.001010.000060.00002
 NW B 0.000610.000700.001540.000820.000020.00002
NNW B 0.000240.000570.001390.000770.000020.00004
  N C 0.000160.000510.002660.004540.001470.00084
NNE C 0.000050.000540.001250.000960.000060.00002
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 NE C 0.000100.000420.000430.000220.000010.00000
ENE C 0.000170.000430.000370.000160.000000.00000
  E C 0.000260.000630.000520.000430.000000.00000
ESE C 0.000230.000930.001370.000960.000020.00000
 SE C 0.000210.000890.002510.001980.000090.00000
SSE C 0.000150.001000.002140.001830.000110.00000
  S C 0.000100.000730.001370.000990.000090.00001
SSW C 0.000130.000340.000850.000850.000110.00000
 SW C 0.000170.000290.000760.001600.000540.00050
WSW C 0.000120.000730.001360.003650.001510.00077
  W C 0.000570.002320.003090.003960.000680.00016
WNW C 0.000520.001650.002360.002860.000480.00007
 NW C 0.000370.000960.002260.002940.000600.00013
NNW C 0.000120.000660.002260.004180.001010.00035
  N D 0.000340.004210.011070.019770.010020.00448
NNE D 0.000220.002890.006080.007510.002410.00116
 NE D 0.000150.002270.003210.001710.000370.00011
ENE D 0.000590.003540.002650.000870.000050.00001
  E D 0.000740.006200.006780.004110.000320.00004
ESE D 0.000770.006850.012790.016370.002750.00032
 SE D 0.000630.005310.009050.011560.002870.00084
SSE D 0.000790.003520.006140.007520.001860.00033
  S D 0.000520.002700.005040.006450.001700.00039
SSW D 0.000520.001820.003640.004130.001090.00037
 SW D 0.000430.001390.004240.010340.007080.00414
WSW D 0.000480.003600.012840.030020.023920.02084
  W D 0.001280.011700.034270.033270.007780.00226
WNW D 0.000960.008020.016880.010120.002150.00048
 NW D 0.000460.004380.010440.014250.006320.00420
NNW D 0.000520.003800.009410.019350.012610.00955
  N E 0.000520.001620.001220.000000.000000.00000
NNE E 0.000420.000780.000270.000000.000000.00000
 NE E 0.000420.000880.001180.000000.000000.00000
ENE E 0.000550.001420.000440.000000.000000.00000
  E E 0.000960.002500.001670.000000.000000.00000
ESE E 0.001050.003280.005340.000000.000000.00000
 SE E 0.001210.002890.003700.000000.000000.00000
SSE E 0.001000.002710.002760.000000.000000.00000
  S E 0.001030.001670.002370.000000.000000.00000
SSW E 0.000770.001500.001330.000000.000000.00000
 SW E 0.001050.000950.000940.000000.000000.00000
WSW E 0.001290.002000.003590.000000.000000.00000
  W E 0.002670.005230.011790.000000.000000.00000
WNW E 0.002330.003150.002860.000000.000000.00000
 NW E 0.001010.001490.001480.000000.000000.00000
NNW E 0.000880.001170.001120.000000.000000.00000
  N F 0.003460.001100.000000.000000.000000.00000
NNE F 0.002200.000710.000000.000000.000000.00000
 NE F 0.002500.000790.000000.000000.000000.00000
ENE F 0.002440.000810.000000.000000.000000.00000
  E F 0.003630.001310.000000.000000.000000.00000
ESE F 0.003720.001510.000000.000000.000000.00000
 SE F 0.004580.001620.000000.000000.000000.00000
SSE F 0.004810.001510.000000.000000.000000.00000
```

```
  S F 0.005090.001560.000000.000000.000000.00000
SSW F 0.004790.001530.000000.000000.000000.00000
 SW F 0.005810.001900.000000.000000.000000.00000
WSW F 0.009390.002530.000000.000000.000000.00000
  W F 0.013560.003800.000000.000000.000000.00000
WNW F 0.011830.002720.000000.000000.000000.00000
 NW F 0.007500.001380.000000.000000.000000.00000
NNW F 0.004460.001250.000000.000000.000000.00000
```

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B1 NBEA dose rates from production wells using the Antelope Coal Company weather data.
B2 NBEA dose rates from satellite plant emissions using the Antelope Coal Company weather data.
B3 NBEA dose rates from restoration wells using the Antelope Coal Company weather data.
B4 NBEA dose rates for new wells using Antelope Coal Company weather data.
B5 NBEA dose rates plus Hank dose rates using Antelope Coal Company weather data.
B6 NBEA dose rates plus Moore Ranch dose rates using Antelope Coal Company weather data
B7 NBEA dose rates plus Nichols Ranch dose rates using Antelope Coal Company weather data
B8 NBEA dose rates from production wells plus the agricultural pathway using Antelope Coal Company weather data
B9 NBEA dose rates from mine fields at maximum purge rates using Antelope Coal Company weather data
B10 NBEA dose rates from satellite stack at maximum purge rates using Antelope Coal Company weather data

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B1 NBEA dose rates from production wells using the Antelope Coal Company weather data.

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METSET: DATA: NBMU15.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 5

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E+02	1005	1	0.00E+00	MU5

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.232E-01	9.971E-01	1.643E-02	7.478E-01	3.596E-01	3.660E+01
GROUND	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03
CLOUD	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.413E-01	1.315E+00	3.346E-01	1.066E+00	6.778E-01	3.691E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.232E-01	9.971E-01	1.643E-02	7.478E-01	3.596E-01	3.660E+01
GROUND	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03
CLOUD	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.413E-01	1.315E+00	3.346E-01	1.066E+00	6.778E-01	3.691E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.91E+01	3.08E-01	3.03E-01	3.28E-01	3.13E-01	4.81E+02
CHILD	TOTALS	2.91E+01	3.11E-01	3.05E-01	3.15E-01	3.09E-01	4.81E+02
TEENAGE	TOTALS	2.91E+01	3.19E-01	3.05E-01	3.10E-01	3.07E-01	4.81E+02
ADULT	TOTALS	2.91E+01	3.19E-01	3.06E-01	3.10E-01	3.07E-01	4.81E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.11E+01	3.72E-01	3.66E-01	4.00E-01	3.79E-01	3.45E+02
CHILD	TOTALS	2.11E+01	3.77E-01	3.68E-01	3.83E-01	3.74E-01	3.45E+02
TEENAGE	TOTALS	2.11E+01	3.88E-01	3.69E-01	3.75E-01	3.71E-01	3.45E+02
ADULT	TOTALS	2.11E+01	3.87E-01	3.70E-01	3.75E-01	3.72E-01	3.45E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.51E+01	4.96E-01	4.90E-01	5.26E-01	5.04E-01	5.78E+02
CHILD	TOTALS	3.51E+01	5.01E-01	4.92E-01	5.07E-01	4.98E-01	5.78E+02
TEENAGE	TOTALS	3.51E+01	5.13E-01	4.93E-01	4.99E-01	4.95E-01	5.78E+02
ADULT	TOTALS	3.51E+01	5.12E-01	4.94E-01	5.00E-01	4.96E-01	5.78E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.55E+01	2.43E-01	2.39E-01	2.60E-01	2.47E-01	7.54E+02
CHILD	TOTALS	4.55E+01	2.46E-01	2.40E-01	2.49E-01	2.43E-01	7.54E+02
TEENAGE	TOTALS	4.55E+01	2.53E-01	2.41E-01	2.45E-01	2.42E-01	7.54E+02
ADULT	TOTALS	4.55E+01	2.52E-01	2.41E-01	2.45E-01	2.42E-01	7.54E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.70E-02	1.93E-02	5.93E-03	8.26E-02	3.47E-02	4.69E-01
CHILD	TOTALS	3.57E-02	2.94E-02	9.07E-03	4.31E-02	2.19E-02	4.69E-01
TEENAGE	TOTALS	3.65E-02	5.51E-02	1.13E-02	2.59E-02	1.68E-02	4.69E-01
ADULT	TOTALS	3.69E-02	5.32E-02	1.41E-02	2.63E-02	1.80E-02	4.69E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.84E-02	2.82E-02	8.11E-03	1.24E-01	5.15E-02	5.99E-01
CHILD	TOTALS	4.65E-02	4.34E-02	1.28E-02	6.42E-02	3.21E-02	5.99E-01
TEENAGE	TOTALS	4.77E-02	8.23E-02	1.61E-02	3.81E-02	2.45E-02	5.99E-01
ADULT	TOTALS	4.83E-02	7.95E-02	2.04E-02	3.87E-02	2.63E-02	5.99E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.99E-02	2.42E-02	7.82E-03	1.02E-01	4.31E-02	6.42E-01
CHILD	TOTALS	4.83E-02	3.66E-02	1.17E-02	5.34E-02	2.74E-02	6.42E-01
TEENAGE	TOTALS	4.93E-02	6.81E-02	1.44E-02	3.22E-02	2.12E-02	6.42E-01
ADULT	TOTALS	4.98E-02	6.58E-02	1.79E-02	3.28E-02	2.26E-02	6.42E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.63E-02	2.23E-02	8.25E-03	8.81E-02	3.83E-02	7.50E-01
CHILD	TOTALS	5.50E-02	3.28E-02	1.16E-02	4.71E-02	2.50E-02	7.50E-01
TEENAGE	TOTALS	5.58E-02	5.95E-02	1.39E-02	2.91E-02	1.98E-02	7.50E-01
ADULT	TOTALS	5.63E-02	5.76E-02	1.69E-02	2.96E-02	2.10E-02	7.50E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.94E-02	3.34E-02	1.07E-02	1.40E-01	5.95E-02	8.95E-01
CHILD	TOTALS	6.73E-02	5.05E-02	1.61E-02	7.37E-02	3.78E-02	8.95E-01
TEENAGE	TOTALS	6.86E-02	9.39E-02	1.98E-02	4.45E-02	2.93E-02	8.95E-01
ADULT	TOTALS	6.93E-02	9.08E-02	2.46E-02	4.52E-02	3.13E-02	8.95E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.07E-01	1.23E-01	5.53E-02	4.38E-01	2.00E-01	5.63E+00
CHILD	TOTALS	4.01E-01	1.73E-01	7.15E-02	2.42E-01	1.36E-01	5.63E+00
TEENAGE	TOTALS	4.05E-01	3.01E-01	8.27E-02	1.56E-01	1.11E-01	5.63E+00
ADULT	TOTALS	4.07E-01	2.92E-01	9.70E-02	1.58E-01	1.17E-01	5.63E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.27E+01	4.88E-01	4.71E-01	5.66E-01	5.07E-01	2.04E+02
CHILD	TOTALS	1.27E+01	5.00E-01	4.75E-01	5.17E-01	4.91E-01	2.04E+02
TEENAGE	TOTALS	1.27E+01	5.32E-01	4.78E-01	4.96E-01	4.85E-01	2.04E+02
ADULT	TOTALS	1.27E+01	5.30E-01	4.81E-01	4.96E-01	4.86E-01	2.04E+02

Program execution time = 2.41 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B2 NBEA dose rates from satellite plant emissions using the Antelope Coal Company weather data.

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REGION: North Butte MU1-5 no ag CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBST.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.00	0.00	10.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E+03	1001	1	1.00E+01	Satellite

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.196E-01	9.685E-01	1.596E-02	7.264E-01	3.493E-01	3.612E+01
GROUND	5.389E-03	5.389E-03	5.389E-03	5.389E-03	5.389E-03	5.389E-03
CLOUD	3.084E-01	3.084E-01	3.084E-01	3.084E-01	3.084E-01	3.084E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.335E-01	1.282E+00	3.298E-01	1.040E+00	6.631E-01	3.643E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.196E-01	9.685E-01	1.596E-02	7.264E-01	3.493E-01	3.612E+01
GROUND	5.389E-03	5.389E-03	5.389E-03	5.389E-03	5.389E-03	5.389E-03
CLOUD	3.084E-01	3.084E-01	3.084E-01	3.084E-01	3.084E-01	3.084E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.335E-01	1.282E+00	3.298E-01	1.040E+00	6.631E-01	3.643E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.99E+00	5.53E-02	5.48E-02	5.75E-02	5.58E-02	1.49E+02
CHILD	TOTALS	8.99E+00	5.56E-02	5.49E-02	5.61E-02	5.54E-02	1.49E+02
TEENAGE	TOTALS	8.99E+00	5.65E-02	5.50E-02	5.55E-02	5.52E-02	1.49E+02
ADULT	TOTALS	8.99E+00	5.65E-02	5.51E-02	5.55E-02	5.52E-02	1.49E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.02E+01	3.43E-02	3.42E-02	3.47E-02	3.44E-02	3.36E+02
CHILD	TOTALS	2.02E+01	3.43E-02	3.42E-02	3.44E-02	3.43E-02	3.36E+02
TEENAGE	TOTALS	2.02E+01	3.45E-02	3.42E-02	3.43E-02	3.43E-02	3.36E+02
ADULT	TOTALS	2.02E+01	3.45E-02	3.42E-02	3.43E-02	3.43E-02	3.36E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.83E+01	1.47E-02	1.47E-02	1.47E-02	1.47E-02	8.05E+02
CHILD	TOTALS	4.83E+01	1.47E-02	1.47E-02	1.47E-02	1.47E-02	8.05E+02
TEENAGE	TOTALS	4.83E+01	1.47E-02	1.47E-02	1.47E-02	1.47E-02	8.05E+02
ADULT	TOTALS	4.83E+01	1.47E-02	1.47E-02	1.47E-02	1.47E-02	8.05E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.93E+00	7.71E-02	7.59E-02	8.24E-02	7.84E-02	9.77E+01
CHILD	TOTALS	5.93E+00	7.79E-02	7.62E-02	7.91E-02	7.73E-02	9.77E+01
TEENAGE	TOTALS	5.93E+00	8.01E-02	7.64E-02	7.76E-02	7.69E-02	9.77E+01
ADULT	TOTALS	5.93E+00	7.99E-02	7.66E-02	7.77E-02	7.70E-02	9.77E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.63E-02	1.88E-02	5.80E-03	8.02E-02	3.37E-02	4.61E-01
CHILD	TOTALS	3.50E-02	2.86E-02	8.85E-03	4.19E-02	2.13E-02	4.61E-01
TEENAGE	TOTALS	3.58E-02	5.35E-02	1.10E-02	2.51E-02	1.64E-02	4.61E-01
ADULT	TOTALS	3.62E-02	5.17E-02	1.37E-02	2.55E-02	1.75E-02	4.61E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.77E-02	2.76E-02	7.97E-03	1.21E-01	5.04E-02	5.91E-01
CHILD	TOTALS	4.58E-02	4.25E-02	1.25E-02	6.27E-02	3.14E-02	5.91E-01
TEENAGE	TOTALS	4.69E-02	8.04E-02	1.58E-02	3.73E-02	2.40E-02	5.91E-01
ADULT	TOTALS	4.76E-02	7.77E-02	1.99E-02	3.79E-02	2.57E-02	5.91E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.91E-02	2.36E-02	7.68E-03	9.90E-02	4.20E-02	6.33E-01
CHILD	TOTALS	4.76E-02	3.56E-02	1.14E-02	5.20E-02	2.67E-02	6.33E-01
TEENAGE	TOTALS	4.85E-02	6.62E-02	1.40E-02	3.14E-02	2.07E-02	6.33E-01
ADULT	TOTALS	4.90E-02	6.40E-02	1.74E-02	3.19E-02	2.21E-02	6.33E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.41E-02	2.13E-02	7.92E-03	8.40E-02	3.66E-02	7.22E-01
CHILD	TOTALS	5.29E-02	3.13E-02	1.11E-02	4.49E-02	2.39E-02	7.22E-01
TEENAGE	TOTALS	5.37E-02	5.68E-02	1.33E-02	2.70E-02	1.89E-02	7.22E-01
ADULT	TOTALS	5.41E-02	5.49E-02	1.62E-02	2.82E-02	2.01E-02	7.22E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.67E-02	3.18E-02	1.02E-02	1.34E-01	5.66E-02	8.61E-01
CHILD	TOTALS	6.47E-02	4.81E-02	1.54E-02	7.01E-02	3.60E-02	8.61E-01
TEENAGE	TOTALS	6.59E-02	8.93E-02	1.89E-02	4.24E-02	2.79E-02	8.61E-01
ADULT	TOTALS	6.66E-02	8.64E-02	2.35E-02	4.31E-02	2.98E-02	8.61E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.07E-01	1.20E-01	5.50E-02	4.26E-01	1.95E-01	5.65E+00
CHILD	TOTALS	4.01E-01	1.69E-01	7.08E-02	2.35E-01	1.33E-01	5.65E+00
TEENAGE	TOTALS	4.05E-01	2.93E-01	8.16E-02	1.52E-01	1.09E-01	5.65E+00
ADULT	TOTALS	4.07E-01	2.84E-01	9.54E-02	1.54E-01	1.14E-01	5.65E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.13E+00	1.46E-01	1.43E-01	1.58E-01	1.49E-01	1.50E+02
CHILD	TOTALS	9.13E+00	1.48E-01	1.44E-01	1.50E-01	1.46E-01	1.50E+02
TEENAGE	TOTALS	9.13E+00	1.52E-01	1.44E-01	1.47E-01	1.45E-01	1.50E+02
ADULT	TOTALS	9.13E+00	1.52E-01	1.45E-01	1.47E-01	1.45E-01	1.50E+02

Program execution time = 0.22 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B3 NBEA dose rates from restoration wells using the Antelope Coal Company weather data.

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REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMU15r.MIL 12/16/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 5

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.67E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.99E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.10E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.31E+02	1005	1	0.00E+00	MU5

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.230E-01	9.959E-01	1.641E-02	7.469E-01	3.592E-01	3.655E+01
GROUND	5.475E-03	5.475E-03	5.475E-03	5.475E-03	5.475E-03	5.475E-03
CLOUD	3.123E-01	3.123E-01	3.123E-01	3.123E-01	3.123E-01	3.123E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.408E-01	1.314E+00	3.342E-01	1.065E+00	6.770E-01	3.687E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.230E-01	9.959E-01	1.641E-02	7.469E-01	3.592E-01	3.655E+01
GROUND	5.475E-03	5.475E-03	5.475E-03	5.475E-03	5.475E-03	5.475E-03
CLOUD	3.123E-01	3.123E-01	3.123E-01	3.123E-01	3.123E-01	3.123E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.408E-01	1.314E+00	3.342E-01	1.065E+00	6.770E-01	3.687E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.91E+01	3.07E-01	3.03E-01	3.28E-01	3.12E-01	4.80E+02
CHILD	TOTALS	2.91E+01	3.11E-01	3.04E-01	3.15E-01	3.08E-01	4.80E+02
TEENAGE	TOTALS	2.91E+01	3.19E-01	3.05E-01	3.10E-01	3.07E-01	4.80E+02
ADULT	TOTALS	2.91E+01	3.18E-01	3.06E-01	3.10E-01	3.07E-01	4.80E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.10E+01	3.72E-01	3.66E-01	3.99E-01	3.79E-01	3.45E+02
CHILD	TOTALS	2.10E+01	3.76E-01	3.67E-01	3.82E-01	3.73E-01	3.45E+02
TEENAGE	TOTALS	2.10E+01	3.87E-01	3.68E-01	3.75E-01	3.71E-01	3.45E+02
ADULT	TOTALS	2.10E+01	3.87E-01	3.70E-01	3.75E-01	3.71E-01	3.45E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.51E+01	4.96E-01	4.89E-01	5.25E-01	5.03E-01	5.77E+02
CHILD	TOTALS	3.51E+01	5.00E-01	4.91E-01	5.07E-01	4.97E-01	5.77E+02
TEENAGE	TOTALS	3.51E+01	5.12E-01	4.92E-01	4.99E-01	4.95E-01	5.77E+02
ADULT	TOTALS	3.51E+01	5.12E-01	4.93E-01	4.99E-01	4.95E-01	5.77E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.54E+01	2.43E-01	2.39E-01	2.60E-01	2.47E-01	7.53E+02
CHILD	TOTALS	4.54E+01	2.45E-01	2.40E-01	2.49E-01	2.43E-01	7.53E+02
TEENAGE	TOTALS	4.54E+01	2.52E-01	2.40E-01	2.44E-01	2.42E-01	7.53E+02
ADULT	TOTALS	4.54E+01	2.52E-01	2.41E-01	2.44E-01	2.42E-01	7.53E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.69E-02	1.92E-02	5.92E-03	8.25E-02	3.47E-02	4.68E-01
CHILD	TOTALS	3.57E-02	2.93E-02	9.06E-03	4.31E-02	2.18E-02	4.68E-01
TEENAGE	TOTALS	3.64E-02	5.50E-02	1.12E-02	2.58E-02	1.68E-02	4.68E-01
ADULT	TOTALS	3.69E-02	5.32E-02	1.41E-02	2.62E-02	1.80E-02	4.68E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.84E-02	2.81E-02	8.10E-03	1.24E-01	5.15E-02	5.98E-01
CHILD	TOTALS	4.64E-02	4.34E-02	1.28E-02	6.41E-02	3.21E-02	5.98E-01
TEENAGE	TOTALS	4.76E-02	8.22E-02	1.61E-02	3.81E-02	2.45E-02	5.98E-01
ADULT	TOTALS	4.83E-02	7.94E-02	2.04E-02	3.87E-02	2.62E-02	5.98E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.98E-02	2.42E-02	7.81E-03	1.02E-01	4.31E-02	6.41E-01
CHILD	TOTALS	4.83E-02	3.65E-02	1.17E-02	5.33E-02	2.73E-02	6.41E-01
TEENAGE	TOTALS	4.92E-02	6.80E-02	1.44E-02	3.22E-02	2.12E-02	6.41E-01
ADULT	TOTALS	4.97E-02	6.57E-02	1.78E-02	3.27E-02	2.26E-02	6.41E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.63E-02	2.23E-02	8.24E-03	8.80E-02	3.83E-02	7.49E-01
CHILD	TOTALS	5.50E-02	3.28E-02	1.16E-02	4.70E-02	2.50E-02	7.49E-01
TEENAGE	TOTALS	5.58E-02	5.94E-02	1.39E-02	2.91E-02	1.98E-02	7.49E-01
ADULT	TOTALS	5.62E-02	5.75E-02	1.69E-02	2.95E-02	2.10E-02	7.49E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.93E-02	3.34E-02	1.07E-02	1.40E-01	5.94E-02	8.94E-01
CHILD	TOTALS	6.72E-02	5.04E-02	1.61E-02	7.36E-02	3.77E-02	8.94E-01
TEENAGE	TOTALS	6.85E-02	9.38E-02	1.98E-02	4.45E-02	2.93E-02	8.94E-01
ADULT	TOTALS	6.92E-02	9.07E-02	2.46E-02	4.52E-02	3.12E-02	8.94E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.07E-01	1.23E-01	5.52E-02	4.38E-01	1.99E-01	5.63E+00
CHILD	TOTALS	4.00E-01	1.73E-01	7.15E-02	2.41E-01	1.36E-01	5.63E+00
TEENAGE	TOTALS	4.04E-01	3.01E-01	8.26E-02	1.55E-01	1.11E-01	5.63E+00
ADULT	TOTALS	4.06E-01	2.92E-01	9.68E-02	1.58E-01	1.16E-01	5.63E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.27E+01	4.87E-01	4.70E-01	5.65E-01	5.06E-01	2.04E+02
CHILD	TOTALS	1.27E+01	5.00E-01	4.75E-01	5.17E-01	4.90E-01	2.04E+02
TEENAGE	TOTALS	1.27E+01	5.31E-01	4.77E-01	4.95E-01	4.84E-01	2.04E+02
ADULT	TOTALS	1.27E+01	5.29E-01	4.81E-01	4.96E-01	4.86E-01	2.04E+02

Program execution time = 2.42 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B4 NBEA dose rates for new wells using Antelope Coal Company weather data.

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REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMU15nw.MIL 12/16/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 5

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1005	1	0.00E+00	MU5

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.604E-06	1.299E-05	2.140E-07	9.740E-06	4.684E-06	4.771E-04
GROUND	7.144E-08	7.144E-08	7.144E-08	7.144E-08	7.144E-08	7.144E-08
CLOUD	4.076E-06	4.076E-06	4.076E-06	4.076E-06	4.076E-06	4.076E-06
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.751E-06	1.713E-05	4.361E-06	1.389E-05	8.831E-06	4.813E-04

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.604E-06	1.299E-05	2.140E-07	9.740E-06	4.684E-06	4.771E-04
GROUND	7.144E-08	7.144E-08	7.144E-08	7.144E-08	7.144E-08	7.144E-08
CLOUD	4.076E-06	4.076E-06	4.076E-06	4.076E-06	4.076E-06	4.076E-06
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.751E-06	1.713E-05	4.361E-06	1.389E-05	8.831E-06	4.813E-04

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.90E-04	4.04E-06	3.98E-06	4.32E-06	4.11E-06	6.43E-03
CHILD	TOTALS	3.90E-04	4.09E-06	4.00E-06	4.15E-06	4.05E-06	6.43E-03
TEENAGE	TOTALS	3.90E-04	4.20E-06	4.01E-06	4.07E-06	4.03E-06	6.43E-03
ADULT	TOTALS	3.90E-04	4.19E-06	4.02E-06	4.07E-06	4.04E-06	6.43E-03

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.67E-04	4.66E-06	4.59E-06	5.00E-06	4.74E-06	4.37E-03
CHILD	TOTALS	2.67E-04	4.71E-06	4.60E-06	4.79E-06	4.67E-06	4.37E-03
TEENAGE	TOTALS	2.67E-04	4.85E-06	4.62E-06	4.70E-06	4.65E-06	4.37E-03
ADULT	TOTALS	2.67E-04	4.84E-06	4.63E-06	4.70E-06	4.65E-06	4.37E-03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.60E-04	6.31E-06	6.23E-06	6.68E-06	6.40E-06	7.57E-03
CHILD	TOTALS	4.60E-04	6.37E-06	6.25E-06	6.45E-06	6.33E-06	7.57E-03
TEENAGE	TOTALS	4.60E-04	6.52E-06	6.26E-06	6.35E-06	6.30E-06	7.57E-03
ADULT	TOTALS	4.60E-04	6.51E-06	6.28E-06	6.35E-06	6.30E-06	7.57E-03

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.28E-04	3.09E-06	3.04E-06	3.33E-06	3.15E-06	8.74E-03
CHILD	TOTALS	5.28E-04	3.13E-06	3.05E-06	3.18E-06	3.10E-06	8.74E-03
TEENAGE	TOTALS	5.28E-04	3.23E-06	3.06E-06	3.11E-06	3.08E-06	8.74E-03
ADULT	TOTALS	5.28E-04	3.22E-06	3.07E-06	3.12E-06	3.08E-06	8.74E-03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.80E-07	2.51E-07	7.71E-08	1.07E-06	4.51E-07	6.09E-06
CHILD	TOTALS	4.64E-07	3.82E-07	1.18E-07	5.61E-07	2.84E-07	6.09E-06
TEENAGE	TOTALS	4.74E-07	7.16E-07	1.46E-07	3.36E-07	2.19E-07	6.09E-06
ADULT	TOTALS	4.80E-07	6.92E-07	1.83E-07	3.41E-07	2.34E-07	6.09E-06

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.30E-07	3.67E-07	1.05E-07	1.61E-06	6.71E-07	7.79E-06
CHILD	TOTALS	6.05E-07	5.65E-07	1.66E-07	8.36E-07	4.18E-07	7.79E-06
TEENAGE	TOTALS	6.20E-07	1.07E-06	2.09E-07	4.96E-07	3.19E-07	7.79E-06
ADULT	TOTALS	6.29E-07	1.03E-06	2.65E-07	5.04E-07	3.42E-07	7.79E-06

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.49E-07	3.15E-07	1.02E-07	1.32E-06	5.61E-07	8.34E-06
CHILD	TOTALS	6.28E-07	4.76E-07	1.52E-07	6.95E-07	3.56E-07	8.34E-06
TEENAGE	TOTALS	6.40E-07	8.85E-07	1.87E-07	4.19E-07	2.76E-07	8.34E-06
ADULT	TOTALS	6.47E-07	8.56E-07	2.32E-07	4.26E-07	2.95E-07	8.34E-06

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.32E-07	2.90E-07	1.07E-07	1.15E-06	4.98E-07	9.74E-06
CHILD	TOTALS	7.14E-07	4.27E-07	1.51E-07	6.12E-07	3.25E-07	9.74E-06
TEENAGE	TOTALS	7.25E-07	7.74E-07	1.81E-07	3.79E-07	2.57E-07	9.74E-06
ADULT	TOTALS	7.31E-07	7.49E-07	2.20E-07	3.84E-07	2.73E-07	9.74E-06

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.04E-07	4.35E-07	1.39E-07	1.83E-06	7.74E-07	1.17E-05
CHILD	TOTALS	8.76E-07	6.57E-07	2.09E-07	9.59E-07	4.92E-07	1.17E-05
TEENAGE	TOTALS	8.93E-07	1.22E-06	2.58E-07	5.79E-07	3.81E-07	1.17E-05
ADULT	TOTALS	9.02E-07	1.18E-06	3.21E-07	5.89E-07	4.07E-07	1.17E-05

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.31E-06	1.60E-06	7.21E-07	5.71E-06	2.60E-06	7.35E-05
CHILD	TOTALS	5.23E-06	2.26E-06	9.32E-07	3.15E-06	1.77E-06	7.35E-05
TEENAGE	TOTALS	5.28E-06	3.92E-06	1.08E-06	2.03E-06	1.44E-06	7.35E-05
ADULT	TOTALS	5.31E-06	3.80E-06	1.26E-06	2.05E-06	1.52E-06	7.35E-05

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.65E-04	6.21E-06	6.00E-06	7.19E-06	6.45E-06	2.66E-03
CHILD	TOTALS	1.65E-04	6.37E-06	6.05E-06	6.58E-06	6.25E-06	2.66E-03
TEENAGE	TOTALS	1.65E-04	6.76E-06	6.09E-06	6.31E-06	6.18E-06	2.66E-03
ADULT	TOTALS	1.65E-04	6.74E-06	6.13E-06	6.32E-06	6.19E-06	2.66E-03

Program execution time = 2.42 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B5 NBEA dose rates plus Hank dose rates using Antelope Coal Company weather data.

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METSET: DATA: NBMU15H.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 6

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E+02	1005	1	0.00E+00	MU5
6	1.43	-5.03	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E+02	1006	1	0.00E+00	Hank

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.313E-01	1.063E+00	1.752E-02	7.969E-01	3.833E-01	3.894E+01
GROUND	5.834E-03	5.834E-03	5.834E-03	5.834E-03	5.834E-03	5.834E-03
CLOUD	3.326E-01	3.326E-01	3.326E-01	3.326E-01	3.326E-01	3.326E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.697E-01	1.401E+00	3.559E-01	1.135E+00	7.217E-01	3.927E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.313E-01	1.063E+00	1.752E-02	7.969E-01	3.833E-01	3.894E+01
GROUND	5.834E-03	5.834E-03	5.834E-03	5.834E-03	5.834E-03	5.834E-03
CLOUD	3.326E-01	3.326E-01	3.326E-01	3.326E-01	3.326E-01	3.326E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.697E-01	1.401E+00	3.559E-01	1.135E+00	7.217E-01	3.927E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.92E+01	3.18E-01	3.12E-01	3.46E-01	3.25E-01	4.82E+02
CHILD	TOTALS	2.92E+01	3.23E-01	3.14E-01	3.29E-01	3.19E-01	4.82E+02
TEENAGE	TOTALS	2.92E+01	3.34E-01	3.15E-01	3.21E-01	3.17E-01	4.82E+02
ADULT	TOTALS	2.92E+01	3.33E-01	3.16E-01	3.21E-01	3.18E-01	4.82E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.12E+01	3.85E-01	3.77E-01	4.20E-01	3.93E-01	3.47E+02
CHILD	TOTALS	2.12E+01	3.90E-01	3.79E-01	3.98E-01	3.86E-01	3.47E+02
TEENAGE	TOTALS	2.12E+01	4.04E-01	3.80E-01	3.88E-01	3.84E-01	3.47E+02
ADULT	TOTALS	2.12E+01	4.03E-01	3.82E-01	3.89E-01	3.84E-01	3.47E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.52E+01	5.08E-01	5.00E-01	5.45E-01	5.17E-01	5.79E+02
CHILD	TOTALS	3.52E+01	5.14E-01	5.02E-01	5.22E-01	5.10E-01	5.79E+02
TEENAGE	TOTALS	3.52E+01	5.29E-01	5.03E-01	5.12E-01	5.07E-01	5.79E+02
ADULT	TOTALS	3.52E+01	5.28E-01	5.05E-01	5.12E-01	5.07E-01	5.79E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.56E+01	2.54E-01	2.48E-01	2.79E-01	2.60E-01	7.56E+02
CHILD	TOTALS	4.56E+01	2.58E-01	2.50E-01	2.63E-01	2.55E-01	7.56E+02
TEENAGE	TOTALS	4.56E+01	2.68E-01	2.51E-01	2.56E-01	2.53E-01	7.56E+02
ADULT	TOTALS	4.56E+01	2.67E-01	2.52E-01	2.57E-01	2.53E-01	7.56E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.94E-02	2.05E-02	6.32E-03	8.80E-02	3.70E-02	5.00E-01
CHILD	TOTALS	3.81E-02	3.13E-02	9.66E-03	4.59E-02	2.33E-02	5.00E-01
TEENAGE	TOTALS	3.89E-02	5.87E-02	1.20E-02	2.75E-02	1.79E-02	5.00E-01
ADULT	TOTALS	3.93E-02	5.67E-02	1.50E-02	2.80E-02	1.92E-02	5.00E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.17E-02	3.01E-02	8.66E-03	1.32E-01	5.51E-02	6.39E-01
CHILD	TOTALS	4.96E-02	4.64E-02	1.37E-02	6.86E-02	3.43E-02	6.39E-01
TEENAGE	TOTALS	5.09E-02	8.79E-02	1.72E-02	4.07E-02	2.62E-02	6.39E-01
ADULT	TOTALS	5.16E-02	8.49E-02	2.18E-02	4.14E-02	2.81E-02	6.39E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.34E-02	2.58E-02	8.36E-03	1.09E-01	4.60E-02	6.87E-01
CHILD	TOTALS	5.17E-02	3.90E-02	1.25E-02	5.70E-02	2.92E-02	6.87E-01
TEENAGE	TOTALS	5.27E-02	7.26E-02	1.53E-02	3.44E-02	2.27E-02	6.87E-01
ADULT	TOTALS	5.33E-02	7.02E-02	1.91E-02	3.50E-02	2.42E-02	6.87E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.05E-02	2.39E-02	8.86E-03	9.44E-02	4.11E-02	8.07E-01
CHILD	TOTALS	5.91E-02	3.52E-02	1.25E-02	5.05E-02	2.68E-02	8.07E-01
TEENAGE	TOTALS	6.00E-02	6.38E-02	1.50E-02	3.12E-02	2.12E-02	8.07E-01
ADULT	TOTALS	6.05E-02	6.17E-02	1.81E-02	3.17E-02	2.25E-02	8.07E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.37E-02	3.55E-02	1.13E-02	1.50E-01	6.33E-02	9.49E-01
CHILD	TOTALS	7.14E-02	5.37E-02	1.71E-02	7.85E-02	4.02E-02	9.49E-01
TEENAGE	TOTALS	7.28E-02	1.00E-01	2.11E-02	4.74E-02	3.12E-02	9.49E-01
ADULT	TOTALS	7.35E-02	9.67E-02	2.62E-02	4.81E-02	3.33E-02	9.49E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.34E-01	1.31E-01	5.88E-02	4.65E-01	2.12E-01	6.00E+00
CHILD	TOTALS	4.27E-01	1.84E-01	7.61E-02	2.57E-01	1.44E-01	6.00E+00
TEENAGE	TOTALS	4.31E-01	3.20E-01	8.80E-02	1.65E-01	1.18E-01	6.00E+00
ADULT	TOTALS	4.33E-01	3.10E-01	1.03E-01	1.68E-01	1.24E-01	6.00E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.28E+01	5.01E-01	4.83E-01	5.86E-01	5.22E-01	2.06E+02
CHILD	TOTALS	1.28E+01	5.15E-01	4.87E-01	5.33E-01	5.05E-01	2.06E+02
TEENAGE	TOTALS	1.28E+01	5.49E-01	4.90E-01	5.10E-01	4.98E-01	2.06E+02
ADULT	TOTALS	1.28E+01	5.47E-01	4.94E-01	5.11E-01	4.99E-01	2.06E+02

Program execution time = 3.08 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B6 NBEA dose rates plus Moore Ranch dose rates using Antelope Coal Company weather data

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METSET: DATA: NBMU15M.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.944012.944015.1440			8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 6

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E+02	1005	1	0.00E+00	MU5
6	7.16	-23.39	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+03	1006	1	0.00E+00	Moore

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.505E-01	1.218E+00	2.022E-02	9.136E-01	4.394E-01	4.274E+01
GROUND	6.474E-03	6.474E-03	6.474E-03	6.474E-03	6.474E-03	6.474E-03
CLOUD	3.658E-01	3.658E-01	3.658E-01	3.658E-01	3.658E-01	3.658E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.228E-01	1.590E+00	3.925E-01	1.286E+00	8.117E-01	4.311E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.505E-01	1.218E+00	2.022E-02	9.136E-01	4.394E-01	4.274E+01
GROUND	6.474E-03	6.474E-03	6.474E-03	6.474E-03	6.474E-03	6.474E-03
CLOUD	3.658E-01	3.658E-01	3.658E-01	3.658E-01	3.658E-01	3.658E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.228E-01	1.590E+00	3.925E-01	1.286E+00	8.117E-01	4.311E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.92E+01	3.23E-01	3.11E-01	3.76E-01	3.36E-01	4.82E+02
CHILD	TOTALS	2.92E+01	3.31E-01	3.14E-01	3.43E-01	3.25E-01	4.82E+02
TEENAGE	TOTALS	2.92E+01	3.53E-01	3.16E-01	3.28E-01	3.21E-01	4.82E+02
ADULT	TOTALS	2.92E+01	3.51E-01	3.18E-01	3.29E-01	3.22E-01	4.82E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.11E+01	3.88E-01	3.75E-01	4.49E-01	4.03E-01	3.46E+02
CHILD	TOTALS	2.11E+01	3.98E-01	3.78E-01	4.11E-01	3.90E-01	3.46E+02
TEENAGE	TOTALS	2.11E+01	4.22E-01	3.80E-01	3.94E-01	3.86E-01	3.46E+02
ADULT	TOTALS	2.11E+01	4.21E-01	3.83E-01	3.95E-01	3.87E-01	3.46E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.52E+01	5.12E-01	4.98E-01	5.75E-01	5.27E-01	5.78E+02
CHILD	TOTALS	3.52E+01	5.22E-01	5.01E-01	5.35E-01	5.14E-01	5.78E+02
TEENAGE	TOTALS	3.52E+01	5.47E-01	5.04E-01	5.18E-01	5.09E-01	5.78E+02
ADULT	TOTALS	3.52E+01	5.46E-01	5.06E-01	5.19E-01	5.10E-01	5.78E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.55E+01	2.58E-01	2.47E-01	3.08E-01	2.70E-01	7.55E+02
CHILD	TOTALS	4.55E+01	2.66E-01	2.50E-01	2.77E-01	2.60E-01	7.55E+02
TEENAGE	TOTALS	4.55E+01	2.86E-01	2.51E-01	2.63E-01	2.56E-01	7.55E+02
ADULT	TOTALS	4.55E+01	2.85E-01	2.54E-01	2.63E-01	2.57E-01	7.55E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.72E-02	2.42E-02	7.52E-03	1.03E-01	4.35E-02	6.01E-01
CHILD	TOTALS	4.56E-02	3.68E-02	1.14E-02	5.40E-02	2.75E-02	6.01E-01
TEENAGE	TOTALS	4.66E-02	6.90E-02	1.42E-02	3.24E-02	2.12E-02	6.01E-01
ADULT	TOTALS	4.71E-02	6.67E-02	1.77E-02	3.29E-02	2.26E-02	6.01E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.95E-02	3.52E-02	1.00E-02	1.55E-01	6.46E-02	7.33E-01
CHILD	TOTALS	5.71E-02	5.44E-02	1.59E-02	8.05E-02	4.02E-02	7.33E-01
TEENAGE	TOTALS	5.86E-02	1.03E-01	2.00E-02	4.77E-02	3.06E-02	7.33E-01
ADULT	TOTALS	5.94E-02	9.97E-02	2.54E-02	4.85E-02	3.28E-02	7.33E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.23E-02	2.96E-02	9.70E-03	1.24E-01	5.26E-02	8.05E-01
CHILD	TOTALS	6.04E-02	4.46E-02	1.44E-02	6.51E-02	3.35E-02	8.05E-01
TEENAGE	TOTALS	6.16E-02	8.29E-02	1.77E-02	3.94E-02	2.60E-02	8.05E-01
ADULT	TOTALS	6.22E-02	8.01E-02	2.19E-02	4.00E-02	2.77E-02	8.05E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.81E-02	3.02E-02	1.14E-02	1.18E-01	5.17E-02	1.04E+00
CHILD	TOTALS	7.64E-02	4.43E-02	1.59E-02	6.34E-02	3.38E-02	1.04E+00
TEENAGE	TOTALS	7.75E-02	8.00E-02	1.90E-02	3.94E-02	2.68E-02	1.04E+00
ADULT	TOTALS	7.81E-02	7.75E-02	2.30E-02	3.99E-02	2.85E-02	1.04E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.15E-02	4.05E-02	1.27E-02	1.72E-01	7.24E-02	1.04E+00
CHILD	TOTALS	7.89E-02	6.14E-02	1.93E-02	8.98E-02	4.59E-02	1.04E+00
TEENAGE	TOTALS	8.05E-02	1.15E-01	2.39E-02	5.41E-02	3.55E-02	1.04E+00
ADULT	TOTALS	8.14E-02	1.11E-01	2.98E-02	5.50E-02	3.79E-02	1.04E+00

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.55E-01	1.38E-01	6.17E-02	4.93E-01	2.24E-01	6.30E+00
CHILD	TOTALS	4.48E-01	1.94E-01	8.00E-02	2.71E-01	1.52E-01	6.30E+00
TEENAGE	TOTALS	4.53E-01	3.39E-01	9.26E-02	1.75E-01	1.24E-01	6.30E+00
ADULT	TOTALS	4.55E-01	3.28E-01	1.09E-01	1.77E-01	1.31E-01	6.30E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.28E+01	5.04E-01	4.79E-01	6.16E-01	5.31E-01	2.05E+02
CHILD	TOTALS	1.28E+01	5.21E-01	4.85E-01	5.46E-01	5.08E-01	2.05E+02
TEENAGE	TOTALS	1.28E+01	5.67E-01	4.89E-01	5.15E-01	4.99E-01	2.05E+02
ADULT	TOTALS	1.28E+01	5.64E-01	4.94E-01	5.16E-01	5.01E-01	2.05E+02

Program execution time = 3.02 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B7 NBEA dose rates plus Nichols Ranch dose rates using Antelope Coal Company weather data

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ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR
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INDIVIDUAL RECEPTOR ALC CHECK AND/OR ANNUAL DOSE COMMITMENTS 7

REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMU15N.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.944012	.944015	.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 6

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E+03	1005	1	0.00E+00	MU5
6	-6.77	-8.89	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E+02	1006	1	0.00E+00	Nichols

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.311E-01	1.061E+00	1.751E-02	7.958E-01	3.827E-01	3.870E+01
GROUND	5.806E-03	5.806E-03	5.806E-03	5.806E-03	5.806E-03	5.806E-03
CLOUD	3.308E-01	3.308E-01	3.308E-01	3.308E-01	3.308E-01	3.308E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.676E-01	1.398E+00	3.541E-01	1.132E+00	7.193E-01	3.904E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.311E-01	1.061E+00	1.751E-02	7.958E-01	3.827E-01	3.870E+01
GROUND	5.806E-03	5.806E-03	5.806E-03	5.806E-03	5.806E-03	5.806E-03
CLOUD	3.308E-01	3.308E-01	3.308E-01	3.308E-01	3.308E-01	3.308E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	4.676E-01	1.398E+00	3.541E-01	1.132E+00	7.193E-01	3.904E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.98E+01	3.20E-01	3.14E-01	3.47E-01	3.27E-01	4.92E+02
CHILD	TOTALS	2.98E+01	3.24E-01	3.16E-01	3.30E-01	3.21E-01	4.92E+02
TEENAGE	TOTALS	2.98E+01	3.35E-01	3.17E-01	3.23E-01	3.19E-01	4.92E+02
ADULT	TOTALS	2.98E+01	3.35E-01	3.18E-01	3.23E-01	3.20E-01	4.92E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.18E+01	3.91E-01	3.84E-01	4.26E-01	4.00E-01	3.57E+02
CHILD	TOTALS	2.18E+01	3.97E-01	3.86E-01	4.04E-01	3.93E-01	3.57E+02
TEENAGE	TOTALS	2.18E+01	4.11E-01	3.87E-01	3.95E-01	3.90E-01	3.57E+02
ADULT	TOTALS	2.18E+01	4.10E-01	3.88E-01	3.95E-01	3.91E-01	3.57E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV.	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.62E+01	5.20E-01	5.12E-01	5.57E-01	5.29E-01	5.96E+02
CHILD	TOTALS	3.62E+01	5.26E-01	5.14E-01	5.34E-01	5.22E-01	5.96E+02
TEENAGE	TOTALS	3.62E+01	5.41E-01	5.15E-01	5.24E-01	5.19E-01	5.96E+02
ADULT	TOTALS	3.62E+01	5.40E-01	5.17E-01	5.24E-01	5.19E-01	5.96E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.91E+01	2.55E-01	2.50E-01	2.79E-01	2.61E-01	8.14E+02
CHILD	TOTALS	4.91E+01	2.59E-01	2.51E-01	2.64E-01	2.56E-01	8.14E+02
TEENAGE	TOTALS	4.91E+01	2.68E-01	2.52E-01	2.57E-01	2.54E-01	8.14E+02
ADULT	TOTALS	4.91E+01	2.68E-01	2.53E-01	2.58E-01	2.54E-01	8.14E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.99E-02	2.07E-02	6.39E-03	8.86E-02	3.73E-02	5.07E-01
CHILD	TOTALS	3.85E-02	3.15E-02	9.75E-03	4.63E-02	2.35E-02	5.07E-01
TEENAGE	TOTALS	3.94E-02	5.91E-02	1.21E-02	2.77E-02	1.81E-02	5.07E-01
ADULT	TOTALS	3.98E-02	5.71E-02	1.52E-02	2.82E-02	1.93E-02	5.07E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.18E-02	3.01E-02	8.67E-03	1.32E-01	5.51E-02	6.41E-01
CHILD	TOTALS	4.97E-02	4.64E-02	1.37E-02	6.86E-02	3.43E-02	6.41E-01
TEENAGE	TOTALS	5.10E-02	8.79E-02	1.72E-02	4.07E-02	2.62E-02	6.41E-01
ADULT	TOTALS	5.17E-02	8.49E-02	2.18E-02	4.14E-02	2.81E-02	6.41E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.38E-02	2.60E-02	8.42E-03	1.09E-01	4.62E-02	6.92E-01
CHILD	TOTALS	5.21E-02	3.92E-02	1.26E-02	5.73E-02	2.94E-02	6.92E-01
TEENAGE	TOTALS	5.31E-02	7.30E-02	1.54E-02	3.46E-02	2.28E-02	6.92E-01
ADULT	TOTALS	5.37E-02	7.05E-02	1.92E-02	3.51E-02	2.43E-02	6.92E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.11E-02	2.40E-02	8.94E-03	9.45E-02	4.11E-02	8.15E-01
CHILD	TOTALS	5.97E-02	3.52E-02	1.25E-02	5.05E-02	2.69E-02	8.15E-01
TEENAGE	TOTALS	6.06E-02	6.38E-02	1.50E-02	3.13E-02	2.13E-02	8.15E-01
ADULT	TOTALS	6.11E-02	6.18E-02	1.82E-02	3.18E-02	2.26E-02	8.15E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.36E-02	3.56E-02	1.13E-02	1.50E-01	6.34E-02	9.48E-01
CHILD	TOTALS	7.13E-02	5.38E-02	1.71E-02	7.85E-02	4.02E-02	9.48E-01
TEENAGE	TOTALS	7.27E-02	1.00E-01	2.11E-02	4.74E-02	3.12E-02	9.48E-01
ADULT	TOTALS	7.35E-02	9.68E-02	2.62E-02	4.82E-02	3.33E-02	9.48E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.29E-01	1.30E-01	5.83E-02	4.64E-01	2.11E-01	5.94E+00
CHILD	TOTALS	4.23E-01	1.83E-01	7.55E-02	2.56E-01	1.44E-01	5.94E+00
TEENAGE	TOTALS	4.27E-01	3.19E-01	8.74E-02	1.65E-01	1.17E-01	5.94E+00
ADULT	TOTALS	4.29E-01	3.09E-01	1.02E-01	1.67E-01	1.23E-01	5.94E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.30E+01	5.06E-01	4.88E-01	5.94E-01	5.28E-01	2.09E+02
CHILD	TOTALS	1.30E+01	5.20E-01	4.92E-01	5.39E-01	5.10E-01	2.09E+02
TEENAGE	TOTALS	1.30E+01	5.56E-01	4.95E-01	5.16E-01	5.03E-01	2.09E+02
ADULT	TOTALS	1.30E+01	5.53E-01	4.99E-01	5.16E-01	5.05E-01	2.09E+02

Program execution time = 3.02 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B8 NBEA dose rates from production wells plus the agricultural pathway using Antelope Coal Company weather data

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REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMU15ag.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.944012.944015.1440	8.3560	7.2650	8.3070	100.0000		

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	320.00	1400.00	230.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 5

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E+02	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E+02	1005	1	0.00E+00	MU5

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.232E-01	9.971E-01	1.643E-02	7.478E-01	3.596E-01	3.660E+01
GROUND	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03
CLOUD	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01
VEG. ING	5.471E-01	6.322E+00	5.471E-01	1.879E+00	1.531E+00	5.471E-01
MEAT ING	4.207E-02	4.862E-01	4.207E-02	1.445E-01	1.177E-01	4.207E-02
MILK ING	9.801E-03	1.133E-01	9.801E-03	3.366E-02	2.742E-02	9.801E-03
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	1.040E+00	8.236E+00	9.335E-01	3.123E+00	2.353E+00	3.751E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	3.109E-01	3.593E+00	3.109E-01	1.068E+00	8.698E-01	3.109E-01
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	3.109E-01	3.593E+00	3.109E-01	1.068E+00	8.698E-01	3.109E-01

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.232E-01	9.971E-01	1.643E-02	7.478E-01	3.596E-01	3.660E+01
GROUND	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03	5.481E-03
CLOUD	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01	3.126E-01
VEG. ING	5.471E-01	6.322E+00	5.471E-01	1.879E+00	1.531E+00	5.471E-01
MEAT ING	3.530E-01	4.079E+00	3.530E-01	1.212E+00	9.875E-01	3.530E-01
MILK ING	9.801E-03	1.133E-01	9.801E-03	3.366E-02	2.742E-02	9.801E-03
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	1.351E+00	1.183E+01	1.244E+00	4.191E+00	3.223E+00	3.782E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.91E+01	3.08E-01	3.03E-01	3.28E-01	3.13E-01	4.81E+02
CHILD	TOTALS	2.91E+01	3.11E-01	3.05E-01	3.15E-01	3.09E-01	4.81E+02
TEENAGE	TOTALS	2.91E+01	3.19E-01	3.05E-01	3.10E-01	3.07E-01	4.81E+02
ADULT	TOTALS	2.91E+01	3.19E-01	3.06E-01	3.10E-01	3.07E-01	4.81E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.11E+01	3.72E-01	3.66E-01	4.00E-01	3.79E-01	3.45E+02
CHILD	TOTALS	2.11E+01	3.77E-01	3.68E-01	3.83E-01	3.74E-01	3.45E+02
TEENAGE	TOTALS	2.11E+01	3.88E-01	3.69E-01	3.75E-01	3.71E-01	3.45E+02
ADULT	TOTALS	2.11E+01	3.87E-01	3.70E-01	3.75E-01	3.72E-01	3.45E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.51E+01	4.96E-01	4.90E-01	5.26E-01	5.04E-01	5.78E+02
CHILD	TOTALS	3.51E+01	5.01E-01	4.92E-01	5.07E-01	4.98E-01	5.78E+02
TEENAGE	TOTALS	3.51E+01	5.13E-01	4.93E-01	4.99E-01	4.95E-01	5.78E+02
ADULT	TOTALS	3.51E+01	5.12E-01	4.94E-01	5.00E-01	4.96E-01	5.78E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.55E+01	2.43E-01	2.39E-01	2.60E-01	2.47E-01	7.54E+02
CHILD	TOTALS	4.55E+01	2.46E-01	2.40E-01	2.49E-01	2.43E-01	7.54E+02
TEENAGE	TOTALS	4.55E+01	2.53E-01	2.41E-01	2.45E-01	2.42E-01	7.54E+02
ADULT	TOTALS	4.55E+01	2.52E-01	2.41E-01	2.45E-01	2.42E-01	7.54E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.70E-02	1.93E-02	5.93E-03	8.26E-02	3.47E-02	4.69E-01
CHILD	TOTALS	3.57E-02	2.94E-02	9.07E-03	4.31E-02	2.19E-02	4.69E-01
TEENAGE	TOTALS	3.65E-02	5.51E-02	1.13E-02	2.59E-02	1.68E-02	4.69E-01
ADULT	TOTALS	3.69E-02	5.32E-02	1.41E-02	2.63E-02	1.80E-02	4.69E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.84E-02	2.82E-02	8.11E-03	1.24E-01	5.15E-02	5.99E-01
CHILD	TOTALS	4.65E-02	4.34E-02	1.28E-02	6.42E-02	3.21E-02	5.99E-01
TEENAGE	TOTALS	4.77E-02	8.23E-02	1.61E-02	3.81E-02	2.45E-02	5.99E-01
ADULT	TOTALS	4.83E-02	7.95E-02	2.04E-02	3.87E-02	2.63E-02	5.99E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.99E-02	2.42E-02	7.82E-03	1.02E-01	4.31E-02	6.42E-01
CHILD	TOTALS	4.83E-02	3.66E-02	1.17E-02	5.34E-02	2.74E-02	6.42E-01
TEENAGE	TOTALS	4.93E-02	6.81E-02	1.44E-02	3.22E-02	2.12E-02	6.42E-01
ADULT	TOTALS	4.98E-02	6.58E-02	1.79E-02	3.28E-02	2.26E-02	6.42E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.63E-02	2.23E-02	8.25E-03	8.81E-02	3.83E-02	7.50E-01
CHILD	TOTALS	5.50E-02	3.28E-02	1.16E-02	4.71E-02	2.50E-02	7.50E-01
TEENAGE	TOTALS	5.58E-02	5.95E-02	1.39E-02	2.91E-02	1.98E-02	7.50E-01
ADULT	TOTALS	5.63E-02	5.76E-02	1.69E-02	2.96E-02	2.10E-02	7.50E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.94E-02	3.34E-02	1.07E-02	1.40E-01	5.95E-02	8.95E-01
CHILD	TOTALS	6.73E-02	5.05E-02	1.61E-02	7.37E-02	3.78E-02	8.95E-01
TEENAGE	TOTALS	6.86E-02	9.39E-02	1.98E-02	4.45E-02	2.93E-02	8.95E-01
ADULT	TOTALS	6.93E-02	9.08E-02	2.46E-02	4.52E-02	3.13E-02	8.95E-01

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.07E-01	1.23E-01	5.53E-02	4.38E-01	2.00E-01	5.63E+00
CHILD	TOTALS	4.01E-01	1.73E-01	7.15E-02	2.42E-01	1.36E-01	5.63E+00
TEENAGE	TOTALS	4.05E-01	3.01E-01	8.27E-02	1.56E-01	1.11E-01	5.63E+00
ADULT	TOTALS	4.07E-01	2.92E-01	9.70E-02	1.58E-01	1.17E-01	5.63E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.27E+01	4.88E-01	4.71E-01	5.66E-01	5.07E-01	2.04E+02
CHILD	TOTALS	1.27E+01	5.00E-01	4.75E-01	5.17E-01	4.91E-01	2.04E+02
TEENAGE	TOTALS	1.27E+01	5.32E-01	4.78E-01	4.96E-01	4.85E-01	2.04E+02
ADULT	TOTALS	1.27E+01	5.30E-01	4.81E-01	4.96E-01	4.86E-01	2.04E+02

Program execution time = 2.47 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B9 NBEA dose rates from mine fields at maximum purge rates using Antelope Coal Company weather data

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REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMU15pg.MIL 12/05/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	320.00	1400.00	230.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 5

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.10	0.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.68E+02	1001	1	0.00E+00	MU1
2	0.10	1.01	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E+03	1002	1	0.00E+00	MU2
3	-0.40	0.30	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.94E+02	1003	1	0.00E+00	MU3
4	-0.50	-1.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+03	1004	1	0.00E+00	MU4
5	-0.90	0.07	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E+03	1005	1	0.00E+00	MU5

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.538E-01	1.245E+00	2.053E-02	9.340E-01	4.492E-01	4.572E+01
GROUND	6.847E-03	6.847E-03	6.847E-03	6.847E-03	6.847E-03	6.847E-03
CLOUD	3.906E-01	3.906E-01	3.906E-01	3.906E-01	3.906E-01	3.906E-01
VEG. ING	6.832E-01	7.895E+00	6.832E-01	2.347E+00	1.911E+00	6.832E-01
MEAT ING	5.254E-02	6.071E-01	5.254E-02	1.805E-01	1.470E-01	5.254E-02
MILK ING	1.224E-02	1.414E-01	1.224E-02	4.204E-02	3.424E-02	1.224E-02
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	1.299E+00	1.029E+01	1.166E+00	3.901E+00	2.939E+00	4.686E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	3.883E-01	4.487E+00	3.883E-01	1.334E+00	1.086E+00	3.883E-01
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	3.883E-01	4.487E+00	3.883E-01	1.334E+00	1.086E+00	3.883E-01

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.538E-01	1.245E+00	2.053E-02	9.340E-01	4.492E-01	4.572E+01
GROUND	6.847E-03	6.847E-03	6.847E-03	6.847E-03	6.847E-03	6.847E-03
CLOUD	3.906E-01	3.906E-01	3.906E-01	3.906E-01	3.906E-01	3.906E-01
VEG. ING	6.832E-01	7.895E+00	6.832E-01	2.347E+00	1.911E+00	6.832E-01
MEAT ING	4.408E-01	5.094E+00	4.408E-01	1.514E+00	1.233E+00	4.408E-01
MILK ING	1.224E-02	1.414E-01	1.224E-02	4.204E-02	3.424E-02	1.224E-02
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	1.688E+00	1.477E+01	1.554E+00	5.234E+00	4.025E+00	4.725E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.65E+01	3.85E-01	3.79E-01	4.10E-01	3.91E-01	6.02E+02
CHILD	TOTALS	3.65E+01	3.89E-01	3.81E-01	3.94E-01	3.86E-01	6.02E+02
TEENAGE	TOTALS	3.65E+01	3.99E-01	3.82E-01	3.88E-01	3.84E-01	6.02E+02
ADULT	TOTALS	3.65E+01	3.98E-01	3.83E-01	3.88E-01	3.84E-01	6.02E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.62E+01	4.62E-01	4.54E-01	4.96E-01	4.70E-01	4.29E+02
CHILD	TOTALS	2.62E+01	4.67E-01	4.56E-01	4.74E-01	4.63E-01	4.29E+02
TEENAGE	TOTALS	2.62E+01	4.81E-01	4.57E-01	4.65E-01	4.60E-01	4.29E+02
ADULT	TOTALS	2.62E+01	4.80E-01	4.59E-01	4.65E-01	4.61E-01	4.29E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.38E+01	6.16E-01	6.09E-01	6.53E-01	6.25E-01	7.21E+02
CHILD	TOTALS	4.38E+01	6.22E-01	6.11E-01	6.30E-01	6.18E-01	7.21E+02
TEENAGE	TOTALS	4.38E+01	6.37E-01	6.12E-01	6.20E-01	6.15E-01	7.21E+02
ADULT	TOTALS	4.38E+01	6.36E-01	6.13E-01	6.21E-01	6.16E-01	7.21E+02

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.56E+01	3.02E-01	2.97E-01	3.24E-01	3.07E-01	9.22E+02
CHILD	TOTALS	5.56E+01	3.05E-01	2.98E-01	3.10E-01	3.03E-01	9.22E+02
TEENAGE	TOTALS	5.56E+01	3.14E-01	2.99E-01	3.04E-01	3.01E-01	9.22E+02
ADULT	TOTALS	5.56E+01	3.14E-01	3.00E-01	3.04E-01	3.01E-01	9.22E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.62E-02	2.41E-02	7.40E-03	1.03E-01	4.34E-02	5.85E-01
CHILD	TOTALS	4.46E-02	3.67E-02	1.13E-02	5.38E-02	2.73E-02	5.85E-01
TEENAGE	TOTALS	4.55E-02	6.88E-02	1.41E-02	3.23E-02	2.10E-02	5.85E-01
ADULT	TOTALS	4.61E-02	6.65E-02	1.76E-02	3.28E-02	2.25E-02	5.85E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.05E-02	3.52E-02	1.01E-02	1.55E-01	6.44E-02	7.48E-01
CHILD	TOTALS	5.81E-02	5.42E-02	1.60E-02	8.02E-02	4.01E-02	7.48E-01
TEENAGE	TOTALS	5.95E-02	1.03E-01	2.01E-02	4.76E-02	3.06E-02	7.48E-01
ADULT	TOTALS	6.03E-02	9.93E-02	2.54E-02	4.84E-02	3.28E-02	7.48E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.23E-02	3.02E-02	9.77E-03	1.27E-01	5.38E-02	8.01E-01
CHILD	TOTALS	6.03E-02	4.57E-02	1.46E-02	6.67E-02	3.42E-02	8.01E-01
TEENAGE	TOTALS	6.15E-02	8.50E-02	1.79E-02	4.03E-02	2.65E-02	8.01E-01
ADULT	TOTALS	6.22E-02	8.22E-02	2.23E-02	4.09E-02	2.83E-02	8.01E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.03E-02	2.78E-02	1.03E-02	1.10E-01	4.78E-02	9.37E-01
CHILD	TOTALS	6.87E-02	4.09E-02	1.45E-02	5.88E-02	3.12E-02	9.37E-01
TEENAGE	TOTALS	6.97E-02	7.43E-02	1.74E-02	3.64E-02	2.47E-02	9.37E-01
ADULT	TOTALS	7.03E-02	7.19E-02	2.11E-02	3.69E-02	2.62E-02	9.37E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.67E-02	4.17E-02	1.33E-02	1.75E-01	7.43E-02	1.12E+00
CHILD	TOTALS	8.40E-02	6.30E-02	2.01E-02	9.20E-02	4.72E-02	1.12E+00
TEENAGE	TOTALS	8.57E-02	1.17E-01	2.48E-02	5.56E-02	3.66E-02	1.12E+00
ADULT	TOTALS	8.66E-02	1.13E-01	3.08E-02	5.65E-02	3.91E-02	1.12E+00

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.09E-01	1.53E-01	6.91E-02	5.47E-01	2.49E-01	7.04E+00
CHILD	TOTALS	5.01E-01	2.16E-01	8.94E-02	3.02E-01	1.70E-01	7.04E+00
TEENAGE	TOTALS	5.06E-01	3.76E-01	1.03E-01	1.94E-01	1.38E-01	7.04E+00
ADULT	TOTALS	5.08E-01	3.65E-01	1.21E-01	1.97E-01	1.46E-01	7.04E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.59E+01	6.07E-01	5.86E-01	7.03E-01	6.30E-01	2.55E+02
CHILD	TOTALS	1.59E+01	6.22E-01	5.91E-01	6.43E-01	6.11E-01	2.55E+02
TEENAGE	TOTALS	1.59E+01	6.61E-01	5.94E-01	6.17E-01	6.03E-01	2.55E+02
ADULT	TOTALS	1.59E+01	6.58E-01	5.99E-01	6.17E-01	6.05E-01	2.55E+02

Program execution time = 2.42 seconds

APPENDIX B - CAMECO NBEA RADIATION DOSES CALCULATED BY THE MILDOS

B10 NBEA dose rates from satellite stack at maximum purge rates using Antelope Coal Company weather data

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REGION: North Butte MU1-5 with CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: NBMUpgST.MIL 12/06/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.15941,0.19576,0.26149,0.23974,0.09085,0.05275

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.2590	0.1830	0.1750	0.1930	0.2260	0.1920	0.1750	0.1650	0.1640	0.1340	0.1720	0.1900	0.2710	0.3420	0.3160	0.2610	3.4180
5.5	0.2600	0.2640	0.2040	0.2140	0.2030	0.2120	0.2950	0.2890	0.2730	0.2360	0.2050	0.2820	0.3330	0.3600	0.3160	0.2780	4.2240
10.0	0.1930	0.0980	0.0700	0.0390	0.0760	0.0880	0.1330	0.1380	0.1250	0.1110	0.1310	0.1930	0.2060	0.2250	0.2170	0.1730	2.2160
15.5	0.0130	0.0050	0.0090	0.0060	0.0010	0.0160	0.0090	0.0120	0.0160	0.0060	0.0310	0.0310	0.0320	0.0320	0.0280	0.0210	0.2680
21.5	0.0050	0.0020	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0020	0.0100	0.0100	0.0020	0.0010	0.0000	0.0010	0.0340
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0110	0.0010	0.0020	0.0000	0.0000	0.0000	0.0140
ALL	0.7300	0.5520	0.4580	0.4520	0.5060	0.5080	0.6130	0.6040	0.5780	0.4890	0.5600	0.7070	0.8460	0.9600	0.8770	0.7340	10.1740
STABILITY CLASS 2																	
1.5	0.0230	0.0150	0.0210	0.0270	0.0420	0.0260	0.0330	0.0230	0.0240	0.0200	0.0160	0.0390	0.0660	0.0870	0.0610	0.0240	0.5470
5.5	0.0550	0.0490	0.0240	0.0240	0.0480	0.0390	0.0790	0.0780	0.0550	0.0310	0.0390	0.0540	0.1100	0.0900	0.0700	0.0570	0.9020
10.0	0.1640	0.0880	0.0550	0.0380	0.0490	0.0950	0.1340	0.1200	0.0890	0.0590	0.0540	0.1280	0.1830	0.1660	0.1540	0.1390	1.7150
15.5	0.0630	0.0170	0.0060	0.0040	0.0040	0.0180	0.0330	0.0320	0.0280	0.0210	0.0480	0.1270	0.0960	0.1010	0.0820	0.0770	0.7570
21.5	0.0020	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0020	0.0010	0.0090	0.0150	0.0040	0.0060	0.0020	0.0020	0.0450
28.0	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0050	0.0100	0.0000	0.0020	0.0020	0.0040	0.0240
ALL	0.3080	0.1700	0.1060	0.0930	0.1430	0.1780	0.2790	0.2540	0.1980	0.1320	0.1710	0.3730	0.4590	0.4520	0.3710	0.3030	3.9900
STABILITY CLASS 3																	
1.5	0.0160	0.0050	0.0100	0.0170	0.0260	0.0230	0.0210	0.0150	0.0100	0.0130	0.0170	0.0120	0.0570	0.0520	0.0370	0.0120	0.3430
5.5	0.0510	0.0540	0.0420	0.0430	0.0630	0.0930	0.0890	0.1000	0.0730	0.0340	0.0290	0.0730	0.2320	0.1650	0.0960	0.0660	1.3030
10.0	0.2660	0.1250	0.0430	0.0370	0.0520	0.1370	0.2510	0.2140	0.1370	0.0850	0.0760	0.1360	0.3090	0.2360	0.2260	0.2260	2.5560
15.5	0.4540	0.0960	0.0220	0.0160	0.0430	0.0960	0.1980	0.1830	0.0990	0.0850	0.1600	0.3650	0.3960	0.2860	0.2940	0.4180	3.2110
21.5	0.1470	0.0060	0.0010	0.0000	0.0000	0.0020	0.0090	0.0110	0.0090	0.0110	0.0540	0.1510	0.0680	0.0480	0.0600	0.1010	0.6780
28.0	0.0840	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0500	0.0770	0.0160	0.0070	0.0130	0.0350	0.2850
ALL	1.0180	0.2880	0.1180	0.1130	0.1840	0.3510	0.5680	0.5230	0.3290	0.2280	0.3860	0.8140	1.0780	0.7940	0.7260	0.8580	8.3760
STABILITY CLASS 4																	
1.5	0.0340	0.0220	0.0150	0.0590	0.0740	0.0770	0.0630	0.0790	0.0520	0.0520	0.0430	0.0480	0.1280	0.0960	0.0460	0.0520	0.9400
5.5	0.4210	0.2890	0.2270	0.3540	0.6200	0.6850	0.5310	0.3520	0.2700	0.1820	0.1390	0.3600	1.1700	0.8020	0.4380	0.3800	7.2200
10.0	1.1100	0.6080	0.3210	0.2650	0.6780	1.2790	0.9050	0.6140	0.5040	0.3640	0.4240	1.2840	3.4270	1.6880	1.0440	0.9410	15.4560
15.5	1.9800	0.7510	0.1710	0.0870	0.4110	1.6370	1.1560	0.7520	0.6450	0.4130	1.0340	3.0020	3.3270	1.0120	1.4250	1.9350	19.7380
21.5	1.0000	0.2410	0.0370	0.0050	0.0320	0.2750	0.2870	0.1860	0.1700	0.1090	0.7080	2.3920	0.7780	0.2150	0.6320	1.2610	8.3280
28.0	0.4480	0.1160	0.0110	0.0010	0.0040	0.0320	0.0840	0.0330	0.0390	0.0370	0.4140	2.0840	0.2260	0.0480	0.4200	0.9550	4.9520
ALL	4.9930	2.0270	0.7820	0.7710	1.8190	3.9850	3.0260	2.0160	1.6800	1.1570	2.7620	9.1700	9.0560	3.8610	4.0050	5.5240	56.6340
STABILITY CLASS 5																	
1.5	0.0520	0.0420	0.0420	0.0550	0.0960	0.1050	0.1210	0.1000	0.1030	0.0770	0.1050	0.1290	0.2670	0.2330	0.1010	0.0880	1.7160
5.5	0.1620	0.0780	0.0880	0.1420	0.2500	0.3280	0.2890	0.2710	0.1670	0.1500	0.0950	0.2000	0.5230	0.3150	0.1490	0.1170	3.3240
10.0	0.1220	0.0270	0.1180	0.0440	0.1670	0.5340	0.3700	0.2760	0.2370	0.1330	0.0940	0.3590	1.1790	0.2860	0.1480	0.1120	4.2060
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.3360	0.1470	0.2480	0.2410	0.5130	0.9670	0.7800	0.6470	0.5070	0.3600	0.2940	0.6880	1.9690	0.8340	0.3980	0.3170	9.2460
STABILITY CLASS 6																	
1.5	0.3460	0.2200	0.2500	0.2440	0.3630	0.3720	0.4580	0.4810	0.5090	0.4790	0.5810	0.9390	1.3560	1.1830	0.7500	0.4460	8.9770
5.5	0.1100	0.0710	0.0790	0.0810	0.1310	0.1510	0.1620	0.1510	0.1560	0.1530	0.1900	0.2530	0.3800	0.2720	0.1380	0.1250	2.6030
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4560	0.2910	0.3290	0.3250	0.4940	0.5230	0.6200	0.6320	0.6650	0.6320	0.7710	1.1920	1.7360	1.4550	0.8880	0.5710	11.5800
ALL	7.8410	3.4750	2.0410	1.9950	3.6590	6.5120	5.8860	4.6760	3.9570	2.9980	4.9440	12.9440	15.1440	8.3560	7.2650	8.3070	100.0000

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	-0.50	0.70	0.00	0.86	1	7	Glenrock	-17.00	-92.00	0.00	93.56	1
2	South Boundary	0.00	-0.50	0.00	0.50	1	8	Midwest	-34.00	-36.00	0.00	49.52	1
3	East Boundary	0.10	0.00	0.00	0.10	1	9	Gillette	34.00	56.00	0.00	65.51	1
4	West Boundary	-1.10	0.00	0.00	1.10	1	10	Wright	38.00	0.00	0.00	38.00	1
5	Casper	-31.00	-92.00	0.00	97.08	1	11	Pfister Ranch	1.00	-0.70	0.00	1.22	1
6	Douglas	-106.00	38.00	0.00	112.61	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10.0-20.0	3	6	11	0	0	3	0	0	0	0	0	0	0	0	0	0
20.0-30.0	6	11	20	3	0	3	0	0	0	0	71	0	2	9	0	0
30.0-40.0	0	6	6	0	1602	6	3	0	0	0	0	38	0	0	0	0
40.0-50.0	6	70	17	56	22	3	0	3	0	176	431	0	0	0	0	0
50.0-60.0	0	53	53	0	3	0	3	5	8	0	0	5	295	0	0	0
60.0-70.0	0	7393	7293	0	0	0	3	0	0	0	0	2	2	2	19	9
70.0-80.0	0	7393	7393	11	2	3	0	0	0	0	0	0	2	2	59	17
1.0-80.0	15	14932	14793	70	1629	18	15	8	8	176	502	45	304	13	78	26

TOTAL 1-80 KM POPULATION IS 32632 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.00	0.00	10.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.01E+03	1001	1	1.00E+01	Satellite

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.491E-01	1.207E+00	1.988E-02	9.051E-01	4.353E-01	4.500E+01
GROUND	6.714E-03	6.714E-03	6.714E-03	6.714E-03	6.714E-03	6.714E-03
CLOUD	3.843E-01	3.843E-01	3.843E-01	3.843E-01	3.843E-01	3.843E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.401E-01	1.598E+00	4.109E-01	1.296E+00	8.263E-01	4.539E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.491E-01	1.207E+00	1.988E-02	9.051E-01	4.353E-01	4.500E+01
GROUND	6.714E-03	6.714E-03	6.714E-03	6.714E-03	6.714E-03	6.714E-03
CLOUD	3.843E-01	3.843E-01	3.843E-01	3.843E-01	3.843E-01	3.843E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.401E-01	1.598E+00	4.109E-01	1.296E+00	8.263E-01	4.539E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= -0.5KM, Y= 0.7KM, Z= 0.0M, DIST= 0.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.12E+01	6.89E-02	6.83E-02	7.16E-02	6.95E-02	1.86E+02
CHILD	TOTALS	1.12E+01	6.93E-02	6.84E-02	6.99E-02	6.90E-02	1.86E+02
TEENAGE	TOTALS	1.12E+01	7.04E-02	6.85E-02	6.91E-02	6.88E-02	1.86E+02
ADULT	TOTALS	1.12E+01	7.03E-02	6.86E-02	6.92E-02	6.88E-02	1.86E+02

NUMBER 2 NAME=South Boundary X= 0.0KM, Y= -0.5KM, Z= 0.0M, DIST= 0.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.52E+01	4.27E-02	4.26E-02	4.32E-02	4.28E-02	4.19E+02
CHILD	TOTALS	2.52E+01	4.28E-02	4.26E-02	4.29E-02	4.27E-02	4.19E+02
TEENAGE	TOTALS	2.52E+01	4.30E-02	4.27E-02	4.28E-02	4.27E-02	4.19E+02
ADULT	TOTALS	2.52E+01	4.30E-02	4.27E-02	4.28E-02	4.27E-02	4.19E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 0.1KM, Y= 0.0KM, Z= 0.0M, DIST= 0.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.02E+01	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.00E+03
CHILD	TOTALS	6.02E+01	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.00E+03
TEENAGE	TOTALS	6.02E+01	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.00E+03
ADULT	TOTALS	6.02E+01	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.00E+03

NUMBER 4 NAME=West Boundary X= -1.1KM, Y= 0.0KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.39E+00	9.60E-02	9.46E-02	1.03E-01	9.76E-02	1.22E+02
CHILD	TOTALS	7.39E+00	9.71E-02	9.49E-02	9.85E-02	9.63E-02	1.22E+02
TEENAGE	TOTALS	7.39E+00	9.98E-02	9.52E-02	9.67E-02	9.58E-02	1.22E+02
ADULT	TOTALS	7.39E+00	9.96E-02	9.55E-02	9.67E-02	9.59E-02	1.22E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -31.0KM, Y= -92.0KM, Z= 0.0M, DIST= 97.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.52E-02	2.34E-02	7.23E-03	9.99E-02	4.20E-02	5.74E-01
CHILD	TOTALS	4.37E-02	3.56E-02	1.10E-02	5.22E-02	2.65E-02	5.74E-01
TEENAGE	TOTALS	4.46E-02	6.67E-02	1.37E-02	3.13E-02	2.04E-02	5.74E-01
ADULT	TOTALS	4.51E-02	6.44E-02	1.71E-02	3.18E-02	2.18E-02	5.74E-01

NUMBER 6 NAME=Douglas X=-106.0KM, Y= 38.0KM, Z= 0.0M, DIST= 112.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.94E-02	3.43E-02	9.93E-03	1.51E-01	6.28E-02	7.36E-01
CHILD	TOTALS	5.71E-02	5.29E-02	1.56E-02	7.82E-02	3.91E-02	7.36E-01
TEENAGE	TOTALS	5.85E-02	1.00E-01	1.96E-02	4.64E-02	2.99E-02	7.36E-01
ADULT	TOTALS	5.93E-02	9.68E-02	2.49E-02	4.72E-02	3.20E-02	7.36E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -17.0KM, Y= -92.0KM, Z= 0.0M, DIST= 93.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.12E-02	2.94E-02	9.57E-03	1.23E-01	5.23E-02	7.89E-01
CHILD	TOTALS	5.93E-02	4.44E-02	1.42E-02	6.47E-02	3.32E-02	7.89E-01
TEENAGE	TOTALS	6.05E-02	8.25E-02	1.75E-02	3.91E-02	2.58E-02	7.89E-01
ADULT	TOTALS	6.11E-02	7.97E-02	2.17E-02	3.98E-02	2.75E-02	7.89E-01

NUMBER 8 NAME=Midwest X= -34.0KM, Y= -36.0KM, Z= 0.0M, DIST= 49.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.75E-02	2.66E-02	9.87E-03	1.05E-01	4.56E-02	8.99E-01
CHILD	TOTALS	6.59E-02	3.90E-02	1.39E-02	5.60E-02	2.97E-02	8.99E-01
TEENAGE	TOTALS	6.69E-02	7.07E-02	1.66E-02	3.47E-02	2.36E-02	8.99E-01
ADULT	TOTALS	6.74E-02	6.84E-02	2.01E-02	3.52E-02	2.50E-02	8.99E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Gillette X= 34.0KM, Y= 56.0KM, Z= 0.0M, DIST= 65.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.31E-02	3.97E-02	1.27E-02	1.66E-01	7.05E-02	1.07E+00
CHILD	TOTALS	8.06E-02	5.99E-02	1.92E-02	8.74E-02	4.49E-02	1.07E+00
TEENAGE	TOTALS	8.21E-02	1.11E-01	2.36E-02	5.28E-02	3.48E-02	1.07E+00
ADULT	TOTALS	8.30E-02	1.08E-01	2.93E-02	5.37E-02	3.71E-02	1.07E+00

NUMBER 10 NAME=Wright X= 38.0KM, Y= 0.0KM, Z= 0.0M, DIST= 38.0KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.07E-01	1.50E-01	6.85E-02	5.31E-01	2.43E-01	7.03E+00
CHILD	TOTALS	5.00E-01	2.11E-01	8.82E-02	2.93E-01	1.66E-01	7.03E+00
TEENAGE	TOTALS	5.04E-01	3.65E-01	1.02E-01	1.90E-01	1.35E-01	7.03E+00
ADULT	TOTALS	5.07E-01	3.54E-01	1.19E-01	1.92E-01	1.42E-01	7.03E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Pfister Ranch X= 1.0KM, Y= -0.7KM, Z= 0.0M, DIST= 1.2KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.14E+01	1.81E-01	1.78E-01	1.96E-01	1.85E-01	1.87E+02
CHILD	TOTALS	1.14E+01	1.84E-01	1.79E-01	1.87E-01	1.82E-01	1.87E+02
TEENAGE	TOTALS	1.14E+01	1.90E-01	1.79E-01	1.83E-01	1.81E-01	1.87E+02
ADULT	TOTALS	1.14E+01	1.89E-01	1.80E-01	1.83E-01	1.81E-01	1.87E+02

Program execution time = 0.27 seconds

Appendix L

Radiation Doses from Cameco's Smith Ranch and Reynolds Ranch Expansion Area In-Situ Uranium Leaching Operations

RADIATION DOSES FROM CAMECO RESOURCES SMITH RANCH and REYNOLDS RANCH IN-SITU URANIUM RECOVERY OPERATIONS

By

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January 13, 2012

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EXECUTIVE SUMMARY

Radiation dose rates were determined using the Nuclear Regulatory Commission computer code MILDOS for the Cameco Resources Smith Ranch (SR) and Reynolds Ranch (RR) uranium extraction facility. The code used weather data from the Glenrock Coal Company weather station which was the most representative weather data for the SR-RR projects. The SR dose rates showed that:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from SR, and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest SR boundary dose rate was 5 mrem/yr at the north property boundary.
- The highest residential dose rate was 40 mrem/yr at the Sunquest Ranch.
- The highest dose rate at cities and towns within an 80 km radius from the SR was 1 mrem/yr at Douglas and Glenrock.
- The 10 CFR 120 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.
- The population effective dose rate within 80 km radius from RR was 2.3 person-rem/yr.

The RR dose rates are as follows:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from RR, and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest RR boundary dose rate was 25 mrem/yr at the east property boundary.
- The highest residential dose rate was 4 mrem/yr at the Duck Creek Ranch.
- The highest dose rate at cities and towns within an 80 km radius from RR was 1 mrem/yr at the town of Wright.
- The 10 CFR 190 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.
- The population effective dose rate within 80 km radius from SR was 2.5 person-rem/yr.

Notes: This assessment assumes that all five components of the SR (Sat2, Sat 3 CPP, SR1 and SR2 are operating simultaneously with a combined purge rate of 1110 gallons per minute. As specified in the Technical Report the maximum purge rate at SR is 491 gallons per minute. Since larger purge rates release proportionally more radon and radon is the source of radiation exposures at in-situ uranium extraction facilities, this assessment is conservative (overestimates the dose rates).

For Reynolds Ranch, this assessment assumes the total purge rate from 8 mine units to be 352 gallons per minute. Using values presented in the Technical Report one can determine a purge rate for RR of 200 gpm. Thus the radiation doses calculated by MILDOS for RR are conservative (overestimates of the actual dose rates).

For comparison naturally occurring background radiation, from cosmic and terrestrial sources, is approximately 365 mrem/yr.

Radiation dose rates were less than 5 mrem/yr for the following:

- Resin shipment to SR
- Radiation from RR operations on SR
- Radiation from SR operations on RR

The sensitivity analysis demonstrated that:

- The purge rate is the only parameter entered into MILDOS that is not constant and increases in the purge rate will release proportionally more radon from the facility. At an unrealistic upper bound purge rate of 352 gallons per minute the dose rates never exceeded 100 mrem/yr.
- Radiation doses calculated using a 25% / 75% distribution of radon released from the mine unit header houses and from the plant did not appear significantly different from the doses calculated using a 10% / 90% distribution.

OBJECTIVE

Using the Nuclear Regulatory Commission's computer code MILDOS determine the radiation doses to:

- People within an 80 km radius of the Smith Ranch,(SR)
- People within an 80 km radius of Reynolds Ranch (RR)
- The property boundary doses at SR
- The property boundary doses at RR
- How RR affects the doses at SR
- How SR affects the doses at RR
- How transferring uranium loaded resin to SR contributes to doses at SR

PROJECT DESCRIPTION

The SR-RR project is located in the southern Power River Basin in southwest Campbell County, Wyoming. The site is approximately 59 km northeast of Casper, Wyoming. See Figure 1.

Figure 2 is the site layout map of the SR-RR project and Figure 3 is an enlarged view of RR.

The SR project consists of Sat2, Sat 3, CPP, SR1, and SR2. As noted in Table 1, the Highlands Uranium Plant is assessed as part of Sat 3. The nearest residence to the SR project is the Sunquest Ranch 1.1 km south of the SR central processing facility. Another nearby ranch is the Vollman Ranch 6.4 km east of the central processing facility. The Smith Ranch project is currently in operation.

The RR project is approximately 9 km north of the SR. RR consists of Mine Units (MU) 21, MU22, MU23, MU24, MU25, MU26, MU27, and MU28. Since the SR and RR projects are near one another, they are both addressed in this MILDOS assessment.

The wells in each mine unit will pump oxygenated water through the underground ore zone to extract uranium. The water is pumped to an ion exchange column for removal of the uranium, and then back underground to extract additional uranium. The resin from the SR will be processed at the SR Central Processing facility. The resin from RR will be trucked to the SR Central Processing Facility for removal of the uranium, after which the resin is returned to the RR.

The maximum purge rate of water requiring disposal is 491 gallons per minute for SR and 200 gallons per minute for RR as detailed in the Technical Report. In this report purge rates of 1110 and 352 were used in the MILDOS calculations of radiation doses which are more conservative (larger values) than would result from using the Technical Report values.

RADIOACTIVE EFFLUENTS

Radon-222 gas and its decay products are the only radioactive effluents from the SR and RR under normal operating conditions. Radon is released into the atmosphere at the following locations:

- New Well Fields - When wells are drilled into the ore body, ore cuttings are transported to the ground surface in the drilling mud. The cuttings are temporarily stored in mud pits where radon-222 is released from the radium-226 in the cuttings. The quantity of radon-222 released from new well fields is much less than 1% of the radon-222 released during well field production as shown in the following section "MILDOS Output – Radiation Dose Rates."
- Production Well Fields - Radon-222 is released from 2 locations during production and restoration. The largest source of radon is from the satellite building. There radon is released from the purge water storage tanks prior to being injected back into the ore body and from the removal of resins from the ion exchange columns. The second largest source of radon outside of the satellite building is from the well heads and valves in each mining unit.
- Restoration Well Fields – Radon is released during restoration of the well fields.
- Land Application – The SR central processing plant contains a circular irrigation area. The water used in the irrigation system has had the radium removed. During winter months purge water is stored in a lined impoundment which is then used for irrigation when temperatures permit.

Under accident conditions where process water escapes from the process piping and/or tanks, uranium and radium-228 are released on the ground and radon into the air. Those releases are anticipated to be within the process area, are cleaned up locally, and release small amounts of radon similar in magnitude to the radon released by drill cuttings from new well installations.

Figure 1 SR - RR Site Location

Figure 2 SR - RR Site Layout (attached)

Figure 3 SR - RR Site Location Enlarged

SMITH RANCH – REYNOLDS RANCH OPERATIONS

Five mining units are present in the SR facility. To assess the maximum impact of the production wells in those mining units, all the mining units were assumed to be in production simultaneously. Operating fewer than 5 mine units at the same time would result in a radiological impact less than the doses presented in this report.

Eight mining units are present in the RR facility. The impact of operating all 8 units together is presented although 8 units will not be simultaneously operated.

For further detail please refer to the discussion presented in the Technical Report.

MILDOS

The computer code MILDOS was used to determine the impact of radon-222 release on the surrounding populations. The code was originally designed to address the impacts of uranium mill operations but was subsequently updated in 1998 to include the impacts of uranium in-situ leaching operations using a MS Windows format. The code was developed by Argonne National Laboratory for the Nuclear Regulatory Commission to assess the radiological impacts and regulatory compliance of a release. The code is a Gaussian plum air dispersion model which utilizes user-provided wind frequency data. Mechanisms such as radioactive decay and ingrowth of daughter radionuclides are included in the transport code. The code allows calculation of the radiation doses at any location within an 80 km radius in 16 compass directions for a large number of radiological sources.

INPUT DATA - WEATHER

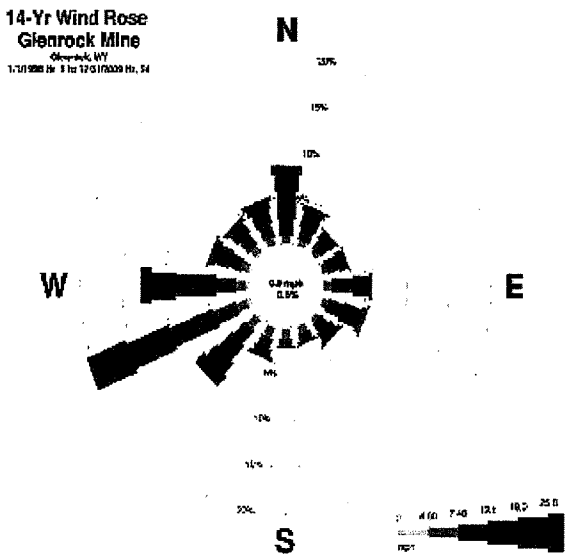
The SR and RR projects are located approximately 59 km northeast of Casper, Wyoming in the southern Power River Basin. The winds are predominately from the west southwest from the Great Divide Basin (Rock Springs area). A weather station has just been installed at the SR but has not been in operation long enough to collect one year of weather data. Weather data are available from Casper, at the Glenrock Coal Company, and at the Antelope Coal Company. The Glenrock Coal Company site is immediately adjacent to the SR site and is considered the most representative site for measuring the wind speed and direction applicable to the SR and RR sites. The annual wind rose for the Glenrock Coal Company Mine is presented in Figure 4.

In a letter from the Nuclear Regulatory Commission to High Planes Uranium (Energy Metals) in 2006 the NRC stated that the meteorological stations at the Glenrock mines meet the standards identified in NRC Regulatory Guide 3.63, *Onsite Meteorological Measurement Program of Uranium Recovery Programs – Data Acquisition and Reporting*, and can be recognized as "standard installations" per NUREG 1569.

The weather data from the Glenrock Coal Company were collected from 1997 -2006 and were converted to the STAR (STBability ABay) format for input into the MILDOS computer code.

The Glenrock Coal Company data in the STAR format is in file "CAM Glenrock Coal Co.str" See Appendix A for the format and the file.

Figure 4. Glenrock Mine Year-Round Wind Rose



INPUT DATA - SR AND RR OPERATIONS

The SR and RR operations data are presented in Table 1. The locations are expressed on a grid system with the central plant of each site as the center and km east as positive values, km west as negative values, km north as positive values, km south as negative values, meters elevation as positive values, and meters depression as negative values. The last RR location entry in Table 1 presents the distance from SR to RR followed by the totals for all the mine units. The data in Table 1 were entered in MILDOS as source terms for new wells, production wells, or restoration wells.

Consistent with prior Cameco MILDOS Modeling, the radon from SR or RR is released to the environment in the following proportions:

25% of the radon from the mine well field header houses, and
75% of the radon from the satellite plant vent.

The implications of this assumption are discussed later.

Radon released from the open tanks and the IX column in the satellite plant will be vented from the plant through a 10 meter stack with an estimated exit velocity of 10 m/sec.

INPUT NEW WELL DATA

The following data was used to determine the doses from the new wells:

Storage time in the pits	12 days
Ore material in the pits	3.5E6 g/yr
Number of pits	12

INPUT DATA - RADIATION DOSE LOCATIONS

Radiation doses were calculated using MILDOS at:

- Cities and towns within 80 km radius of SR and RR.
- The north, south, east and west boundaries using the grid system with the center point at the central processing plant of SR or RR.
- The nearest residence for SR is the Sunquest Ranch and a nearby Vollman Ranch.
- The nearest residence for the RR facility which is Duck Creek Ranch

The X and Y coordinates in kilometers for each of those locations is shown in Table 2.

Table 1 SR-RR Operations Data

Smith Ranch

Satellite	X km	Y km	[Ra] pCi/g	Em Fr	Thick m	Den g/cm*3	Well field	Area m*2	Cir Vol L	Fr Rn	Rn vent /d	Purge gpm	Col Vol L	Col ul/d	Por	Op days
Sat 2			574	0.2	4.6	1.93	C	1.18E+05	1.46E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.6	1.93	D	2.60E+04	3.21E+07	0.8	0.01			0.5	0.4	365
			574	0.2	4.6	1.93	E	9.24E+04	1.14E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.6	1.93	H	1.04E+05	1.28E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.6	1.93	I	8.28E+04	1.02E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.6	1.93	Dext	2.01E+04	2.48E+07	0.8	0.01			0.5	0.4	365
	8.4	4.1	574	0.2	4.6	1.93	**Total**	4.43E+05	5.47E+08	0.8	0.01	222	6.37E+04	0.5	0.4	365
Sat 3			574	0.2	4.6	1.93	F	3.11E+05	3.84E+08	0.8	0.01			0.5	0.4	365
			574	0.2	6.1	1.93	(HUP)J	1.11E+05	1.84E+08	0.8	0.01			0.5	0.4	365
			574	0.2	5.8	1.93	(HUP)K	1.68E+05	2.63E+08	0.8	0.01			0.5	0.4	365
							K north	1.30E+06	7.31E+07	0.8	0.01			0.5	0.4	365
	4	1.8	574	0.2	5.8	1.93	**Total**	1.89E+06	9.04E+08	0.8	0.01	222	7.65E+04	0.5	0.4	365
CPP			574	0.2	5.5	1.93	#1	1.03E+05	1.53E+08	0.8	0.01			0.5	0.4	365
			574	0.2	7	1.93	#2	2.11E+05	3.99E+08	0.8	0.01			0.5	0.4	365
			574	0.2	5.5		15	1.19E+05	1.76E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.9		15A	3.72E+04	4.89E+07	0.8	0.01			0.5	0.4	365
	0	0	574	0.2	5.7	1.93	**Total**	4.70E+05	7.77E+08	0.8	0.01	222	1.02E+05	0.5	0.4	365
SR1*			574	0.2	5.8	1.93	#4	1.27E+05	1.98E+08	0.8	0.01			0.5	0.4	365
			574	0.2	5.2	1.93	#4A	1.27E+05	1.77E+08	0.8	0.01			0.5	0.4	365
			574	0.2	5.5	1.93	15	1.19E+05	1.76E+08	0.8	0.01			0.5	0.4	365
			574	0.2	4.9	1.93	15A	3.72E+04	4.89E+07	0.8	0.01			0.5	0.4	365
			574	0.2	6.1	1.93	7	7.80E+04	1.28E+08	0.8	0.01			0.5	0.4	365
			574	0.2	5.2	1.93	3ext	3.20E+05	9.00E+06	0.8	0.01			0.5	0.4	365
			574	0.2	5.2	1.93	#3	1.47E+05	2.05E+08	0.8	0.01			0.5	0.4	365
	0	0	574	0.2	5.5	1.93	**Total**	9.55E+05	9.42E+08	0.8	0.01	222	1.02E+05	0.5	0.4	365
SR2			574	0.2	7	1.93	9	1.79E+05	3.40E+08	0.8	0.01			0.5	0.4	365

			574	0.2	7	1.93	10	5.70E+04	1.08E+08	0.8	0.01			0.5	0.4	365
	-6.1	-4.9	574	0.2	7	1.93	**Total**	2.36E+05	4.48E+08	0.8	0.01	222	1.13E+05	0.5	0.4	365
*Note: SR1 location (X=-2.9; Y=0.8) set to X=0; Y=0 because SR1 purge water is piped to CPP.																
SR Total	0	0	574	0.2	7	193	Total	3.99E+09	3.62E+09	0.8	0.01	1110	4.57E+05	0.5	0.4	365
Reynolds Ranch																
Dist from SAT 00	0.31	0.04	574	0.2	7.6	1.93	MU21	3.46E+05	6.58E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	0.99	-1.4	574	0.2	7.6	1.93	MU22	2.80E+05	5.30E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	-0	1.59	574	0.2	7.6	1.93	MU23	2.45E+05	4.63E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	-0.5	0.86	574	0.2	7.6	1.93	MU24	1.99E+05	3.77E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	2.67	1.48	574	0.2	7.6	1.93	MU25	3.36E+05	6.35E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	2.99	0.38	574	0.2	7.6	1.93	MU26	2.76E+05	5.22E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
	0.7	0.63	574	0.2	7.6	1.93	MU27	5.45E+05	1.03E+09	0.8	0.01	44	1.13E+05	0.5	0.4	365
	0.83	-1.7	574	0.2	7.6	1.93	MU28	4.19E+05	7.93E+08	0.8	0.01	44	1.13E+05	0.5	0.4	365
Dis. SR to RR	-1.6	9	574	0.2	7.6	1.93	**Total**	2.65E+06	5.01E+09	0.8	0.01	352	9.04E+05	0.5	0.4	365

Locations = Well unit
X = Km from SR-RR (+) = East, (-) = West
Y = Km from SR-RR (+) = North, (-) = South
[Ra] = Radium concentration
EM. FR = Radon emanation fraction
THICK = Thickness of ore
DEN = Density of ore
AREA = Area of well unit

CIR VOL = Volume of process water in circulation
FR Rn = Fraction of Radon in process water
Rn VENT = Rate of Radon venting from process water
PURGE= Treated water purge rate
COL = Ion-Exchange column volume
COL UN = Ion-Exchange column unloading rate
POR = Porosity of ion exchange resin
Op Days = Days of operation

Table 2 SR-RR Locations Where Radiation Doses are Calculated by MILDOS

LOCATION	KM EAST (+) WEST (-)	KM NORTH (+) SOUTH (-)	KM ABOVE (+) BELOW (-)
SR North Boundary	9.1	6.4	0.0
SR South Boundary	-4.6	-7.0	0.0
SR East Boundary	15.5	3.0	0.0
SR West Boundary	-9.4	5.5	0.0
Sunquest Ranch	0.0	-1.1	0.0
Vollman Ranch	-6.4	0.1	0.0
SR to Casper	-54.0	-23.0	0.0
SR to Douglas	22.0	-32.0	0.0
SR to Glenrock	-16.0	-20.0	0.0
SR to Midwest	-60.0	41.0	0.0
SR to Gillette	11.0	129.0	0.0
SR to Wright	11.0	-73.0	0.0
RR North Boundary	1.4	1.0	0.0
RR South Boundary	0.9	-4.6	0.0
RR East Boundary	3.2	0.5	0.0
RR West Boundary	-0.3	-0.6	0.0
Duck Creek Ranch	8.1	3.2	0.0
RR to Casper	-30.7	-49.7	0.0
RR to Douglas	25.8	-42.0	0.0
RR to Glenrock	-30.6	-14.0	0.0
RR to Midwest	-46.4	30.4	0.0
RR to Gillette	125.5	16.0	0.0
RR to Wright	68.5	16.7	0.0

INPUT DATA - POPULATION DATA

Table 3 presents the population within an 80 km radius of SR and RR. The largest values in Table 3 show where the cities are located. Gillette is approximately 70 km northeast of the site. The town of Wright is approximately 40 km east of the site and the nearest resident is approximately 1 km west of the site.

Table 3 SR and RR 80 km radius Population Distribution

	Radius in Kilometers												
Sector	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
N	0	0	0	0	0	0	4	4	4	4	4	4	4
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	4	4	4	4	4	4	8
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	4	0	4	4	4	4	4	4
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	3	0	3	0	4	8	10	100	5300	100	50	10
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	4	10	8	10	10	8	4
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	4	0	4	10	20	3000	2500	50000	1000	100
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	4	8	8	10	10	10	10	8
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	4	4	4	8	10	10	10	10
NNW	0	0	0	0	0	0	0	0	0	0	0	0	0

INPUT DATA – OFF-SITE RESIN SHIPMENTS TO SR

Shipments of resin will be sent to SR from off-site properties for removal of the uranium on the resin. The shipments will contain limited amounts of radon that are entrained in the water on and near the moist resin and limited amounts of radon that are a decay product of any radium associated with the resin and water. MILDOS was used to estimate the amount of radon released using the following parameters:

Radium concentration in ore	547 pCi/g
Radon emanation from ore	0.2
Density of ore	1.93 g/cm^3
Active area of ore	443000 m^2
Volume in Circulation	5.47E8 L
Resin column volume	63700 L
Column unload rate	1.6/d
Resin porosity	0.4

MILDOS OUTPUT – SR RADIATION DOSE RATES

Table 4 presents the dose rates in mrem/yr at the SR property boundaries, the nearby residences, and the cities within 80 km radius of the site. The SR doses include the dose contribution from RR and from a shipment of resin from off-site properties but do not include the doses from agricultural sources. SR doses were determined using a purge rate of 222 gallons per minute, a 25% mine field/ 75% satellite radon release distribution and the Glenrock Coal Company weather data.

U.S. Regulatory Commissions Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills" Table 2 footnote (o) specifies "Vegetation or forage sampling need be carried out only if dose calculations indicate that the ingestion pathway from grazing animals are a potentially significant exposure pathway (an exposure pathway should be considered important if the predicted dose to an individual would exceed 5% of the applicable radiation protection standard. The applicable radiation protection standard in 10 CFR 20 is 100 mrem/yr. Five percent of 100 mrem/yr is 5 mrem/yr.

The doses from agricultural sources were shown in the Cameco North Butte Expansion Area MILDOS Report to be less than 5 mrem/yr which is not considered significant. The SR and RR agricultural pathways are very similar to the North Butte Expansion Area agricultural pathway and would result in radiation doses less than 5 mrem/yr.

Table 4 SR Radiation Dose Rates Within 80 km of the Site

SMITH RANCH Location	Total Dose mrem/yr
SR North Boundary	4.8
SR South Boundary	2.0
SR East Boundary	3.5
SR West Boundary	2.0
Sunquest Ranch	39.5
Vollman Ranch	4.0
Casper	0.2
Douglas	0.6
Glenrock	0.6
Midwest	0.3
Wright	0.3
Gillette	0.1

Conclusions from the SR dose rates are as follows:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from SR, and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest SR boundary dose rate was 5 mrem/yr at the north property boundary.
- The highest residential dose rate was 40 mrem/yr at the Sunquest Ranch.
- The highest dose rate at cities and towns within an 80 km radius from SR was 1 mrem/yr at Douglas and Glenrock.
- The 10 CFR 190 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.

The population effective dose rate within 80 km radius from SR was 2.3 person-rem/yr.

For comparison naturally occurring background radiation, from cosmic and terrestrial sources, is approximately 365 mrem/yr.

MILDOS OUTPUT – RR RADIATION DOSE RATES

Table 5 presents the dose rates in mrem/yr at the RR property boundaries, the nearby residences, and the cities within 80 km radius of the site. The RR doses include the dose contribution from SR but does not include the doses from agricultural sources which are small and not significant. RR doses were determined using a purge rate of 44 gallons per minute, a 25% / 75% radon distribution and the Glenrock Coal Company weather data.

Table 5 RR Radiation Dose Rates Within 80 km of the Site

REYNOLDS RANCH	Total Dose
Location	mrem/yr
RR North Boundary	8.0
RR South Boundary	4.6
RR East Boundary	24.8
RR West Boundary	3.8
Duck Creek Ranch	3.9
Casper	0.3
Douglas	0.5
Glenrock	0.6
Midwest	0.2
Wright	0.8
Gillette	0.4

Conclusions from the RR dose rates are as follows:

- All dose rates to the public at the property boundaries, the cities and towns within an 80 km radius from RR, and at the nearest residence were below the 100 mrem/yr limit specified in 10 CFR 20 (total effective dose equivalent).
- The highest RR boundary dose rate was 25 mrem/yr at the east property boundary.
- The highest residential dose rate was 4 mrem/yr at the Duck Creek Ranch.
- The highest dose rate at cities and towns within an 80 km radius from RR was 1 mrem/yr at the town of Wright.
- The 10 CFR 20 dose rate was 0 mrem/yr which was below the 10 mrem/yr dose limit for emissions that exclude radon and its progeny.

The population effective dose rate within 80 km radius from SR was 2.3 person-rem/yr.

For comparison naturally occurring background radiation, from cosmic and terrestrial sources, is approximately 365 mrem/yr.

MILDOS OUTPUT – SS and RR RADIATION DOSE RATES

Radiation dose rates were calculated from mine unit wells in restoration as opposed to production. The restoration well dose rates were exactly the same as the production well dose rates. See Appendices B1 and B3.

Radiation dose rates were also calculated from new wells in the mine units. The dose rates from new wells were less than 1% of the doses from the production wells. See Appendices B1 and B4.

Radiation dose rates were not calculated for water from the in-situ uranium extraction operation at SR or RR that will be released on the surface of the land because the releases are sporadic and of limited duration.

The source term associated with the impoundment and spray irrigation is addressed in the context of the purge rate.

MILDOS OUTPUT – OFF-SITE RESIN SHIPMENT TO SR

The off-site resin shipments to SR contained some radon in the water associated with the moist resin and some radon from the decay of radium in the shipment. MILDOS run presented in appendix B1estimated the amount of radon released from the resin shipment to be 9.8 Ci/yr. The total radon released from the SR mine fields, the RR dose contribution to SR, and from a resin shipments were 2700 Ci/yr. The radon released from the resin is then 0.04% of the total radon released. Since released radon is directly correlated to radiation doses for uranium recovery operations, the radiation doses attributed to the handling of resins from other properties is very small. For example the dose from resin to people at the Sunquest Ranch would be (40 mrem/yr)(0.0004) = 0.02 mrem/yr.

MILDOS OUTPUT – RADIATION DOSES TO SR FROM RR

SR and RR are on the same radioactive materials license and are approximately 9 km apart from one another. Appendix B5 presents the MILDOS radiation doses for SR without the contribution of doses from RR. Appendix B1 presents the MILDOS radiation doses for SR including the contribution from RR. Subtracting the doses in B1 from the doses in B5 shows the doses at SR attributed to RR. The largest doses from RR to SR were 1.4 mrem/yr at the north property boundary. At all other boundaries, residences, or towns within 80 km radius of the site the doses from RR to SR were smaller than 1.4 mrem/y. Using the criteria in Regulatory 4.14 the radiation doses from RR on SR are small and not significant exposure pathways..

MILDOS OUTPUT – RADIATION DOSES TO RR FROM SR

Subtracting the radiation doses in Appendix B12 from the doses in Appendix B8 gives the doses from SR to RR. The largest dose from SR to RR was 2.8 mrem/yr at the south property boundary.

SENSITIVITY ANALYSIS

The MILDOS sensitivity analysis identifies how input parameters affect the calculated radiation dose.

PURGE RATE

The input parameters from Table 1 for the MILDOS computer model used to calculate radiation doses to people in and around SR and RR and the variability of each parameter are:

Parameter	Description	Variability
1.	Location in the X, Y, Z coordinate system	Constant
2.	The Radium 226 concentration in the ore	Constant
3.	The Radon emanation rate from the ore	Constant
4.	The ore thickness	Constant
5.	The ore density	Constant
6.	The area of the ore deposit	Constant
7.	The fraction of radon in process water	Constant
8.	The ion exchange column volume	Constant
9.	The ion exchange column unloading rate	Constant, set by operator
10.	The porosity of the ion exchange resin	Constant for each resin
11.	The days of operation each year	Constant, set by operator
12.	The volume of process water in circulation	Constant with some small variations
13.	Purge rate	Variable, depending on operating conditions.

All the parameters are constant except for parameter 13, the purge. This assessment assumes that all five components of the SR (Sat 2, Sat 3 CPP, SR1 and SR2 are operating simultaneously with a combined purge rate of 1110 gallons per minute. As specified in the Technical Report the maximum purge rate at SR is 491 gallons per minute. Since larger purge rates release proportionally more radon and radon is the source of radiation exposures at in-situ uranium extraction facilities, this assessment is conservative (overestimates the dose rates)

For Reynolds Ranch, this assessment assumes that the upper bound purge rate from 8 mine units to be 352 gallons per minute. Using values presented in the Technical Report one can

determine a purge rate for RR of 200 gpm. Thus the radiation doses calculated by MILDOS for RR are conservative (overestimates of the actual dose rates).

Table 6 RR Dose Rates Assuming an Upper Bound Purge Rate

	Total mrem/yr
REYNOLDS RANCH	
Location	**Max Purge**
RR North Boundary	41.7
RR South Boundary	6.2
RR East Boundary	42.2
RR West Boundary	49.9
Duck Creek Ranch	7.8
Casper	0.3
Douglas	0.5
Glenrock	0.5
Midwest	0.4
Wright	0.9
Gillette	0.4

RADON RELEASE POINTS

The radiation dose rates from typical operations are presented in Table 4 and 5 using:

25% radon released from the mine field header houses.
75% radon released from the satellite plant vent stack.

That distribution has been used historically in MILDOS assessments. For comparison dose rates were calculated using:

10% radon released from the mine field header houses.
90% radon released from the satellite plant vent stack.

The SR and RR dose rates from both distributions are presented in Table 7. A comparison of the 25% / 75% distribution of radon in column 2 with the 10% / 90% distribution of radon in column 3, or a comparison of dose rates in column 4 with the dose rates in column 5 shows that the averages and standard distributions are similar. That similarity suggests that within the range of values selected for the radon distribution between releases at the mine fields and releases at the satellite plant, the radon distribution is usually not important in assessing the doses to people around the SR site.

Table 7 SR and RR Radiation Doses Calculated from Different Percentage Radon Distributions

SMITH RANCH Location	Total Dose 0.25/0.75 mrem/yr	Total Dose 0.10/0.90 mrem/yr	REYNOLDS RANCH Location	Total Dose 0.25/0.75 mrem/yr	Total Dose 0.10/0.90 mrem/yr
SR North Boundary	4.8	4.7	RR North Boundary	8.0	4.2
SR South Boundary	2.0	2.0	RR South Boundary	4.6	4.5
SR East Boundary	3.5	3.5	RR East Boundary	24.8	11.2
SR West Boundary	2.0	2.0	RR West Boundary	3.8	2.6
Sunquest Ranch	39.5	44.7	Duck Creek Ranch	3.9	3.6
Vollman Ranch	4.0	4.3	Casper	0.3	0.3
Casper	0.2	0.2	Douglas	0.5	0.5
Douglas	0.6	0.6	Glenrock	0.6	0.6
Glenrock	0.6	0.6	Midwest	0.2	0.2
Midwest	0.3	0.3	Wright	0.8	0.8
Wright	0.3	0.3	Gillette	0.4	0.4
Gillette	0.1	0.1	Average	4.3	2.6
Average	4.8	5.3	Std.Dev.	7.2	3.3
Std. Dev.	11.0	12.5		8.0	4.2

APPENDIX A GLENROCK COAL COMPANY WEATHER DATA IN STAR FORMAT

Column	1	Blank
	2-4	Wind Direction
	5	Blank
	6	Stability Category
	7	Blank
	8	Start of the Wind Speed Categories (knots)
	8-14	Wind Speed 1-3 (knots)
	15-21	Wind Speed 4-6 (knots)
	22-28	Wind Speed 7-10 (knots)
	29-35	Wind Speed 11-16 (knots)
	36-42	Wind Speed 17-21 (knots)
	43-49	Wind Speed >21 (knots)

```
  N A 0.000260.001660.001590.000170.000010.00000
NNE A 0.000150.001160.001280.000150.000000.00000
 NE A 0.000260.001360.001090.000010.000010.00000
ENE A 0.000300.001170.000690.000080.000010.00000
  E A 0.000230.001480.001270.000060.000010.00000
ESE A 0.000310.001220.001010.000140.000000.00000
 SE A 0.000240.001050.000930.000140.000000.00000
SSE A 0.000270.001430.001100.000100.000000.00000
  S A 0.000260.001670.000890.000220.000030.00000
SSW A 0.000480.002070.001120.000240.000000.00000
 SW A 0.000450.002300.002040.000450.000010.00000
WSW A 0.000480.002160.002270.000600.000060.00000
  W A 0.000450.001700.002470.000690.000090.00003
WNW A 0.000550.001700.001820.000300.000010.00001
 NW A 0.000460.002160.001890.000400.000010.00001
NNW A 0.000370.002220.001270.000170.000030.00001
  N B 0.000030.000240.000950.000390.000030.00008
NNE B 0.000030.000260.000850.000190.000000.00000
 NE B 0.000060.000120.000490.000090.000000.00000
ENE B 0.000050.000180.000570.000090.000000.00000
  E B 0.000080.000260.000490.000240.000000.00000
ESE B 0.000090.000180.000840.000240.000000.00000
 SE B 0.000060.000260.000750.000300.000010.00000
SSE B 0.000040.000390.000410.000230.000010.00000
  S B 0.000100.000370.000310.000210.000010.00001
SSW B 0.000120.000480.000660.000580.000040.00000
 SW B 0.000230.000590.001160.001190.000190.00005
WSW B 0.000220.000510.001300.001670.000210.00005
  W B 0.000170.000540.001680.001770.000190.00008
WNW B 0.000140.000370.000960.001000.000100.00000
 NW B 0.000120.000440.000940.000720.000040.00000
NNW B 0.000040.000270.001100.000600.000050.00000
  N C 0.000090.000320.001540.002970.001350.00099
NNE C 0.000030.000300.000990.001180.000010.00000
 NE C 0.000030.000150.000890.000440.000000.00000
```

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ENE C 0.000080.000280.000620.000400.000010.00000
  E C 0.000080.000440.000870.000810.000000.00000
ESE C 0.000030.000450.000940.001320.000030.00000
 SE C 0.000080.000540.001170.001310.000060.00001
SSE C 0.000090.000450.000620.000450.000030.00001
  S C 0.000100.000660.000510.000420.000100.00001
SSW C 0.000130.000750.001040.000910.000370.00006
 SW C 0.000260.000910.001890.002970.001430.00027
WSW C 0.000260.000890.002470.005110.002260.00059
  W C 0.000220.000800.001640.004410.001590.00035
WNW C 0.000120.000500.001210.002760.000670.00015
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NNW C 0.000060.000580.001400.001610.000370.00013
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 NE D 0.000140.001190.004970.010150.001610.00026
ENE D 0.000330.001120.005500.011070.001410.00026
  E D 0.000330.001900.009570.021890.004030.00075
ESE D 0.000270.002020.009030.021490.005910.00281
 SE D 0.000080.002380.005670.008790.003840.00119
SSE D 0.000350.002580.003530.002450.000760.00022
  S D 0.000400.003350.003250.001660.000390.00008
SSW D 0.000750.004450.005790.005230.001320.00078
 SW D 0.000820.005610.009490.017420.013820.02167
WSW D 0.001070.006240.015660.050360.043940.05395
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WNW D 0.000530.004120.007630.013140.005010.00244
 NW D 0.000670.003750.007230.010430.003650.00175
NNW D 0.000400.002470.006410.013810.007140.00641
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NNE E 0.000140.001410.004460.000000.000000.00000
 NE E 0.000190.001530.004430.000000.000000.00000
ENE E 0.000190.001640.006860.000000.000000.00000
  E E 0.000490.002570.011880.000000.000000.00000
ESE E 0.000370.001590.006090.000000.000000.00000
 SE E 0.000260.001400.003760.000000.000000.00000
SSE E 0.000390.002830.003520.000000.000000.00000
  S E 0.000550.004250.003760.000000.000000.00000
SSW E 0.000820.004330.003800.000000.000000.00000
 SW E 0.000720.003980.004200.000000.000000.00000
WSW E 0.000890.002980.004030.000000.000000.00000
  W E 0.000600.002240.004240.000000.000000.00000
WNW E 0.000460.001990.002650.000000.000000.00000
 NW E 0.000280.002180.003730.000000.000000.00000
NNW E 0.000310.001840.003560.000000.000000.00000
  N F 0.000330.000400.000000.000000.000000.00000
NNE F 0.000270.000500.000000.000000.000000.00000
 NE F 0.000360.000460.000000.000000.000000.00000
ENE F 0.000500.000670.000000.000000.000000.00000
  E F 0.000450.000770.000000.000000.000000.00000
ESE F 0.000390.000540.000000.000000.000000.00000
 SE F 0.000400.000530.000000.000000.000000.00000
SSE F 0.000420.000460.000000.000000.000000.00000
  S F 0.000410.000670.000000.000000.000000.00000
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 SW F 0.000680.000600.000000.000000.000000.00000
WSW F 0.000710.001030.000000.000000.000000.00000
  W F 0.000720.001030.000000.000000.000000.00000
WNW F 0.000770.000770.000000.000000.000000.00000
 NW F 0.000510.000680.000000.000000.000000.00000
NNW F 0.000310.000590.000000.000000.000000.00000
```

APPENDIX B MILDOS PRINTOUT

Appendix B contains the print out from MILDOS containing the following information:

Appendix	Receptor	Source	Source	Source	Weather
B1	SR	SR prod. wells 44 gpm	RR	Resin	Glenwood Coal
B2	SR	SR satellite stack44 gpm	RR	Resin	Glenwood Coal
B3	SR	SR restor. wells 44 gpm	RR	Resin	Glenwood Coal
B4	SR	SR new wells	RR	Resin	Glenwood Coal
B5	SR	SR prod. wells 44 gpm	no RR	Resin	Glenwood Coal
B6	SR	SR prod. wells 222 gpm	Total RR wells	Resin	Glenwood Coal
B7	SR	SR satellite stack 222 gpm	Total RR wells	Resin	Glenwood Coal
B8	RR	RR prod. wells 44 gpm	Total SR		Glenwood Coal
B9	RR	RR satellite stack 44 gpm	Total SR		Glenwood Coal
B10	RR	RR restor. wells 44 gpm	Total SR		Glenwood Coal
B11	RR	RR prod wells 222 gpm	Total SR		Glenwood Coal
B12	RR	RR Satellite stack222 gpm	Total SR		Glenwood Coal

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B1	SR	SR prod. wells 44 gpm	RR	Resin	Glenwood Coal

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ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR
POPULATION DOSE SUMMARY 6
INDIVIDUAL RECEPTOR ALC CHECK AND/OR ANNUAL DOSE COMMITMENTS 7

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METSET: DATA: SR2rr.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 7

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
					CI/YEAR								
1	4.00	1.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.90E+03	1001	1	0.00E+00	SAT3
2	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E+03	1002	1	0.00E+00	CPP
3	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E+03	1003	1	0.00E+00	SR1
4	-6.10	-4.90	7.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E+03	1004	1	0.00E+00	SR2
5	8.40	4.10	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+03	1005	1	0.00E+00	SAT2
6	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.82E+00	1006	1	0.00E+00	Resin Shipment
7	-1.60	9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E+04	1007	1	0.00E+00	Reynolds Ranch

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.652E-01	2.149E+00	3.354E-02	1.612E+00	7.747E-01	2.118E+02
GROUND	2.686E-02	2.686E-02	2.686E-02	2.686E-02	2.686E-02	2.686E-02
CLOUD	1.773E+00	1.773E+00	1.773E+00	1.773E+00	1.773E+00	1.773E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.065E+00	3.949E+00	1.834E+00	3.412E+00	2.575E+00	2.136E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.387E+02	3.255E+03	5.425E+01	2.387E+02	2.387E+02	1.519E+03
TOTALS	2.387E+02	3.255E+03	5.425E+01	2.387E+02	2.387E+02	1.519E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.652E-01	2.149E+00	3.354E-02	1.612E+00	7.747E-01	2.118E+02
GROUND	2.686E-02	2.686E-02	2.686E-02	2.686E-02	2.686E-02	2.686E-02
CLOUD	1.773E+00	1.773E+00	1.773E+00	1.773E+00	1.773E+00	1.773E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.387E+02	3.255E+03	5.425E+01	2.387E+02	2.387E+02	1.519E+03
TOTALS	2.408E+02	3.259E+03	5.609E+01	2.421E+02	2.413E+02	1.733E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.43E+00	3.19E-01	2.61E-01	5.85E-01	3.84E-01	6.96E+01
CHILD	TOTALS	4.43E+00	3.61E-01	2.75E-01	4.19E-01	3.30E-01	6.96E+01
TEENAGE	TOTALS	4.43E+00	4.69E-01	2.85E-01	3.47E-01	3.09E-01	6.96E+01
ADULT	TOTALS	4.43E+00	4.62E-01	2.97E-01	3.48E-01	3.14E-01	6.96E+01

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.75E+00	1.28E-01	1.04E-01	2.37E-01	1.54E-01	2.74E+01
CHILD	TOTALS	1.75E+00	1.45E-01	1.10E-01	1.69E-01	1.32E-01	2.74E+01
TEENAGE	TOTALS	1.75E+00	1.89E-01	1.14E-01	1.39E-01	1.23E-01	2.74E+01
ADULT	TOTALS	1.75E+00	1.86E-01	1.19E-01	1.40E-01	1.25E-01	2.74E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.67E+00	2.60E-01	1.97E-01	5.51E-01	3.31E-01	4.12E+01
CHILD	TOTALS	2.67E+00	3.06E-01	2.12E-01	3.70E-01	2.72E-01	4.12E+01
TEENAGE	TOTALS	2.67E+00	4.25E-01	2.23E-01	2.90E-01	2.49E-01	4.12E+01
ADULT	TOTALS	2.67E+00	4.16E-01	2.36E-01	2.92E-01	2.54E-01	4.12E+01

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.81E+00	1.59E-01	1.28E-01	3.01E-01	1.93E-01	2.81E+01
CHILD	TOTALS	1.81E+00	1.81E-01	1.36E-01	2.12E-01	1.65E-01	2.81E+01
TEENAGE	TOTALS	1.81E+00	2.39E-01	1.41E-01	1.74E-01	1.53E-01	2.81E+01
ADULT	TOTALS	1.81E+00	2.35E-01	1.47E-01	1.75E-01	1.56E-01	2.81E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.23E-01	6.37E-02	3.07E-02	2.18E-01	1.01E-01	3.10E+00
CHILD	TOTALS	2.20E-01	8.84E-02	3.86E-02	1.22E-01	7.00E-02	3.10E+00
TEENAGE	TOTALS	2.22E-01	1.51E-01	4.41E-02	7.98E-02	5.78E-02	3.10E+00
ADULT	TOTALS	2.23E-01	1.47E-01	5.10E-02	8.08E-02	6.06E-02	3.10E+00

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.82E-01	1.04E-01	6.01E-02	3.07E-01	1.53E-01	6.91E+00
CHILD	TOTALS	4.78E-01	1.36E-01	7.06E-02	1.80E-01	1.12E-01	6.91E+00
TEENAGE	TOTALS	4.80E-01	2.18E-01	7.78E-02	1.25E-01	9.58E-02	6.91E+00
ADULT	TOTALS	4.82E-01	2.12E-01	8.69E-02	1.26E-01	9.95E-02	6.91E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.70E-01	7.56E-02	5.19E-02	1.86E-01	1.02E-01	6.91E+00
CHILD	TOTALS	4.68E-01	9.32E-02	5.76E-02	1.17E-01	8.01E-02	6.91E+00
TEENAGE	TOTALS	4.69E-01	1.38E-01	6.16E-02	8.71E-02	7.14E-02	6.91E+00
ADULT	TOTALS	4.70E-01	1.35E-01	6.65E-02	8.78E-02	7.34E-02	6.91E+00

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.58E-01	6.97E-02	3.52E-02	2.31E-01	1.09E-01	3.60E+00
CHILD	TOTALS	2.55E-01	9.54E-02	4.35E-02	1.30E-01	7.63E-02	3.60E+00
TEENAGE	TOTALS	2.57E-01	1.61E-01	4.92E-02	8.64E-02	6.35E-02	3.60E+00
ADULT	TOTALS	2.58E-01	1.56E-01	5.64E-02	8.75E-02	6.65E-02	3.60E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.21E+01	2.14E-01	1.91E-01	3.20E-01	2.40E-01	1.99E+02
CHILD	TOTALS	1.21E+01	2.31E-01	1.96E-01	2.54E-01	2.18E-01	1.99E+02
TEENAGE	TOTALS	1.21E+01	2.74E-01	2.00E-01	2.25E-01	2.10E-01	1.99E+02
ADULT	TOTALS	1.21E+01	2.71E-01	2.05E-01	2.26E-01	2.12E-01	1.99E+02

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.27E+00	1.60E-01	1.35E-01	2.79E-01	1.89E-01	3.57E+01
CHILD	TOTALS	2.27E+00	1.79E-01	1.41E-01	2.05E-01	1.65E-01	3.57E+01
TEENAGE	TOTALS	2.27E+00	2.27E-01	1.45E-01	1.73E-01	1.56E-01	3.57E+01
ADULT	TOTALS	2.27E+00	2.24E-01	1.51E-01	1.73E-01	1.58E-01	3.57E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.99E-01	7.89E-02	4.06E-02	2.59E-01	1.23E-01	4.19E+00
CHILD	TOTALS	2.96E-01	1.08E-01	4.98E-02	1.47E-01	8.63E-02	4.19E+00
TEENAGE	TOTALS	2.98E-01	1.81E-01	5.61E-02	9.76E-02	7.20E-02	4.19E+00
ADULT	TOTALS	2.99E-01	1.75E-01	6.42E-02	9.88E-02	7.54E-02	4.19E+00

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.11E-01	5.87E-02	1.80E-02	2.53E-01	1.06E-01	1.40E+00
CHILD	TOTALS	1.07E-01	8.96E-02	2.75E-02	1.32E-01	6.67E-02	1.40E+00
TEENAGE	TOTALS	1.09E-01	1.68E-01	3.42E-02	7.88E-02	5.13E-02	1.40E+00
ADULT	TOTALS	1.10E-01	1.63E-01	4.29E-02	8.01E-02	5.49E-02	1.40E+00

Program execution time = 3.24 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B2	SR	SR satellite stack44 gpm	RR	Resin	Glenwood Coal

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REGION: CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: SR2rrST.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.883017	.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.540020	.197012	.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.00	0.00	10.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E+03	1001	1	1.00E+01	Satellite

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.702E-02	2.190E-01	3.401E-03	1.642E-01	7.893E-02	2.224E+01
GROUND	2.813E-03	2.813E-03	2.813E-03	2.813E-03	2.813E-03	2.813E-03
CLOUD	1.858E-01	1.858E-01	1.858E-01	1.858E-01	1.858E-01	1.858E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.156E-01	4.075E-01	1.920E-01	3.528E-01	2.675E-01	2.243E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.385E+01	3.252E+02	5.420E+00	2.385E+01	2.385E+01	1.518E+02
TOTALS	2.385E+01	3.252E+02	5.420E+00	2.385E+01	2.385E+01	1.518E+02

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.702E-02	2.190E-01	3.401E-03	1.642E-01	7.893E-02	2.224E+01
GROUND	2.813E-03	2.813E-03	2.813E-03	2.813E-03	2.813E-03	2.813E-03
CLOUD	1.858E-01	1.858E-01	1.858E-01	1.858E-01	1.858E-01	1.858E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.385E+01	3.252E+02	5.420E+00	2.385E+01	2.385E+01	1.518E+02
TOTALS	2.406E+01	3.256E+02	5.612E+00	2.420E+01	2.412E+01	1.742E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.18E-01	3.26E-02	2.61E-02	6.23E-02	3.98E-02	6.52E+00
CHILD	TOTALS	4.17E-01	3.73E-02	2.77E-02	4.38E-02	3.38E-02	6.52E+00
TEENAGE	TOTALS	4.17E-01	4.94E-02	2.88E-02	3.57E-02	3.14E-02	6.52E+00
ADULT	TOTALS	4.18E-01	4.85E-02	3.01E-02	3.59E-02	3.20E-02	6.52E+00

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.81E-01	1.14E-02	9.80E-03	1.89E-02	1.32E-02	2.86E+00
CHILD	TOTALS	1.81E-01	1.26E-02	1.02E-02	1.42E-02	1.17E-02	2.86E+00
TEENAGE	TOTALS	1.81E-01	1.56E-02	1.05E-02	1.22E-02	1.11E-02	2.86E+00
ADULT	TOTALS	1.81E-01	1.54E-02	1.08E-02	1.22E-02	1.13E-02	2.86E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.20E-01	3.00E-02	2.31E-02	6.18E-02	3.77E-02	4.94E+00
CHILD	TOTALS	3.19E-01	3.51E-02	2.48E-02	4.20E-02	3.13E-02	4.94E+00
TEENAGE	TOTALS	3.20E-01	4.80E-02	2.59E-02	3.33E-02	2.88E-02	4.94E+00
ADULT	TOTALS	3.20E-01	4.71E-02	2.74E-02	3.35E-02	2.93E-02	4.94E+00

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.82E-01	1.45E-02	1.19E-02	2.66E-02	1.75E-02	2.83E+00
CHILD	TOTALS	1.82E-01	1.65E-02	1.26E-02	1.91E-02	1.50E-02	2.83E+00
TEENAGE	TOTALS	1.82E-01	2.14E-02	1.30E-02	1.58E-02	1.41E-02	2.83E+00
ADULT	TOTALS	1.82E-01	2.10E-02	1.35E-02	1.59E-02	1.43E-02	2.83E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.34E-02	6.58E-03	3.21E-03	2.24E-02	1.04E-02	3.25E-01
CHILD	TOTALS	2.31E-02	9.11E-03	4.02E-03	1.25E-02	7.23E-03	3.25E-01
TEENAGE	TOTALS	2.33E-02	1.55E-02	4.57E-03	8.23E-03	5.98E-03	3.25E-01
ADULT	TOTALS	2.34E-02	1.51E-02	5.29E-03	8.33E-03	6.27E-03	3.25E-01

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.35E-02	1.11E-02	6.59E-03	3.24E-02	1.63E-02	7.69E-01
CHILD	TOTALS	5.31E-02	1.45E-02	7.69E-03	1.91E-02	1.20E-02	7.69E-01
TEENAGE	TOTALS	5.33E-02	2.31E-02	8.45E-03	1.34E-02	1.03E-02	7.69E-01
ADULT	TOTALS	5.35E-02	2.25E-02	9.40E-03	1.35E-02	1.07E-02	7.69E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.23E-02	7.89E-03	5.56E-03	1.87E-02	1.05E-02	7.74E-01
CHILD	TOTALS	5.20E-02	9.62E-03	6.12E-03	1.20E-02	8.34E-03	7.74E-01
TEENAGE	TOTALS	5.22E-02	1.40E-02	6.51E-03	9.02E-03	7.48E-03	7.74E-01
ADULT	TOTALS	5.23E-02	1.37E-02	7.00E-03	9.09E-03	7.68E-03	7.74E-01

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.36E-02	6.51E-03	3.24E-03	2.18E-02	1.02E-02	3.29E-01
CHILD	TOTALS	2.33E-02	8.96E-03	4.02E-03	1.23E-02	7.14E-03	3.29E-01
TEENAGE	TOTALS	2.35E-02	1.52E-02	4.56E-03	8.10E-03	5.92E-03	3.29E-01
ADULT	TOTALS	2.36E-02	1.47E-02	5.25E-03	8.20E-03	6.21E-03	3.29E-01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.30E+00	1.68E-02	1.67E-02	1.76E-02	1.70E-02	7.13E+01
CHILD	TOTALS	4.30E+00	1.69E-02	1.67E-02	1.71E-02	1.68E-02	7.13E+01
TEENAGE	TOTALS	4.30E+00	1.72E-02	1.67E-02	1.69E-02	1.68E-02	7.13E+01
ADULT	TOTALS	4.30E+00	1.72E-02	1.68E-02	1.69E-02	1.68E-02	7.13E+01

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.05E-01	2.12E-02	1.87E-02	3.30E-02	2.41E-02	6.44E+00
CHILD	TOTALS	4.04E-01	2.31E-02	1.93E-02	2.57E-02	2.17E-02	6.44E+00
TEENAGE	TOTALS	4.05E-01	2.79E-02	1.97E-02	2.25E-02	2.08E-02	6.44E+00
ADULT	TOTALS	4.05E-01	2.75E-02	2.03E-02	2.25E-02	2.10E-02	6.44E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.15E-02	8.03E-03	4.23E-03	2.59E-02	1.24E-02	4.42E-01
CHILD	TOTALS	3.11E-02	1.09E-02	5.14E-03	1.47E-02	8.76E-03	4.42E-01
TEENAGE	TOTALS	3.13E-02	1.81E-02	5.77E-03	9.88E-03	7.35E-03	4.42E-01
ADULT	TOTALS	3.15E-02	1.76E-02	6.57E-03	1.00E-02	7.68E-03	4.42E-01

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.06E-02	5.74E-03	1.73E-03	2.48E-02	1.04E-02	1.33E-01
CHILD	TOTALS	1.02E-02	8.78E-03	2.67E-03	1.29E-02	6.52E-03	1.33E-01
TEENAGE	TOTALS	1.04E-02	1.65E-02	3.32E-03	7.72E-03	5.01E-03	1.33E-01
ADULT	TOTALS	1.05E-02	1.60E-02	4.18E-03	7.84E-03	5.36E-03	1.33E-01

Program execution time = 0.22 seconds

APPENDIX B MILDOS PRINTOUT

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Appendix	Receptor	Source	Source	Source	Weather
B3	SR	SR restor. wells 44 gpm	RR	Resin	Glenwood Coal

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METSET: DATA: SR2rrR.MIL 12/16/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 7

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	4.00	1.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.89E+03	1001	1	0.00E+00	SAT3
2	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E+03	1002	1	0.00E+00	CPP
3	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E+03	1003	1	0.00E+00	SR1
4	-6.10	-4.90	7.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E+03	1004	1	0.00E+00	SR2
5	8.40	4.10	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+03	1005	1	0.00E+00	SAT2
6	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1006	1	0.00E+00	Resin Shipment
7	-1.60	9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E+04	1007	1	0.00E+00	Reynolds Ranch

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.644E-01	2.143E+00	3.344E-02	1.607E+00	7.724E-01	2.111E+02
GROUND	2.678E-02	2.678E-02	2.678E-02	2.678E-02	2.678E-02	2.678E-02
CLOUD	1.768E+00	1.768E+00	1.768E+00	1.768E+00	1.768E+00	1.768E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.059E+00	3.937E+00	1.828E+00	3.402E+00	2.567E+00	2.129E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.380E+02	3.246E+03	5.409E+01	2.380E+02	2.380E+02	1.515E+03
TOTALS	2.380E+02	3.246E+03	5.409E+01	2.380E+02	2.380E+02	1.515E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.644E-01	2.143E+00	3.344E-02	1.607E+00	7.724E-01	2.111E+02
GROUND	2.678E-02	2.678E-02	2.678E-02	2.678E-02	2.678E-02	2.678E-02
CLOUD	1.768E+00	1.768E+00	1.768E+00	1.768E+00	1.768E+00	1.768E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.380E+02	3.246E+03	5.409E+01	2.380E+02	2.380E+02	1.515E+03
TOTALS	2.401E+02	3.250E+03	5.592E+01	2.414E+02	2.406E+02	1.728E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.42E+00	3.18E-01	2.61E-01	5.83E-01	3.82E-01	6.94E+01
CHILD	TOTALS	4.42E+00	3.60E-01	2.75E-01	4.18E-01	3.29E-01	6.94E+01
TEENAGE	TOTALS	4.42E+00	4.68E-01	2.84E-01	3.46E-01	3.08E-01	6.94E+01
ADULT	TOTALS	4.42E+00	4.60E-01	2.96E-01	3.47E-01	3.13E-01	6.94E+01

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.74E+00	1.27E-01	1.04E-01	2.36E-01	1.54E-01	2.73E+01
CHILD	TOTALS	1.74E+00	1.45E-01	1.10E-01	1.68E-01	1.32E-01	2.73E+01
TEENAGE	TOTALS	1.74E+00	1.89E-01	1.13E-01	1.39E-01	1.23E-01	2.73E+01
ADULT	TOTALS	1.74E+00	1.85E-01	1.18E-01	1.39E-01	1.25E-01	2.73E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.66E+00	2.59E-01	1.96E-01	5.50E-01	3.30E-01	4.10E+01
CHILD	TOTALS	2.66E+00	3.05E-01	2.12E-01	3.68E-01	2.71E-01	4.10E+01
TEENAGE	TOTALS	2.66E+00	4.23E-01	2.22E-01	2.89E-01	2.48E-01	4.10E+01
ADULT	TOTALS	2.66E+00	4.15E-01	2.35E-01	2.91E-01	2.53E-01	4.10E+01

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.81E+00	1.58E-01	1.28E-01	3.00E-01	1.93E-01	2.80E+01
CHILD	TOTALS	1.80E+00	1.81E-01	1.35E-01	2.12E-01	1.64E-01	2.80E+01
TEENAGE	TOTALS	1.81E+00	2.38E-01	1.40E-01	1.73E-01	1.53E-01	2.80E+01
ADULT	TOTALS	1.81E+00	2.34E-01	1.47E-01	1.74E-01	1.56E-01	2.80E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.22E-01	6.35E-02	3.06E-02	2.18E-01	1.01E-01	3.09E+00
CHILD	TOTALS	2.19E-01	8.81E-02	3.85E-02	1.22E-01	6.98E-02	3.09E+00
TEENAGE	TOTALS	2.21E-01	1.51E-01	4.39E-02	7.95E-02	5.76E-02	3.09E+00
ADULT	TOTALS	2.22E-01	1.46E-01	5.09E-02	8.05E-02	6.04E-02	3.09E+00

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.81E-01	1.03E-01	5.99E-02	3.06E-01	1.53E-01	6.89E+00
CHILD	TOTALS	4.77E-01	1.36E-01	7.03E-02	1.79E-01	1.12E-01	6.89E+00
TEENAGE	TOTALS	4.79E-01	2.18E-01	7.75E-02	1.24E-01	9.55E-02	6.89E+00
ADULT	TOTALS	4.80E-01	2.12E-01	8.67E-02	1.26E-01	9.93E-02	6.89E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.68E-01	7.54E-02	5.17E-02	1.86E-01	1.02E-01	6.89E+00
CHILD	TOTALS	4.66E-01	9.30E-02	5.74E-02	1.17E-01	7.99E-02	6.89E+00
TEENAGE	TOTALS	4.67E-01	1.38E-01	6.14E-02	8.68E-02	7.12E-02	6.89E+00
ADULT	TOTALS	4.68E-01	1.34E-01	6.63E-02	8.76E-02	7.32E-02	6.89E+00

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.57E-01	6.95E-02	3.51E-02	2.30E-01	1.09E-01	3.59E+00
CHILD	TOTALS	2.54E-01	9.51E-02	4.34E-02	1.30E-01	7.60E-02	3.59E+00
TEENAGE	TOTALS	2.56E-01	1.60E-01	4.90E-02	8.62E-02	6.33E-02	3.59E+00
ADULT	TOTALS	2.57E-01	1.56E-01	5.63E-02	8.72E-02	6.63E-02	3.59E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.21E+01	2.13E-01	1.90E-01	3.19E-01	2.39E-01	1.98E+02
CHILD	TOTALS	1.21E+01	2.30E-01	1.96E-01	2.53E-01	2.17E-01	1.98E+02
TEENAGE	TOTALS	1.21E+01	2.73E-01	2.00E-01	2.24E-01	2.09E-01	1.98E+02
ADULT	TOTALS	1.21E+01	2.70E-01	2.04E-01	2.25E-01	2.11E-01	1.98E+02

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.27E+00	1.60E-01	1.34E-01	2.78E-01	1.89E-01	3.55E+01
CHILD	TOTALS	2.26E+00	1.79E-01	1.41E-01	2.04E-01	1.65E-01	3.55E+01
TEENAGE	TOTALS	2.26E+00	2.27E-01	1.45E-01	1.72E-01	1.55E-01	3.55E+01
ADULT	TOTALS	2.27E+00	2.23E-01	1.50E-01	1.73E-01	1.57E-01	3.55E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.98E-01	7.87E-02	4.05E-02	2.58E-01	1.22E-01	4.18E+00
CHILD	TOTALS	2.95E-01	1.07E-01	4.96E-02	1.46E-01	8.60E-02	4.18E+00
TEENAGE	TOTALS	2.97E-01	1.80E-01	5.59E-02	9.74E-02	7.18E-02	4.18E+00
ADULT	TOTALS	2.98E-01	1.75E-01	6.40E-02	9.85E-02	7.51E-02	4.18E+00

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.10E-01	5.85E-02	1.79E-02	2.52E-01	1.06E-01	1.39E+00
CHILD	TOTALS	1.06E-01	8.94E-02	2.74E-02	1.31E-01	6.65E-02	1.39E+00
TEENAGE	TOTALS	1.09E-01	1.68E-01	3.41E-02	7.86E-02	5.11E-02	1.39E+00
ADULT	TOTALS	1.10E-01	1.62E-01	4.28E-02	7.99E-02	5.47E-02	1.39E+00

Program execution time = 3.13 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B4	SR	SR new wells	RR	Resin	Glenwood Coal

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METSET: DATA: SR2rrNW.MIL 12/16/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 7

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	4.00	1.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1001	1	0.00E+00	SAT3
2	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1002	1	0.00E+00	CPP
3	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1003	1	0.00E+00	SR1
4	-6.10	-4.90	7.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1004	1	0.00E+00	SR2
5	8.40	4.10	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1005	1	0.00E+00	SAT2
6	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1006	1	0.00E+00	Resin Shipment
7	-1.60	9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-02	1007	1	0.00E+00	Reynolds Ranch

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	7.301E-07	5.915E-06	9.212E-08	4.437E-06	2.132E-06	5.928E-04
GROUND	7.502E-08	7.502E-08	7.502E-08	7.502E-08	7.502E-08	7.502E-08
CLOUD	4.931E-06	4.931E-06	4.931E-06	4.931E-06	4.931E-06	4.931E-06
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	5.737E-06	1.092E-05	5.099E-06	9.443E-06	7.139E-06	5.978E-04

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	6.451E-04	8.797E-03	1.466E-04	6.451E-04	6.451E-04	4.105E-03
TOTALS	6.451E-04	8.797E-03	1.466E-04	6.451E-04	6.451E-04	4.105E-03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	7.301E-07	5.915E-06	9.212E-08	4.437E-06	2.132E-06	5.928E-04
GROUND	7.502E-08	7.502E-08	7.502E-08	7.502E-08	7.502E-08	7.502E-08
CLOUD	4.931E-06	4.931E-06	4.931E-06	4.931E-06	4.931E-06	4.931E-06
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	6.451E-04	8.797E-03	1.466E-04	6.451E-04	6.451E-04	4.105E-03
TOTALS	6.508E-04	8.808E-03	1.517E-04	6.546E-04	6.522E-04	4.703E-03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.45E-05	9.26E-07	7.65E-07	1.67E-06	1.11E-06	2.29E-04
CHILD	TOTALS	1.45E-05	1.04E-06	8.04E-07	1.21E-06	9.56E-07	2.29E-04
TEENAGE	TOTALS	1.45E-05	1.35E-06	8.31E-07	1.00E-06	8.97E-07	2.29E-04
ADULT	TOTALS	1.45E-05	1.32E-06	8.64E-07	1.01E-06	9.11E-07	2.29E-04

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.99E-06	4.02E-07	3.45E-07	6.64E-07	4.65E-07	1.27E-04
CHILD	TOTALS	7.98E-06	4.44E-07	3.59E-07	5.01E-07	4.12E-07	1.27E-04
TEENAGE	TOTALS	7.99E-06	5.50E-07	3.68E-07	4.29E-07	3.92E-07	1.27E-04
ADULT	TOTALS	7.99E-06	5.42E-07	3.80E-07	4.31E-07	3.96E-07	1.27E-04

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.87E-06	8.02E-07	6.19E-07	1.65E-06	1.01E-06	1.37E-04
CHILD	TOTALS	8.85E-06	9.37E-07	6.64E-07	1.12E-06	8.36E-07	1.37E-04
TEENAGE	TOTALS	8.86E-06	1.28E-06	6.94E-07	8.90E-07	7.69E-07	1.37E-04
ADULT	TOTALS	8.87E-06	1.26E-06	7.32E-07	8.95E-07	7.85E-07	1.37E-04

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.62E-06	4.25E-07	3.39E-07	8.21E-07	5.21E-07	7.12E-05
CHILD	TOTALS	4.61E-06	4.88E-07	3.60E-07	5.74E-07	4.41E-07	7.12E-05
TEENAGE	TOTALS	4.61E-06	6.49E-07	3.74E-07	4.66E-07	4.10E-07	7.12E-05
ADULT	TOTALS	4.62E-06	6.37E-07	3.92E-07	4.69E-07	4.17E-07	7.12E-05

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.25E-07	1.78E-07	8.58E-08	6.07E-07	2.82E-07	8.69E-06
CHILD	TOTALS	6.16E-07	2.46E-07	1.08E-07	3.39E-07	1.95E-07	8.69E-06
TEENAGE	TOTALS	6.22E-07	4.21E-07	1.23E-07	2.22E-07	1.61E-07	8.69E-06
ADULT	TOTALS	6.25E-07	4.08E-07	1.42E-07	2.25E-07	1.69E-07	8.69E-06

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.39E-06	2.93E-07	1.72E-07	8.58E-07	4.31E-07	2.00E-05
CHILD	TOTALS	1.38E-06	3.83E-07	2.01E-07	5.06E-07	3.16E-07	2.00E-05
TEENAGE	TOTALS	1.39E-06	6.13E-07	2.21E-07	3.52E-07	2.72E-07	2.00E-05
ADULT	TOTALS	1.39E-06	5.96E-07	2.47E-07	3.56E-07	2.82E-07	2.00E-05

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.41E-06	2.14E-07	1.49E-07	5.19E-07	2.89E-07	2.08E-05
CHILD	TOTALS	1.40E-06	2.63E-07	1.65E-07	3.29E-07	2.27E-07	2.08E-05
TEENAGE	TOTALS	1.40E-06	3.87E-07	1.76E-07	2.46E-07	2.03E-07	2.08E-05
ADULT	TOTALS	1.41E-06	3.78E-07	1.89E-07	2.48E-07	2.08E-07	2.08E-05

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.51E-07	1.80E-07	8.95E-08	6.06E-07	2.84E-07	9.07E-06
CHILD	TOTALS	6.43E-07	2.48E-07	1.11E-07	3.40E-07	1.98E-07	9.07E-06
TEENAGE	TOTALS	6.48E-07	4.21E-07	1.26E-07	2.24E-07	1.64E-07	9.07E-06
ADULT	TOTALS	6.51E-07	4.08E-07	1.45E-07	2.27E-07	1.72E-07	9.07E-06

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.68E-05	7.54E-07	6.96E-07	1.02E-06	8.18E-07	1.10E-03
CHILD	TOTALS	6.68E-05	7.96E-07	7.10E-07	8.54E-07	7.64E-07	1.10E-03
TEENAGE	TOTALS	6.68E-05	9.05E-07	7.19E-07	7.81E-07	7.43E-07	1.10E-03
ADULT	TOTALS	6.68E-05	8.97E-07	7.32E-07	7.83E-07	7.48E-07	1.10E-03

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.30E-06	5.42E-07	4.63E-07	9.06E-07	6.30E-07	1.31E-04
CHILD	TOTALS	8.29E-06	6.00E-07	4.82E-07	6.79E-07	5.57E-07	1.31E-04
TEENAGE	TOTALS	8.29E-06	7.48E-07	4.95E-07	5.80E-07	5.28E-07	1.31E-04
ADULT	TOTALS	8.30E-06	7.37E-07	5.12E-07	5.82E-07	5.35E-07	1.31E-04

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.39E-07	2.17E-07	1.13E-07	7.02E-07	3.35E-07	1.18E-05
CHILD	TOTALS	8.29E-07	2.94E-07	1.38E-07	3.99E-07	2.36E-07	1.18E-05
TEENAGE	TOTALS	8.35E-07	4.91E-07	1.55E-07	2.67E-07	1.98E-07	1.18E-05
ADULT	TOTALS	8.38E-07	4.77E-07	1.77E-07	2.70E-07	2.07E-07	1.18E-05

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.88E-07	1.56E-07	4.71E-08	6.73E-07	2.82E-07	3.62E-06
CHILD	TOTALS	2.77E-07	2.38E-07	7.25E-08	3.51E-07	1.77E-07	3.62E-06
TEENAGE	TOTALS	2.83E-07	4.48E-07	9.03E-08	2.10E-07	1.36E-07	3.62E-06
ADULT	TOTALS	2.87E-07	4.33E-07	1.14E-07	2.13E-07	1.45E-07	3.62E-06

Program execution time = 3.19 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B5	SR	SR prod. wells 44 gpm	no RR	Resin	Glenwood Coal

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METSET: DATA: SR2.mil 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 6

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	4.00	1.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.90E+03	1001	1	0.00E+00	SAT3
2	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E+03	1002	1	0.00E+00	CPP
3	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E+03	1003	1	0.00E+00	SR1
4	-6.10	-4.90	7.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E+03	1004	1	0.00E+00	SR2
5	8.40	4.10	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+03	1005	1	0.00E+00	SAT2
6	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.82E+00	1006	1	0.00E+00	Resin Shipment

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.419E-01	1.149E+00	1.792E-02	8.621E-01	4.144E-01	1.125E+02
GROUND	1.428E-02	1.428E-02	1.428E-02	1.428E-02	1.428E-02	1.428E-02
CLOUD	9.392E-01	9.392E-01	9.392E-01	9.392E-01	9.392E-01	9.392E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	1.095E+00	2.103E+00	9.714E-01	1.816E+00	1.368E+00	1.134E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	1.257E+02	1.714E+03	2.857E+01	1.257E+02	1.257E+02	8.000E+02
TOTALS	1.257E+02	1.714E+03	2.857E+01	1.257E+02	1.257E+02	8.000E+02

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.419E-01	1.149E+00	1.792E-02	8.621E-01	4.144E-01	1.125E+02
GROUND	1.428E-02	1.428E-02	1.428E-02	1.428E-02	1.428E-02	1.428E-02
CLOUD	9.392E-01	9.392E-01	9.392E-01	9.392E-01	9.392E-01	9.392E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	1.257E+02	1.714E+03	2.857E+01	1.257E+02	1.257E+02	8.000E+02
TOTALS	1.268E+02	1.716E+03	2.954E+01	1.275E+02	1.271E+02	9.134E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.02E+00	1.92E-01	1.61E-01	3.35E-01	2.27E-01	4.78E+01
CHILD	TOTALS	3.02E+00	2.15E-01	1.68E-01	2.46E-01	1.98E-01	4.78E+01
TEENAGE	TOTALS	3.02E+00	2.73E-01	1.74E-01	2.07E-01	1.86E-01	4.78E+01
ADULT	TOTALS	3.02E+00	2.68E-01	1.80E-01	2.08E-01	1.89E-01	4.78E+01

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.13E+00	6.86E-02	5.74E-02	1.20E-01	8.12E-02	1.79E+01
CHILD	TOTALS	1.13E+00	7.69E-02	6.02E-02	8.81E-02	7.07E-02	1.79E+01
TEENAGE	TOTALS	1.13E+00	9.79E-02	6.20E-02	7.40E-02	6.66E-02	1.79E+01
ADULT	TOTALS	1.13E+00	9.64E-02	6.44E-02	7.44E-02	6.76E-02	1.79E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.99E+00	1.67E-01	1.31E-01	3.31E-01	2.07E-01	3.09E+01
CHILD	TOTALS	1.99E+00	1.93E-01	1.40E-01	2.29E-01	1.73E-01	3.09E+01
TEENAGE	TOTALS	1.99E+00	2.60E-01	1.46E-01	1.84E-01	1.60E-01	3.09E+01
ADULT	TOTALS	1.99E+00	2.55E-01	1.53E-01	1.85E-01	1.63E-01	3.09E+01

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.88E-01	8.32E-02	6.60E-02	1.63E-01	1.03E-01	1.37E+01
CHILD	TOTALS	8.86E-01	9.59E-02	7.02E-02	1.13E-01	8.65E-02	1.37E+01
TEENAGE	TOTALS	8.87E-01	1.28E-01	7.31E-02	9.15E-02	8.01E-02	1.37E+01
ADULT	TOTALS	8.88E-01	1.26E-01	7.67E-02	9.20E-02	8.16E-02	1.37E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.19E-01	3.46E-02	1.65E-02	1.19E-01	5.52E-02	1.66E+00
CHILD	TOTALS	1.18E-01	4.81E-02	2.08E-02	6.65E-02	3.80E-02	1.66E+00
TEENAGE	TOTALS	1.19E-01	8.25E-02	2.38E-02	4.34E-02	3.13E-02	1.66E+00
ADULT	TOTALS	1.19E-01	8.00E-02	2.76E-02	4.39E-02	3.29E-02	1.66E+00

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.79E-01	5.70E-02	3.41E-02	1.64E-01	8.31E-02	4.01E+00
CHILD	TOTALS	2.77E-01	7.41E-02	3.96E-02	9.73E-02	6.14E-02	4.01E+00
TEENAGE	TOTALS	2.78E-01	1.18E-01	4.34E-02	6.82E-02	5.29E-02	4.01E+00
ADULT	TOTALS	2.79E-01	1.14E-01	4.82E-02	6.89E-02	5.49E-02	4.01E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.56E-01	4.09E-02	2.78E-02	1.02E-01	5.57E-02	3.77E+00
CHILD	TOTALS	2.55E-01	5.06E-02	3.10E-02	6.38E-02	4.34E-02	3.77E+00
TEENAGE	TOTALS	2.55E-01	7.53E-02	3.32E-02	4.73E-02	3.86E-02	3.77E+00
ADULT	TOTALS	2.56E-01	7.35E-02	3.59E-02	4.76E-02	3.97E-02	3.77E+00

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.25E-01	3.50E-02	1.72E-02	1.18E-01	5.52E-02	1.74E+00
CHILD	TOTALS	1.23E-01	4.83E-02	2.15E-02	6.63E-02	3.84E-02	1.74E+00
TEENAGE	TOTALS	1.24E-01	8.21E-02	2.44E-02	4.36E-02	3.18E-02	1.74E+00
ADULT	TOTALS	1.25E-01	7.96E-02	2.81E-02	4.42E-02	3.33E-02	1.74E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.10E+01	1.34E-01	1.25E-01	1.78E-01	1.45E-01	1.81E+02
CHILD	TOTALS	1.10E+01	1.41E-01	1.27E-01	1.51E-01	1.36E-01	1.81E+02
TEENAGE	TOTALS	1.10E+01	1.59E-01	1.29E-01	1.39E-01	1.33E-01	1.81E+02
ADULT	TOTALS	1.10E+01	1.58E-01	1.31E-01	1.39E-01	1.33E-01	1.81E+02

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.54E+00	1.07E-01	8.99E-02	1.85E-01	1.26E-01	2.42E+01
CHILD	TOTALS	1.54E+00	1.19E-01	9.40E-02	1.36E-01	1.10E-01	2.42E+01
TEENAGE	TOTALS	1.54E+00	1.51E-01	9.68E-02	1.15E-01	1.04E-01	2.42E+01
ADULT	TOTALS	1.54E+00	1.49E-01	1.00E-01	1.15E-01	1.05E-01	2.42E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.67E-01	4.26E-02	2.24E-02	1.37E-01	6.55E-02	2.34E+00
CHILD	TOTALS	1.65E-01	5.76E-02	2.72E-02	7.81E-02	4.64E-02	2.34E+00
TEENAGE	TOTALS	1.66E-01	9.59E-02	3.06E-02	5.24E-02	3.89E-02	2.34E+00
ADULT	TOTALS	1.67E-01	9.32E-02	3.48E-02	5.30E-02	4.07E-02	2.34E+00

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.47E-02	2.98E-02	8.97E-03	1.29E-01	5.40E-02	6.87E-01
CHILD	TOTALS	5.27E-02	4.56E-02	1.38E-02	6.71E-02	3.38E-02	6.87E-01
TEENAGE	TOTALS	5.39E-02	8.58E-02	1.72E-02	4.01E-02	2.60E-02	6.87E-01
ADULT	TOTALS	5.46E-02	8.29E-02	2.17E-02	4.07E-02	2.78E-02	6.87E-01

Program execution time = 2.59 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B6	SR	SR prod. wells 222 gpm	Total RR wells	Resin	Glenwood Coal

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METSET: DATA: SR2rrPG.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.883017	.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.540020	.197012	.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 7

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	4.00	1.80	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.57E+03	1001	1	0.00E+00	SAT3
2	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E+03	1002	1	0.00E+00	CPP
3	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E+03	1003	1	0.00E+00	SR1
4	-6.10	-4.90	7.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E+03	1004	1	0.00E+00	SR2
5	8.40	4.10	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E+03	1005	1	0.00E+00	SAT2
6	0.00	0.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.82E+00	1006	1	0.00E+00	Resin Shipment
7	-1.60	9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E+04	1007	1	0.00E+00	Reynolds Ranch

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.978E-01	2.413E+00	3.767E-02	1.810E+00	8.699E-01	2.379E+02
GROUND	3.018E-02	3.018E-02	3.018E-02	3.018E-02	3.018E-02	3.018E-02
CLOUD	1.992E+00	1.992E+00	1.992E+00	1.992E+00	1.992E+00	1.992E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.320E+00	4.435E+00	2.060E+00	3.832E+00	2.892E+00	2.399E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.681E+02	3.656E+03	6.094E+01	2.681E+02	2.681E+02	1.706E+03
TOTALS	2.681E+02	3.656E+03	6.094E+01	2.681E+02	2.681E+02	1.706E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.978E-01	2.413E+00	3.767E-02	1.810E+00	8.699E-01	2.379E+02
GROUND	3.018E-02	3.018E-02	3.018E-02	3.018E-02	3.018E-02	3.018E-02
CLOUD	1.992E+00	1.992E+00	1.992E+00	1.992E+00	1.992E+00	1.992E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.681E+02	3.656E+03	6.094E+01	2.681E+02	2.681E+02	1.706E+03
TOTALS	2.704E+02	3.661E+03	6.300E+01	2.719E+02	2.710E+02	1.946E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.97E+00	3.57E-01	2.93E-01	6.56E-01	4.30E-01	7.80E+01
CHILD	TOTALS	4.97E+00	4.05E-01	3.09E-01	4.70E-01	3.70E-01	7.80E+01
TEENAGE	TOTALS	4.97E+00	5.26E-01	3.19E-01	3.88E-01	3.46E-01	7.80E+01
ADULT	TOTALS	4.97E+00	5.18E-01	3.33E-01	3.90E-01	3.52E-01	7.80E+01

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.99E+00	1.44E-01	1.18E-01	2.66E-01	1.74E-01	3.12E+01
CHILD	TOTALS	1.99E+00	1.63E-01	1.24E-01	1.90E-01	1.49E-01	3.12E+01
TEENAGE	TOTALS	1.99E+00	2.13E-01	1.28E-01	1.57E-01	1.39E-01	3.12E+01
ADULT	TOTALS	1.99E+00	2.10E-01	1.34E-01	1.57E-01	1.42E-01	3.12E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.98E+00	2.91E-01	2.20E-01	6.18E-01	3.70E-01	4.60E+01
CHILD	TOTALS	2.98E+00	3.43E-01	2.38E-01	4.14E-01	3.04E-01	4.60E+01
TEENAGE	TOTALS	2.98E+00	4.76E-01	2.49E-01	3.25E-01	2.78E-01	4.60E+01
ADULT	TOTALS	2.98E+00	4.66E-01	2.64E-01	3.27E-01	2.84E-01	4.60E+01

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.03E+00	1.78E-01	1.44E-01	3.38E-01	2.17E-01	3.15E+01
CHILD	TOTALS	2.03E+00	2.04E-01	1.52E-01	2.38E-01	1.85E-01	3.15E+01
TEENAGE	TOTALS	2.03E+00	2.69E-01	1.58E-01	1.95E-01	1.72E-01	3.15E+01
ADULT	TOTALS	2.03E+00	2.64E-01	1.65E-01	1.96E-01	1.75E-01	3.15E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.50E-01	7.15E-02	3.45E-02	2.45E-01	1.14E-01	3.48E+00
CHILD	TOTALS	2.47E-01	9.92E-02	4.33E-02	1.37E-01	7.86E-02	3.48E+00
TEENAGE	TOTALS	2.49E-01	1.70E-01	4.95E-02	8.96E-02	6.49E-02	3.48E+00
ADULT	TOTALS	2.50E-01	1.65E-01	5.73E-02	9.07E-02	6.81E-02	3.48E+00

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.41E-01	1.16E-01	6.74E-02	3.44E-01	1.72E-01	7.75E+00
CHILD	TOTALS	5.36E-01	1.53E-01	7.92E-02	2.02E-01	1.26E-01	7.75E+00
TEENAGE	TOTALS	5.39E-01	2.45E-01	8.73E-02	1.40E-01	1.08E-01	7.75E+00
ADULT	TOTALS	5.40E-01	2.39E-01	9.76E-02	1.41E-01	1.12E-01	7.75E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.28E-01	8.49E-02	5.83E-02	2.09E-01	1.15E-01	7.78E+00
CHILD	TOTALS	5.26E-01	1.05E-01	6.47E-02	1.32E-01	9.00E-02	7.78E+00
TEENAGE	TOTALS	5.27E-01	1.55E-01	6.92E-02	9.78E-02	8.02E-02	7.78E+00
ADULT	TOTALS	5.28E-01	1.51E-01	7.47E-02	9.86E-02	8.25E-02	7.78E+00

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.90E-01	7.83E-02	3.96E-02	2.60E-01	1.22E-01	4.05E+00
CHILD	TOTALS	2.86E-01	1.07E-01	4.89E-02	1.47E-01	8.57E-02	4.05E+00
TEENAGE	TOTALS	2.89E-01	1.81E-01	5.53E-02	9.71E-02	7.13E-02	4.05E+00
ADULT	TOTALS	2.90E-01	1.76E-01	6.34E-02	9.83E-02	7.47E-02	4.05E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.34E+01	2.40E-01	2.14E-01	3.61E-01	2.69E-01	2.20E+02
CHILD	TOTALS	1.34E+01	2.59E-01	2.20E-01	2.85E-01	2.45E-01	2.20E+02
TEENAGE	TOTALS	1.34E+01	3.08E-01	2.24E-01	2.52E-01	2.35E-01	2.20E+02
ADULT	TOTALS	1.34E+01	3.05E-01	2.30E-01	2.53E-01	2.37E-01	2.20E+02

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.54E+00	1.80E-01	1.51E-01	3.12E-01	2.12E-01	3.99E+01
CHILD	TOTALS	2.54E+00	2.01E-01	1.58E-01	2.30E-01	1.85E-01	3.99E+01
TEENAGE	TOTALS	2.54E+00	2.55E-01	1.63E-01	1.93E-01	1.74E-01	3.99E+01
ADULT	TOTALS	2.54E+00	2.51E-01	1.69E-01	1.94E-01	1.77E-01	3.99E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.36E-01	8.86E-02	4.56E-02	2.91E-01	1.38E-01	4.70E+00
CHILD	TOTALS	3.32E-01	1.21E-01	5.59E-02	1.65E-01	9.69E-02	4.70E+00
TEENAGE	TOTALS	3.34E-01	2.03E-01	6.30E-02	1.10E-01	8.09E-02	4.70E+00
ADULT	TOTALS	3.36E-01	1.97E-01	7.21E-02	1.11E-01	8.46E-02	4.70E+00

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.24E-01	6.60E-02	2.02E-02	2.84E-01	1.19E-01	1.57E+00
CHILD	TOTALS	1.20E-01	1.01E-01	3.09E-02	1.48E-01	7.49E-02	1.57E+00
TEENAGE	TOTALS	1.23E-01	1.89E-01	3.84E-02	8.86E-02	5.76E-02	1.57E+00
ADULT	TOTALS	1.24E-01	1.83E-01	4.82E-02	9.00E-02	6.16E-02	1.57E+00

Program execution time = 3.19 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B7	SR	SR satellite stack 222 gpm	Total RR wells	Resin	Glenwood Coal

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METSET: DATA: SR2rrPGS.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 12 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	9.10	6.40	0.00	11.13	1	7	Glenrock	-16.00	-20.00	0.00	25.61	1
2	South Boundary	-4.60	-7.00	0.00	8.38	1	8	Midwest	-60.00	41.00	0.00	72.67	1
3	East Boundary	15.50	3.00	0.00	15.79	1	9	Sunquest Ranch n. re	0.00	-1.10	0.00	1.10	1
4	West Boundary	-9.40	5.50	0.00	10.89	1	10	Vollman Ranch	-6.40	0.10	0.00	6.40	1
5	Casper	-54.00	-23.00	0.00	58.69	1	11	Wright	11.00	-73.00	0.00	73.82	1
6	Douglas	22.00	-32.00	0.00	38.83	1	12	Gillette	11.00	129.00	0.00	129.47	1

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.00	0.00	10.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.04E+04	1001	1	1.00E+01	Satellite

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.031E-01	2.456E+00	3.815E-02	1.842E+00	8.854E-01	2.495E+02
GROUND	3.156E-02	3.156E-02	3.156E-02	3.156E-02	3.156E-02	3.156E-02
CLOUD	2.084E+00	2.084E+00	2.084E+00	2.084E+00	2.084E+00	2.084E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.419E+00	4.572E+00	2.154E+00	3.958E+00	3.001E+00	2.516E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.675E+02	3.648E+03	6.080E+01	2.675E+02	2.675E+02	1.702E+03
TOTALS	2.675E+02	3.648E+03	6.080E+01	2.675E+02	2.675E+02	1.702E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.031E-01	2.456E+00	3.815E-02	1.842E+00	8.854E-01	2.495E+02
GROUND	3.156E-02	3.156E-02	3.156E-02	3.156E-02	3.156E-02	3.156E-02
CLOUD	2.084E+00	2.084E+00	2.084E+00	2.084E+00	2.084E+00	2.084E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.675E+02	3.648E+03	6.080E+01	2.675E+02	2.675E+02	1.702E+03
TOTALS	2.699E+02	3.653E+03	6.295E+01	2.715E+02	2.705E+02	1.954E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 9.1KM, Y= 6.4KM, Z= 0.0M, DIST= 11.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.68E+00	3.65E-01	2.93E-01	6.99E-01	4.47E-01	7.32E+01
CHILD	TOTALS	4.68E+00	4.19E-01	3.11E-01	4.91E-01	3.79E-01	7.32E+01
TEENAGE	TOTALS	4.68E+00	5.54E-01	3.23E-01	4.00E-01	3.53E-01	7.32E+01
ADULT	TOTALS	4.68E+00	5.44E-01	3.38E-01	4.02E-01	3.59E-01	7.32E+01

NUMBER 2 NAME=South Boundary X= -4.6KM, Y= -7.0KM, Z= 0.0M, DIST= 8.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.03E+00	1.28E-01	1.10E-01	2.12E-01	1.48E-01	3.21E+01
CHILD	TOTALS	2.03E+00	1.41E-01	1.14E-01	1.60E-01	1.31E-01	3.21E+01
TEENAGE	TOTALS	2.03E+00	1.76E-01	1.17E-01	1.37E-01	1.25E-01	3.21E+01
ADULT	TOTALS	2.03E+00	1.73E-01	1.21E-01	1.37E-01	1.26E-01	3.21E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 15.5KM, Y= 3.0KM, Z= 0.0M, DIST= 15.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.59E+00	3.36E-01	2.59E-01	6.94E-01	4.23E-01	5.54E+01
CHILD	TOTALS	3.58E+00	3.93E-01	2.78E-01	4.71E-01	3.51E-01	5.54E+01
TEENAGE	TOTALS	3.58E+00	5.38E-01	2.91E-01	3.73E-01	3.23E-01	5.54E+01
ADULT	TOTALS	3.59E+00	5.28E-01	3.07E-01	3.76E-01	3.29E-01	5.54E+01

NUMBER 4 NAME=West Boundary X= -9.4KM, Y= 5.5KM, Z= 0.0M, DIST= 10.9KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.04E+00	1.63E-01	1.34E-01	2.99E-01	1.96E-01	3.18E+01
CHILD	TOTALS	2.04E+00	1.85E-01	1.41E-01	2.14E-01	1.69E-01	3.18E+01
TEENAGE	TOTALS	2.04E+00	2.40E-01	1.46E-01	1.77E-01	1.58E-01	3.18E+01
ADULT	TOTALS	2.04E+00	2.36E-01	1.52E-01	1.78E-01	1.60E-01	3.18E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Casper X= -54.0KM, Y= -23.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.62E-01	7.38E-02	3.60E-02	2.51E-01	1.17E-01	3.65E+00
CHILD	TOTALS	2.59E-01	1.02E-01	4.50E-02	1.41E-01	8.11E-02	3.65E+00
TEENAGE	TOTALS	2.61E-01	1.74E-01	5.13E-02	9.23E-02	6.70E-02	3.65E+00
ADULT	TOTALS	2.62E-01	1.69E-01	5.93E-02	9.34E-02	7.03E-02	3.65E+00

NUMBER 6 NAME=Douglas X= 22.0KM, Y= -32.0KM, Z= 0.0M, DIST= 38.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.00E-01	1.25E-01	7.40E-02	3.63E-01	1.83E-01	8.63E+00
CHILD	TOTALS	5.96E-01	1.63E-01	8.63E-02	2.15E-01	1.35E-01	8.63E+00
TEENAGE	TOTALS	5.98E-01	2.60E-01	9.48E-02	1.50E-01	1.16E-01	8.63E+00
ADULT	TOTALS	6.00E-01	2.53E-01	1.05E-01	1.51E-01	1.20E-01	8.63E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Glenrock X= -16.0KM, Y= -20.0KM, Z= 0.0M, DIST= 25.6KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.86E-01	8.85E-02	6.23E-02	2.10E-01	1.18E-01	8.68E+00
CHILD	TOTALS	5.84E-01	1.08E-01	6.87E-02	1.34E-01	9.35E-02	8.68E+00
TEENAGE	TOTALS	5.85E-01	1.57E-01	7.30E-02	1.01E-01	8.39E-02	8.68E+00
ADULT	TOTALS	5.86E-01	1.54E-01	7.85E-02	1.02E-01	8.61E-02	8.68E+00

NUMBER 8 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.65E-01	7.30E-02	3.64E-02	2.45E-01	1.15E-01	3.69E+00
CHILD	TOTALS	2.61E-01	1.00E-01	4.51E-02	1.38E-01	8.01E-02	3.69E+00
TEENAGE	TOTALS	2.63E-01	1.70E-01	5.12E-02	9.09E-02	6.64E-02	3.69E+00
ADULT	TOTALS	2.65E-01	1.65E-01	5.89E-02	9.20E-02	6.96E-02	3.69E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Sunquest Ranch n. re X= 0.0KM, Y= -1.1KM, Z= 0.0M, DIST= 1.1KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.82E+01	1.89E-01	1.87E-01	1.97E-01	1.91E-01	8.00E+02
CHILD	TOTALS	4.82E+01	1.90E-01	1.87E-01	1.92E-01	1.89E-01	8.00E+02
TEENAGE	TOTALS	4.82E+01	1.93E-01	1.88E-01	1.90E-01	1.88E-01	8.00E+02
ADULT	TOTALS	4.82E+01	1.93E-01	1.88E-01	1.90E-01	1.88E-01	8.00E+02

NUMBER 10 NAME=Vollman Ranch X= -6.4KM, Y= 0.1KM, Z= 0.0M, DIST= 6.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.54E+00	2.38E-01	2.10E-01	3.70E-01	2.70E-01	7.23E+01
CHILD	TOTALS	4.54E+00	2.59E-01	2.17E-01	2.88E-01	2.44E-01	7.23E+01
TEENAGE	TOTALS	4.54E+00	3.13E-01	2.22E-01	2.52E-01	2.33E-01	7.23E+01
ADULT	TOTALS	4.54E+00	3.09E-01	2.27E-01	2.53E-01	2.36E-01	7.23E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Wright X= 11.0KM, Y= -73.0KM, Z= 0.0M, DIST= 73.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.53E-01	9.01E-02	4.74E-02	2.90E-01	1.39E-01	4.96E+00
CHILD	TOTALS	3.49E-01	1.22E-01	5.76E-02	1.65E-01	9.83E-02	4.96E+00
TEENAGE	TOTALS	3.52E-01	2.03E-01	6.47E-02	1.11E-01	8.24E-02	4.96E+00
ADULT	TOTALS	3.53E-01	1.97E-01	7.37E-02	1.12E-01	8.61E-02	4.96E+00

NUMBER 12 NAME=Gillette X= 11.0KM, Y= 129.0KM, Z= 0.0M, DIST= 129.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.18E-01	6.44E-02	1.94E-02	2.79E-01	1.17E-01	1.49E+00
CHILD	TOTALS	1.14E-01	9.85E-02	2.99E-02	1.45E-01	7.32E-02	1.49E+00
TEENAGE	TOTALS	1.17E-01	1.85E-01	3.73E-02	8.66E-02	5.62E-02	1.49E+00
ADULT	TOTALS	1.18E-01	1.79E-01	4.69E-02	8.80E-02	6.01E-02	1.49E+00

Program execution time = 0.27 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B8	RR	RR prod. wells 44 gpm	Total SR		Glenwood Coal

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REGION: Reynolds Ranch Boundarie CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: RR2sr.MIL 01/10/12

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	1.38	1.04	0.00	1.73	1	7	Douglas	25.80	-42.00	0.00	49.29	1
2	South Boundary	0.92	-4.60	0.00	4.69	1	8	Glenrock	-30.60	-14.10	0.00	33.69	1
3	East Boundary	3.22	0.46	0.00	3.25	1	9	Midwest	-46.40	30.40	0.00	55.47	1
4	West Boundary	-0.28	-0.60	0.00	0.66	1	10	Wright	68.50	16.70	0.00	70.51	1
5	Duck Creek Ranch	0.60	-3.70	0.00	3.75	1	11	Gillette	125.50	16.00	0.00	126.52	1
6	Casper	-31.00	-50.00	0.00	58.83	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 9

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.31	0.04	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E+03	1001	1	0.00E+00	MU21
2	0.99	-1.40	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E+03	1002	1	0.00E+00	MU22
3	0.00	1.59	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.71E+02	1003	1	0.00E+00	MU23
4	-0.50	0.86	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.11E+02	1004	1	0.00E+00	MU24
5	2.67	1.48	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.85E+02	1005	1	0.00E+00	MU25
6	2.99	0.38	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E+03	1006	1	0.00E+00	MU26
7	0.70	0.63	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E+03	1007	1	0.00E+00	MU27
8	0.83	-1.70	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.01E+03	1008	1	0.00E+00	MU28
9	1.60	-9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E+04	1009	1	0.00E+00	SR total

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
9	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
9	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.870E-01	2.326E+00	3.599E-02	1.744E+00	8.383E-01	2.450E+02
GROUND	3.087E-02	3.087E-02	3.087E-02	3.087E-02	3.087E-02	3.087E-02
CLOUD	2.022E+00	2.022E+00	2.022E+00	2.022E+00	2.022E+00	2.022E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.340E+00	4.378E+00	2.089E+00	3.797E+00	2.891E+00	2.470E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.361E+02	3.220E+03	5.366E+01	2.361E+02	2.361E+02	1.503E+03
TOTALS	2.361E+02	3.220E+03	5.366E+01	2.361E+02	2.361E+02	1.503E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	2.870E-01	2.326E+00	3.599E-02	1.744E+00	8.383E-01	2.450E+02
GROUND	3.087E-02	3.087E-02	3.087E-02	3.087E-02	3.087E-02	3.087E-02
CLOUD	2.022E+00	2.022E+00	2.022E+00	2.022E+00	2.022E+00	2.022E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.361E+02	3.220E+03	5.366E+01	2.361E+02	2.361E+02	1.503E+03
TOTALS	2.385E+02	3.224E+03	5.575E+01	2.399E+02	2.390E+02	1.750E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 1.4KM, Y= 1.0KM, Z= 0.0M, DIST= 1.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.67E+01	3.38E-01	3.11E-01	4.62E-01	3.68E-01	4.41E+02
CHILD	TOTALS	2.67E+01	3.58E-01	3.17E-01	3.85E-01	3.43E-01	4.41E+02
TEENAGE	TOTALS	2.67E+01	4.08E-01	3.22E-01	3.51E-01	3.33E-01	4.41E+02
ADULT	TOTALS	2.67E+01	4.05E-01	3.27E-01	3.51E-01	3.35E-01	4.41E+02

NUMBER 2 NAME=South Boundary X= 0.9KM, Y= -4.6KM, Z= 0.0M, DIST= 4.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.03E+00	2.37E-01	2.15E-01	3.36E-01	2.61E-01	8.03E+01
CHILD	TOTALS	5.02E+00	2.53E-01	2.21E-01	2.74E-01	2.41E-01	8.03E+01
TEENAGE	TOTALS	5.02E+00	2.93E-01	2.24E-01	2.47E-01	2.33E-01	8.03E+01
ADULT	TOTALS	5.03E+00	2.90E-01	2.29E-01	2.48E-01	2.35E-01	8.03E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 3.2KM, Y= 0.5KM, Z= 0.0M, DIST= 3.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.28E+01	3.89E-01	3.54E-01	5.52E-01	4.28E-01	1.54E+03
CHILD	TOTALS	9.28E+01	4.15E-01	3.62E-01	4.50E-01	3.95E-01	1.54E+03
TEENAGE	TOTALS	9.28E+01	4.81E-01	3.68E-01	4.06E-01	3.83E-01	1.54E+03
ADULT	TOTALS	9.28E+01	4.76E-01	3.75E-01	4.07E-01	3.86E-01	1.54E+03

NUMBER 4 NAME=West Boundary X= -0.3KM, Y= -0.6KM, Z= 0.0M, DIST= 0.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.32E+00	2.18E-01	1.96E-01	3.24E-01	2.44E-01	1.52E+02
CHILD	TOTALS	9.31E+00	2.35E-01	2.01E-01	2.58E-01	2.23E-01	1.52E+02
TEENAGE	TOTALS	9.32E+00	2.78E-01	2.05E-01	2.29E-01	2.14E-01	1.52E+02
ADULT	TOTALS	9.32E+00	2.75E-01	2.10E-01	2.30E-01	2.16E-01	1.52E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Duck Creek Ranch X= 0.6KM, Y= -3.7KM, Z= 0.0M, DIST= 3.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.43E+00	2.27E-01	2.05E-01	3.29E-01	2.51E-01	8.73E+01
CHILD	TOTALS	5.43E+00	2.43E-01	2.10E-01	2.65E-01	2.31E-01	8.73E+01
TEENAGE	TOTALS	5.43E+00	2.84E-01	2.14E-01	2.37E-01	2.23E-01	8.73E+01
ADULT	TOTALS	5.43E+00	2.81E-01	2.18E-01	2.38E-01	2.25E-01	8.73E+01

NUMBER 6 NAME=Casper X= -31.0KM, Y= -50.0KM, Z= 0.0M, DIST= 58.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.39E-01	5.63E-02	3.14E-02	1.73E-01	8.46E-02	3.39E+00
CHILD	TOTALS	2.37E-01	7.48E-02	3.74E-02	1.00E-01	6.11E-02	3.39E+00
TEENAGE	TOTALS	2.38E-01	1.22E-01	4.15E-02	6.84E-02	5.18E-02	3.39E+00
ADULT	TOTALS	2.39E-01	1.19E-01	4.68E-02	6.91E-02	5.40E-02	3.39E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Douglas X= 25.8KM, Y= -42.0KM, Z= 0.0M, DIST= 49.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.68E-01	1.05E-01	5.93E-02	3.19E-01	1.57E-01	6.68E+00
CHILD	TOTALS	4.64E-01	1.39E-01	7.04E-02	1.86E-01	1.14E-01	6.68E+00
TEENAGE	TOTALS	4.66E-01	2.26E-01	7.79E-02	1.27E-01	9.69E-02	6.68E+00
ADULT	TOTALS	4.68E-01	2.20E-01	8.76E-02	1.29E-01	1.01E-01	6.68E+00

NUMBER 8 NAME=Glenrock X= -30.6KM, Y= -14.1KM, Z= 0.0M, DIST= 33.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.29E-01	9.99E-02	6.29E-02	2.72E-01	1.42E-01	7.67E+00
CHILD	TOTALS	5.26E-01	1.27E-01	7.19E-02	1.65E-01	1.07E-01	7.67E+00
TEENAGE	TOTALS	5.28E-01	1.97E-01	7.80E-02	1.18E-01	9.33E-02	7.67E+00
ADULT	TOTALS	5.29E-01	1.92E-01	8.58E-02	1.19E-01	9.65E-02	7.67E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Midwest X= -46.4KM, Y= 30.4KM, Z= 0.0M, DIST= 55.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.77E-01	6.90E-02	3.69E-02	2.19E-01	1.06E-01	3.90E+00
CHILD	TOTALS	2.74E-01	9.29E-02	4.46E-02	1.25E-01	7.51E-02	3.90E+00
TEENAGE	TOTALS	2.76E-01	1.54E-01	4.99E-02	8.46E-02	6.32E-02	3.90E+00
ADULT	TOTALS	2.77E-01	1.49E-01	5.67E-02	8.56E-02	6.60E-02	3.90E+00

NUMBER 10 NAME=Wright X= 68.5KM, Y= 16.7KM, Z= 0.0M, DIST= 70.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.60E-01	1.87E-01	9.98E-02	5.98E-01	2.87E-01	1.07E+01
CHILD	TOTALS	7.52E-01	2.53E-01	1.21E-01	3.42E-01	2.04E-01	1.07E+01
TEENAGE	TOTALS	7.57E-01	4.20E-01	1.35E-01	2.30E-01	1.72E-01	1.07E+01
ADULT	TOTALS	7.60E-01	4.08E-01	1.54E-01	2.33E-01	1.79E-01	1.07E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Gillette X= 125.5KM, Y= 16.0KM, Z= 0.0M, DIST= 126.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.81E-01	1.35E-01	5.59E-02	5.11E-01	2.27E-01	5.15E+00
CHILD	TOTALS	3.74E-01	1.95E-01	7.46E-02	2.77E-01	1.51E-01	5.15E+00
TEENAGE	TOTALS	3.78E-01	3.48E-01	8.76E-02	1.74E-01	1.21E-01	5.15E+00
ADULT	TOTALS	3.81E-01	3.37E-01	1.04E-01	1.77E-01	1.28E-01	5.15E+00

Program execution time = 4.77 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B9	RR	RR satellite stack 44 gpm	Total SR		Glenwood Coal

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REGION: Reynolds Ranch Boundarie CODE: MILDOS-AREA (02/97) PAGE 2

METSET: DATA: RR2srST.MIL 01/10/12

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	1.38	1.04	0.00	1.73	1	7	Douglas	25.80	-42.00	0.00	49.29	1
2	South Boundary	0.92	-4.60	0.00	4.69	1	8	Glenrock	-30.60	-14.10	0.00	33.69	1
3	East Boundary	3.22	0.46	0.00	3.25	1	9	Midwest	-60.00	41.00	0.00	72.67	1
4	West Boundary	-0.28	-0.60	0.00	0.66	1	10	Wright	68.50	16.70	0.00	70.51	1
5	Duck Creek Ranch	0.60	-3.70	0.00	3.75	1	11	Gillette	125.50	16.00	0.00	126.52	1
6	Casper	-30.70	-50.00	0.00	58.67	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	1.60	-9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E+04	1001	1	0.00E+00	SR total

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.007E-01	2.437E+00	3.758E-02	1.828E+00	8.785E-01	2.662E+02
GROUND	3.342E-02	3.342E-02	3.342E-02	3.342E-02	3.342E-02	3.342E-02
CLOUD	2.181E+00	2.181E+00	2.181E+00	2.181E+00	2.181E+00	2.181E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.516E+00	4.652E+00	2.252E+00	4.043E+00	3.093E+00	2.684E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.358E+02	3.216E+03	5.360E+01	2.358E+02	2.358E+02	1.501E+03
TOTALS	2.358E+02	3.216E+03	5.360E+01	2.358E+02	2.358E+02	1.501E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.007E-01	2.437E+00	3.758E-02	1.828E+00	8.785E-01	2.662E+02
GROUND	3.342E-02	3.342E-02	3.342E-02	3.342E-02	3.342E-02	3.342E-02
CLOUD	2.181E+00	2.181E+00	2.181E+00	2.181E+00	2.181E+00	2.181E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.358E+02	3.216E+03	5.360E+01	2.358E+02	2.358E+02	1.501E+03
TOTALS	2.384E+02	3.221E+03	5.585E+01	2.399E+02	2.389E+02	1.769E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 1.4KM, Y= 1.0KM, Z= 0.0M, DIST= 1.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.65E+00	1.84E-01	1.47E-01	3.52E-01	2.25E-01	2.51E+01
CHILD	TOTALS	1.65E+00	2.11E-01	1.56E-01	2.47E-01	1.90E-01	2.51E+01
TEENAGE	TOTALS	1.65E+00	2.79E-01	1.62E-01	2.01E-01	1.77E-01	2.51E+01
ADULT	TOTALS	1.65E+00	2.74E-01	1.70E-01	2.02E-01	1.80E-01	2.51E+01

NUMBER 2 NAME=South Boundary X= 0.9KM, Y= -4.6KM, Z= 0.0M, DIST= 4.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.35E+00	2.62E-01	2.37E-01	3.74E-01	2.89E-01	6.86E+01
CHILD	TOTALS	4.35E+00	2.80E-01	2.43E-01	3.04E-01	2.66E-01	6.86E+01
TEENAGE	TOTALS	4.35E+00	3.25E-01	2.47E-01	2.73E-01	2.57E-01	6.86E+01
ADULT	TOTALS	4.35E+00	3.22E-01	2.53E-01	2.74E-01	2.60E-01	6.86E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 3.2KM, Y= 0.5KM, Z= 0.0M, DIST= 3.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.11E+00	2.22E-01	1.79E-01	4.20E-01	2.70E-01	3.22E+01
CHILD	TOTALS	2.10E+00	2.54E-01	1.90E-01	2.97E-01	2.30E-01	3.22E+01
TEENAGE	TOTALS	2.11E+00	3.34E-01	1.97E-01	2.43E-01	2.14E-01	3.22E+01
ADULT	TOTALS	2.11E+00	3.28E-01	2.06E-01	2.44E-01	2.18E-01	3.22E+01

NUMBER 4 NAME=West Boundary X= -0.3KM, Y= -0.6KM, Z= 0.0M, DIST= 0.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.93E+00	1.88E-01	1.55E-01	3.41E-01	2.25E-01	2.96E+01
CHILD	TOTALS	1.92E+00	2.13E-01	1.63E-01	2.46E-01	1.94E-01	2.96E+01
TEENAGE	TOTALS	1.93E+00	2.75E-01	1.69E-01	2.04E-01	1.82E-01	2.96E+01
ADULT	TOTALS	1.93E+00	2.70E-01	1.76E-01	2.05E-01	1.85E-01	2.96E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Duck Creek Ranch X= 0.6KM, Y= -3.7KM, Z= 0.0M, DIST= 3.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.42E+00	2.39E-01	2.12E-01	3.65E-01	2.70E-01	5.36E+01
CHILD	TOTALS	3.42E+00	2.59E-01	2.19E-01	2.87E-01	2.44E-01	5.36E+01
TEENAGE	TOTALS	3.42E+00	3.11E-01	2.23E-01	2.52E-01	2.34E-01	5.36E+01
ADULT	TOTALS	3.42E+00	3.07E-01	2.29E-01	2.53E-01	2.37E-01	5.36E+01

NUMBER 6 NAME=Casper X= -30.7KM, Y= -50.0KM, Z= 0.0M, DIST= 58.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.47E-01	5.74E-02	3.23E-02	1.75E-01	8.59E-02	3.51E+00
CHILD	TOTALS	2.45E-01	7.61E-02	3.83E-02	1.02E-01	6.22E-02	3.51E+00
TEENAGE	TOTALS	2.46E-01	1.24E-01	4.25E-02	6.96E-02	5.29E-02	3.51E+00
ADULT	TOTALS	2.47E-01	1.20E-01	4.78E-02	7.03E-02	5.51E-02	3.51E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Douglas X= 25.8KM, Y= -42.0KM, Z= 0.0M, DIST= 49.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.07E-01	1.11E-01	6.36E-02	3.32E-01	1.65E-01	7.24E+00
CHILD	TOTALS	5.02E-01	1.46E-01	7.50E-02	1.94E-01	1.20E-01	7.24E+00
TEENAGE	TOTALS	5.05E-01	2.36E-01	8.28E-02	1.34E-01	1.02E-01	7.24E+00
ADULT	TOTALS	5.06E-01	2.29E-01	9.28E-02	1.35E-01	1.07E-01	7.24E+00

NUMBER 8 NAME=Glenrock X= -30.6KM, Y= -14.1KM, Z= 0.0M, DIST= 33.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.12E-01	1.11E-01	7.18E-02	2.93E-01	1.55E-01	8.91E+00
CHILD	TOTALS	6.09E-01	1.40E-01	8.13E-02	1.80E-01	1.18E-01	8.91E+00
TEENAGE	TOTALS	6.11E-01	2.14E-01	8.78E-02	1.30E-01	1.04E-01	8.91E+00
ADULT	TOTALS	6.12E-01	2.09E-01	9.60E-02	1.31E-01	1.07E-01	8.91E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.94E-01	5.77E-02	2.71E-02	2.02E-01	9.28E-02	2.68E+00
CHILD	TOTALS	1.91E-01	8.07E-02	3.44E-02	1.12E-01	6.36E-02	2.68E+00
TEENAGE	TOTALS	1.93E-01	1.39E-01	3.95E-02	7.27E-02	5.22E-02	2.68E+00
ADULT	TOTALS	1.94E-01	1.35E-01	4.60E-02	7.36E-02	5.49E-02	2.68E+00

NUMBER 10 NAME=Wright X= 68.5KM, Y= 16.7KM, Z= 0.0M, DIST= 70.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	7.70E-01	1.90E-01	1.01E-01	6.08E-01	2.92E-01	1.09E+01
CHILD	TOTALS	7.61E-01	2.57E-01	1.22E-01	3.47E-01	2.07E-01	1.09E+01
TEENAGE	TOTALS	7.66E-01	4.26E-01	1.37E-01	2.34E-01	1.74E-01	1.09E+01
ADULT	TOTALS	7.69E-01	4.14E-01	1.56E-01	2.36E-01	1.82E-01	1.09E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Gillette X= 125.5KM, Y= 16.0KM, Z= 0.0M, DIST= 126.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.91E-01	1.38E-01	5.73E-02	5.21E-01	2.32E-01	5.29E+00
CHILD	TOTALS	3.83E-01	1.99E-01	7.63E-02	2.82E-01	1.54E-01	5.29E+00
TEENAGE	TOTALS	3.88E-01	3.55E-01	8.96E-02	1.78E-01	1.23E-01	5.29E+00
ADULT	TOTALS	3.91E-01	3.44E-01	1.07E-01	1.80E-01	1.31E-01	5.29E+00

Program execution time = 0.60 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B10	RR	RR restor. wells 44 gpm	Total SR		Glenwood Coal

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METSET: DATA: RR2.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	1.38	1.04	0.00	1.73	1	7	Douglas	25.80	-42.00	0.00	49.29	1
2	South Boundary	0.92	-4.60	0.00	4.69	1	8	Glenrock	-30.60	-14.10	0.00	33.69	1
3	East Boundary	3.22	0.46	0.00	3.25	1	9	Midwest	-60.00	41.00	0.00	72.67	1
4	West Boundary	-0.28	-0.60	0.00	0.66	1	10	Wright	68.50	16.70	0.00	70.51	1
5	Duck Creek Ranch	0.60	-3.70	0.00	3.75	1	11	Gillette	125.50	16.00	0.00	126.52	1
6	Casper	-30.70	-49.70	0.00	58.42	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 8

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.31	0.04	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E+03	1001	1	0.00E+00	MU21
2	0.99	-1.40	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E+03	1002	1	0.00E+00	MU22
3	0.00	1.59	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.71E+02	1003	1	0.00E+00	MU23
4	-0.50	0.86	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.11E+02	1004	1	0.00E+00	MU24
5	2.67	1.48	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.85E+02	1005	1	0.00E+00	MU25
6	2.99	0.38	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E+03	1006	1	0.00E+00	MU26
7	0.70	0.63	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E+03	1007	1	0.00E+00	MU27
8	0.83	-1.70	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.01E+03	1008	1	0.00E+00	MU28

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.097E-01	8.889E-01	1.383E-02	6.667E-01	3.204E-01	8.802E+01
GROUND	1.116E-02	1.116E-02	1.116E-02	1.116E-02	1.116E-02	1.116E-02
CLOUD	7.357E-01	7.357E-01	7.357E-01	7.357E-01	7.357E-01	7.357E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	8.566E-01	1.636E+00	7.607E-01	1.414E+00	1.067E+00	8.877E+01

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	9.707E+01	1.324E+03	2.206E+01	9.707E+01	9.707E+01	6.177E+02
TOTALS	9.707E+01	1.324E+03	2.206E+01	9.707E+01	9.707E+01	6.177E+02

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	1.097E-01	8.889E-01	1.383E-02	6.667E-01	3.204E-01	8.802E+01
GROUND	1.116E-02	1.116E-02	1.116E-02	1.116E-02	1.116E-02	1.116E-02
CLOUD	7.357E-01	7.357E-01	7.357E-01	7.357E-01	7.357E-01	7.357E-01
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	9.707E+01	1.324E+03	2.206E+01	9.707E+01	9.707E+01	6.177E+02
TOTALS	9.793E+01	1.325E+03	2.282E+01	9.849E+01	9.814E+01	7.065E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 1.4KM, Y= 1.0KM, Z= 0.0M, DIST= 1.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.58E+01	2.29E-01	2.24E-01	2.55E-01	2.36E-01	4.26E+02
CHILD	TOTALS	2.58E+01	2.33E-01	2.25E-01	2.39E-01	2.30E-01	4.26E+02
TEENAGE	TOTALS	2.58E+01	2.44E-01	2.26E-01	2.32E-01	2.29E-01	4.26E+02
ADULT	TOTALS	2.58E+01	2.43E-01	2.27E-01	2.32E-01	2.29E-01	4.26E+02

NUMBER 2 NAME=South Boundary X= 0.9KM, Y= -4.6KM, Z= 0.0M, DIST= 4.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.46E+00	8.25E-02	7.53E-02	1.16E-01	9.06E-02	3.98E+01
CHILD	TOTALS	2.46E+00	8.78E-02	7.70E-02	9.50E-02	8.38E-02	3.98E+01
TEENAGE	TOTALS	2.46E+00	1.01E-01	7.82E-02	8.59E-02	8.12E-02	3.98E+01
ADULT	TOTALS	2.46E+00	1.00E-01	7.97E-02	8.62E-02	8.18E-02	3.98E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 3.2KM, Y= 0.5KM, Z= 0.0M, DIST= 3.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.16E+01	2.58E-01	2.48E-01	3.04E-01	2.69E-01	1.52E+03
CHILD	TOTALS	9.16E+01	2.65E-01	2.50E-01	2.75E-01	2.60E-01	1.52E+03
TEENAGE	TOTALS	9.16E+01	2.84E-01	2.52E-01	2.63E-01	2.56E-01	1.52E+03
ADULT	TOTALS	9.16E+01	2.83E-01	2.54E-01	2.63E-01	2.57E-01	1.52E+03

NUMBER 4 NAME=West Boundary X= -0.3KM, Y= -0.6KM, Z= 0.0M, DIST= 0.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.18E+00	1.07E-01	1.04E-01	1.23E-01	1.11E-01	1.35E+02
CHILD	TOTALS	8.18E+00	1.10E-01	1.05E-01	1.13E-01	1.08E-01	1.35E+02
TEENAGE	TOTALS	8.18E+00	1.16E-01	1.05E-01	1.09E-01	1.07E-01	1.35E+02
ADULT	TOTALS	8.18E+00	1.16E-01	1.06E-01	1.09E-01	1.07E-01	1.35E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Duck Creek Ranch X= 0.6KM, Y= -3.7KM, Z= 0.0M, DIST= 3.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.42E+00	8.56E-02	7.97E-02	1.13E-01	9.23E-02	5.57E+01
CHILD	TOTALS	3.42E+00	9.00E-02	8.11E-02	9.60E-02	8.68E-02	5.57E+01
TEENAGE	TOTALS	3.42E+00	1.01E-01	8.21E-02	8.85E-02	8.46E-02	5.57E+01
ADULT	TOTALS	3.42E+00	1.00E-01	8.34E-02	8.87E-02	8.51E-02	5.57E+01

NUMBER 6 NAME=Casper X= -30.7KM, Y= -49.7KM, Z= 0.0M, DIST= 58.4KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.51E-02	2.27E-02	1.26E-02	6.97E-02	3.41E-02	1.35E+00
CHILD	TOTALS	9.42E-02	3.02E-02	1.50E-02	4.04E-02	2.46E-02	1.35E+00
TEENAGE	TOTALS	9.48E-02	4.93E-02	1.67E-02	2.75E-02	2.09E-02	1.35E+00
ADULT	TOTALS	9.51E-02	4.79E-02	1.88E-02	2.79E-02	2.17E-02	1.35E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Douglas X= 25.8KM, Y= -42.0KM, Z= 0.0M, DIST= 49.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.70E-01	3.97E-02	2.18E-02	1.23E-01	6.00E-02	2.41E+00
CHILD	TOTALS	1.68E-01	5.30E-02	2.61E-02	7.11E-02	4.31E-02	2.41E+00
TEENAGE	TOTALS	1.69E-01	8.69E-02	2.91E-02	4.84E-02	3.65E-02	2.41E+00
ADULT	TOTALS	1.69E-01	8.44E-02	3.29E-02	4.89E-02	3.80E-02	2.41E+00

NUMBER 8 NAME=Glenrock X= -30.6KM, Y= -14.1KM, Z= 0.0M, DIST= 33.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.68E-01	3.45E-02	2.06E-02	9.91E-02	5.02E-02	2.42E+00
CHILD	TOTALS	1.67E-01	4.48E-02	2.40E-02	5.88E-02	3.71E-02	2.42E+00
TEENAGE	TOTALS	1.67E-01	7.10E-02	2.63E-02	4.12E-02	3.20E-02	2.42E+00
ADULT	TOTALS	1.68E-01	6.92E-02	2.92E-02	4.16E-02	3.32E-02	2.42E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Midwest X= -60.0KM, Y= 41.0KM, Z= 0.0M, DIST= 72.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.62E-02	2.69E-02	1.33E-02	9.07E-02	4.24E-02	1.34E+00
CHILD	TOTALS	9.50E-02	3.70E-02	1.65E-02	5.09E-02	2.95E-02	1.34E+00
TEENAGE	TOTALS	9.57E-02	6.29E-02	1.88E-02	3.35E-02	2.44E-02	1.34E+00
ADULT	TOTALS	9.62E-02	6.11E-02	2.16E-02	3.39E-02	2.56E-02	1.34E+00

NUMBER 10 NAME=Wright X= 68.5KM, Y= 16.7KM, Z= 0.0M, DIST= 70.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.07E-01	7.53E-02	4.02E-02	2.40E-01	1.15E-01	4.33E+00
CHILD	TOTALS	3.03E-01	1.02E-01	4.86E-02	1.37E-01	8.20E-02	4.33E+00
TEENAGE	TOTALS	3.05E-01	1.68E-01	5.44E-02	9.24E-02	6.90E-02	4.33E+00
ADULT	TOTALS	3.06E-01	1.63E-01	6.18E-02	9.34E-02	7.20E-02	4.33E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Gillette X= 125.5KM, Y= 16.0KM, Z= 0.0M, DIST= 126.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.51E-01	5.37E-02	2.21E-02	2.04E-01	9.03E-02	2.03E+00
CHILD	TOTALS	1.48E-01	7.76E-02	2.95E-02	1.10E-01	5.99E-02	2.03E+00
TEENAGE	TOTALS	1.49E-01	1.38E-01	3.47E-02	6.93E-02	4.80E-02	2.03E+00
ADULT	TOTALS	1.50E-01	1.34E-01	4.15E-02	7.03E-02	5.07E-02	2.03E+00

Program execution time = 4.06 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B11	RR	RR prod wells 222 gpm	Total SR		Glenwood Coal

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METSET: DATA: RR2srPG.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.883017.1220	9.5300	3.2870	2.7480	3.6640	70.2760	
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.540020.197012.3000	5.1880	4.6640	5.3530	100.0040		

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	1.38	1.04	0.00	1.73	1	7	Douglas	25.80	-42.00	0.00	49.29	1
2	South Boundary	0.92	-4.60	0.00	4.69	1	8	Glenrock	-30.60	-14.10	0.00	33.69	1
3	East Boundary	3.22	0.46	0.00	3.25	1	9	Midwest	-46.40	30.40	0.00	55.47	1
4	West Boundary	-0.28	-0.60	0.00	0.66	1	10	Wright	68.50	16.70	0.00	70.51	1
5	Duck Creek Ranch	0.60	-3.70	0.00	3.75	1	11	Gillette	125.50	16.00	0.00	126.52	1
6	Casper	-31.00	-50.00	0.00	58.83	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0, 0, 0, 0, 0, 0, 0, 0, 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 9

NO.	KM X	KM Y	M Z	KM2 AREA	CI/YEAR U-238	Th-230	Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.31	0.04	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E+03	1001	1	0.00E+00	MU21
2	0.99	-1.40	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.19E+03	1002	1	0.00E+00	MU22
3	0.00	1.59	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E+03	1003	1	0.00E+00	MU23
4	-0.50	0.86	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E+03	1004	1	0.00E+00	MU24
5	2.67	1.48	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E+03	1005	1	0.00E+00	MU25
6	2.99	0.38	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E+03	1006	1	0.00E+00	MU26
7	0.70	0.63	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E+03	1007	1	0.00E+00	MU27
8	0.83	-1.70	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E+03	1008	1	0.00E+00	MU28
9	1.60	-9.00	0.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E+04	1009	1	0.00E+00	SR total

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
9	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
2	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
3	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
4	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
5	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
6	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
7	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
9	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.474E-01	2.815E+00	4.355E-02	2.112E+00	1.015E+00	2.972E+02
GROUND	3.744E-02	3.744E-02	3.744E-02	3.744E-02	3.744E-02	3.744E-02
CLOUD	2.452E+00	2.452E+00	2.452E+00	2.452E+00	2.452E+00	2.452E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.837E+00	5.304E+00	2.533E+00	4.601E+00	3.504E+00	2.997E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.850E+02	3.887E+03	6.478E+01	2.850E+02	2.850E+02	1.814E+03
TOTALS	2.850E+02	3.887E+03	6.478E+01	2.850E+02	2.850E+02	1.814E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.474E-01	2.815E+00	4.355E-02	2.112E+00	1.015E+00	2.972E+02
GROUND	3.744E-02	3.744E-02	3.744E-02	3.744E-02	3.744E-02	3.744E-02
CLOUD	2.452E+00	2.452E+00	2.452E+00	2.452E+00	2.452E+00	2.452E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.850E+02	3.887E+03	6.478E+01	2.850E+02	2.850E+02	1.814E+03
TOTALS	2.879E+02	3.892E+03	6.731E+01	2.896E+02	2.885E+02	2.114E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 1.4KM, Y= 1.0KM, Z= 0.0M, DIST= 1.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.98E+01	3.95E-01	3.62E-01	5.49E-01	4.33E-01	4.91E+02
CHILD	TOTALS	2.98E+01	4.20E-01	3.70E-01	4.53E-01	4.01E-01	4.91E+02
TEENAGE	TOTALS	2.98E+01	4.82E-01	3.76E-01	4.11E-01	3.89E-01	4.91E+02
ADULT	TOTALS	2.98E+01	4.78E-01	3.83E-01	4.12E-01	3.92E-01	4.91E+02

NUMBER 2 NAME=South Boundary X= 0.9KM, Y= -4.6KM, Z= 0.0M, DIST= 4.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.01E+00	2.88E-01	2.61E-01	4.09E-01	3.17E-01	9.59E+01
CHILD	TOTALS	6.00E+00	3.07E-01	2.68E-01	3.33E-01	2.92E-01	9.59E+01
TEENAGE	TOTALS	6.01E+00	3.56E-01	2.72E-01	3.00E-01	2.83E-01	9.59E+01
ADULT	TOTALS	6.01E+00	3.53E-01	2.78E-01	3.01E-01	2.85E-01	9.59E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 3.2KM, Y= 0.5KM, Z= 0.0M, DIST= 3.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.08E+02	4.59E-01	4.16E-01	6.58E-01	5.07E-01	1.79E+03
CHILD	TOTALS	1.08E+02	4.90E-01	4.26E-01	5.34E-01	4.67E-01	1.79E+03
TEENAGE	TOTALS	1.08E+02	5.71E-01	4.33E-01	4.79E-01	4.51E-01	1.79E+03
ADULT	TOTALS	1.08E+02	5.65E-01	4.42E-01	4.81E-01	4.55E-01	1.79E+03

NUMBER 4 NAME=West Boundary X= -0.3KM, Y= -0.6KM, Z= 0.0M, DIST= 0.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	1.07E+01	2.62E-01	2.34E-01	3.93E-01	2.94E-01	1.75E+02
CHILD	TOTALS	1.07E+01	2.83E-01	2.40E-01	3.11E-01	2.67E-01	1.75E+02
TEENAGE	TOTALS	1.07E+01	3.36E-01	2.45E-01	2.76E-01	2.57E-01	1.75E+02
ADULT	TOTALS	1.07E+01	3.32E-01	2.51E-01	2.76E-01	2.59E-01	1.75E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Duck Creek Ranch X= 0.6KM, Y= -3.7KM, Z= 0.0M, DIST= 3.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.40E+00	2.74E-01	2.47E-01	3.99E-01	3.05E-01	1.03E+02
CHILD	TOTALS	6.39E+00	2.94E-01	2.54E-01	3.21E-01	2.79E-01	1.03E+02
TEENAGE	TOTALS	6.40E+00	3.45E-01	2.58E-01	2.87E-01	2.70E-01	1.03E+02
ADULT	TOTALS	6.40E+00	3.41E-01	2.64E-01	2.88E-01	2.72E-01	1.03E+02

NUMBER 6 NAME=Casper X= -31.0KM, Y= -50.0KM, Z= 0.0M, DIST= 58.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.89E-01	6.80E-02	3.80E-02	2.08E-01	1.02E-01	4.09E+00
CHILD	TOTALS	2.86E-01	9.04E-02	4.52E-02	1.21E-01	7.38E-02	4.09E+00
TEENAGE	TOTALS	2.88E-01	1.47E-01	5.02E-02	8.26E-02	6.27E-02	4.09E+00
ADULT	TOTALS	2.89E-01	1.43E-01	5.65E-02	8.35E-02	6.52E-02	4.09E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Douglas X= 25.8KM, Y= -42.0KM, Z= 0.0M, DIST= 49.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.68E-01	1.27E-01	7.19E-02	3.86E-01	1.90E-01	8.10E+00
CHILD	TOTALS	5.63E-01	1.69E-01	8.53E-02	2.25E-01	1.38E-01	8.10E+00
TEENAGE	TOTALS	5.66E-01	2.73E-01	9.44E-02	1.54E-01	1.17E-01	8.10E+00
ADULT	TOTALS	5.68E-01	2.66E-01	1.06E-01	1.56E-01	1.22E-01	8.10E+00

NUMBER 8 NAME=Glenrock X= -30.6KM, Y= -14.1KM, Z= 0.0M, DIST= 33.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.44E-01	1.21E-01	7.66E-02	3.30E-01	1.72E-01	9.35E+00
CHILD	TOTALS	6.40E-01	1.55E-01	8.74E-02	2.00E-01	1.30E-01	9.35E+00
TEENAGE	TOTALS	6.43E-01	2.39E-01	9.49E-02	1.43E-01	1.13E-01	9.35E+00
ADULT	TOTALS	6.44E-01	2.33E-01	1.04E-01	1.44E-01	1.17E-01	9.35E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Midwest X= -46.4KM, Y= 30.4KM, Z= 0.0M, DIST= 55.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.32E-01	8.30E-02	4.43E-02	2.64E-01	1.27E-01	4.68E+00
CHILD	TOTALS	3.29E-01	1.12E-01	5.36E-02	1.51E-01	9.04E-02	4.68E+00
TEENAGE	TOTALS	3.31E-01	1.85E-01	6.00E-02	1.02E-01	7.60E-02	4.68E+00
ADULT	TOTALS	3.32E-01	1.80E-01	6.81E-02	1.03E-01	7.94E-02	4.68E+00

NUMBER 10 NAME=Wright X= 68.5KM, Y= 16.7KM, Z= 0.0M, DIST= 70.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	9.18E-01	2.26E-01	1.21E-01	7.23E-01	3.47E-01	1.30E+01
CHILD	TOTALS	9.08E-01	3.06E-01	1.46E-01	4.13E-01	2.47E-01	1.30E+01
TEENAGE	TOTALS	9.15E-01	5.07E-01	1.63E-01	2.78E-01	2.07E-01	1.30E+01
ADULT	TOTALS	9.18E-01	4.93E-01	1.86E-01	2.81E-01	2.17E-01	1.30E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Gillette X= 125.5KM, Y= 16.0KM, Z= 0.0M, DIST= 126.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.61E-01	1.63E-01	6.76E-02	6.18E-01	2.74E-01	6.23E+00
CHILD	TOTALS	4.52E-01	2.36E-01	9.01E-02	3.34E-01	1.82E-01	6.23E+00
TEENAGE	TOTALS	4.57E-01	4.20E-01	1.06E-01	2.11E-01	1.46E-01	6.23E+00
ADULT	TOTALS	4.60E-01	4.07E-01	1.26E-01	2.14E-01	1.54E-01	6.23E+00

Program execution time = 4.73 seconds

APPENDIX B MILDOS PRINTOUT

Appendix	Receptor	Source	Source	Source	Weather
B12	RR	RR Satellite stack222 gpm	Total SR		Glenwood Coal

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METSET: DATA: RR2srPGS.MIL 12/08/11

JOINT FREQUENCY IN PERCENT, DIRECTION INDICATES WHERE WIND IS FROM FREQWS=0.03074,0.13967,0.25186,0.31047,0.14539,0.12191

MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTALS
STABILITY CLASS 1																	
1.5	0.0260	0.0150	0.0260	0.0300	0.0230	0.0310	0.0240	0.0270	0.0260	0.0480	0.0450	0.0480	0.0450	0.0550	0.0460	0.0370	0.5520
5.5	0.1660	0.1160	0.1360	0.1170	0.1480	0.1220	0.1050	0.1430	0.1670	0.2070	0.2300	0.2160	0.1700	0.1700	0.2160	0.2220	2.6510
10.0	0.1590	0.1280	0.1090	0.0690	0.1270	0.1010	0.0930	0.1100	0.0890	0.1120	0.2040	0.2270	0.2470	0.1820	0.1890	0.1270	2.2730
15.5	0.0170	0.0150	0.0010	0.0080	0.0060	0.0140	0.0140	0.0100	0.0220	0.0240	0.0450	0.0600	0.0690	0.0300	0.0400	0.0170	0.3920
21.5	0.0010	0.0000	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000	0.0030	0.0000	0.0010	0.0060	0.0090	0.0010	0.0010	0.0030	0.0280
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0010	0.0010	0.0010	0.0060
ALL	0.3690	0.2740	0.2730	0.2250	0.3050	0.2680	0.2360	0.2900	0.3070	0.3910	0.5250	0.5570	0.5430	0.4390	0.4930	0.4070	5.9020
STABILITY CLASS 2																	
1.5	0.0030	0.0030	0.0060	0.0050	0.0080	0.0090	0.0060	0.0040	0.0100	0.0120	0.0230	0.0220	0.0170	0.0140	0.0120	0.0040	0.1580
5.5	0.0240	0.0260	0.0120	0.0180	0.0260	0.0180	0.0260	0.0390	0.0370	0.0480	0.0590	0.0510	0.0540	0.0370	0.0440	0.0270	0.5460
10.0	0.0950	0.0850	0.0490	0.0570	0.0490	0.0840	0.0750	0.0410	0.0310	0.0660	0.1160	0.1300	0.1680	0.0960	0.0940	0.1100	1.3460
15.5	0.0390	0.0190	0.0090	0.0090	0.0240	0.0240	0.0300	0.0230	0.0210	0.0580	0.1190	0.1670	0.1770	0.1000	0.0720	0.0600	0.9510
21.5	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0040	0.0190	0.0210	0.0190	0.0100	0.0040	0.0050	0.0880
28.0	0.0080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0000	0.0050	0.0050	0.0080	0.0000	0.0000	0.0000	0.0270
ALL	0.1720	0.1330	0.0760	0.0890	0.1070	0.1350	0.1380	0.1080	0.1010	0.1880	0.3410	0.3960	0.4430	0.2570	0.2260	0.2060	3.1160
STABILITY CLASS 3																	
1.5	0.0090	0.0030	0.0030	0.0080	0.0080	0.0030	0.0080	0.0090	0.0100	0.0130	0.0260	0.0260	0.0220	0.0120	0.0130	0.0060	0.1790
5.5	0.0320	0.0300	0.0150	0.0280	0.0440	0.0450	0.0540	0.0450	0.0660	0.0750	0.0910	0.0890	0.0800	0.0500	0.0480	0.0580	0.8500
10.0	0.1540	0.0990	0.0890	0.0620	0.0870	0.0940	0.1170	0.0620	0.0510	0.1040	0.1890	0.2470	0.1640	0.1210	0.1310	0.1400	1.9110
15.5	0.2970	0.1180	0.0440	0.0400	0.0810	0.1320	0.1310	0.0450	0.0420	0.0910	0.2970	0.5110	0.4410	0.2760	0.2090	0.1610	2.9160
21.5	0.1350	0.0010	0.0000	0.0010	0.0000	0.0030	0.0060	0.0030	0.0100	0.0370	0.1430	0.2260	0.1590	0.0670	0.0490	0.0370	0.8770
28.0	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010	0.0010	0.0010	0.0060	0.0270	0.0590	0.0350	0.0150	0.0090	0.0130	0.2660
ALL	0.7260	0.2510	0.1510	0.1390	0.2200	0.2770	0.3170	0.1650	0.1800	0.3260	0.7730	1.1580	0.9010	0.5410	0.4590	0.4150	6.9990
STABILITY CLASS 4																	
1.5	0.0320	0.0130	0.0140	0.0330	0.0330	0.0270	0.0080	0.0350	0.0400	0.0750	0.0820	0.1070	0.0680	0.0530	0.0670	0.0400	0.7270
5.5	0.2580	0.1340	0.1190	0.1120	0.1900	0.2020	0.2380	0.2580	0.3350	0.4450	0.5610	0.6240	0.5670	0.4120	0.3750	0.2470	5.0770
10.0	0.9510	0.5450	0.4970	0.5500	0.9570	0.9030	0.5670	0.3530	0.3250	0.5790	0.9490	1.5660	1.3770	0.7630	0.7230	0.6410	12.2460
15.5	2.5400	1.6110	1.0150	1.1070	2.1890	2.1490	0.8790	0.2450	0.1660	0.5230	1.7420	5.0360	3.8480	1.3140	1.0430	1.3810	26.7880
21.5	1.4800	0.4950	0.1610	0.1410	0.4030	0.5910	0.3840	0.0760	0.0390	0.1320	1.3820	4.3940	2.2880	0.5010	0.3650	0.7140	13.5460
28.0	1.0500	0.2030	0.0260	0.0260	0.0750	0.2810	0.1190	0.0220	0.0080	0.0780	2.1670	5.3950	1.3820	0.2440	0.1750	0.6410	11.8920
ALL	6.3110	3.0010	1.8320	1.9690	3.8470	4.1530	2.1950	0.9890	0.9130	1.8320	6.8830	17.1220	9.5300	3.2870	2.7480	3.6640	70.2760
STABILITY CLASS 5																	
1.5	0.0300	0.0140	0.0190	0.0190	0.0490	0.0370	0.0260	0.0390	0.0550	0.0820	0.0720	0.0890	0.0600	0.0460	0.0280	0.0310	0.6960
5.5	0.1430	0.1410	0.1530	0.1640	0.2570	0.1590	0.1400	0.2830	0.4250	0.4330	0.3980	0.2980	0.2240	0.1990	0.2180	0.1840	3.8190
10.0	0.3130	0.4460	0.4430	0.6860	1.1880	0.6090	0.3760	0.3520	0.3760	0.3800	0.4200	0.4030	0.4240	0.2650	0.3730	0.3560	7.4100
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.4860	0.6010	0.6150	0.8690	1.4940	0.8050	0.5420	0.6740	0.8560	0.8950	0.8900	0.7900	0.7080	0.5100	0.6190	0.5710	11.9250
STABILITY CLASS 6																	
1.5	0.0330	0.0270	0.0360	0.0500	0.0450	0.0390	0.0400	0.0420	0.0410	0.0390	0.0680	0.0710	0.0720	0.0770	0.0510	0.0310	0.7620
5.5	0.0400	0.0500	0.0460	0.0670	0.0770	0.0540	0.0530	0.0460	0.0670	0.0540	0.0600	0.1030	0.1030	0.0770	0.0680	0.0590	1.0240
10.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
28.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ALL	0.0730	0.0770	0.0820	0.1170	0.1220	0.0930	0.0930	0.0880	0.1080	0.0930	0.1280	0.1740	0.1750	0.1540	0.1190	0.0900	1.7860
ALL	8.1370	4.3370	3.0290	3.4080	6.0950	5.7310	3.5210	2.3140	2.4650	3.7250	9.5400	20.1970	12.3000	5.1880	4.6640	5.3530	100.0040

INDIVIDUAL RECEPTOR LOCATION DATA, 11 LOCATIONS INPUT THIS RUN

I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE	I	LOCATION NAMES	X(KM)	Y(KM)	Z(M)	DIST(KM)	TYPE
1	North Boundary	1.38	1.04	0.00	1.73	1	7	Douglas	25.80	-42.00	0.00	49.29	1
2	South Boundary	0.92	-4.60	0.00	4.69	1	8	Glenrock	-30.60	-14.10	0.00	33.69	1
3	East Boundary	3.22	0.46	0.00	3.25	1	9	Midwest	-46.40	30.40	0.00	55.47	1
4	West Boundary	-0.28	-0.60	0.00	0.66	1	10	Wright	68.50	16.70	0.00	70.51	1
5	Duck Creek Ranch	0.60	-3.70	0.00	3.75	1	11	Gillette	125.50	16.00	0.00	126.52	1
6	Casper	-31.00	-50.00	0.00	58.83	1							

MISCELLANEOUS INPUTABLE PARAMETER VALUES

DMM	DMA	TSTART	FFORI	FHAYI	FFORP	FHAYP	FPR(1)	FPR(2)	FPR(3)	ACTRAT
100.0	100.0	2011.00	0.50	0.50	0.50	0.50	0.00	0.00	0.00	2.50

IPACT EQUALS 0,

JC EQUALS 0, 0, 0, 0, 0, 0, 1, 0, 0, 0

TIME STEP DATA....	STEP NAMES	LENGTH, YRS	IFTODO
1		5.00	1

XRHO EQUALS 1.5, 2.5, 3.5, 4.5, 7.5, 15.0, 25.0, 35.0, 45.0, 55.0, 65.0, 75.0,

HDP EQUALS 50.0

POPULATION DISTRIBUTION

KILOMETERS	N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5
1.0- 2.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0- 3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0- 4.0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
4.0- 5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.0-10.0	0	0	0	0	4	0	4	0	0	0	4	0	4	0	4	0
10.0-20.0	4	0	0	0	0	0	8	0	4	0	10	0	8	0	4	0
20.0-30.0	4	0	4	0	4	0	10	0	10	0	20	0	8	0	4	0
30.0-40.0	4	0	4	0	4	0	100	0	8	0	3000	0	10	0	8	0
40.0-50.0	4	0	4	0	4	0	5300	0	10	0	2500	0	10	0	10	0
50.0-60.0	4	0	4	0	4	0	100	0	10	0	50000	0	10	0	10	0
60.0-70.0	4	0	4	0	4	0	50	0	8	0	1000	0	10	0	10	0
70.0-80.0	4	0	8	0	4	0	10	0	4	0	100	0	8	0	10	0
1.0-80.0	28	0	28	0	28	0	5582	0	54	0	56638	0	68	0	60	0

TOTAL 1-80 KM POPULATION IS 62486 PERSONS

NUMBER OF SOURCES= 1

NO.	KM X	KM Y	M Z	KM2 AREA	U-238	Th-230	CI/YEAR Ra-226	Pb-210	Rn-222	ID	PSIZE SET	M/SEC EXIT VEL	SOURCE NAME
1	0.00	0.00	10.00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.24E+04	1001	1	1.00E+01	Satellite

INPUT TAILS ACTIVITIES, PCI/G

SET	URANIUM	THORIUM	RADIUM	LEAD
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AMAD AND FRACTIONAL DISTRIBUTION

SET	1.5	3.0	7.7	54.0
1	0.000	1.000	0.000	0.000
2	1.000	0.000	0.000	0.000
3	0.000	0.000	0.300	0.700

PARTICULATE SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

RADON SOURCE STRENGTH MULTIPLIERS BY TIME STEP, 1 TIME STEP(S) USED FOR THIS RUN

SOURCE NUMBER	TSTEP 1 5.00YRS	TSTEP 2 5.00YRS	TSTEP 3 5.00YRS	TSTEP 4 5.00YRS	TSTEP 5 5.00YRS	TSTEP 6 5.00YRS	TSTEP 7 5.00YRS	TSTEP 8 5.00YRS	TSTEP 9 5.00YRS	TSTEP10 5.00YRS
1	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

SUMMARY PRINT OF POPULATION DOSES COMPUTED FOR TSTEP 1--DOSES SHOWN ARE ANNUAL POPULATION DOSE COMMITMENTS, PERSON-REM PER YEAR

DOSES RECEIVED BY PEOPLE WITHIN 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.231E-01	2.618E+00	4.066E-02	1.963E+00	9.437E-01	2.659E+02
GROUND	3.364E-02	3.364E-02	3.364E-02	3.364E-02	3.364E-02	3.364E-02
CLOUD	2.221E+00	2.221E+00	2.221E+00	2.221E+00	2.221E+00	2.221E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TOTALS	2.578E+00	4.872E+00	2.295E+00	4.218E+00	3.198E+00	2.682E+02

DOSES RECEIVED BY PEOPLE BEYOND 80 KILOMETERS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GROUND	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CLOUD	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.851E+02	3.888E+03	6.480E+01	2.851E+02	2.851E+02	1.814E+03
TOTALS	2.851E+02	3.888E+03	6.480E+01	2.851E+02	2.851E+02	1.814E+03

TOTAL DOSES COMPUTED OVER ALL POPULATIONS

PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INHAL.	3.231E-01	2.618E+00	4.066E-02	1.963E+00	9.437E-01	2.659E+02
GROUND	3.364E-02	3.364E-02	3.364E-02	3.364E-02	3.364E-02	3.364E-02
CLOUD	2.221E+00	2.221E+00	2.221E+00	2.221E+00	2.221E+00	2.221E+00
VEG. ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MEAT ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MILK ING	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RNPLUS50	2.851E+02	3.888E+03	6.480E+01	2.851E+02	2.851E+02	1.814E+03
TOTALS	2.877E+02	3.893E+03	6.710E+01	2.893E+02	2.883E+02	2.083E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 1 NAME=North Boundary X= 1.4KM, Y= 1.0KM, Z= 0.0M, DIST= 1.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.56E+01	5.16E-01	5.03E-01	5.75E-01	5.30E-01	7.53E+02
CHILD	TOTALS	4.56E+01	5.25E-01	5.06E-01	5.38E-01	5.18E-01	7.53E+02
TEENAGE	TOTALS	4.56E+01	5.49E-01	5.08E-01	5.22E-01	5.13E-01	7.53E+02
ADULT	TOTALS	4.56E+01	5.47E-01	5.11E-01	5.22E-01	5.14E-01	7.53E+02

NUMBER 2 NAME=South Boundary X= 0.9KM, Y= -4.6KM, Z= 0.0M, DIST= 4.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.21E+00	2.26E-01	2.07E-01	3.17E-01	2.48E-01	1.00E+02
CHILD	TOTALS	6.21E+00	2.41E-01	2.12E-01	2.60E-01	2.30E-01	1.00E+02
TEENAGE	TOTALS	6.21E+00	2.78E-01	2.15E-01	2.36E-01	2.23E-01	1.00E+02
ADULT	TOTALS	6.21E+00	2.75E-01	2.19E-01	2.36E-01	2.25E-01	1.00E+02

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 3 NAME=East Boundary X= 3.2KM, Y= 0.5KM, Z= 0.0M, DIST= 3.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.03E+01	5.07E-01	4.77E-01	6.46E-01	5.41E-01	3.31E+02
CHILD	TOTALS	2.03E+01	5.29E-01	4.84E-01	5.59E-01	5.12E-01	3.31E+02
TEENAGE	TOTALS	2.03E+01	5.85E-01	4.89E-01	5.21E-01	5.01E-01	3.31E+02
ADULT	TOTALS	2.03E+01	5.81E-01	4.95E-01	5.22E-01	5.04E-01	3.31E+02

NUMBER 4 NAME=West Boundary X= -0.3KM, Y= -0.6KM, Z= 0.0M, DIST= 0.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	6.30E+01	9.91E-02	9.88E-02	1.00E-01	9.93E-02	1.05E+03
CHILD	TOTALS	6.30E+01	9.92E-02	9.89E-02	9.94E-02	9.91E-02	1.05E+03
TEENAGE	TOTALS	6.30E+01	9.96E-02	9.89E-02	9.92E-02	9.90E-02	1.05E+03
ADULT	TOTALS	6.30E+01	9.96E-02	9.90E-02	9.92E-02	9.90E-02	1.05E+03

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 5 NAME=Duck Creek Ranch X= 0.6KM, Y= -3.7KM, Z= 0.0M, DIST= 3.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.25E+00	2.33E-01	2.17E-01	3.04E-01	2.50E-01	1.34E+02
CHILD	TOTALS	8.25E+00	2.44E-01	2.21E-01	2.60E-01	2.35E-01	1.34E+02
TEENAGE	TOTALS	8.25E+00	2.73E-01	2.23E-01	2.40E-01	2.30E-01	1.34E+02
ADULT	TOTALS	8.25E+00	2.71E-01	2.27E-01	2.40E-01	2.31E-01	1.34E+02

NUMBER 6 NAME=Casper X= -31.0KM, Y= -50.0KM, Z= 0.0M, DIST= 58.8KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	2.80E-01	6.58E-02	3.70E-02	2.01E-01	9.86E-02	3.97E+00
CHILD	TOTALS	2.78E-01	8.73E-02	4.39E-02	1.17E-01	7.13E-02	3.97E+00
TEENAGE	TOTALS	2.79E-01	1.42E-01	4.87E-02	7.98E-02	6.07E-02	3.97E+00
ADULT	TOTALS	2.80E-01	1.38E-01	5.48E-02	8.07E-02	6.31E-02	3.97E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 7 NAME=Douglas X= 25.8KM, Y= -42.0KM, Z= 0.0M, DIST= 49.3KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.94E-01	1.16E-01	6.38E-02	3.62E-01	1.76E-01	7.00E+00
CHILD	TOTALS	4.89E-01	1.56E-01	7.65E-02	2.09E-01	1.26E-01	7.00E+00
TEENAGE	TOTALS	4.92E-01	2.55E-01	8.52E-02	1.42E-01	1.07E-01	7.00E+00
ADULT	TOTALS	4.93E-01	2.48E-01	9.62E-02	1.44E-01	1.12E-01	7.00E+00

NUMBER 8 NAME=Glenrock X= -30.6KM, Y= -14.1KM, Z= 0.0M, DIST= 33.7KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	5.00E-01	9.98E-02	6.07E-02	2.82E-01	1.44E-01	7.21E+00
CHILD	TOTALS	4.96E-01	1.29E-01	7.02E-02	1.68E-01	1.07E-01	7.21E+00
TEENAGE	TOTALS	4.98E-01	2.03E-01	7.67E-02	1.19E-01	9.28E-02	7.21E+00
ADULT	TOTALS	4.99E-01	1.97E-01	8.49E-02	1.20E-01	9.62E-02	7.21E+00

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 9 NAME=Midwest X= -46.4KM, Y= 30.4KM, Z= 0.0M, DIST= 55.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	3.82E-01	8.97E-02	5.00E-02	2.75E-01	1.35E-01	5.41E+00
CHILD	TOTALS	3.78E-01	1.19E-01	5.96E-02	1.60E-01	9.73E-02	5.41E+00
TEENAGE	TOTALS	3.80E-01	1.95E-01	6.62E-02	1.09E-01	8.26E-02	5.41E+00
ADULT	TOTALS	3.81E-01	1.89E-01	7.45E-02	1.10E-01	8.60E-02	5.41E+00

NUMBER 10 NAME=Wright X= 68.5KM, Y= 16.7KM, Z= 0.0M, DIST= 70.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	8.83E-01	2.18E-01	1.16E-01	6.94E-01	3.34E-01	1.25E+01
CHILD	TOTALS	8.74E-01	2.94E-01	1.41E-01	3.97E-01	2.37E-01	1.25E+01
TEENAGE	TOTALS	8.80E-01	4.87E-01	1.57E-01	2.67E-01	2.00E-01	1.25E+01
ADULT	TOTALS	8.83E-01	4.73E-01	1.79E-01	2.70E-01	2.08E-01	1.25E+01

TIME STEP NUMBER 1, DURATION IN YRS IS... 5.0

NUMBER 11 NAME=Gillette X= 125.5KM, Y= 16.0KM, Z= 0.0M, DIST= 126.5KM, IRTYPE= 1

40CFR190 ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHILD	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TEENAGE	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADULT	TOTALS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL ANNUAL DOSE COMMITMENTS COMPUTED FOR THIS LOCATION, MREM/YR

AGE	PATHWAY	EFFECTIV	BONE	AVG.LUNG	LIVER	KIDNEY	BRONCHI
INFANT	TOTALS	4.37E-01	1.56E-01	6.43E-02	5.93E-01	2.63E-01	5.91E+00
CHILD	TOTALS	4.29E-01	2.26E-01	8.60E-02	3.21E-01	1.74E-01	5.91E+00
TEENAGE	TOTALS	4.34E-01	4.03E-01	1.01E-01	2.02E-01	1.40E-01	5.91E+00
ADULT	TOTALS	4.37E-01	3.90E-01	1.21E-01	2.05E-01	1.48E-01	5.91E+00

Program execution time = 0.22 seconds