

## **Appendix A. Errata**



# Appendix A. Errata

Errata in the *Oak Ridge Reservation Annual Site Environmental Report for 2006* (DOE/ORO/2233).

In Sect. 5.10.4.2.2, “SNS Site Results,” p. 5-43, second column, second full paragraph, first sentence, “<sup>13</sup>H” should be “<sup>3</sup>H.” The corrected paragraph reads as follows.

Table 5.10 summarizes the mean values for concentrations of <sup>3</sup>H, <sup>14</sup>C, gross alpha activity, and gross beta activities detected over the baseline monitoring period. For comparison, Table 5.11 displays averaged background concentrations of these radionuclides in groundwater in the main campus area of ORNL. Mean tritium and <sup>14</sup>C concentrations at the SNS site were lower during baseline monitoring than the averaged results found in background monitoring wells at ORNL. Likewise, mean <sup>3</sup>H concentrations in samples collected at the SNS site were lower than those reported for mean concentrations of <sup>3</sup>H in background surface water samples at the ORNL main campus area (839.7 pCi/L) (Bechtel National, Inc., 1992). Gross beta and alpha activity mean concentrations in groundwater at the SNS site are slightly higher than the averaged results in background monitoring wells at ORNL (see Table 5.11).

In Table 8.6, under “Melton Hill Lake (CRK 58, Knox County Water Plant),” the total individual EDE should be 0.003. The following table contains the corrected value.

**Table 8.6. Summary of annual maximum individual (mrem) and collective (person-rem) effective dose equivalents (EDEs) from waterborne radionuclides<sup>a,b</sup>**

	Drinking water	Eating fish	Other uses	Total <sup>c</sup>
<b>Upstream of All ORR Discharge Locations (CRK 70 and CRK 66, City of Oak Ridge Water Plant)</b>				
Individual EDE	0.003	0.03	0.000004	0.03
Collective EDE	0.04	0.002	0.000001	0.04
<b>Melton Hill Lake (CRK 58, Knox County Water Plant)</b>				
Individual EDE	0.003	0.00007	0.00005	0.003
Collective EDE	0.04	0.002	0.00001	0.04
<b>Upper Clinch River (CRK 23, Gallaher Water Plant, CRK 32)</b>				
Individual EDE	0.01	0.7	0.00005	0.7
Collective EDE	0.009	0.1	0.00001	0.1
<b>Lower Clinch River (CRK 16)</b>				
Individual EDE	NA <sup>d</sup>	0.08	0.004	0.08
Collective EDE	NA <sup>d</sup>	0.03	0.01	0.04
<b>Upper Watts Bar Lake, Kingston Municipal Water Plant</b>				
Individual EDE	0.02	0.01	0.0006	0.03
Collective EDE	0.2	0.02	0.004	0.3
<b>Lower System (Lower Watts Bar Lake and Chickamauga Lake)</b>				
Individual EDE	0.02	0.01	0.0005	0.03
Collective EDE	2	0.1	0.04	2
<b>Poplar Creek</b>				
Individual EDE	NA <sup>d</sup>	0.3	0.006	0.3
Collective EDE	NA <sup>d</sup>	0.009	2E-7	0.009

<sup>a</sup>1 mrem = 0.01 mSv.

<sup>b</sup>Doses based on measured radionuclide concentrations in water or estimated from measured discharges and known or estimated stream flows.

<sup>c</sup>Rounded difference between individual pathway doses and total.

<sup>d</sup>Not at drinking water supply locations.

In Table 8.7, the millisievert values for dose to the maximally exposed individual from “other activities” and from “eating turkey” were incorrect. The corrected values appear in the following table.

**Table 8.7. Summary of maximum potential radiation dose equivalents to an adult during 2006 and locations of the maximum exposures**

Pathway	Dose to maximally exposed individual		Percentage of DOE mrem/year limit (%)	Estimated population dose		Population within 80 km	Estimated background radiation population dose (person-rem) <sup>a</sup>
	mrem	mSv		person-rem	person-Sv		
Airborne effluents:							
All pathways	0.8	0.008	0.8	18.4	0.184	1,040,041 <sup>b</sup>	
Liquid effluents:							
Drinking water	0.02	0.0002	0.02	2	0.02	369,153 <sup>c</sup>	
Eating fish	0.7	0.007	0.7	0.4	0.004	39,931 <sup>d</sup>	
Other activities	0.004	0.00004	0.004	0.04	0.0004	290,107 <sup>d</sup>	
Eating deer	3	0.03 <sup>e</sup>	3.0	0.2	0.002	284	
Eating geese	0.2	0.002 <sup>f</sup>	0.2	<i>G</i>	<i>g</i>		
Eating turkey	0.04	0.00004 <sup>h</sup>	0.04	0.0008	8E-6	39	
Direct radiation	0.8	0.008 <sup>i</sup>	0.8	0.08	0.0008	100	
All pathways	6	0.06	6	21	0.21	1,040,041	312,012

<sup>a</sup>Estimated background population dose is based on 300 mrem/year individual dose and the population within 80 km of the ORR.

<sup>b</sup>Population based on 2000 census data.

<sup>c</sup>Population estimates based on community and non-community drinking water supply data from the Tennessee Department of Environment and Conservation, Division of Water.

<sup>d</sup>Population estimates based population within 80 km and fraction of fish harvested in Melton Hill, Watts Bar, and Chickamauga reservoirs. Melton Hill recreational information obtained from TVA (TVA 2006).

<sup>e</sup>The maximum EDE from consumption of a deer harvested on the ORR in 2006 and the population dose is based on number of hunters that harvested deer.

<sup>f</sup>From consuming two hypothetical worst-case geese, each a combination of the heaviest goose harvested and the highest measured concentrations of <sup>137</sup>Cs in released geese.

<sup>g</sup>Population doses were not estimated for the consumption of geese since few geese (2) were brought to checking station during the goose hunt.

<sup>h</sup>From consuming two hypothetical worst-case turkey, each a combination of the heaviest turkey harvested and the highest measured concentrations of <sup>137</sup>Cs in released turkey. The population dose is based on the number of released turkeys.

<sup>i</sup>Direct radiation dose estimate based on exposure to a fisherman on Poplar Creek.

