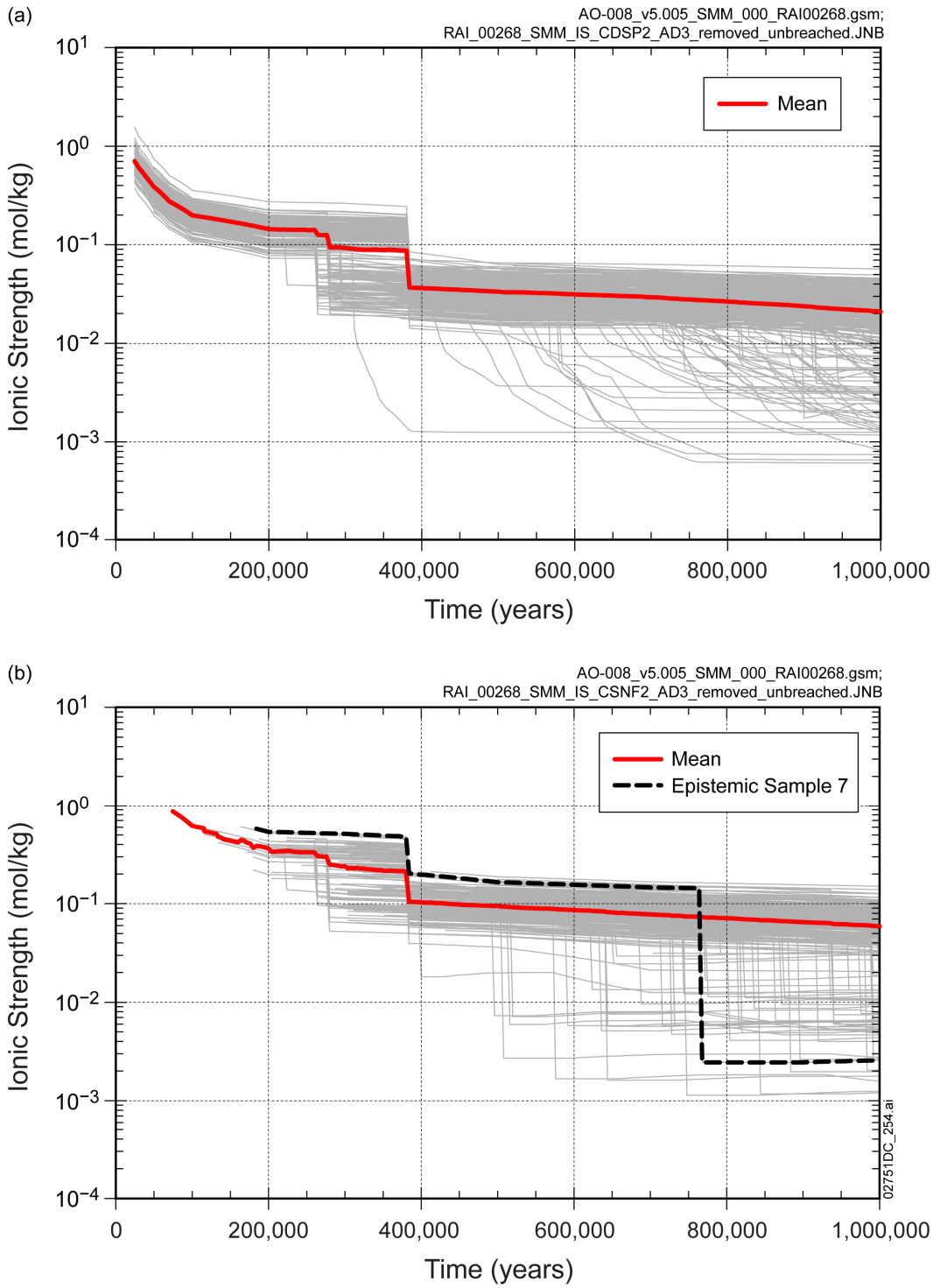

Figure 18. Ionic Strength in the Corrosion Products Domain of (a) Codisposal Waste Packages and (b) Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

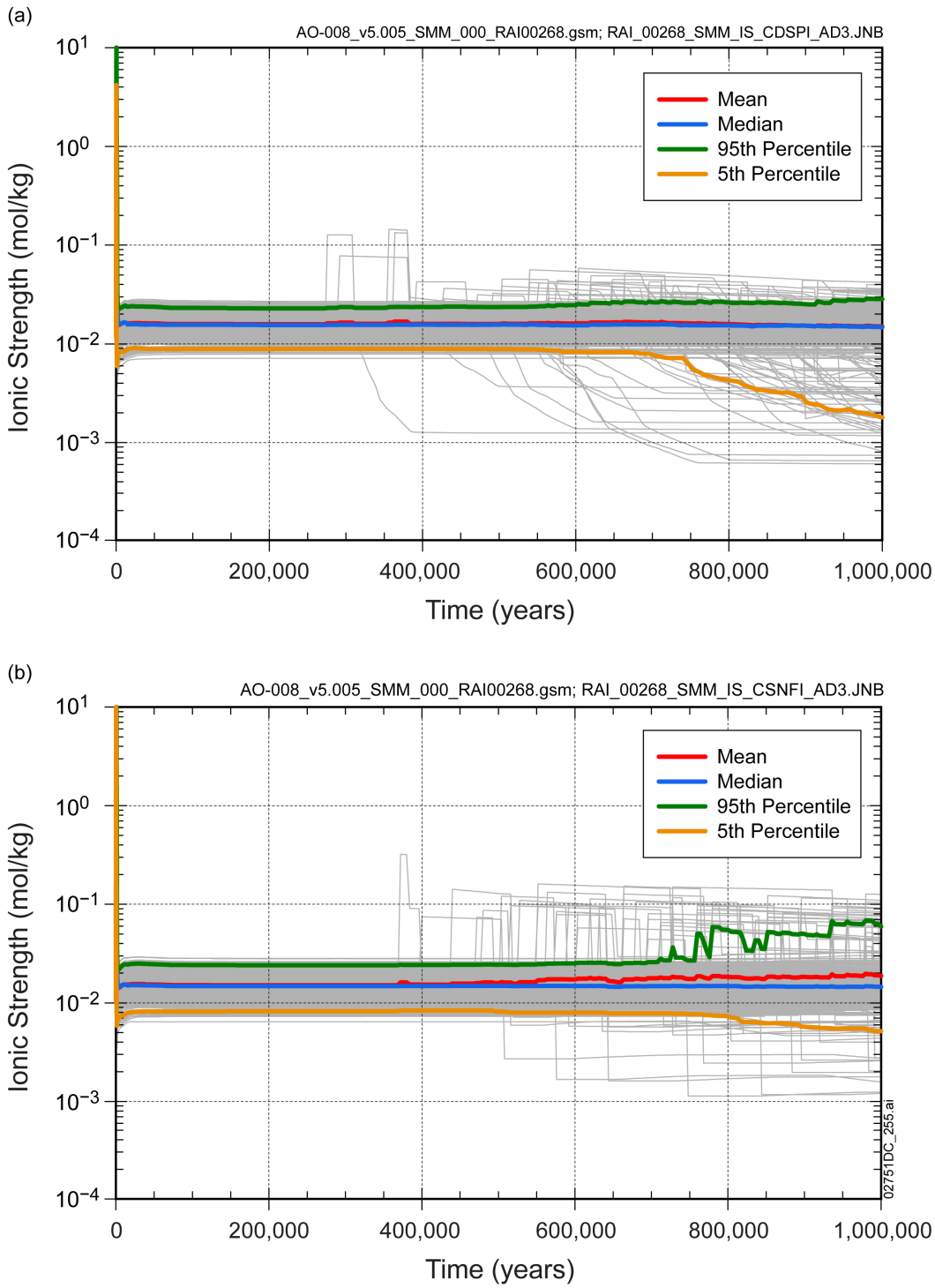

Figure 19. Ionic Strength in the Invert below (a) Codisposal Waste Packages and (b) Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

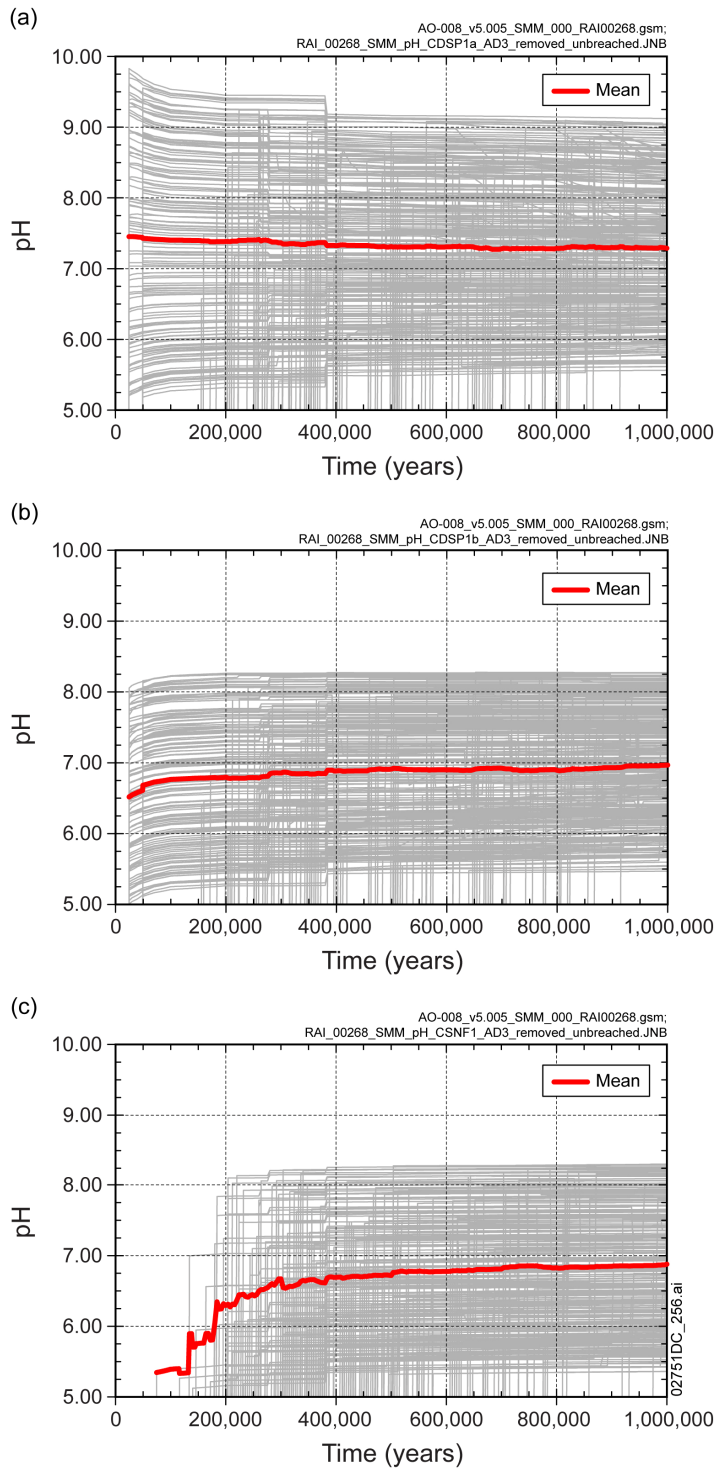

Figure 20. pH in (a) the HLW Domain of Codisposal Waste Packages, (b) the DOE-owned SNF Domain of Codisposal Waste Packages, and (c) the Waste Form Domain of Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

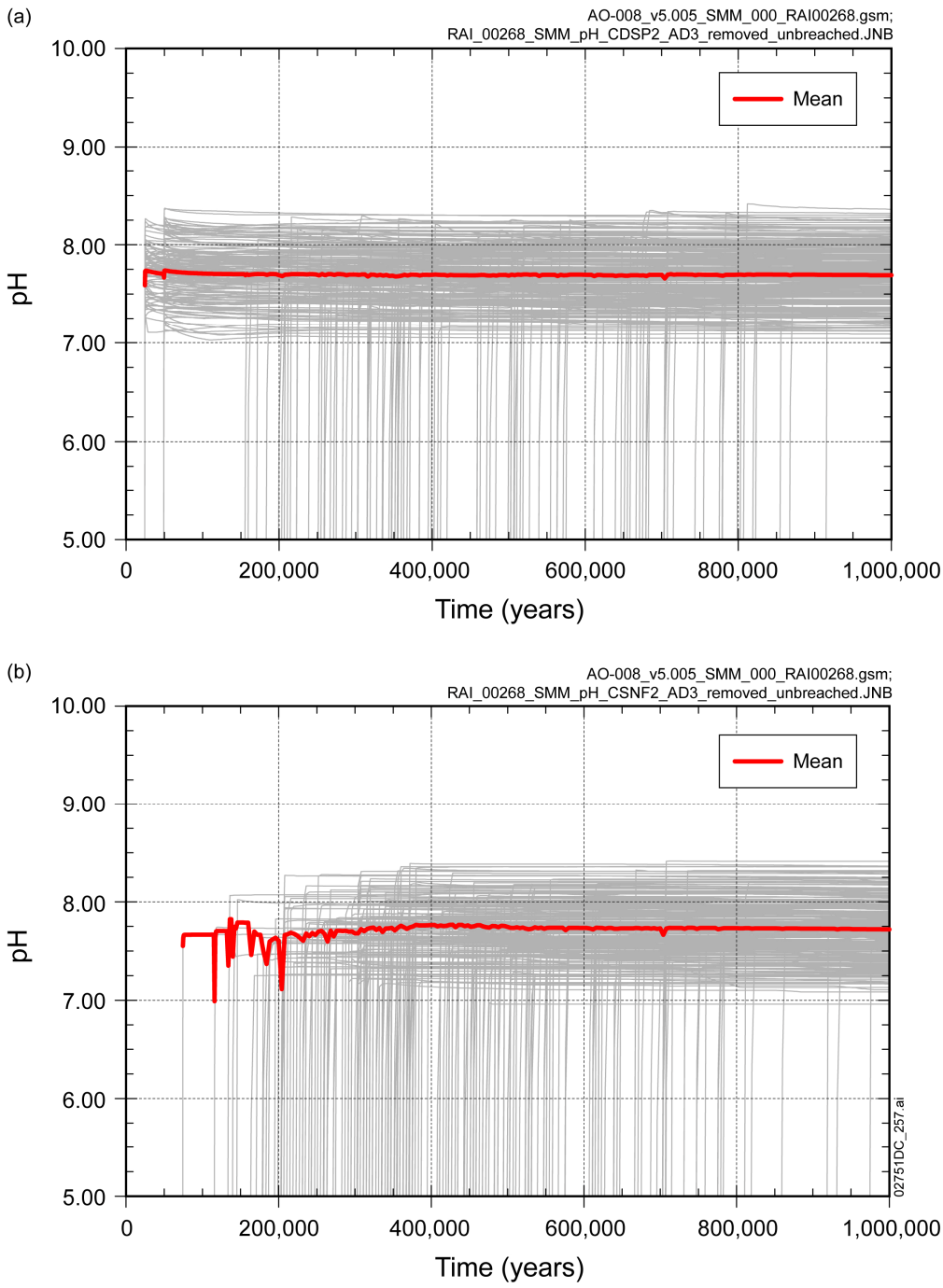

Figure 21. pH in the Corrosion Products Domain of (a) Codisposal Waste Packages and (b) Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

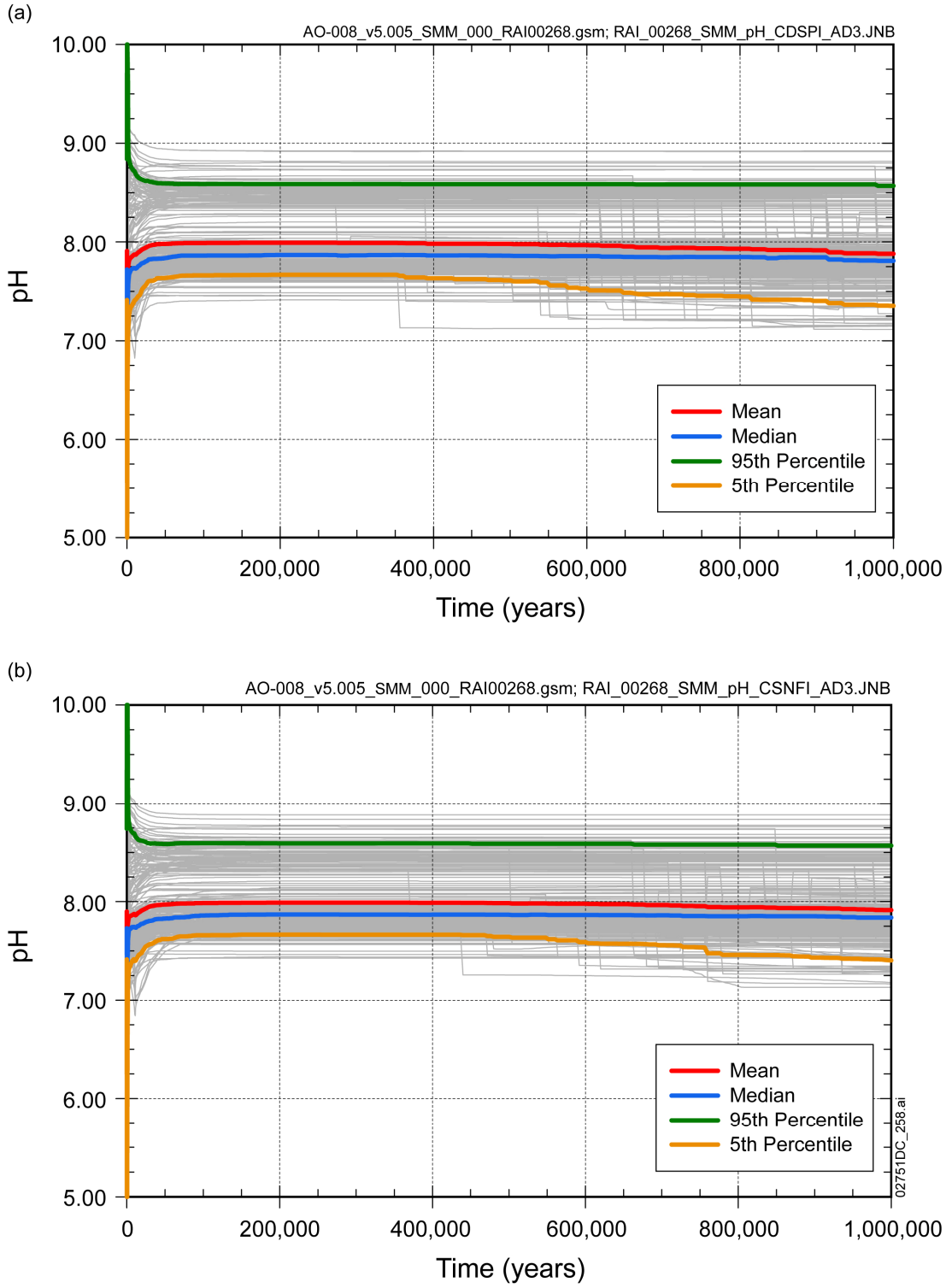

Figure 22. pH in the Invert below (a) Codisposal Waste Packages and (b) Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

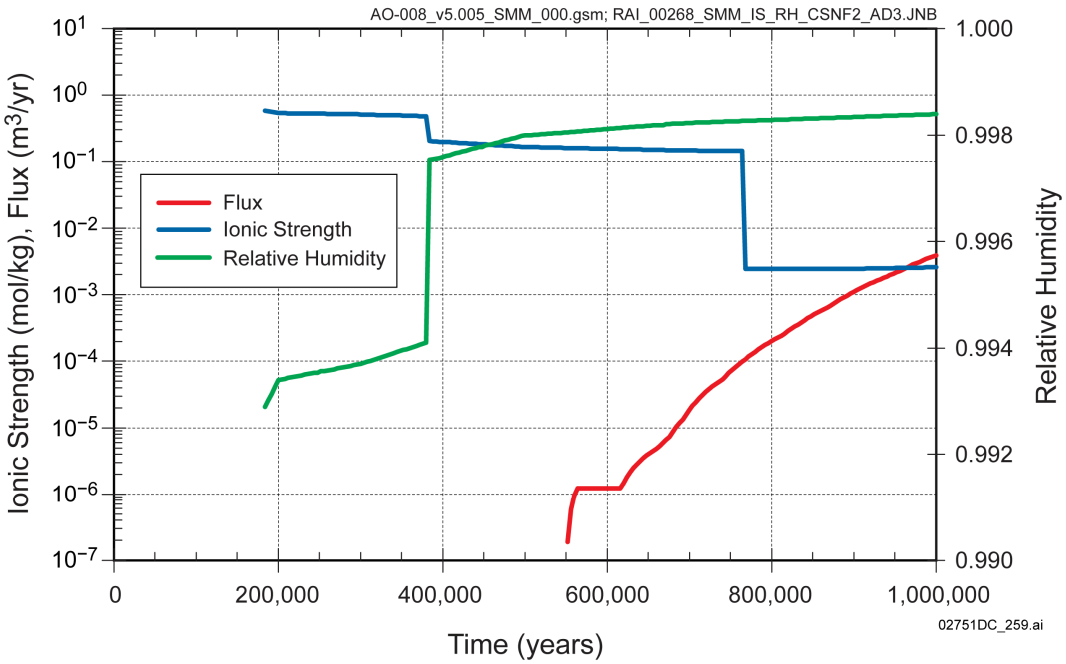

Figure 23. Ionic Strength, Relative Humidity, and Flux through the Commercial SNF Waste Package for Epistemic Sample 7 in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

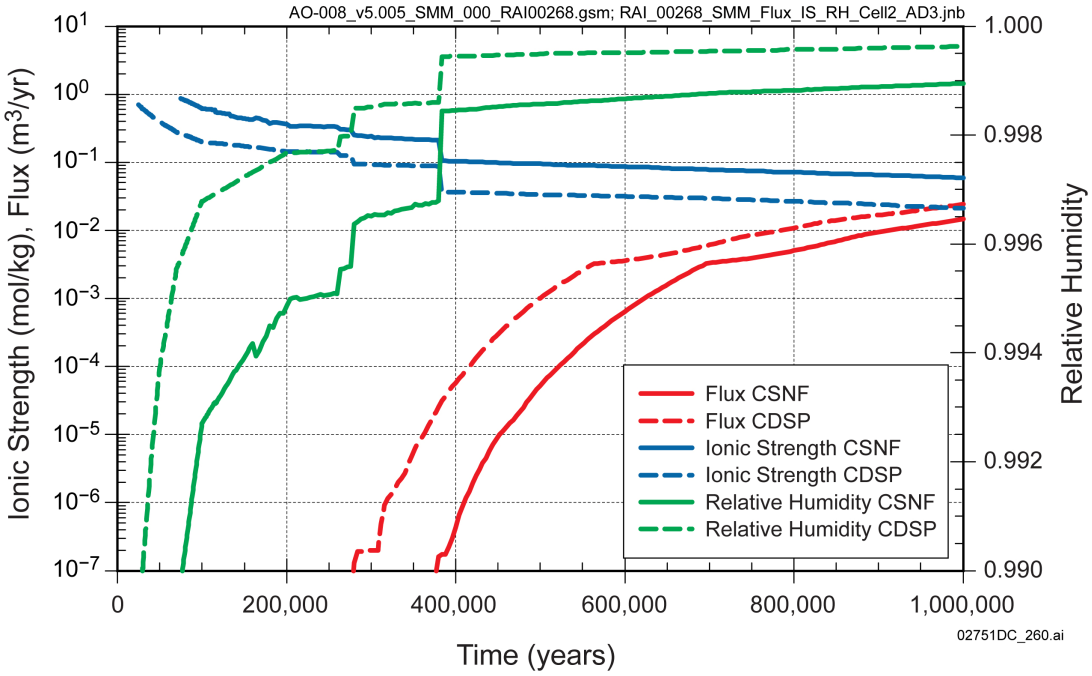

Figure 24. Mean Ionic Strength, Relative Humidity, and Flux through the Commercial SNF and Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

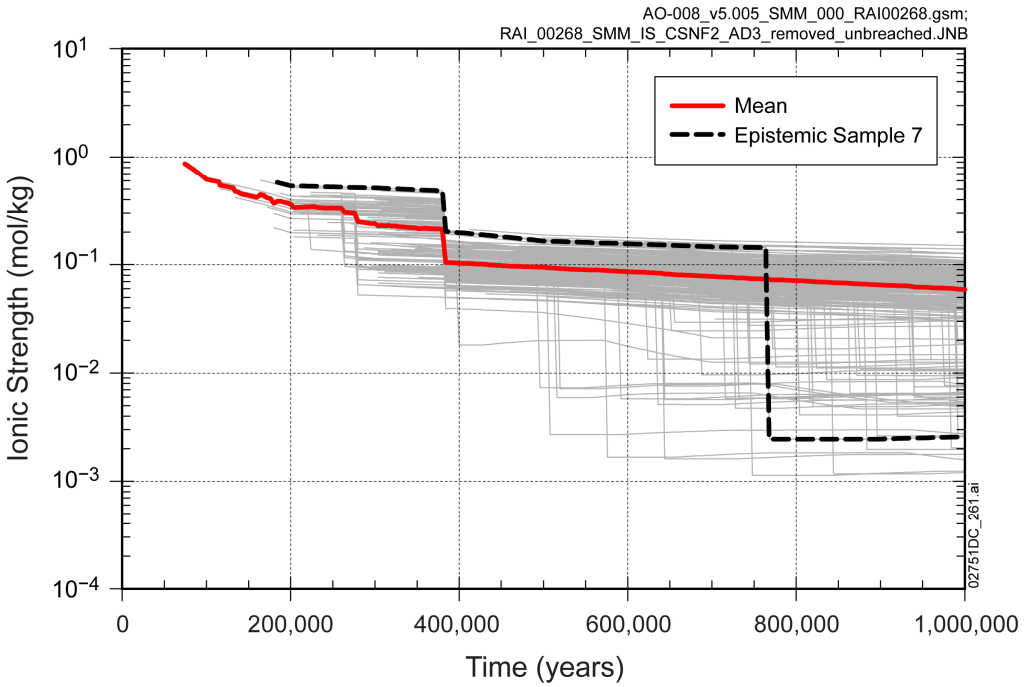

Figure 25. Ionic Strength in the Corrosion Products Domain of Commercial SNF Waste Packages, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

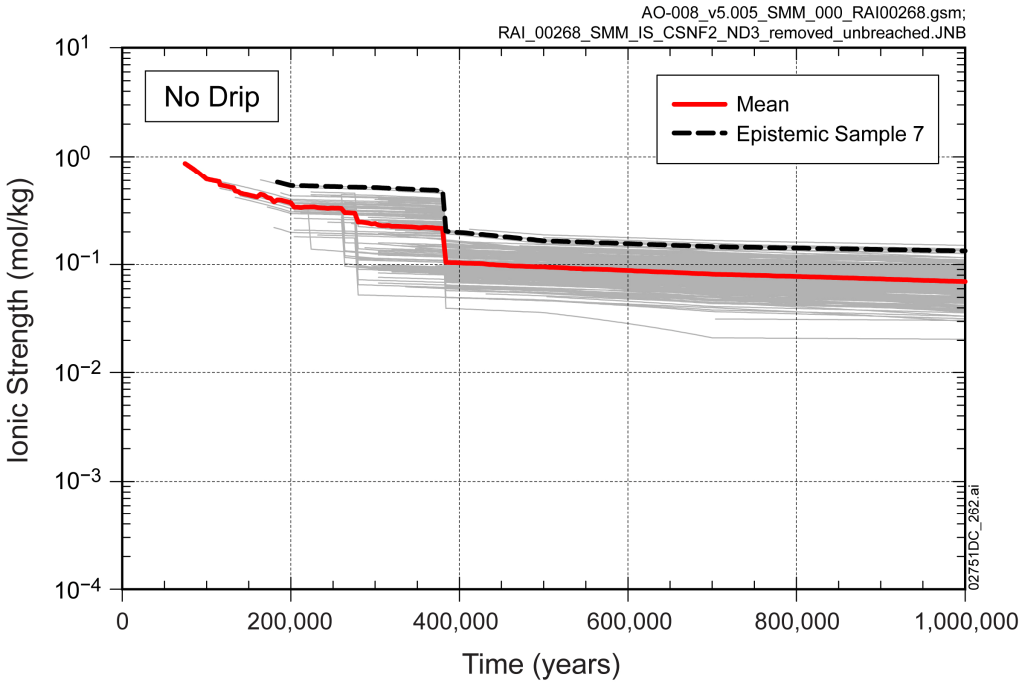

Figure 26. Ionic Strength in the Corrosion Products Domain of Commercial SNF Waste Packages, in Percolation Subregion 3, No-Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

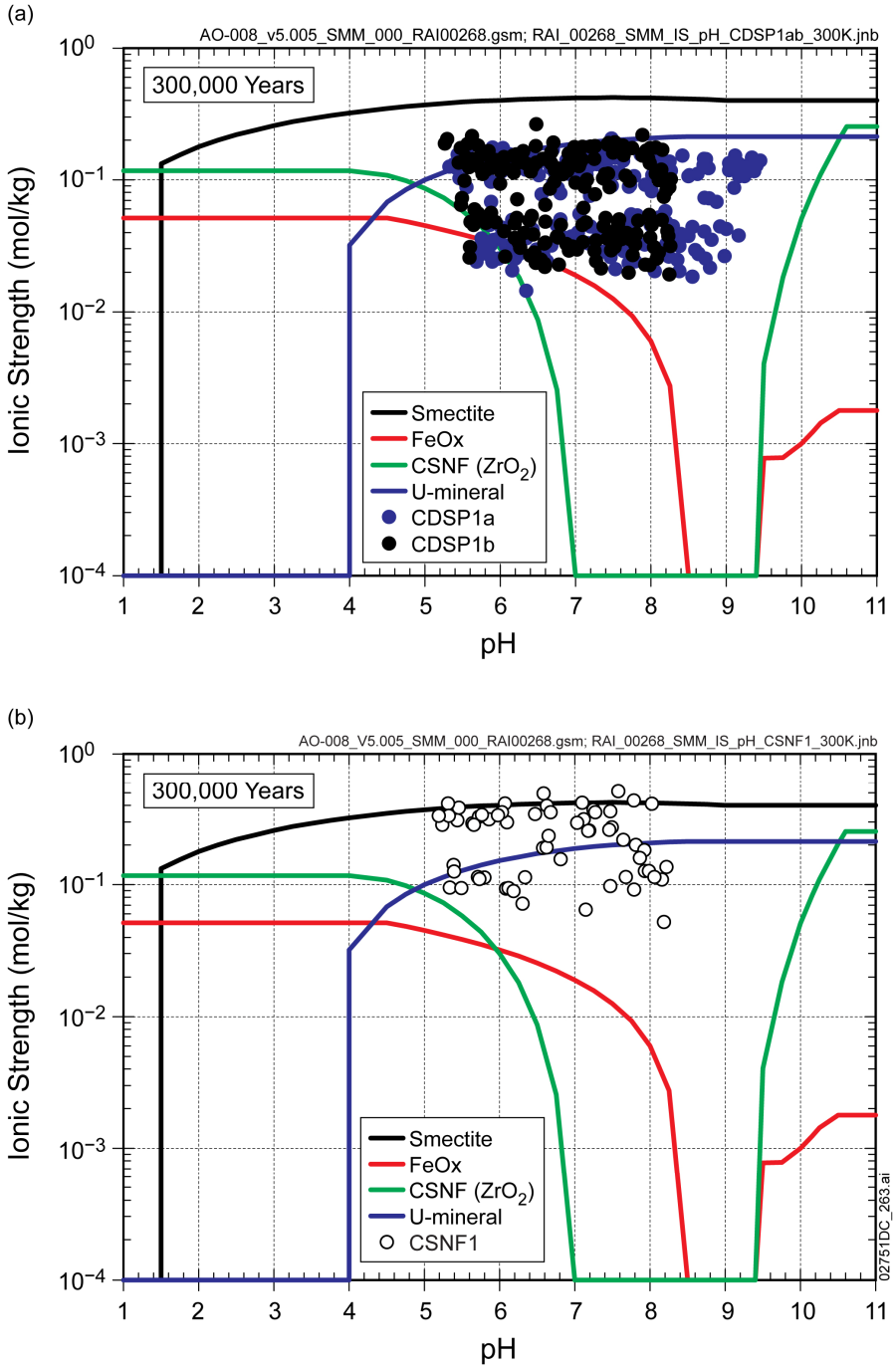

Figure 27. pH and Ionic Strengths of the Waters within (a) the Codisposal Waste Form Domains and (b) the Commercial SNF Waste Form Domain in the Percolation Subregion 3 and Drip Environment at 300,000 Years for the Seismic Ground Motion Modeling Case with Aleatory Vector 4641

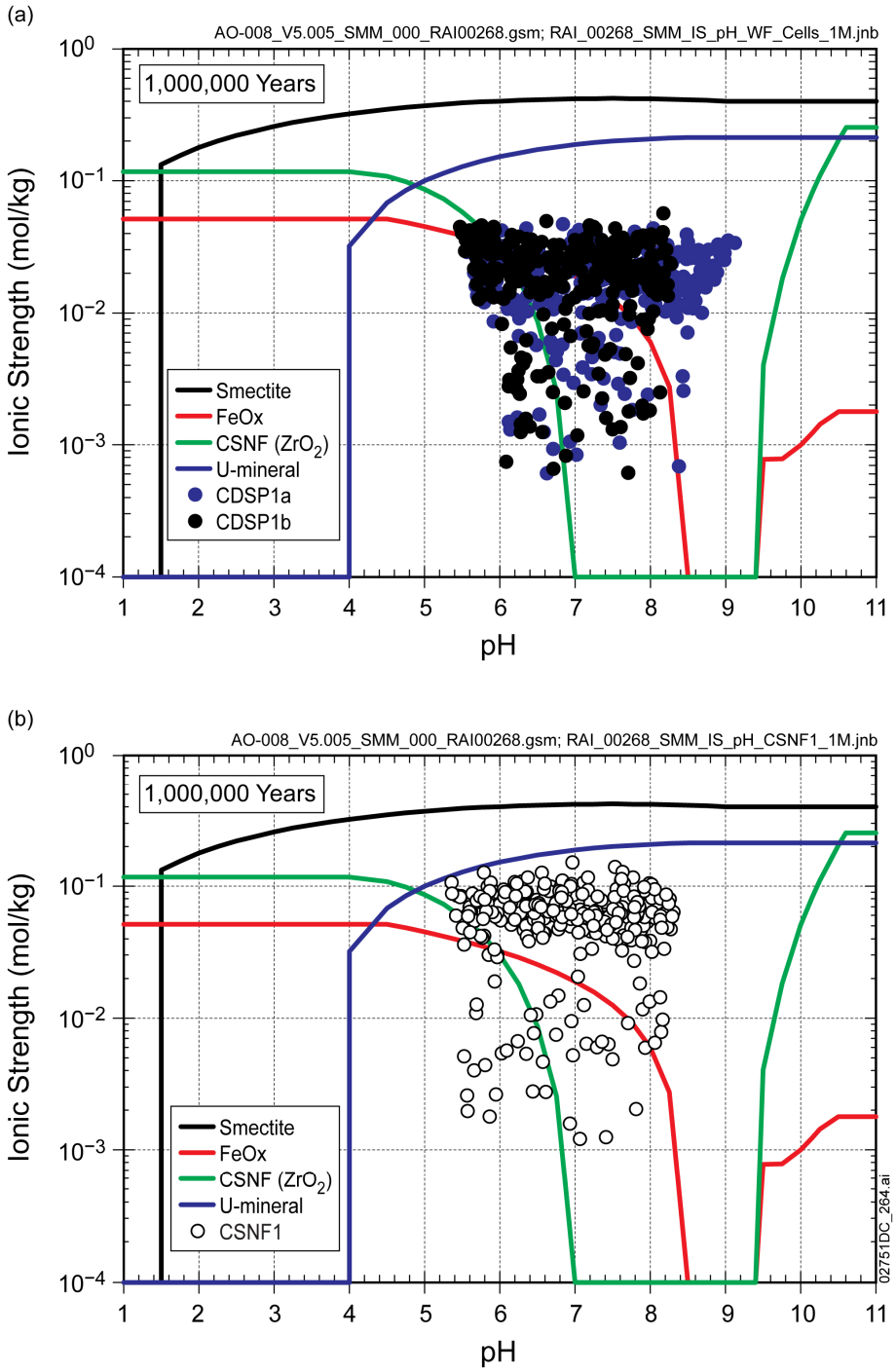

Figure 28. pH and Ionic Strengths of the Waters within (a) the Codisposal Waste Form Domains and (b) the Commercial SNF Waste Form Domain in the Percolation Subregion 3 and Drip Environment at 1,000,000 Years for the Seismic Ground Motion Modeling Case with Aleatory Vector 4641

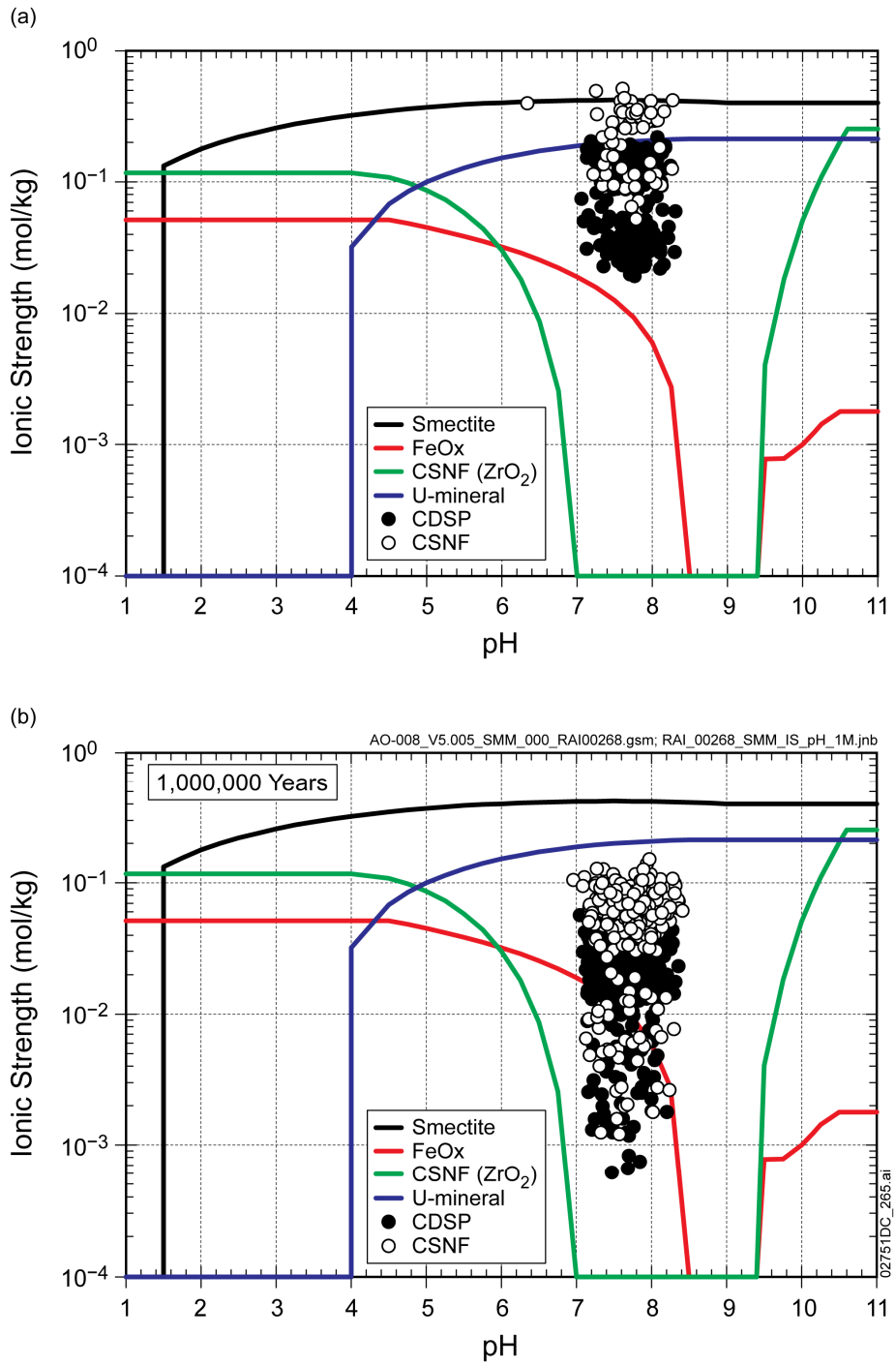

Figure 29. pH and Ionic Strengths of the Waters within the Codisposal and Commercial SNF Corrosion Products Domains in the Percolation Subregion 3 and Drip Environment at (a) 300,000 Years and (b) 1,000,000 Years for the Seismic Ground Motion Modeling Case with Aleatory Vector 4641

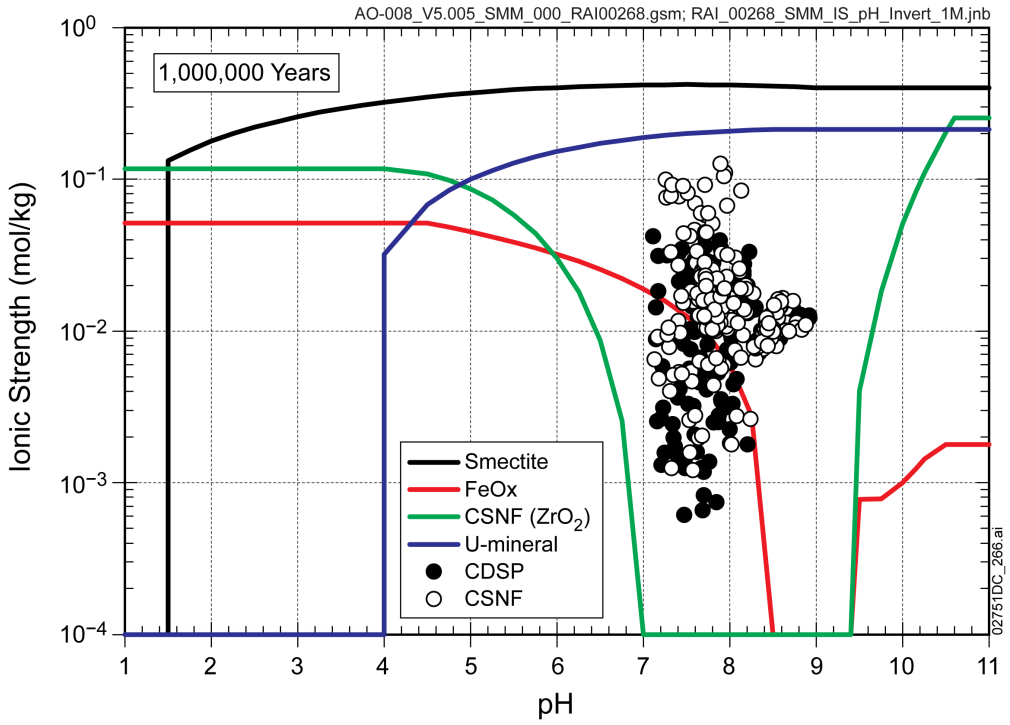

Figure 30. pH and Ionic Strengths of the Waters within the Invert under Codisposal and Commercial SNF Waste Packages in the Percolation Subregion 3 and Drip Environment at 1,000,000 Years for the Seismic Ground Motion Modeling Case with Aleatory Vector 4641

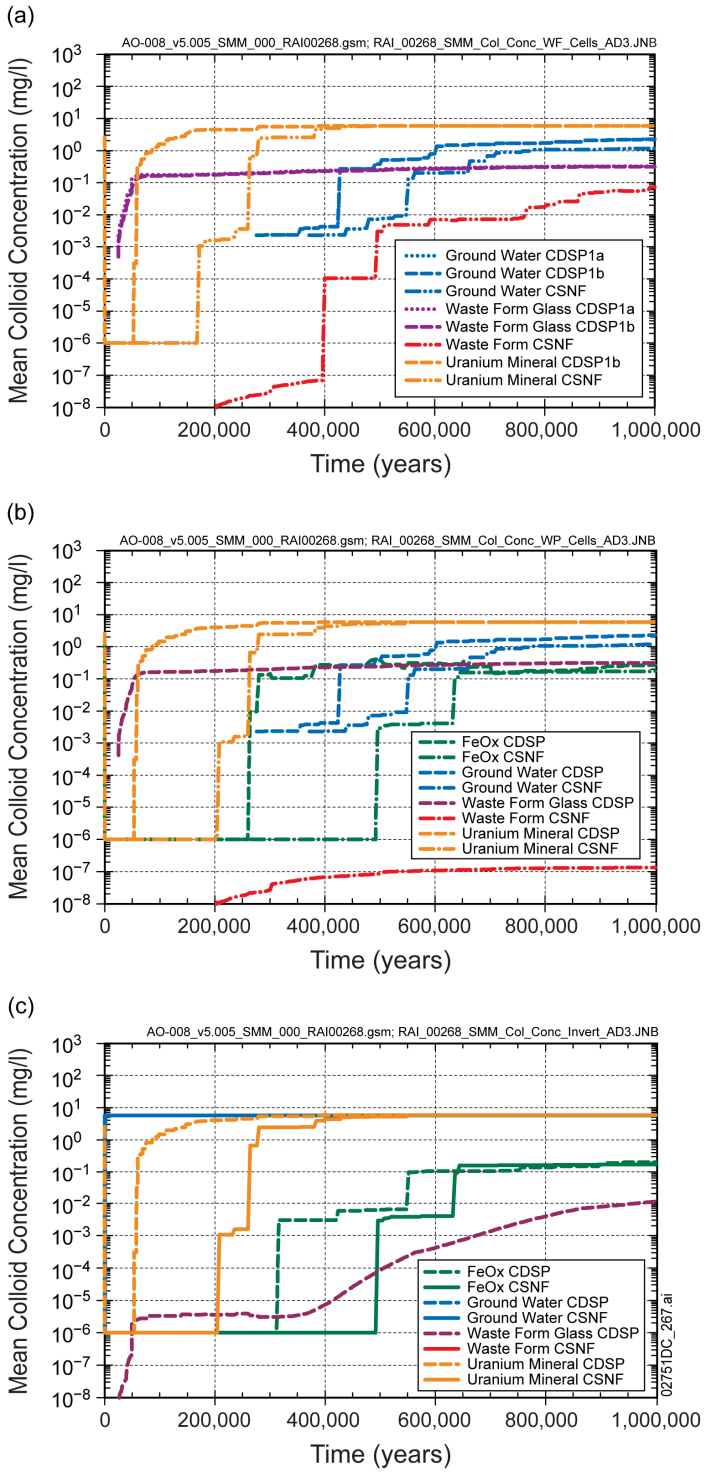

Figure 31. Mean Colloid Concentration in (a) the Waste Form Domains, (b) the Corrosion Products Domain, and (c) the Invert, in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

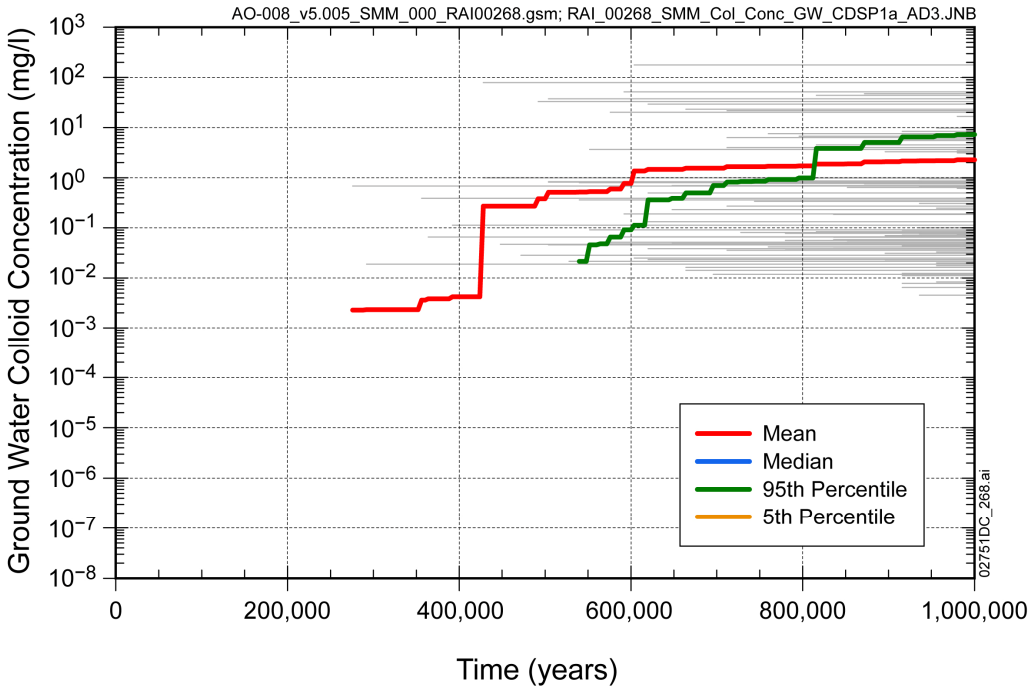

Figure 32. Groundwater Colloid Concentration in the Waste Form Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

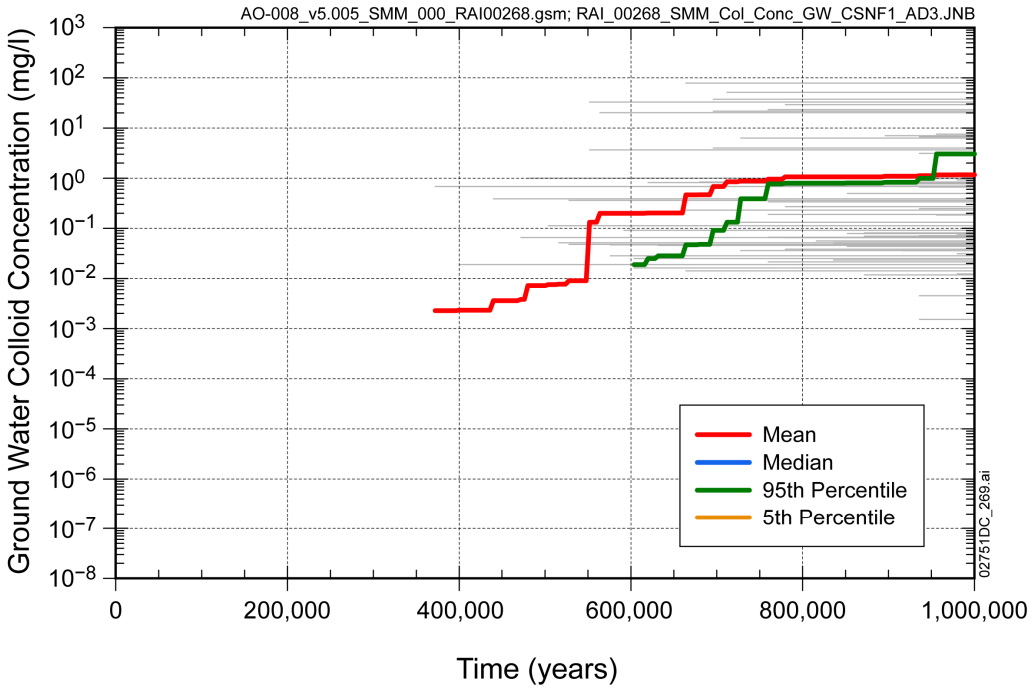

Figure 33. Groundwater Colloid Concentration in the Waste Form Domain of Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

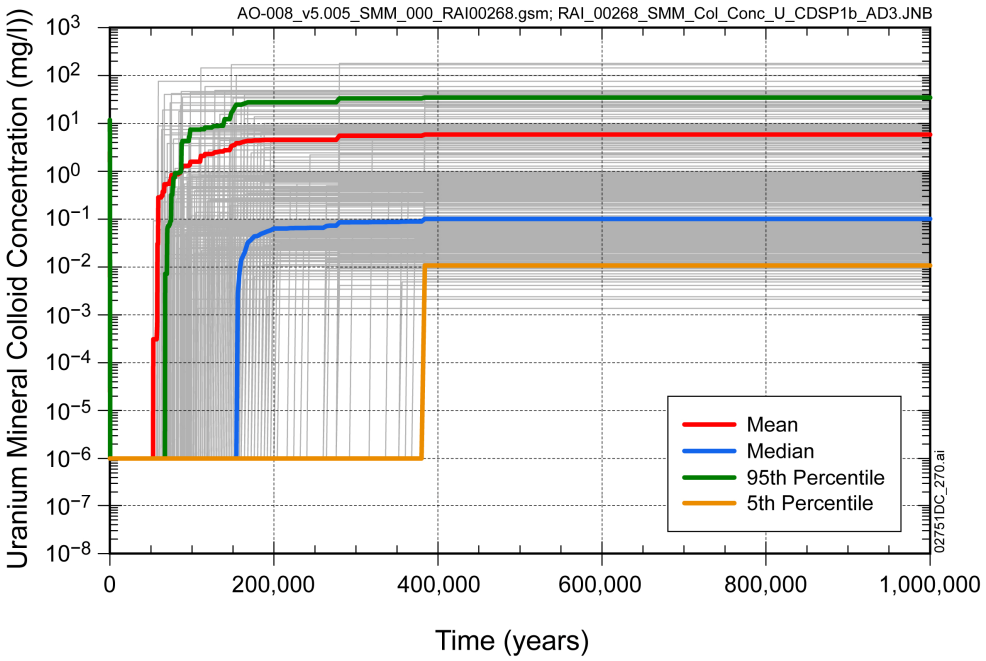

Figure 34. Uranium Minerals Colloid Concentration in the DOE-owned SNF Waste Form Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

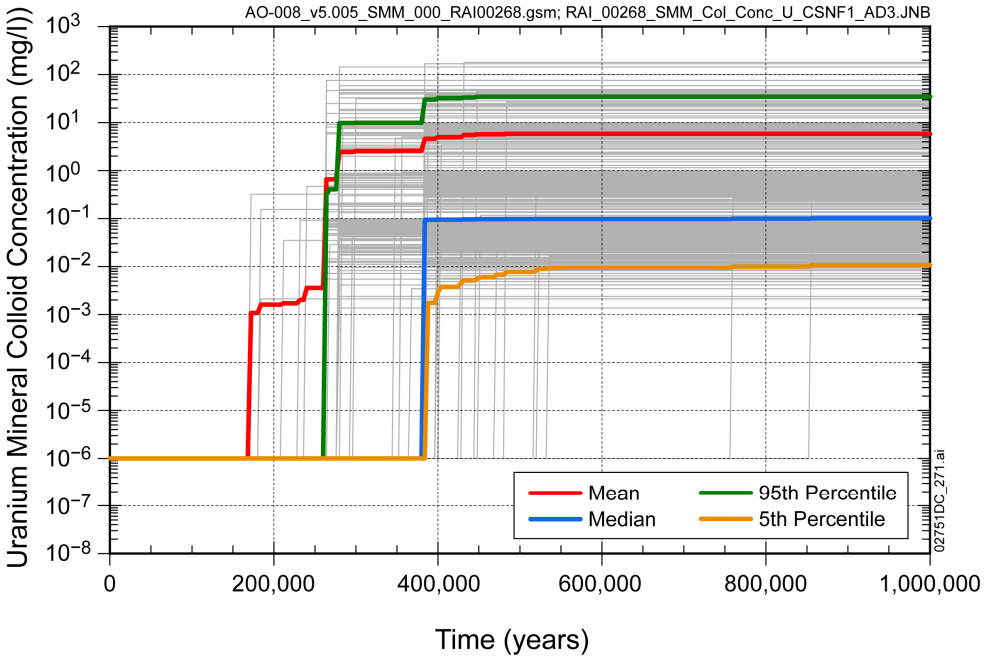

Figure 35. Uranium Minerals Colloid Concentration in the Commercial SNF Waste Form Domain of Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

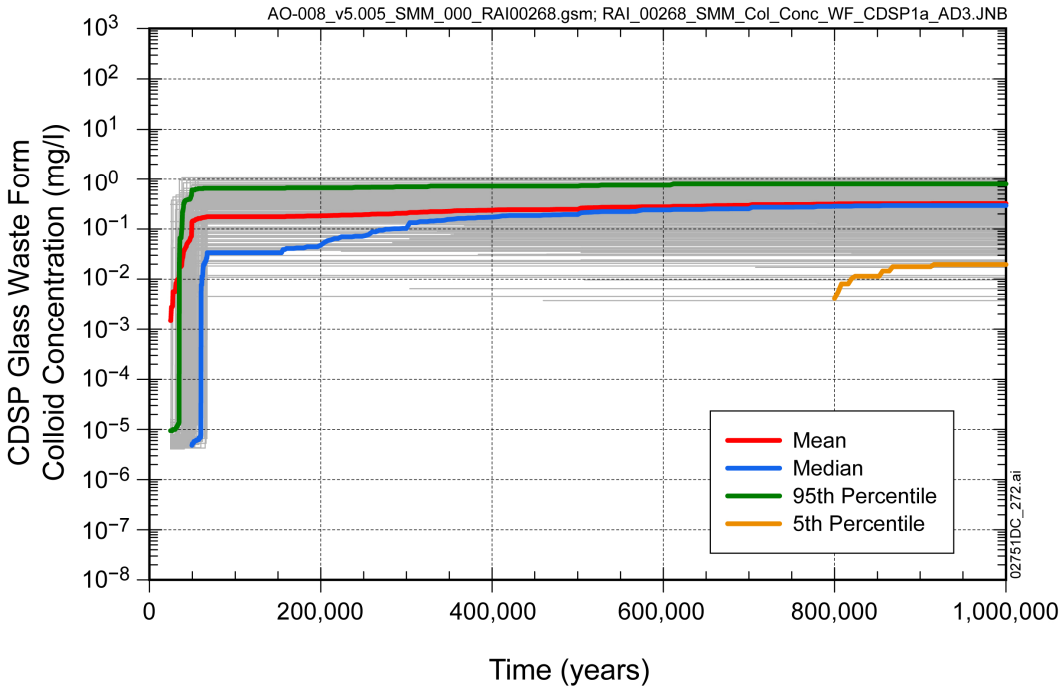

Figure 36. Codisposal Glass Waste Form Colloid Concentration in the Waste Form Domain in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

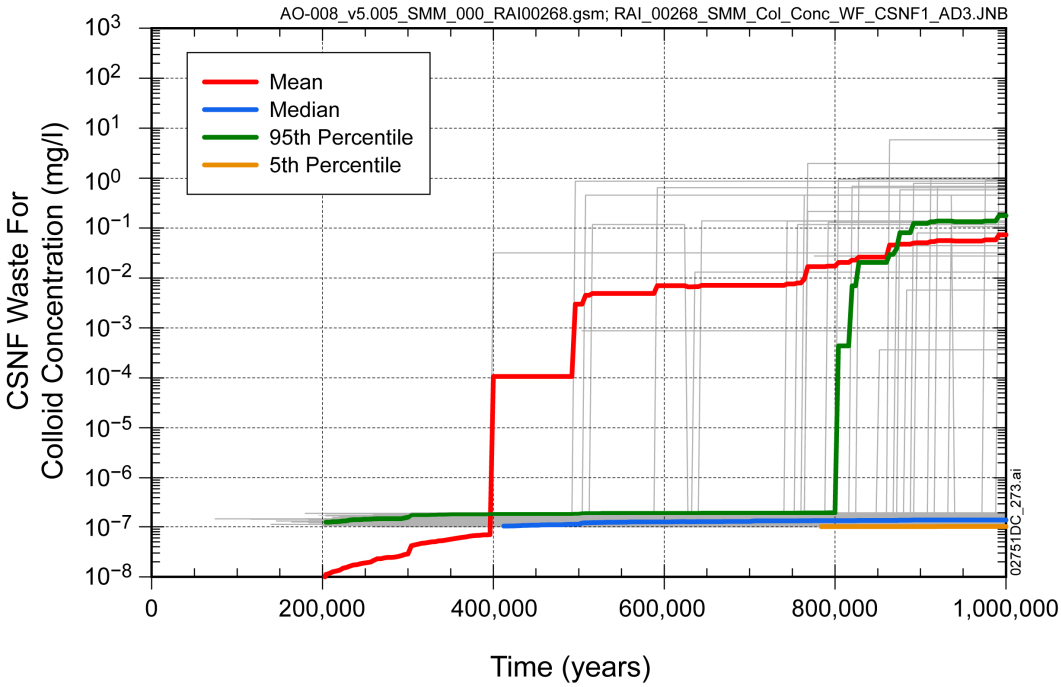

Figure 37. Commercial SNF Waste Form Colloid Concentration in the Waste Form Domain in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

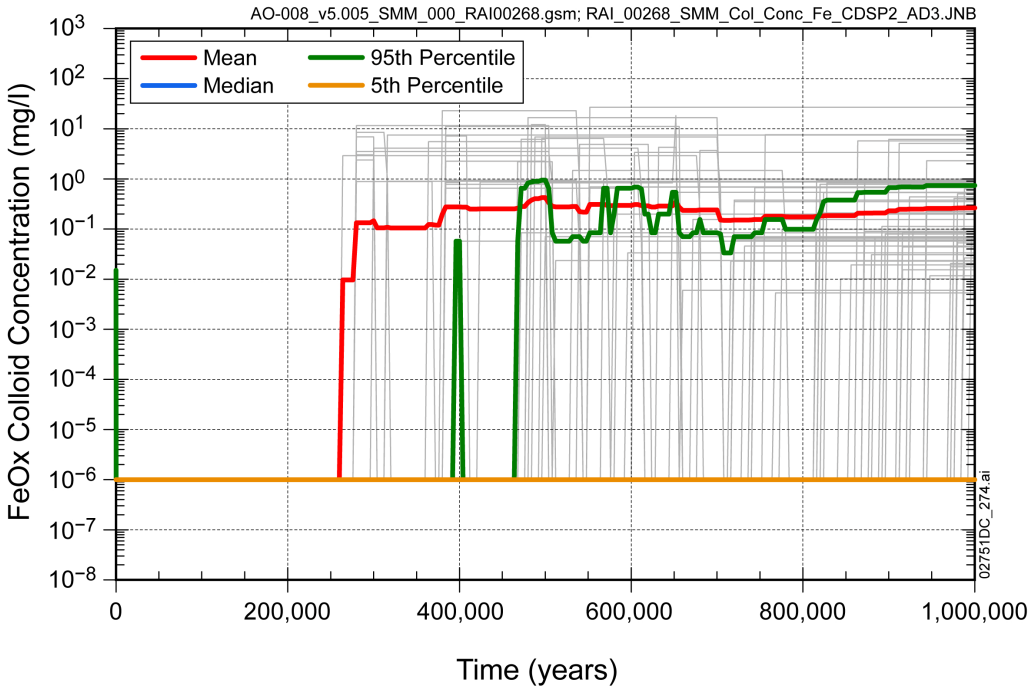

Figure 38. FeO_x Colloid Concentration in the Corrosion Products Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

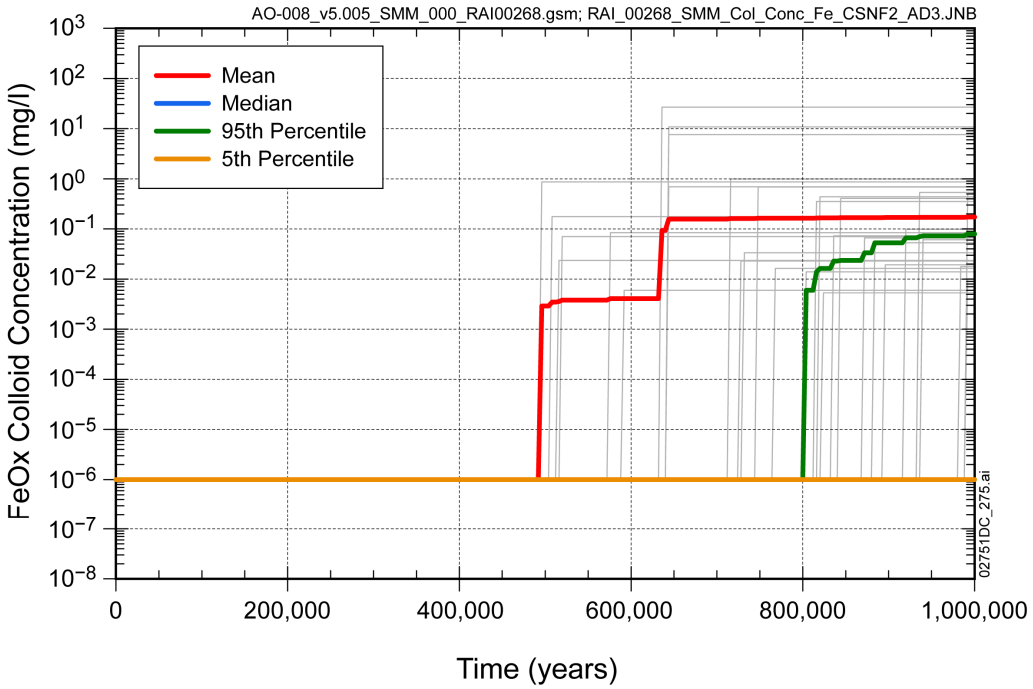

Figure 39. FeO_x Colloid Concentration in the Corrosion Products Domain of Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

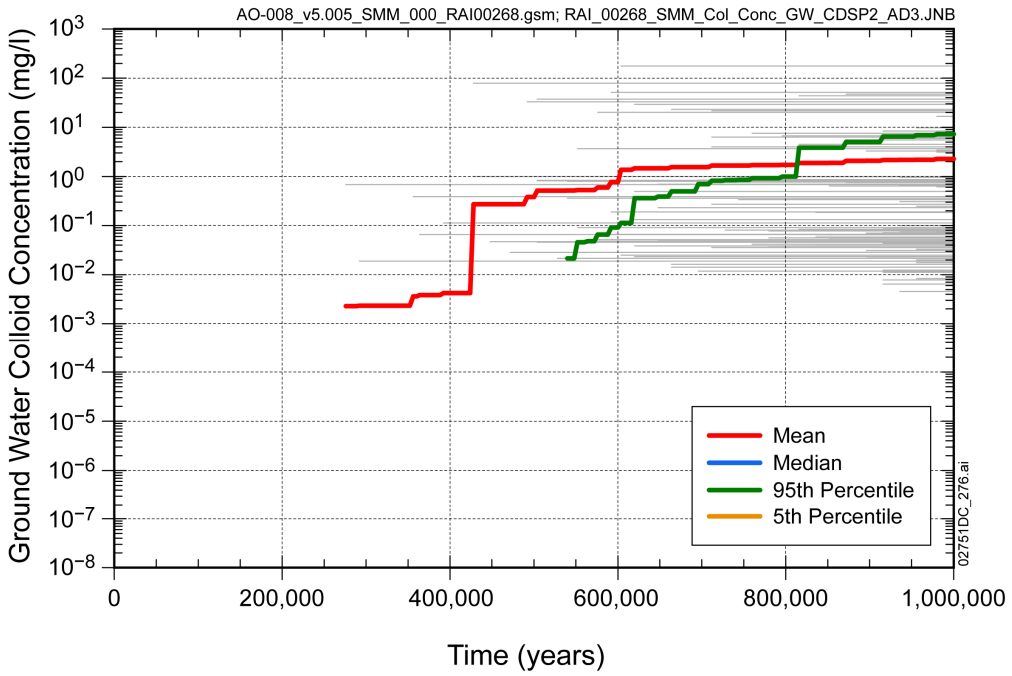

Figure 40. Groundwater Colloid Concentration in the Corrosion Products Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

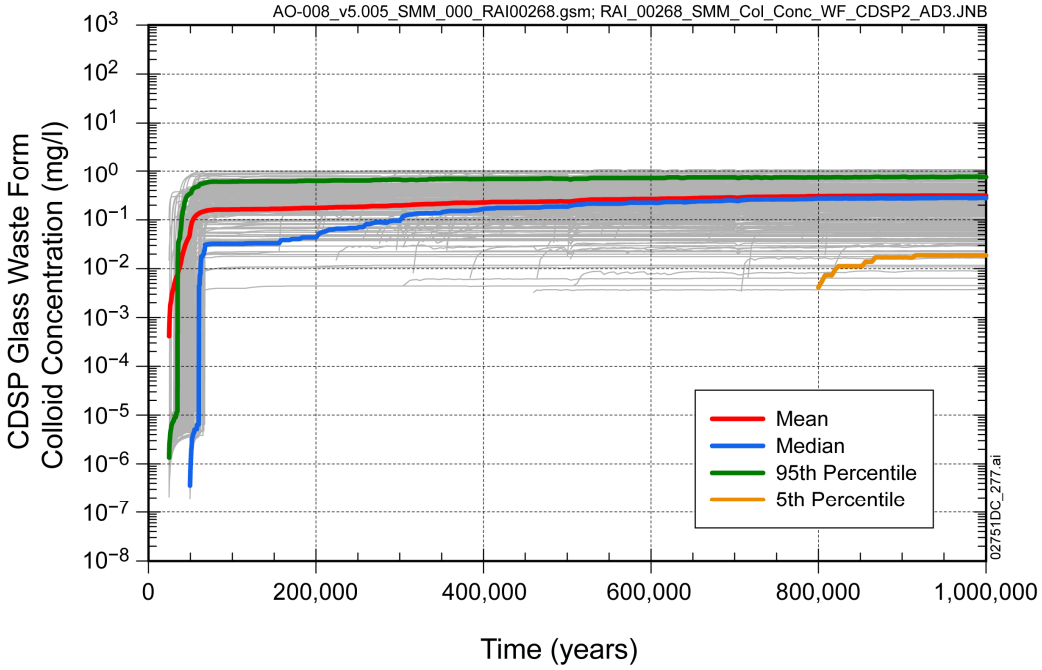

Figure 41. Glass Waste Form Colloid Concentration in the Corrosion Products Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

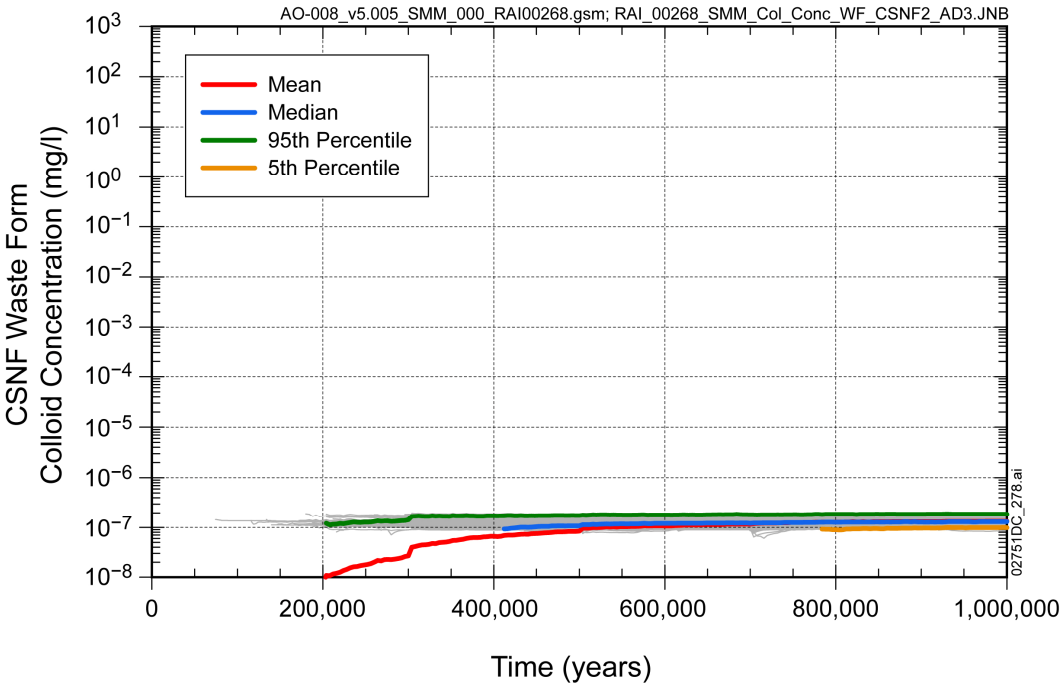

Figure 42. Commercial SNF Waste Form Colloid Concentration in the Corrosion Products Domain in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

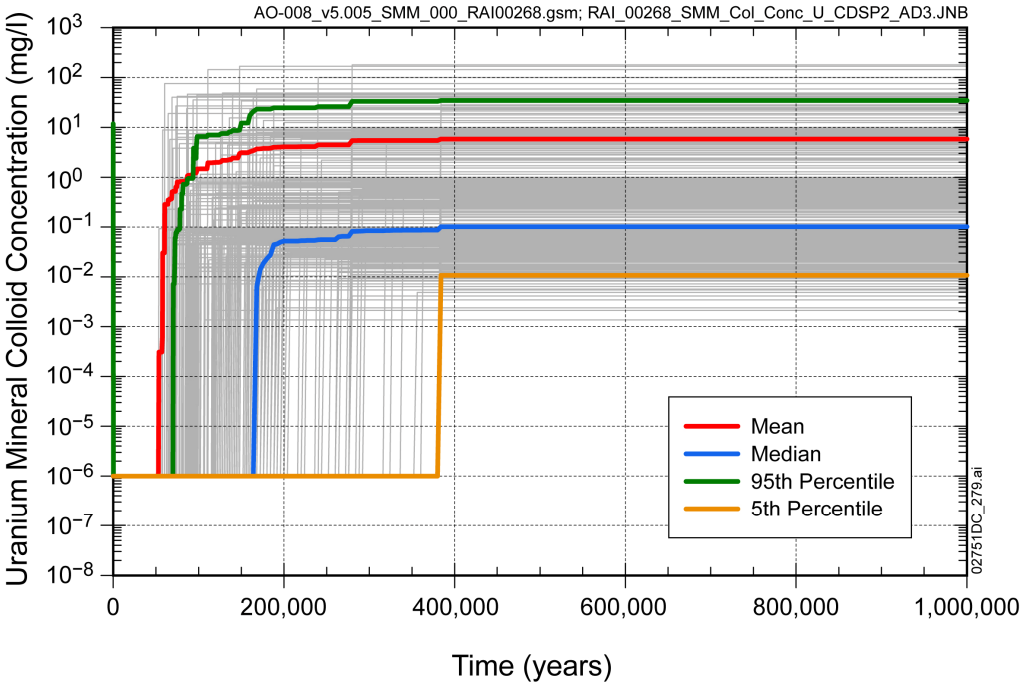

Figure 43. Uranium Minerals Colloid Concentration in the Corrosion Products Domain of Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

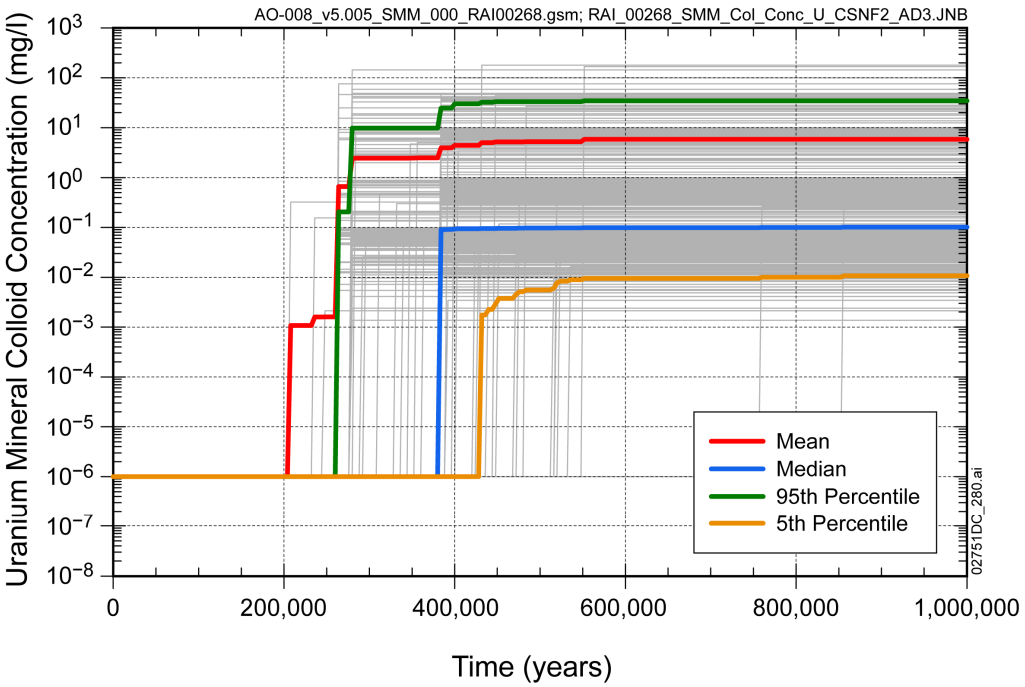

Figure 44. Uranium Minerals Colloid Concentration in the Corrosion Products Domain of Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

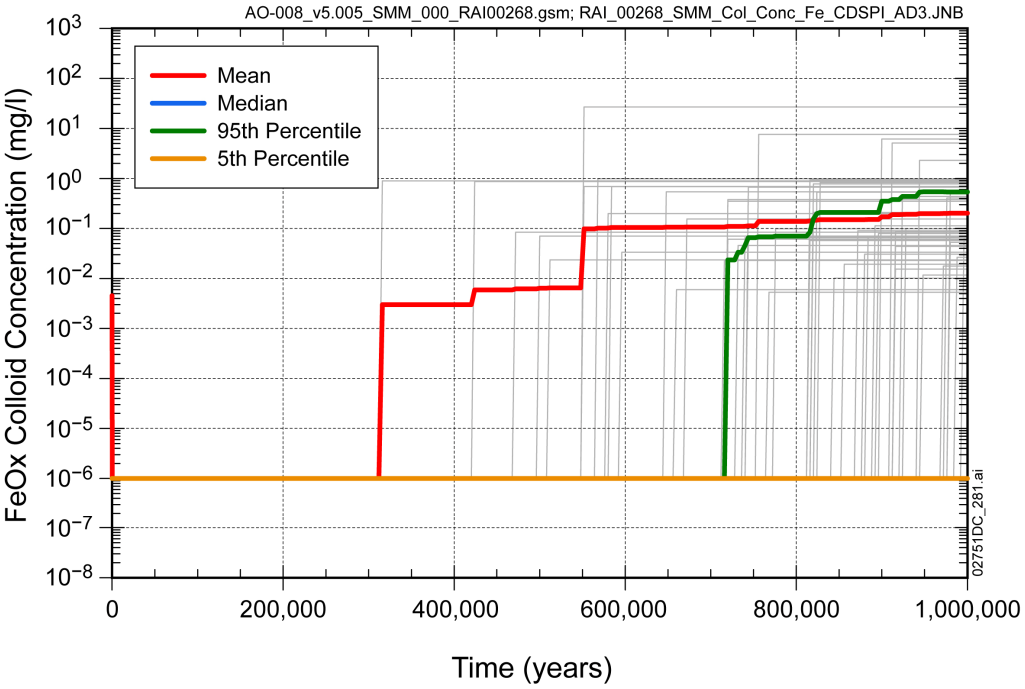

Figure 45. FeO_x Colloid Concentration in the Invert under Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

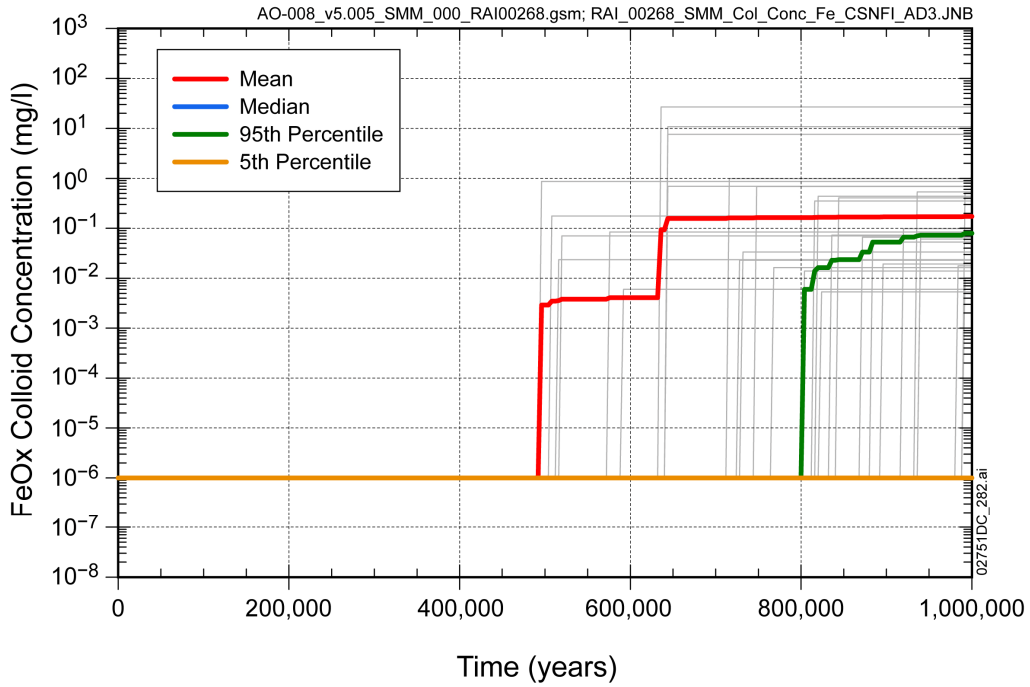

Figure 46. FeO_x Colloid Concentration in the Invert under Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

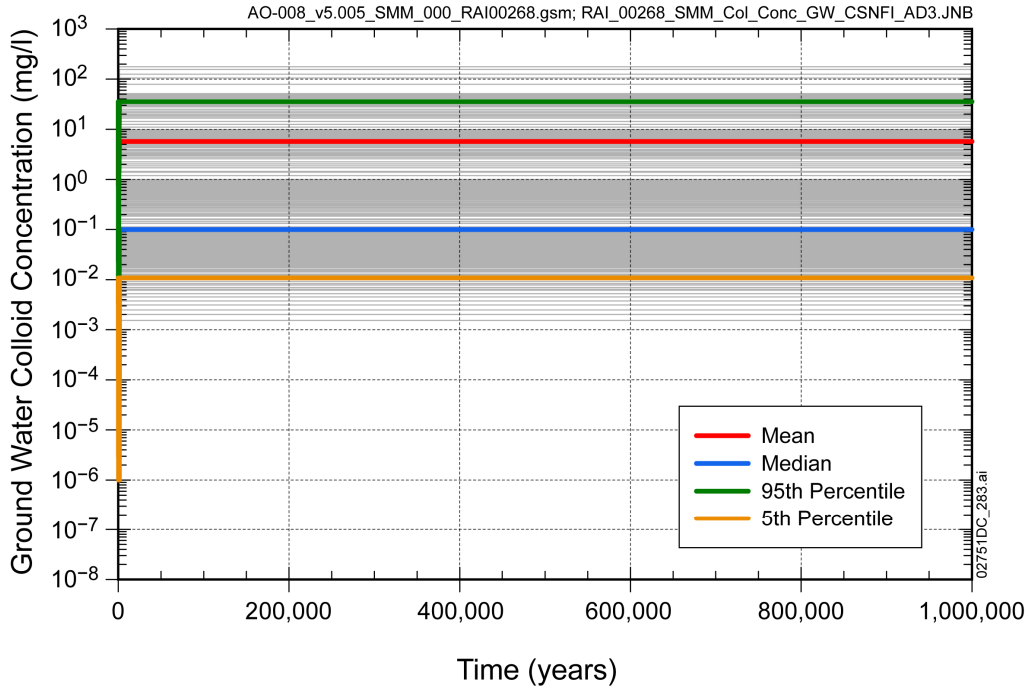

Figure 47. Groundwater Colloid Concentration in the Invert under Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

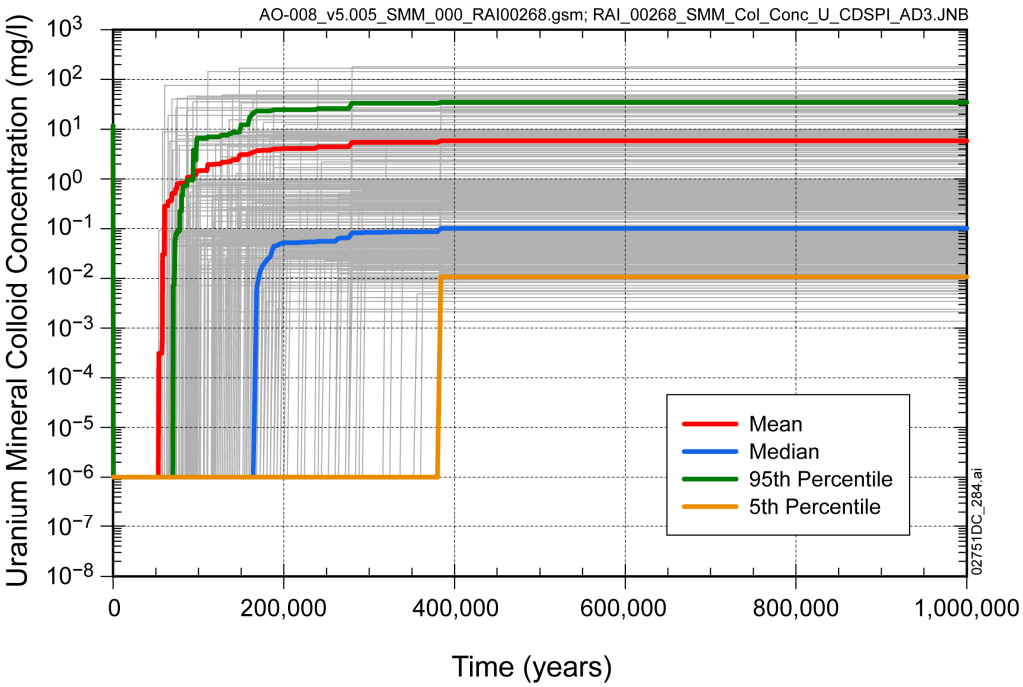

Figure 48. Uranium Minerals Colloid Concentration in the Invert under Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

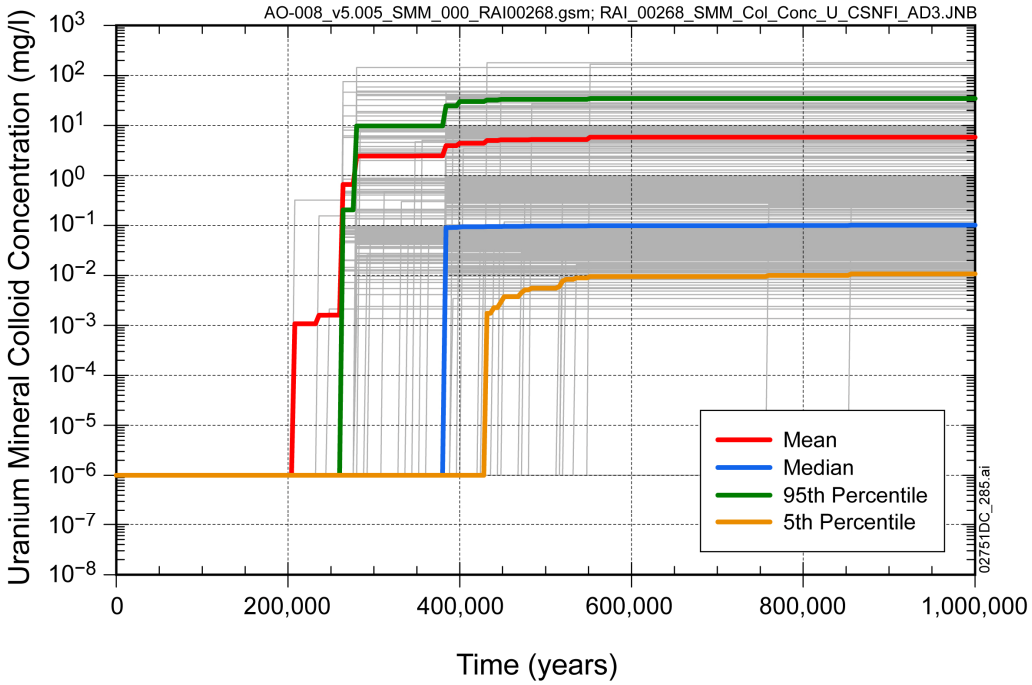

Figure 49. Uranium Minerals Colloid Concentration in the Invert under Commercial SNF Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

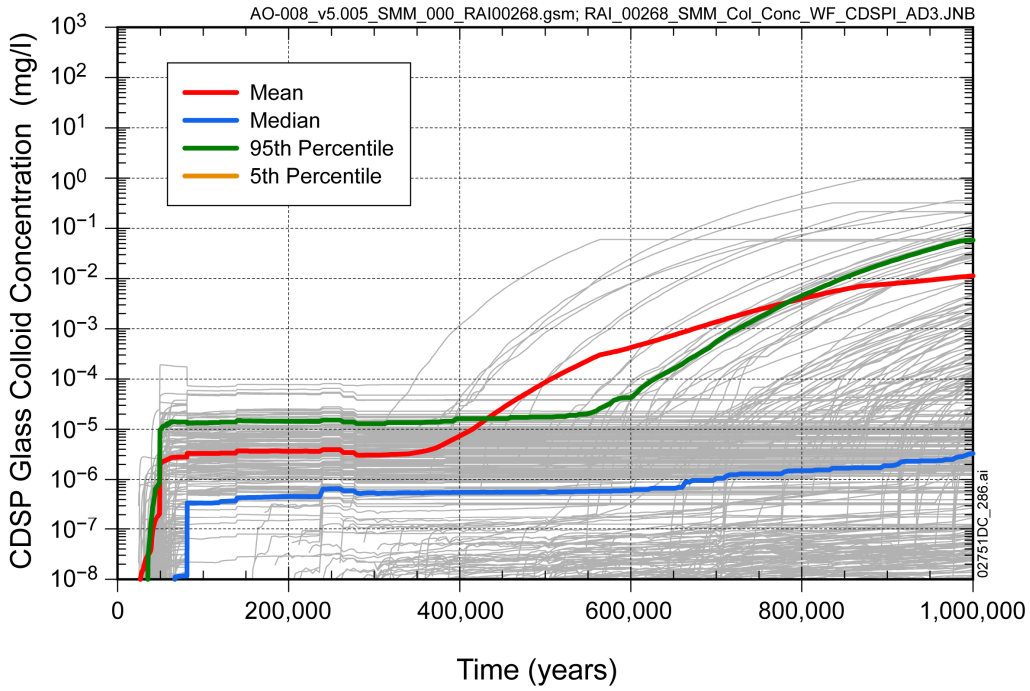

Figure 50. Glass Waste Form Colloid Concentration in the Invert under Codisposal Waste Packages in Percolation Subregion 3, Drip Environment, for a 300 Epistemic Vector 1,000,000-Year Seismic Ground Motion Modeling Case with Aleatory Vector 4641

2. COMMITMENTS TO NRC

None.

3. DESCRIPTION OF PROPOSED LA CHANGE

None.

4. REFERENCES

SNL (Sandia National Laboratories) 2007. *Engineered Barrier System: Physical and Chemical Environment.* ANL-EBS-MD-000033 REV 06. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20070907.0003; LLR.20080328.0031.

SNL 2008a. *Postclosure Nuclear Safety Design Bases.* ANL-WIS-MD-000024 REV 01. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080226.0002; DOC.20080314.0004; LLR.20080507.0018; DOC.20080610.0007.

SNL 2008b. *Total System Performance Assessment Model /Analysis for the License Application.* MDL-WIS-PA-000005 REV 00 AD 01. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20080312.0001; LLR.20080414.0037; LLR.20080507.0002; LLR.20080522.0113; DOC.20080724.0005; DOC.20090106.0001[a].

NOTE: [a]Provided as an enclosure to letter from Williams to Sulima dtd 02/17/2009. "Yucca Mountain – Request for Additional Information Re: License Application (Safety Analysis Report Section 2.1), Safety Evaluation Report Volume 3 – Postclosure Chapters 2.2.1.1 and 2.2.1.3.7 – Submittal of Department of Energy Reference Citations."