

Clinch River Nuclear Site
Early Site Permit Application
Part 3, Environmental Report



Adapted from: (Reference 2.3.1-47)
1 inch = 4000 ft
Contour Interval = 20 ft

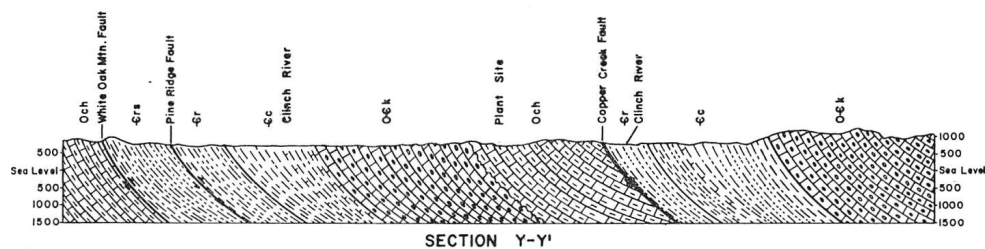
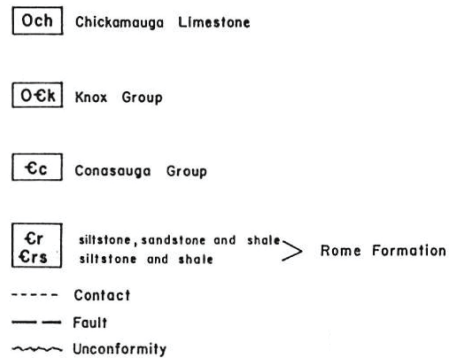


Figure 2.3.1-17. Preconstruction Topographic and Geologic Map and Cross-Section of the CRBRP Project

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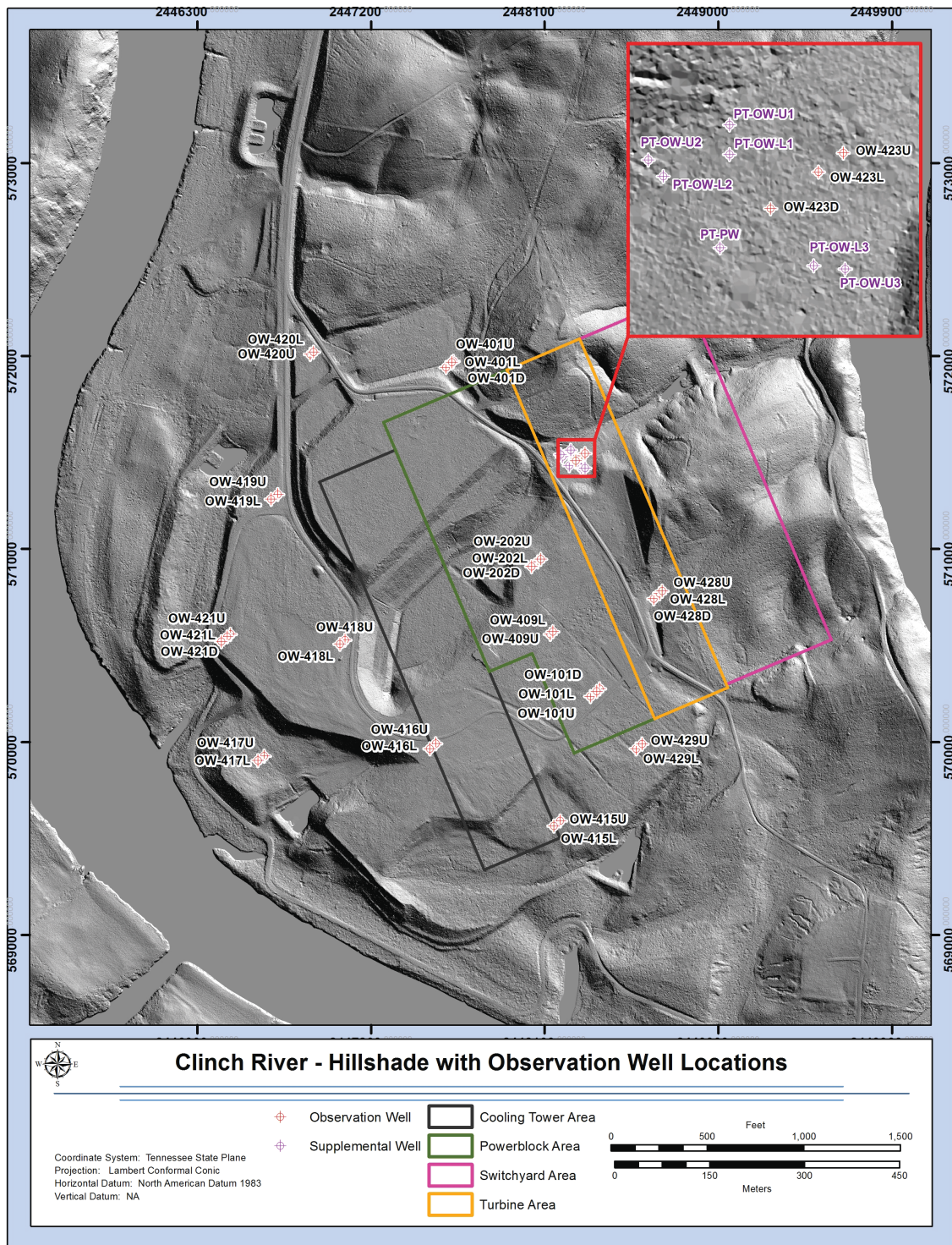


Figure 2.3.1-18. Current Site Topography and Observation Well Locations

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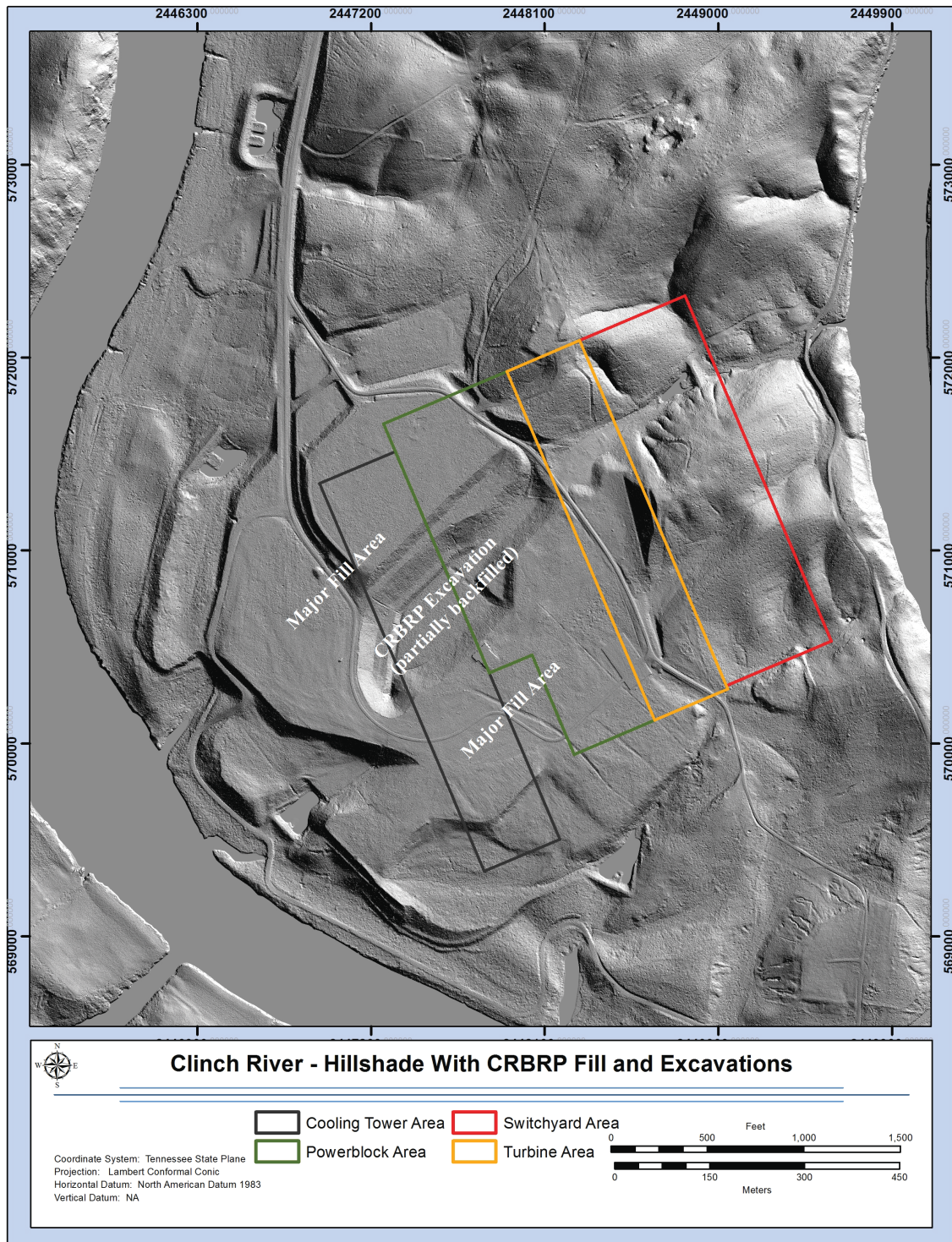
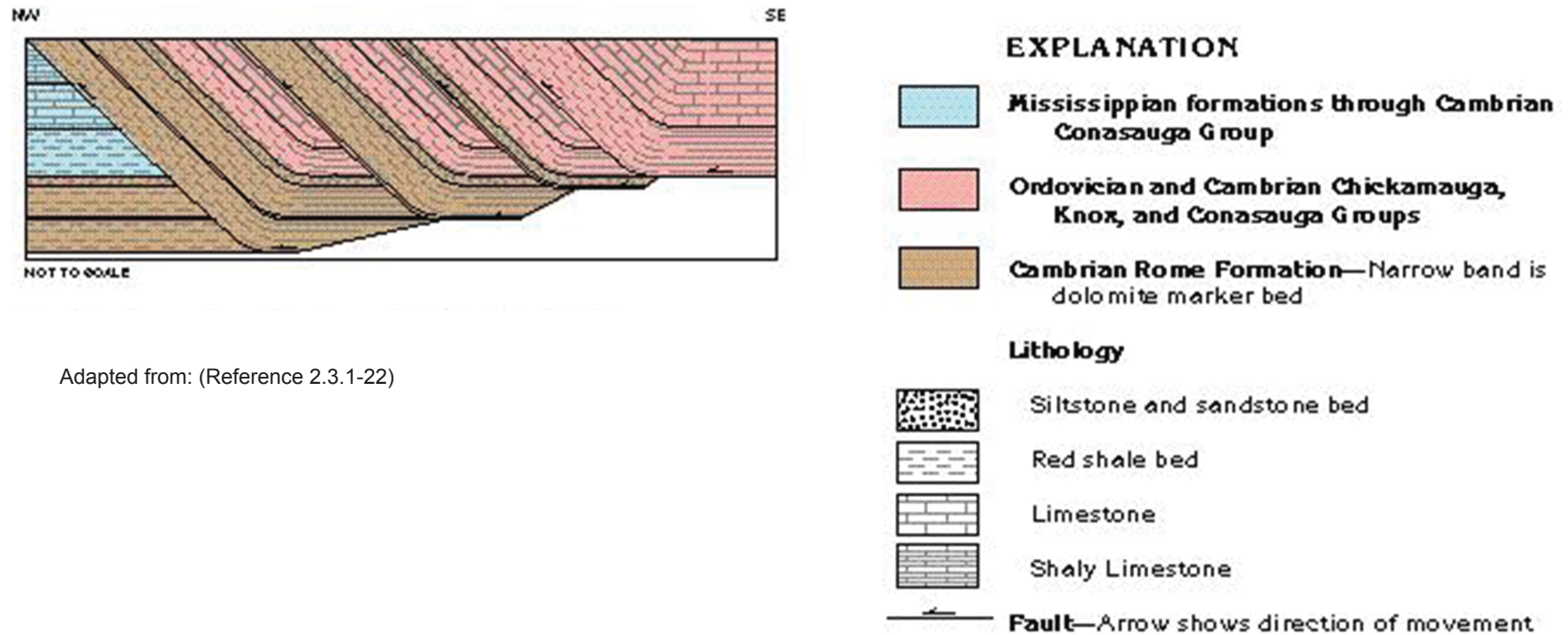
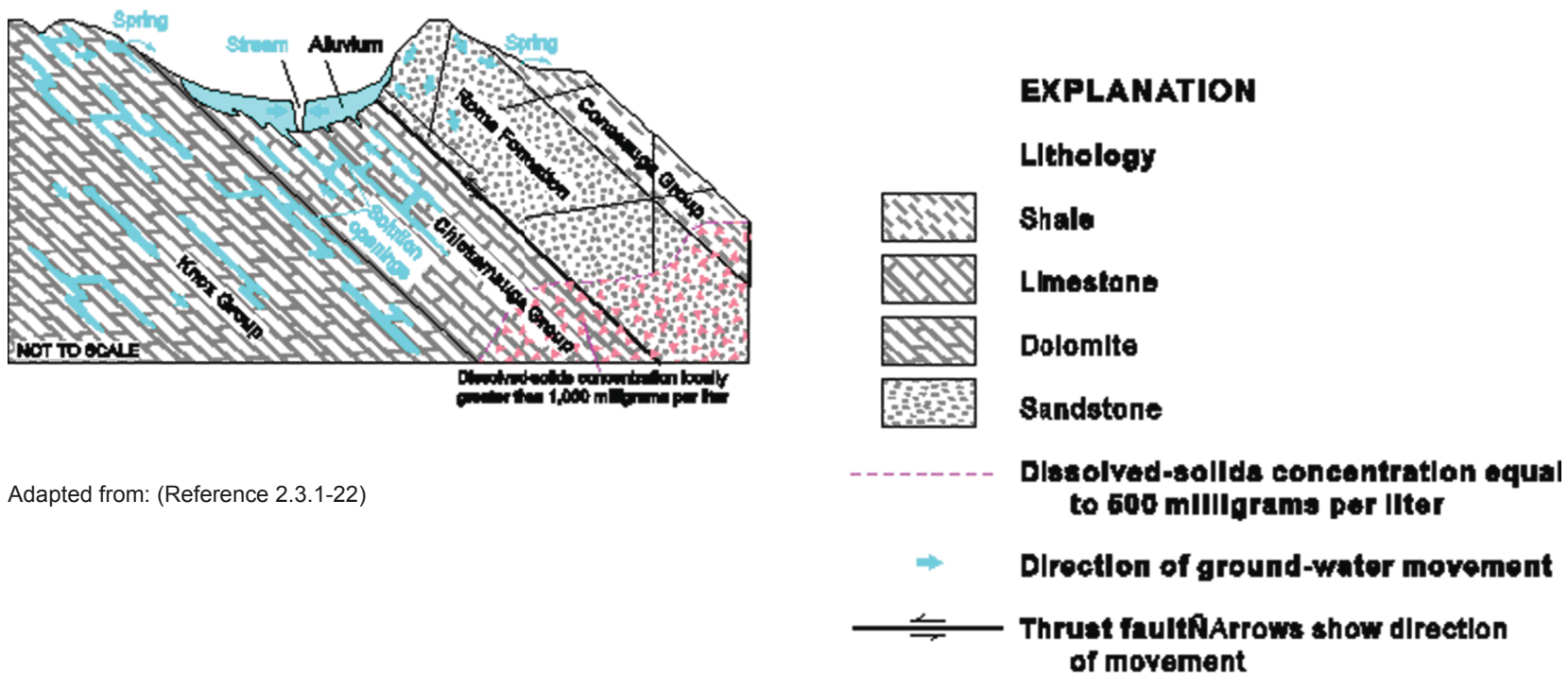


Figure 2.3.1-19. CRBRP Fill and Excavation Areas



Adapted from: (Reference 2.3.1-22)

Figure 2.3.1-20. Cambrian and Ordovician Aquifers



Adapted from: (Reference 2.3.1-22)

Figure 2.3.1-21. Typical Cross-Section of the East Tennessee Aquifer System

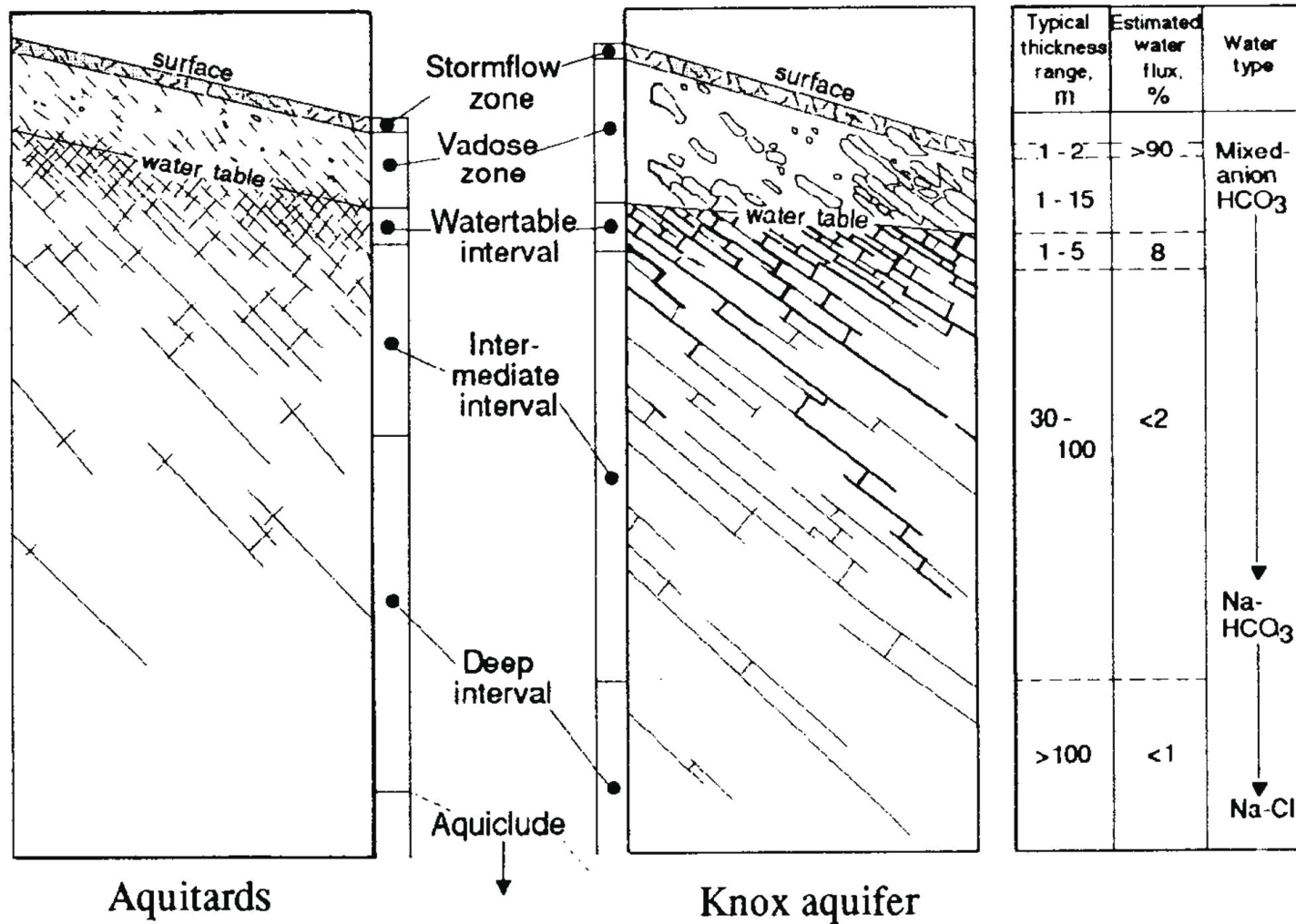
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			Lithology	Thickness, m	Formation		Structural Characteristics	Hydrologic Unit
ORDOVICIAN	UPPER	Chickamauga Group (Och)		100-170	Omc	Moccasin Formation	Weak unit	Aquitard
			105-110	Owi	Witten Formation	Upper décollement		
			5-10	Obw	Bowen Formation			
	MIDDLE	Chickamauga Group (Och)	110-115	Obe	Benbolt / Wardell Formation	Strong units	Aquifer	
			80-85	Ork	Rockdell Formation			
			75-80	Ofl	Hogskin Member Fleanor Shale Member			Lincolnshire Fm
			70-80	Oe Obl	Eidson Member Blackford Formation			
	LOWER	Knox Group (O&K)	75-150	Oma	Mascot Dolomite	Ramp zone	Aquifer	
			90-150	Ok	Kingsport Formation			
			40-60	Olv	Longview Dolomite			
152-213			Oc	Chepultepec Dolomite				
CAMBRIAN	UPPER	Conasauga Group (Ec)	244-335	Ccr	Copper Ridge Dolomite	Strong units	Aquifer	
			100-110	Cmn	Maynardville Limestone			
	MIDDLE	Conasauga Group (Ec)	150-180	Cn	Nolichucky Shale	Weak units	Aquitard	
			98-125	Cdg	Dismal Gap Formation (Formerly Maryville Ls.)			
			25-34	Crg	Rogersville Shale			
			31-37	Cf	Friendship Formation (Formerly Rutledge Ls.)			
			56-70	Cpv	Pumpkin Valley Shale			
	LOWER		122-183	Cr	Rome Formation	Basal décollement		

Source: (Reference 2.3.1-29).

Figure 2.3.1-22. Site Area Hydrogeostratigraphy

ORNL-DWG 92-9368

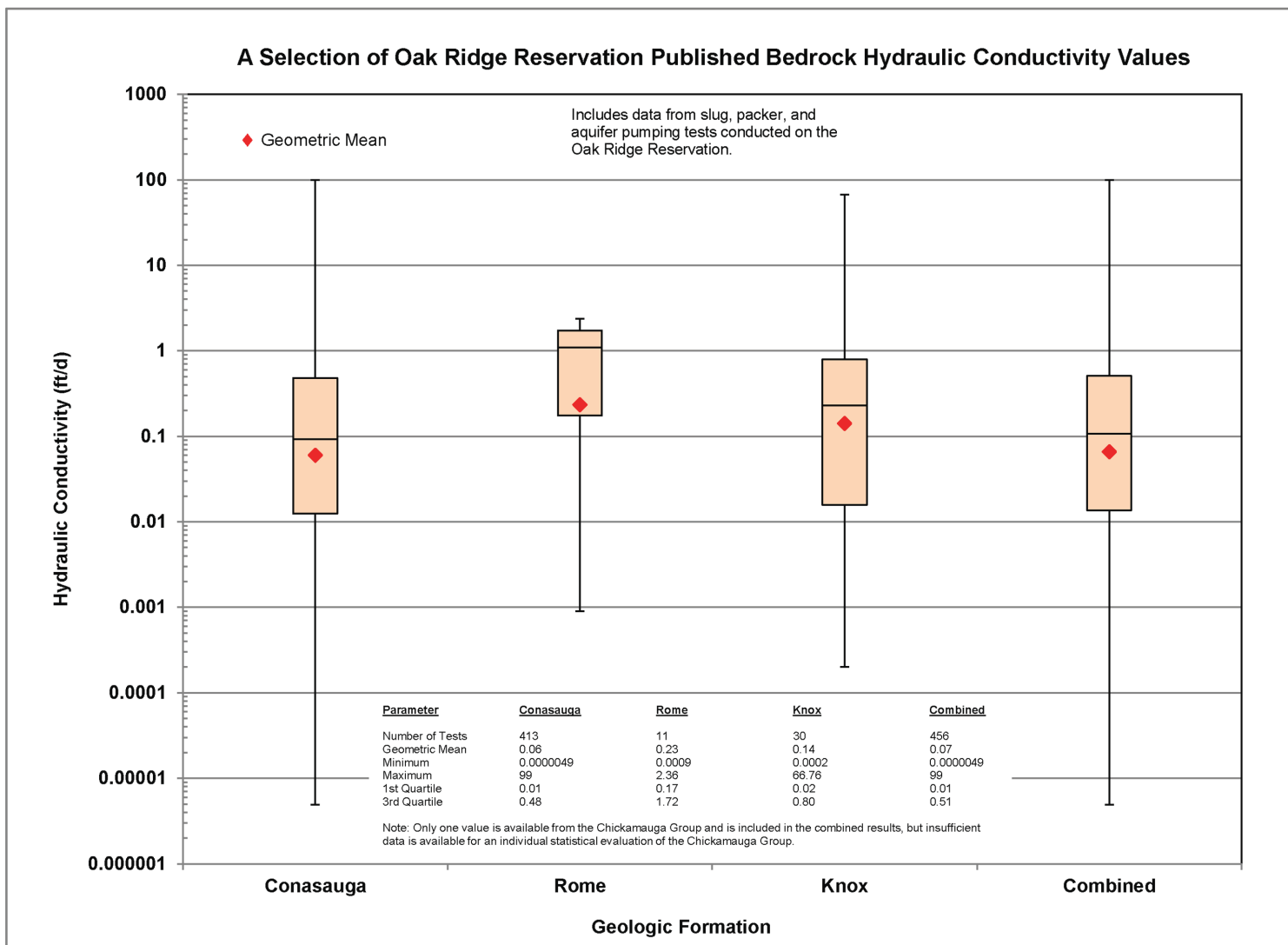


Not to scale

Source: (Reference 2.3.1-28)

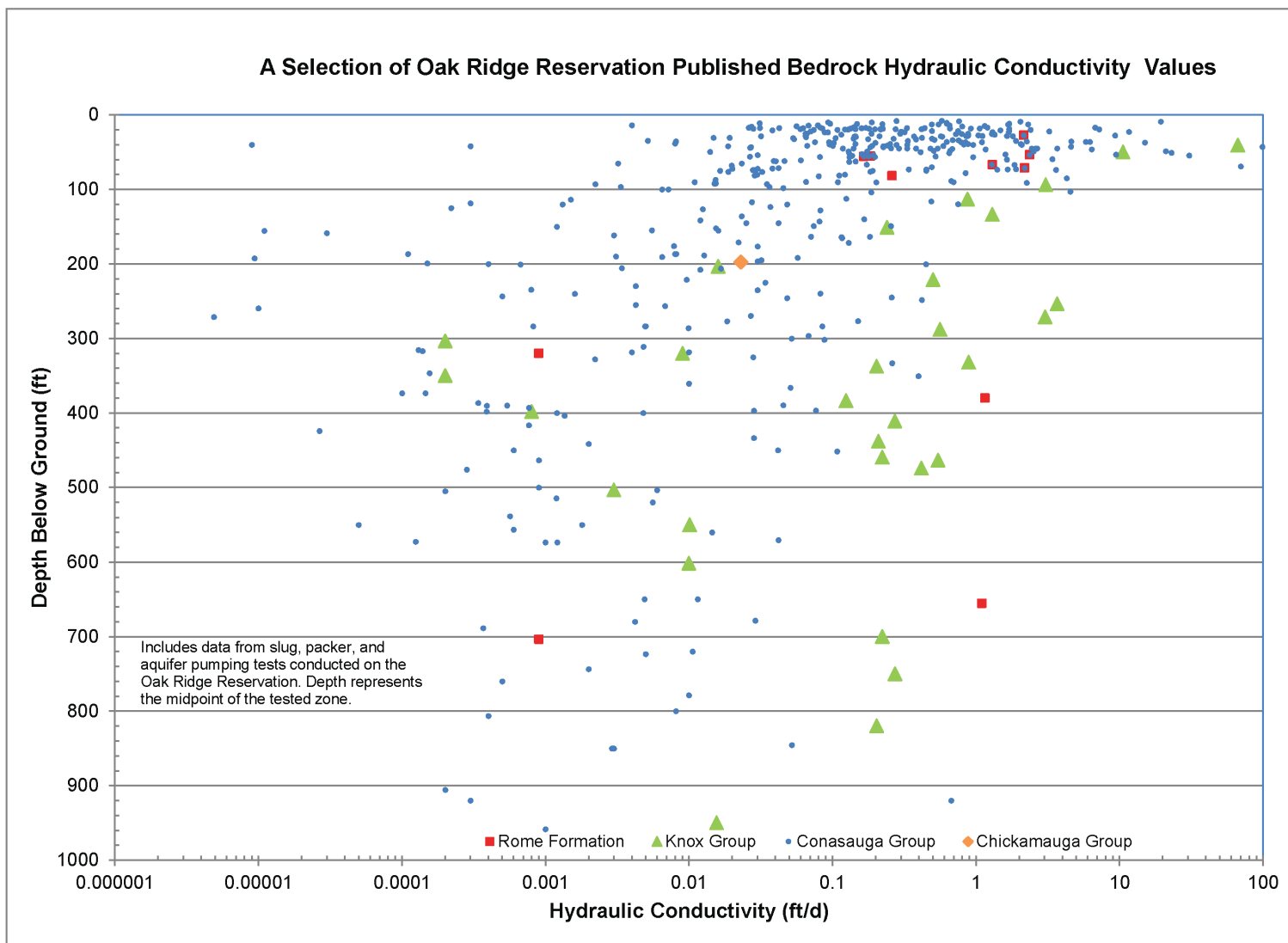
Figure 2.3.1-23. ORR Vertical Flow Conceptualization

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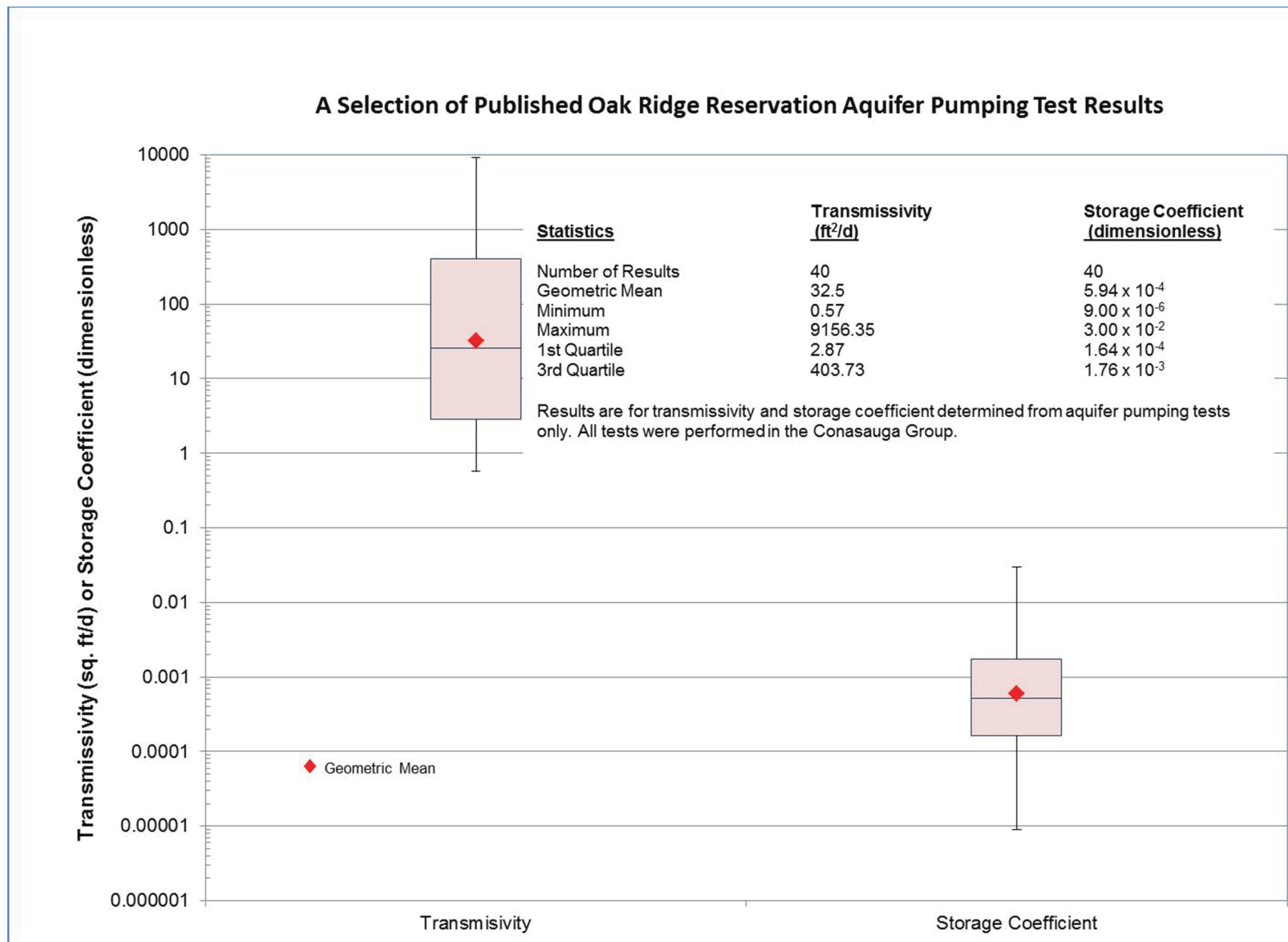
a) Box and whisker plot of hydraulic conductivity tests by geologic formation. Data presented in Appendix 2.3-A

Figure 2.3.1-24. ORR Historic Bedrock Hydraulic Conductivity Test Data (Sheet 1 of 2)



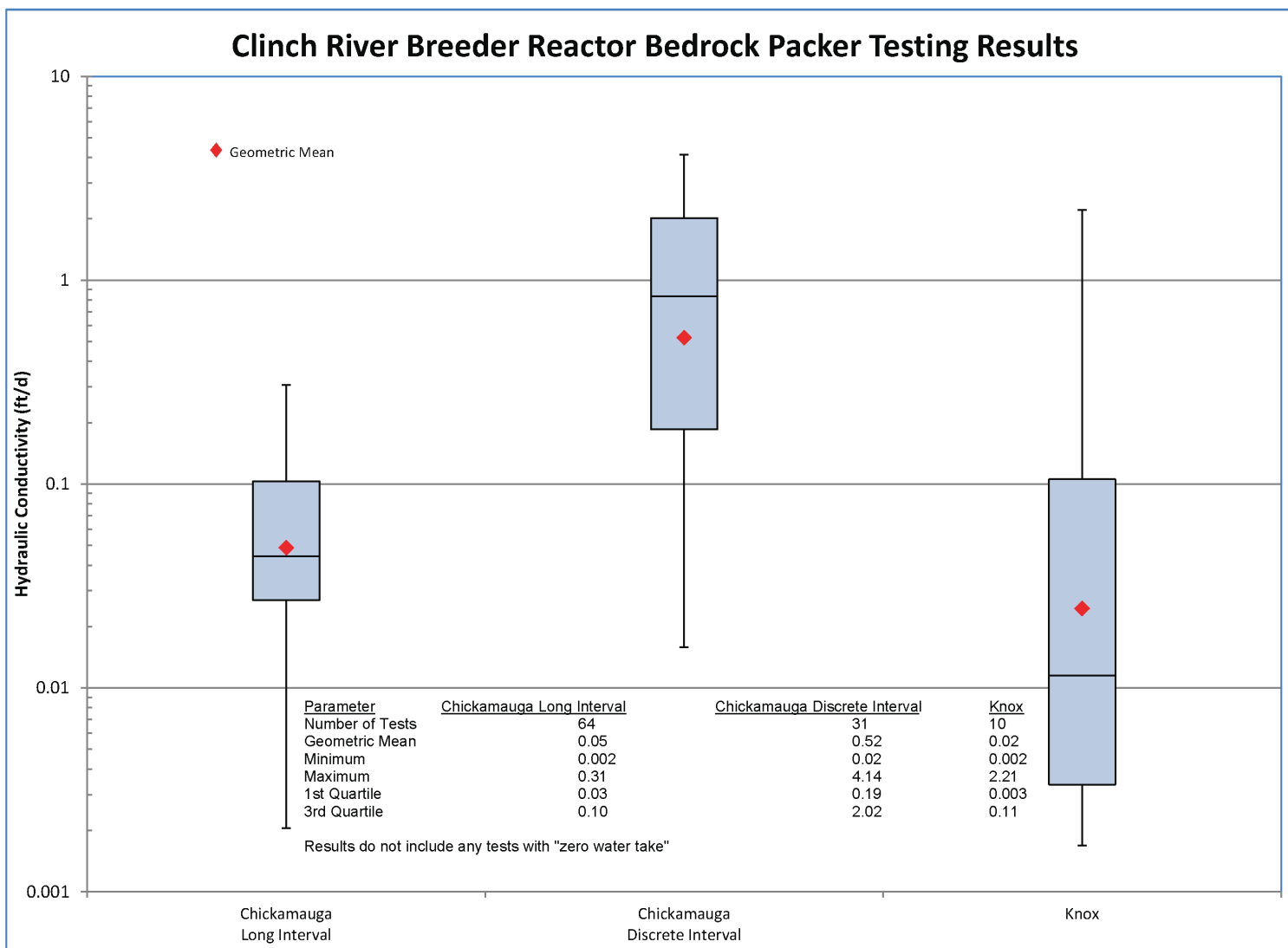
b) Scatter plot of hydraulic conductivity versus depth. Data presented in Appendix 2.3-A

Figure 2.3.1-24. ORR Historic Bedrock Hydraulic Conductivity Test Data (Sheet 2 of 2)



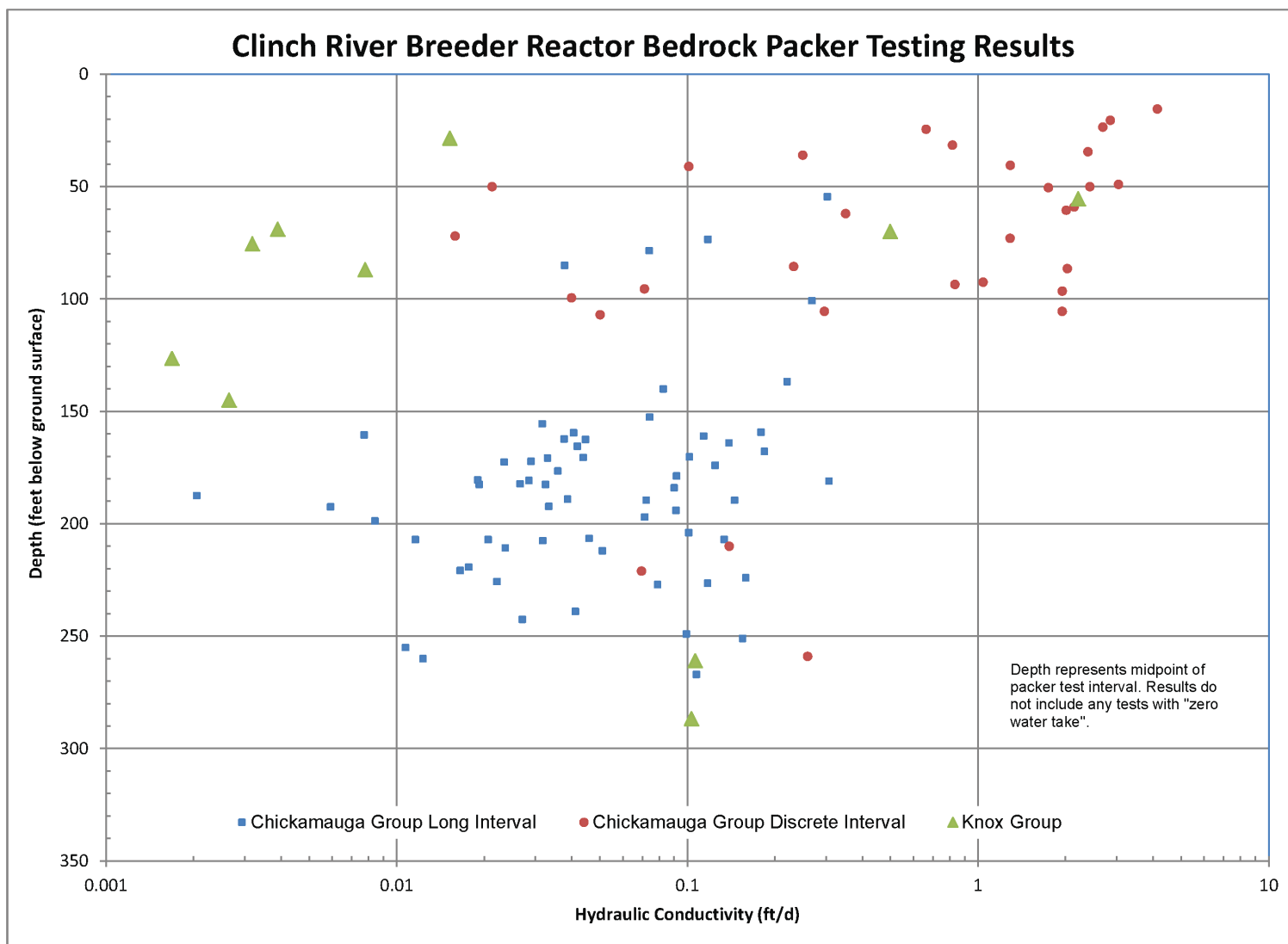
Data presented in Appendix 2.3-A

Figure 2.3.1-25. ORR Aquifer Pumping Test Results



a) Box and whisker plot of CRBRP bedrock packer test results. Data presented in Appendix 2.3-B

Figure 2.3.1-26. CRBRP Bedrock Packer Hydraulic Conductivity Tests (Sheet 1 of 2)



b) Hydraulic conductivity versus depth plot of CRBRP bedrock packer test results. Data presented in Appendix 2.3-B

Figure 2.3.1-26. CRBRP Bedrock Packer Hydraulic Conductivity Tests (Sheet 2 of 2)