98091711 3-
Part 3

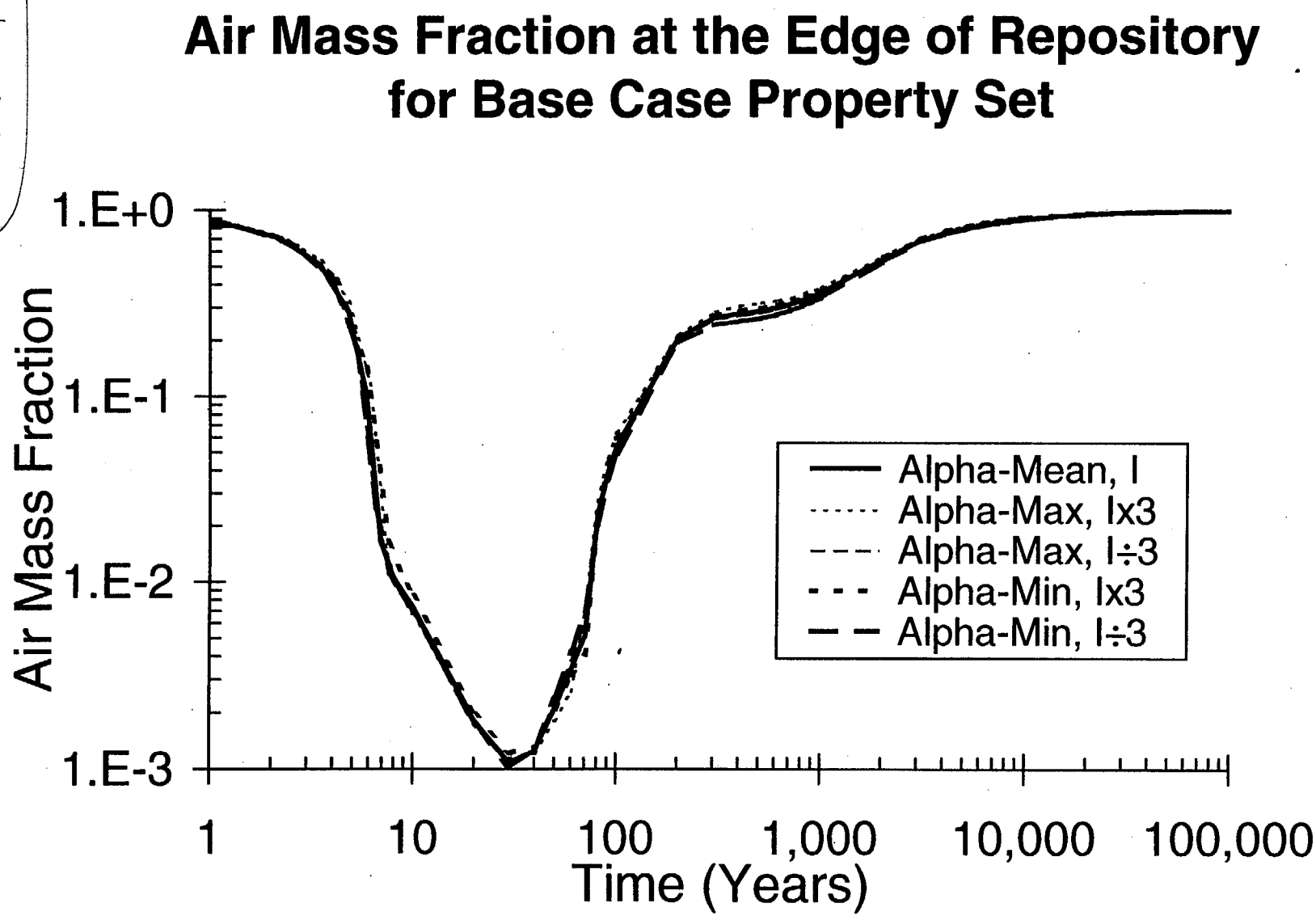


Figure 3-113. Air mass fraction at the edge of the repository for the base case property set at the present day infiltration rate.

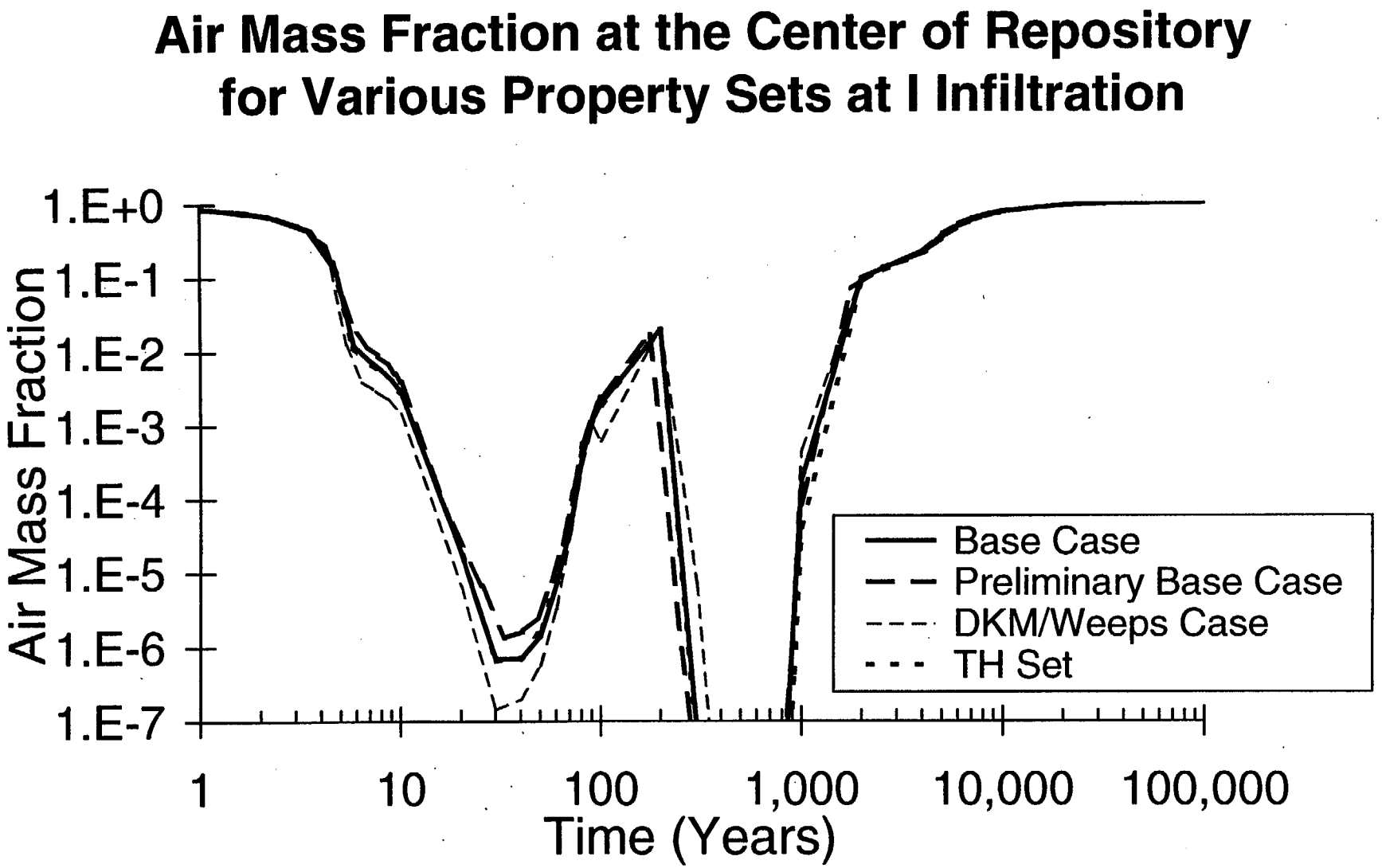


Figure 3-114. Air mass fraction at the center location at nominal I present day infiltration for the base case, preliminary base case, DKM/Weeps and the TH property set.

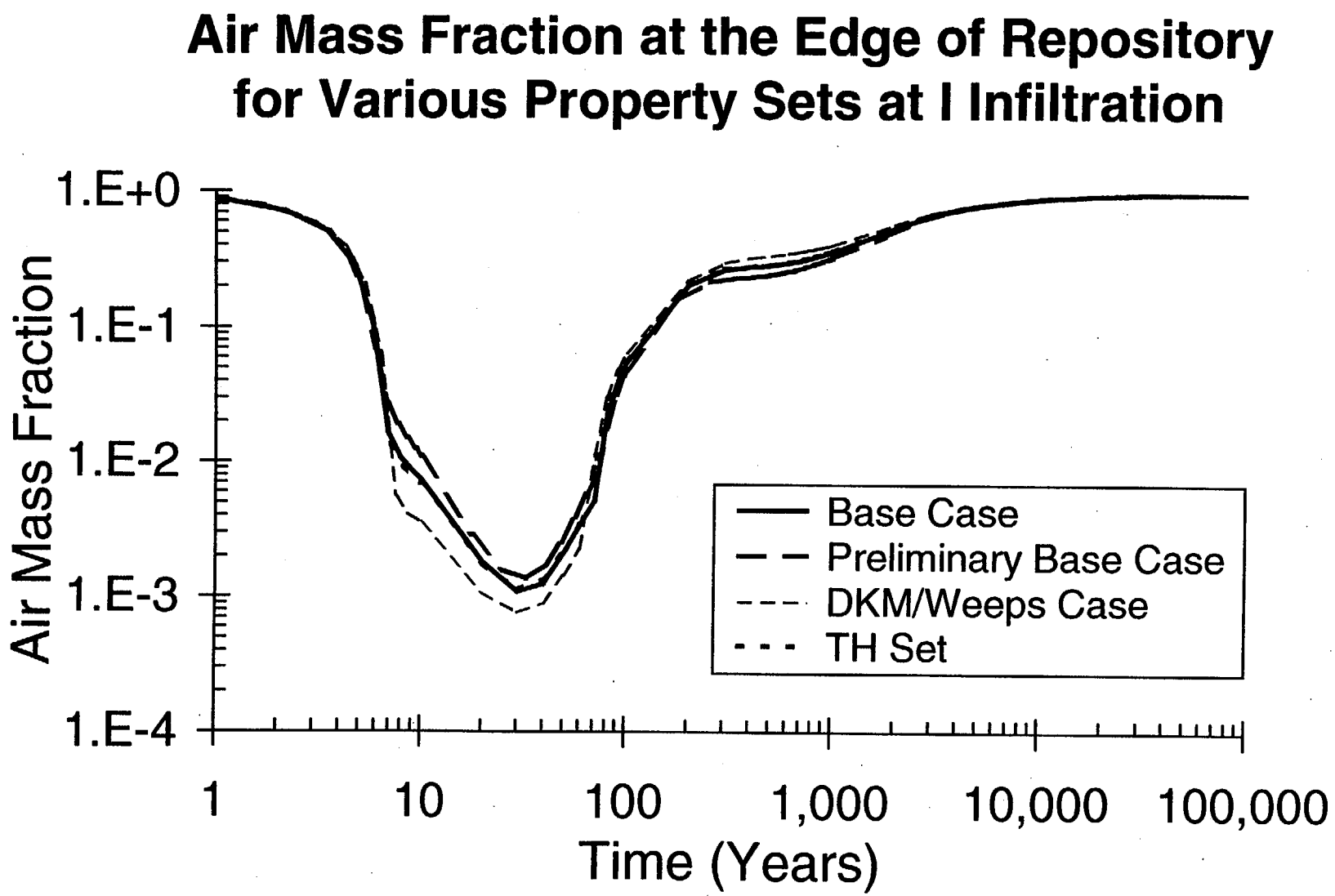


Figure 3-115. Air mass fraction at the edge location at nominal I present day infiltration for the base case, preliminary base case, DKM/Weeps and the TH property set.

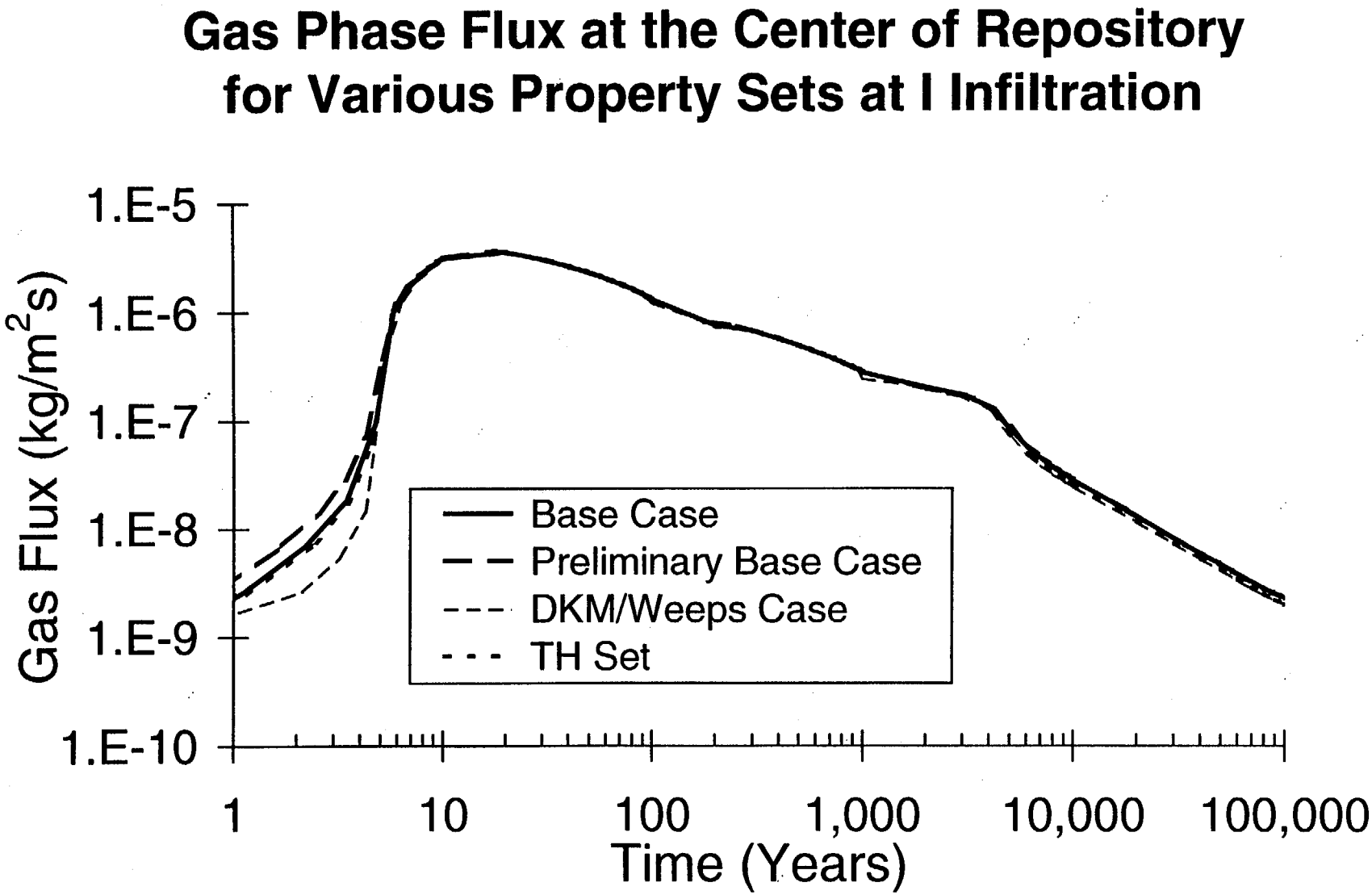


Figure 3-116. Gas flux at the center location at nominal I present day infiltration for the base case, preliminary base case, DKM/Weeps and the TH property set.

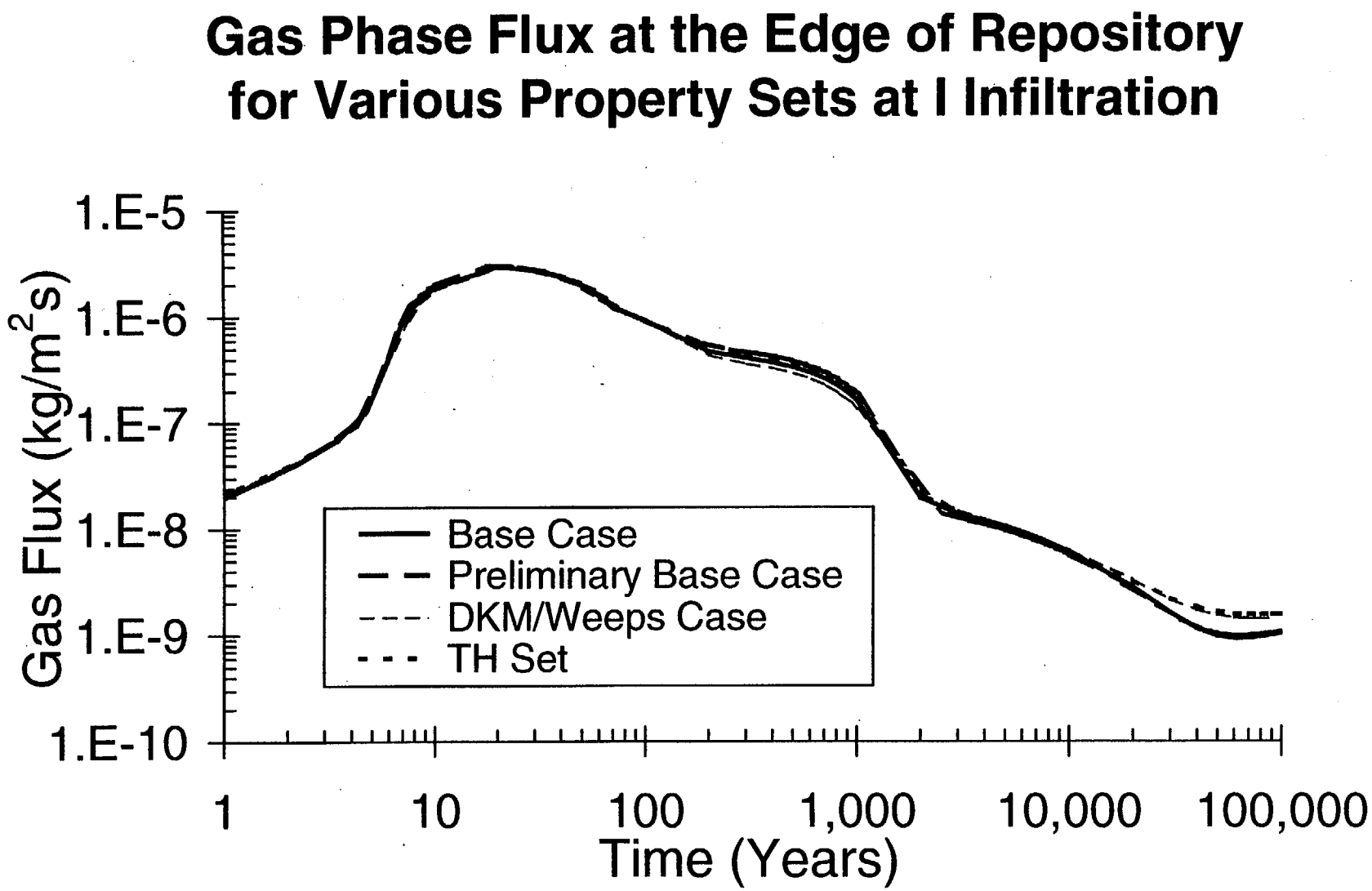


Figure 3-117. Gas flux at the edge location at nominal I present day infiltration for the base case, preliminary base case, DKM/Weeps and the TH property set.

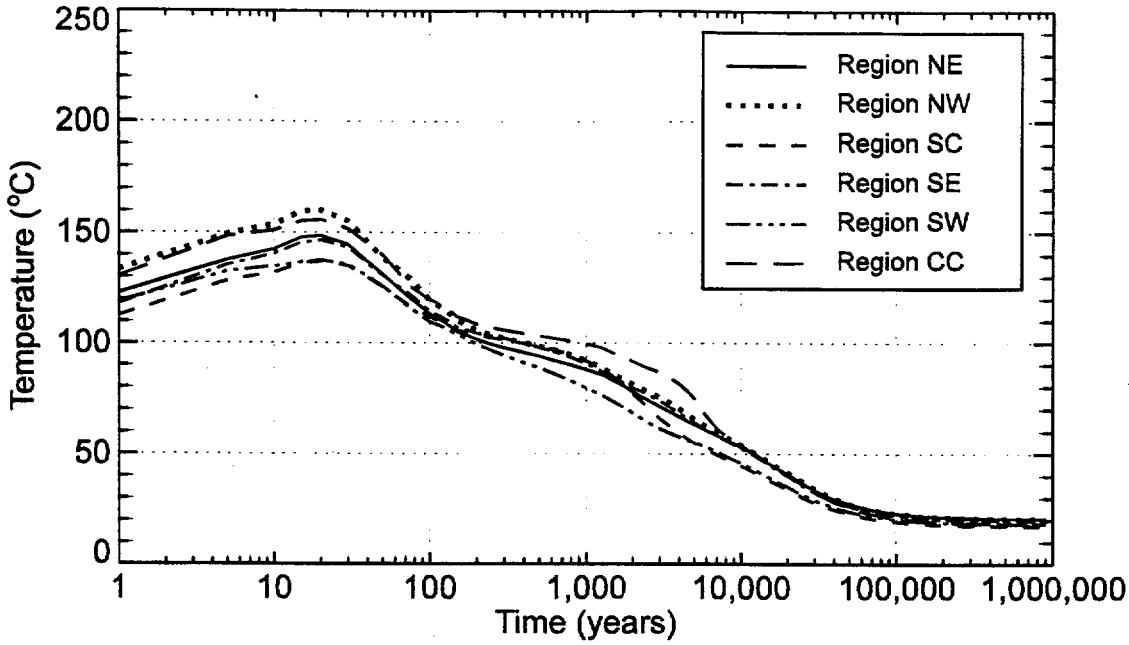


Figure 3-118. Average waste package temperature history for six repository regions (commercial spent fuel, long-term-average climate, mean infiltration, preliminary base case hydrologic properties.

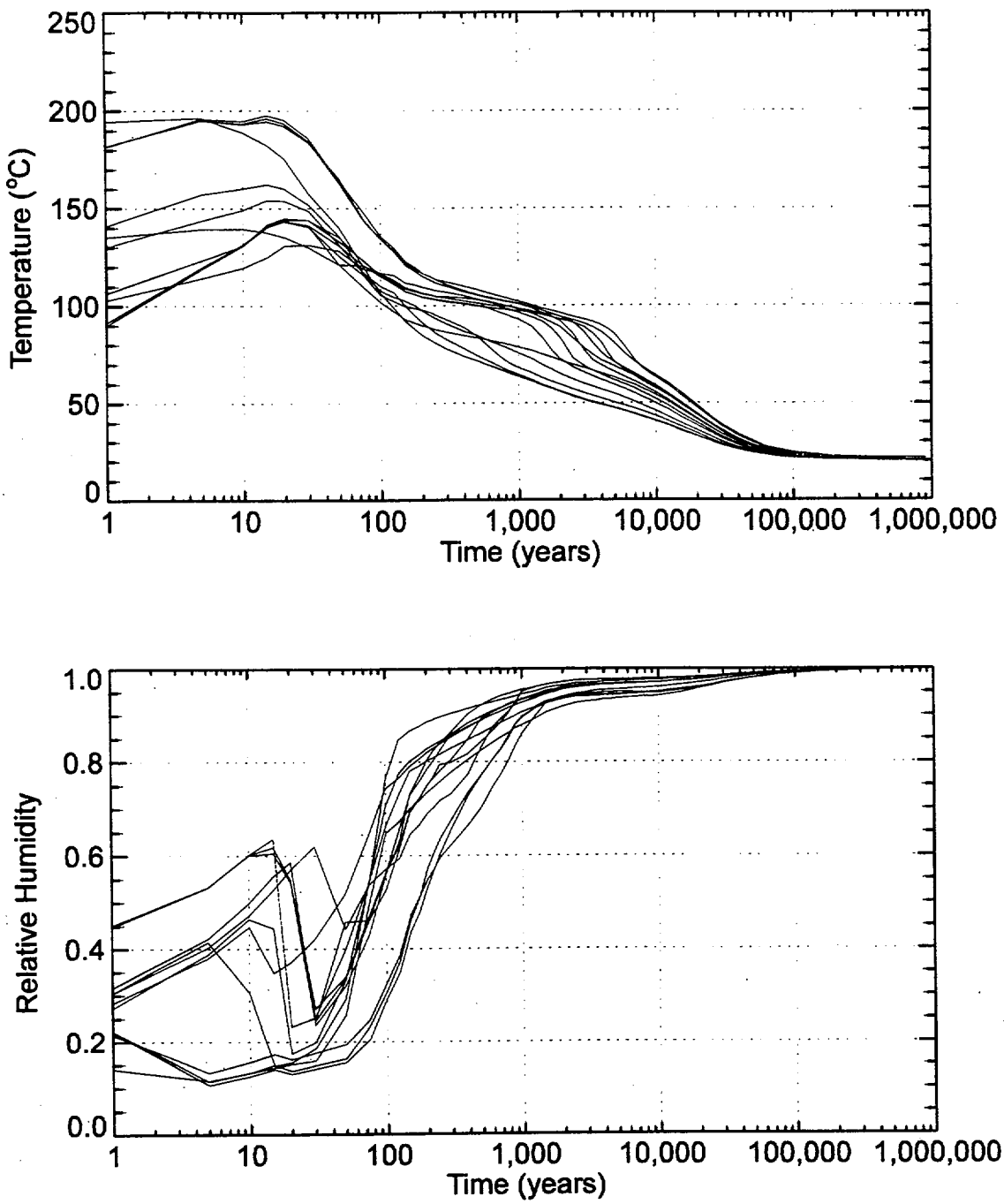


Figure 3-119. Upper figure: variability of temperature history among waste packages (commercial spent fuel, long-term-average climate, mean infiltration, preliminary base case hydrologic properties, region NE). Lower figure: variability of relative humidity history among waste packages (commercial spent fuel, long-term-average climate, mean infiltration, preliminary base case hydrologic properties, region NE).

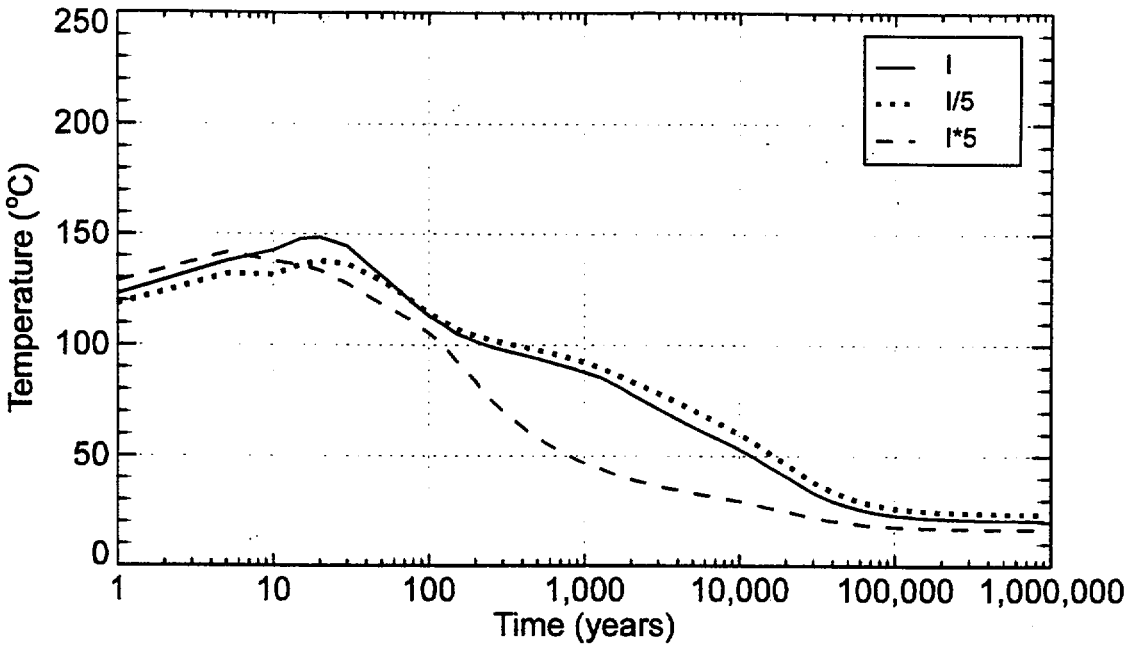


Figure 3-120. Average waste package temperature history for the three preliminary base case hydrologic property sets (commercial spent fuel, long-term-average climate, region NE).

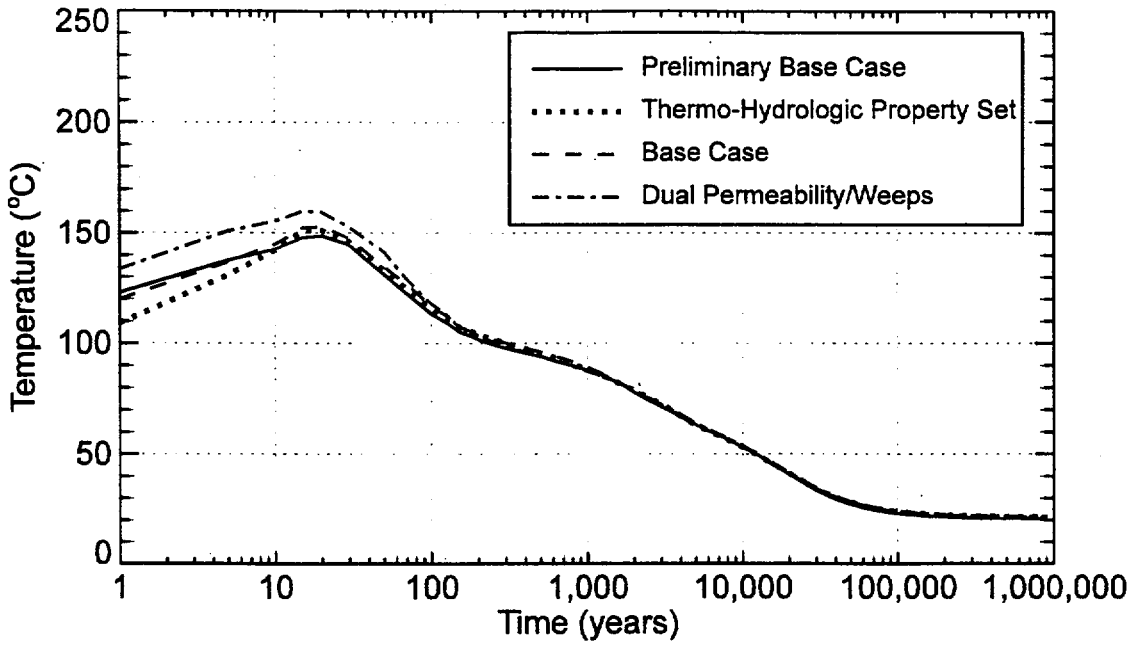


Figure 3-121. Effect of different hydrologic property sets on waste package temperature (commercial spent fuel, long-term-average climate, mean infiltration, region NE).

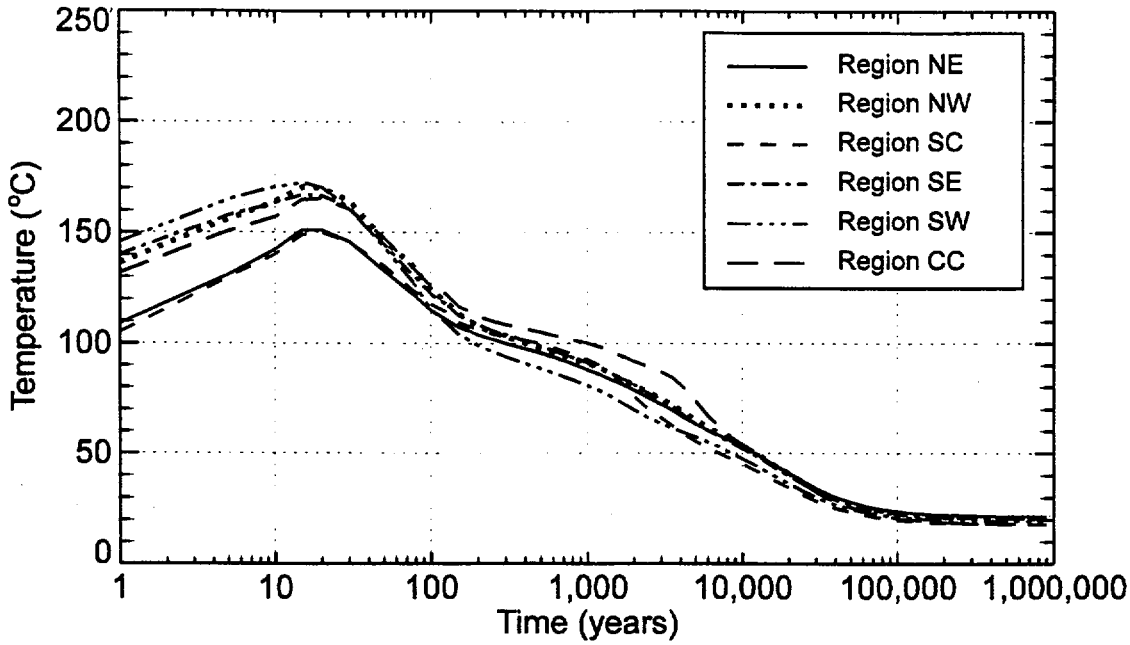


Figure 3-122. Average waste package temperature history for six repository regions (commercial spent fuel, long-term-average climate, mean infiltration, "thermal-hydrologic property set" hydrologic properties).

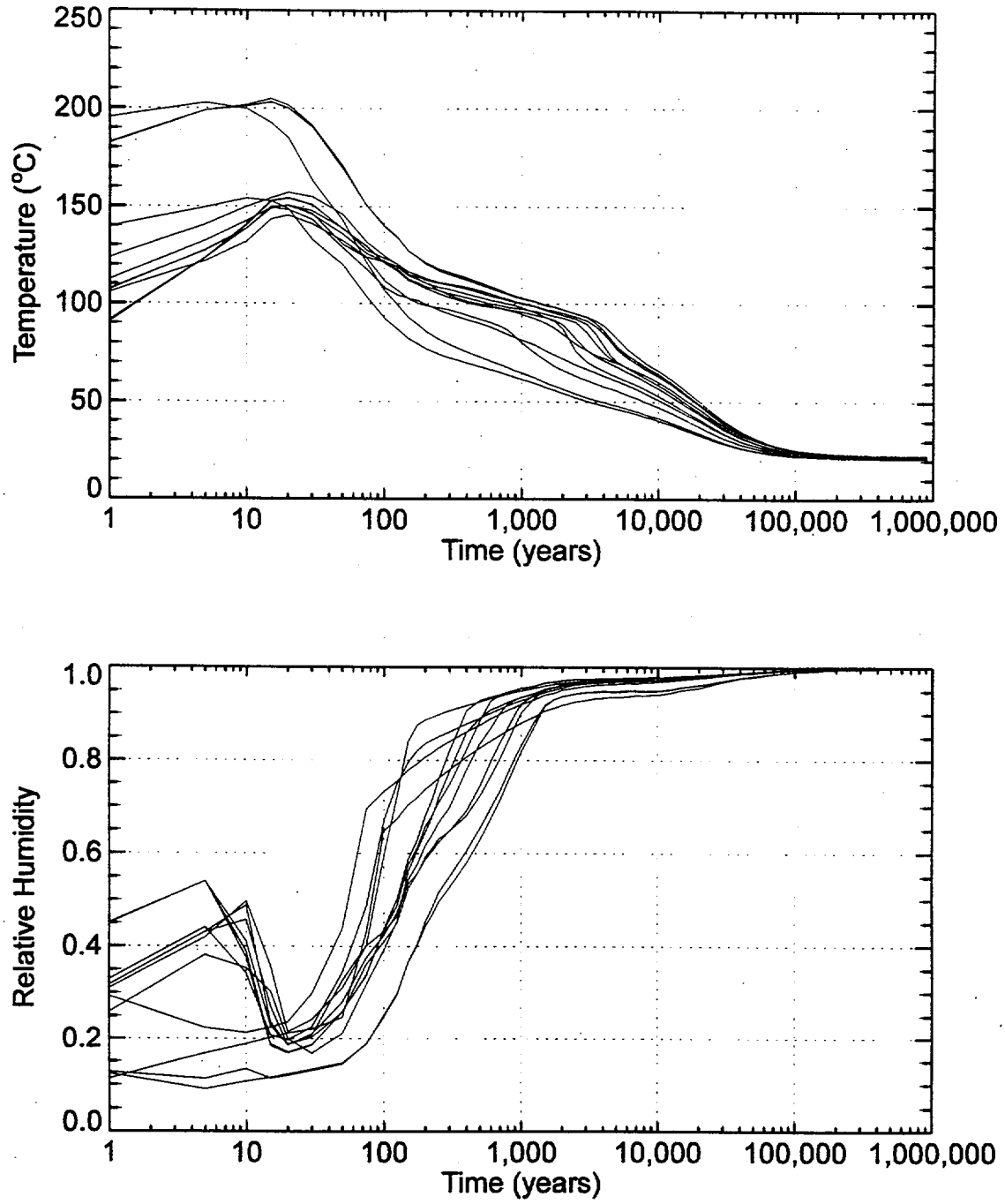
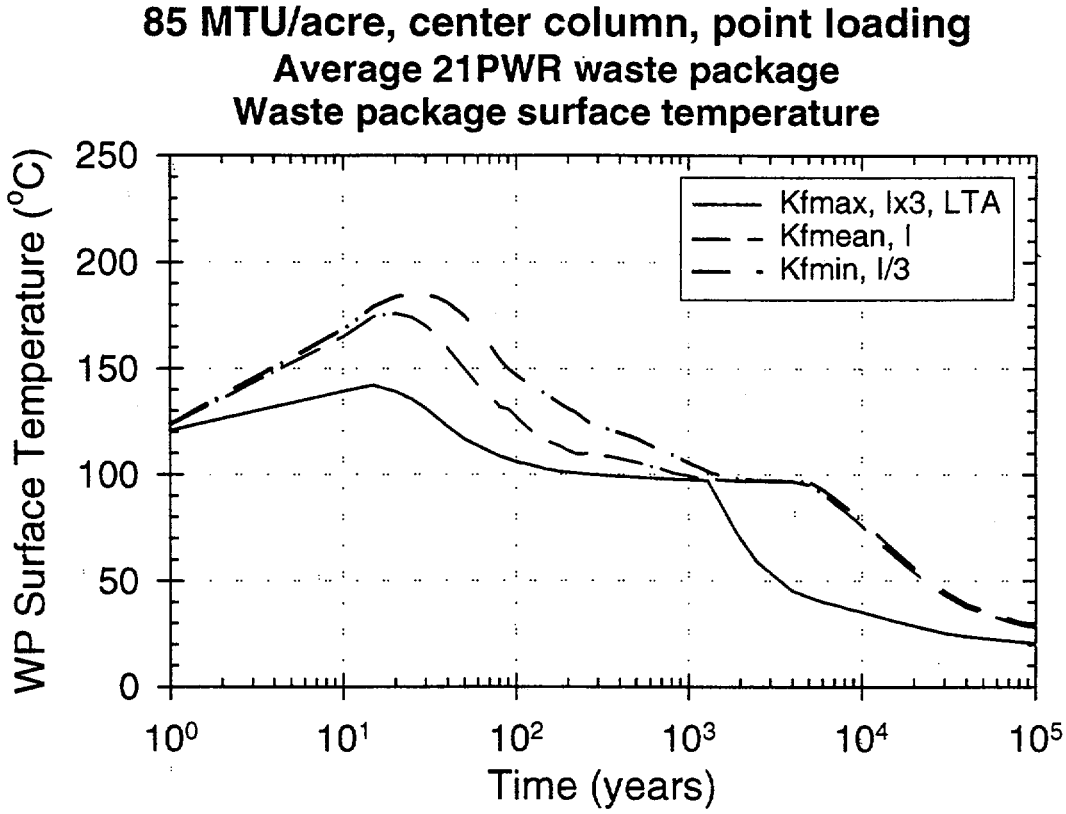


Figure 3-123. Upper figure: variability of temperature history among waste packages (commercial spent fuel, long-term-average climate, mean infiltration, "thermal-hydrologic property set" hydrologic properties, region NE). Lower figure: variability of relative humidity history among waste packages (commercial spent fuel, long-term-average climate, mean infiltration, "thermal-hydrologic property set" hydrologic properties, region NE).



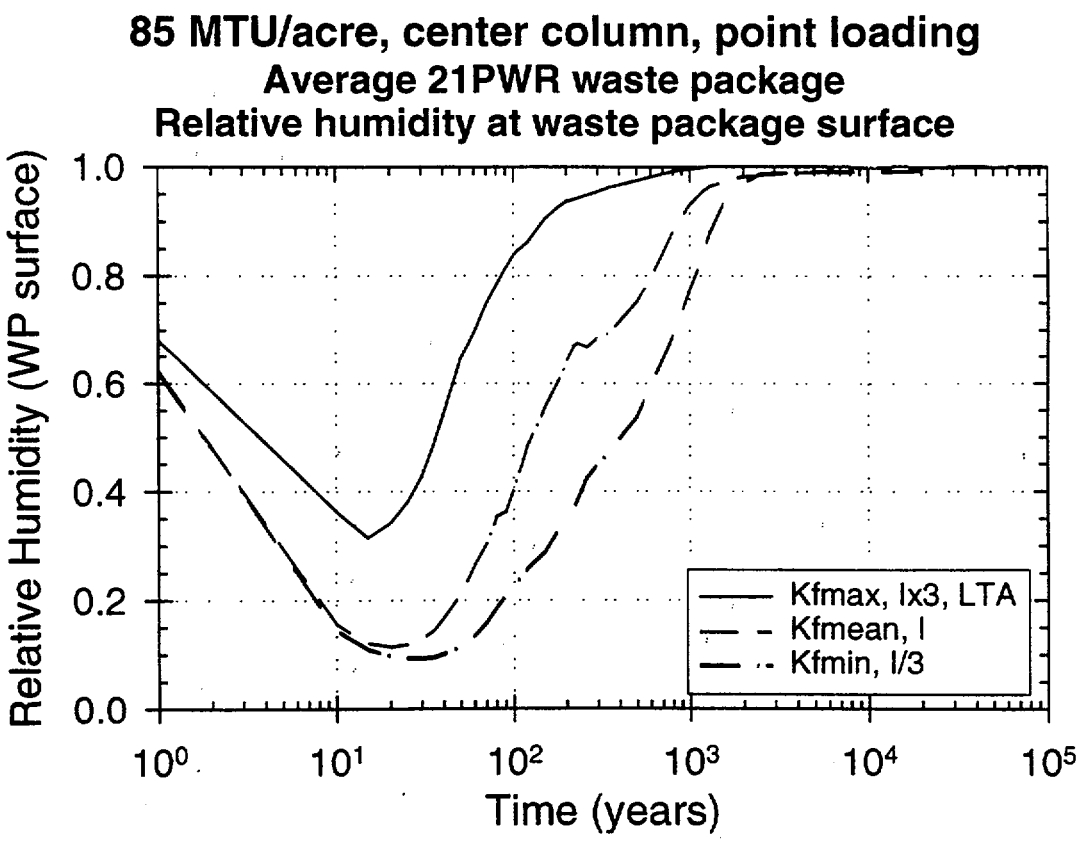
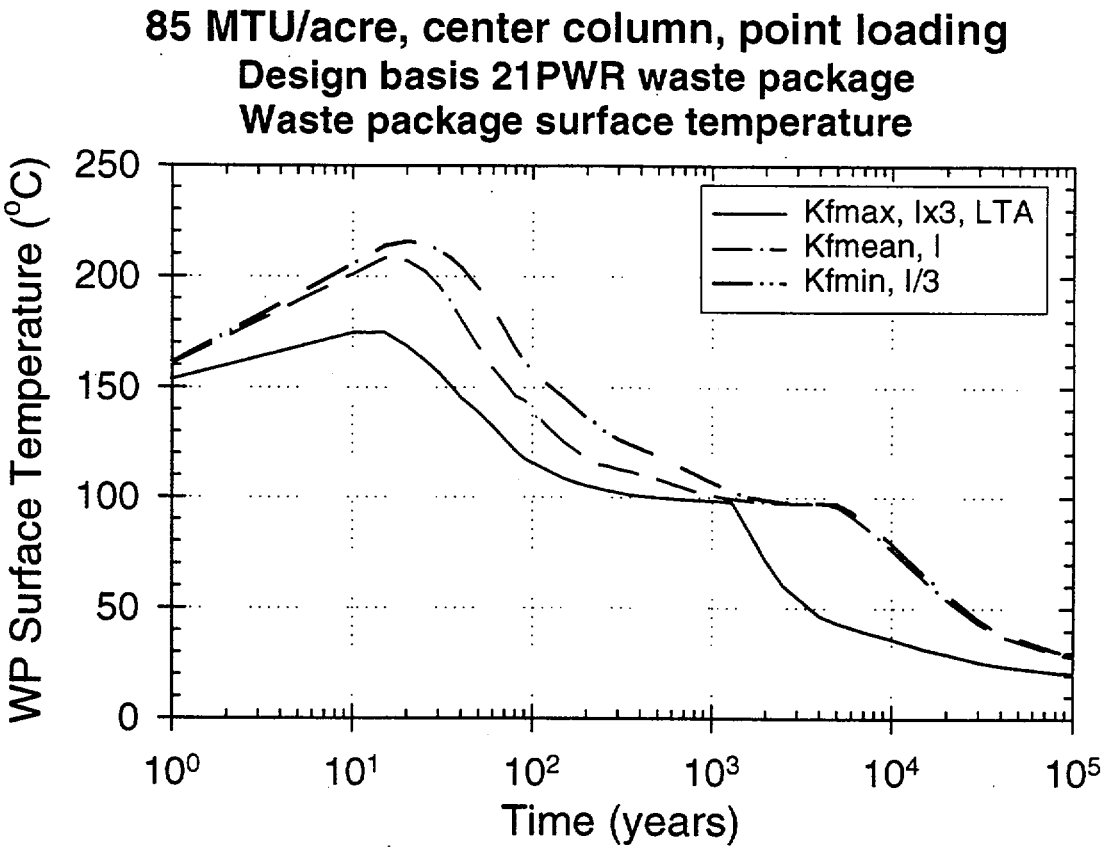


Figure 3-124. Upper figure: maximum variability in waste package surface temperature for the average 21 PWR waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration). Lower figure: maximum variability in waste package surface relative humidity for the average 21 PWR waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration).



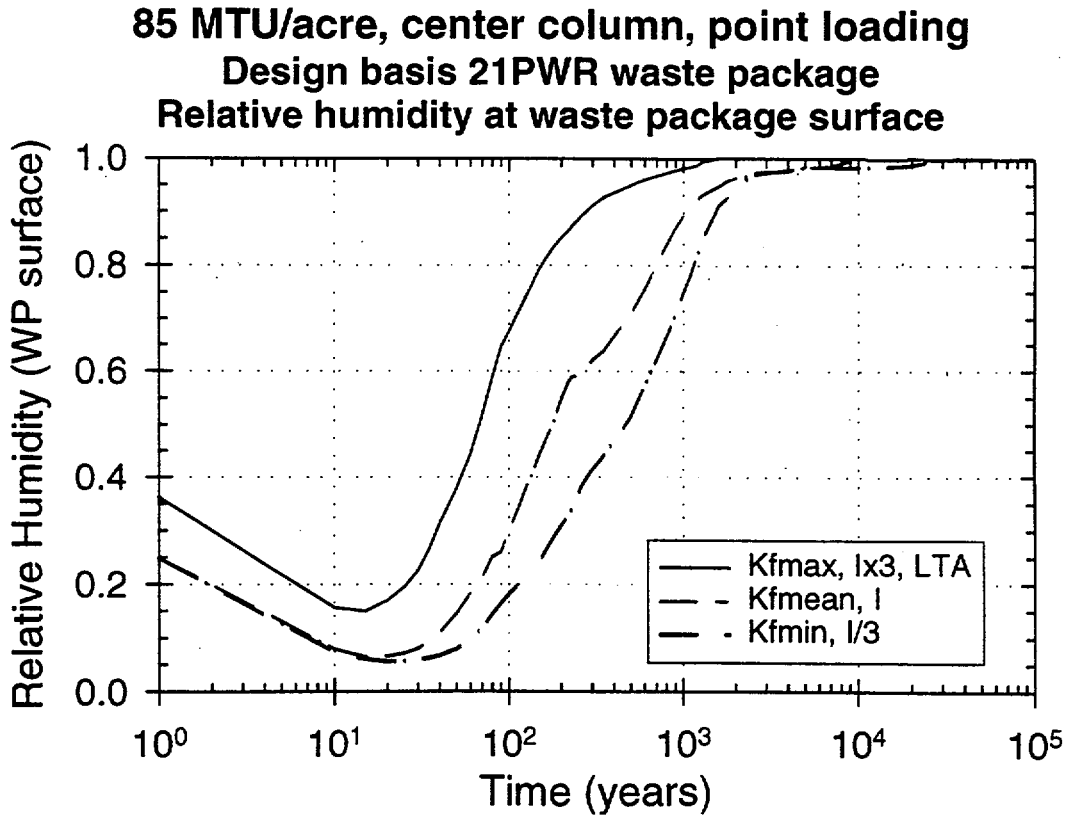
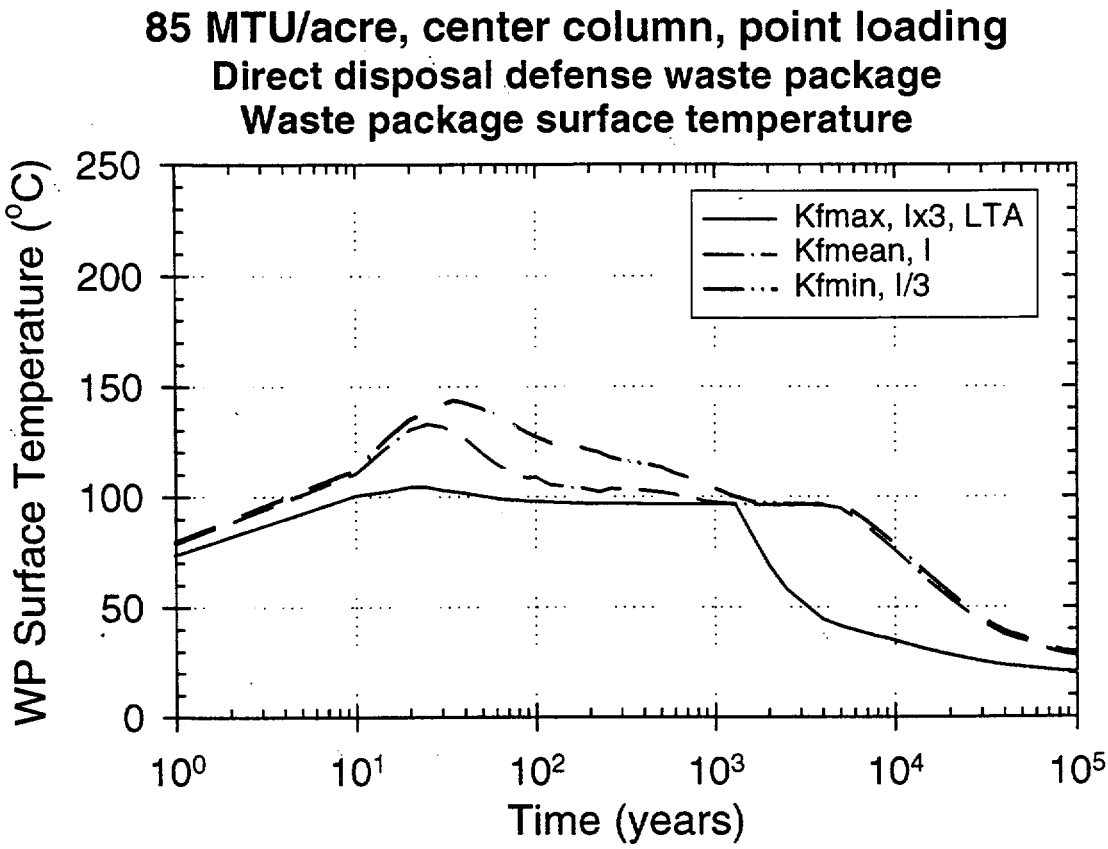


Figure 3-125. Upper figure: maximum variability in waste package surface temperature for the design basis 21 PWR waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration). Lower figure: maximum variability in waste package surface relative humidity for the design basis 21 PWR waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration).



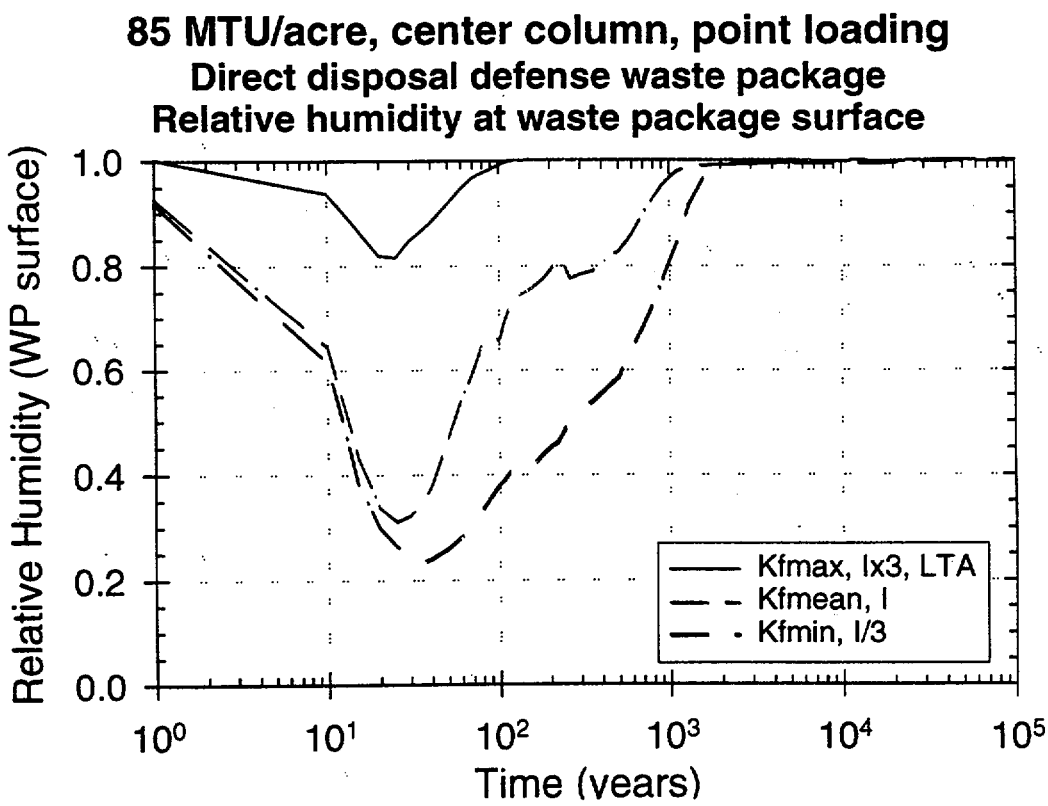
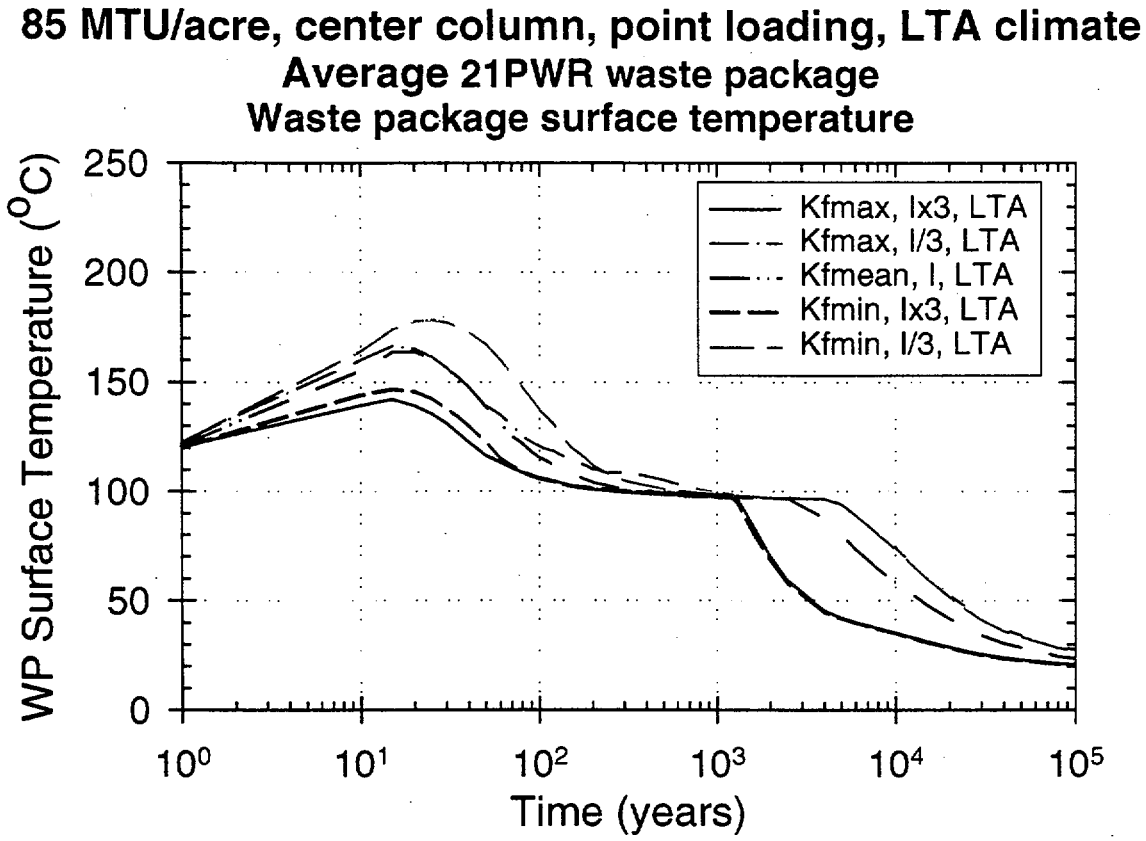


Figure 3-126. Upper figure: maximum variability in waste package surface temperature for the separate disposal (direct disposal) waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration). Lower figure: maximum variability in waste package surface relative humidity for the separate disposal (direct disposal) waste package (K_f max, long-term-average climate, Ix3 infiltration; K_f min, present day climate, I/3 infiltration)



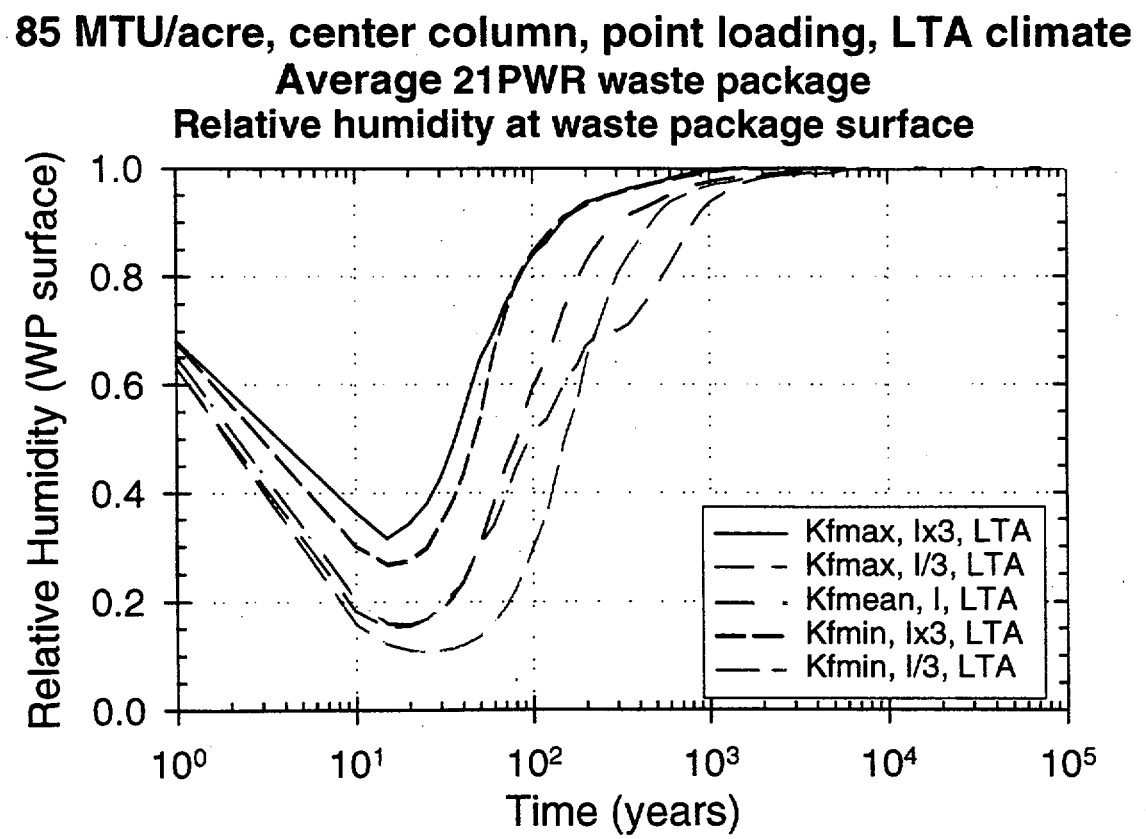
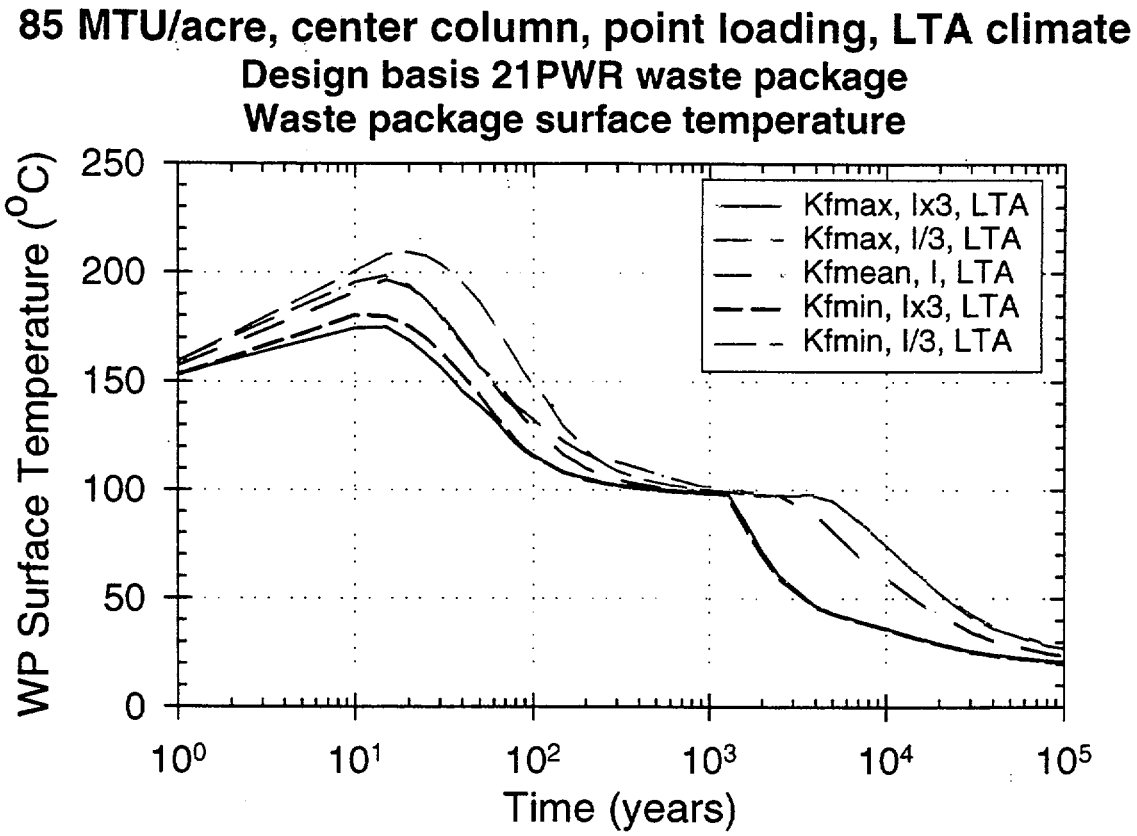


Figure 3-127. Upper figure: waste package surface temperature for the average 21 PWR waste package for five dual permeability/Weeps property sets (long-term-average). Lower figure: waste package surface relative humidity for the average 21 PWR waste package for five dual permeability/Weeps property sets (long-term-average climate).



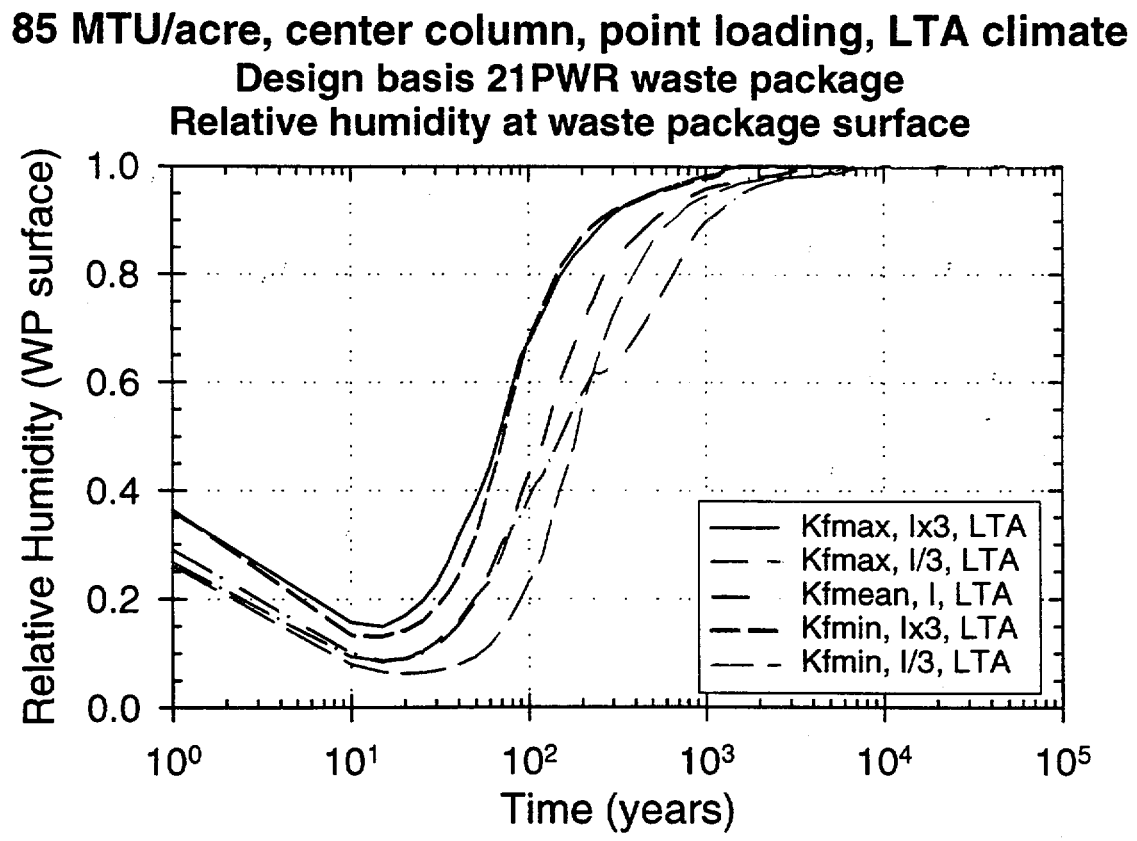
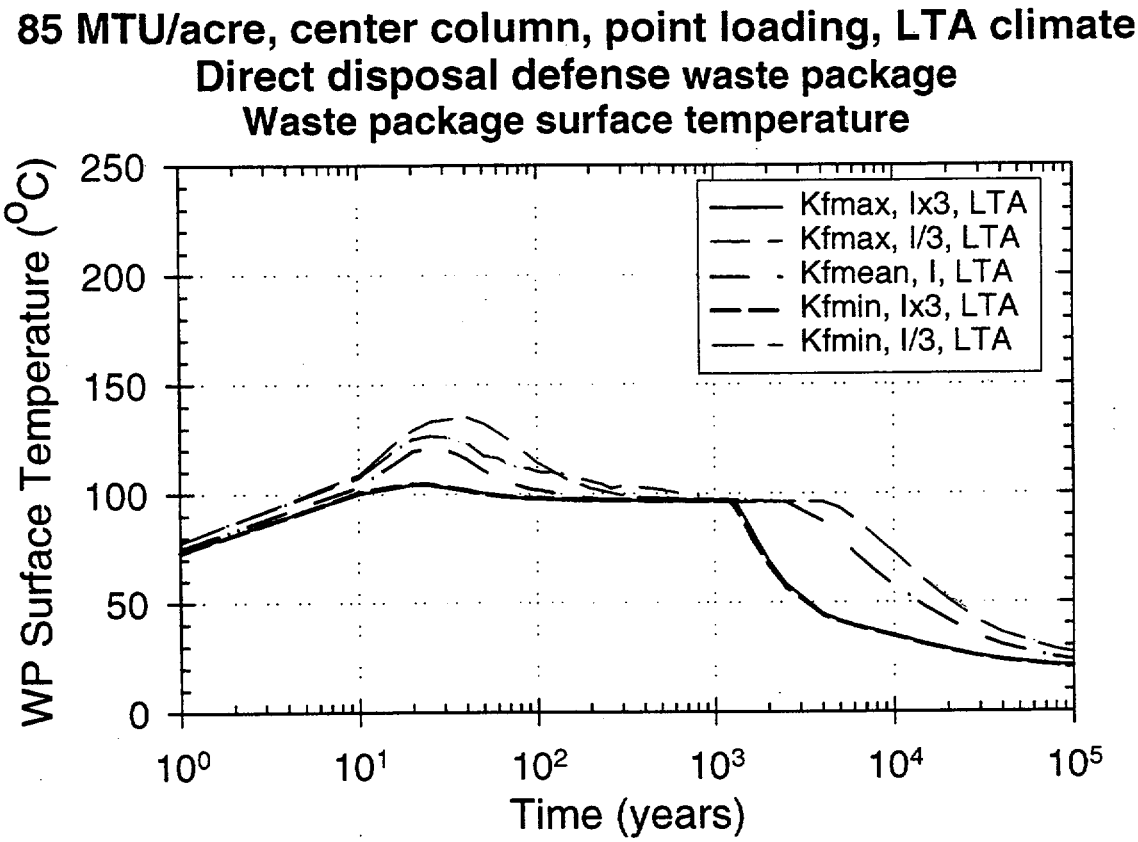


Figure 3-128. Upper figure: waste package surface temperature for the design basis 21 PWR waste package for five dual permeability/Weeps property sets (long-term-average). Lower figure: waste package surface relative humidity for the design basis 21 PWR waste package for five dual permeability/Weeps property sets (long-term-average climate).



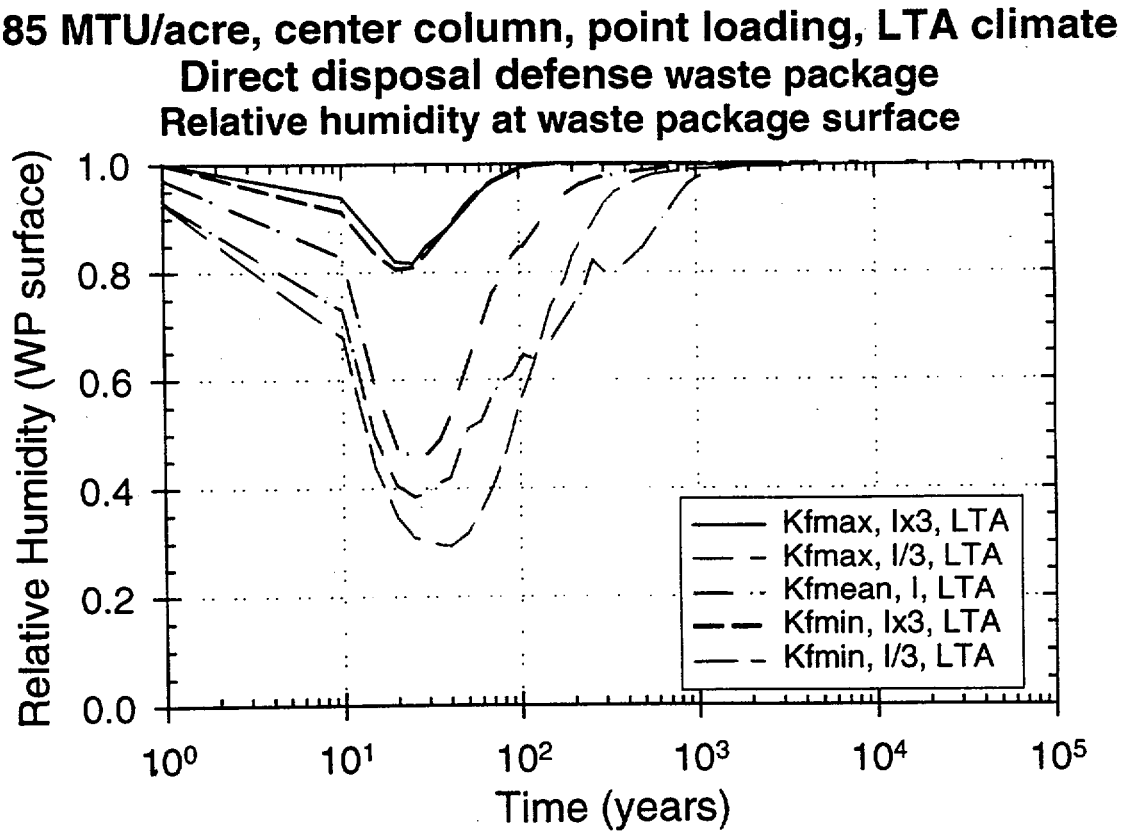
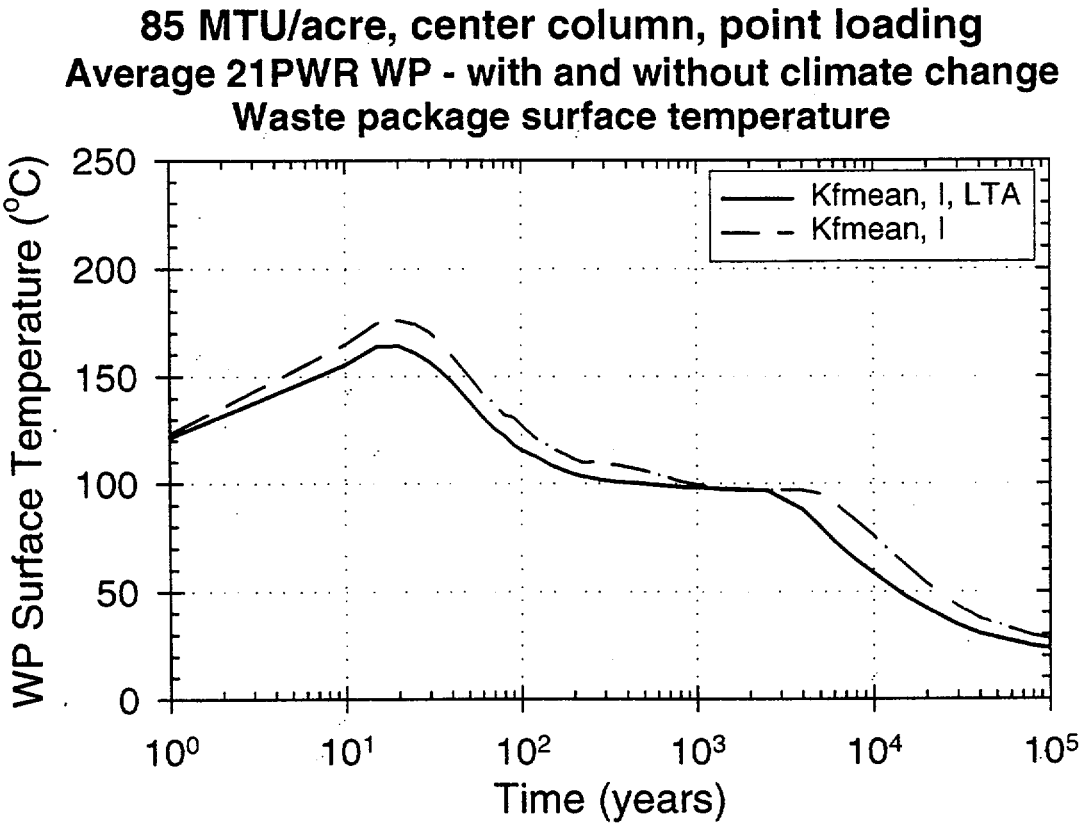


Figure 3-129. Upper figure: waste package surface temperature for the separate disposal (direct disposal) waste package for five dual permeability/Weeps property sets (long-term-average). Lower figure: waste package surface relative humidity for the separate disposal (direct disposal) waste package for five dual permeability/Weeps property sets (long-term-average climate).



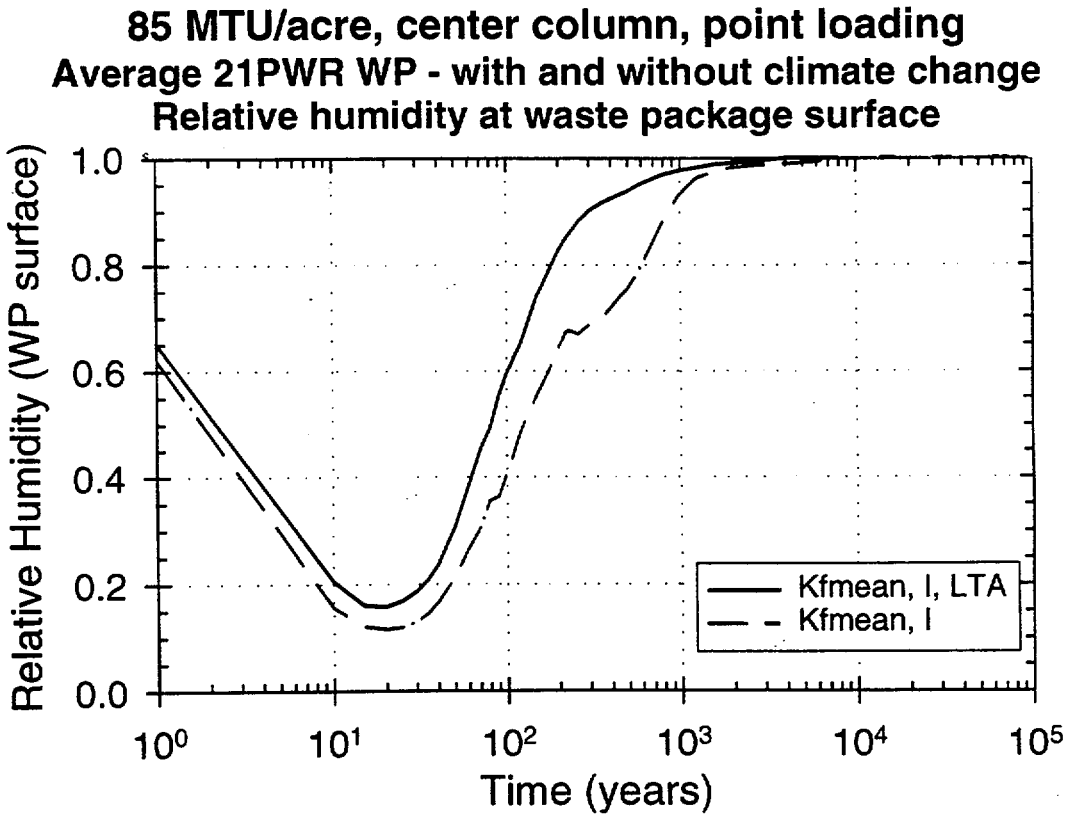
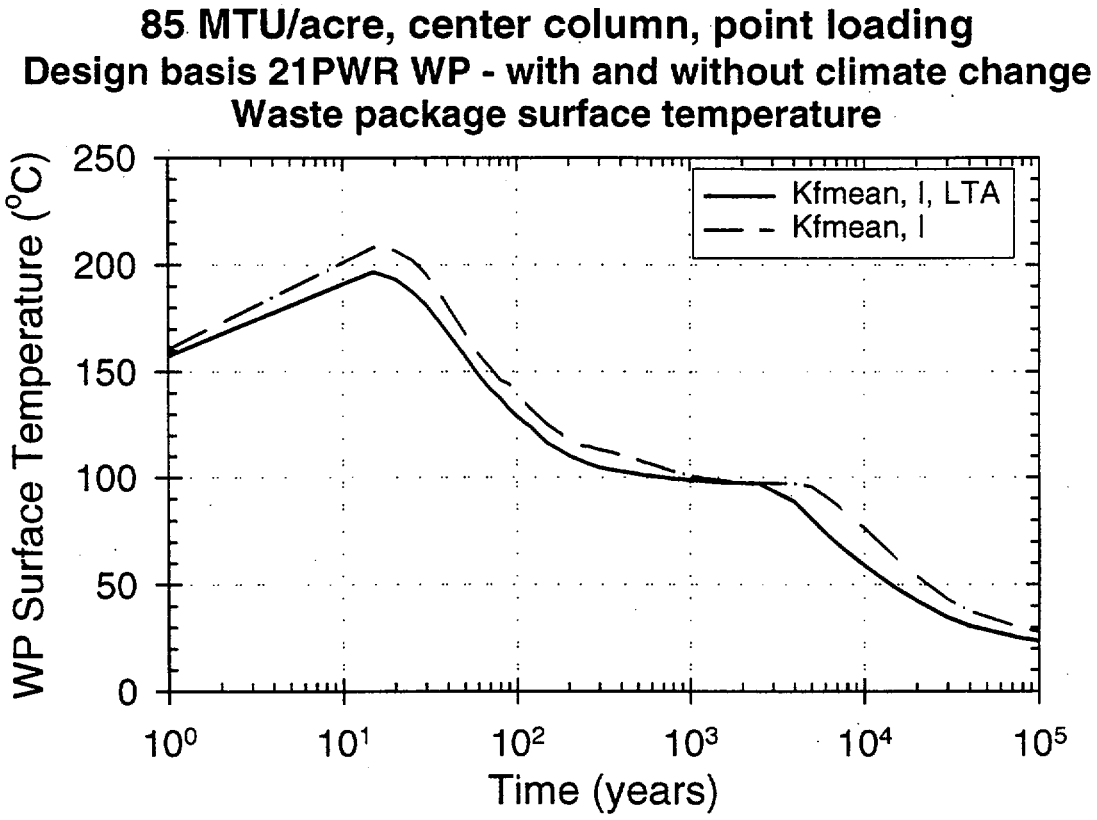


Figure 3-130. Upper figure: waste package surface temperature for the average 21 PWR waste package with and without climate change (K_f mean hydrologic property set). Lower figure: waste package surface relative humidity for the average 21 PWR waste package with and without climate change (K_f mean hydrologic property set).



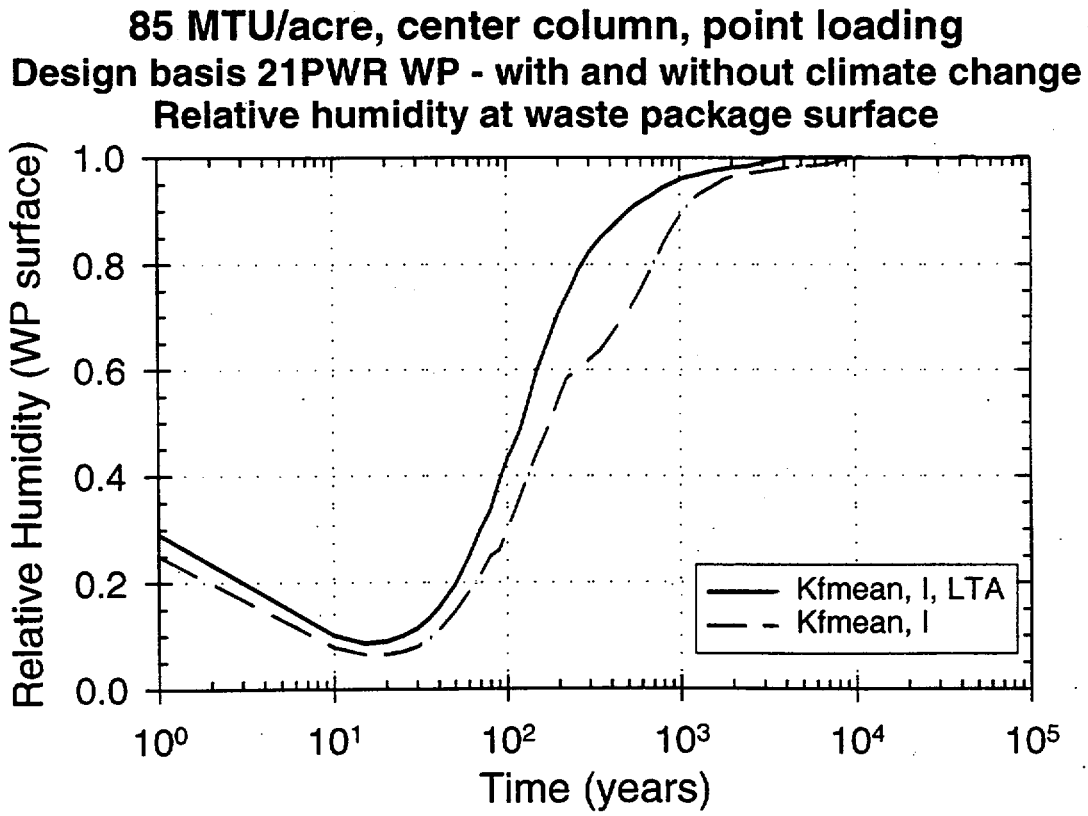
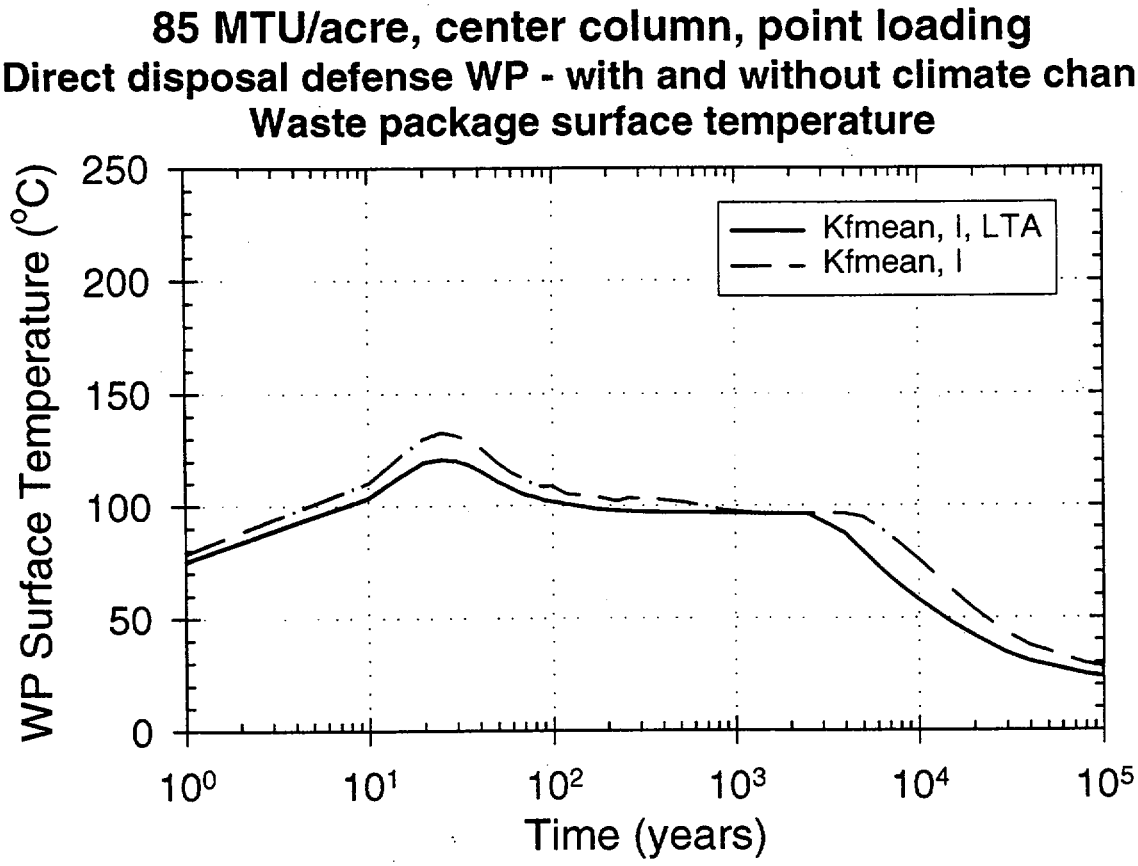


Figure 3-131. Upper figure: waste package surface temperature for the design basis 21 PWR waste package with and without climate change (K_f mean hydrologic property set). Lower figure: waste package surface relative humidity for the design basis 21 PWR waste package with and without climate change (K_f mean hydrologic property set).



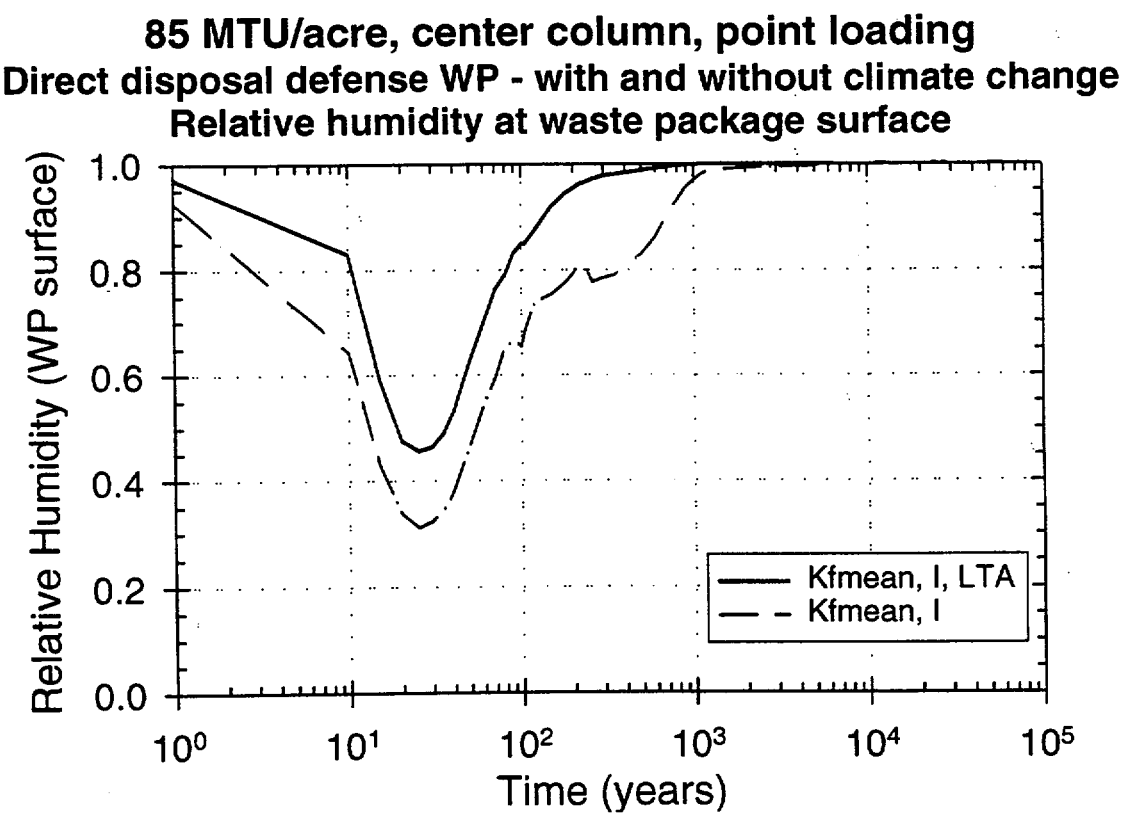


Figure 3-132. Upper figure: waste package surface temperature for the separate disposal (direct disposal) waste package with and without climate change (K_f mean hydrologic property set). Lower figure: waste package surface relative humidity for the separate disposal (direct disposal) waste package with and without climate change (K_f mean hydrologic property set).

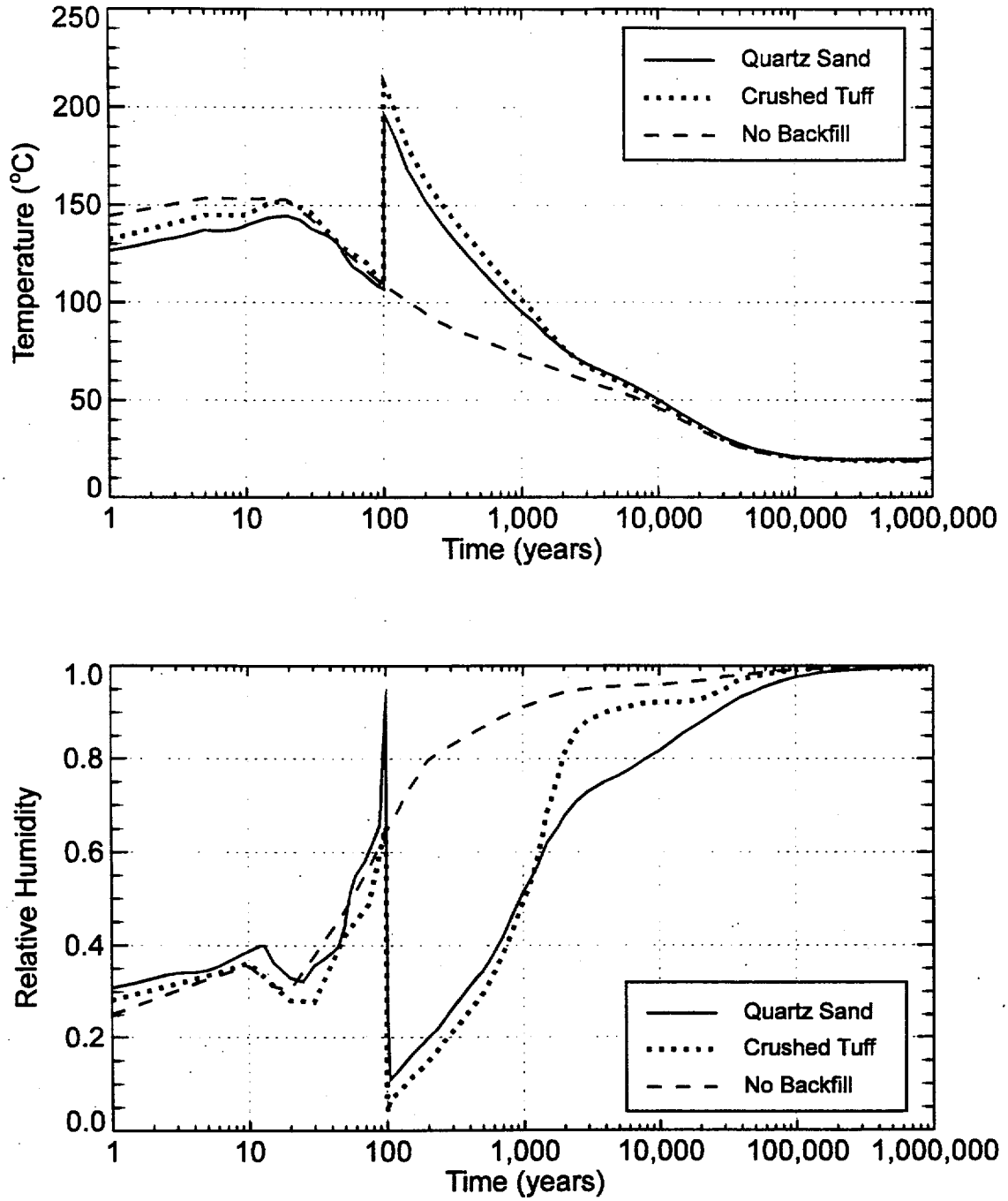


Figure 3-133. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region SW). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

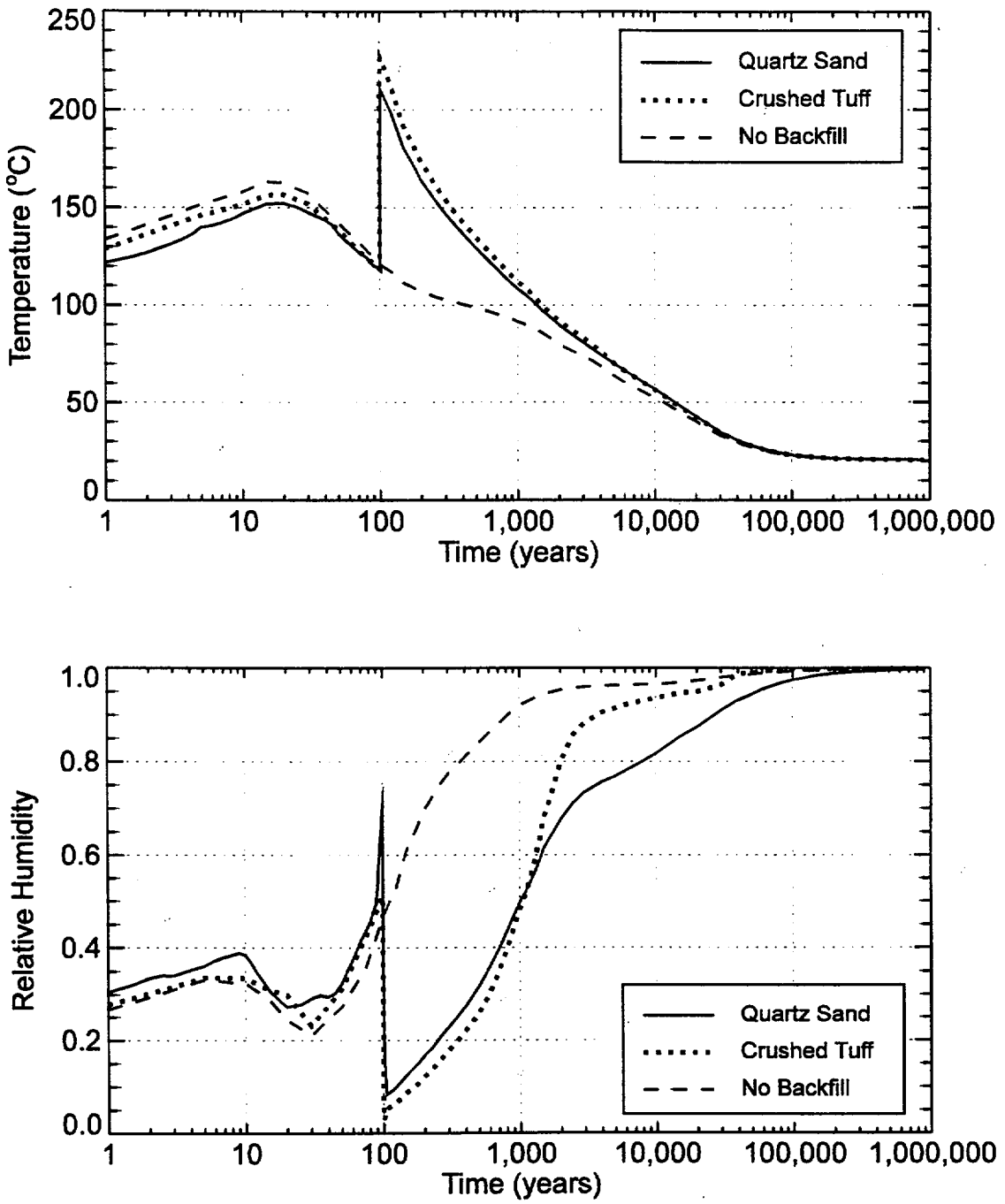


Figure 3-134. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region SE). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

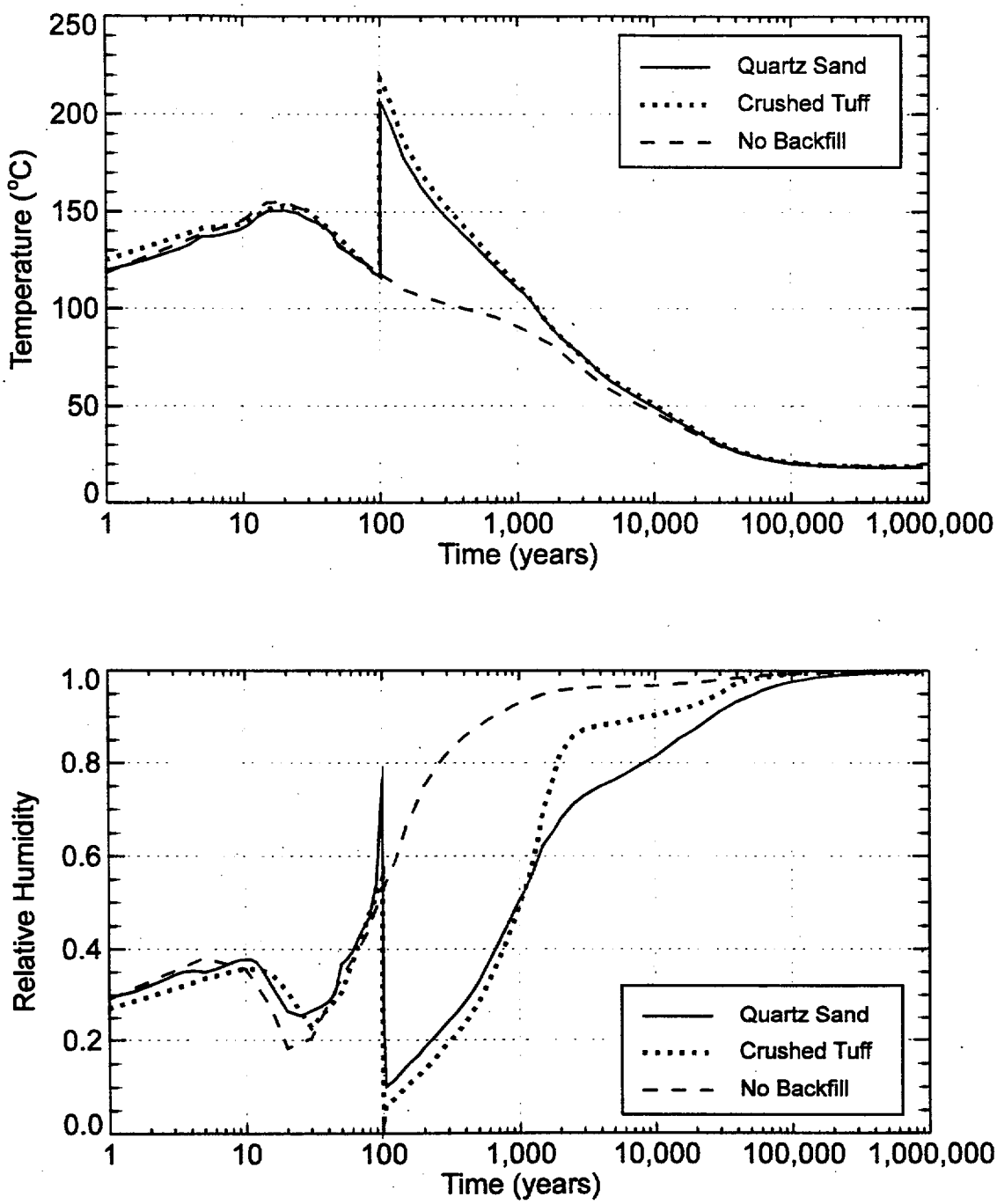


Figure 3-135. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region SC). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

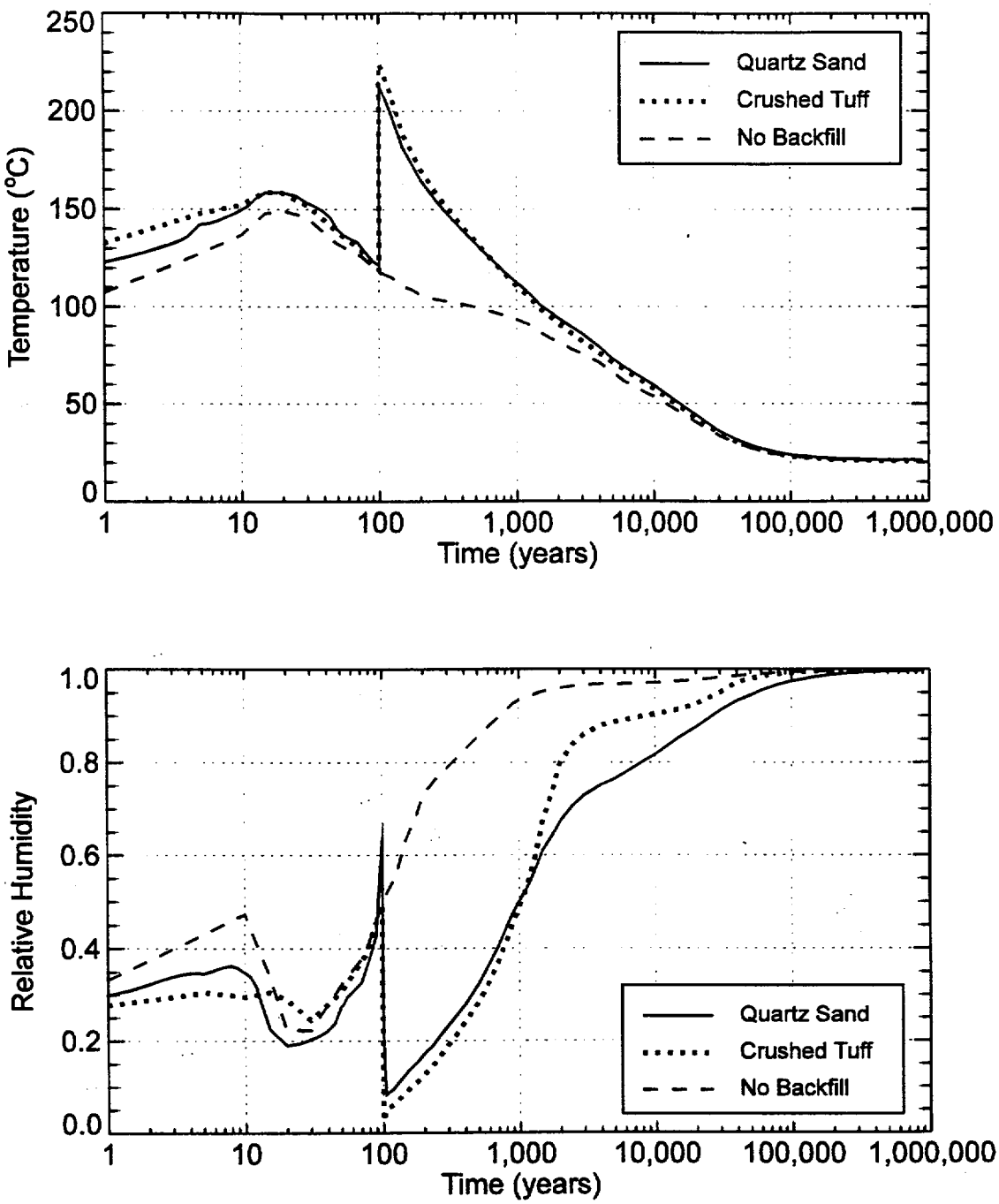


Figure 3-136. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region NW). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

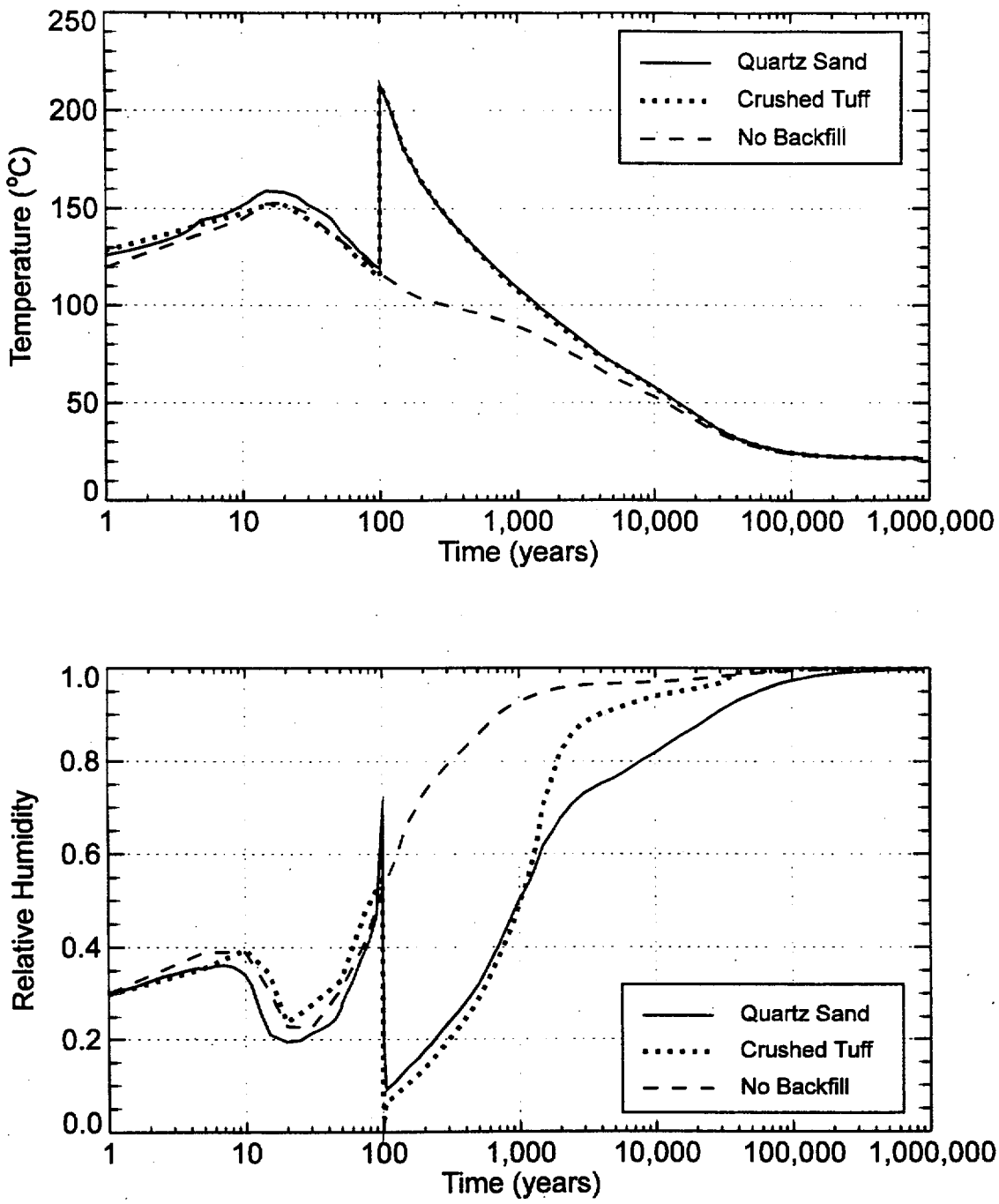


Figure 3-137. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region NE). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

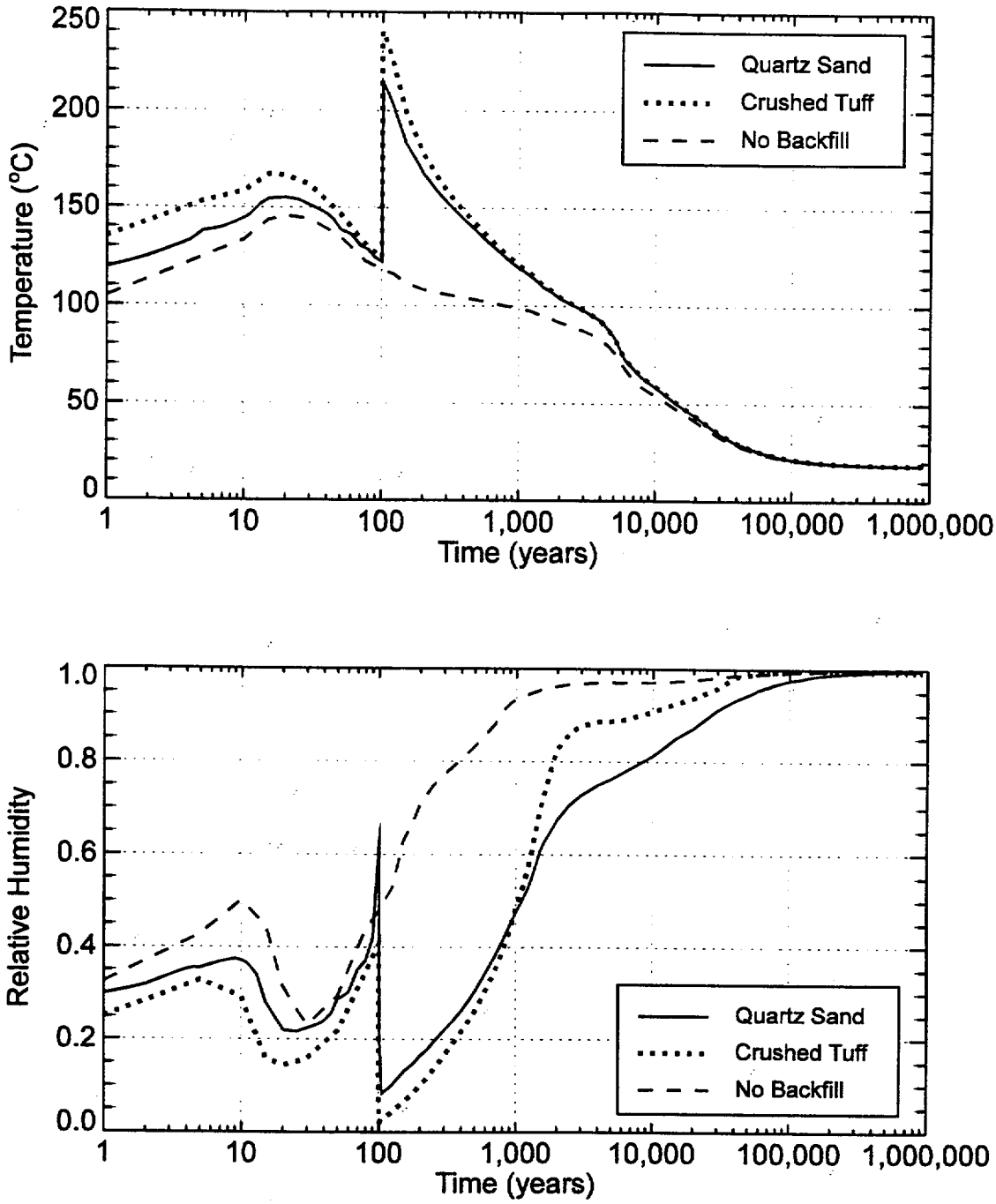


Figure 3-138. Repository design option with and without backfill using two different backfill materials (commercial spent fuel, long-term-average climate, mean infiltration, base case hydrologic properties, region CC).

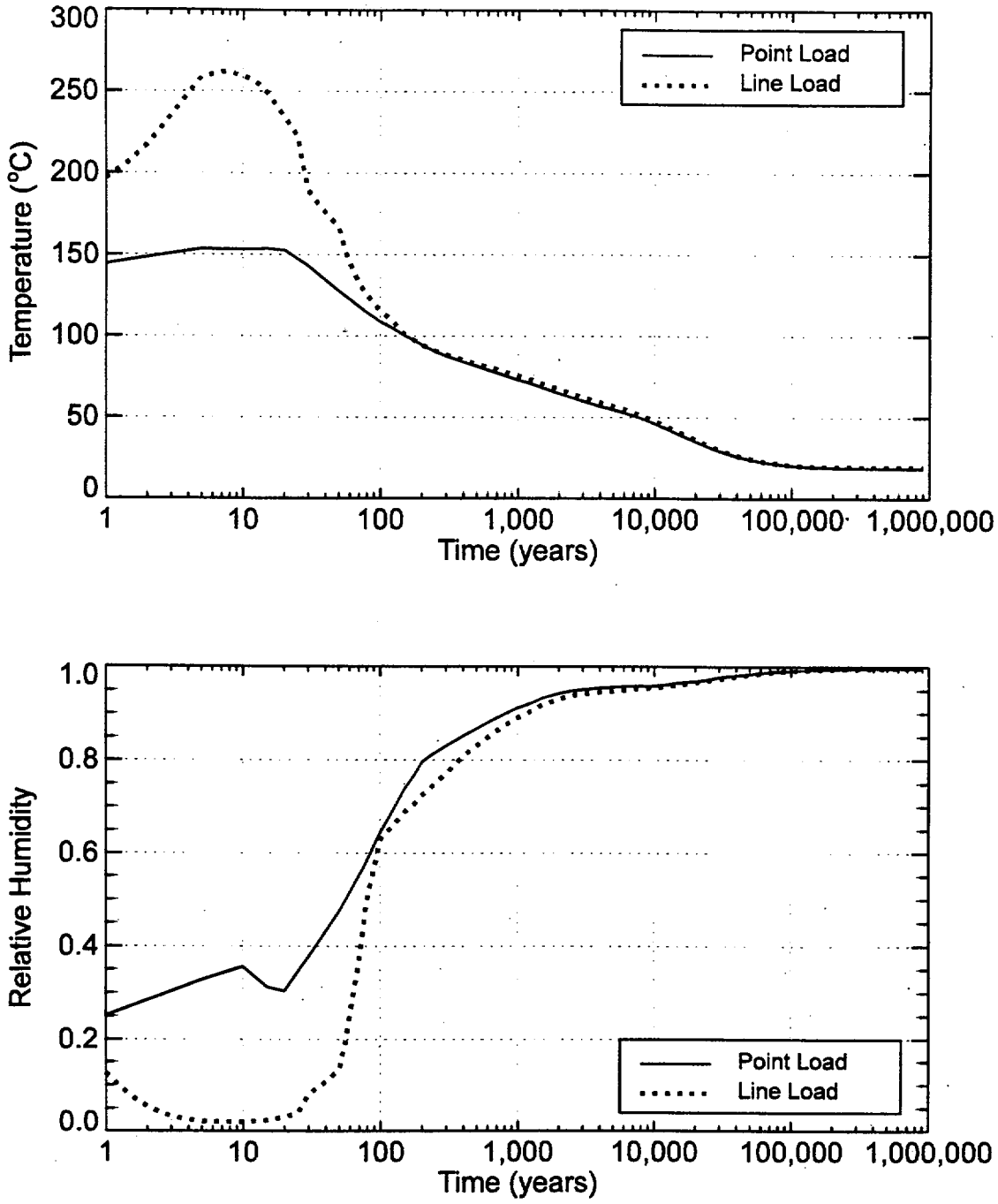


Figure 3-139. Comparison of point-load (reference design) to line-load repository designs for an empty emplacement drift (commercial spent fuel, long-term-average climate, region SW). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

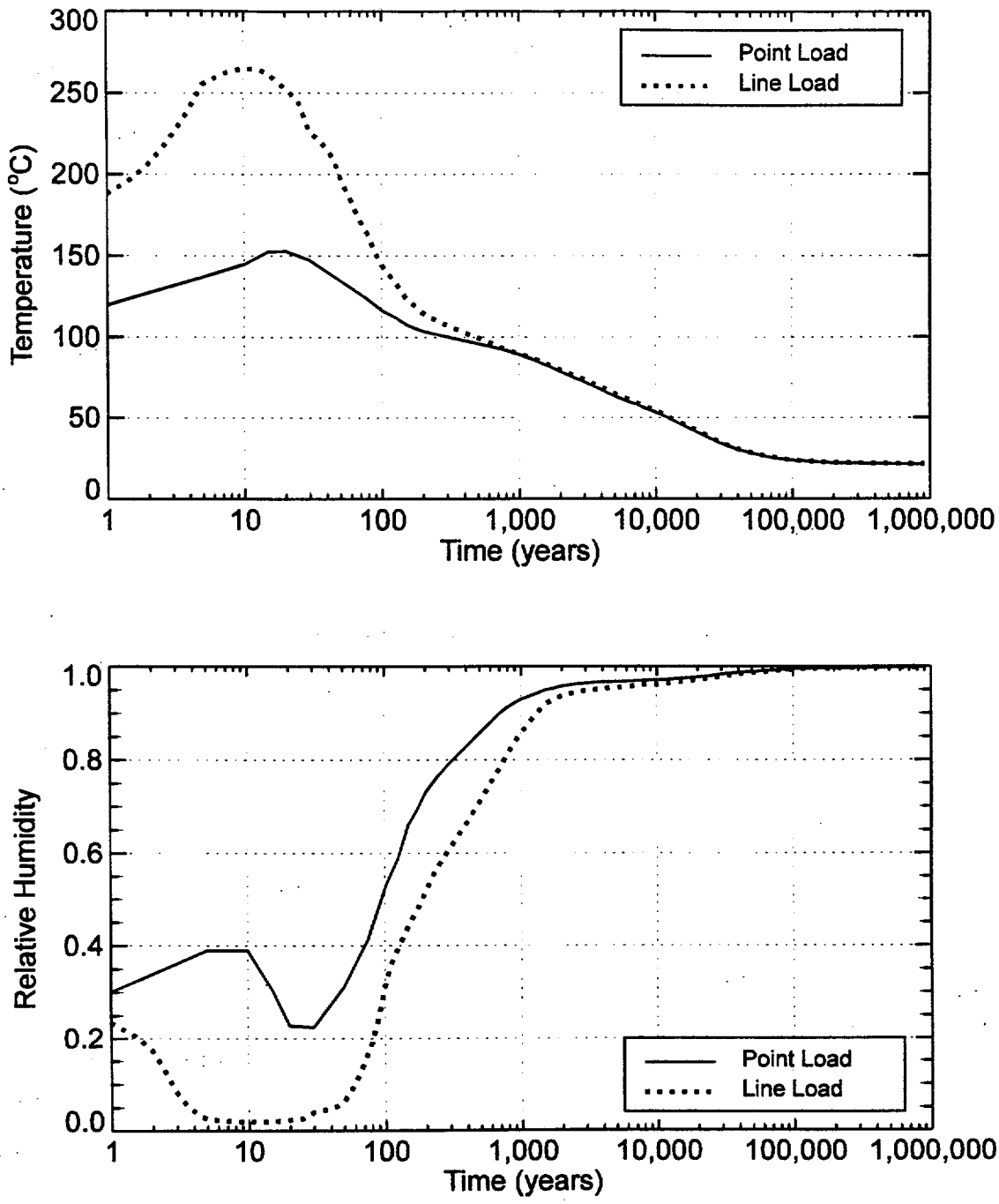


Figure 3-140. Comparison of point-load (reference design) to line-load repository designs for an empty emplacement drift (commercial spent fuel, long-term-average climate, region NE). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

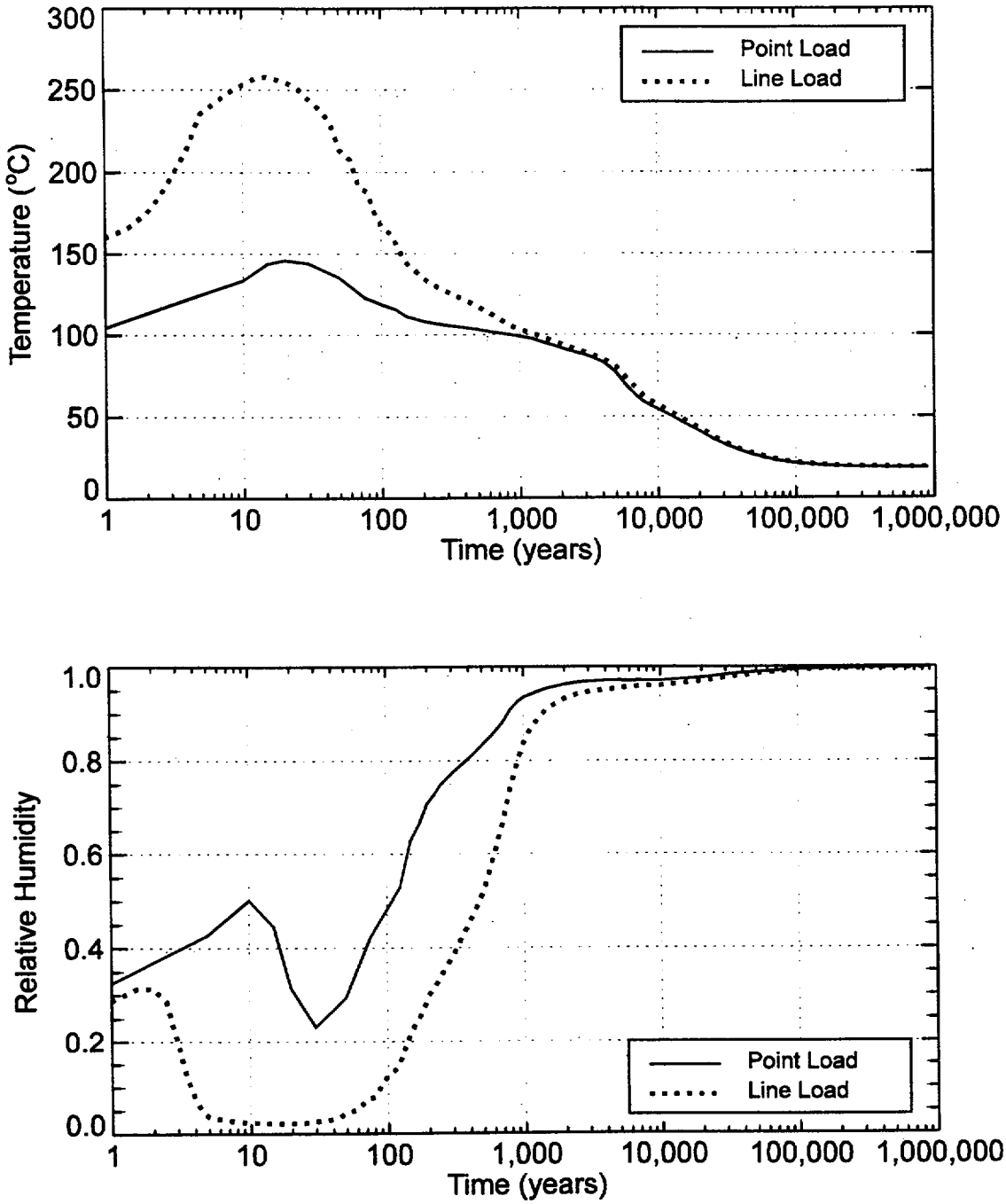


Figure 3-141. Comparison of point-load (reference design) to line-load repository designs for an empty emplacement drift (commercial spent fuel, long-term-average climate, region CC). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

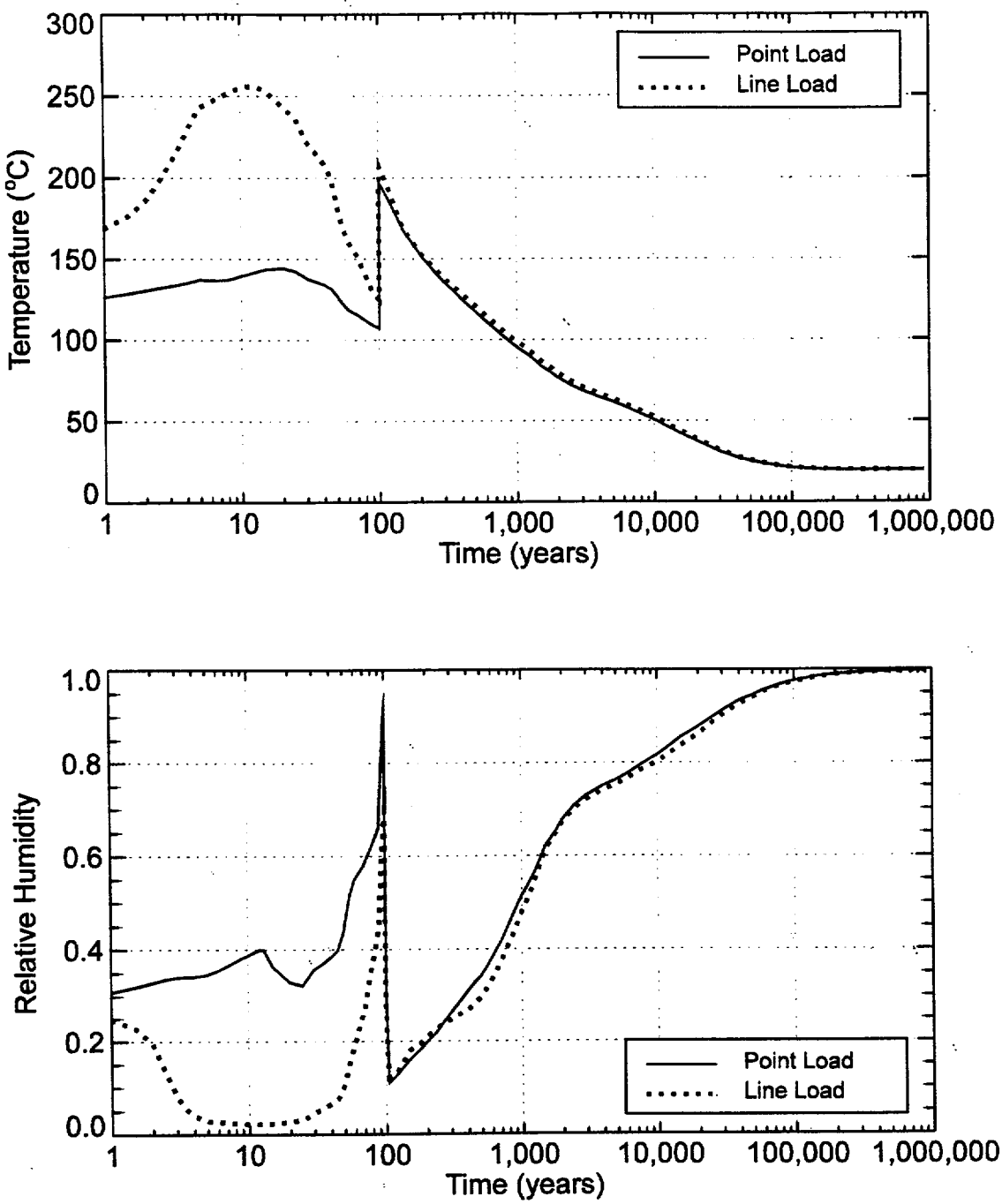


Figure 3-142. Comparison of point-load (reference design) to line-load repository designs for a partial quartz sand backfill (commercial spent fuel, long-term-average climate, region SW). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

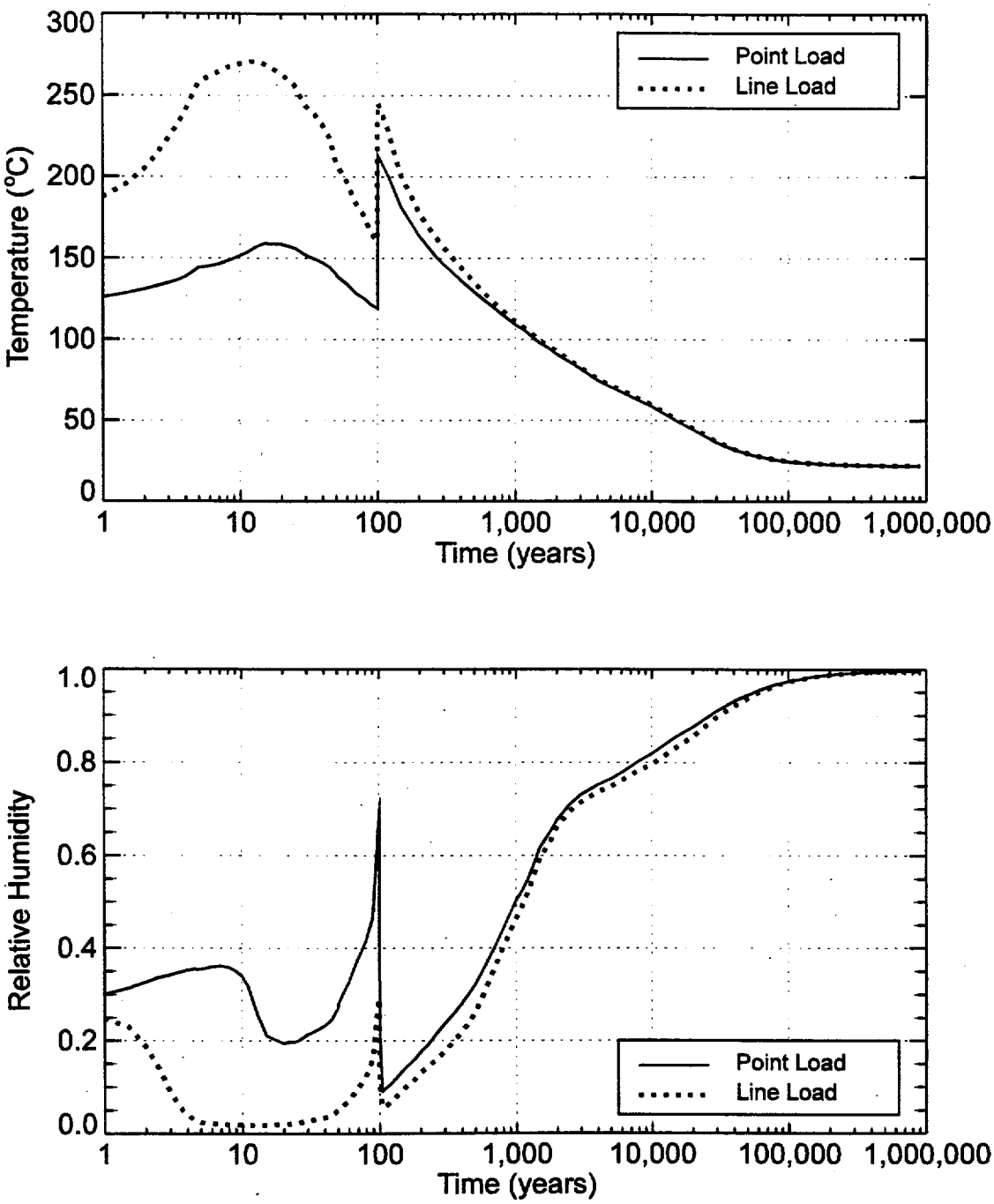


Figure 3-143. Comparison of point-load (reference design) to line-load repository designs for a partial quartz sand backfill (commercial spent fuel, long-term-average climate, region NE). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

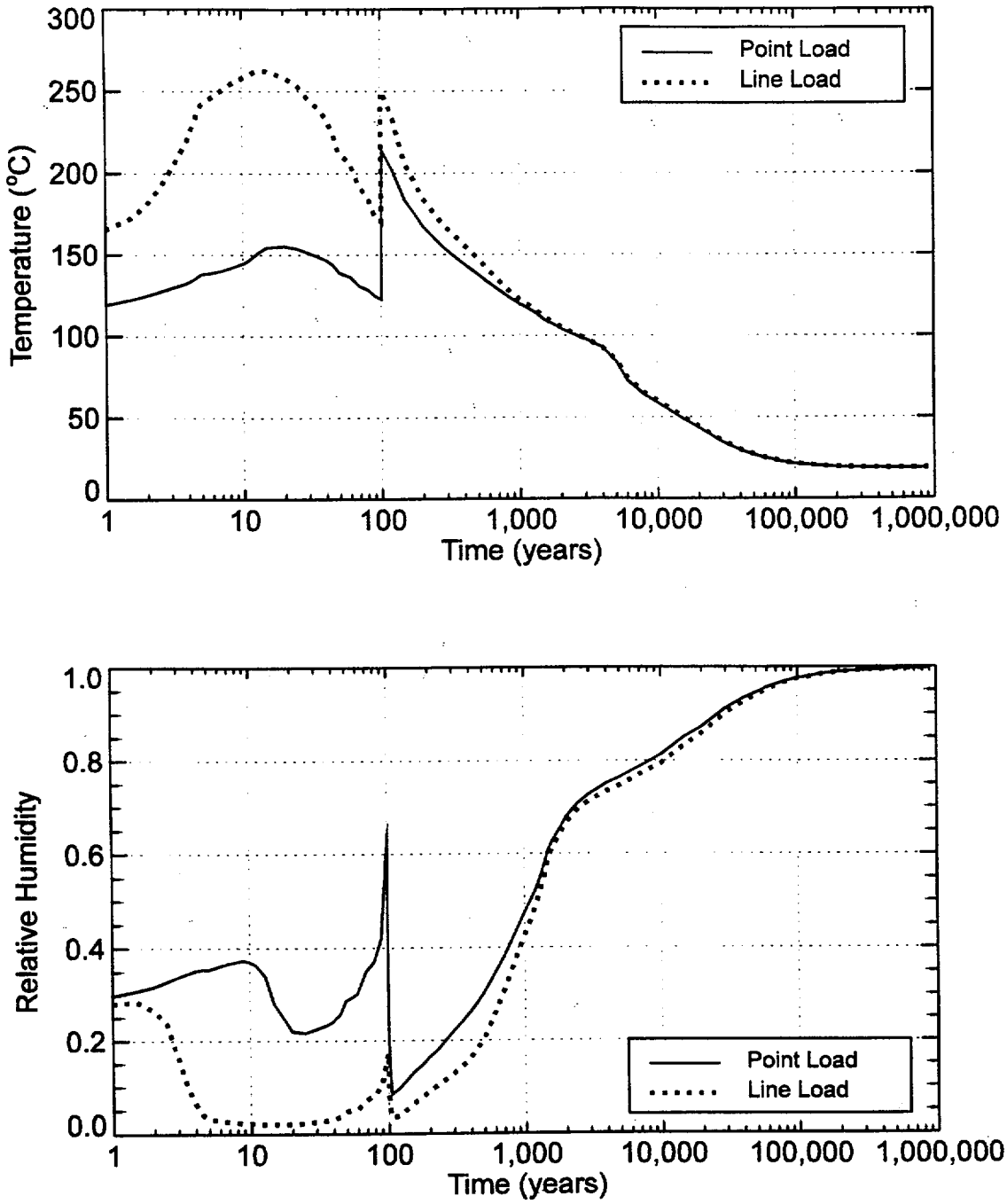


Figure 3-144. Comparison of point-load (reference design) to line-load repository designs for a partial quartz sand backfill (commercial spent fuel, long-term-average climate, region CC). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

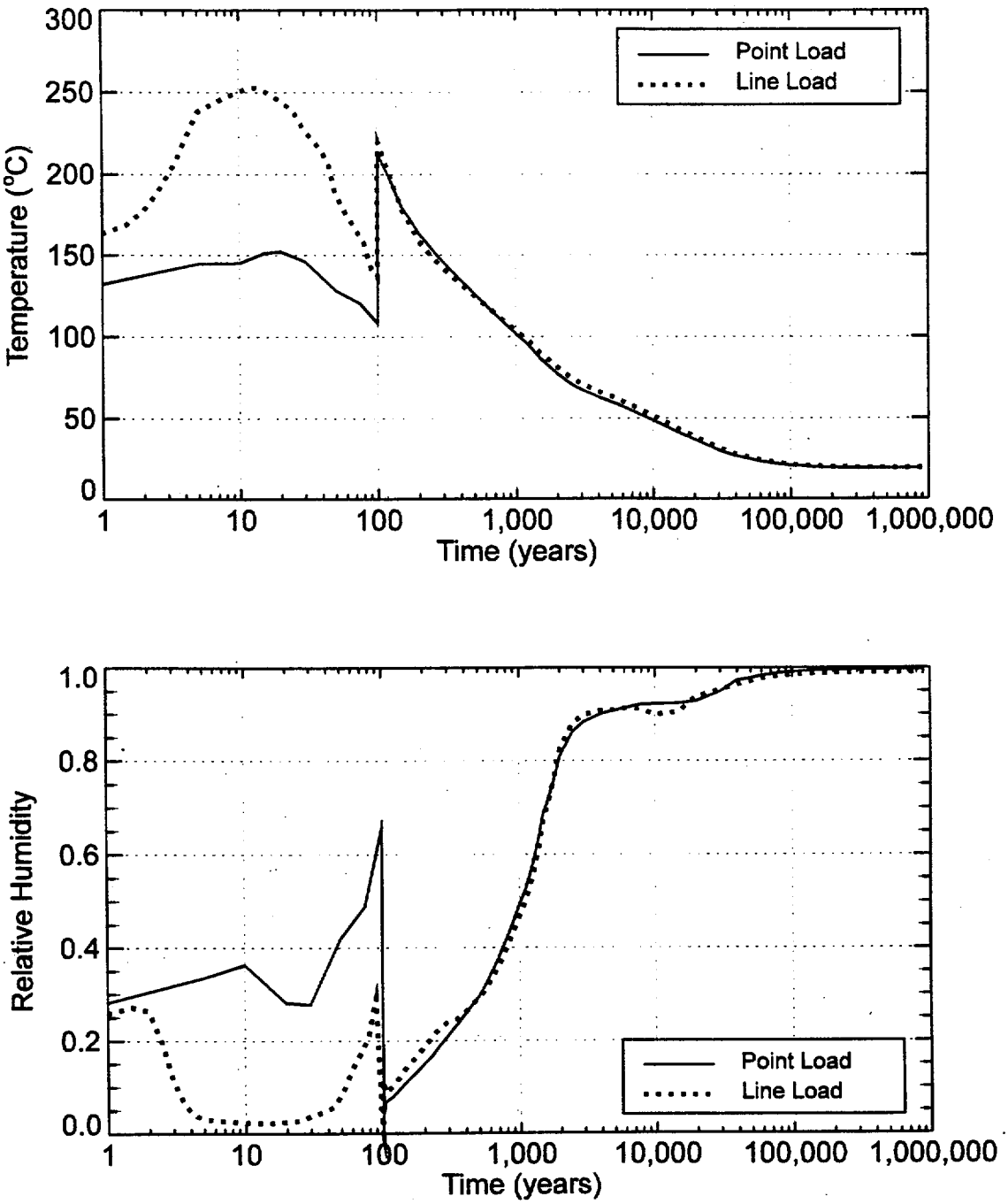


Figure 3-145. Comparison of point-load (reference design) to line-load repository designs for a partial crushed tuff backfill (commercial spent fuel, long-term-average climate, region SW). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

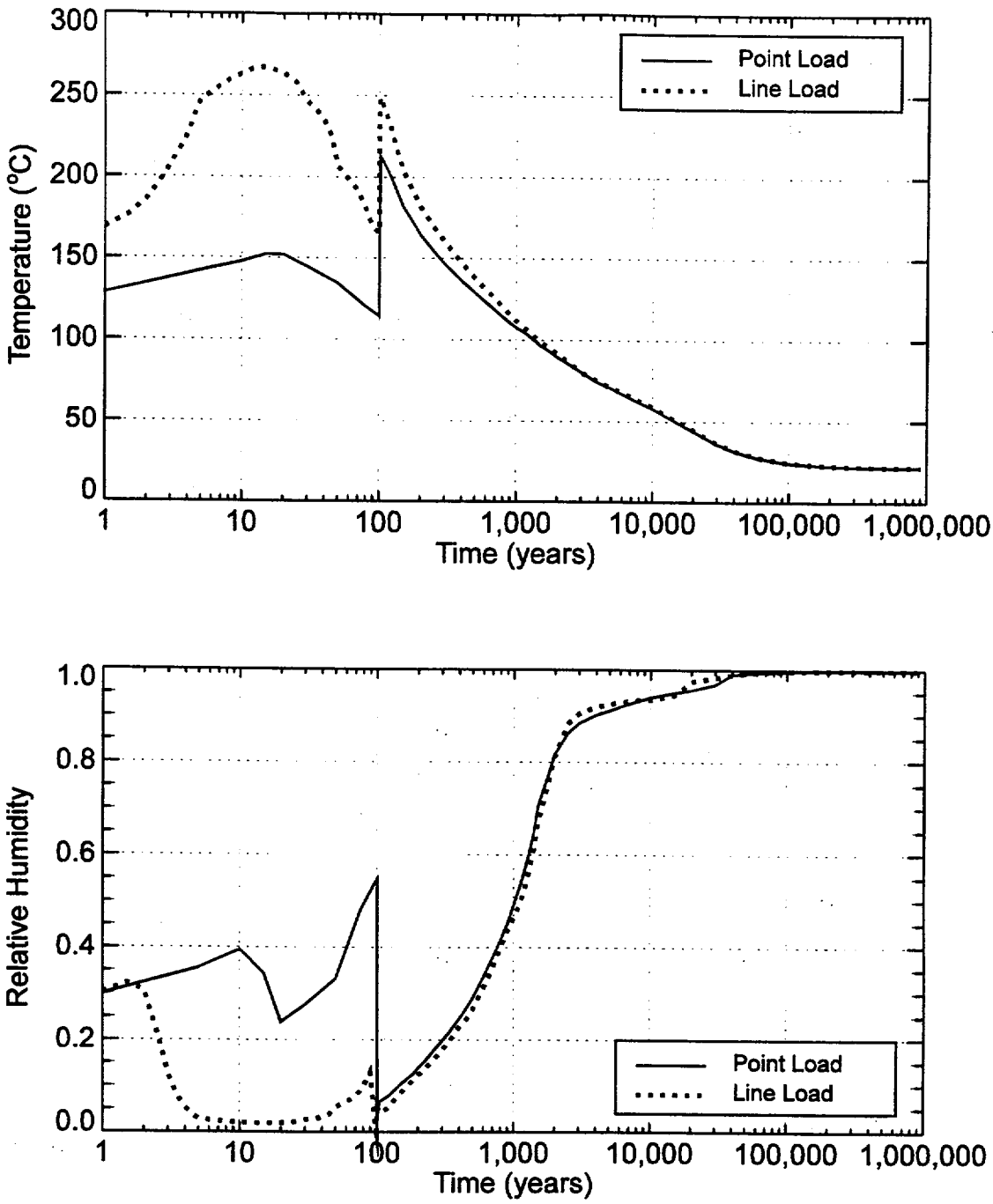


Figure 3-146. Comparison of point-load (reference design) to line-load repository designs for a partial crushed tuff backfill (commercial spent fuel, long-term-average climate, region NE). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

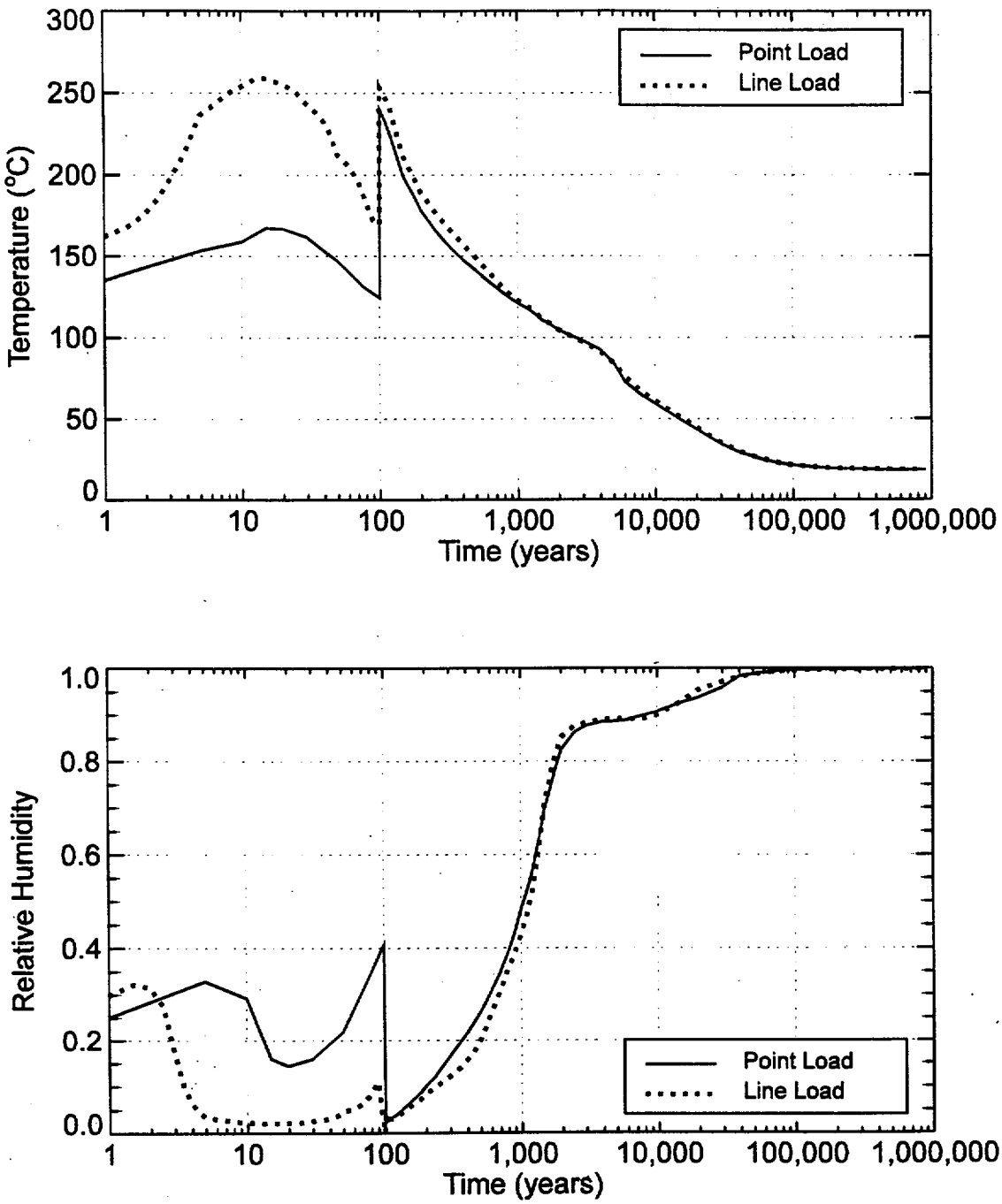


Figure 3-147. Comparison of point-load (reference design) to line-load repository designs for a partial crushed tuff backfill (commercial spent fuel, long-term-average climate, region CC). Upper figure: average waste package temperature, Lower figure: average waste package relative humidity.

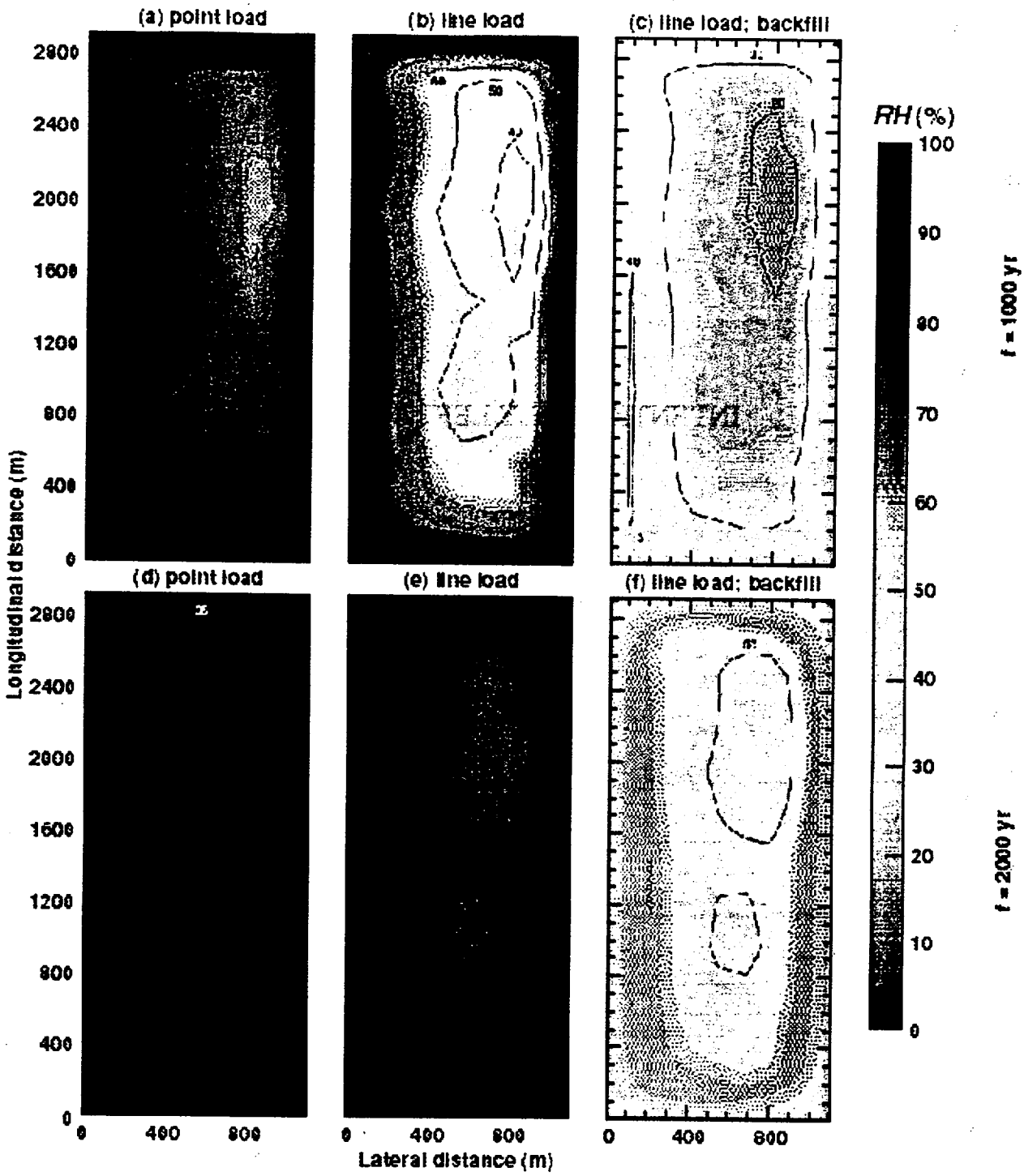


Figure 3-148. Relative humidity *RH* on the surface of "average" 21-PWR medium-heat CSNF WPs plotted for the point-load design at (a) 1000 yr and (d) 2000 yr, the line-load design at (b) 1000 yr and (e) 2000 yr, and the quartz-sand backfilled line-load design at (c) 1000 yr and (f) 2000 yr; all distributions assume the base-case lx1 $\alpha_{f,mean}$ parameter set and the nominal infiltration-flux q_{inf} map (average q_{inf} = 7.8 mm/yr).

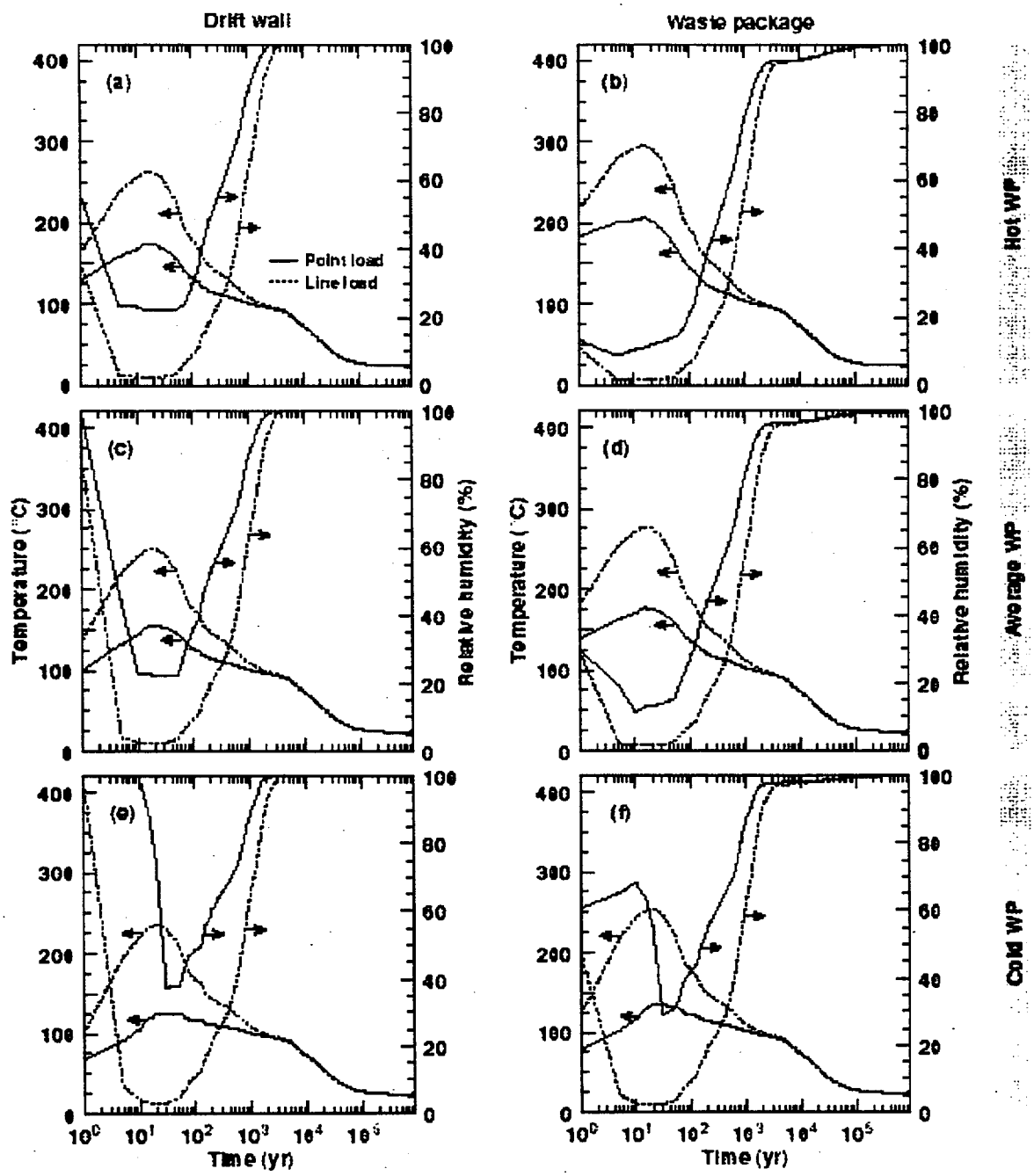


Figure 3-149. Temperature and relative humidity on the drift wall (a, c, e) and on the WP (b, d, f) for the point-load and line-load designs with no backfill; curves given for three WP types: a "hot" 21-PWR design-basis CSNF WP, an "average" 21-PWR medium-heat CSNF WP, and a "cold" direct-disposal DHLW WP; all curves assume the I5c2 location, the base-case Ix1 $\alpha_{f,mean}$ parameter set, and a local percolation flux of 8.53 mm/yr.

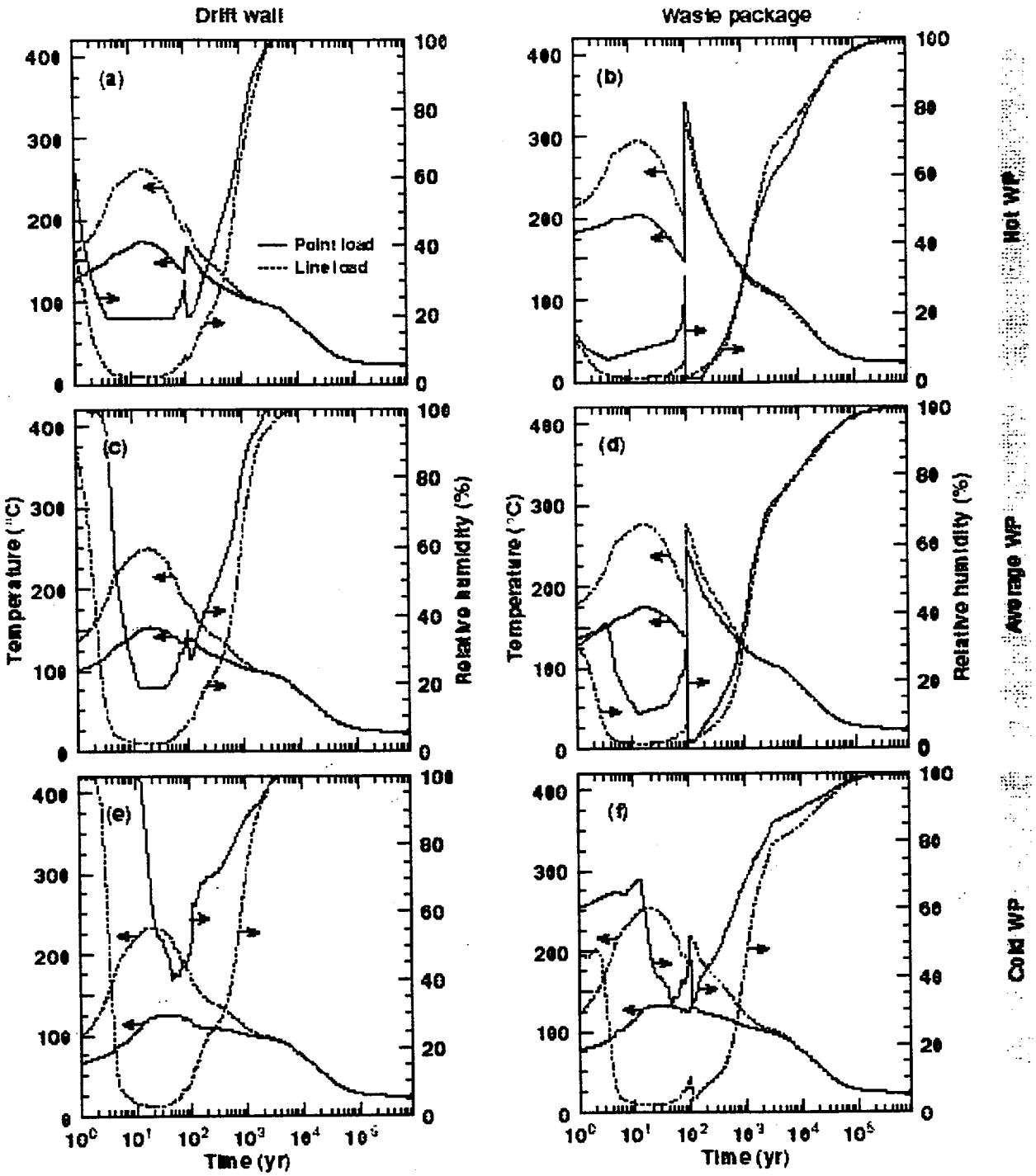


Figure 3-150. Temperature and relative humidity on the drift wall (a,c,e) and on the WP (b,d,f) for the point-load and line-load designs with quartz-sand backfill at 100 yr; curves given for three WP types: a "hot" 21-PWR design-basis CSNF WP, an "average" 21-PWR medium-heat CSNF WP, and a "cold" direct-disposal DHLW WP; all curves assume the I5c2 location, the base-case Ix1 $\alpha_{f,mean}$ parameter set, and a local percolation flux of 8.53 mm/yr.

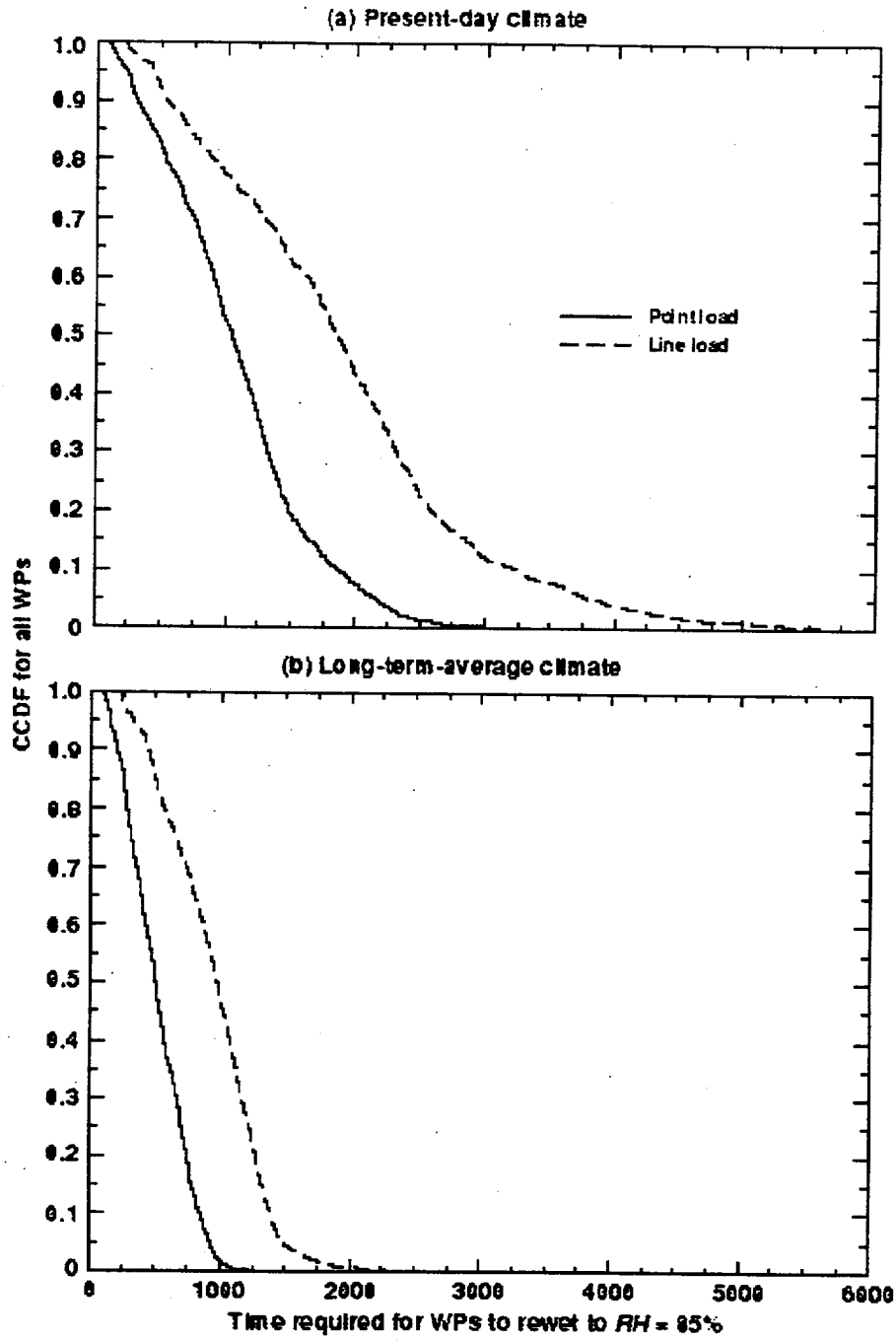


Figure 3-151. Complementary cumulative density function (CCDF) of the time required for WPs to rewet to a relative humidity *RH* of 85% for (a) the Ix1 $\alpha_{f,mean}$ case and (b) LTAx1 $\alpha_{f,mean}$ case, where α_f is the van Genuchten "alpha" parameter for fractures. The symbol I stands for the present-day-climate percolation-flux map, and the symbol LTA stands for the long-term-average percolation-flux map. Curves are plotted for the point-load and line-load designs with no backfill.

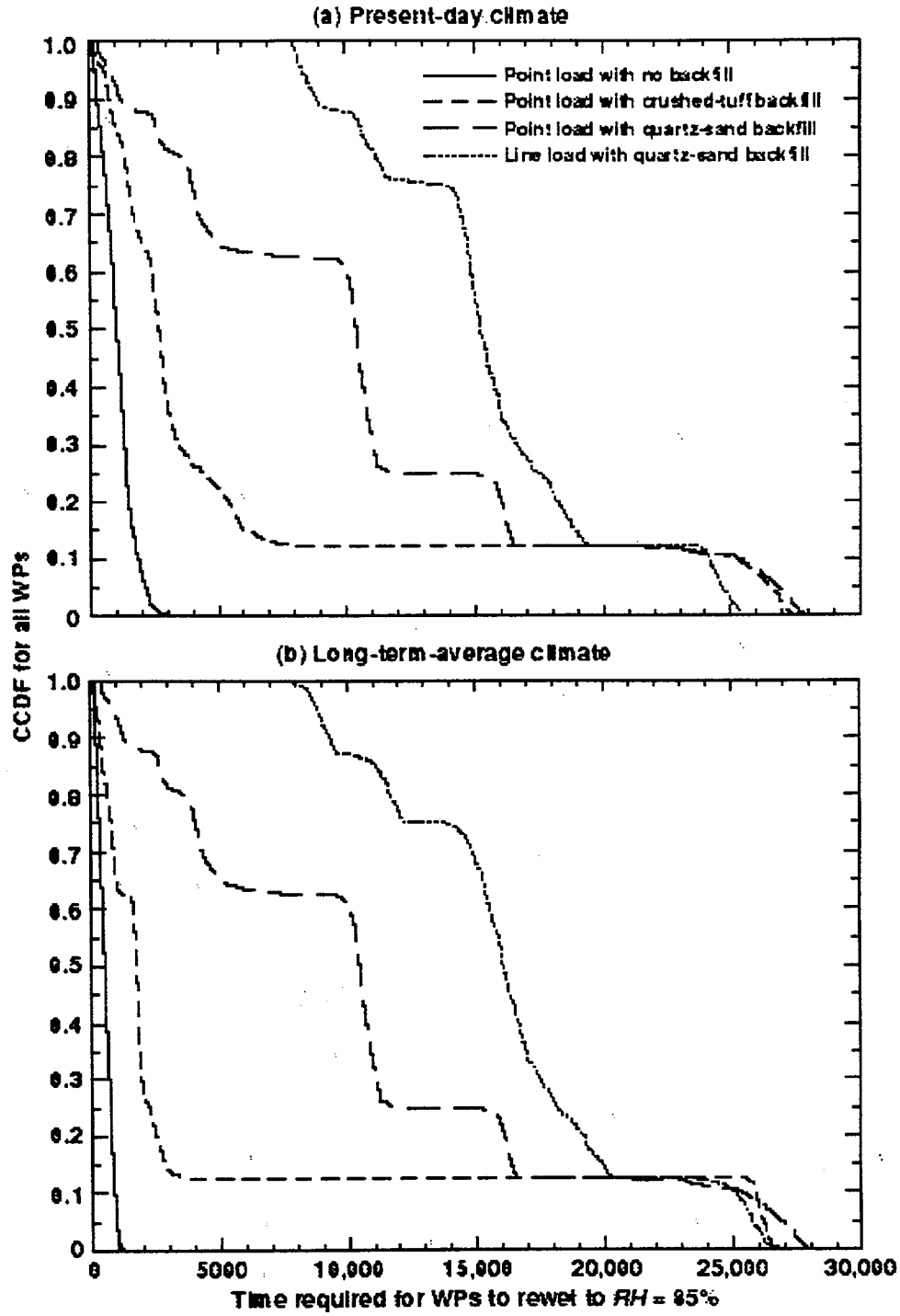


Figure 3-152. Complementary cumulative density function (CCDF) of the time required for WPs to rewet to a relative humidity *RH* of 85% for (a) the Ix1 $\alpha_{f,mean}$ case and (b) LTAx1 $\alpha_{f,mean}$ case, where α_f is the van Genuchten "alpha" parameter for fractures. The symbol I stands for the present-day-climate percolation-flux map, and the symbol LTA stands for the long-term-average percolation-flux map. From left to right, curves are plotted for the following cases: (1) point-load design with no backfill, (2) point-load design with crushed-tuff backfill, (3) point-load design with quartz-sand backfill, and (4) line-load design with quartz-sand backfill.

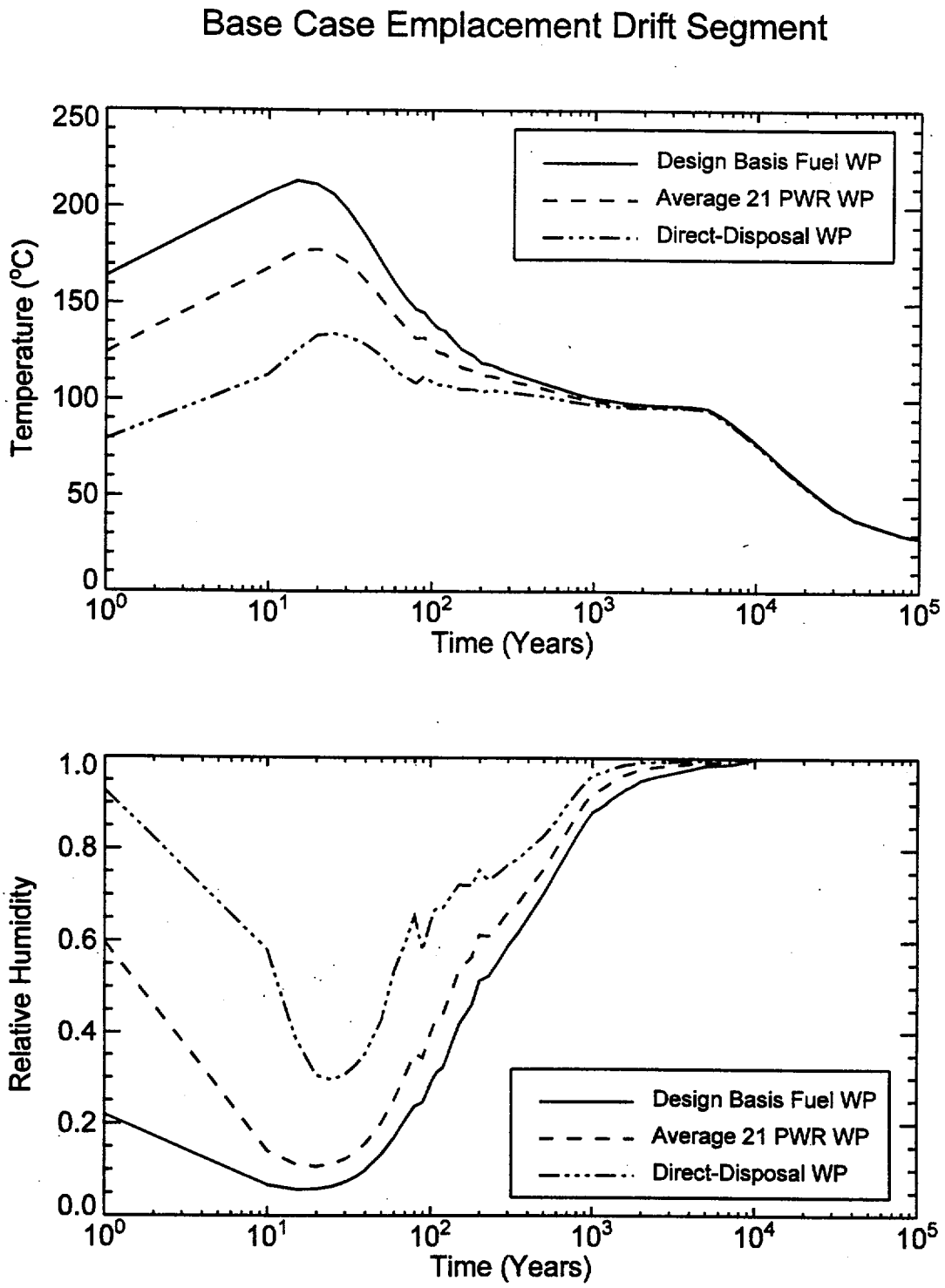


Figure 3-153. Base case drift segment displaying a hot, medium, and cold waste package (present day climate, mean infiltration, base case hydrologic properties). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

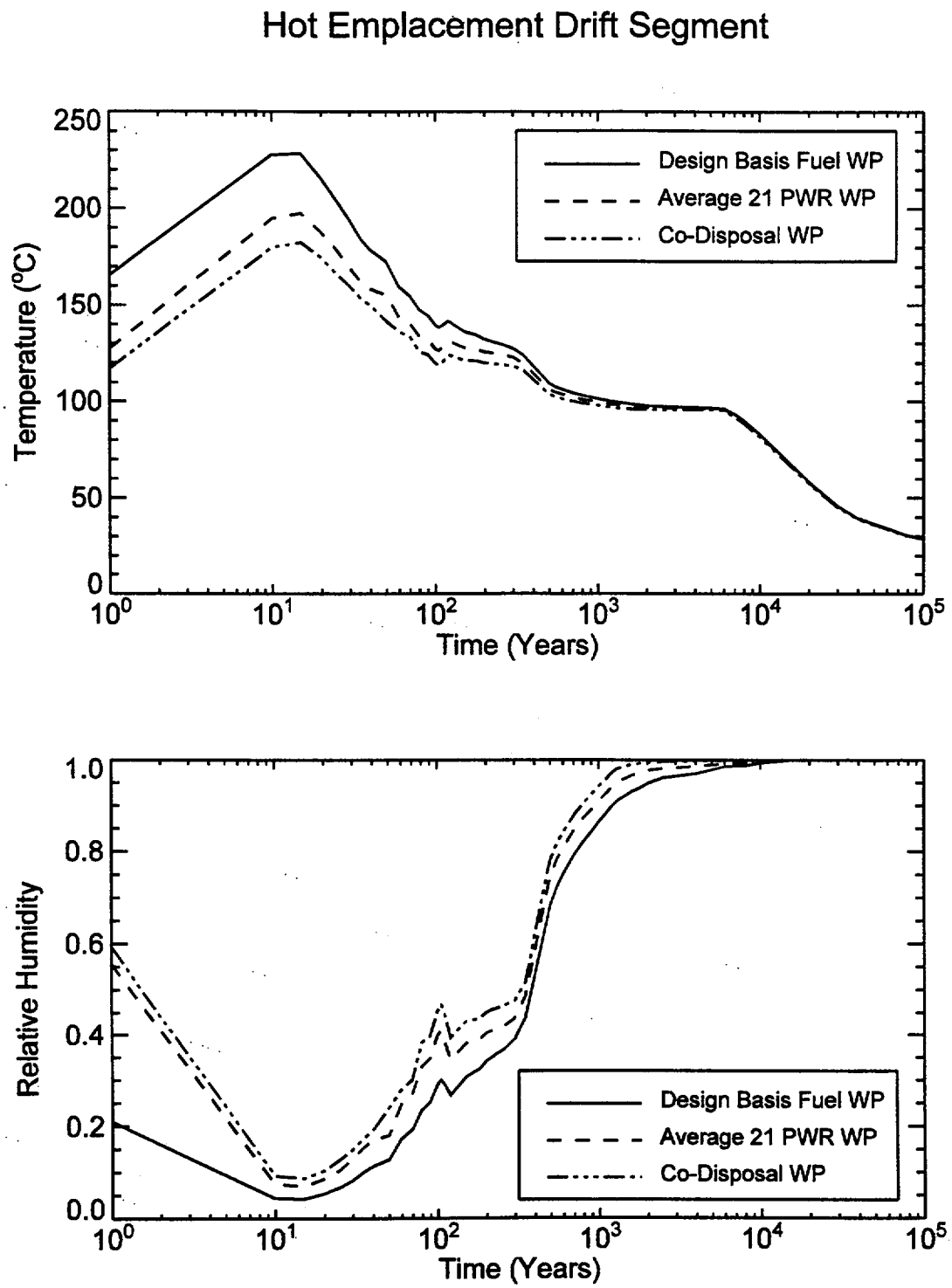


Figure 3-154. "Hot" drift segment displaying a hot, medium, and cold waste package (present day climate, mean infiltration, base case hydrologic properties). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

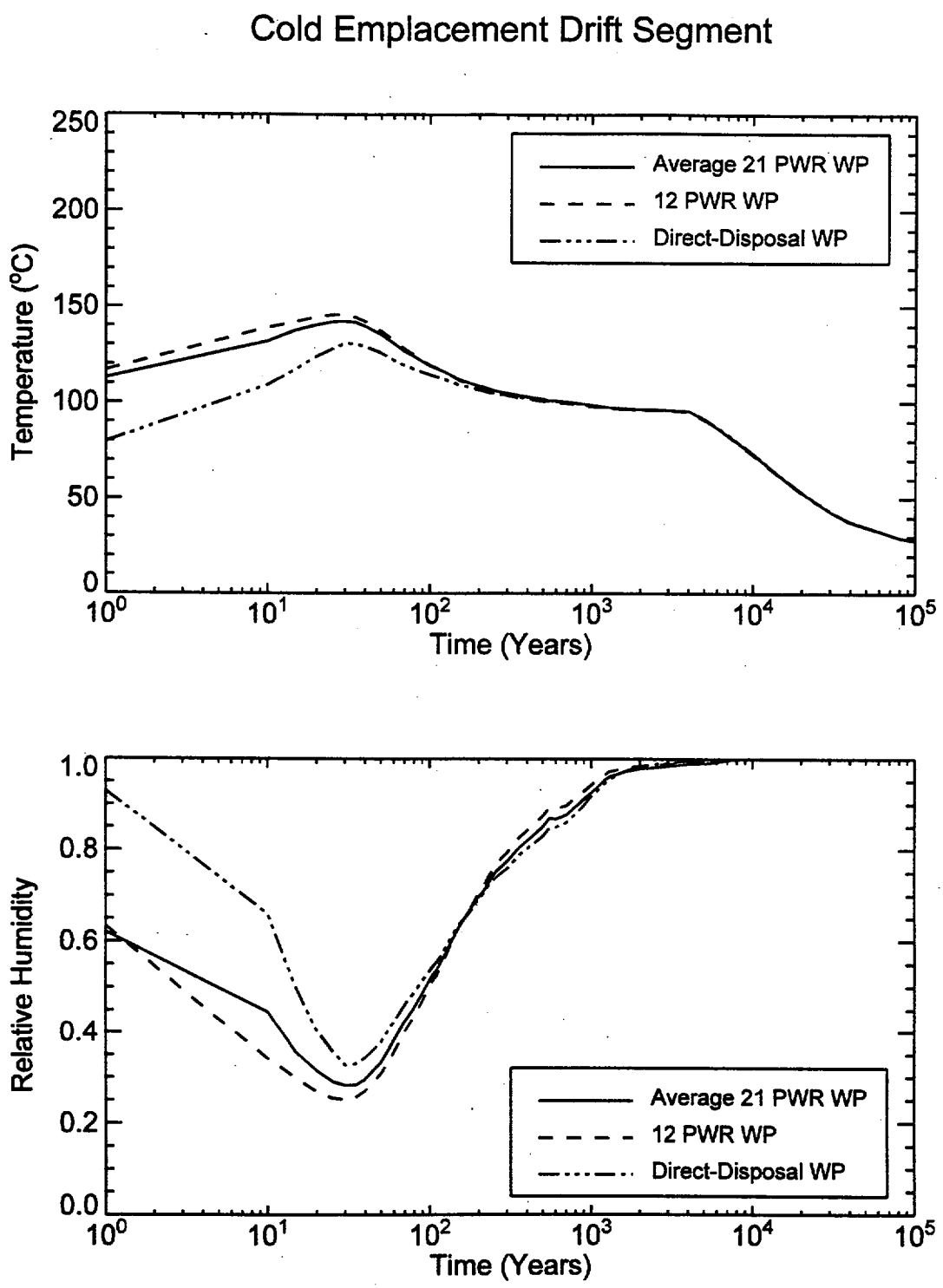


Figure 3-155. "Cold" drift segment displaying a hot, medium, and cold waste package (present day climate, mean infiltration, base case hydrologic properties). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

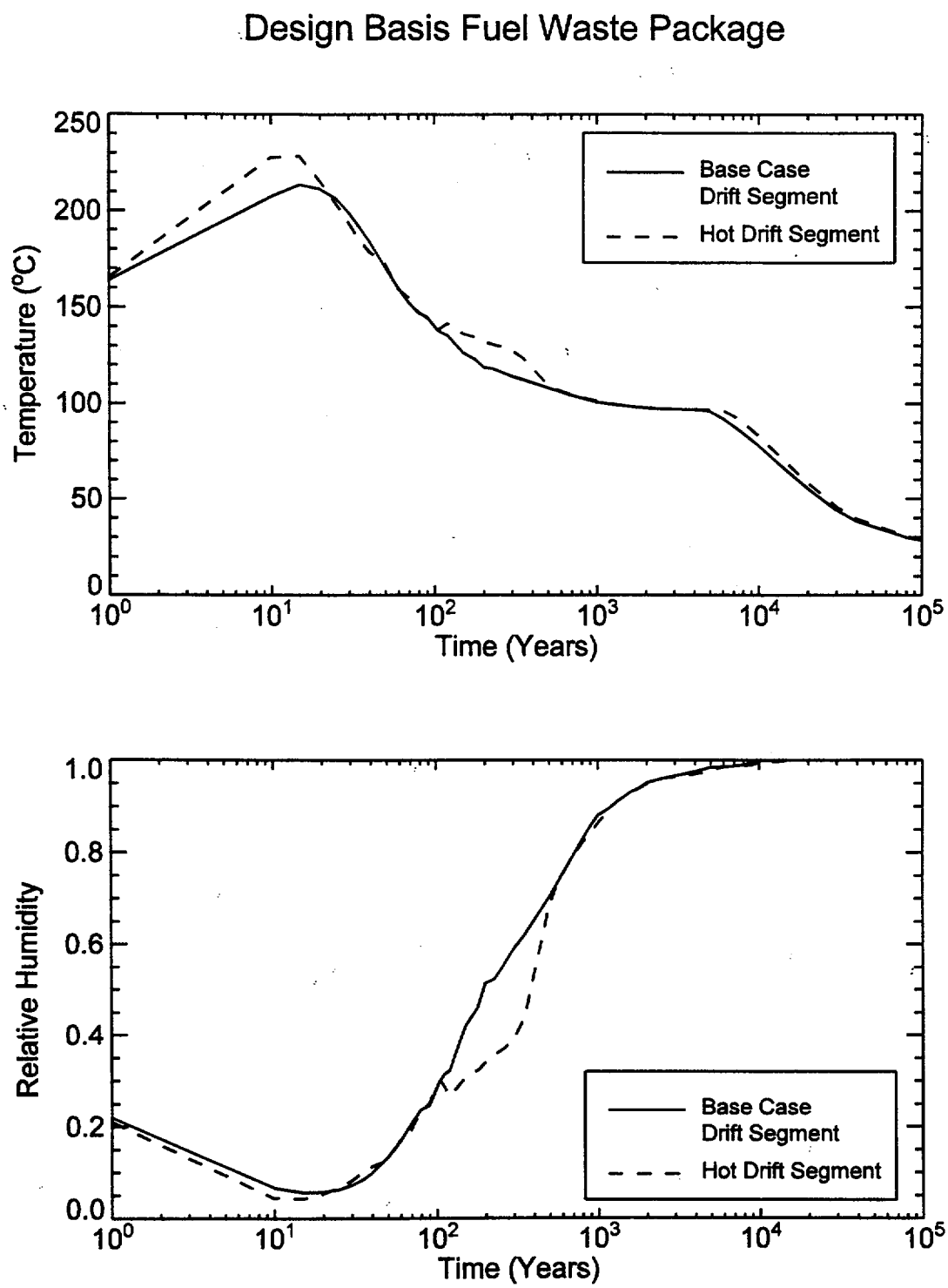


Figure 3-156. Design basis fuel waste package for the base case and the "hot" drift segments (present day climate, mean infiltration, base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

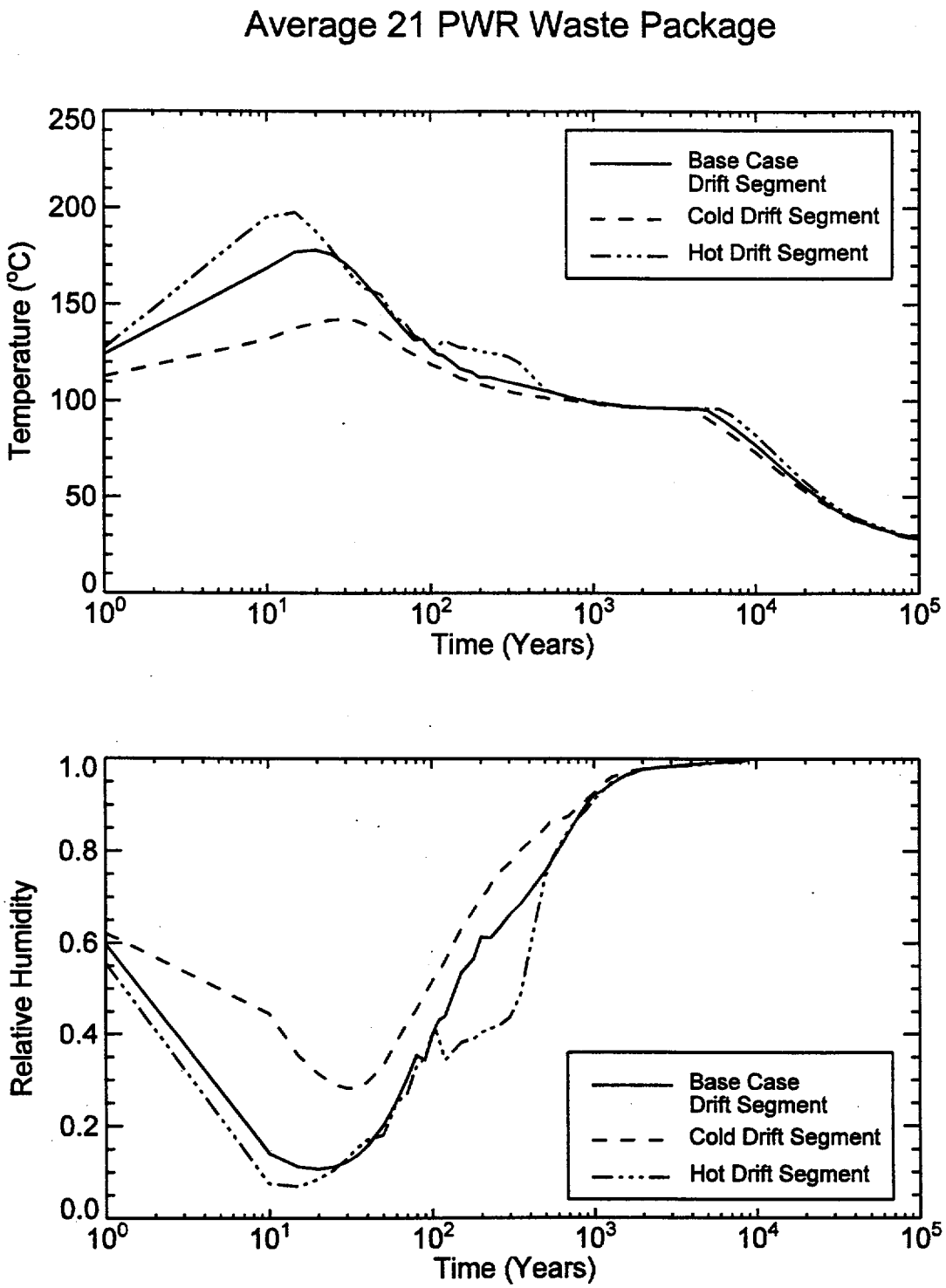


Figure 3-157. Average 21 PWR waste package for the base case, "cold," and the "hot" drift segments (present day climate, mean infiltration, base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

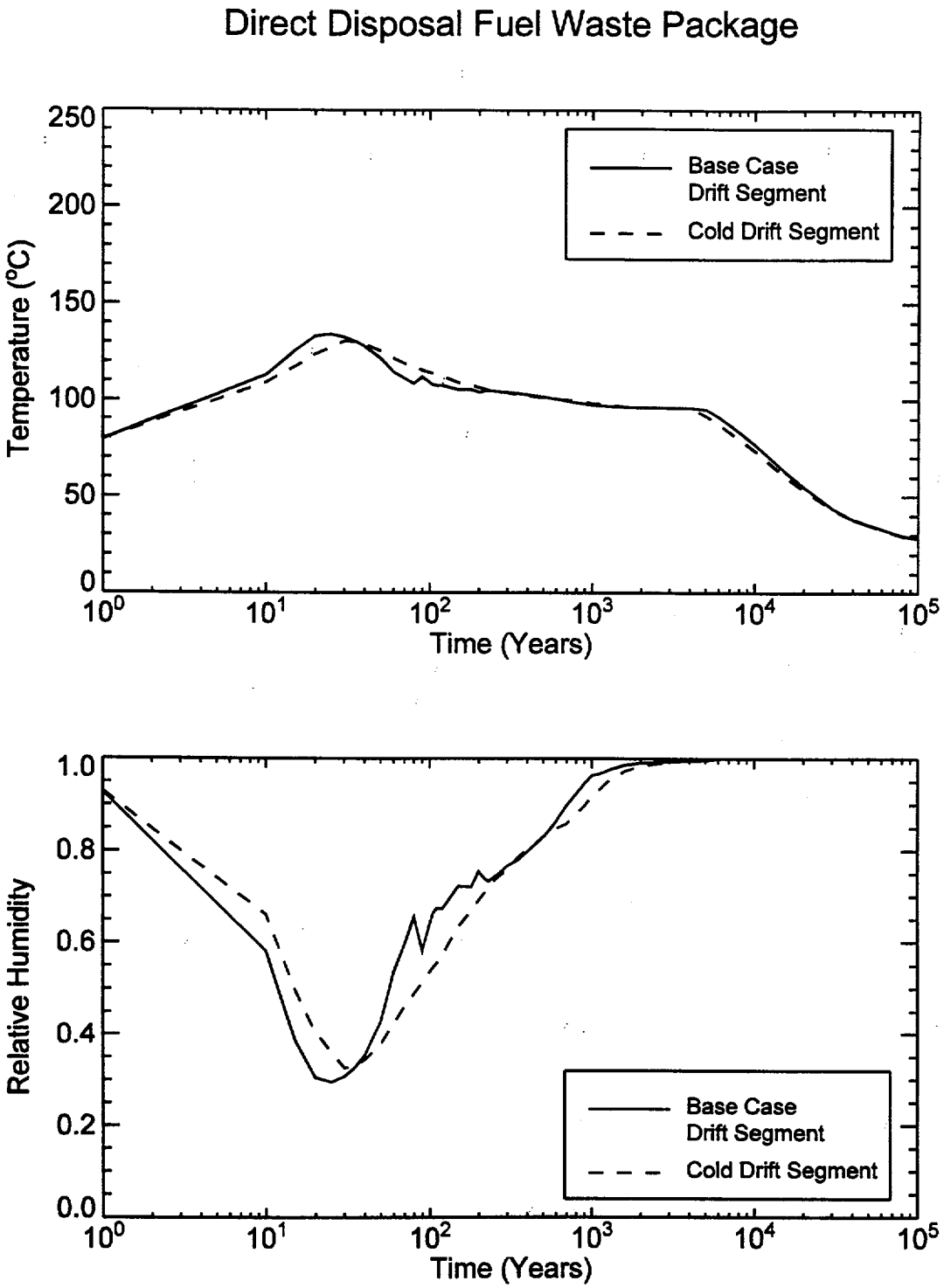


Figure 3-158. Separate (direct-) disposal waste package for the base case and the "cold" drift segments (present day climate, mean infiltration, base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

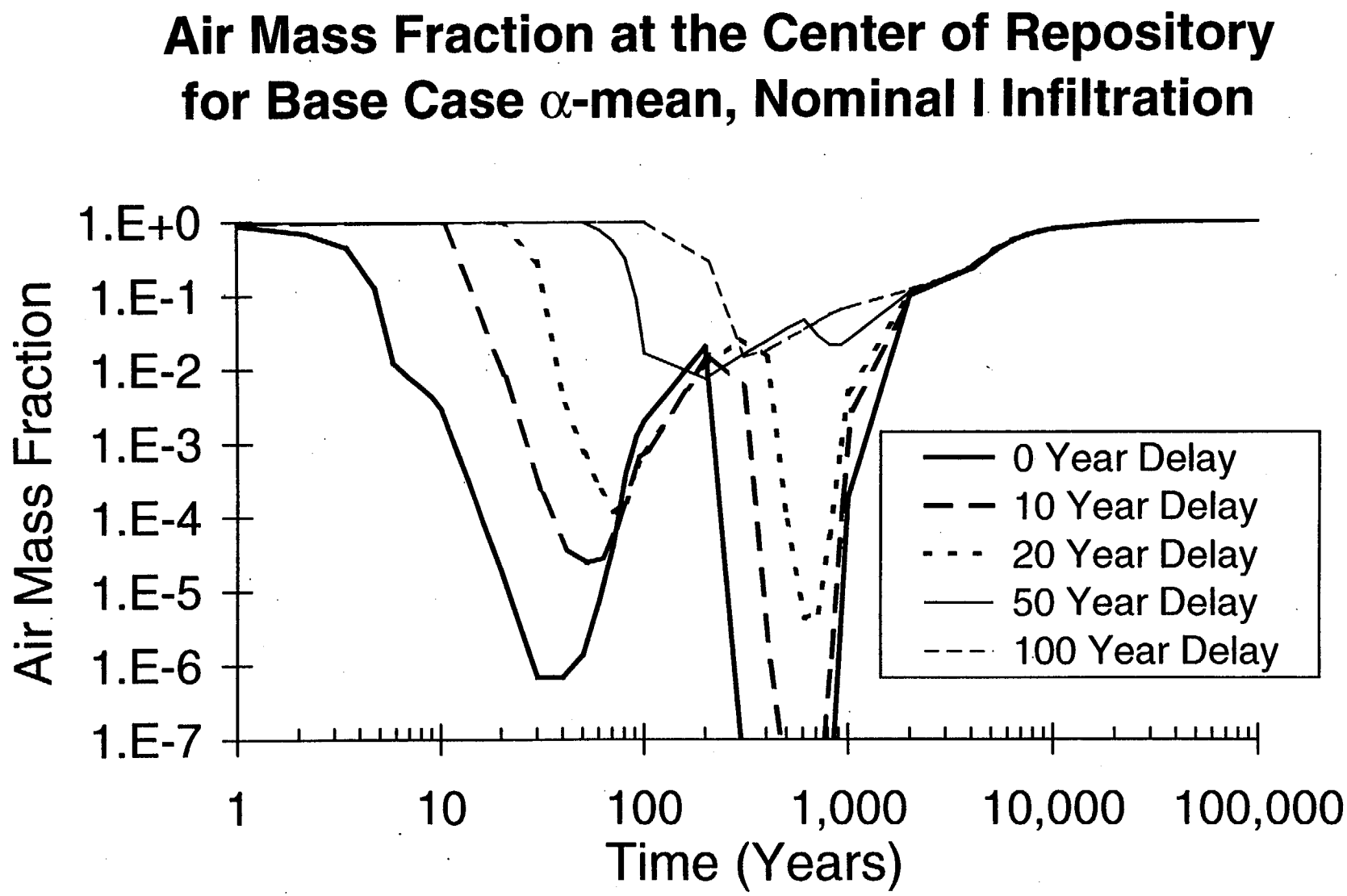


Figure 3-159. Air mass fraction at the center of the repository for various waste emplacement delay times. Base case α_f-mean property set at the nominal I infiltration rate.

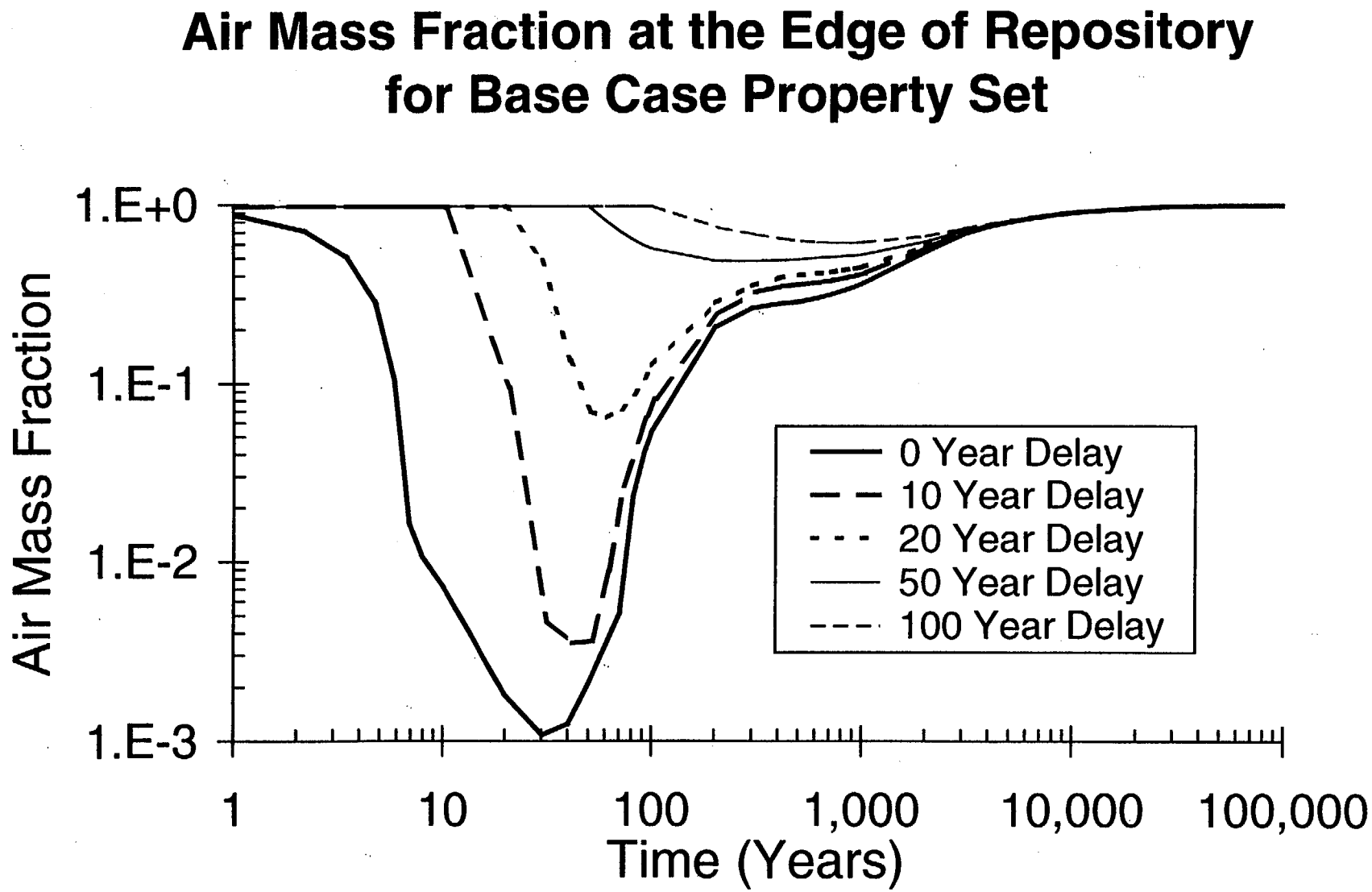


Figure 3-160. Air mass fraction at the edge of the repository for various waste emplacement delay times. Base case α_l-mean property set at the nominal I infiltration rate.

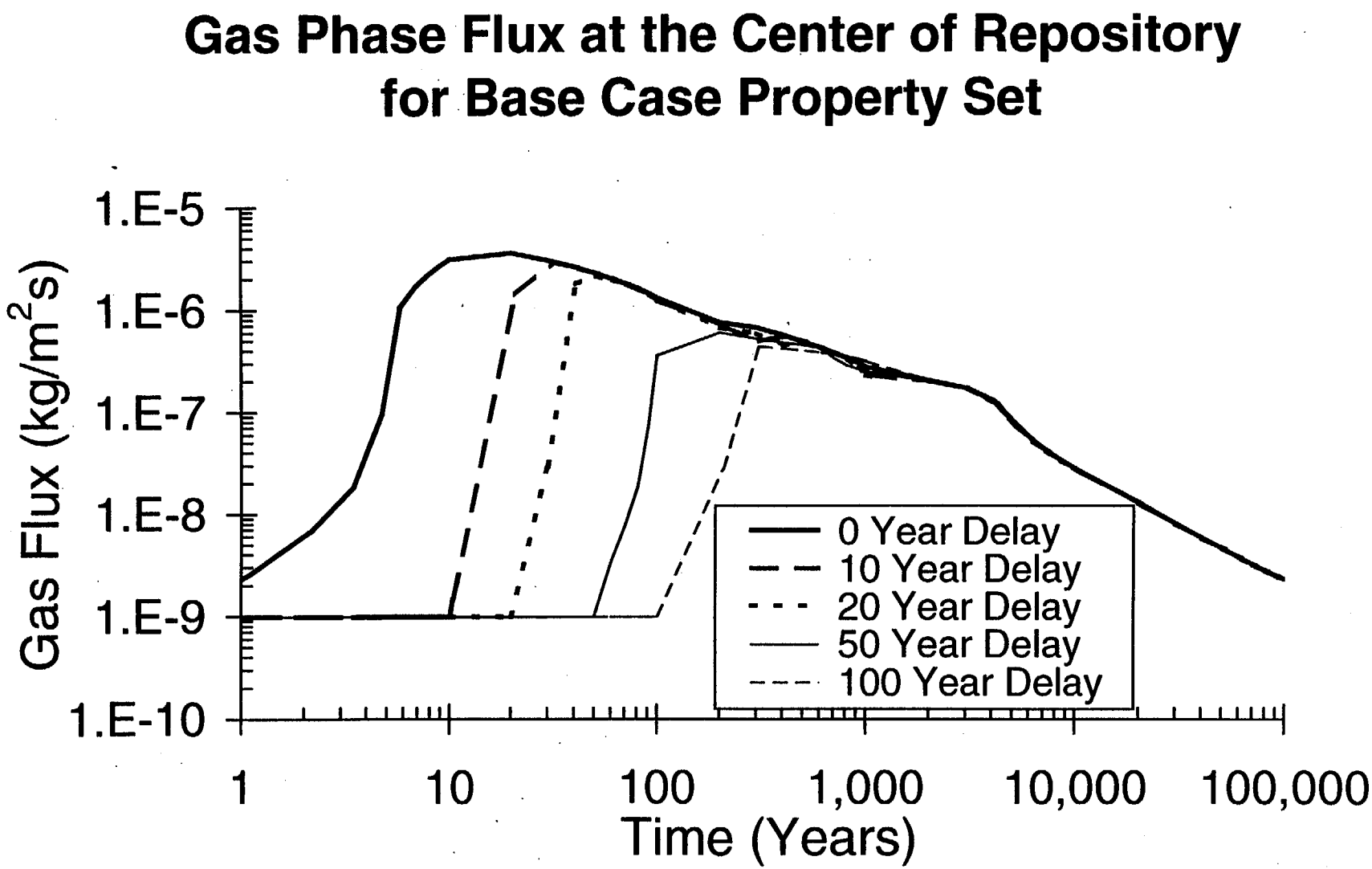


Figure 3-161. Gas flux at the center of the repository for various waste emplacement delay times. Base case α_f-mean property set at the nominal I infiltration rate.

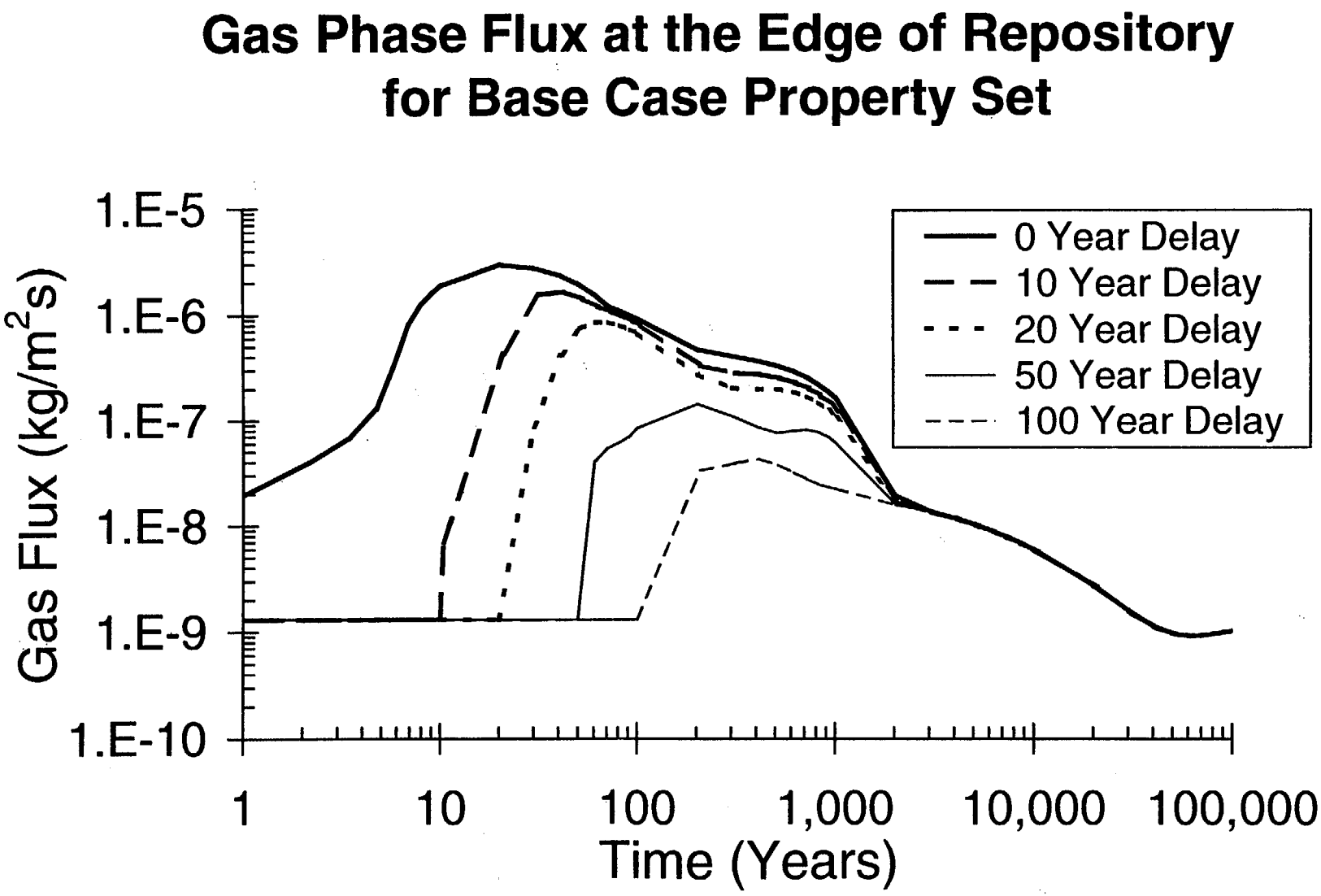


Figure 3-162. Gas flux at the edge of the repository for various waste emplacement delay times. Base case α_f-mean property set at the nominal I infiltration rate.

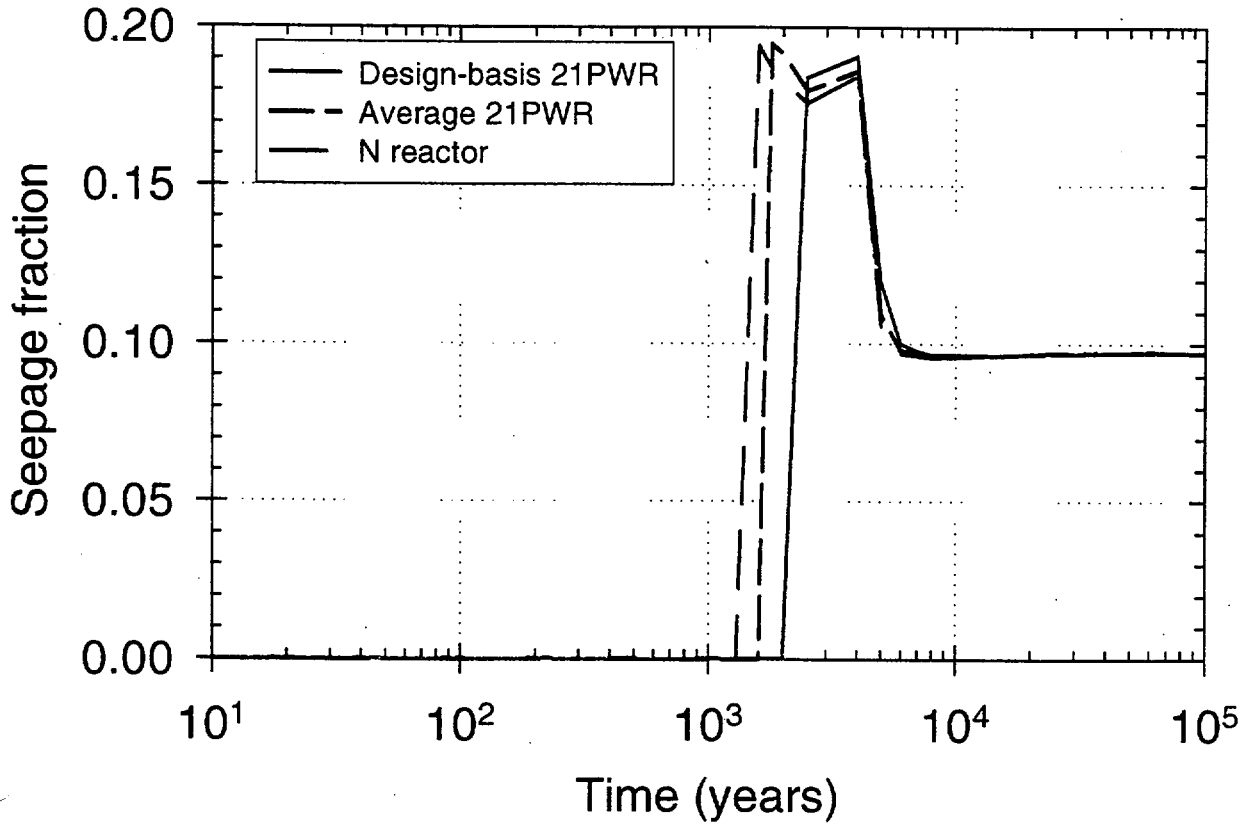


Figure 3-163. Seepage fraction (fraction of waste packages contacted by seeps) for three waste packages, as calculated by the approximate method described in the text.

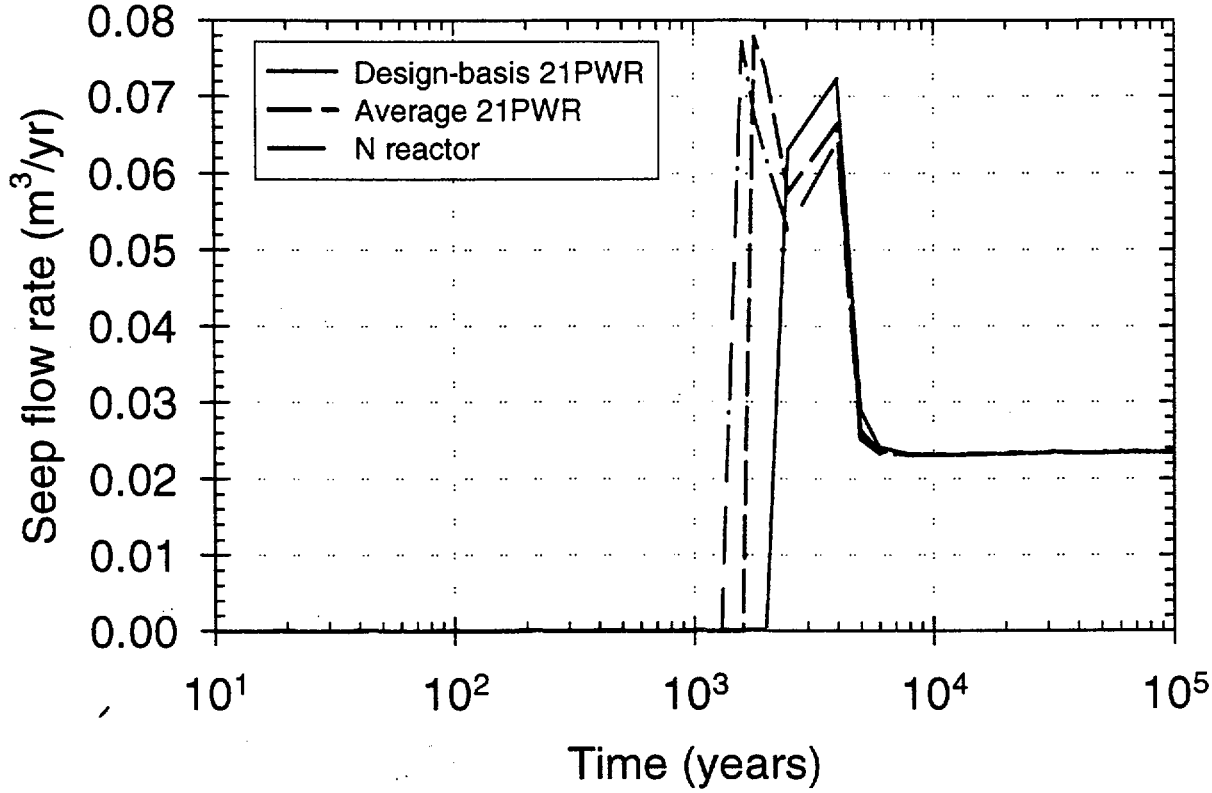


Figure 3-164. Seep flow rate for three waste packages, as calculated by the approximate method described in the text.

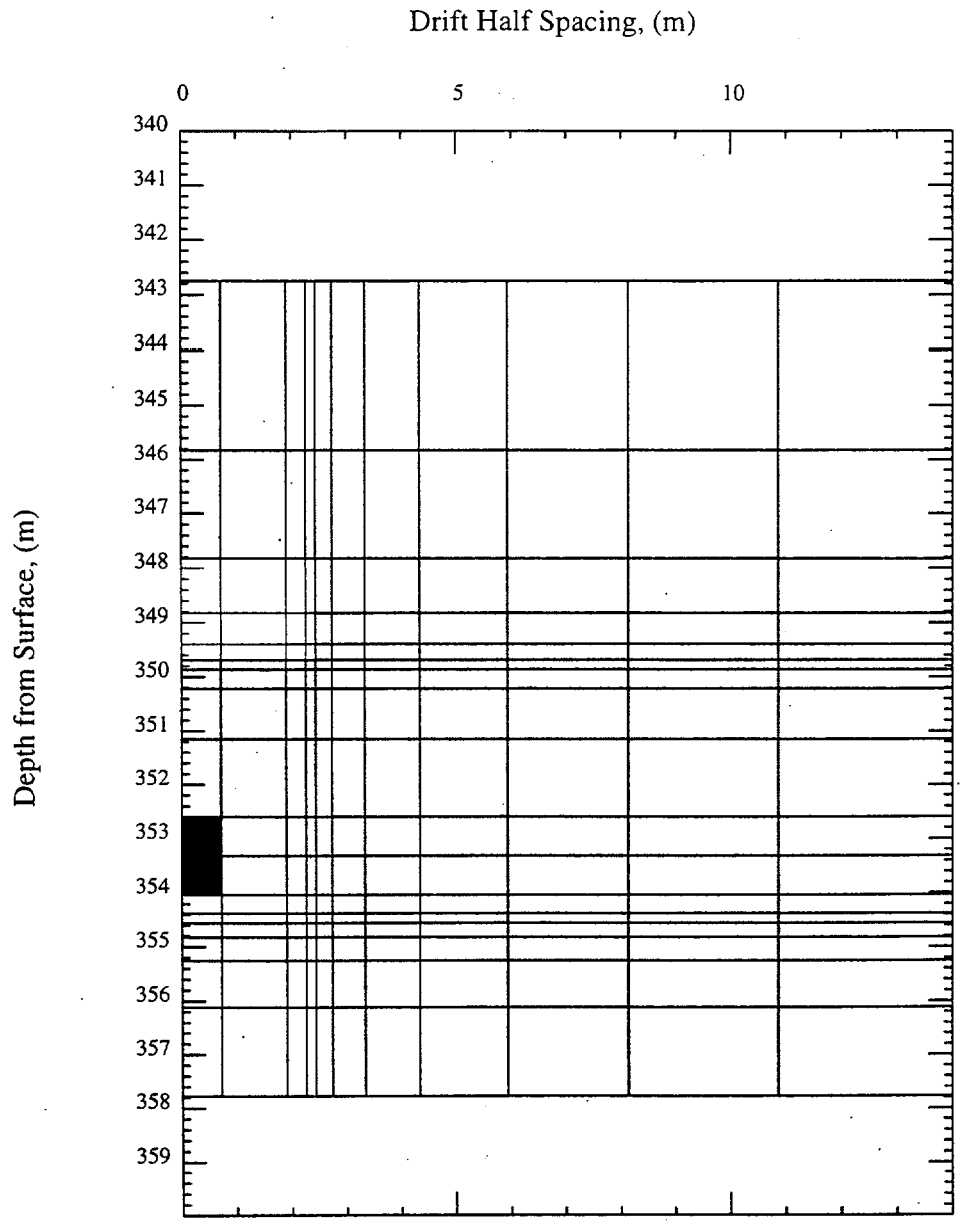


Figure 3-165. The rockfall rubble computational mesh.

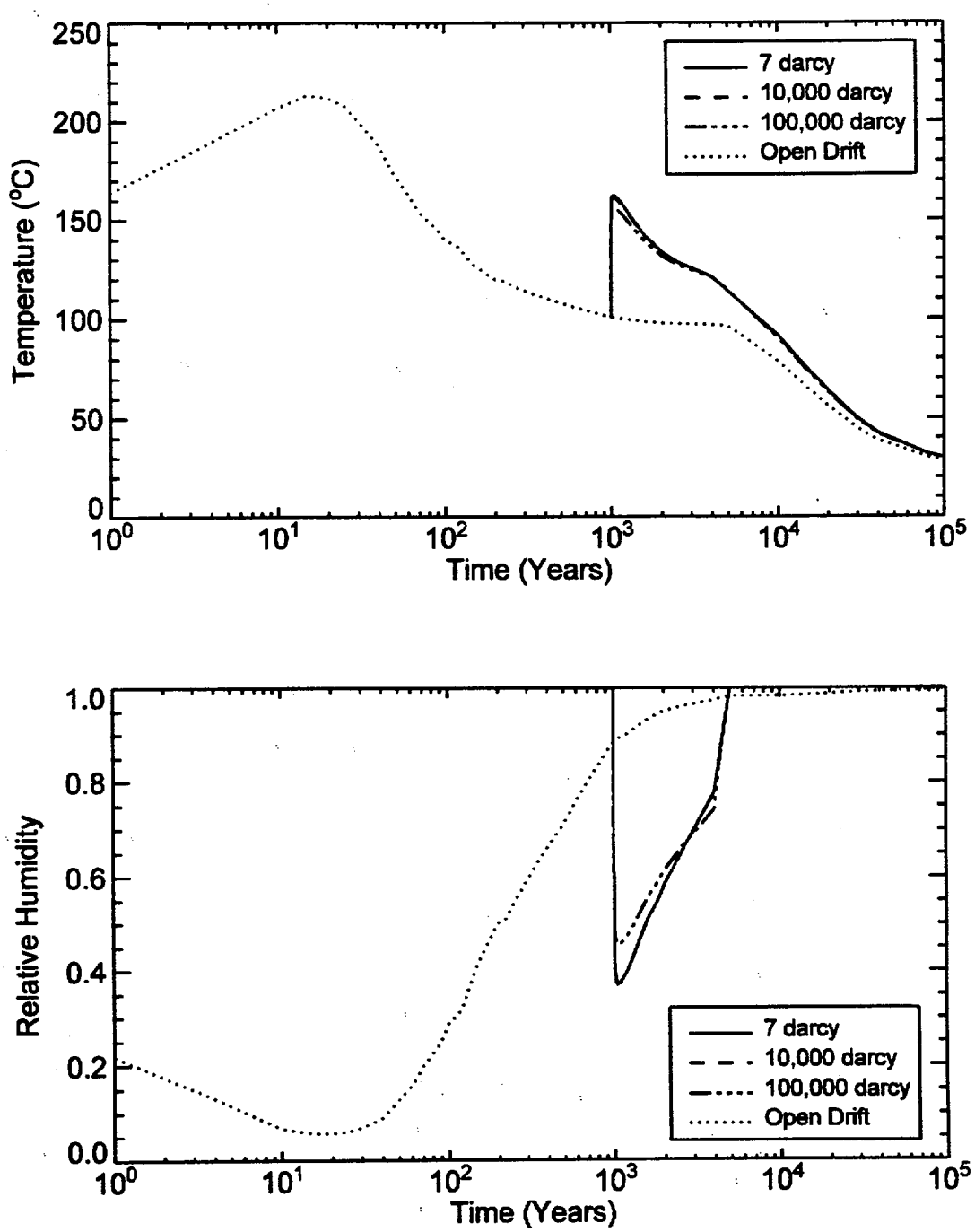


Figure 3-166. Rockfall rubble at 1000 years after waste emplacement (design basis fuel waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

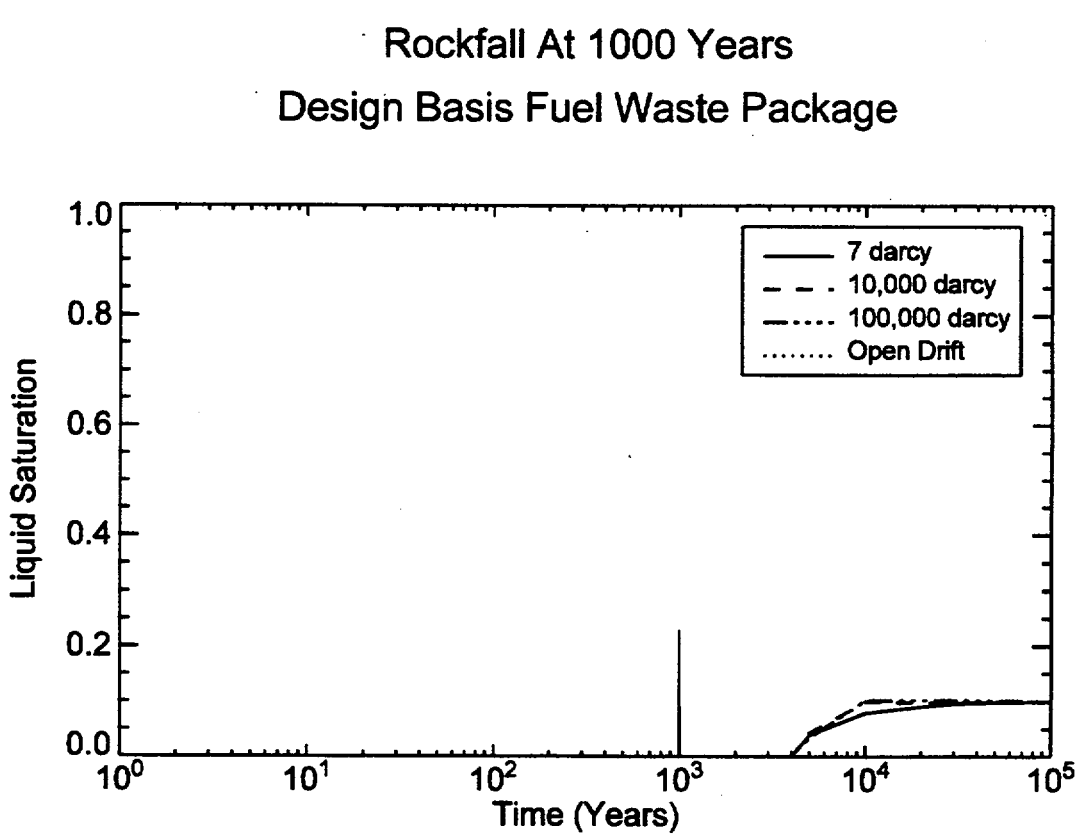


Figure 3-167. Rockfall rubble at 1000 years after waste emplacement (design basis fuel waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Liquid saturation adjacent to waste package surface.

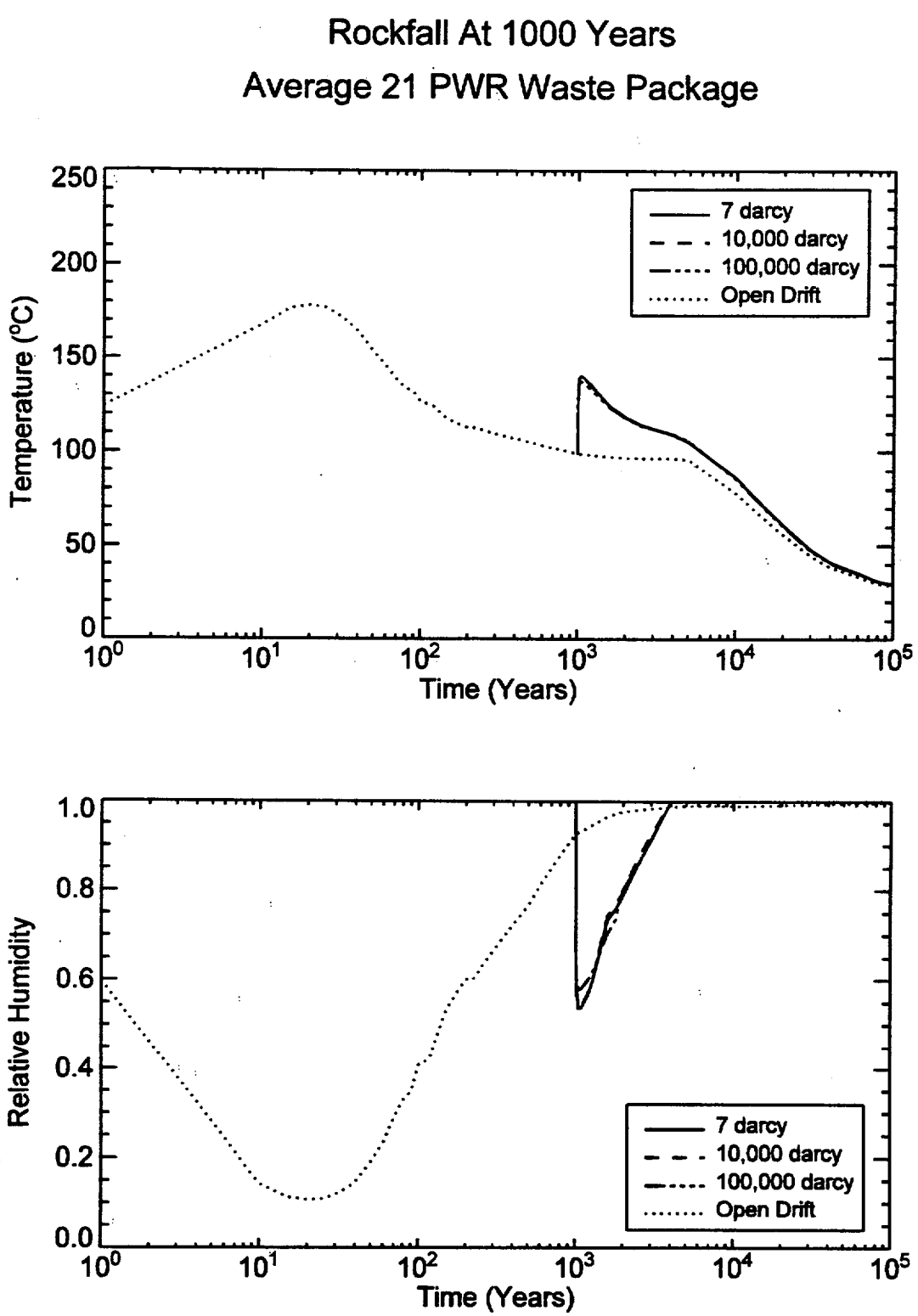


Figure 3-168. Rockfall rubble at 1000 years after waste emplacement (average 21 PWR waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

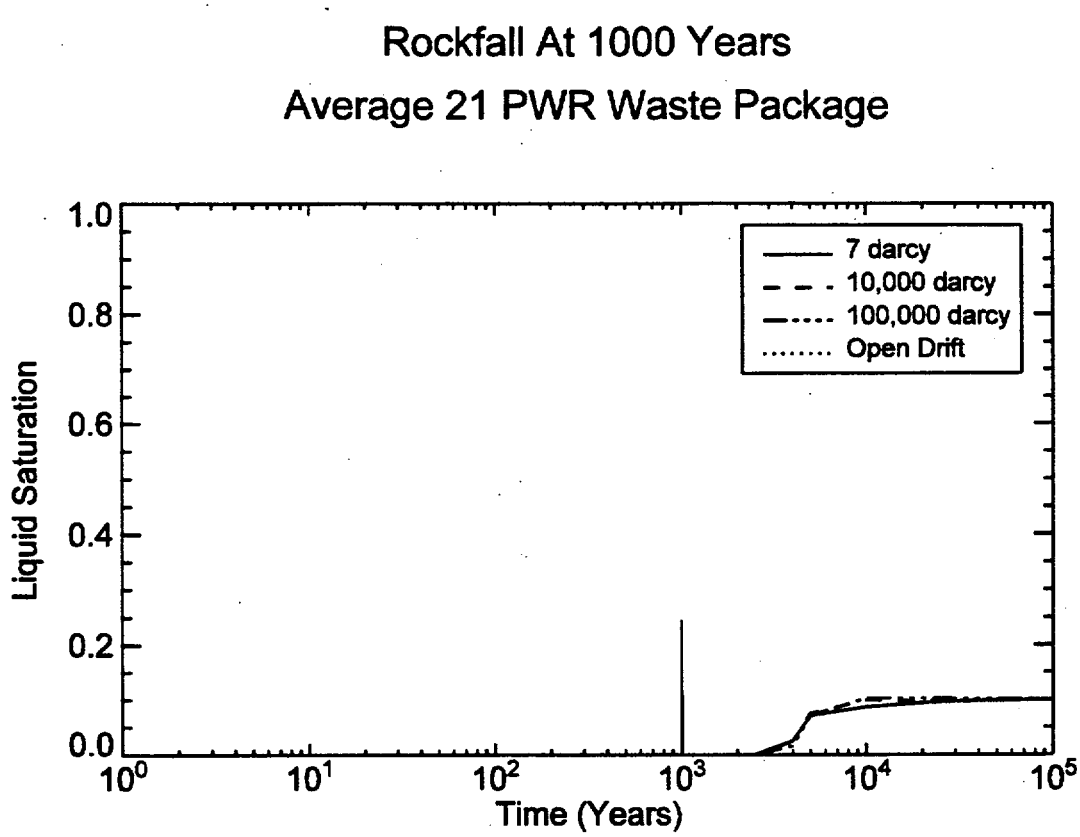


Figure 3-168. Rockfall rubble at 1000 years after waste emplacement (average 21 PWR waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Liquid saturation adjacent to waste package surface.

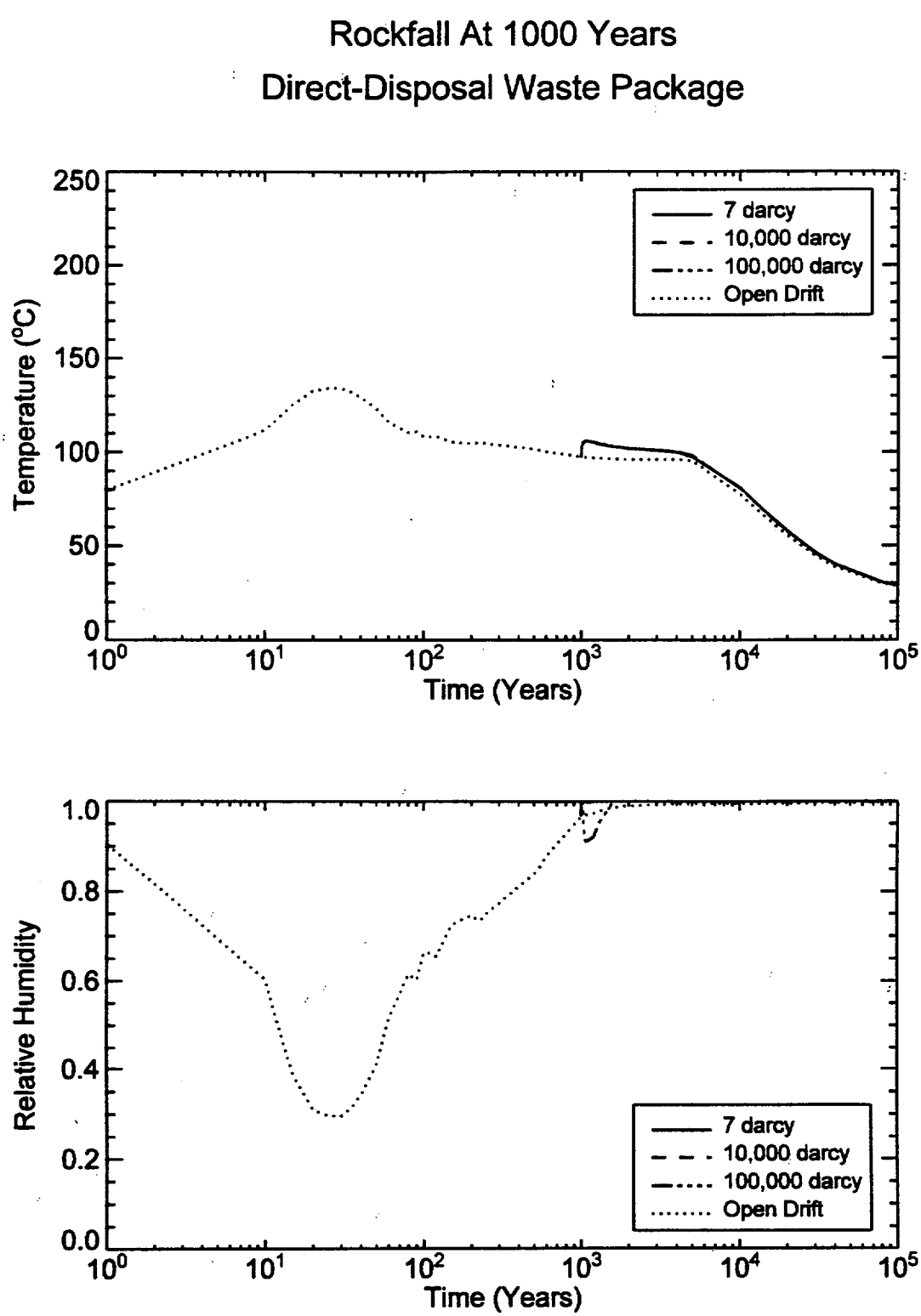


Figure 3-170. Rockfall rubble at 1000 years after waste emplacement (direct-disposal waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Upper figure: waste package surface temperature, Lower figure: waste package surface relative humidity.

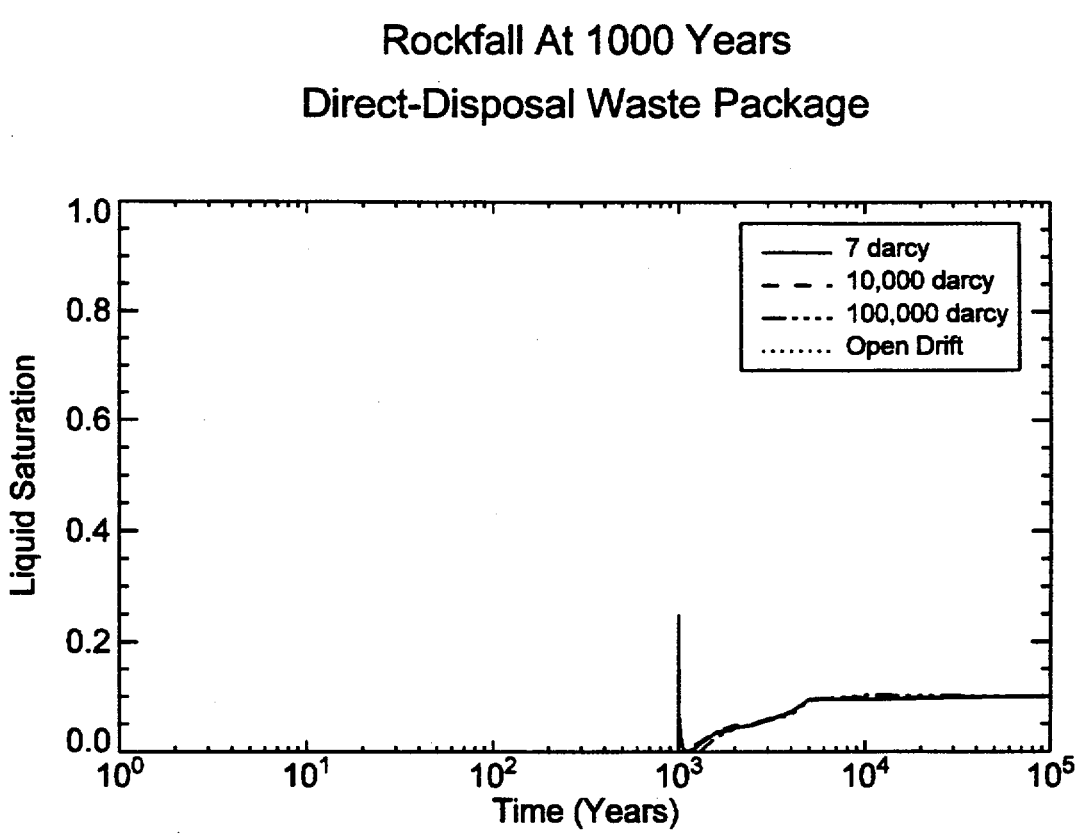


Figure 3-171. Rockfall rubble at 1000 years after waste emplacement (direct-disposal waste package, present day climate, mean infiltration, preliminary base case hydrologic property set). Liquid saturation adjacent to waste package surface.

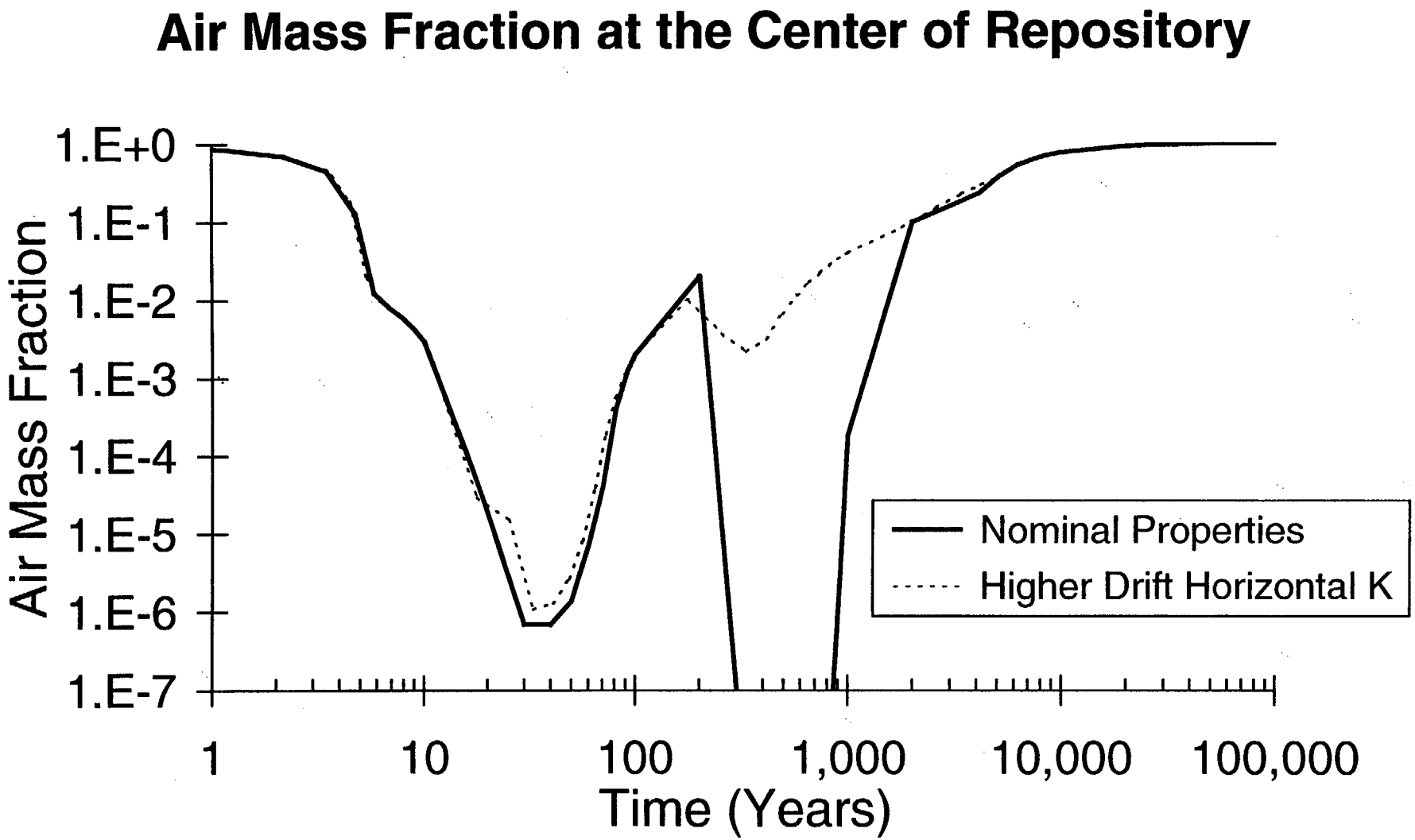


Figure 3-172. Air mass fraction at the center of the repository when the horizontal bulk permeability in the repository elements is increased by a factor of 1000 and when the nominal property set is used. Base case α_l-mean at nominal I, present day infiltration.

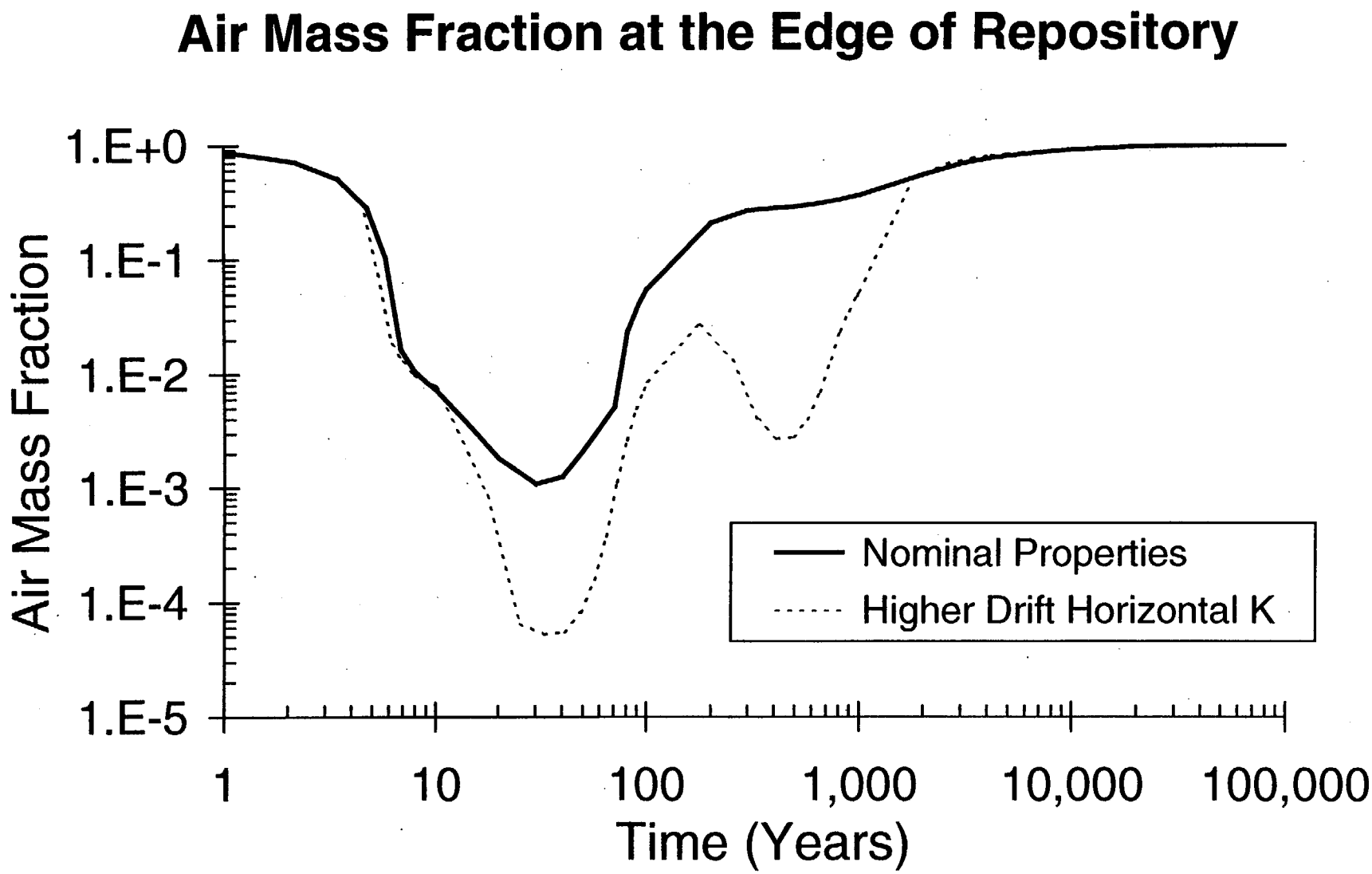


Figure 3-173. Air mass fraction at the edge of the repository when the horizontal bulk permeability in the repository elements is increased by a factor of 1000 and when the nominal property set is used. Base case α_l-mean at nominal I, present day infiltration.

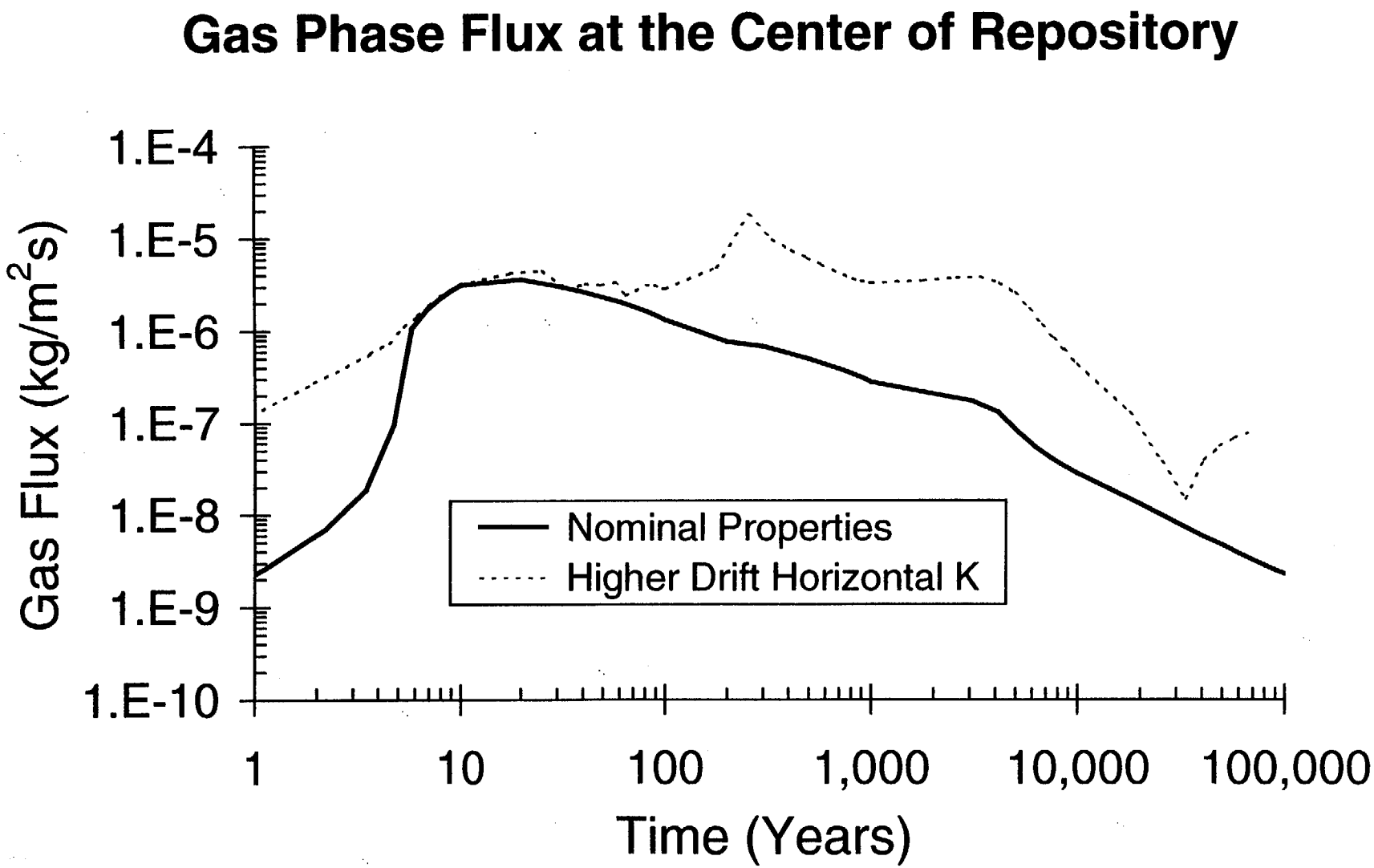


Figure 3-174. Gas flux at the center of the repository when the horizontal bulk permeability in the repository elements is increased by a factor of 1000 and when the nominal property set is used. Base case α_f-mean at nominal I, present day infiltration.

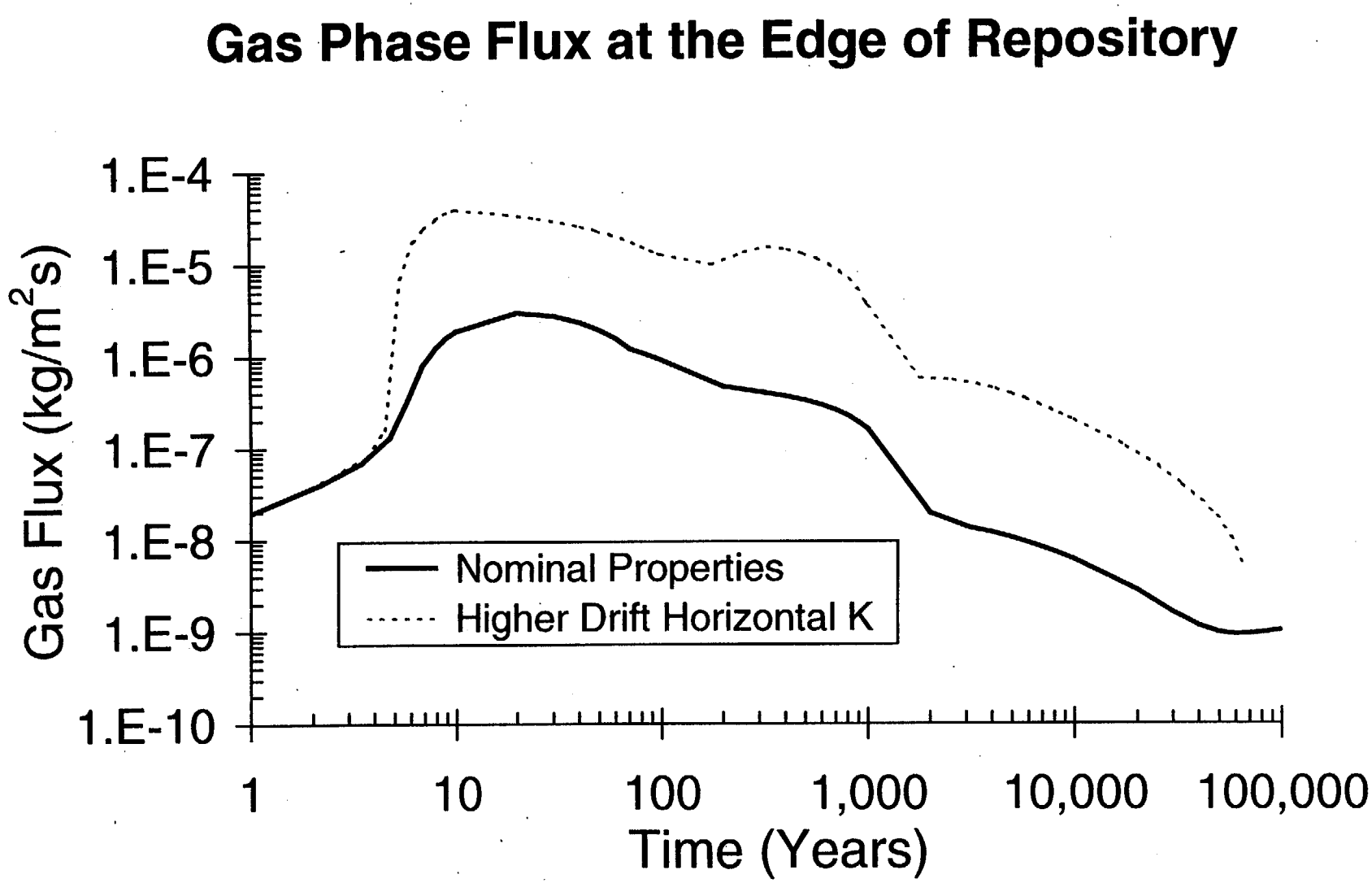


Figure 3-175. Gas flux at the edge of the repository when the horizontal bulk permeability in the repository elements is increased by a factor of 1000 and when the nominal property set is used. Base case α_t-mean at nominal I, present day infiltration.

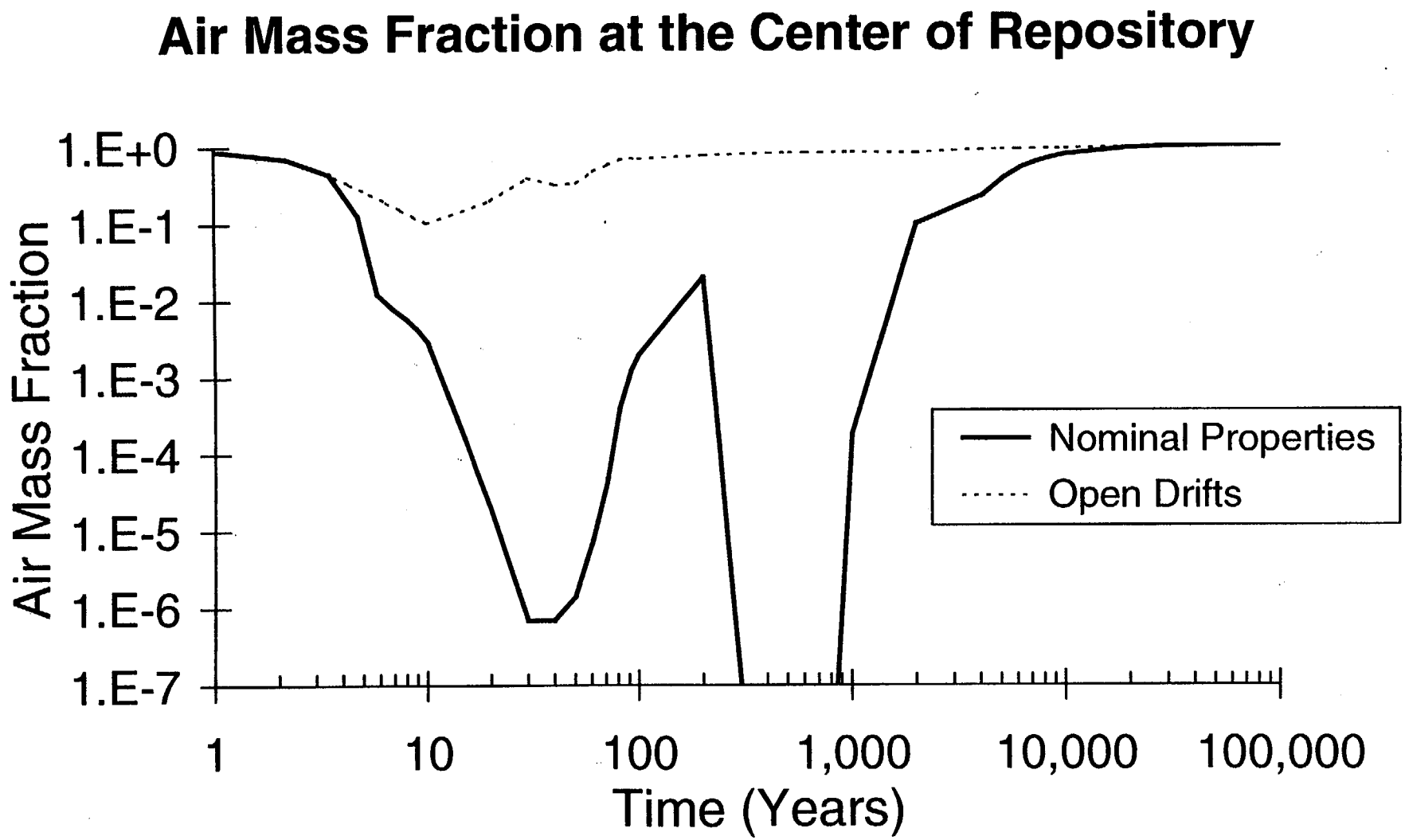


Figure 3-176. Air mass fraction at the center of the repository when the repository is modeled as being connected to the environment and the nominal case. Base case α_f-mean at nominal I, present day infiltration.

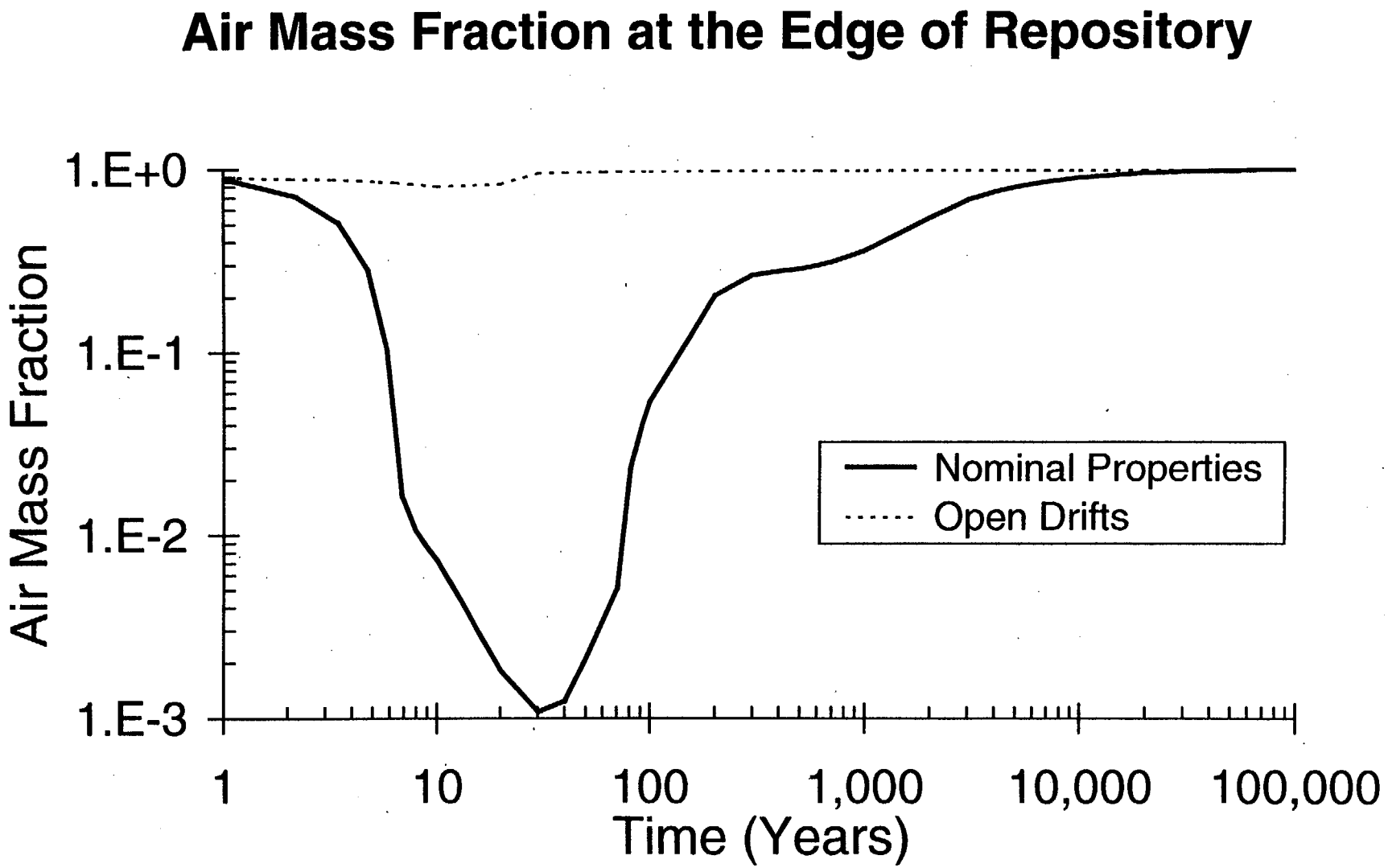


Figure 3-177. Air mass fraction at the edge of the repository when the repository is modeled as being connected to the environment and the nominal case. Base case α_f-mean at nominal I, present day infiltration.

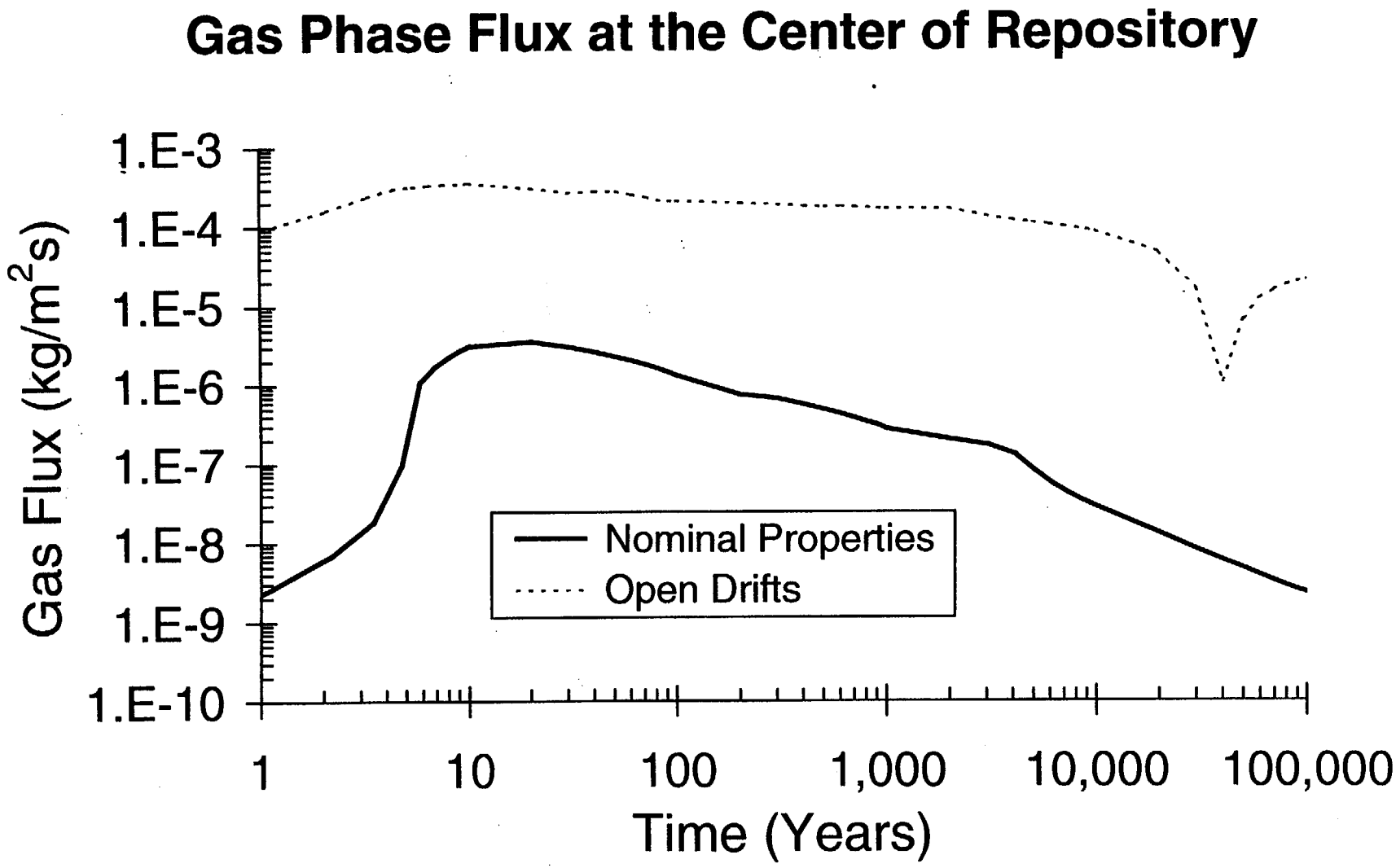


Figure 3-178. Gas flux at the center of the repository when the repository is modeled as being connected to the environment and the nominal case. Base case α_f-mean at nominal I, present day infiltration.

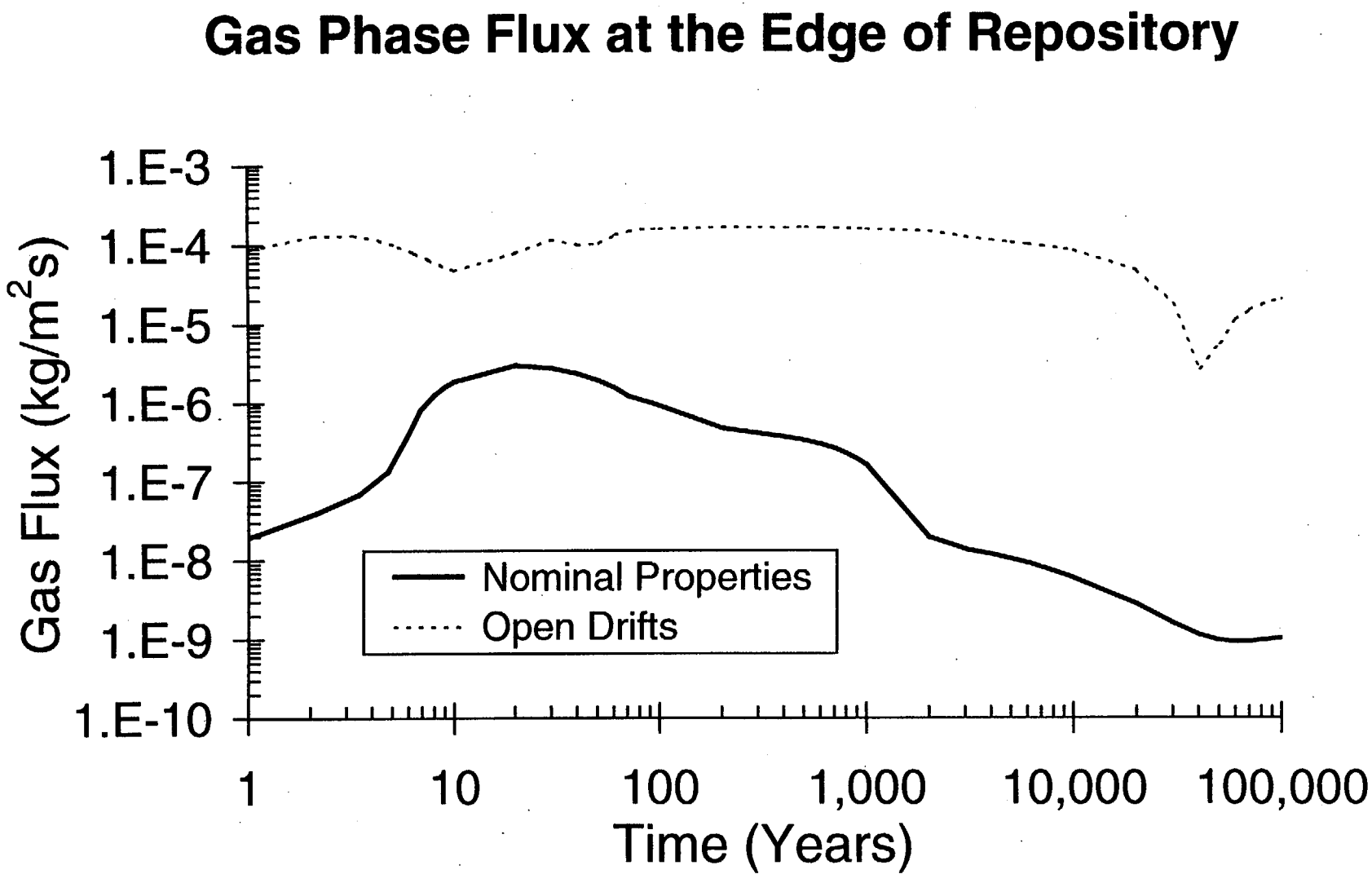


Figure 3-179. Gas flux at the edge of the repository when the repository is modeled as being connected to the environment and the nominal case. Base case α_r-mean at nominal I, present day infiltration.

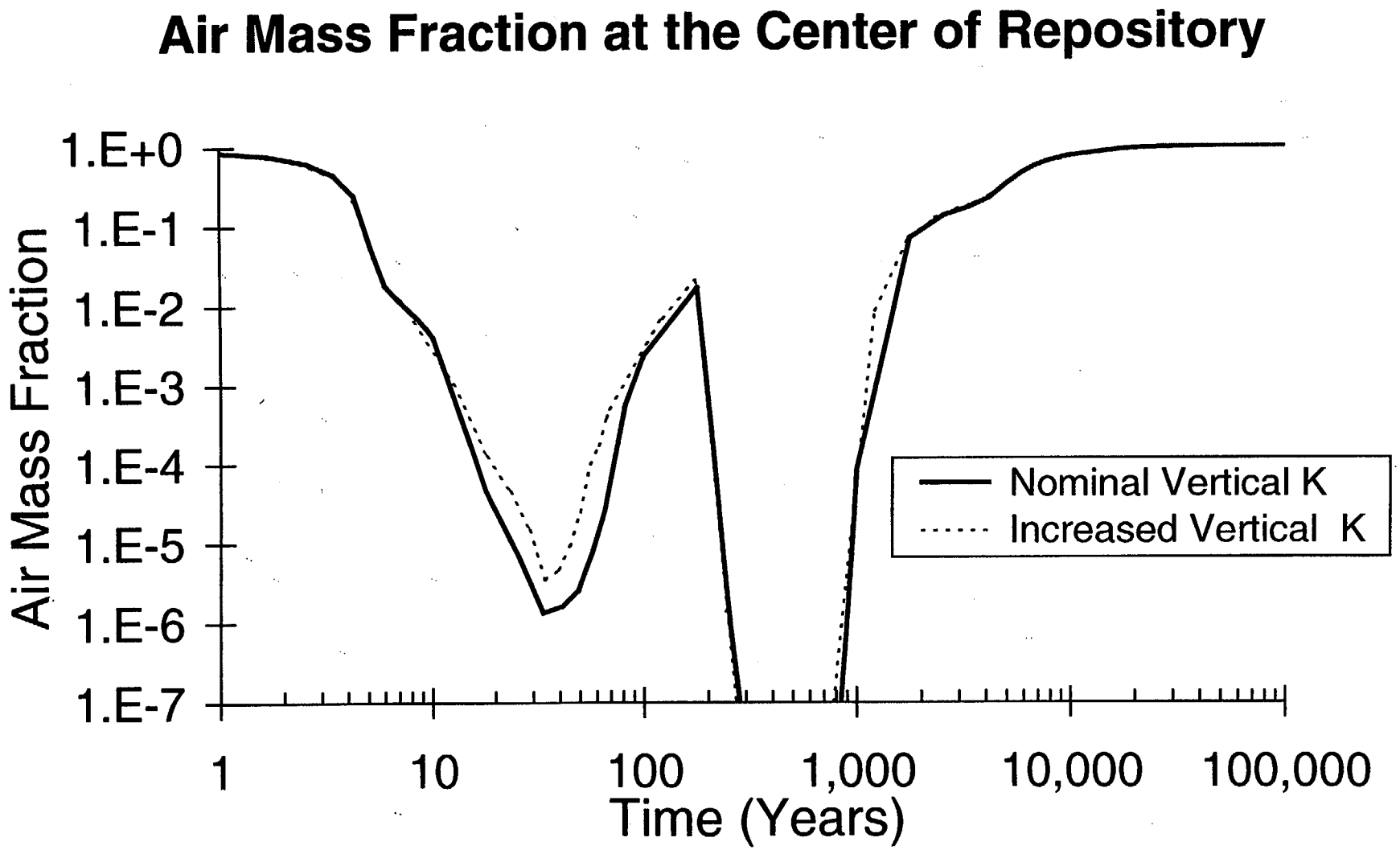


Figure 3-180. Air mass fraction at the center of the repository when the vertical fracture permeability is increased to ten times the horizontal fracture permeability in the tsw35, tsw36, and tsw37 and when the nominal property set is used. Preliminary base case at nominal I, present day infiltration.

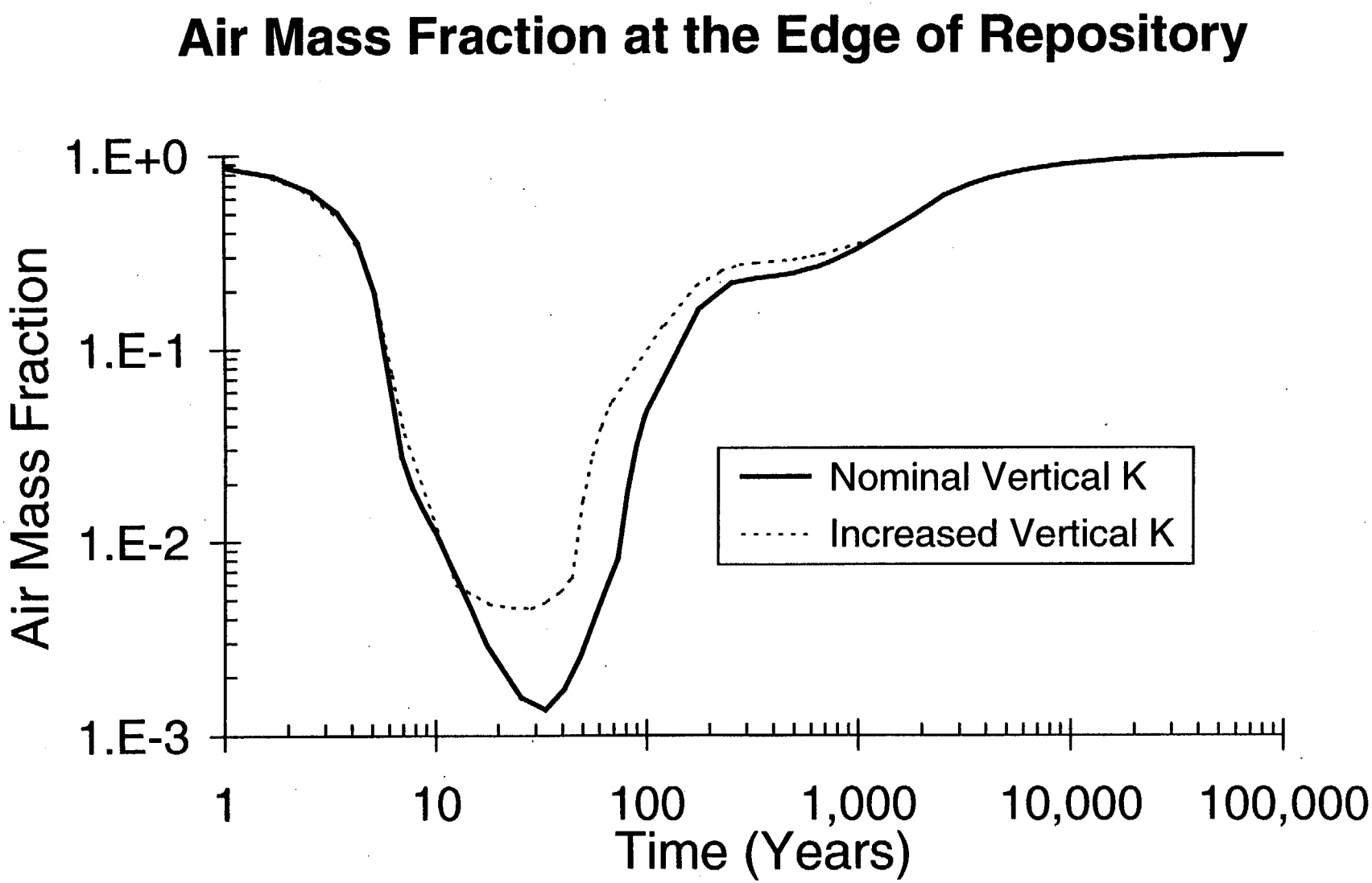


Figure 3-181. Air mass fraction at the edge of the repository when the vertical fracture permeability is increased to ten times the horizontal fracture permeability in the tsw35, tsw36, and tsw37 and when the nominal property set is used. Preliminary base case at nominal I, present day infiltration.

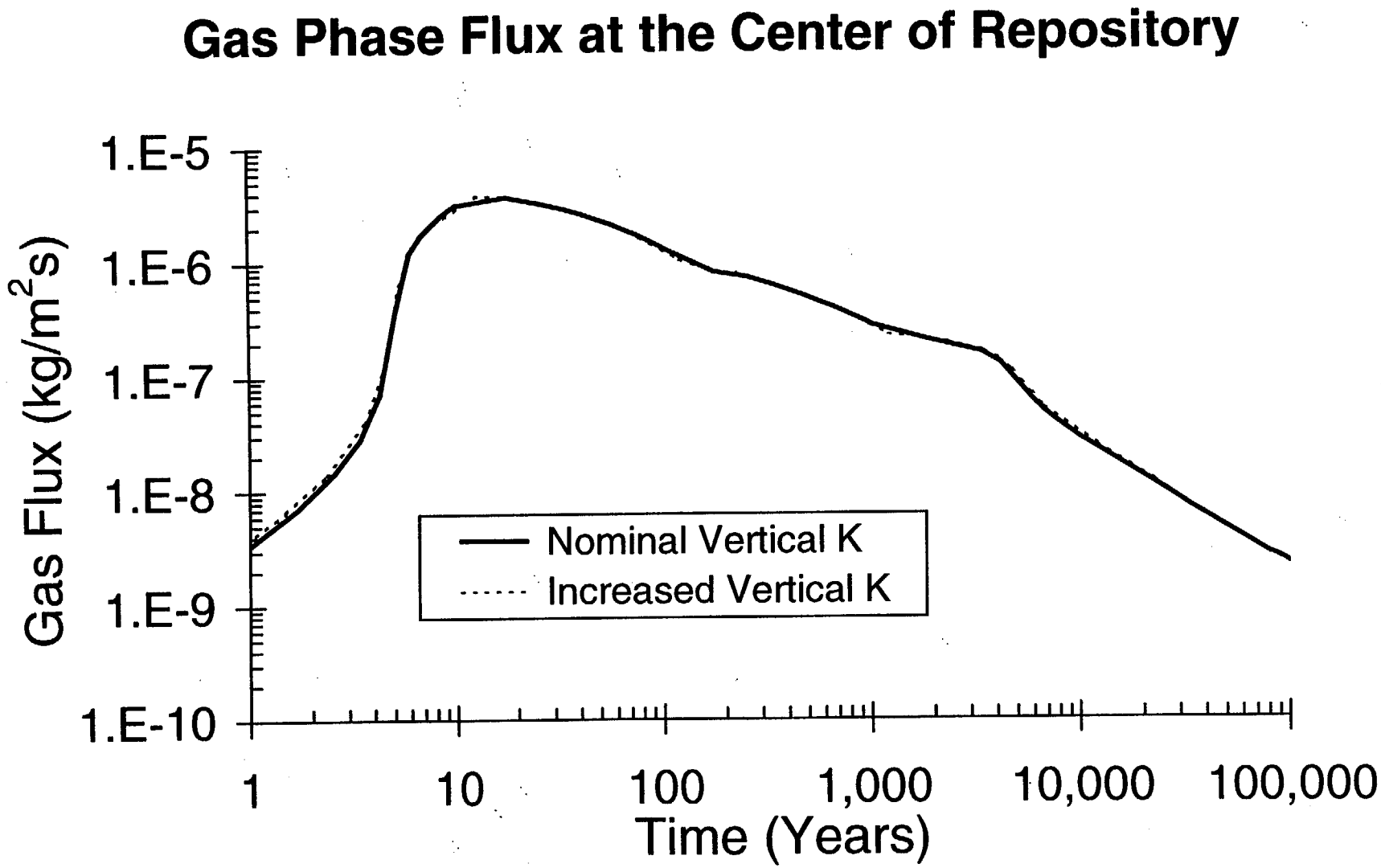


Figure 3-182. Gas flux at the center of the repository when the vertical fracture permeability is increased to ten times the horizontal fracture permeability in the tsw35, tsw36, and tsw37 and when the nominal property set is used. Preliminary base case at nominal I, present day infiltration.

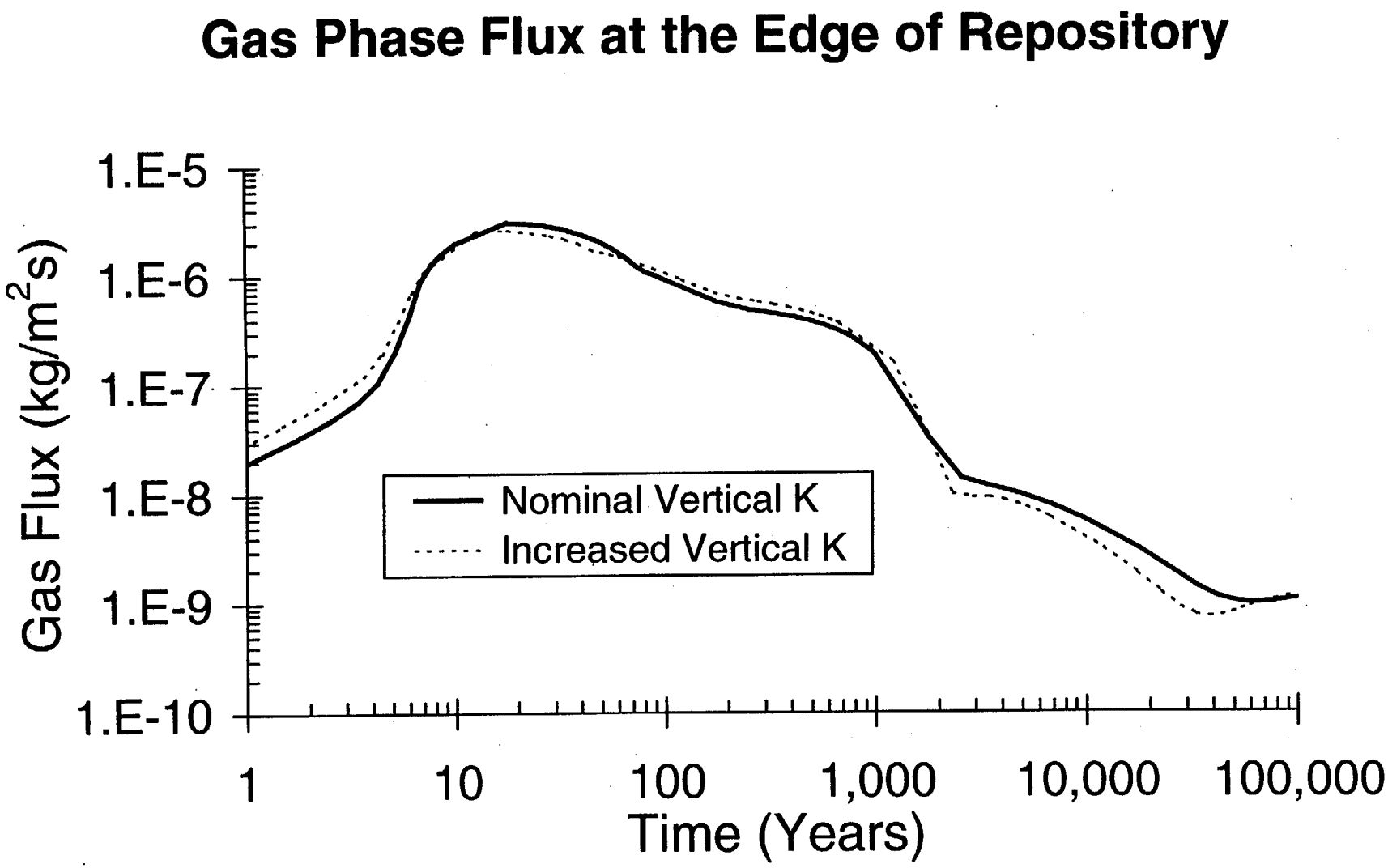


Figure 3-183. Gas flux at the edge of the repository when the vertical fracture permeability is increased to ten times the horizontal fracture permeability in the tsw35, tsw36, and tsw37 and when the nominal property set is used. Preliminary base case at nominal I, present day infiltration.

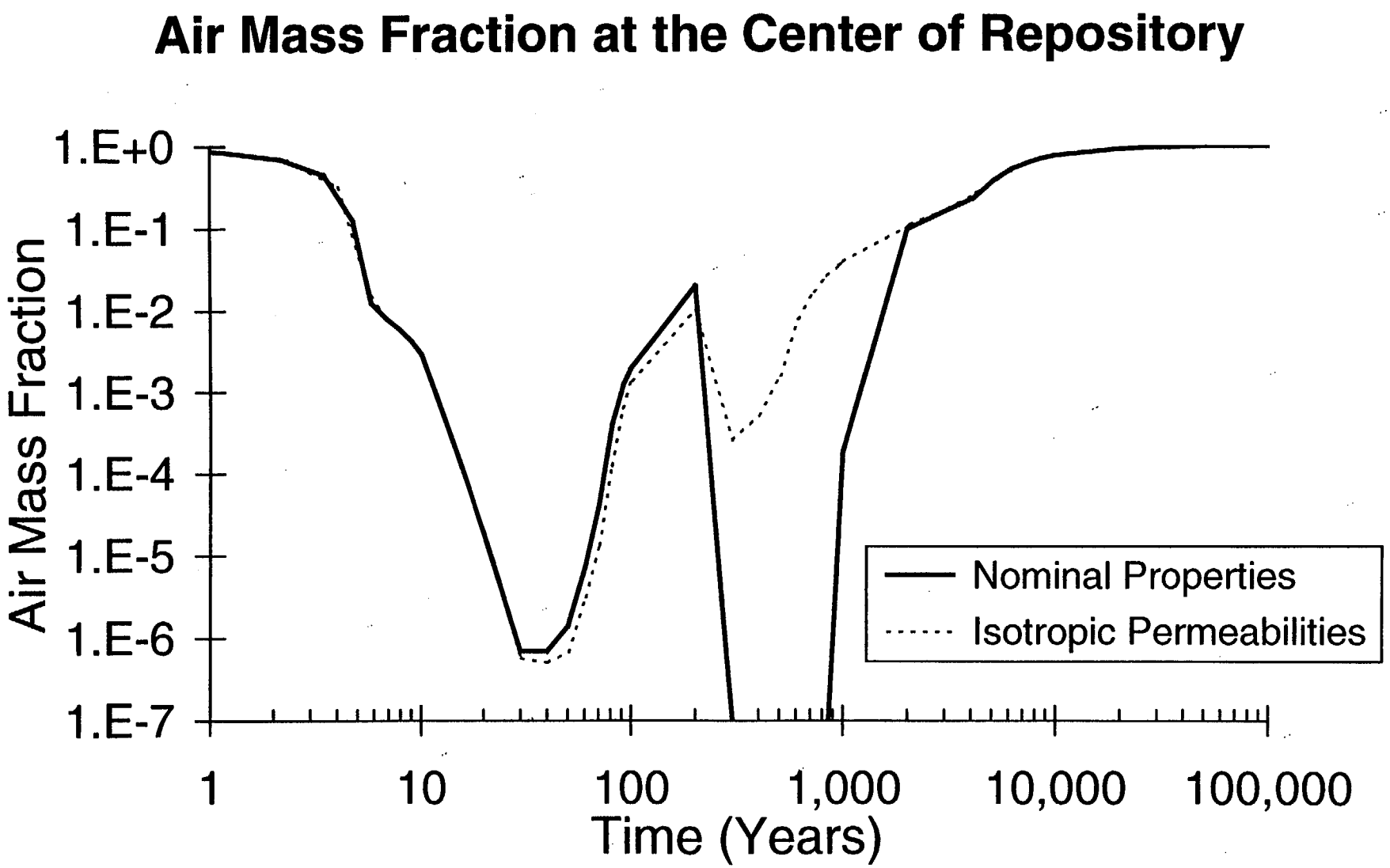


Figure 3-184. Air mass fraction at the center of the repository when the horizontal permeability was increased to that of the vertical permeability in each unit and when the nominal property set is used. Base case at nominal I, present day infiltration.

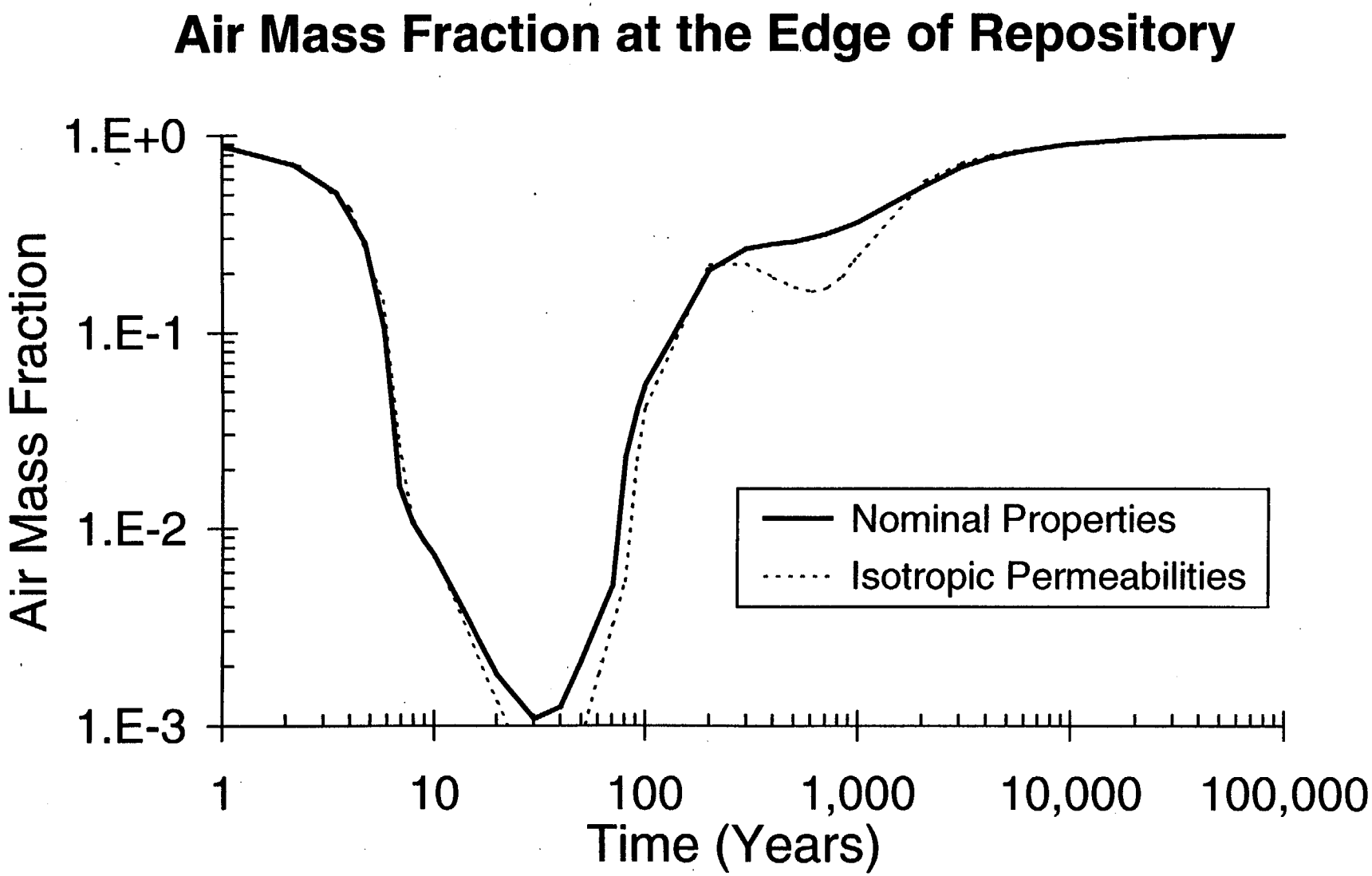


Figure 3-185. Air mass fraction at the edge of the repository when the horizontal permeability was increased to that of the vertical permeability in each unit and when the nominal property set is used. Base case at nominal I, present day infiltration.

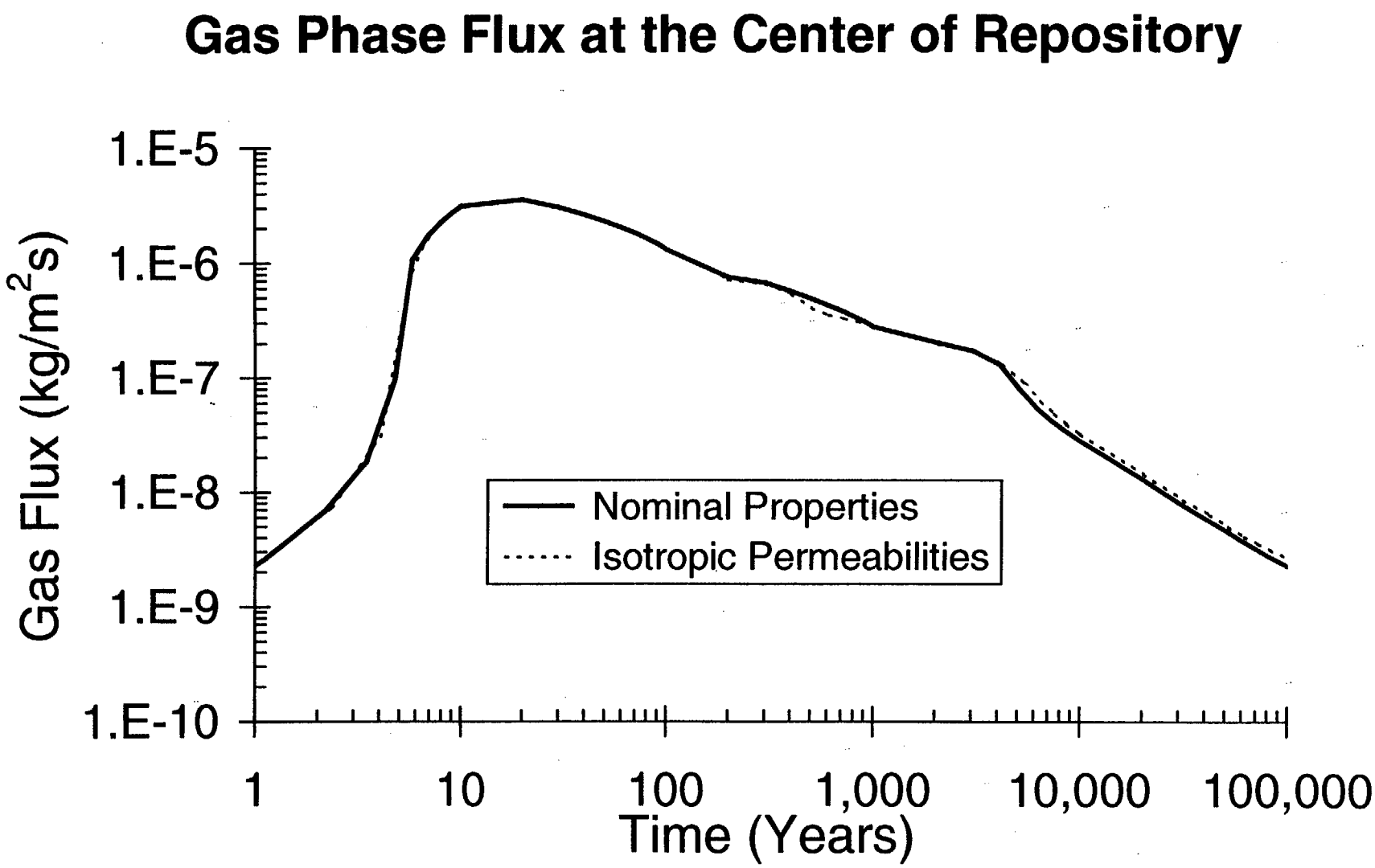


Figure 3-186. Gas flux at the center of the repository when the horizontal permeability was increased to that of the vertical permeability in each unit and when the nominal property set is used. Base case at nominal I, present day infiltration.

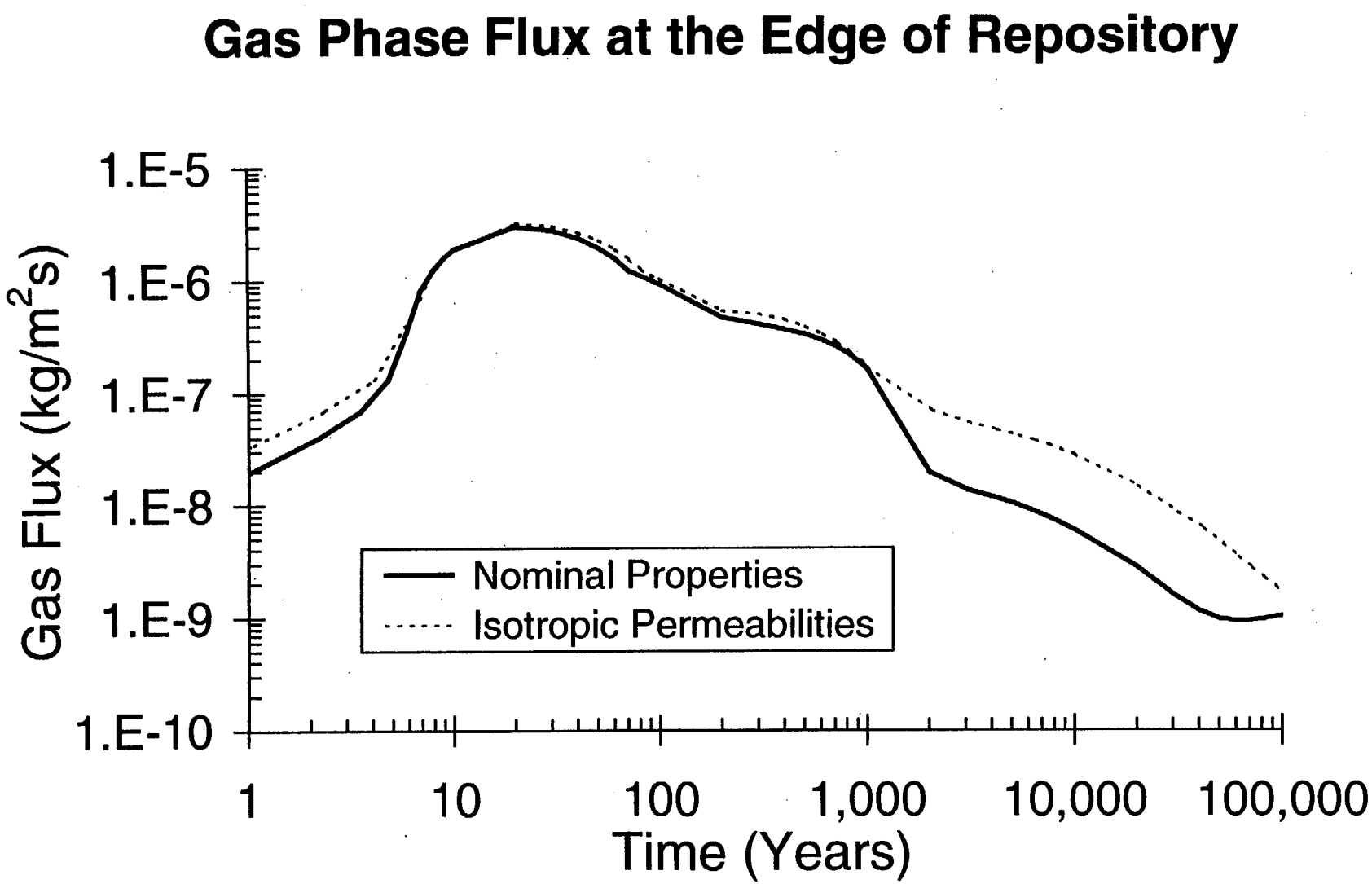


Figure 3-187. Gas flux at the edge of the repository when the horizontal permeability was increased to that of the vertical permeability in each unit and when the nominal property set is used. Base case at nominal I, present day infiltration.

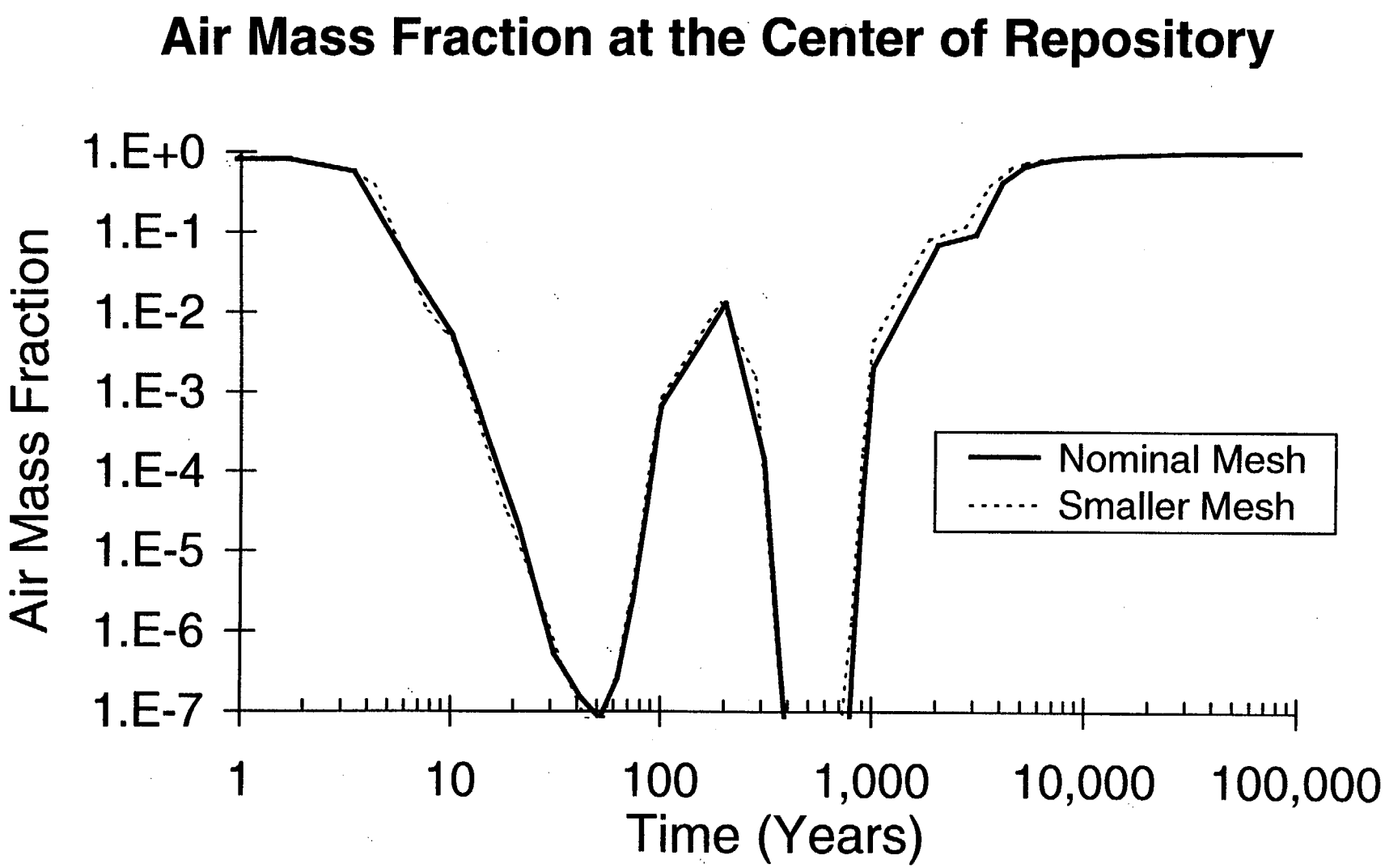


Figure 3-188. Air mass fraction at the center of the repository when the lower 80 meters of the model domain is removed and when the nominal simulation domain is used. Preliminary base case at nominal I, long term average infiltration.

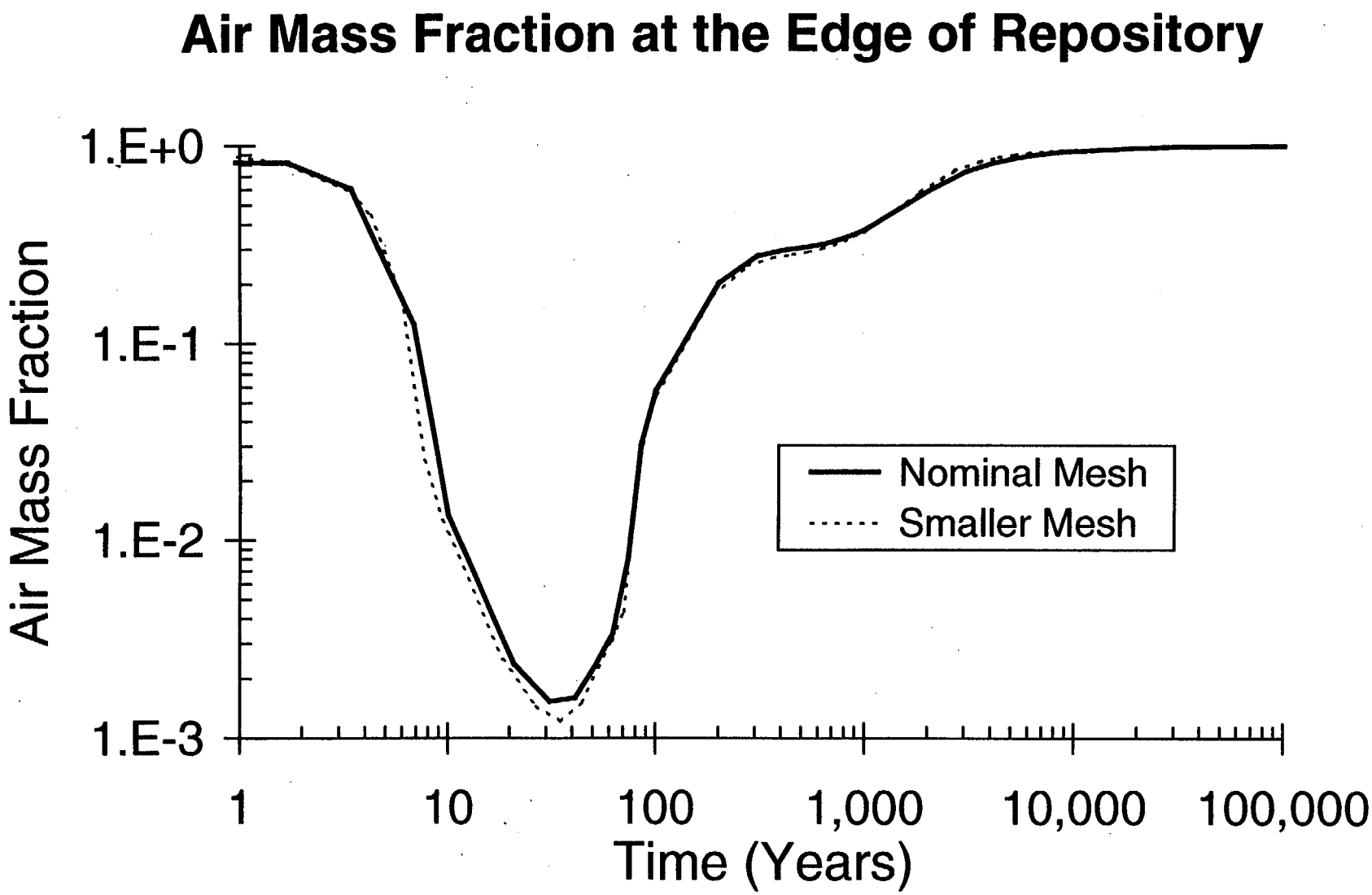


Figure 3-189. Air mass fraction at the edge of the repository when the lower 80 meters of the model domain is removed and when the nominal simulation domain is used. Preliminary base case at nominal I, long term average infiltration.

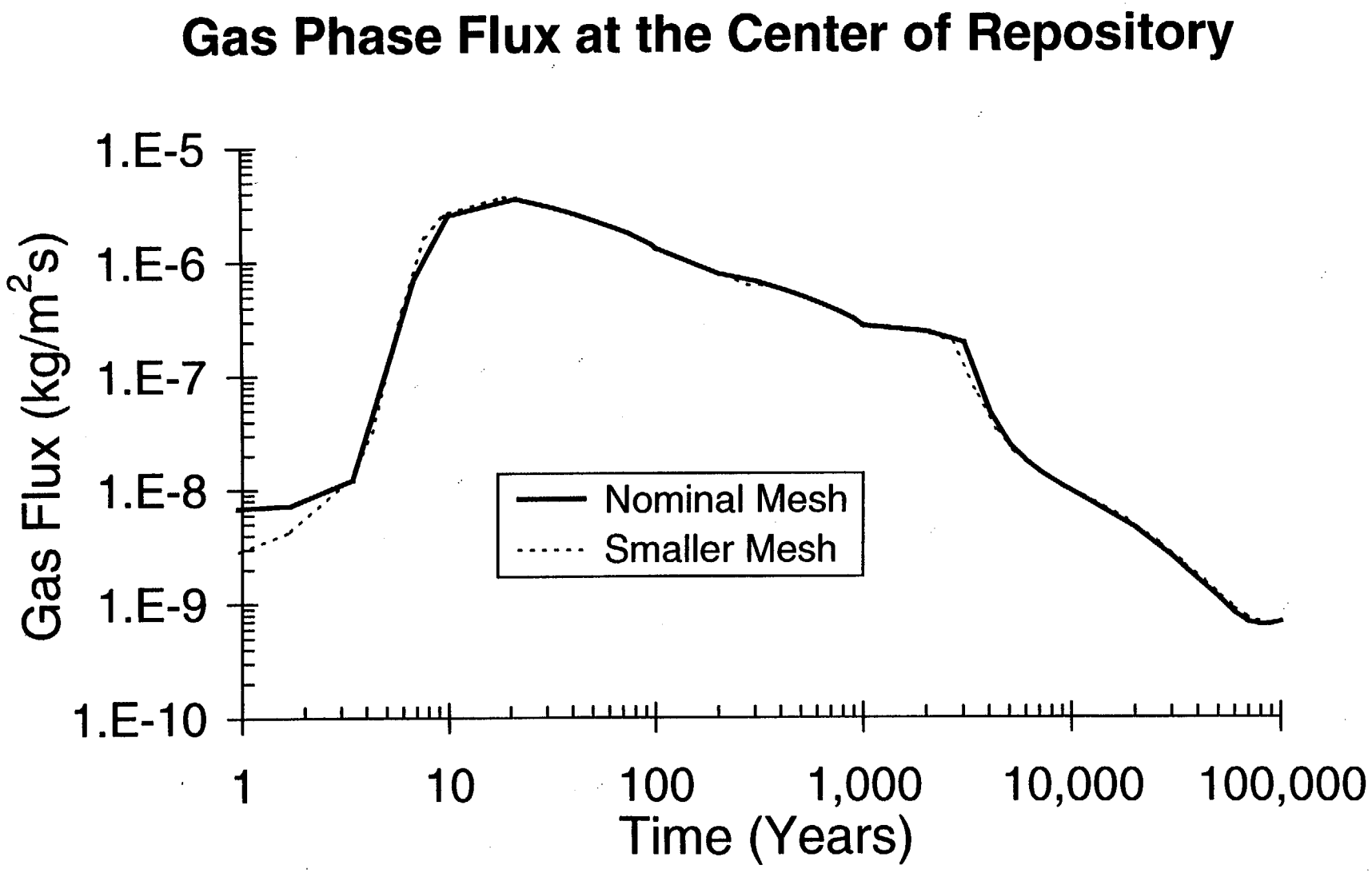


Figure 3-190. Gas flux at the center of the repository when the lower 80 meters of the model domain is removed and when the nominal simulation domain is used. Preliminary base case at nominal I, long term average infiltration.

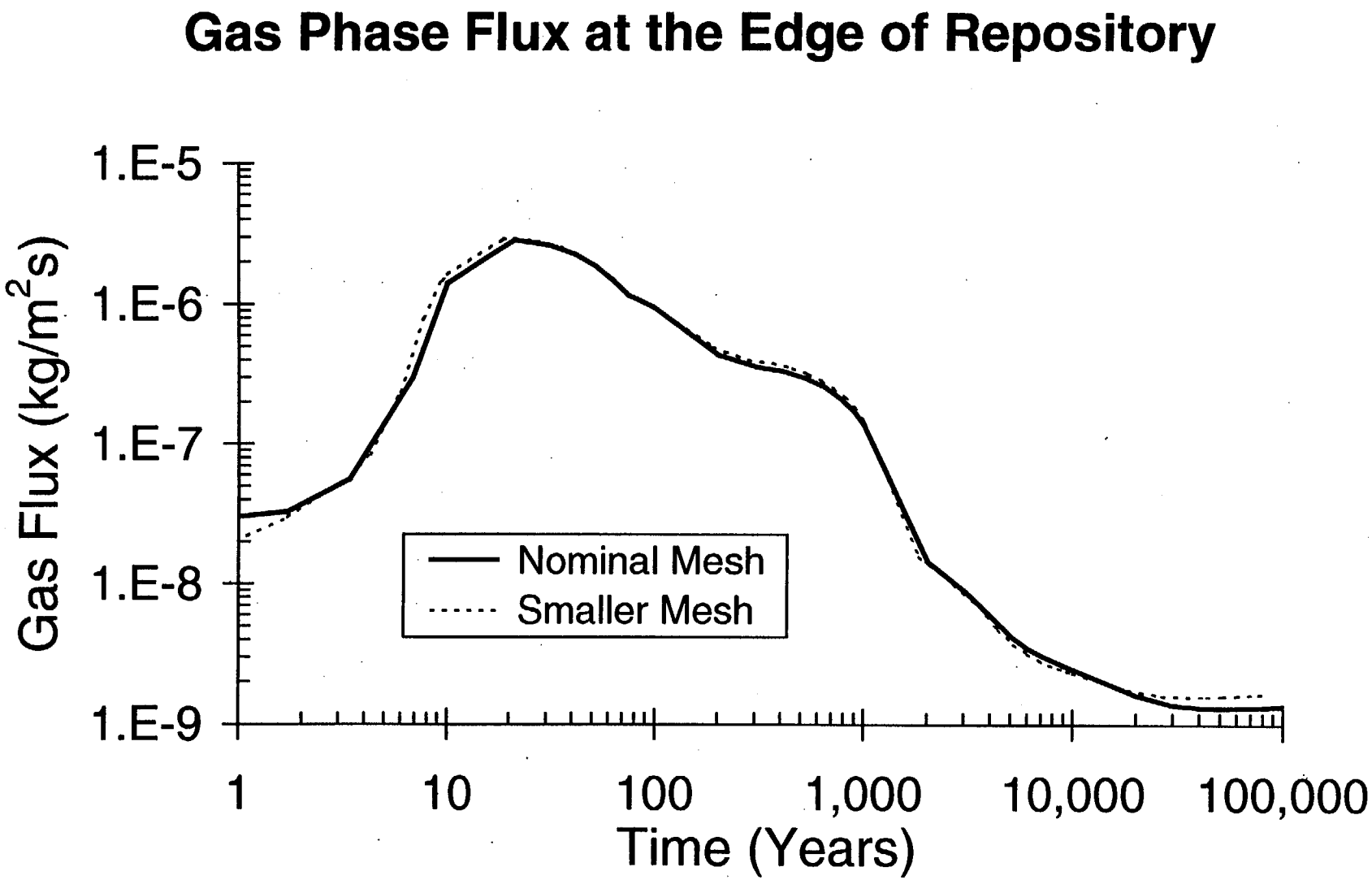


Figure 3-191. Gas flux at the edge of the repository when the lower 80 meters of the model domain is removed and when the nominal simulation domain is used. Preliminary base case at nominal I, long term average infiltration.

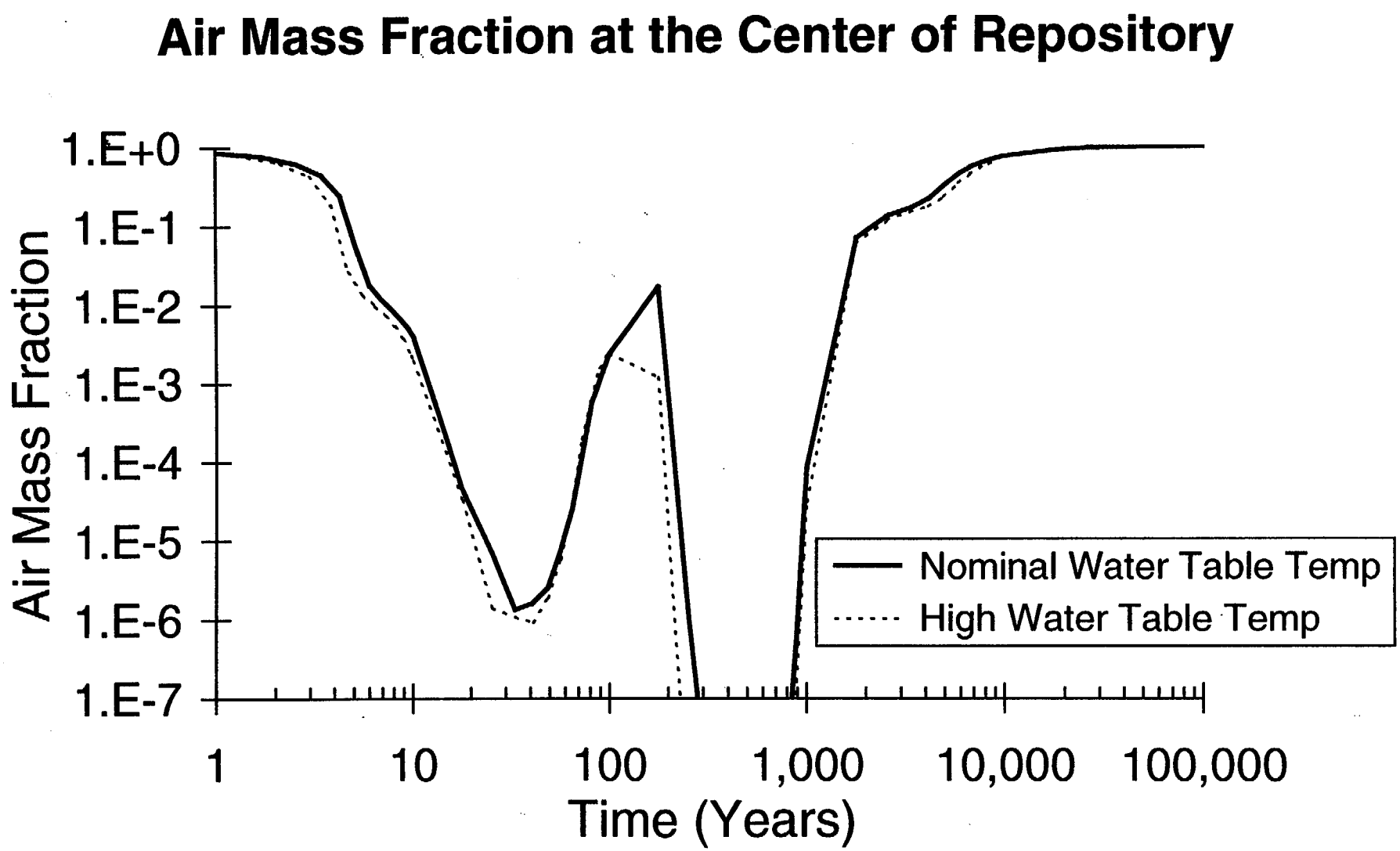


Figure 3-192. Air mass fraction at the center of the repository when the water table temperature is at the nominal value (32°C) and when it is raised to a constant 42°C. Preliminary base case at nominal I, present day infiltration.

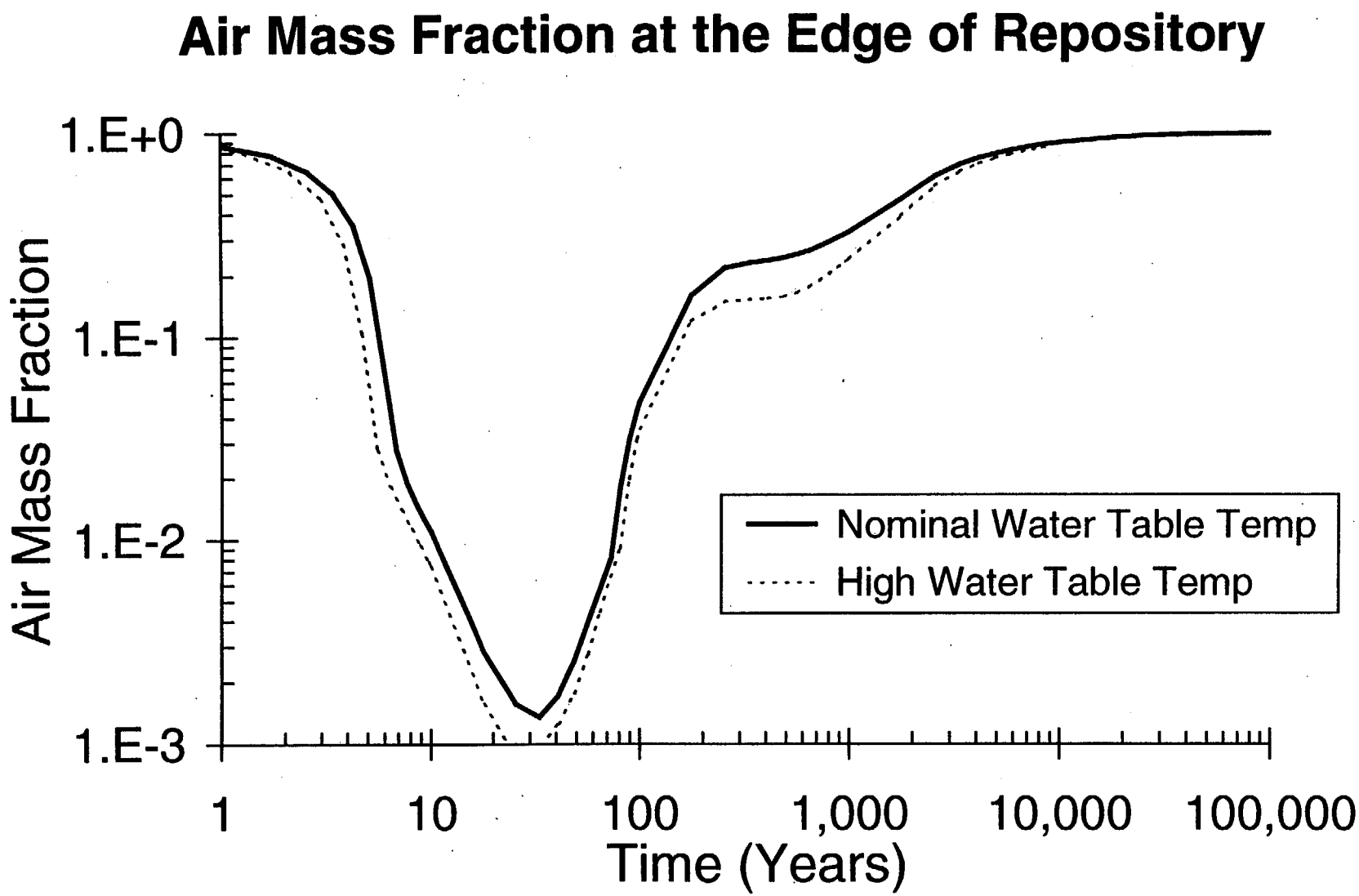


Figure 3-193. Air mass fraction at the edge of the repository when the water table temperature is at the nominal value (32°C) and when it is raised to a constant 42°C. Preliminary base case at nominal I, present day infiltration.

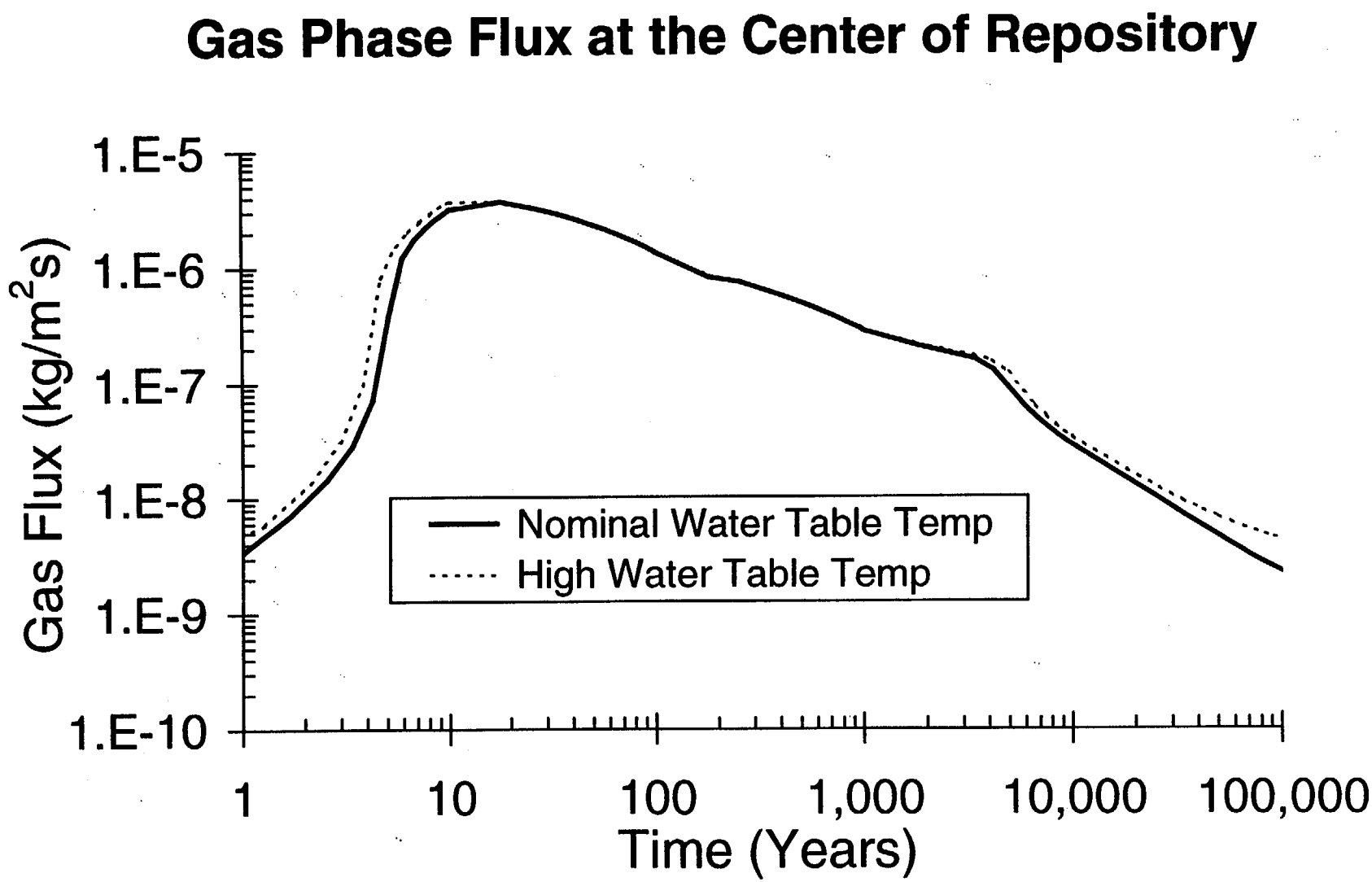


Figure 3-194. Gas flux at the center of the repository when the water table temperature is at the nominal value (32°C) and when it is raised to a constant 42°C. Preliminary base case at nominal I, present day infiltration.

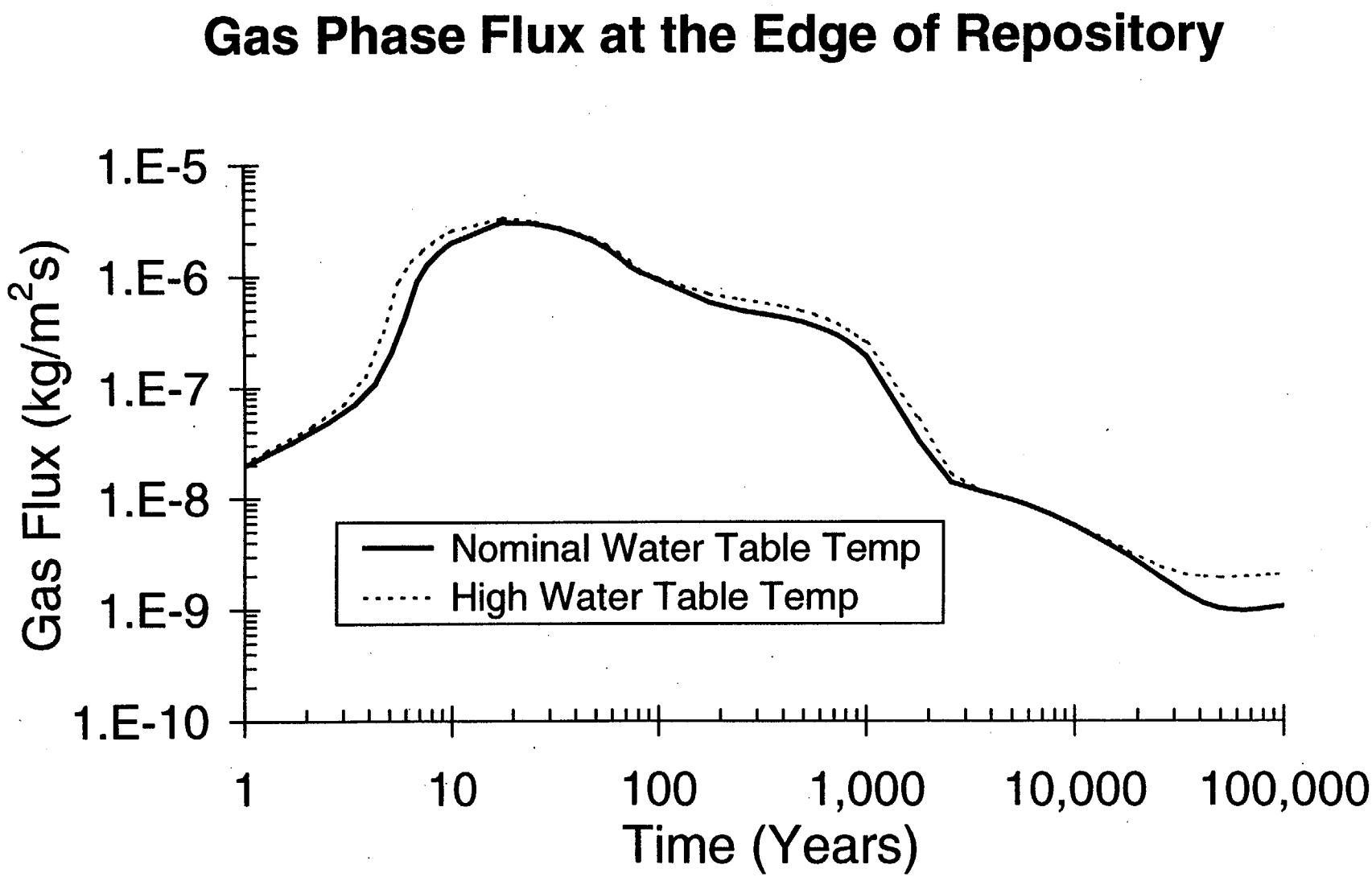


Figure 3-195. Gas flux at the edge of the repository when the water table temperature is at the nominal value (32°C) and when it is raised to a constant 42°C. Preliminary base case at nominal I, present day infiltration.

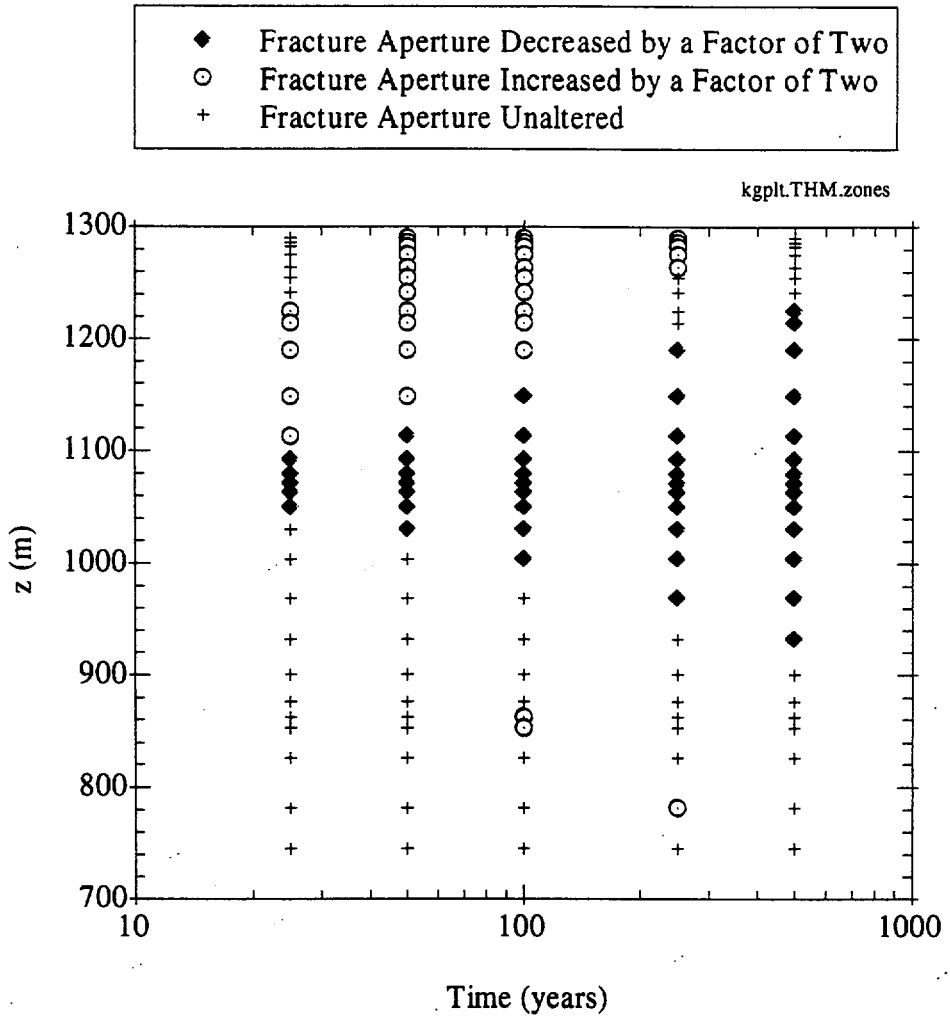


Figure 3-196. Regions of the one-dimensional thermal-hydrologic model where the fracture aperture has increased or decreased by a factor of two at 25, 50, 100, 250, and 500 years. The spatial and temporal distributions of altered zones were determined from a thermal-mechanical simulation described in Mack et al. (1989). Each symbol represents an element in the thermal-hydrologic model, and the repository is assumed to be located at 1071 m.

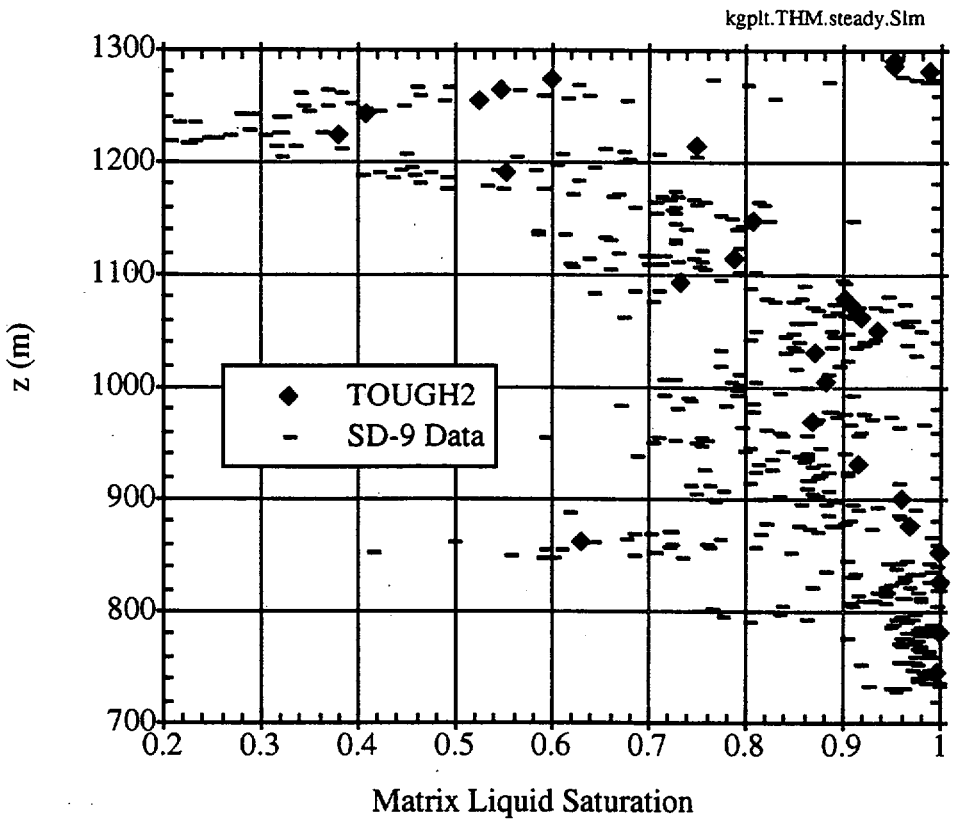
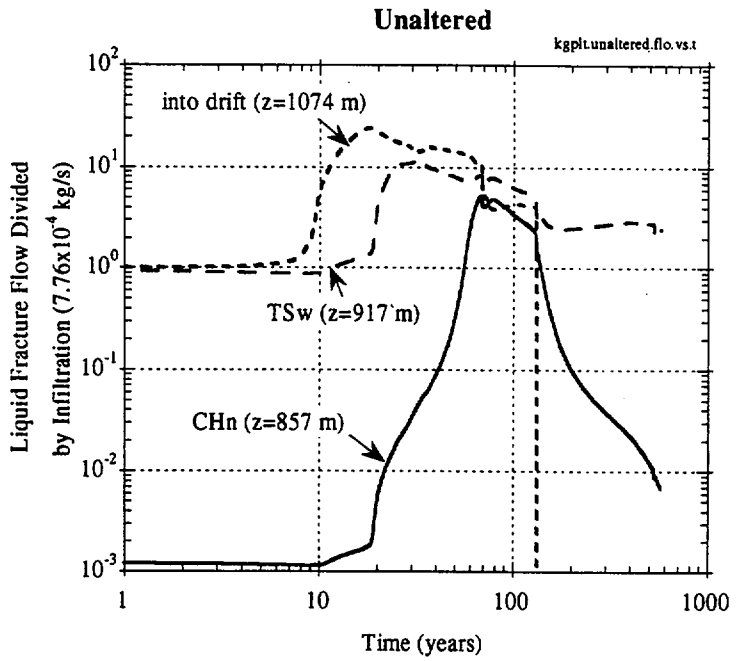


Figure 3-197. Simulated steady-state ambient matrix liquid saturations along 1-D column used in thermal-hydro-mechanical simulations. SD-9 data are also shown for comparison.



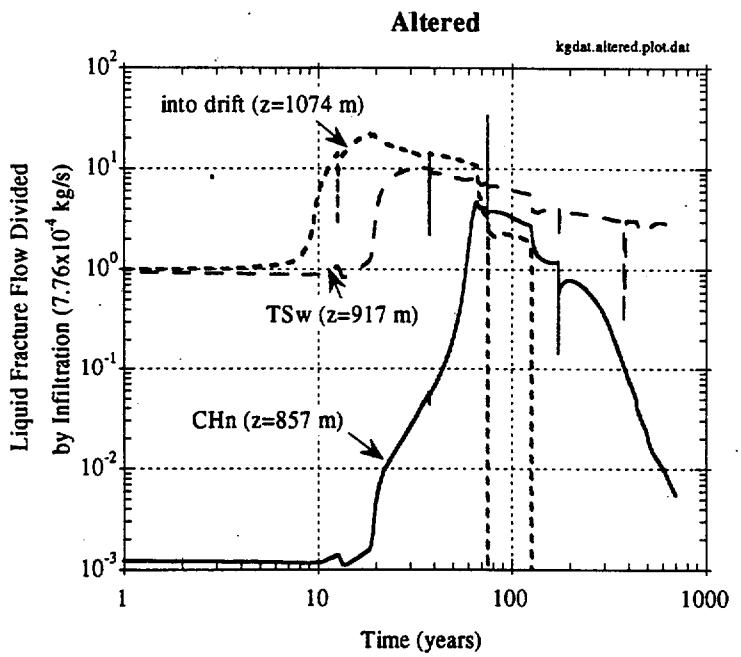


Figure 3-198. Liquid fracture flow divided by infiltration at three locations as a function of time for unaltered and altered simulations.

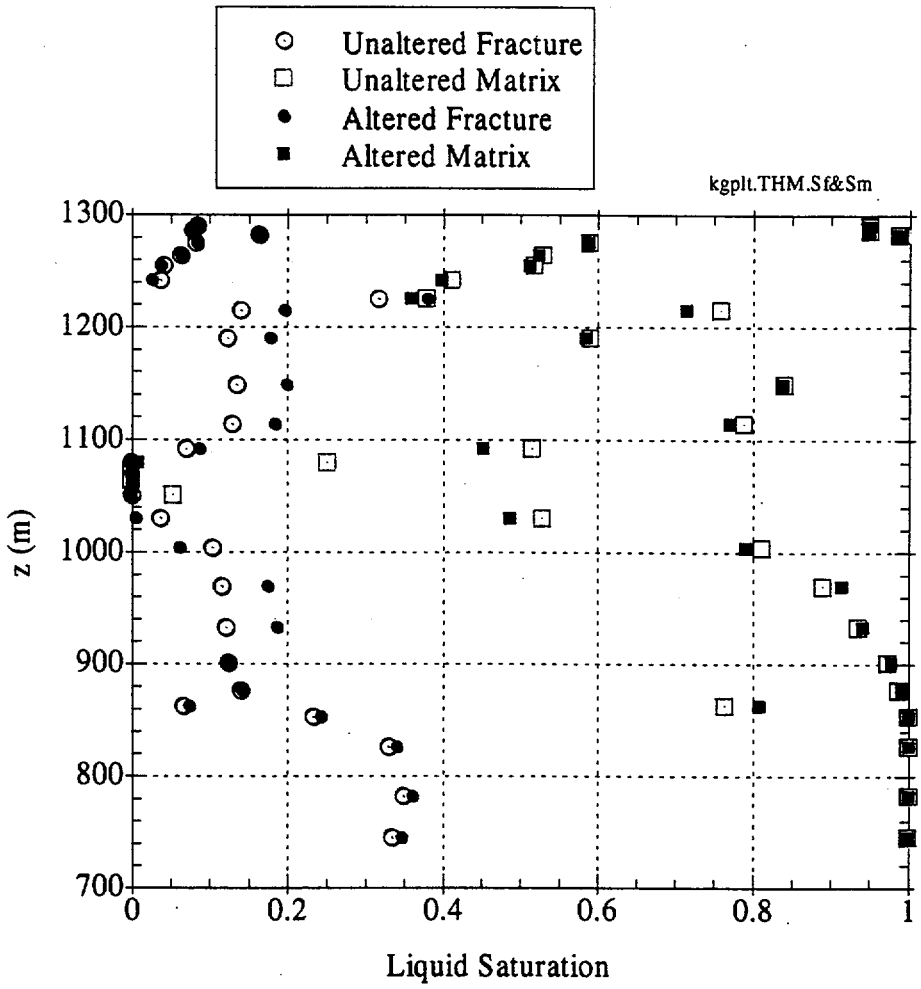


Figure 3-199. Fracture and matrix liquid saturations for altered and unaltered thermal-hydrologic simulations at 500 years of heating.

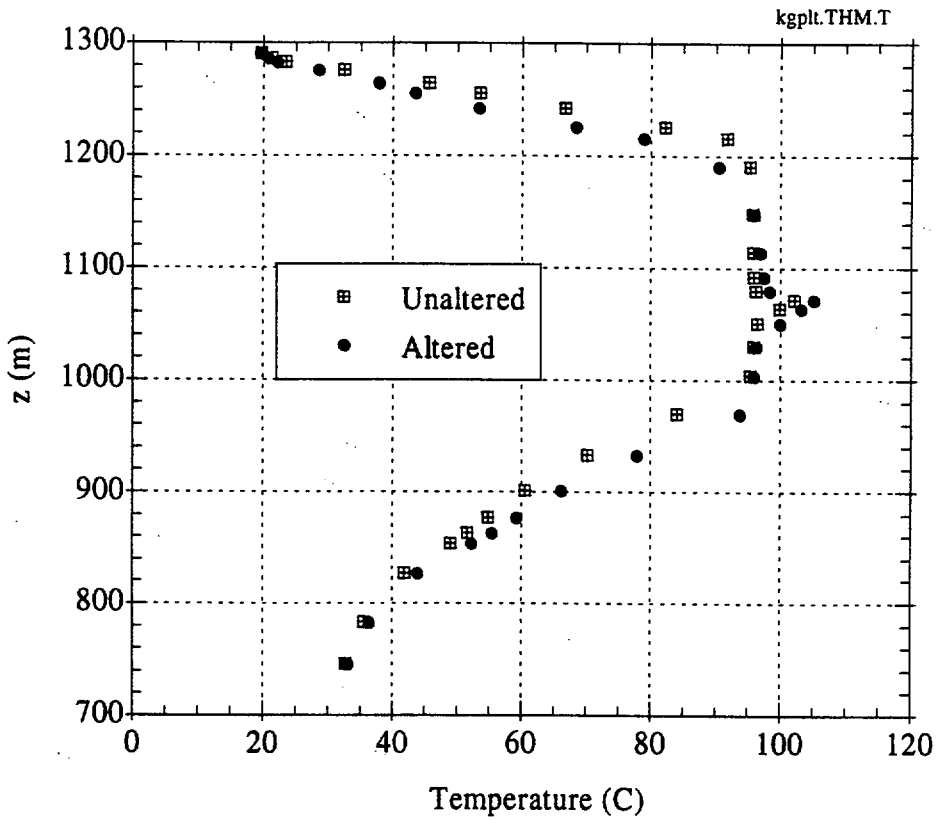


Figure 3-200. Simulated temperature profiles for altered and unaltered simulations at 500 years of heating.

Table 3-1. Table of TH Inputs to Other TSPA Models.

Model Scale Quantity	Code Used	TH Parameter	Parameter Used By	TH Parameter Used in Process Model or TSPA Model	Form of the Product
Drift	NUFT	T_{wp}, Waste Package Surface Temperature	Waste Package Degradation (WPD), Waste Form Degradation (WFD)	WAPDEG, RIP	Time-History, Time-History
Drift	NUFT	RH_{wp}, Waste Package Relative Humidity	Waste Package Degradation (WPD)	WAPDEG	Time-History
Mountain	TOUGH2	X_a, Air Mass Fraction	Near-Field Geochemical Environment (NFGE)	Gas Composition Model	Time-History
Mountain	TOUGH2	M_{gas}, Mass Flux of the Gas-Phase	Near-Field Geochemical Environment (NFGE)	Gas Composition Model	Time-History
Drift	NUFT	S_{linv}, Invert Liquid Saturation	Total System (EBS Transport)	RIP	Time-History
Drift	NUFT	T_{dw}, Drift Wall Temperature	Seepage Model, Near-Field Geochemical Environment (NFGE)	Abstracted Models for Drift Seepage and Gas-Phase Composition Models	Time-History
Drift	NUFT	M_{liquid}, Mass Flux ~ 3 meters Above Drift	Seepage Model	Abstracted Models for Drift Seepage	Time-History

Table 3-2. Summary of Assumptions and Models for TH in TSPA-93, TSPA-95, and TSPA-VA.

	TSPA-93 (Wilson et al. 1994)	TSPA-95 (CRWMS M&O 1995)	TSPA-VA (Section 3.5)
Loading	57-114 kW/Acre	25-83 MTU/Acre	~99 kW/Acre or 85 MTU/Acre
Infiltration Rate	N/A	0.05 to 0.3 mm/year	1 to 125* mm/year
Thermal Models	3-D drift-scale (conduction-only) 3-D mountain-scale (conduction-only)	2-D drift-scale (ECM-TH)	2-D mountain-scale (GECM-TH) 3-D smeared heat source mountain-scale model (SMT) (conduction-only) 1-D smeared heat source drift-scale model (SDT) (conduction-only) 2-D line heat source drift-scale model (LDTH) (DKM-TH) 3-D discrete heat source drift-scale model (DDT) (conduction-only)

* This infiltration rate ranges from one-third of the present-day infiltration to three times the climate-change infiltration.

Table 3-3. Technical Data Tracking Information for TH Inputs.

TDIF Number	DTN Number	Description	QA Status
306527	LB971212001254.001	Base-Case, mean α_f	NQ
306528	LB971212001254.002	Base-Case, min α_f, I÷3	NQ
306529	LB971212001254.003	Base-Case, min α_f, I*3	NQ
306530	LB971212001254.004	Base-Case, max α_f, I÷3	NQ
306531	LB971212001254.005	Base-Case, max α_f, I*3	NQ
306532	LB971212001254.006	DKM/Weeps, mean k_f	NQ
306533	LB971212001254.007	DKM/Weeps, min k_f, I÷3	NQ
306534	LB971212001254.008	DKM/Weeps, min k_f, I*3	NQ
306535	LB971212001254.009	DKM/Weeps, max k_f, I÷3	NQ
306536	LB971212001254.010	DKM/Weeps, max k_f, I*3	NQ
306481	LB971100001254.001	Preliminary Base-Case I*5	Q
306482	LB971100001254.002	Preliminary Base-Case I	Q
306483	LB971100001254.003	Preliminary Base-Case I÷5	Q
306690	LL980209004242.026	Thermal-Hydrologic Property Set	Q
	GS960908312211.003	Variable Infiltration Rate	Q
306664	SNT05071897001.002	Thermal Property Data	NQ
306736	SNT05071897001.004	Thermal Loading Data	NQ

Table 3-4. Table of Codes used in the TH Analyses.

Code Name	Version No.	QA Status	Model Analysis Location
TOUGH2	3.4.2 (SNL)	Q	Lateral Boundary Conditions in Two-Dimensional Mountain-Scale Models, Section 3.4.3
NUFT	9-19-97	NQ	Transient Climate Change Analysis, Section 3.4.4
TOUGH2	3.4.2 (SNL)	Q	Single Heater Test DKM Simulations, Section 3.4.5
TOUGH2	3.4.2 (SNL)	Q	Thermal Hydrology Base Case from Mountain-Scale Models, Section 3.5.5.1
NUFT	7-29-97 3-9-98CMS	NQ NQ	Thermal Hydrology Base Case from TH Multiscale Modeling and Abstraction Method, Section 3.5.5.2
NUFT	9-19-97	NQ	PA Testing Models (Drift-Scale), Section 3.6.1
NUFT	10-19-98	NQ	Model and Parameter Variation Approach (Drift-Scale), Section 3.6.2.2.2
NUFT	7-29-97 3-11-98CMS 4-3-98 4-15-98	NQ NQ NQ NQ	Model and Parameter Variation Approach (TH Multiscale Modeling and Abstraction Method), Section 3.6.2.2.2
NUFT	3-11-98CMS	NQ	Alternative Repository Design Options, Section 3.6.3
NUFT	3-11-98CMS 5-2-98 5-22-98	NQ NQ NQ	Thermal Loading Models (Line-Loading), Section 3.6.4.1
NUFT	2-25-98CMS	NQ	Thermal Loading Models (Hot and Cold Drift Segments), Section 3.6.4.2
TOUGH2	3.4.2 (SNL)	Q	Thermal Loading Models (Delayed Thermal Loads), Section 3.6.4.3
NUFT	9-19-97	NQ	Rockfall Models (Drift-Scale), Section 3.6.6
TOUGH2	3.4.2 (SNL)	Q	Other Mountain-Scale Issues, Section 3.6.7
TOUGH2	3.4.1 (SNL)	Q	Thermal-Hydrologic-Mechanical Model, Section 3.6.8

Table 3-5. Summary of Data Tracking Numbers (DTNs) and the Q Status of Source Data used in TSPA-VA Calculations.

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-58	TOUGH2	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.005	NQ
3-12	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.VertFault.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.VertFault.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-159	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.VertFault.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.VertFault.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-160	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.VertFault.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.VertFault.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-161	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.VertFault.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.VertFault.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-16	TOUGH2 SNL V.3.4.2 (Sun)	sensitivity/PBC.VertFault.I/ TOUGH2.INP	sensitivity/PBC.VertFault.I/ TOUGH2.OUT	SNT05071897001.006	NQ
3-17	TOUGH2 SNL V.3.4.2 (Sun)	sensitivity/PBC.VertFault.I/ TOUGH2.INP	sensitivity/PBC.VertFault.I/ TOUGH2.OUT	SNT05071897001.006	NQ
3-18	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.OUT	SNT05071897001.005	NQ
3-19	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.OUT	SNT05071897001.005	NQ
3-20	NUFT 9-19-97 (Sun)	NA	21a2pwr_wp.basei.noclim.centdat 21a2pwr_wp.basei.clim.centdat	SNT05071897001.001	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-21	NUFT 9-19-97 (Sun)	NA	21b2pwr_wp.basei.noclim.centdat 21b2pwr_wp.basei.clim.centdat	SNT05071897001.001	NQ
3-22	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.basei.noclim.centdat dirdisp_wp.basei.clim.centdat	SNT05071897001.001	NQ
3-23	NUFT 9-19-97 (Sun)	NA	21a2pwr_wp.basei.noclim.centdat 21a2pwr_wp.basei.clim.centdat	SNT05071897001.001	NQ
3-24	NA	NA	NA	GS960908312211.003	Q
3-25	TOUGH2 (v3.4.2)	.../pre_bc/heating/9month TOUGH2.INP INCON	.../pre_bc/heating/9month prebaca.dkm.dat	SNT05071897001.011	NQ
3-26	TOUGH2 (v3.4.2)	.../heating/9mo/2ndtry TOUGH.INP INCON	.../heating/9mo/2ndtry alphamean.dkm.dat	SNT05071897001.011	NQ
3-27	TOUGH2 (v3.4.2)	.../pre_bc/heating/9month TOUGH2.INP INCON .../heating/9mo/2ndtry TOUGH.INP INCON	.../pre_bc/heating/9month prebaca.dkm.dat .../heating/9mo/2ndtry alphamean.dkm.dat alphmn.cool1.dkm.dat alphmn.cool2.dkm.dat	SNT05071897001.011	NQ
3-28	TOUGH2 (v3.4.2)	.../pre_bc/heating/9month TOUGH2.INP INCON .../heating/9mo/2ndtry TOUGH.INP INCON	.../pre_bc/heating/9month prebaca.dkm.dat .../heating/9mo/2ndtry alphamean.dkm.dat alphmn.cool1.dkm.dat alphmn.cool2.dkm.dat	SNT05071897001.011	NQ
3-29	TOUGH2 (v3.4.2)	.../pre_bc/heating/9month TOUGH2.INP INCON .../heating/9mo/2ndtry TOUGH.INP INCON	.../pre_bc/heating/9month prebaca.dkm.dat .../heating/9mo/2ndtry alphamean.dkm.dat alphmn.cool1.dkm.dat alphmn.cool2.dkm.dat	SNT05071897001.011	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-41	NA	Repository-wide thermal decay curve	repository.txt	SNT05071897001.004	NQ
3-42	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT	SNT05071897001.007	NQ
3-43	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT	SNT05071897001.007	NQ
3-44	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amax.ld3/ TOUGH2.INP	base.case.files/Amax.ld3/ TOUGH2.PLT	SNT05071897001.007	NQ
3-45	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amax.ld3/ TOUGH2.INP	base.case.files/Amax.ld3/ TOUGH2.PLT	SNT05071897001.007	NQ
3-46	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amax.lx3.cc/ TOUGH2.INP	base.case.files/Amax.lx3.cc/ TOUGH2.PLT	SNT05071897001.007	NQ
3-47	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amax.lx3.cc/ TOUGH2.INP	base.case.files/Amax.lx3.cc/ TOUGH2.PLT	SNT05071897001.007	NQ
3-53	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ
3-54	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ
3-55	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ
3-56	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-57	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ
3-58	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.OUT	SNT05071897001.007	NQ
3-59	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP base.case.files/Amax.ld3/ TOUGH2.INP base.case.files/Amin.ld3/ TOUGH2.INP base.case.files/Amax.lx3/ TOUGH2.INP base.case.files/Amin.lx3/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT base.case.files/Amax.ld3/ TOUGH2.PLT base.case.files/Amin.ld3/ TOUGH2.PLT base.case.files/Amax.lx3/ TOUGH2.PLT base.case.files/Amin.lx3/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-60	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP base.case.files/Amax.ld3/ TOUGH2.INP base.case.files/Amin.ld3/ TOUGH2.INP base.case.files/Amax.lx3/ TOUGH2.INP base.case.files/Amin.lx3/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT base.case.files/Amax.ld3/ TOUGH2.PLT base.case.files/Amin.ld3/ TOUGH2.PLT base.case.files/Amax.lx3/ TOUGH2.PLT base.case.files/Amin.lx3/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-61	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l.cc/ TOUGH2.INP base.case.files/Amax.ld3.cc/ TOUGH2.INP base.case.files/Amin.ld3.cc/ TOUGH2.INP base.case.files/Amax.lx3.cc/ TOUGH2.INP base.case.files/Amin.lx3.cc/ TOUGH2.INP	base.case.files/Amean.l.cc/ TOUGH2.PLT base.case.files/Amax.ld3.cc/ TOUGH2.PLT base.case.files/Amin.ld3.cc/ TOUGH2.PLT base.case.files/Amax.lx3.cc/ TOUGH2.PLT base.case.files/Amin.lx3.cc/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-62	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l.cc/ TOUGH2.INP base.case.files/Amax.ld3.cc/ TOUGH2.INP base.case.files/Amin.ld3.cc/ TOUGH2.INP base.case.files/Amax.lx3.cc/ TOUGH2.INP base.case.files/Amin.lx3.cc/ TOUGH2.INP	base.case.files/Amean.l.cc/ TOUGH2.PLT base.case.files/Amax.ld3.cc/ TOUGH2.PLT base.case.files/Amin.ld3.cc/ TOUGH2.PLT base.case.files/Amax.lx3.cc/ TOUGH2.PLT base.case.files/Amin.lx3.cc/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-63	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP base.case.files/Amax.ld3/ TOUGH2.INP base.case.files/Amin.ld3/ TOUGH2.INP base.case.files/Amax.lx3/ TOUGH2.INP base.case.files/Amin.lx3/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT base.case.files/Amax.ld3/ TOUGH2.PLT base.case.files/Amin.ld3/ TOUGH2.PLT base.case.files/Amax.lx3/ TOUGH2.PLT base.case.files/Amin.lx3/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-64	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP base.case.files/Amax.ld3/ TOUGH2.INP base.case.files/Amin.ld3/ TOUGH2.INP base.case.files/Amax.lx3/ TOUGH2.INP base.case.files/Amin.lx3/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT base.case.files/Amax.ld3/ TOUGH2.PLT base.case.files/Amin.ld3/ TOUGH2.PLT base.case.files/Amax.lx3/ TOUGH2.PLT base.case.files/Amin.lx3/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-65	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l.cc/ TOUGH2.INP base.case.files/Amax.ld3.cc/ TOUGH2.INP base.case.files/Amin.ld3.cc/ TOUGH2.INP base.case.files/Amax.lx3.cc/ TOUGH2.INP base.case.files/Amin.lx3.cc/ TOUGH2.INP	base.case.files/Amean.l.cc/ TOUGH2.PLT base.case.files/Amax.ld3.cc/ TOUGH2.PLT base.case.files/Amin.ld3.cc/ TOUGH2.PLT base.case.files/Amax.lx3.cc/ TOUGH2.PLT base.case.files/Amin.lx3.cc/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-66	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l.cc/ TOUGH2.INP base.case.files/Amax.ld3.cc/ TOUGH2.INP base.case.files/Amin.ld3.cc/ TOUGH2.INP base.case.files/Amax.lx3.cc/ TOUGH2.INP base.case.files/Amin.lx3.cc/ TOUGH2.INP	base.case.files/Amean.l.cc/ TOUGH2.PLT base.case.files/Amax.ld3.cc/ TOUGH2.PLT base.case.files/Amin.ld3.cc/ TOUGH2.PLT base.case.files/Amax.lx3.cc/ TOUGH2.PLT base.case.files/Amin.lx3.cc/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007 SNT05071897001.007	NQ
3-67	Average Calculation	LL980709704242.042	NE_noBF_j_22_04_newaverageSNF NW_noBF_j_22_04_newaverageSNF SW_noBF_j_22_04_newaverageSNF SC_noBF_j_22_04_newaverageSNF CC_noBF_j_22_04_newaverageSNF SE_noBF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-68	Average Calculation	LL980709704242.042	NE_noBF_j_12_04_newaverageSNF NW_noBF_j_12_04_newaverageSNF SW_noBF_j_12_04_newaverageSNF SC_noBF_j_12_04_newaverageSNF CC_noBF_j_12_04_newaverageSNF SE_noBF_j_12_04_newaverageSNF	SNT05071897001.010	NQ
3-69	Average Calculation	LL980709704242.042	NE_noBF_j_22_04_newaverageSNF NW_noBF_j_22_04_newaverageSNF SW_noBF_j_22_04_newaverageSNF SC_noBF_j_22_04_newaverageSNF CC_noBF_j_22_04_newaverageSNF SE_noBF_j_22_04_newaverageSNF	SNT05071897001.010	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-70	NUFT	NA	NA	LL980709704242.042	NQ
3-71	NUFT	NA	NA	LL980709704242.042	NQ
3-72	Average Calculation	LL980709704242.042 LL980709904242.044 LL980710104242.046 LL980710304242.048 LL980710404242.049	NE_noBF_j_22_04_newaverageSNF NE_noBF_l_25_04_newaverageSNF NE_noBF_m_26_04_newaverageSNF NE_noBF_n_25_04_newaverageSNF NE_noBF_o_26_04_newaverageSNF	SNT05071897001.010	NQ
3-73	Average Calculation	LL980709704242.042 LL980708504242.030 LL980710204242.047	SW_noBF_g1_22_04_newaverageSNF SW_noBF_j_22_04_newaverageSNF SW_noBF_p_22_04_newaverageSNF	SNT05071897001.010	NQ
3-74	Average Calculation	LL980709704242.042 LL980708504242.030 LL980710204242.047	NE_noBF_g1_22_04_newaverageSNF NE_noBF_j_22_04_newaverageSNF NE_noBF_p_22_04_newaverageSNF	SNT05071897001.010	NQ
3-75	Average Calculation	LL980709904242.044	NE_noBF_l_25_04_newaverageSNF NW_noBF_l_25_04_newaverageSNF SW_noBF_l_25_04_newaverageSNF SC_noBF_l_25_04_newaverageSNF CC_noBF_l_25_04_newaverageSNF SE_noBF_l_25_04_newaverageSNF	SNT05071897001.010	NQ
3-76	Average Calculation	LL980709904242.044	NE_noBF_l_15_04_newaverageSNF NW_noBF_l_15_04_newaverageSNF SW_noBF_l_15_04_newaverageSNF SC_noBF_l_15_04_newaverageSNF CC_noBF_l_15_04_newaverageSNF SE_noBF_l_15_04_newaverageSNF	SNT05071897001.010	NQ
3-77	Average Calculation	LL980710104242.046	NE_noBF_o_25_04_newaverageSNF NW_noBF_o_25_04_newaverageSNF SW_noBF_o_25_04_newaverageSNF SC_noBF_o_25_04_newaverageSNF CC_noBF_o_25_04_newaverageSNF SE_noBF_o_25_04_newaverageSNF	SNT05071897001.010	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-78	Average Calculation	LL980710104242.046	NE_noBF_o_15_04_newaverageSNF NW_noBF_o_15_04_newaverageSNF SW_noBF_o_15_04_newaverageSNF SC_noBF_o_15_04_newaverageSNF CC_noBF_o_15_04_newaverageSNF SE_noBF_o_15_04_newaverageSNF	SNT05071897001.010	NQ
3-79	Average Calculation	LL980709904242.044 LL980710104242.046	NE_noBF_l_25_04_newaverageSNF NE_noBF_o_15_04_newaverageSNF	SNT05071897001.010	NQ
3-80	Average Calculation	LL980709704242.042	NE_noBF_j_22_04_newaverageSNF NE_noBF_j_12_04_newaverageSNF	SNT05071897001.010	NQ
3-81	Average Calculation	LL980709704242.042	NE_noBF_j_22_04_newaverageSNF NE_noBF_j_22_04_newaverageDHLW	SNT05071897001.010	NQ
3-82	Average Calculation	LL980709704242.042	SW_noBF_j_22_04_newaverageSNF SW_noBF_j_22_04_newaverageDHLW	SNT05071897001.010	NQ
3-83	NUFT	NA	NA	LL980709704242.042 LL980709904242.044 LL980710104242.046 LL980710304242.048 LL980710404242.049	NQ
3-84	NUFT 9-19-97 (Sun)	NA	21b1pwr_wp.basei.noclim.centdat	SNT05071897001.001	NQ
3-85	NUFT 9-19-97 (Sun)	NA	21c1pwr_wp.basei.noclim.centdat	SNT05071897001.001	NQ
3-86	NUFT 9-19-97 (Sun)	NA	21c1pwr_wp.basei.noclim.centdat	SNT05071897001.001	NQ
3-87	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.basei.noclim.centdat	SNT05071897001.001	NQ
3-88	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.basei.noclim.centdat	SNT05071897001.001	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-89	NUFT 9-19-97 (Sun)	NA	21b1pwr_wp.ix5.noclim.centdat	SNT05071897001.001	NQ
3-90	NUFT 9-19-97 (Sun)	NA	21c1pwr_wp.ix5.noclim.centdat	SNT05071897001.001	NQ
3-91	NUFT 9-19-97 (Sun)	NA	21c1pwr_wp.ix5.noclim.centdat	SNT05071897001.001	NQ
3-92	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.ix5.noclim.centdat	SNT05071897001.001	NQ
3-93	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.ix5.noclim.centdat	SNT05071897001.001	NQ
3-94	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.basei.noclim.edgedat	SNT05071897001.001	NQ
3-95	NUFT 9-19-97 (Sun)	NA	dirdisp_wp.basei.noclim.edgedat	SNT05071897001.001	NQ
3-96	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l/ TOUGH2.INP prop.sensitivity.files/PBC.ld5/ TOUGH2.INP prop.sensitivity.files/PBC.lx5/ TOUGH2.INP	prop.sensitivity.files/PBC.l/ TOUGH2.PLT prop.sensitivity.files/PBC.ld5/ TOUGH2.PLT prop.sensitivity.files/PBC.lx5/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-97	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l.cc/ TOUGH2.INP prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.INP prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.INP	prop.sensitivity.files/PBC.l.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-98	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l/ TOUGH2.INP prop.sensitivity.files/ PBC.ld5/TOUGH2.INP prop.sensitivity.files/ PBC.lx5/TOUGH2.INP	prop.sensitivity.files/PBC.l/ TOUGH2.PLT prop.sensitivity.files/ PBC.ld5/TOUGH2.PLT prop.sensitivity.files/ PBC.lx5/TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-99	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l.cc/ TOUGH2.INP prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.INP prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.INP	prop.sensitivity.files/PBC.l.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-100	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l/ TOUGH2.INP prop.sensitivity.files/ PBC.ld5/TOUGH2.INP prop.sensitivity.files/ PBC.lx5/TOUGH2.INP	prop.sensitivity.files/PBC.l/ TOUGH2.PLT prop.sensitivity.files/ PBC.ld5/TOUGH2.PLT prop.sensitivity.files/ PBC.lx5/TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-101	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l.cc/ TOUGH2.INP prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.INP prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.INP	prop.sensitivity.files/PBC.l.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-102	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l/ TOUGH2.INP prop.sensitivity.files/ PBC.ld5/TOUGH2.INP prop.sensitivity.files/ PBC.lx5/TOUGH2.INP	prop.sensitivity.files/PBC.l/ TOUGH2.PLT prop.sensitivity.files/ PBC.ld5/TOUGH2.PLT prop.sensitivity.files/ PBC.lx5/TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-103	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.l.cc/ TOUGH2.INP prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.INP prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.INP	prop.sensitivity.files/PBC.l.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.ld5.cc/ TOUGH2.PLT prop.sensitivity.files/PBC.lx5.cc/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-104	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.PLT	SNT05071897001.005	
3-105	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l.cc/ TOUGH2.INP	prop.sensitivity.files.cc/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-106	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.PLT	SNT05071897001.005	
3-107	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l.cc/ TOUGH2.INP	prop.sensitivity.files.cc/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-108	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3/ TOUGH2.PLT	SNT05071897001.005	
3-109	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.l.cc/ TOUGH2.INP	prop.sensitivity.files.cc/ DKMWeeps.K.l/ TOUGH2.PLT	SNT05071897001.005	NQ
		prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmax.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.lx3.cc/ TOUGH2.PLT	SNT05071897001.005	
		prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.Kmin.ld3.cc/ TOUGH2.PLT	SNT05071897001.005	

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-110	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmax.Ix3/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmax.Id3/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmin.Ix3/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmin.Id3/ TOUGH2.INP	prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmax.Ix3/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmax.Id3/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmin.Ix3/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmin.Id3/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-111	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ DKMWeeps.K.I.cc/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmax.Ix3.cc/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmax.Id3.cc/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmin.Ix3.cc/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.Kmin.Id3.cc/ TOUGH2.INP	prop.sensitivity.files.cc/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmax.Ix3.cc/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmax.Id3.cc/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmin.Ix3.cc/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.Kmin.Id3.cc/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-112	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ TH.I/TOUGH2.INP prop.sensitivity.files/ TH.I.cc/TOUGH2.INP	prop.sensitivity.files/ TH.I/TOUGH2.PLT prop.sensitivity.files/ TH.I.cc/TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005	NQ
3-113	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/ TH.I/TOUGH2.INP prop.sensitivity.files/ TH.I.cc/TOUGH2.INP	prop.sensitivity.files/ TH.I/TOUGH2.PLT prop.sensitivity.files/ TH.I.cc/TOUGH2.PLT	SNT05071897001.005 SNT05071897001.005	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-114	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP prop.sensitivity.files/PBC.I/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.INP prop.sensitivity.files/ TH.I/TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT prop.sensitivity.files/PBC.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ TH.I/TOUGH2.PLT	SNT05071897001.007 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-115	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP prop.sensitivity.files/PBC.I/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.INP prop.sensitivity.files/ TH.I/TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT prop.sensitivity.files/PBC.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ TH.I/TOUGH2.PLT	SNT05071897001.007 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-116	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP prop.sensitivity.files/PBC.I/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.INP prop.sensitivity.files/ TH.I/TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT prop.sensitivity.files/PBC.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ TH.I/TOUGH2.PLT	SNT05071897001.007 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ
3-117	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP prop.sensitivity.files/PBC.I/ TOUGH2.INP prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.INP prop.sensitivity.files/ TH.I/TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT prop.sensitivity.files/PBC.I/ TOUGH2.PLT prop.sensitivity.files/ DKMWeeps.K.I/ TOUGH2.PLT prop.sensitivity.files/ TH.I/TOUGH2.PLT	SNT05071897001.007 SNT05071897001.005 SNT05071897001.005 SNT05071897001.005	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-118	Average Calculation	LL980708204242.027	NE_noBF_c_22_04_newaverageSNF NW_noBF_c_22_04_newaverageSNF SW_noBF_c_22_04_newaverageSNF SC_noBF_c_22_04_newaverageSNF CC_noBF_c_22_04_newaverageSNF SE_noBF_c_22_04_newaverageSNF	SNT05071897001.010	NQ
3-119	NUFT	NA	NA	LL980708204242.027	NQ
3-120	Average Calculation	LL980708204242.027 LL980708304242.028 LL980708404242.029	NE_noBF_c_22_04_newaverageSNF NE_noBF_d_24_04_newaverageSNF NE_noBF_e_23_04_newaverageSNF	SNT05071897001.010	NQ
3-121	Average Calculation	LL980709704242.042 LL980708504242.030 LL980710204242.047 LL980708204242.027	NE_noBF_g1_22_04_newaverageSNF NE_noBF_j_22_04_newaverageSNF NE_noBF_p_22_04_newaverageSNF NE_noBF_c_22_04_newaverageSNF	SNT05071897001.010	NQ
3-122	Average Calculation	LL980708504242.030	NE_noBF_g1_22_04_newaverageSNF NW_noBF_g1_22_04_newaverageSNF SW_noBF_g1_22_04_newaverageSNF SC_noBF_g1_22_04_newaverageSNF CC_noBF_g1_22_04_newaverageSNF SE_noBF_g1_22_04_newaverageSNF	SNT05071897001.010	NQ
3-123	NUFT	NA	NA	LL980708504242.030	NQ
3-124	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centerx1.0.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-125	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centerx1.0.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ
3-126	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centerx1.0.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ
3-127	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx0.3LTA.in amb.point.centerx0.3LTA.ics 85.point.centerx0.3LTAb.in 85.point.centerx0.3LTA.re1l 85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx3.0_mn_LTA.in amb.point.centerx3.0_mnLTA. 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centex0.3LTA.ext 85.point.centerix0.3LTAb.ext 85.point.centerx1.0LTA.ext 85.point.centerx3.0_mn_LTA.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-128	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx0.3LTA.in amb.point.centerx0.3LTA.ics 85.point.centerx0.3LTAb.in 85.point.centerx0.3LTA.re1 85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx3.0_mn_LTA.in amb.point.centerx3.0_mnLTA. 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centex0.3LTA.ext 85.point.centerix0.3LTAb.ext 85.point.centerx1.0LTA.ext 85.point.centerx3.0_mn_LTA.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ
3-129	NUFT V. 2-25-98 (HP/UX)	85.point.centerx3.0LTA.in amb.point.centerx3.0LTA.ics 85.point.centerx0.3LTA.in amb.point.centerx0.3LTA.ics 85.point.centerx0.3LTAb.in 85.point.centerx0.3LTA.re1 85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx3.0_mn_LTA.in amb.point.centerx3.0_mnLTA. 85.point.centerx0.3_mn.in amb.point.centerx0.3_mn.ics	85.point.centerx3.0LTA.ext 85.point.centex0.3LTA.ext 85.point.centerix0.3LTAb.ext 85.point.centerx1.0LTA.ext 85.point.centerx3.0_mn_LTA.ext 85.point.centerx0.3_mn.ext	MO9807MWD0NUFT.000	NQ
3-130	NUFT V. 2-25-98 (HP/UX)	85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics	85.point.centerx1.0LTA.ext 85.point.centerx1.0.ext	MO9807MWD0NUFT.000	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-131	NUFT V. 2-25-98 (HP/UX)	85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics	85.point.centerx1.0LTA.ext 85.point.centerx1.0.ext	MO9807MWD0NUFT.000	NQ
3-132	NUFT V. 2-25-98 (HP/UX)	85.point.centerx1.0LTA.in amb.point.centerx1.0LTA.ics 85.point.centerx1.0.in amb.point.centerx1.0.ics	85.point.centerx1.0LTA.ext 85.point.centerx1.0.ext	MO9807MWD0NUFT.000	NQ
3-133	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	SW_BF_j_22_04_newaverageSNF SW_noBF_j_22_04_newaverageSNF SW_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-134	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	SE_BF_j_22_04_newaverageSNF SE_noBF_j_22_04_newaverageSNF SE_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-135	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	SC_BF_j_22_04_newaverageSNF SC_noBF_j_22_04_newaverageSNF SC_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-136	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	NW_BF_j_22_04_newaverageSNF NW_noBF_j_22_04_newaverageSNF NW_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-137	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	NE_BF_j_22_04_newaverageSNF NE_noBF_j_22_04_newaverageSNF NE_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-138	Average Calculation	LL980709704242.042 LL980709304242.038 LL980708704242.032	CC_BF_j_22_04_newaverageSNF CC_noBF_j_22_04_newaverageSNF CC_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-139	Average Calculation	LL980709704242.042 LL980709604242.041	SW_noBF_j_22_04_newaverageSNF SW_snf_noBF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-140	Average Calculation	LL980709704242.042 LL980709604242.041	NE_noBF_j_22_04_newaverageSNF NE_snf_noBF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-141	Average Calculation	LL980709704242.042 LL980709604242.041	CC_noBF_j_22_04_newaverageSNF CC_snf_noBF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-142	Average Calculation	LL980708704242.032 LL980708604242.031	SW_snf_sand_BF_j_22_03_newaverageSNF SW_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-143	Average Calculation	LL980708704242.032 LL980708604242.031	NE_snf_sand_BF_j_22_03_newaverageSNF SW_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-144	Average Calculation	LL980708704242.032 LL980708604242.031	CC_snf_sand_BF_j_22_03_newaverageSNF CC_snf_sand_BF_j_22_04_newaverageSNF	SNT05071897001.010	NQ
3-145	Average Calculation	LL980709304242.038 LL980709204242.037	SW_BF_j_22_04_newaverageSNF SW_snf_tuff_BF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-146	Average Calculation	LL980709304242.038 LL980709204242.037	NE_BF_j_22_04_newaverageSNF NE_snf_tuff_BF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-147	Average Calculation	LL980709304242.038 LL980709204242.037	CC_BF_j_22_04_newaverageSNF CC_snf_tuff_BF_j_22_03_newaverageSNF	SNT05071897001.010	NQ
3-148	NUFT	NA	NA	LL980709704242.042 LL980709604242.041 LL980708604242.031	NQ
3-149	NUFT	NA	NA	LL980709704242.042 LL980709604242.041	NQ
3-150	NUFT	NA	NA	LL980708704242.032 LL980708604242.031	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-151	NUFT	NA	NA	LL980709704242.042 LL980709604242.041	NQ
3-152	NUFT	NA	NA	LL980709704242.042 LL980709304242.038 LL980708704242.032 LL980708604242.031	NQ
3-153	NUFT (9-19-97)	85.point.center.alfmean.in 85.point.center.alfmean.ics	ref_cf3#1_9_34.elm ref_cf4#1_14_34.elm ref_df2#1_25_34.elm ref_edft#1_14_33.elm ref_edft#1_25_33.elm ref_edft#1_9_33.elm	SNT05071897001.009	NQ
3-154	NUFT (2-25-98CMS)	85.point.center.alfmn.hot.in 85.point.center.alfmean.ics	hot_cf2#1_5_34.elm hot_cf3#1_10_34.elm hot_df2#1_25_34.elm hot_edft#1_10_33.elm hot_edft#1_25_33.elm hot_edft#1_5_33.elm	SNT05071897001.009	NQ
3-155	NUFT (2-25-98CMS)	85.point.center.alfmn.cold.in 85.point.center.alfmean.ics	cold_cf1#1_1_34.elm cold_cf3#1_8_34.elm cold_df2#1_25_34.elm cold_edft#1_1_33.elm cold_edft#1_25_33.elm cold_edft#1_8_33.elm	SNT05071897001.009	NQ
3-156	NUFT (9-19-97) NUFT (2-25-98CMS)	85.point.center.alfmean.in 85.point.center.alfmean.ics 85.point.center.alfmn.hot.in 85.point.center.alfmean.ics	ref_cf3#1_9_34.elm hot_cf3#1_10_34.elm ref_edft#1_9_33.elm hot_edft#1_10_33.elm	SNT05071897001.009	NQ
3-157	NUFT (9-19-97) NUFT (2-25-98CMS)	85.point.center.alfmean.in 85.point.center.alfmean.ics 85.point.center.alfmn.cold.in 85.point.center.alfmean.ics	ref_cf4#1_14_34.elm hot_cf2#1_5_34.elm cold_cf3#1_8_34.elm ref_edft#1_14_33.elm hot_edft#1_5_33.elm cold_edft#1_8_33.elm	SNT05071897001.009	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-158	NUFT (9-19-97) NUFT (2-25-98CMS)	85.point.center.alfmean.in 85.point.center.alfmean.ics 85.point.center.alfmn.cold.in 85.point.center.alfmean.ics	ref_df2#1_25_34.elm cold_df2#1_25_34.elm ref_edft#1_25_33.elm cold_edft#1_25_33.elm	SNT05071897001.009	NQ
3-159	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Delay010.I/ TOUGH2.INP sensitivity/BC.Delay020.I/ TOUGH2.INP sensitivity/BC.Delay050.I/ TOUGH2.INP sensitivity/BC.Delay100.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Delay010.I/ TOUGH2.PLT sensitivity/BC.Delay020.I/ TOUGH2.PLT sensitivity/BC.Delay050.I/ TOUGH2.PLT sensitivity/BC.Delay100.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006	NQ
3-160	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Delay010.I/ TOUGH2.INP sensitivity/BC.Delay020.I/ TOUGH2.INP sensitivity/BC.Delay050.I/ TOUGH2.INP sensitivity/BC.Delay100.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Delay010.I/ TOUGH2.PLT sensitivity/BC.Delay020.I/ TOUGH2.PLT sensitivity/BC.Delay050.I/ TOUGH2.PLT sensitivity/BC.Delay100.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006	NQ
3-161	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Delay010.I/ TOUGH2.INP sensitivity/BC.Delay020.I/ TOUGH2.INP sensitivity/BC.Delay050.I/ TOUGH2.INP sensitivity/BC.Delay100.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Delay010.I/ TOUGH2.PLT sensitivity/BC.Delay020.I/ TOUGH2.PLT sensitivity/BC.Delay050.I/ TOUGH2.PLT sensitivity/BC.Delay100.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-162	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.l/ TOUGH2.INP sensitivity/BC.Delay010.l/ TOUGH2.INP sensitivity/BC.Delay020.l/ TOUGH2.INP sensitivity/BC.Delay050.l/ TOUGH2.INP sensitivity/BC.Delay100.l/ TOUGH2.INP	base.case.files/Amean.l/ TOUGH2.PLT sensitivity/BC.Delay010.l/ TOUGH2.PLT sensitivity/BC.Delay020.l/ TOUGH2.PLT sensitivity/BC.Delay050.l/ TOUGH2.PLT sensitivity/BC.Delay100.l/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006 SNT05071897001.006	NQ
3-165	NUFT (9-19-97)	85.point.center.in	rf.ps	SNT05071897001.008	NQ
3-166	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_cf3#1:9:34 T_edft#1:9:33 r0_cf3#1_9_34 r0_roc#1_9_33 r1_cf3#1_9_34 r1_roc#1_9_33 r2_cf3#1_9_34 r2_roc#1_9_33	SNT05071897001.008	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-167	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_cf3#1:9:34 T_edft#1:9:33 r0_cf3#1_9_34 r0_roc#1_9_33 r1_cf3#1_9_34 r1_roc#1_9_33 r2_cf3#1_9_34 r2_roc#1_9_33	SNT05071897001.008	NQ
3-168	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_cf4#1:14:34 T_edft#1:14:33 r0_cf4#1_14_34 r0_roc#1_14_33 r1_cf4#1_14_34 r1_roc#1_14_33 r2_cf4#1_14_34 r2_roc#1_14_33	SNT05071897001.008	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-169	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_cf4#1:14:34 T_edft#1:14:33 r0_cf4#1_14_34 r0_roc#1_14_33 r1_cf4#1_14_34 r1_roc#1_14_33 r2_cf4#1_14_34 r2_roc#1_14_33	SNT05071897001.008	NQ
3-170	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_df2#1:25:34 T_edft#1:25:33 r0_df2#1_25_34 r0_roc#1_25_33 r1_df2#1_25_34 r1_roc#1_25_33 r2_df2#1_25_34 r2_roc#1_25_33	SNT05071897001.008	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-171	NUFT (9-19-97)	.../rockfall0/cont 85.point.center.in 85.point.center.res1000 .../rockfall1 85.point.center.in 85.point.center.res1000 .../rockfall2 85.point.center.in 85.point.center.res1000 .../Tcond 85.point.center.in 85.point.center.ics	T_df2#1:25:34 T_edft#1:25:33 r0_df2#1_25_34 r0_roc#1_25_33 r1_df2#1_25_34 r1_roc#1_25_33 r2_df2#1_25_34 r2_roc#1_25_33	SNT05071897001.008	NQ
3-172	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HighRepHorK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HighRepHorK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-173	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HighRepHorK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HighRepHorK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-174	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HighRepHorK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HighRepHorK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-175	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HighRepHorK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HighRepHorK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-176	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Open.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Open.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-177	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Open.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Open.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-178	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Open.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Open.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-179	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.Open.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.Open.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-180	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.IncVertK.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.IncVertK.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-181	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.IncVertK.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.IncVertK.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-182	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.IncVertK.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.IncVertK.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-183	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I/ TOUGH2.INP sensitivity/PBC.IncVertK.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I/ TOUGH2.PLT sensitivity/PBC.IncVertK.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-184	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HorEqVertK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HorEqVertK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-185	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HorEqVertK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HorEqVertK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-186	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HorEqVertK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HorEqVertK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-187	TOUGH2 SNL V.3.4.2 (Sun)	base.case.files/Amean.I/ TOUGH2.INP sensitivity/BC.HorEqVertK.I/ TOUGH2.INP	base.case.files/Amean.I/ TOUGH2.PLT sensitivity/BC.HorEqVertK.I/ TOUGH2.PLT	SNT05071897001.007 SNT05071897001.006	NQ
3-188	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.CCSmallMesh/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.CCSmallMesh/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-189	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.CCSmallMesh/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.CCSmallMesh/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-190	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.CCSmallMesh/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.CCSmallMesh/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-191	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.CCSmallMesh/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.CCSmallMesh/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-192	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.HWT.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.HWT.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-193	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.HWT.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.HWT.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-194	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.HWT.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.HWT.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ

Table 3-5. (continued).

Figure	Code and Version	Input Filename	Output Filename	Data Tracking Number	QA Status
3-195	TOUGH2 SNL V.3.4.2 (Sun)	prop.sensitivity.files/PBC.I.cc/ TOUGH2.INP sensitivity/PBC.HWT.I/ TOUGH2.INP	prop.sensitivity.files/PBC.I.cc/ TOUGH2.PLT sensitivity/ PBC.HWT.I/ TOUGH2.PLT	SNT05071897001.005 SNT05071897001.006	NQ
3-196	TOUGH2 SNL V.3.4.1 (Sun)	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.003	NQ
3-197	TOUGH2 SNL V.3.4.1 (Sun)	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.003	NQ
3-198	TOUGH2 SNL V.3.4.1 (Sun)	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.003	NQ
3-199	TOUGH2 SNL V.3.4.1 (Sun)	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.003	NQ
3-200	TOUGH2 SNL V.3.4.1 (Sun)	TOUGH2.INP	TOUGH2.OUT	SNT05071897001.003	NQ

Table 3-6. Transient Infiltration Rate Study (DTN GS96090803212211.003 for present day infiltration only, these data are qualified).

Model Geometry	Present Day Infiltration (Dry)	Long-Term Average Infiltration (LTA)
3-D "Testing" Drift-Scale TH Model: Northing = 233,400 m; Easting = 170,650 m	11.5 mm/year	59.21 mm/year

Table 3-7. Hydrologic Properties for DKM Simulations of the Single-Heater Test (DTN LB971212001254.001 (not qualified) and LB971100001254.002 (qualified)).

Hydrologic Property TSPA Analyses (tsw34 model layer)	Preliminary Base Case Fracture	Base Case Fracture	Preliminary Base Case Matrix	Base Case Matrix
Permeability (m^2)	6.76×10^{-12} 4.27×10^{-13}	6.76×10^{-12} 4.27×10^{-13}	4.07×10^{-18}	4.07×10^{-18}
Porosity	1.24×10^{-4}	1.24×10^{-4}	0.089	0.089
van Genuchten Alpha (Pa^{-1})	9.77×10^{-5}	8.36×10^{-4}	1.02×10^{-6}	1.02×10^{-6}
van Genuchten m	0.492	0.492	0.322	0.322
Residual Saturation	0.01	0.01	0.18	0.18
Fracture Frequency (m^{-1})	1.88	1.88	-	-
X_{fm} (Fracture-Matrix Interaction Parameter)	1.55×10^{-4}	8×10^{-3}	-	-

Table 3-8. Thermal Properties for DKM Simulations of the Single-Heater Test (SNT05071897001.002; data are not qualified).

Thermal Property TSPA Analyses (tsw34 model layer)	Preliminary Base Case and Base Case (Matrix)	Preliminary Base Case and Base Case (Fracture)
Wet Thermal Conductivity (W/m-K)	2.33	8.31×10^{-5}
Dry Thermal Conductivity (W/m-K)	1.56	3.72×10^{-6}
Grain Specific Heat (J/kg-K)	948	1010
Grain Density (kg/m^3)	2530	0.995
Tortuosity Coefficient (-)	0.7	0.7

Table 3-9. Thermo-hydrologic Performance Measures Estimated by the TH Multiscale Modeling and Abstraction Method.

Location	T	RH	$X_{air,gas}$	S_{liq}	q_{liq}
Rock above drift wall	X	X	X	X	X
Rock at drift wall	X	X	X	X	X
Drift above waste package			X		
Waste package surface	X	X			X
Invert	X	X	X	X	X

Table 3-10. Summary of Model Types Used in the TH Multiscale Modeling and Abstraction Method. Process Types are Thermal-conduction (T) and Thermal-hydrologic (TH).

Model Type	Heat Source	Dimensionality	Process Type	In-Drift Thermal Radiation	Use in TSPA-VA Multiscale TH Modeling Approach
SMT	smeared	3-D mountain-scale	T	no	Process-model input
LMTH	line-averaged	3-D mountain-scale	TH	yes	Abstracted result[1]
DMTH	discrete	3-D mountain-scale	TH	yes	Abstracted result[1]
SDT	smeared	1-D drift-scale	T	no	Process-model input
LDTH	line-averaged	2-D drift-scale	TH	yes	Process-model input
DDT	discrete	3-D drift-scale	T	yes	Process-model input

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Table 3-11. Drift-Scale Model Column Locations. Northing and Easting Values are Given in the Nevada State Plane Coordinate System (Hardin 1998).

Column Name	Easting (m)	Northing (m)	Repository elevation (m)	Repository depth (m)	Repository unit name
I1c1	170201	232406	1093.3	387.3	Tsw36
I1c2	170418	232394	1092.5	365.3	Tsw35
I1c3	170645	232382	1091.6	335.2	Tsw35
I1c4	170872	232370	1090.8	288.1	Tsw35
I1c5	171098	232358	1089.9	274.4	Tsw34
I2c1	170214	232857	1087.0	296.2	Tsw36
I2c2	170441	232845	1086.2	369.8	Tsw35
I2c3	170668	232833	1085.4	341.5	Tsw35
I2c4	170895	232821	1084.5	278.9	Tsw35
I2c5	171122	232809	1083.7	230.6	Tsw34
I3c1	170238	233308	1080.8	329.9	Tsw36
I3c2	170464	233296	1079.9	382.6	Tsw35
I3c3	170692	233285	1079.1	298.8	Tsw35
I3c4	170919	233273	1078.2	258.5	Tsw35
I3c5	171146	233261	1077.4	256.0	Tsw34
I4c1	170262	233760	1074.5	369.8	Tsw36
I4c2	170489	233748	1073.7	386.6	Tsw35
I4c3	170716	233736	1072.8	352.6	Tsw35
I4c4	170943	233724	1072.0	293.7	Tsw35
I4c5	171169	233712	1071.1	253.7	Tsw34
I5c1	170285	234211	1068.3	400.1	Tsw35
I5c2	170512	234199	1067.4	384.3	Tsw35
I5c3	170739	234187	1066.6	357.0	Tsw35
I5c4	170966	234175	1065.7	303.2	Tsw35
I5c5	171193	234164	1064.9	281.9	Tsw34
I6c1	170309	234663	1062.0	365.0	Tsw36
I6c2	170536	234651	1061.2	396.9	Tsw35
I6c3	170763	234639	1060.3	340.2	Tsw35
I6c4	170990	234627	1059.5	295.7	Tsw35
I6c5	171217	234615	1058.6	243.0	Tsw35
I7c1	170333	235114	1055.7	408.8	Tsw35
I7c2	170560	235102	1054.9	371.7	Tsw35
I7c3	170787	235090	1054.0	291.7	Tsw35
I7c4	171013	235078	1053.2	346.9	Tsw35
I7c5	171240	235066	1052.4	317.8	Tsw35

Table 3-12. Infiltration q_{inf}(mm/year) and Liquid-Phase Saturation $S_{liq.rep}$ at the Repository Depth, for the Columns Modeled for TSPA-VA (Hardin 1998).

Column Name	q_{inf} (mm/yr)			$S_{liq.rep}$		
	$q_{inf} \div 3$	q_{inf}	$q_{inf} \times 3$	$q_{inf} \div 3$	q_{inf}	$q_{inf} \times 3$
I1c1	4.1	12.4	37.1	0.966	0.948	0.943
I1c2	4.5	13.4	40.3	0.896	0.885	0.888
I1c3	2.3	7.0	21.1	0.869	0.863	0.874
I1c4	1.8	5.4	16.1	0.916	0.920	0.946
I1c5	1.6	4.8	14.3	0.965	0.968	0.984
I2c1	1.1	3.3	10.0	0.940	0.937	0.937
I2c2	3.6	10.9	32.8	0.890	0.881	0.885
I2c3	5.8	17.3	51.9	0.926	0.922	0.926
I2c4	2.3	7.0	21.0	0.916	0.918	0.941
I2c5	2.8	8.5	25.6	0.964	0.967	0.986
I3c1	2.0	5.9	17.8	0.942	0.930	0.927
I3c2	5.8	17.4	52.1	0.909	0.896	0.903
I3c3	2.5	7.5	22.4	0.919	0.922	0.927
I3c4	1.6	4.8	14.3	0.915	0.920	0.946
I3c5	1.1	3.3	9.8	0.963	0.968	0.982
I4c1	2.0	6.0	18.0	0.860	0.850	0.846
I4c2	5.3	16.0	48.1	0.905	0.893	0.895
I4c3	3.6	10.9	32.7	0.925	0.925	0.936
I4c4	2.1	6.2	18.6	0.935	0.939	0.956
I4c5	1.2	3.5	10.4	0.963	0.968	0.981
I5c1	3.7	11.2	33.6	0.863	0.850	0.844
I5c2	2.8	8.5	25.6	0.924	0.926	0.935
I5c3	5.1	15.3	45.8	0.928	0.927	0.935
I5c4	0.7	2.0	6.1	0.911	0.920	0.934
I5c5	0.2	0.7	2.0	0.958	0.967	0.979
I6c1	3.1	9.4	28.1	0.883	0.865	0.859
I6c2	2.6	7.7	23.0	0.893	0.890	0.895
I6c3	4.9	14.7	44.1	0.927	0.925	0.935
I6c4	0.9	2.6	7.7	0.913	0.921	0.947
I6c5	1.2	3.7	11.0	0.933	0.938	0.955
I7c1	2.5	7.5	22.4	0.898	0.896	0.898
I7c2	1.0	2.9	8.8	0.887	0.892	0.900
I7c3	1.4	4.2	12.5	0.919	0.929	0.976
I7c4	2.0	6.0	17.9	0.918	0.921	0.940
I7c5	1.8	5.3	16.0	0.915	0.919	0.940

Table 3-13. Hydrologic Properties at the Potential Repository Horizon Used for Base Case, mean α_f, DTN: LB971212001254.001.

Material Name	Porosity	Permeability (m^2)	V.G. α (Pa^{-1})	V.G. λ	S_r, S_{ls}	X_{fm}
tswM4 (Tptpmn)	0.089	4.07×10^{-18}	1.02×10^{-6}	0.322	0.18, 0.982*	-
tswM5 (Tptpll)	0.115	1.55×10^{-17}	3.31×10^{-6}	0.229	0.08, 0.943*	-
tswM6 (Tptpln)	0.092	8.91×10^{-17}	7.41×10^{-7}	0.414	0.18, 0.975*	-
tswF4 (Tptpmn)	1.24×10^{-4}	6.76×10^{-12} (v) 4.27×10^{-13} (h)	8.36×10^{-4}	0.492	0.01, 1.0	8.00×10^{-3}
tswF5 (Tptpll)	3.29×10^{-4}	3.80×10^{-12} (v) 9.12×10^{-13} (h)	1.41×10^{-3}	0.492	0.01, 1.0	8.00×10^{-3}
tswF6 (Tptpln)	3.99×10^{-4}	1.20×10^{-12} (v) 1.20×10^{-12} (h)	1.18×10^{-3}	0.492	0.01, 1.0	8.00×10^{-3}

* = (1 + matrix saturation)/2, used in the G-ECM models only. For DKM Sls = 1.0.

Table 3-14. Hydrologic Properties at the Potential Repository Horizon for Base Case, min α_f, I/3, DTN: LB971212001254.002.

Material	Porosity	Permeability (m^2)	V.G. α (Pa^{-1})	V.G. λ	S_r, S_{ls}	X_{fm}
tswM4 (Tptpmn)	0.089	4.07×10^{-18}	1.02×10^{-6}	0.322	0.18, 0.986*	-
tswM5 (Tptpll)	0.115	1.55×10^{-17}	3.31×10^{-6}	0.229	0.08, 0.959*	-
tswM6 (Tptpln)	0.092	8.91×10^{-17}	7.41×10^{-7}	0.414	0.18, 0.983*	-
tswF4 (Tptpmn)	1.24×10^{-4}	6.76×10^{-12} (v) 4.27×10^{-13} (h)	1.98×10^{-4}	0.492	0.01, 1.0	1.9×10^{-1}
tswF5 (Tptpll)	3.29×10^{-4}	3.80×10^{-12} (v) 9.12×10^{-13} (h)	3.4×10^{-4}	0.492	0.01, 1.0	1.9×10^{-1}
tswF6 (Tptpln)	3.99×10^{-4}	1.20×10^{-12} (v) 1.20×10^{-12} (h)	3.92×10^{-4}	0.492	0.01, 1.0	1.9×10^{-1}

* = (1 + matrix saturation)/2, used in the G-ECM models only. For DKM Sls = 1.0.

Table 3-15. Hydrologic Properties at the Potential Repository Horizon for Base Case, min α_f, I*3, DTN: LB971212001254.003.

Material	Porosity	Permeability (m^2)	V.G. α (Pa^{-1})	V.G. λ	S_r, S_{ls}	X_{fm}
tswM4 (Tptpmn)	0.089	4.07×10^{-18}	1.02×10^{-6}	0.322	0.18, 0.985*	-
tswM5 (Tptpll)	0.115	1.55×10^{-17}	3.31×10^{-6}	0.229	0.08, 0.946*	-
tswM6 (Tptpln)	0.092	8.91×10^{-17}	7.41×10^{-7}	0.414	0.18, 0.971*	-
tswF4 (Tptpmn)	1.24×10^{-4}	6.76×10^{-12} (v) 4.27×10^{-13} (h)	1.98×10^{-4}	0.492	0.01, 1.0	4.75×10^{-4}
tswF5 (Tptpll)	3.29×10^{-4}	3.80×10^{-12} (v) 9.12×10^{-13} (h)	3.4×10^{-4}	0.492	0.01, 1.0	4.75×10^{-4}
tswF6 (Tptpln)	3.99×10^{-4}	1.20×10^{-12} (v) 1.20×10^{-12} (h)	3.92×10^{-4}	0.492	0.01, 1.0	4.75×10^{-4}

* = (1 + matrix saturation)/2, used in the G-ECM models only. For DKM Sls = 1.0.

Table 3-16. Hydrologic Properties at the Potential Repository Horizon for Base Case, max α_f, I/3, DTN: LB971212001254.004.

Material	Porosity	Permeability (m^2)	V.G. α (Pa^{-1})	V.G. λ	S_r, S_{ls}	X_{fm}
tswM4 (Tptpmn)	0.089	4.07×10^{-18}	1.02×10^{-6}	0.322	0.18, 0.983*	-
tswM5 (Tptpll)	0.115	1.55×10^{-17}	3.31×10^{-6}	0.229	0.08, 0.947*	-
tswM6 (Tptpln)	0.092	8.91×10^{-17}	7.41×10^{-7}	0.414	0.18, 0.976*	-
tswF4 (Tptpmn)	1.24×10^{-4}	6.76×10^{-12} (v) 4.27×10^{-13} (h)	3.16×10^{-3}	0.492	0.01, 1.0	5.03×10^{-2}
tswF5 (Tptpll)	3.29×10^{-4}	3.80×10^{-12} (v) 9.12×10^{-13} (h)	5.59×10^{-3}	0.492	0.01, 1.0	5.03×10^{-2}
tswF6 (Tptpln)	3.99×10^{-4}	1.20×10^{-12} (v) 1.20×10^{-12} (h)	3.19×10^{-3}	0.492	0.01, 1.0	5.03×10^{-2}

* = (1 + matrix saturation)/2, used in the G-ECM models only. For DKM Sls = 1.0.

Table 3-17. Hydrologic Properties at the Potential Repository Horizon for Base Case, max α_f, I*3, DTN: LB971212001254.005.

Material	Porosity	Permeability (m^2)	V.G. α (Pa^{-1})	V.G. λ	S_r, S_{ls}	X_{fm}
tswM4 (Tptpmn)	0.089	4.07×10^{-18}	1.02×10^{-6}	0.322	0.18, 0.987*	-
tswM5 (Tptpll)	0.115	1.55×10^{-17}	3.31×10^{-6}	0.229	0.08, 0.950*	-
tswM6 (Tptpln)	0.092	8.91×10^{-17}	7.41×10^{-7}	0.414	0.18, 0.969*	-
tswF4 (Tptpmn)	1.24×10^{-4}	6.76×10^{-12} (v) 4.27×10^{-13} (h)	3.16×10^{-3}	0.492	0.01, 1.0	4.62×10^{-5}
tswF5 (Tptpll)	3.29×10^{-4}	3.80×10^{-12} (v) 9.12×10^{-13} (h)	5.59×10^{-3}	0.492	0.01, 1.0	4.62×10^{-5}
tswF6 (Tptpln)	3.99×10^{-4}	1.20×10^{-12} (v) 1.20×10^{-12} (h)	3.19×10^{-3}	0.492	0.01, 1.0	4.62×10^{-5}

* = (1 + matrix saturation)/2, used in the G-ECM models only. For DKM Sls = 1.0.

Table 3-18. Thermophysical Properties Used in TH Simulations for TSPA-VA, DTN: SNT05071897001.002.

Unit	Wet thermal conductivity (W/m-K)	Dry thermal conductivity (W/m-K)	Rock grain density (kg/m^3)	Rock grain specific heat (J/kg-K)	Tortuosity coefficient
tcw11* (Tpcpll)	1.76	1.02	2510	847	0.7
tcw12 (Tpcpln)	1.88	1.28	2510	837	0.7
tcw13 (Tpcpv)	0.98	0.54	2470	857	0.7
ptn21 (Tpbt4)	0.5	0.35	2340	1080	0.7
ptn22 (Tpy)	0.97	0.44	2400	849	0.7
ptn23 (Tpbt3)	1.02	0.46	2370	1020	0.7
ptn24 (Tpp)	0.82	0.35	2260	1330	0.7
ptn25 (Tpbt2)	0.67	0.23	2370	1220	0.7
tsw31 (Tptrv)	1.00	0.37	2510	834	0.7
tsw32 (Tptrn)	1.62	1.06	2550	866	0.7
tsw33* (Tptpul)	1.80	0.71	2510	883	0.7
tsw34 (Tptpmn)	2.33	1.56	2530	948	0.7
tsw35* (Tptpll)	2.02	1.2	2540	900	0.7
tsw36 (Tptpln)	1.84	1.42	2560	865	0.7
tsw37 (Tptpv)	2.08	1.69	2360	984	0.7
ch1zc (Tpbt1)	1.31	0.7	2310	1060	0.7
ch2zc (Tac(z))	1.2	0.61	2350	1150	0.7
ch3zc (Tac(z))	1.2	0.61	2350	1150	0.7
ch4zc (Tacbt)	1.35	0.73	2440	1170	0.7
ch1vc (Tpbt1)	1.31	0.7	2310	1060	0.7
ch2vc (Tac(v))	1.17	0.58	2240	1200	0.7
ch3vc (Tac(v))	1.17	0.58	2240	1200	0.7

Table 3-18. (continued).

Unit	Wet thermal conductivity (W/m-K)	Dry thermal conductivity (W/m-K)	Rock grain density (kg/m^3)	Rock grain specific heat (J/kg-K)	Tortuosity coefficient
ch4vc (Tac(v))	1.17	0.58	2240	1200	0.7
pp3vp (Tcp3)	1.26	0.66	2580	841	0.7
bf3vb (Tcp3)	1.26	0.66	2580	841	0.7
tm3vt (Tcp3)	1.26	0.66	2580	841	0.7
pp2zp (Tcp2)	1.35	0.74	2510	644	0.7
bf2zb (Tcp2)	1.35	0.74	2510	644	0.7

*Used lithophysal thermal conductivities

Table 3-19. Thermal Properties of Concrete (taken from CRWMS M&O 1997d, p. 11).

Property	Value
Thermal Conductivity (W/m-K)	1.37
Specific Heat (J/kg-K)	880.
Density (kg/m^3)	2100.

Table 3-20. Hydrologic Properties of Concrete.

	Matrix	Fracture
van Genuchten α (Pa^{-1})	8.0×10^{-8}	1.0×10^{-2}
van Genuchten β (–)	1.4	1.4
Intrinsic permeability (m^2)	1.0×10^{-20}	1.0×10^{-7}
Residual saturation (-)	0.03	0.00
Porosity (-)	0.1	1.0×10^{-3}

Table 3-21. Thermal Properties of Waste-Package Material (taken from CRWMS M&O 1997d, p.11).

Property	Value
Thermal Conductivity (W/m-K)	41.709
Specific Heat (J/kg-K)	487.9
Density (kg/m^3)	8131.
Emissivity (-)	0.8

Table 3-22. Waste-Package Types Used in the TSPA-VA Drift-Scale Models, (see Figure 3-39), DTN: SNT05071897001.004.

Waste Package Type	MTU (CDA 1997)	Initial Decay Heat (CRWMS M&O 1997b)	In-Drift Spacing According to MTU
12 PWR - South Texas	6.25	10.48 kW	10.627 m.
21 PWR - Control Rods	7.4	2.91 kW	12.583 m.
21 PWR - Design Basis	9.744	17.85 kW	16.568 m.
21 PWR - (average) Plates	8.93	9.34 kW	15.177 m.
44 BWR - Absorber Plates	7.81	6.44 kW	13.28 m.
Co-Disposal (5 HLW)	N/A	4.06 kW	N/A
Separate-Disposal (4 DOE SNF)	N/A	0.793 kW	N/A

N/A = not applicable

Table 3-23. Comparison of the Waste-Stream Distribution for Waste Packages in Repository and the Modeled Drift Segment (CRWMS M&O 1997e, pp. 3-15).

Waste Package Type	44 BWR	21 PWR	12 PWR	Additional
Number of Expected Waste Packages	2,826	4,239	553	codisposal = 1663 direct-disposal = 883
Percent of Expected Inventory	27.8%	41.7%	5.4%	25%
Number of Waste Packages in Discrete Section Modeled	2	3	0.5	1.5
Representative Percent in Discrete Section	28.6%	42.6%	7.1%	21.4%

Table 3-24. Actual Drift Geometry (CRWMS M&O 1997c, pp. 57 and 58).

Actual drift quantity	Value
Drift inside diameter, d_{id} (m)	5.1
Concrete liner thickness (m)	0.2
Invert height plus liner (m)	0.855
Inside invert height (m)	0.655

Table 3-25. Modeled Drift Geometry.

Transformed drift quantity	Value
Drift inside height (and width), h_{id} (m)	4.52
Concrete liner (or rock) thickness (m)	0.177
Invert height plus liner (or rock) (m)	0.517
Inside invert height, h_{inv} (m)	0.34

Table 3-26. Waste Package Geometry (Design Input Request and Transmittal QAP 3-12, dated 9/10/97, MOL.19980720.045).

Waste Package	Actual Diameter (m)	Actual Length (m)	Modeled Height and Width (m)	Modeled Length (m)
CSNF (12PWR)	1.35	5.87	1.445	5.87
CSNF (21PWR, 44BWR)	1.664, 1.604	5.30	1.445	5.30
Additional	2.0	5.37	1.445	5.37

Table 3-27. Thermal Loading Data for the Reference Point-Loading Design.

Quantity	Model	Value
Lineal Power Load (total)	Drift-scale	0.69 (kW/m)
Lineal Power Load (CSNF only)	Drift-scale	0.63 (kW/m)
Lineal Mass Load (CSNF only)	Drift-scale	0.59 (MTU/m)
Areal Power Density (total)	Mountain-scale	93-100 (kW/acre)
Areal Power Density (total)	Drift-scale	99.9 (kW/acre)
Areal Mass Load (CSNF only)	Drift-scale Mountain-scale	85 (MTU/acre)

Table 3-28. The Temperature-Dependent Conduction Equivalence (TH Results in DTN: SNT05071897001.001).

	k_{eq} (W/m-K)
$0 < T_{WP} \leq 50$ (°C)	11
$50 < T_{WP} \leq 95$ (°C)	14
$95 < T_{WP} \leq 150$ (°C)	21
$150 < T_{WP} \leq 225$ (°C)	36

Table 3-29. Scaling Factors, *f*, Applied to Three-dimensional Drift-Scale Models (TH Results in DTN: SNT05071897001.001).

Repository Location	Early Time (0 to 1000 years)	Late Time (1000 to 100,000 years)
Center	1.0	1.0
Edge	0.8	0.6

Table 3-30. Matrix Property Values for the TH Hydrologic Parameter Set Calibrated Against the SHT, DTN: LL980209004242.026.

Geologic Unit	Model Unit	Porosity	Permeability (m^2)	S_r[a]	α[b] (Pa^{-1})	m[b]
Tpcpll	tcw11	0.066	5.40E-18	0.13	1.15E-06	0.2310
Tpcpln	tcw12	0.066	5.40E-18	0.13	2.01E-06	0.2447
Tpcpv	tcw13	0.140	5.69E-17	0.33	3.74E-06	0.4548
Tpbt4	ptn21	0.369	1.61E-14	0.10	3.98E-05	0.2531
Tpy	ptn22	0.234	3.30E-15	0.14	7.94E-06	0.4925
Tpbt3	ptn23	0.353	5.40E-14	0.17	5.44E-05	0.3002
Tpp	ptn24	0.469	8.80E-14	0.10	3.43E-05	0.3859
Tpbt2	ptn25	0.464	3.18E-13	0.10	1.81E-04	0.3195
Tptrv	tsw31	0.042	7.76E-17	0.11	5.84E-05	0.2304
Tptrn	tsw32	0.146	1.82E-16	0.04	2.00E-05	0.2861
Tptpul	tsw33	0.135	2.04E-17	0.06	6.21E-06	0.2479
Tptpmn	tsw34	0.089	4.08E-18	0.18	1.19E-06	0.3212
Tptpll	tsw35	0.115	2.22E-17	0.08	4.01E-06	0.1983
Tptpln	tsw36	0.092	8.70E-18	0.18	8.08E-07	0.5138
Tptpv	tsw37	0.020	8.39E-18	0.50	5.30E-07	0.3709
Tpbt1	ch1zc	0.193	1.36E-17	0.36	4.29E-06	0.3489
Tac(z)	ch2zc	0.240	2.50E-18	0.20	2.16E-05	0.2119
Tac(z)	ch3zc	0.240	2.50E-18	0.20	2.16E-05	0.2119
Tacbt	ch4zc	0.169	5.49E-18	0.33	1.03E-06	0.4322
Tpbt1	ch1vc	0.265	1.60E-12	0.04	7.60E-05	0.1592
Tac(v)	ch2vc	0.321	5.50E-14	0.06	4.12E-05	0.2291
Tac(v)	ch3vc	0.321	5.50E-14	0.06	4.12E-05	0.2291
Tabt1	ch4vc	0.321	5.50E-14	0.06	4.12E-05	0.2291
Tcp(3)	pp3vp	0.274	1.91E-15	0.07	1.66E-05	0.3142
Tcb(w)	bf3vb	0.274	1.91E-15	0.07	1.66E-05	0.3142
Tcb(w)	tm3vt	0.274	1.91E-15	0.07	1.66E-05	0.3142
Tcp(2)	pp2zp	0.197	1.75E-17	0.18	8.39E-06	0.3568
Tcb(n)	bf2zb	0.197	1.75E-17	0.18	8.39E-06	0.3568

[a] S_r is the residual liquid-phase saturation (not in situ saturation).

[b] α and m are fitting parameters for capillary pressure and relative permeability curves, respectively.

Table 3-31. Fracture Property Values for the TH Property Set that was Calibrated Against the SHT, DTN: LL980209004242.026.

Geologic Unit	Model Unit	Porosity	Permeability (m^2)		S_r[a]	α[b] (Pa^{-1})	m[b]	FMX
			Vertical	Horizontal				
Tpcpll	tcw11	2.33E-04	2.29E-11	6.03E-12	0.01	2.37E-03	0.667	5.00E-04
Tpcpln	tcw12	2.99E-04	1.38E-11	6.03E-12	0.01	2.37E-03	0.669	5.00E-04
Tpcpv	tcw13	7.05E-05	2.82E-12	2.40E-13	0.01	9.12E-04	0.669	5.00E-04
Tpbt4	ptn21	4.84E-05	5.25E-13	5.25E-13	0.01	1.10E-03	0.669	5.02E-01
Tpy	ptn22	4.83E-05	1.95E-13	1.95E-13	0.01	1.85E-03	0.669	5.00E-01
Tpbt3	ptn23	1.30E-04	2.57E-13	2.57E-13	0.01	3.45E-03	0.667	5.00E-01
Tpp	ptn24	6.94E-05	6.17E-14	6.17E-14	0.01	9.13E-04	0.667	5.00E-01
Tpbt2	ptn25	3.86E-05	7.76E-14	7.76E-14	0.10	1.81E-04	0.320	5.00E-01
Tptrv	tsw31	8.92E-05	1.07E-11	1.00E-12	0.01	1.44E-04	0.566	4.68E-01
Tptrn	tsw32	1.29E-04	1.51E-11	7.08E-13	0.01	1.42E-03	0.667	5.00E-04
Tptpul	tsw33	1.05E-04	2.63E-11	8.91E-13	0.01	1.73E-03	0.667	5.00E-04
Tptpmn	tsw34	1.24E-04	6.76E-12	4.27E-13	0.01	9.34E-04	0.643	1.23E-03
Tptpll	tsw35	3.29E-04	3.80E-12	9.12E-13	0.01	1.26E-03	0.667	5.00E-04
Tptpln	tsw36	3.99E-04	1.20E-12	1.20E-12	0.01	1.32E-03	0.667	5.00E-04
Tptpv	tsw37	4.92E-04	1.20E-12	1.20E-12	0.01	1.19E-03	0.659	5.00E-04
Tpbt1	ch1zc	1.10E-05	2.51E-14	2.40E-14	0.01	1.14E-03	0.667	5.00E-01
Tac(z)	ch2zc	1.10E-05	2.51E-14	1.17E-14	0.01	1.12E-03	0.654	9.22E-01
Tac(z)	ch3zc	1.10E-05	2.51E-14	1.17E-14	0.01	1.12E-03	0.654	9.22E-01
Tacbt	ch4zc	1.10E-05	2.51E-14	1.55E-14	0.01	1.14E-03	0.667	5.00E-01
Tpbt1	ch1vc	7.14E-05	1.74E-13	1.74E-13	0.01	1.18E-03	0.669	5.00E-01
Tac(v)	ch2vc	7.14E-05	2.88E-13	2.88E-13	0.01	1.18E-03	0.667	5.00E-01
Tac(v)	ch3vc	7.14E-05	2.88E-13	2.88E-13	0.01	1.18E-03	0.667	5.00E-01
Tabt1	ch4vc	7.14E-05	2.88E-13	2.88E-13	0.01	1.18E-03	0.667	5.00E-01
Tcp(3)	pp3vp	7.14E-05	7.08E-13	6.92E-13	0.01	1.42E-03	0.667	5.00E-04
Tcb(w)	bf3vb	7.14E-05	7.08E-13	6.92E-13	0.01	1.42E-03	0.667	5.00E-04
Tcb(w)	tm3vt	7.14E-05	7.08E-13	6.92E-13	0.01	1.42E-03	0.667	5.00E-04
Tcp(2)	pp2zp	1.10E-05	2.51E-14	6.46E-14	0.01	1.14E-03	0.667	5.00E-01
Tcb(n)	bf2zb	1.10E-05	2.51E-14	6.46E-14	0.01	1.14E-03	0.667	5.00E-01

[a] Sr is the residual liquid-phase saturation (not in situ saturation).

[b] α and m are fitting parameters for capillary pressure and relative permeability curves, respectively.

Table 3-32. Matrix Property Values of the Thermal-Hydrologic Property Set for Only the Property Values that Differ from the Matrix Values in the Previous Table, DTN: LL980209004242.026.

Geologic Unit	Model Unit	Porosity	Permeability (m^2)	S_r[a]	α[b] (Pa^{-1})	m[b]
Tptpln	tsw36	0.092	8.70E-18	0.18	2.272E-6	0.5138
Tptpv	tsw37	0.02	4.080E-18	0.5	7.3856E-6	0.3709

[a] S_r is the residual liquid-phase saturation (not in situ saturation).

[b] α and m are fitting parameters for capillary pressure and relative permeability curves, respectively.

Table 3-33. Duration of Dryout Around Emplacement Drifts Regardless of Affected Area (Duration of Dryout Zones that Completely Surround Emplacement Drifts) DTN: MO9807MWD0NUFT.000.

CURRENT CLIMATE CONDITIONS			LTA CLIMATE CONDITIONS				
Infiltration Rate							
I / 3	I	I × 3	LTA / 3	LTA	LTA × 3		
5000 yrs (2000)		1200 yrs (350)	1500 yrs (500)		230 yrs (60)	K_f min	CENTER MODEL
	5000 yrs (1800)			1800 yrs (600)		K_f mean	
6000 yrs (4000-5000)		1500 yrs (700)	3500 yrs (1600)		300 yrs (70)	K_f max	
2500 yrs (1800)		1600 yrs (700)	1100 yrs (800)		500 yrs (110)	K_f min	EDGE MODEL
	1800 yrs (1600)			1400 yrs (800)		K_f mean	
1800 yrs (1600)		1600 yrs (1000)	1300 yrs (1100)		500 yrs (0)	K_f max	

Table 3-34. Waste-Package Types Used in the Hot Drift Segment Sensitivity Study, DTN: SNT05071897001.004.

Waste Package Type	Quantity in the Model	MTU (CDA 1997)	Initial Decay Heat (CRWMS M&O 1997b)	In-Drift Spacing According to MTU
12 PWR	0.5	5.32	11.23 kW	9.05 m.
21 PWR	1	8.91	10.27 kW	15.15 m.
21 PWR - Design Basis	1	9.744	17.85 kW	16.57 m.
21 PWR - (average)	1	8.93	9.34 kW	15.18 m.
44 BWR – (average)	1	7.74	7.73 kW	13.16 m
44 BWR	1	7.54	11.63 kW	12.82 m.
Co-Disposal (5 HLW)	1.5	N/A	4.06 kW	N/A

N/A = not applicable

Table 3-35. Waste-Package Types Used in the Cold Drift Segment Sensitivity Study, DTN: SNT05071897001.004.

Waste Package Type	Quantity in the Model	MTU (CDA 1997)	Initial Decay Heat (CRWMS M&O 1997b)	In-Drift Spacing According to MTU
12 PWR	0.5	6.25	10.48 kW	10.63 m.
21 PWR	2	7.4	2.91 kW	12.58 m.
21 PWR - (average)	1	8.93	9.34 kW	15.18 m.
44 BWR	2	7.81	6.44 kW	13.28 m.
Separate-Disposal (4 DOE SNF)	1.5	N/A	0.79 kW	N/A

N/A = not applicable

Table 3-36. Thermal Loading Data for the Idealized Point-Load Emplacement Drift Segments: Base Case, Hot, and Cold, DTN: SNT05071897001.009.

Quantity	Base Case	Hot	Cold
Lineal Power Load (total), (kW/m)	0.69	0.89	0.48
Lineal Power Load (CSNF only), (kW/m)	0.63	0.81	0.46
Lineal Mass Load (CSNF only), (MTU/m)	0.59	0.59	0.59
Areal Mass Load (CSNF only), (MTU/acre)	85	85	85

Table 3-37. Convective-Heat-Transfer Parameters (Bulk Permeabilities in Rockfall). DTN: SNT05071897001.008.

Bulk Permeability (m^2)	Bulk Permeability (darcy)	Similar To
7×10^{-12}	7	Host rock fracture
1×10^{-8}	10,000	Unconsolidated gravel (medium)
1×10^{-7}	100,000	Unconsolidated gravel (high)

Table 3-38. Void-Space Hydrologic Properties DTN: SNT05071897001.008.

Void Space Property	Value
Porosity	0.5
β_f (fracture beta)	5.0
α_f (Pa^{-1}) (fracture alpha)	1.0×10^{-2}
S_r (residual saturation)	0.0

Table 3-39. Expert Panel for the Near-Field Expert Elicitation (CRWMS M&O 1998, pp. 1-6 of 8).

Expert	Affiliation
Derek Elsworth	Pennsylvania State University
John E. Gale	Fracflow Consultants, Inc.
Roger D. Hart	Itasca Consulting Group, Inc.
Benjamin Ross	Disposal Safety, Inc.
Robert S. Schechter	University of Texas (Emeritus)
Yanis Yortsos	University of Southern California

Chapter 3
Tables