Figures

Geologic Units			Hydrogeologic Units
System	**Series**	**Formation**	**Aquifers and Confining Units**
Quaternary	Holocene	Undifferentiated	Surficial Aquifer
	Pleistocene		
Tertiary	Pliocene	Undifferentiated	
			Tertiary Aquifer and Confining Unit
	Oligocene	River Bend Formation	Castle Hayne Aquifer and Confining Unit
	Eocene	Castle Hayne Formation	
	Paleocene	Beaufort Formation	
Cretaceous	Upper Cretaceous	Rocky Point Member	Pee Dee Aquifer and Confining Unit
		Peedee Formation	
			Black Creek Confining Unit
		Black Creek Formation	Black Creek Aquifer

Shading indicates unit is present beneath the Wilmington Site.

Reference: Lautier, 1998

Figure 3.4-1. General relationship between aquifers and geologic units in the region.

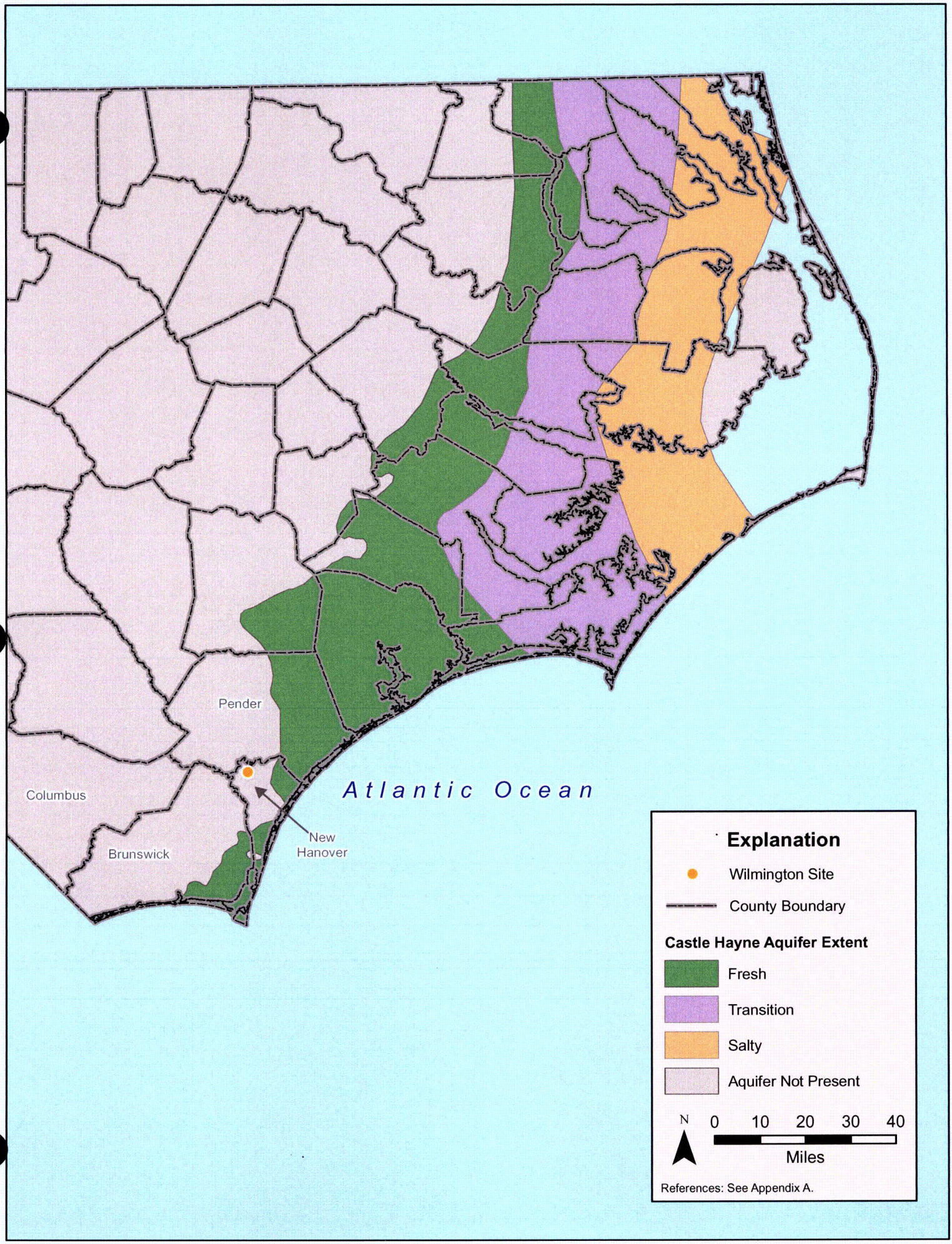


Figure 3.4-2. Extent of the Castle Hayne Aquifer.

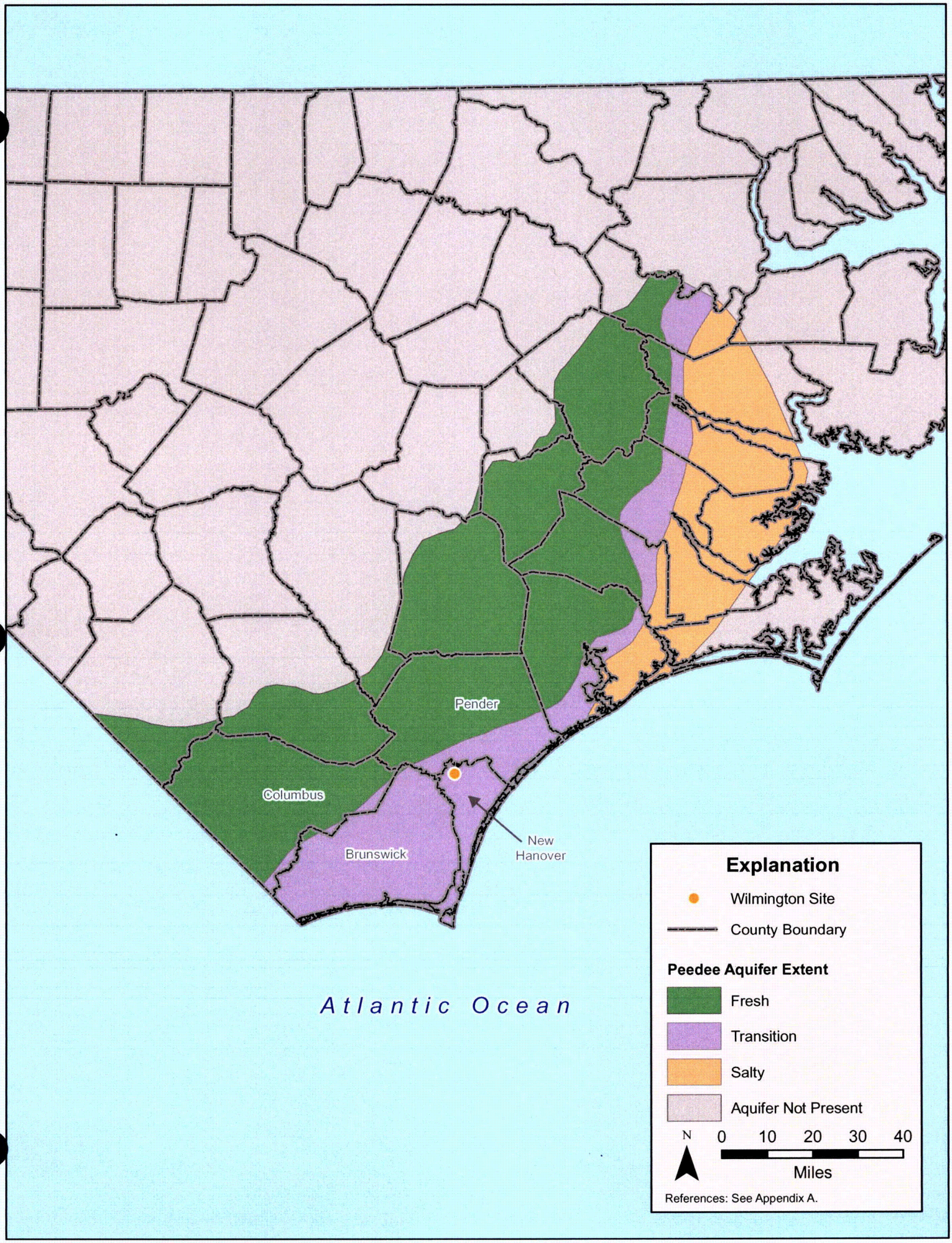


Figure 3.4-3. Extent of the Peedee Aquifer.

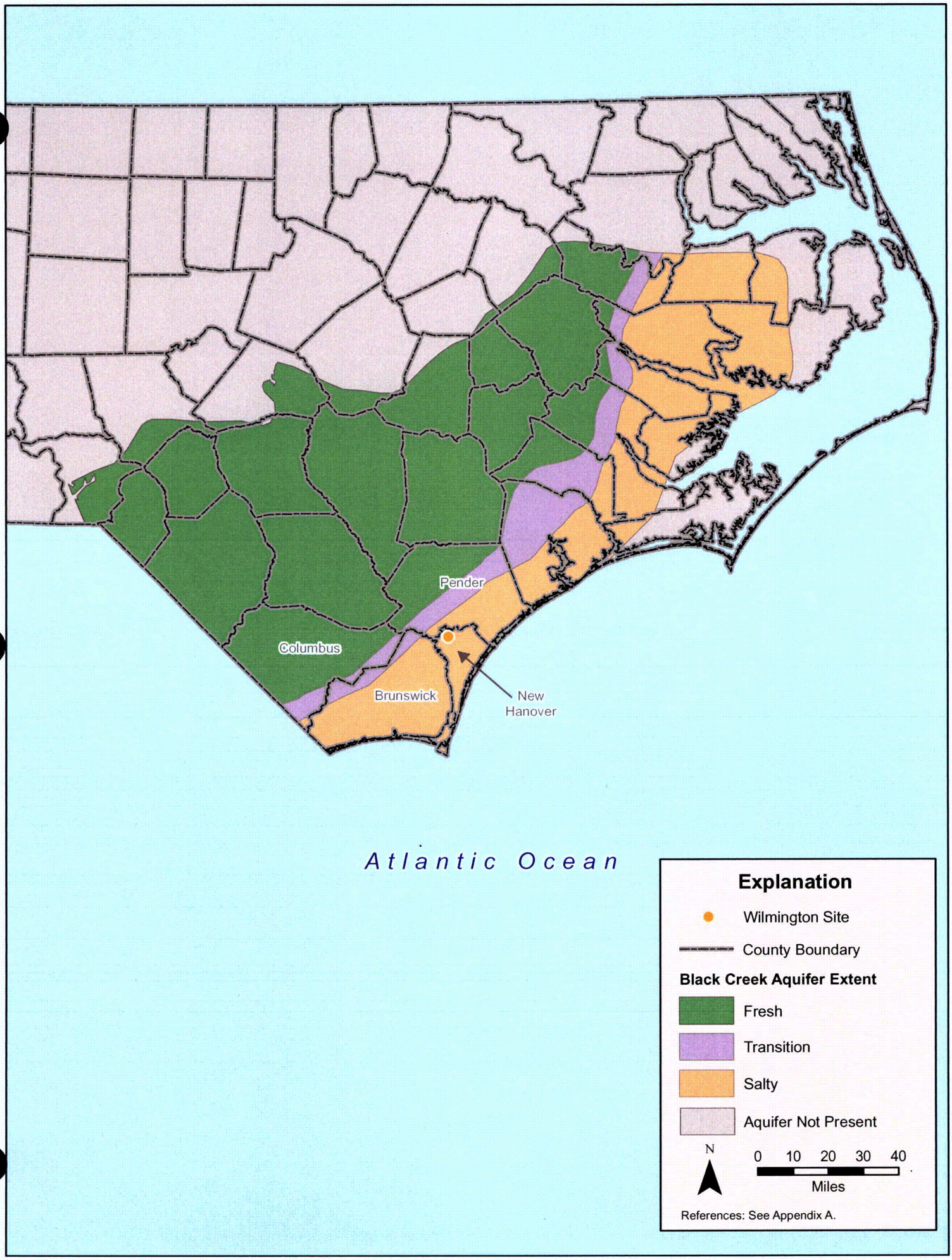


Figure 3.4-4. Extent of the Black Creek Aquifer.

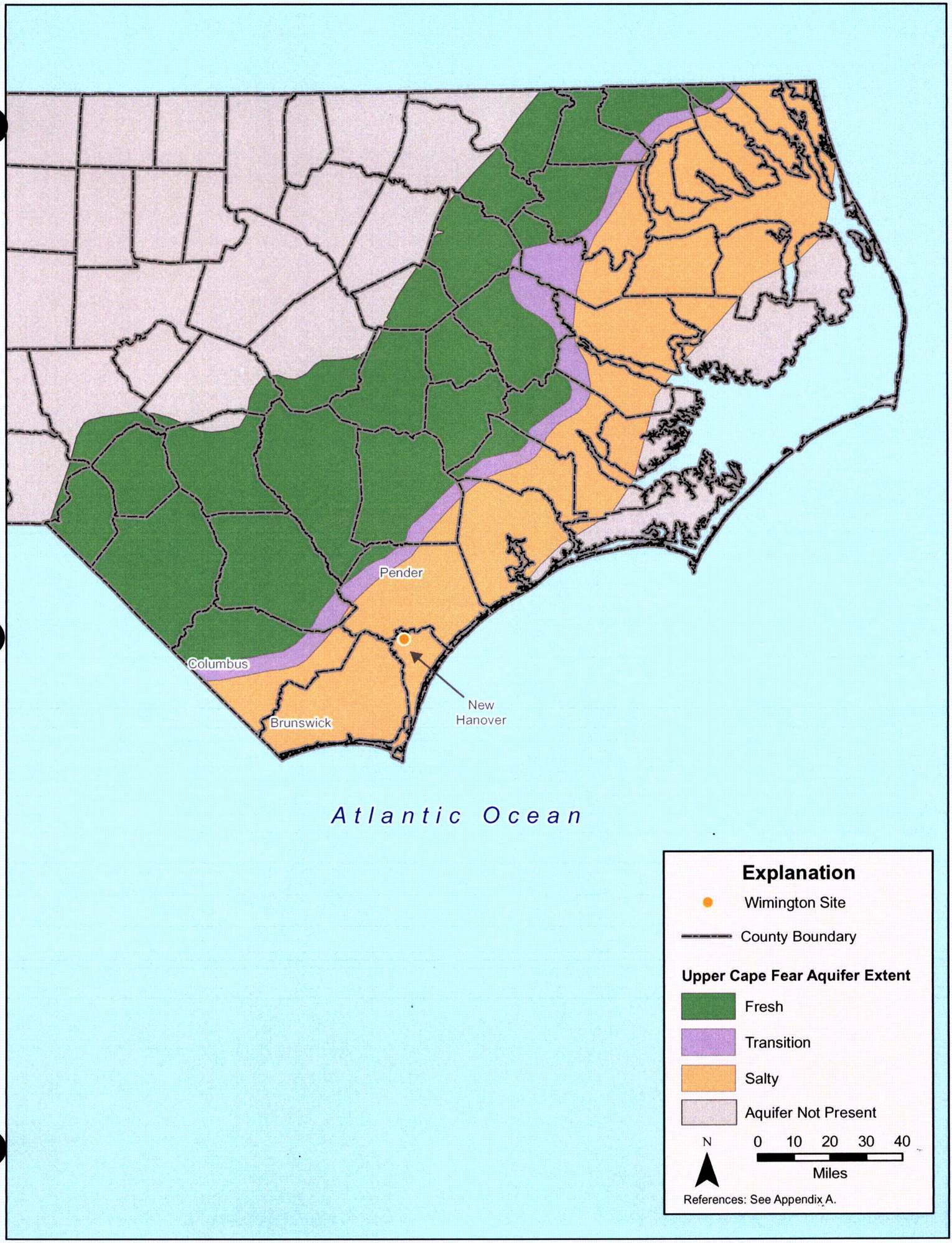


Figure 3.4-5. Extent of the Upper Cape Fear Aquifer.

Figure 3.4-6. Extent of the Lower Cape Fear Aquifer.

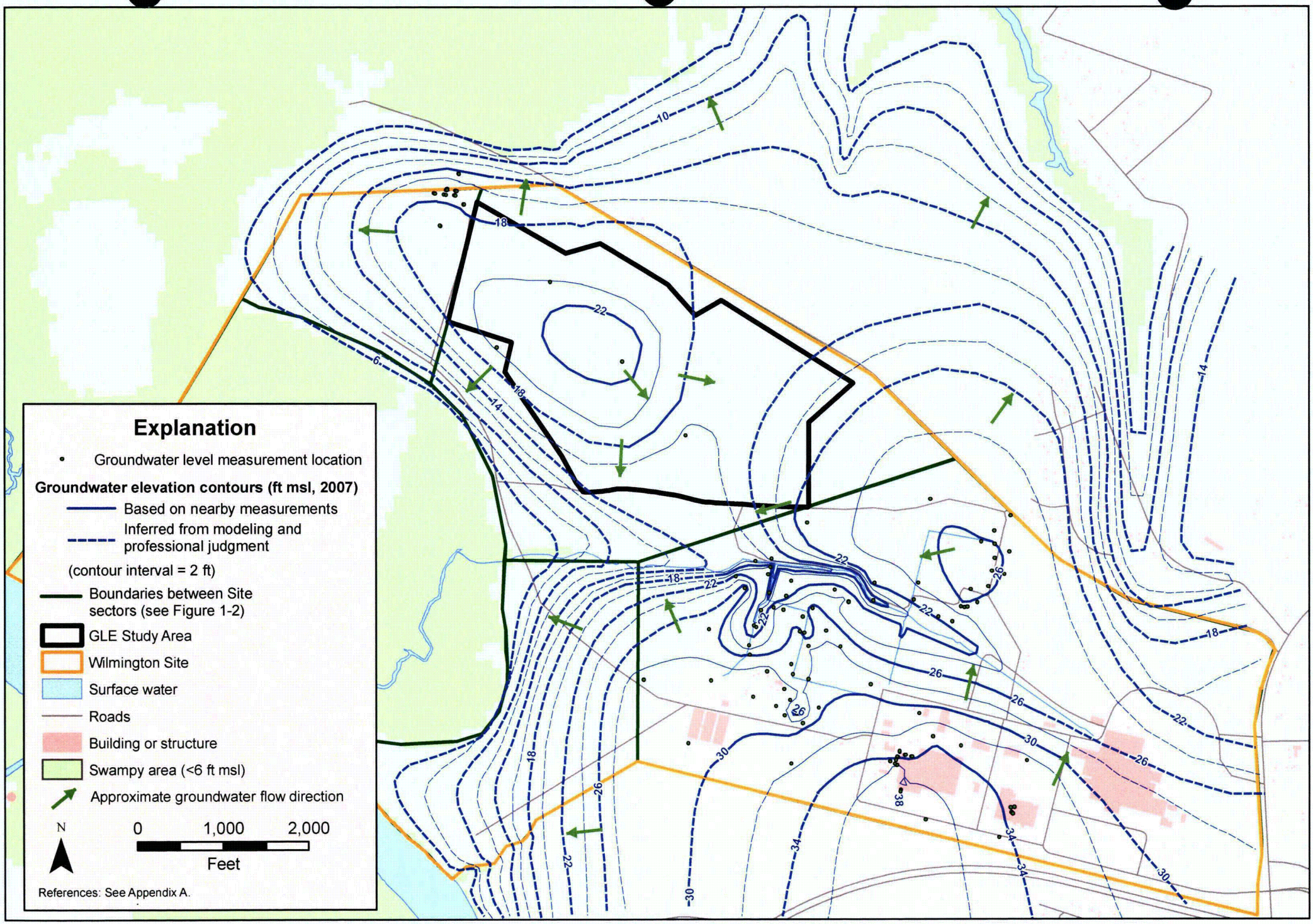
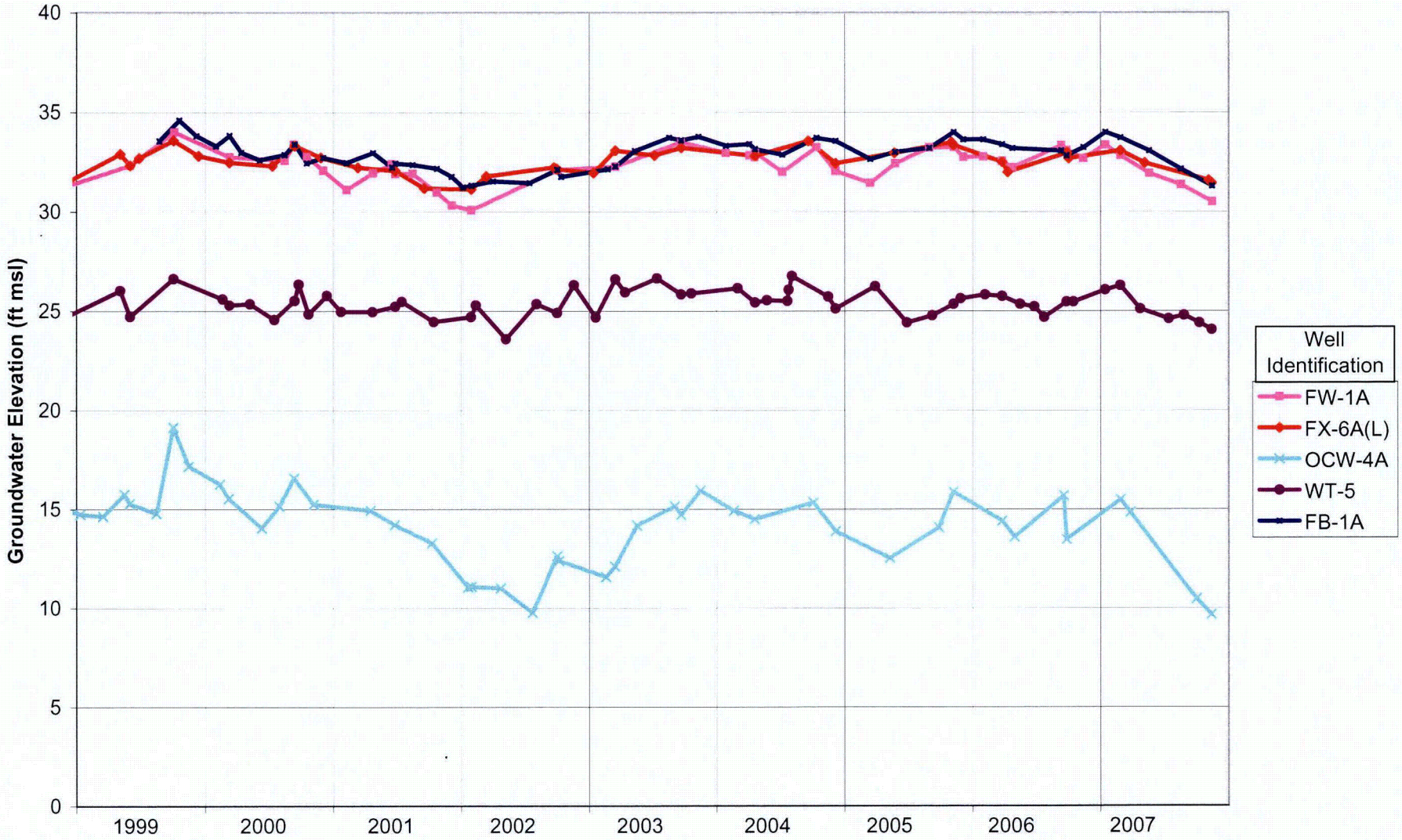
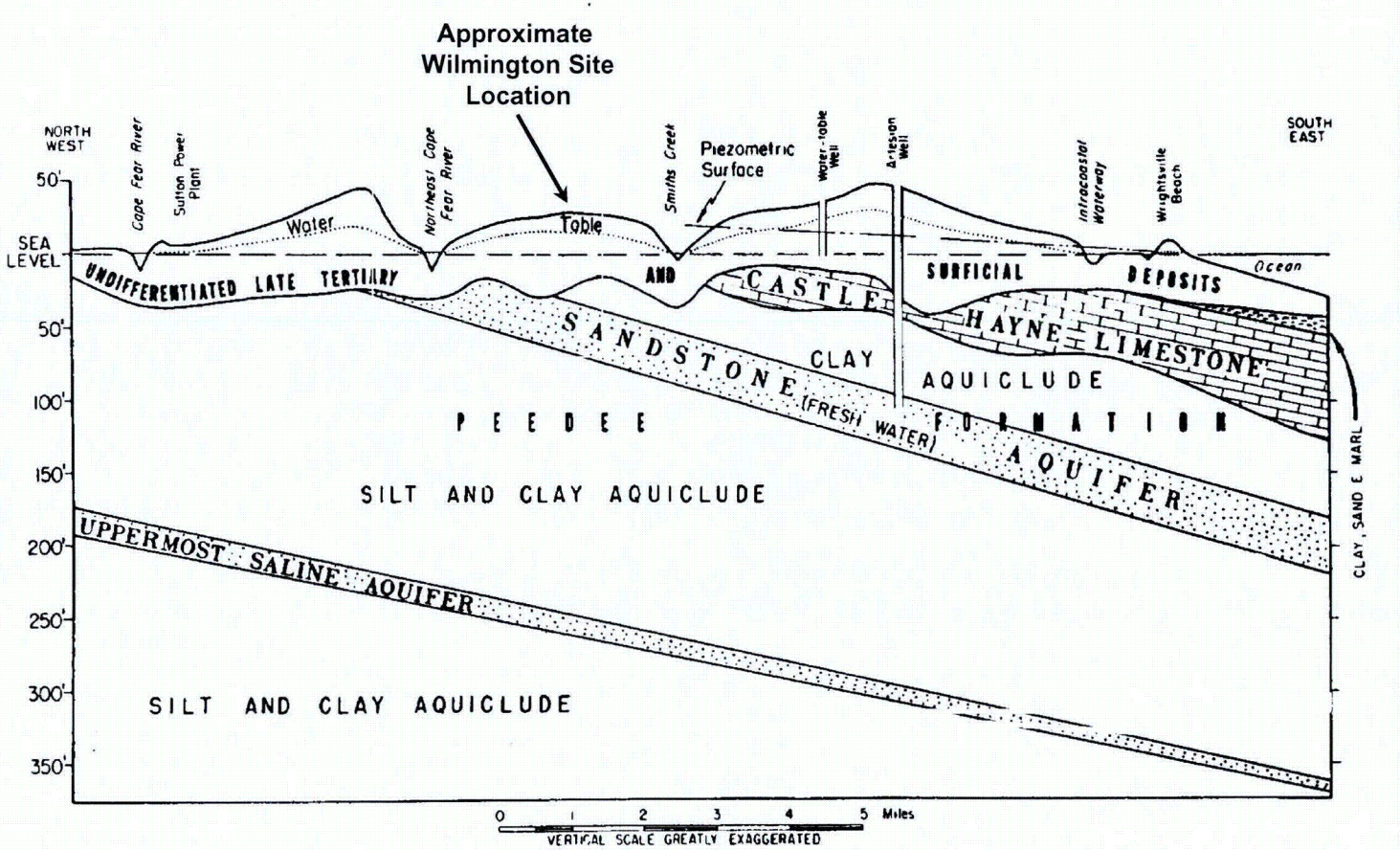


Figure 3.4-7. Surficial Aquifer groundwater elevation contours (2007).



Reference: RTI data and analysis

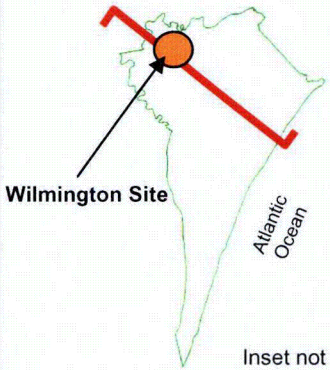
Figure 3.4-8. Example Surficial Aquifer hydrographs.



Note:
The sandstone aquifer identified here (Peedee Aquifer) corresponds to the Principal Aquifer at the Wilmington Site.

Reference: Bain, 1970

New Hanover County, North Carolina
Approximate cross section location



Inset not to scale

Figure 3.4-9. Hydrogeologic cross section through New Hanover County, NC.

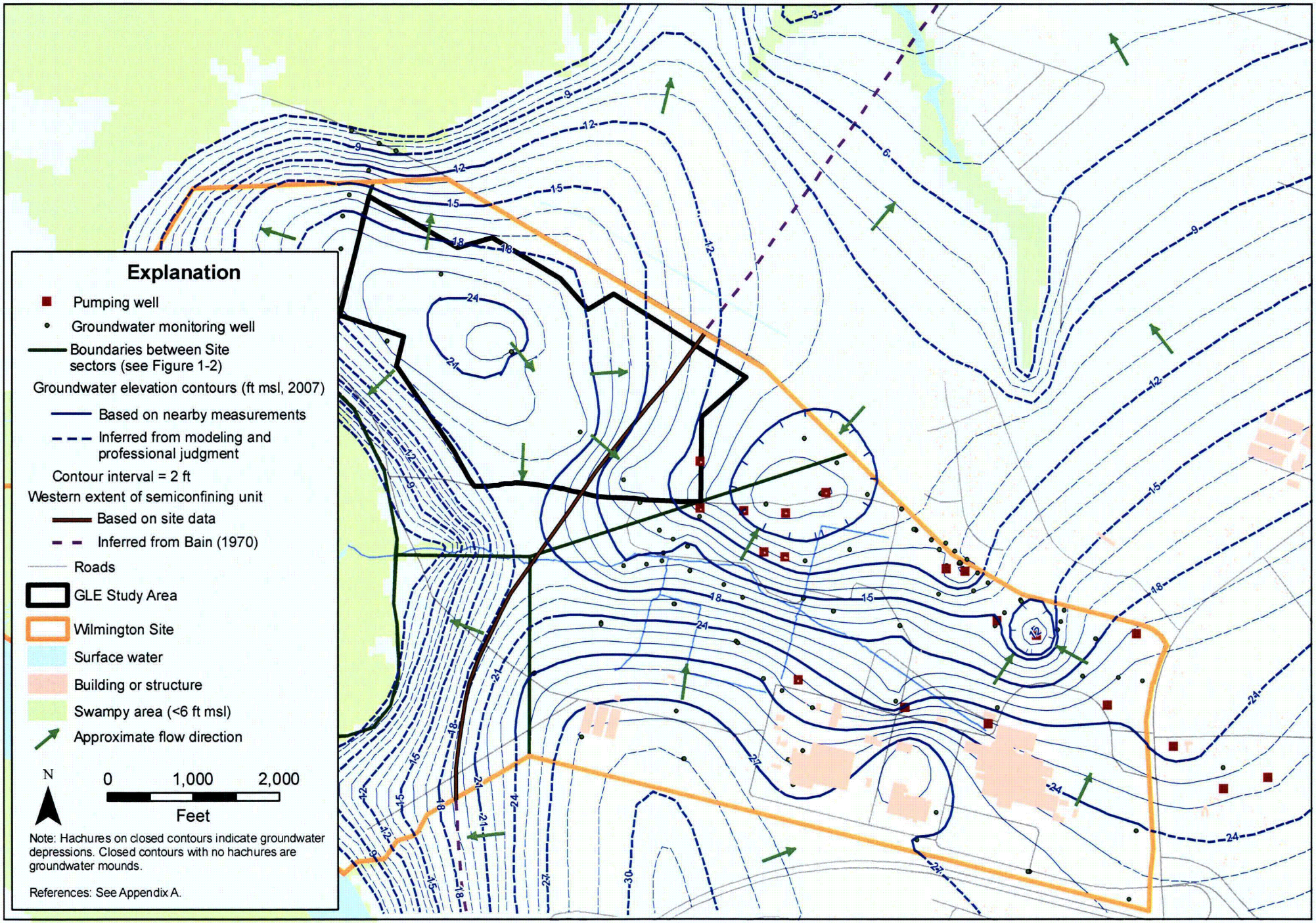


Figure 3.4-10. Principal Aquifer groundwater elevation contours (2007).

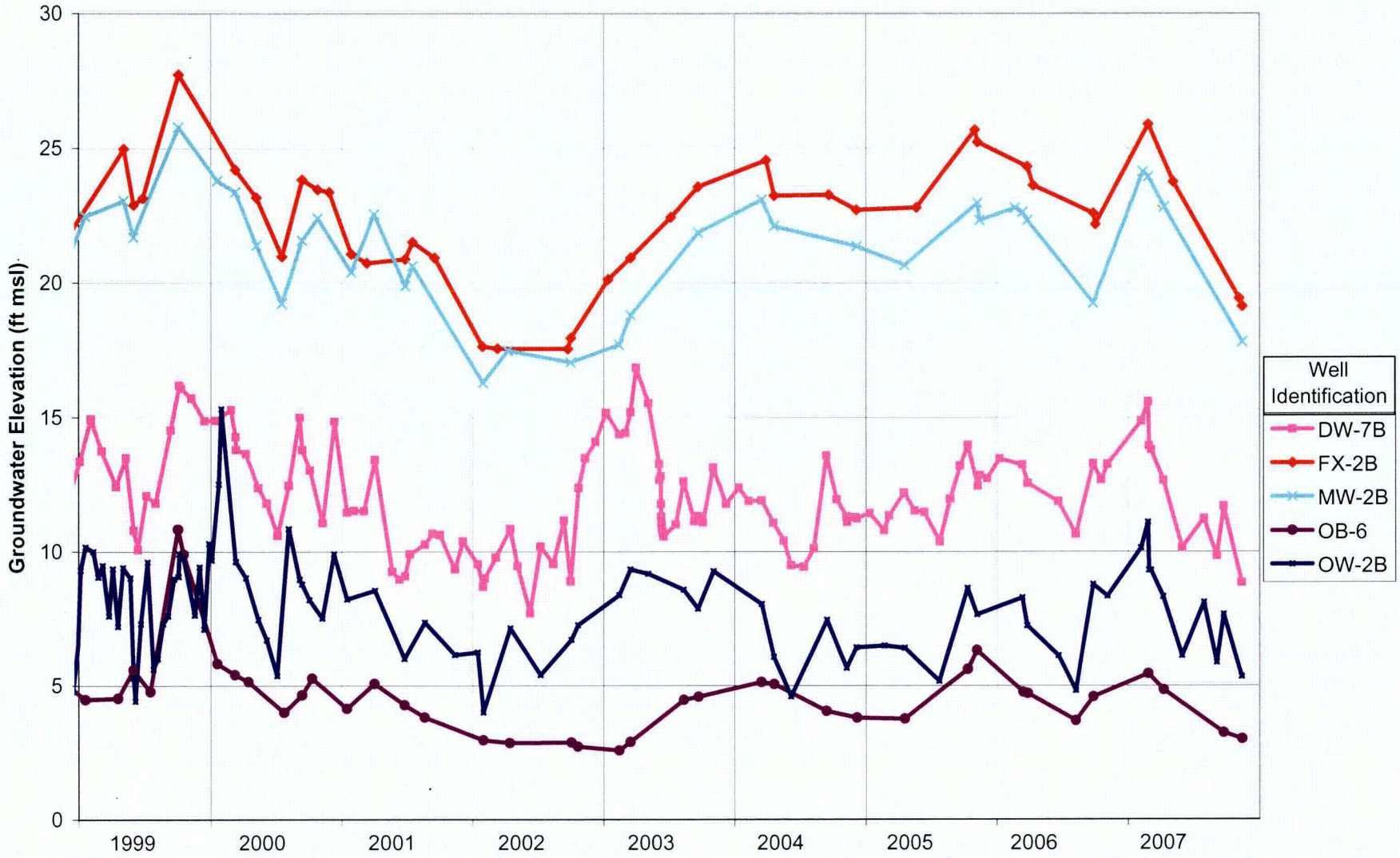


Figure 3.4-11. Example Principal Aquifer hydrographs.

Reference: RTI data and analysis

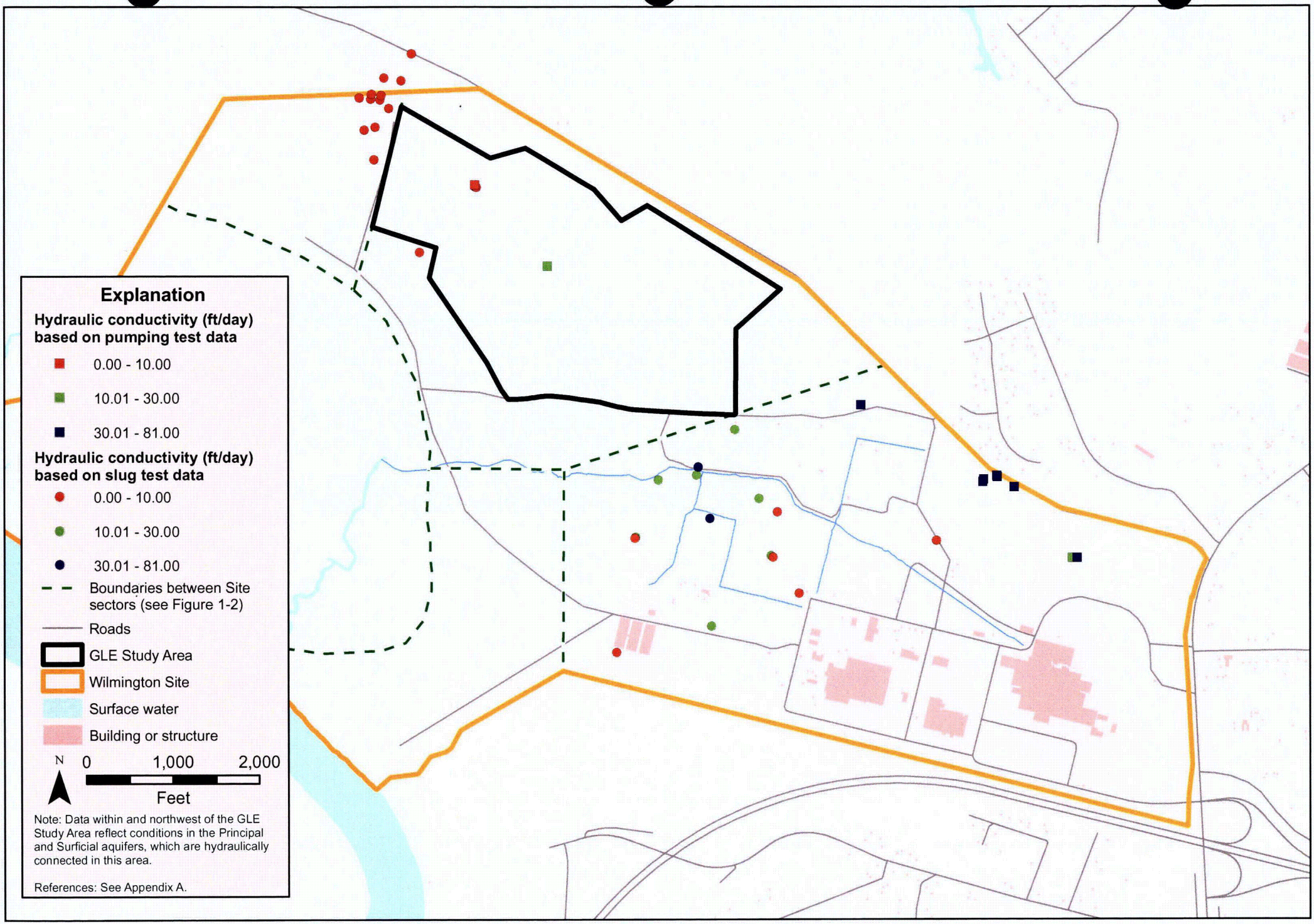


Figure 3.4-12. Measured Principal Aquifer hydraulic conductivity (ft/day).

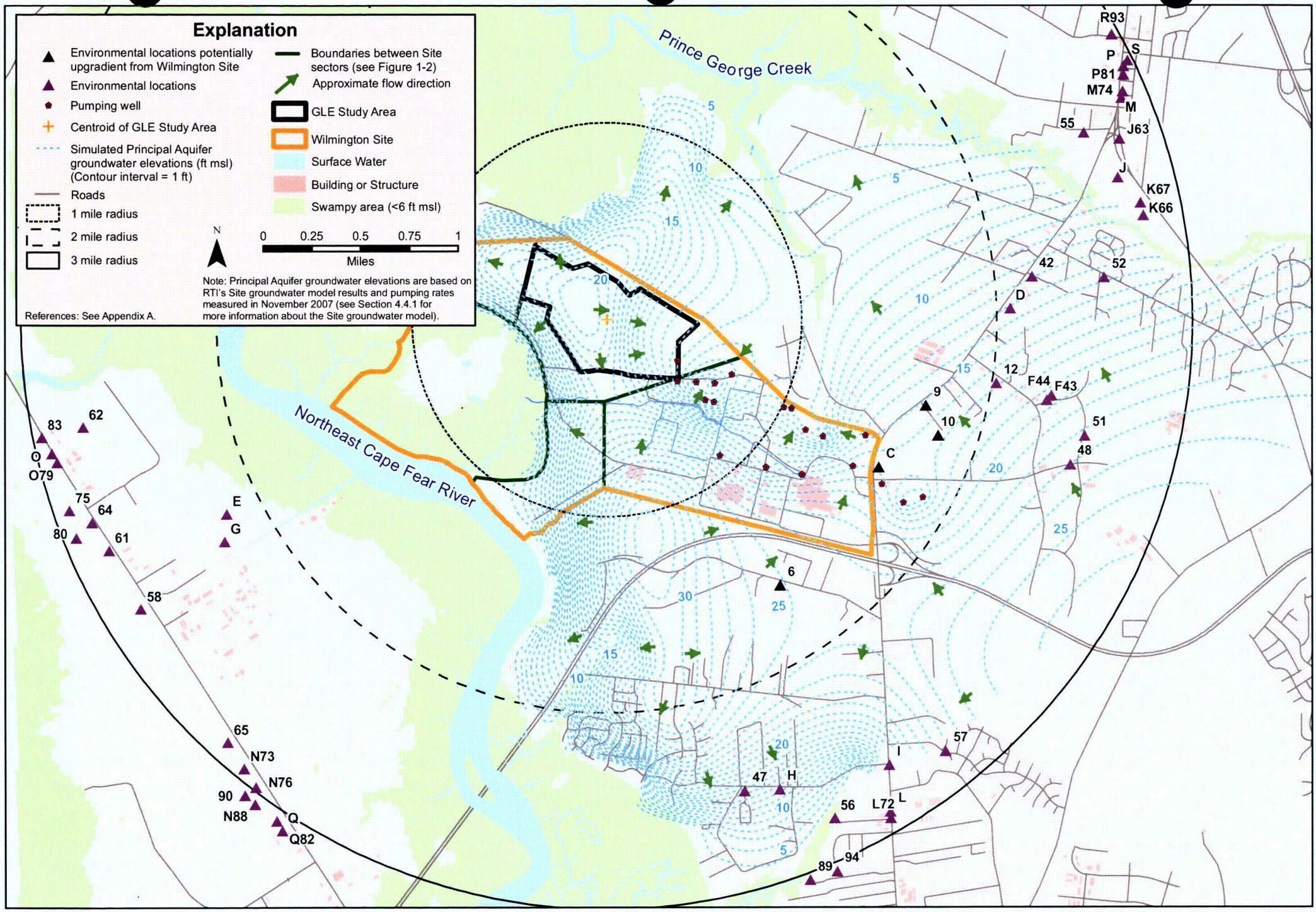


Figure 3.4-13. Locations with known or potential environmental issues in the vicinity of the Site.

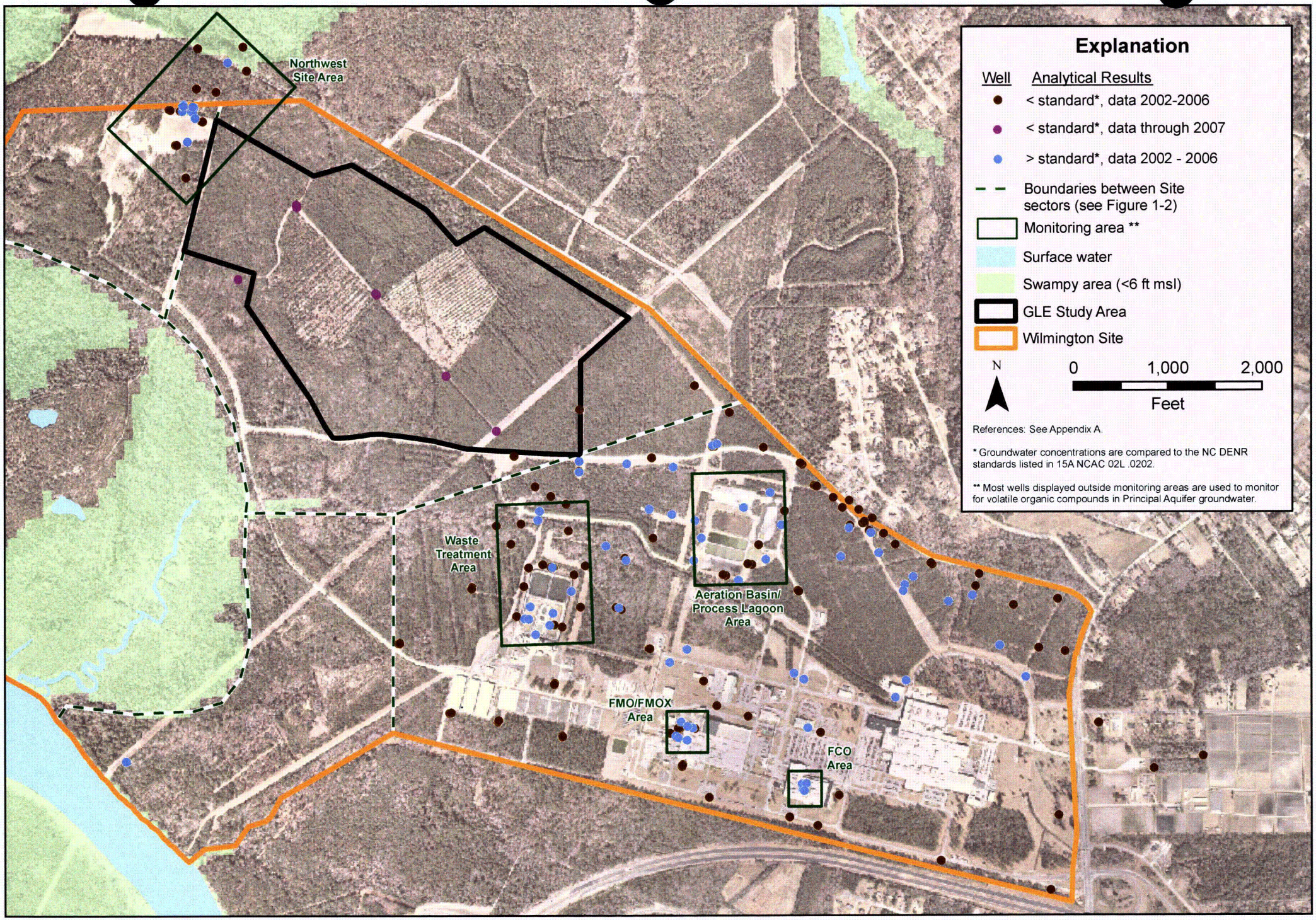


Figure 3.4-14. Summary of groundwater quality data – all monitored constituents.

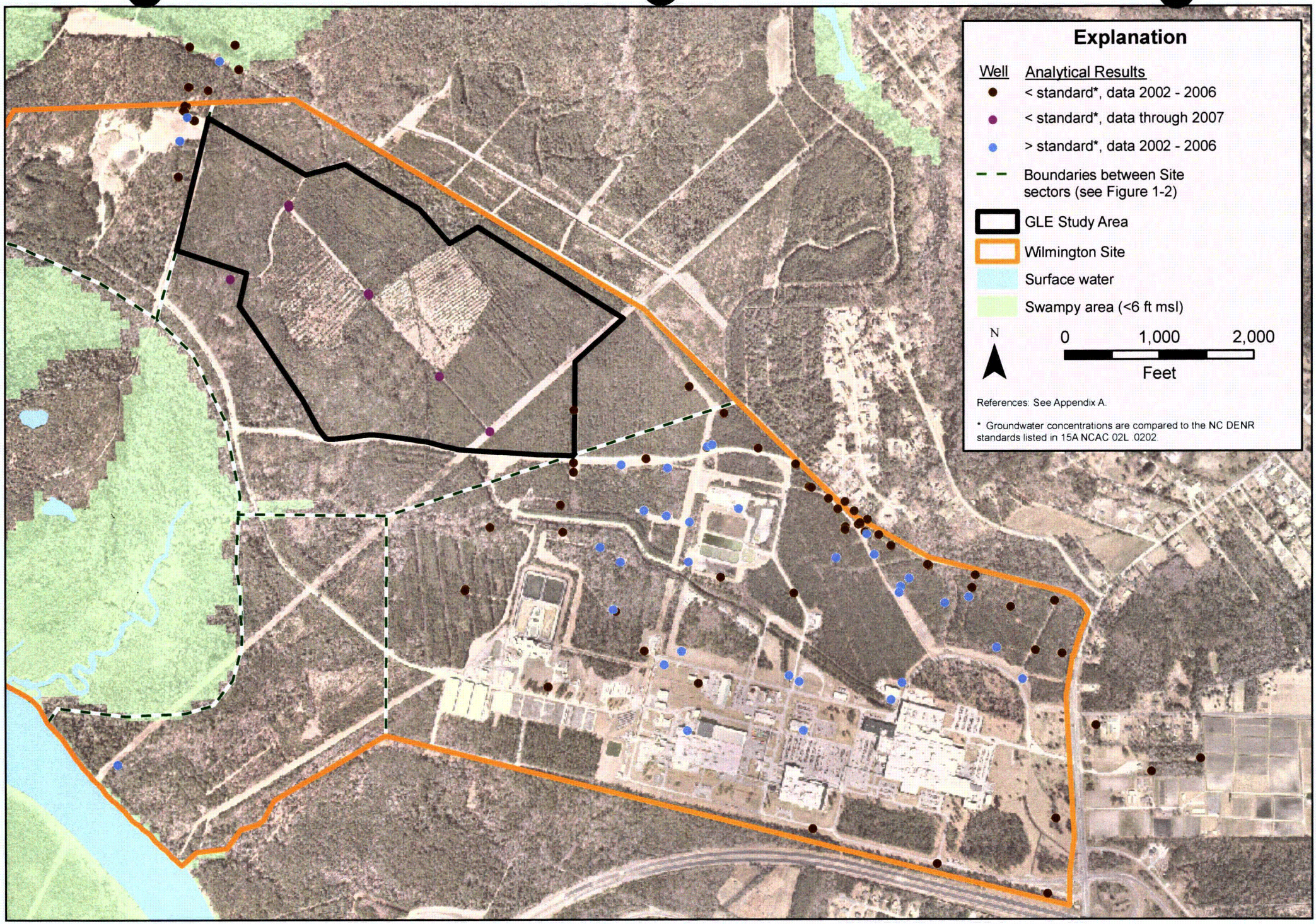


Figure 3.4-15. Summary of groundwater quality data – organic constituents.

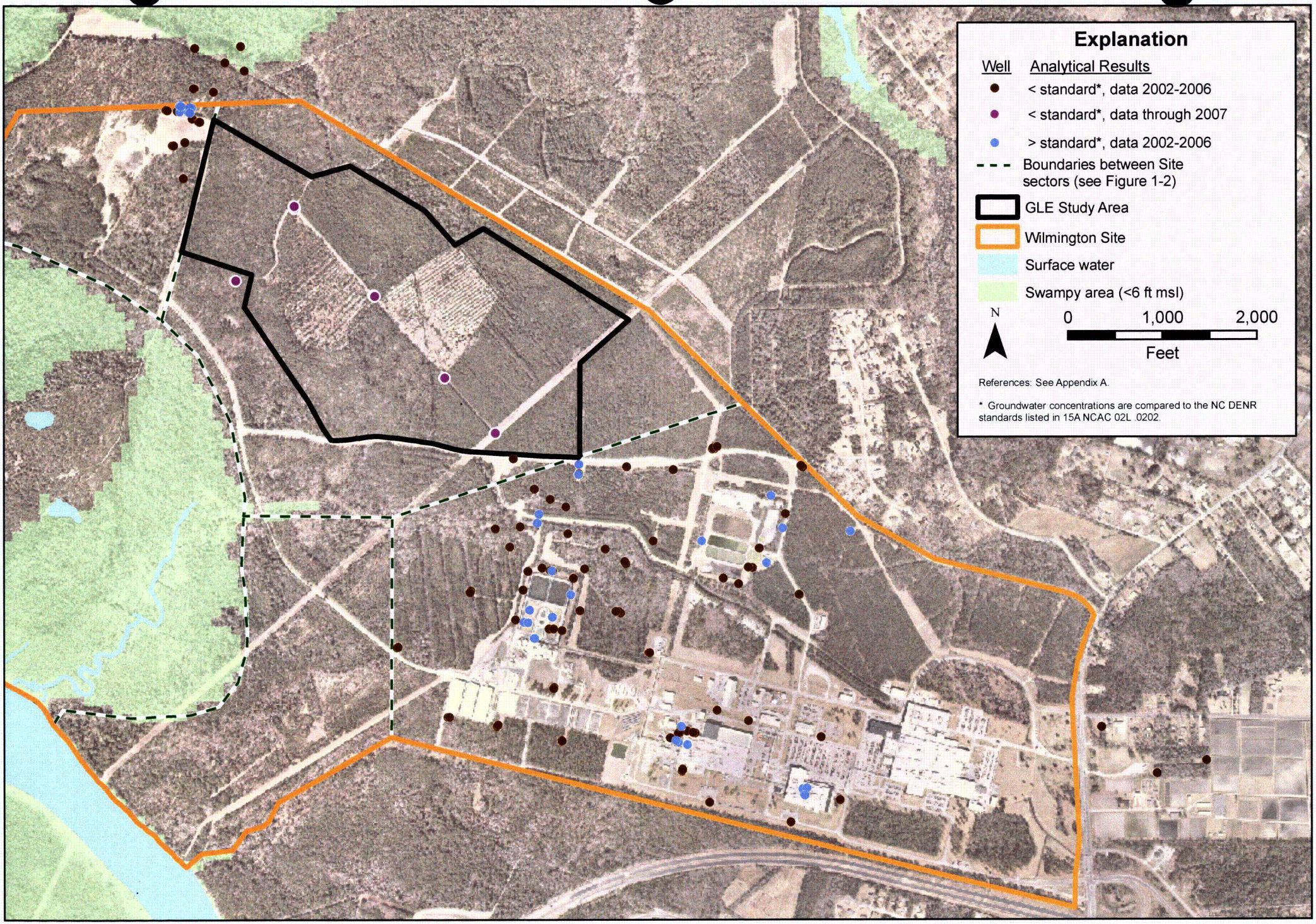


Figure 3.4-16. Summary of groundwater quality data - inorganic and physical constituents.

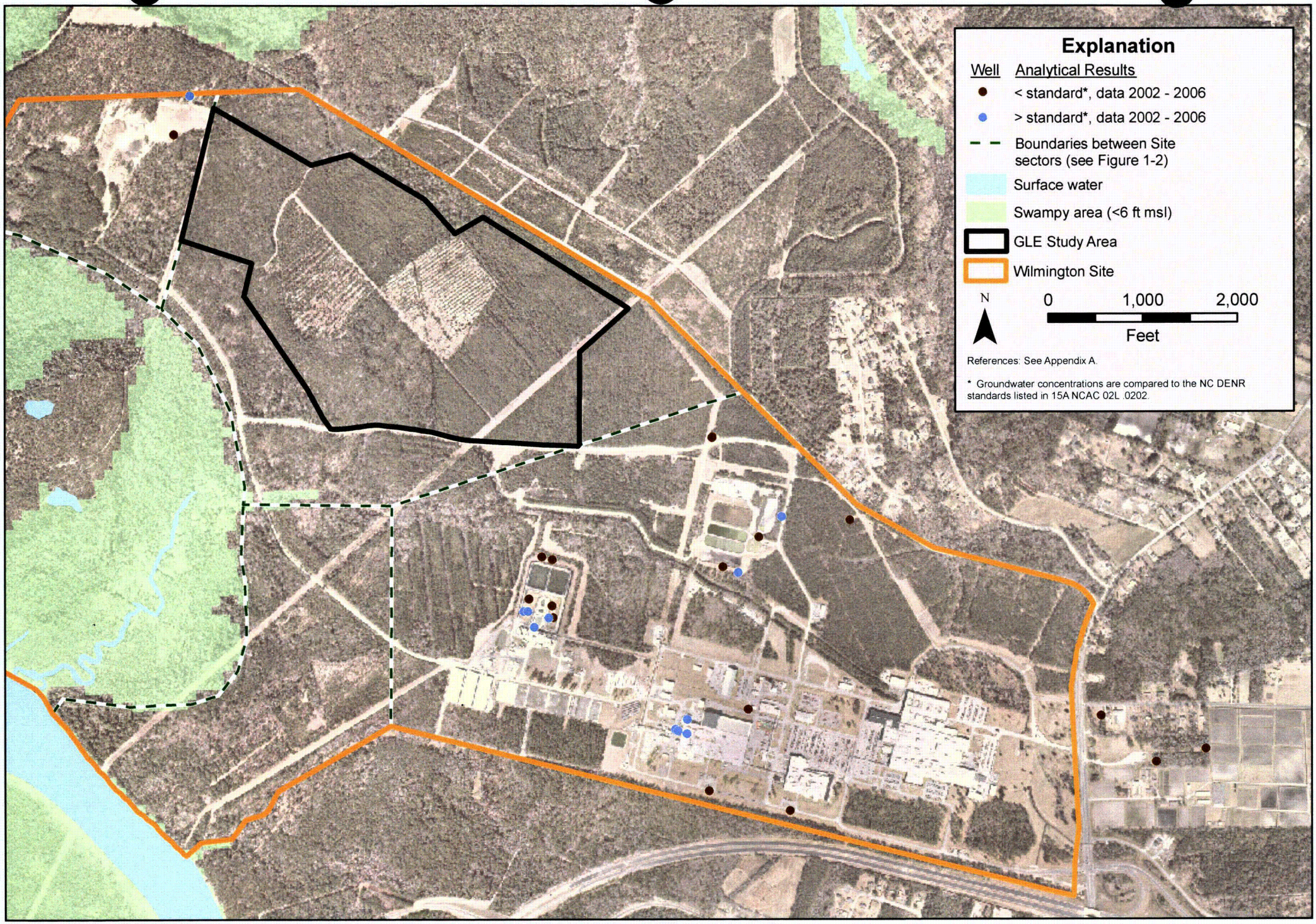


Figure 3.4-17. Summary of groundwater quality data - gross alpha activity.

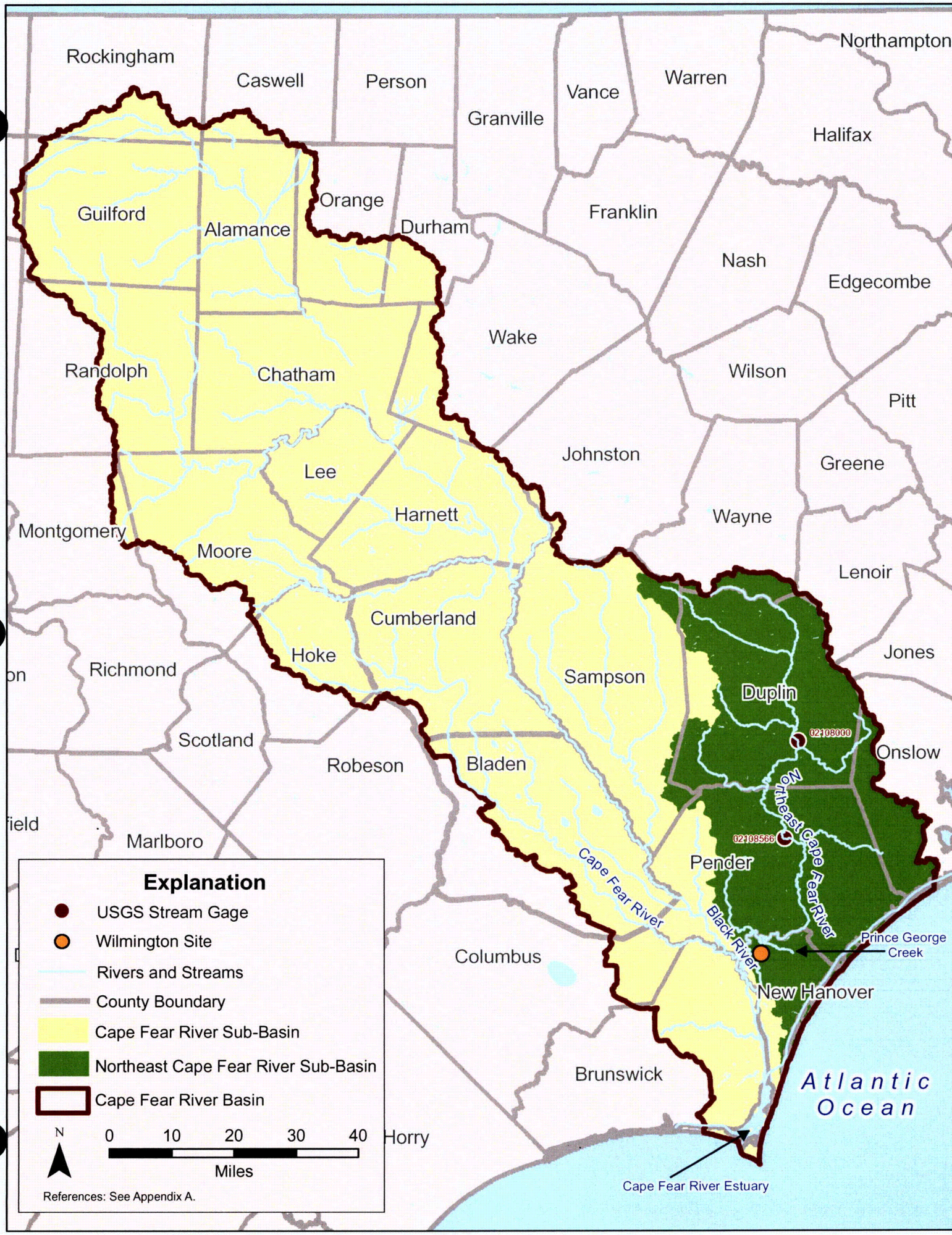


Figure 3.4-18. Regional surface waters.

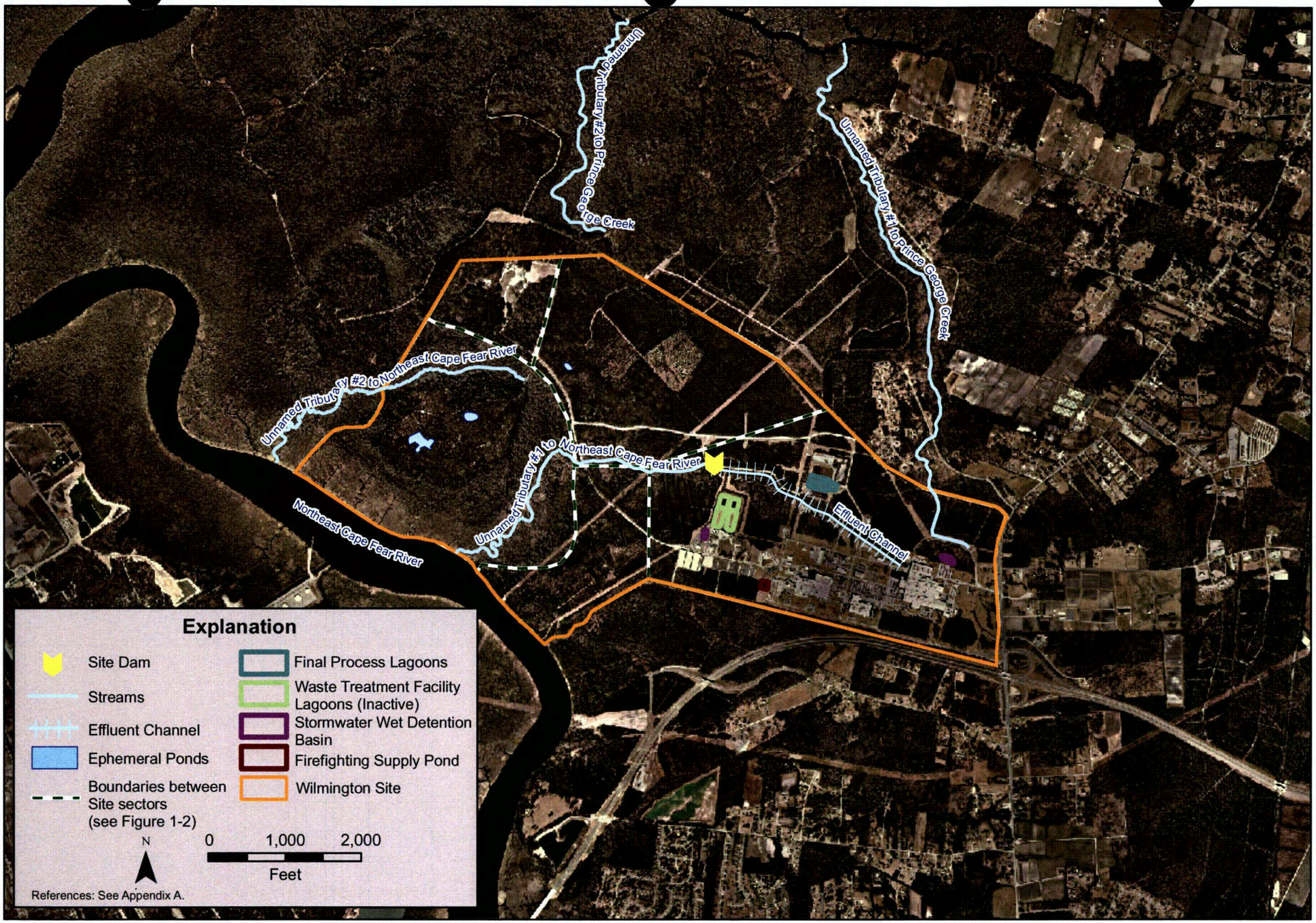


Figure 3.4-19. Wilmington Site surface waters.

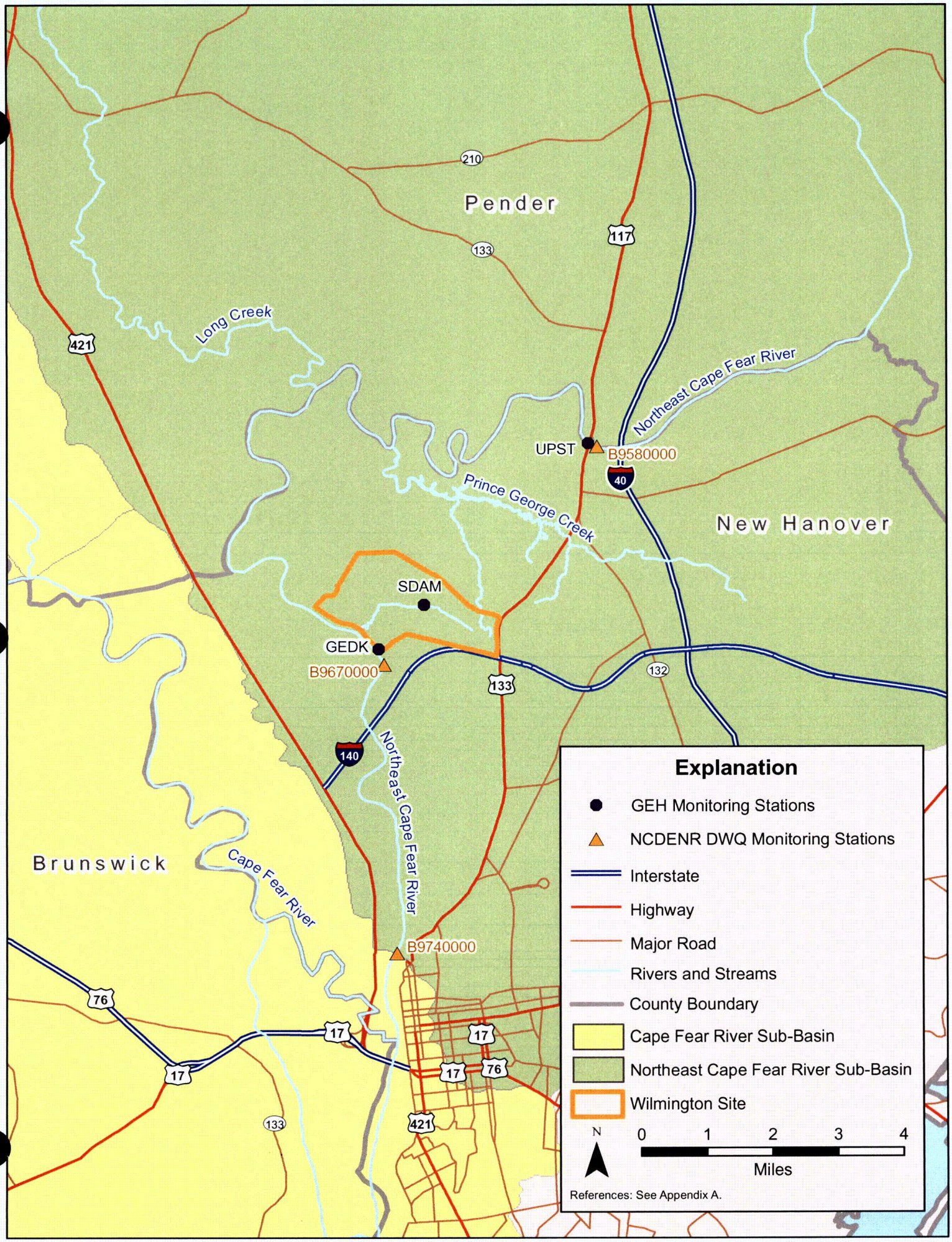


Figure 3.4-20. Water quality monitoring locations.

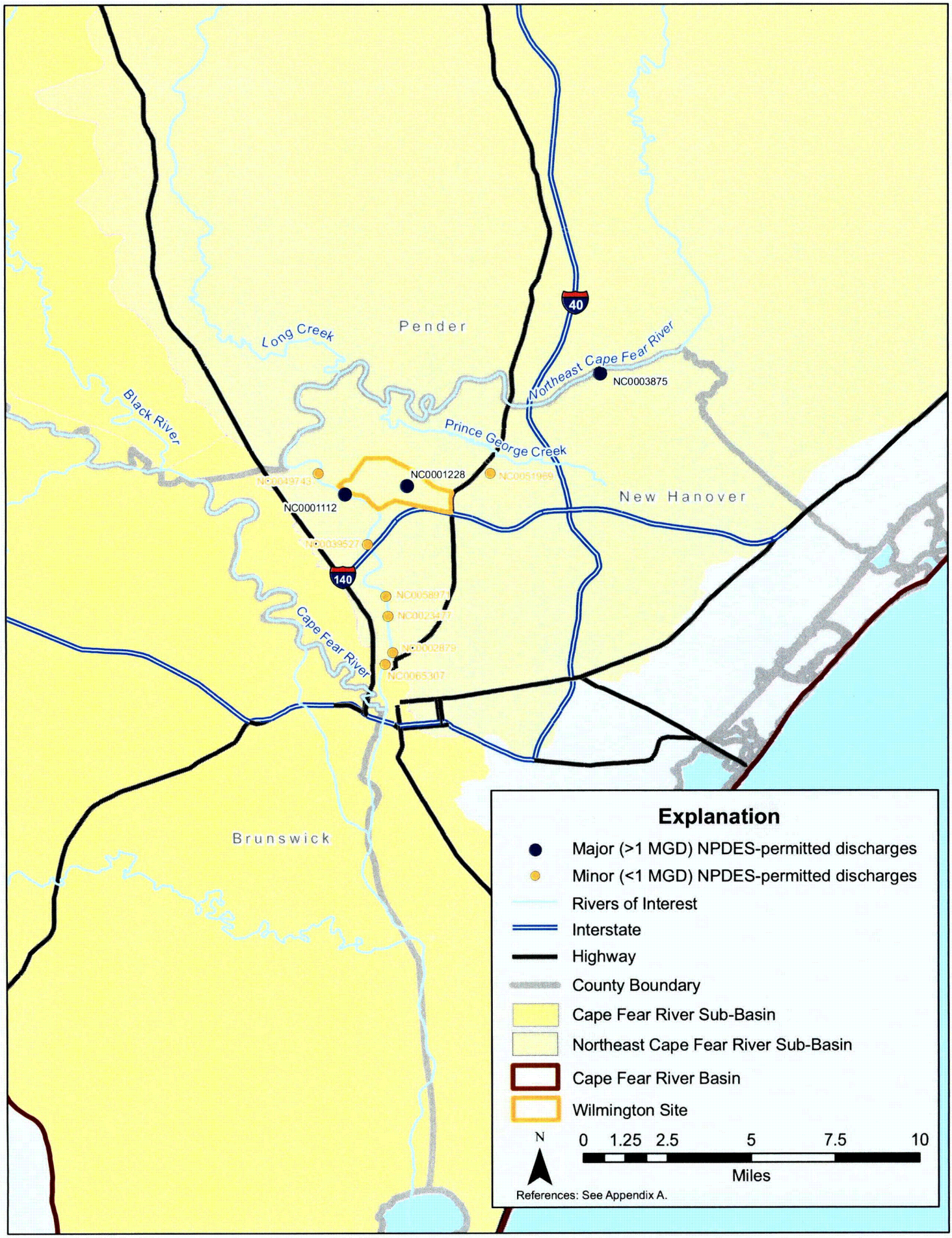


Figure 3.4-21. National Pollutant and Discharge Elimination System (NPDES) permittees on the Northeast Cape Fear River and Prince George Creek in New Hanover County.

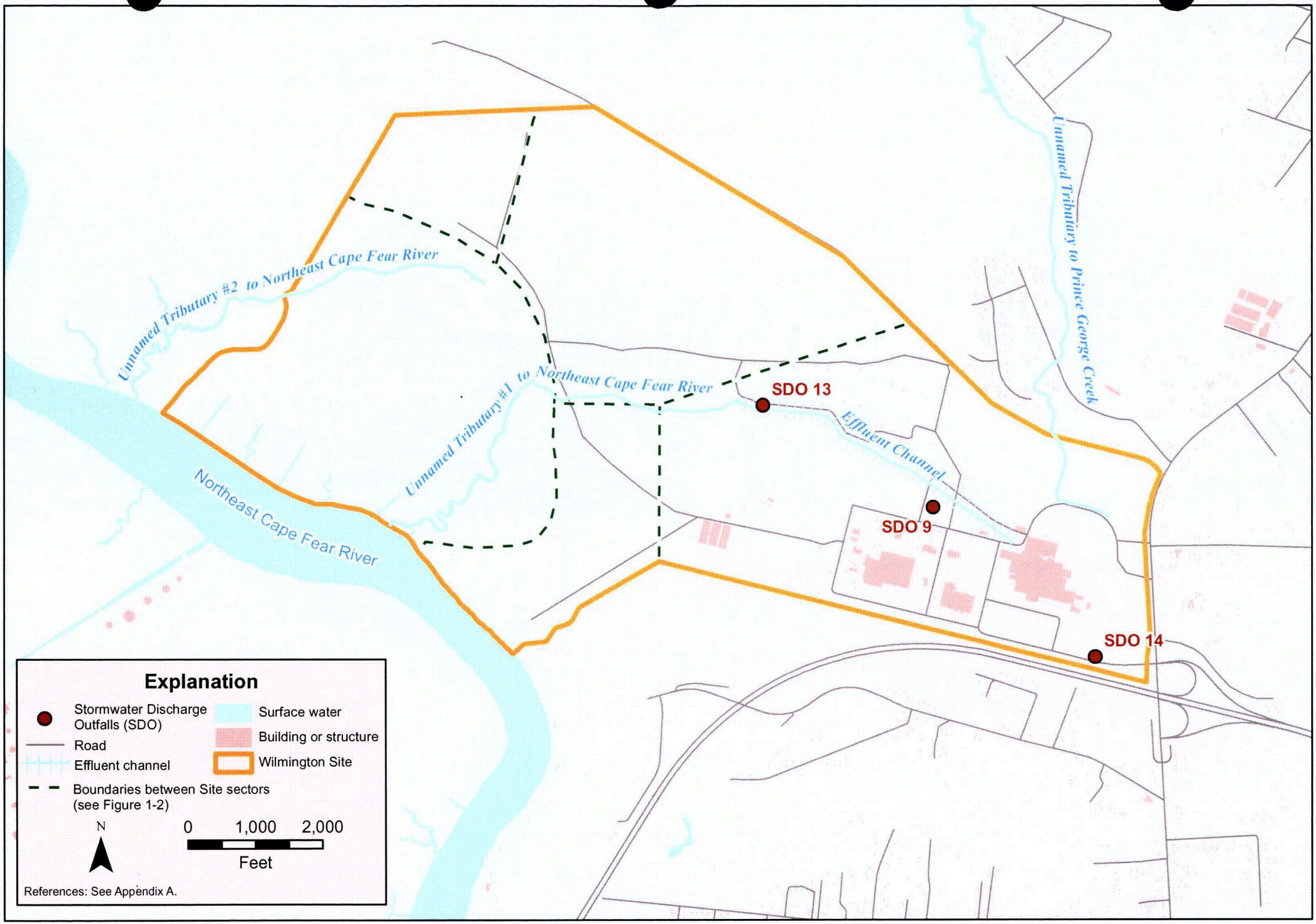


Figure 3.4-22. Wilmington Site stormwater sampling locations.

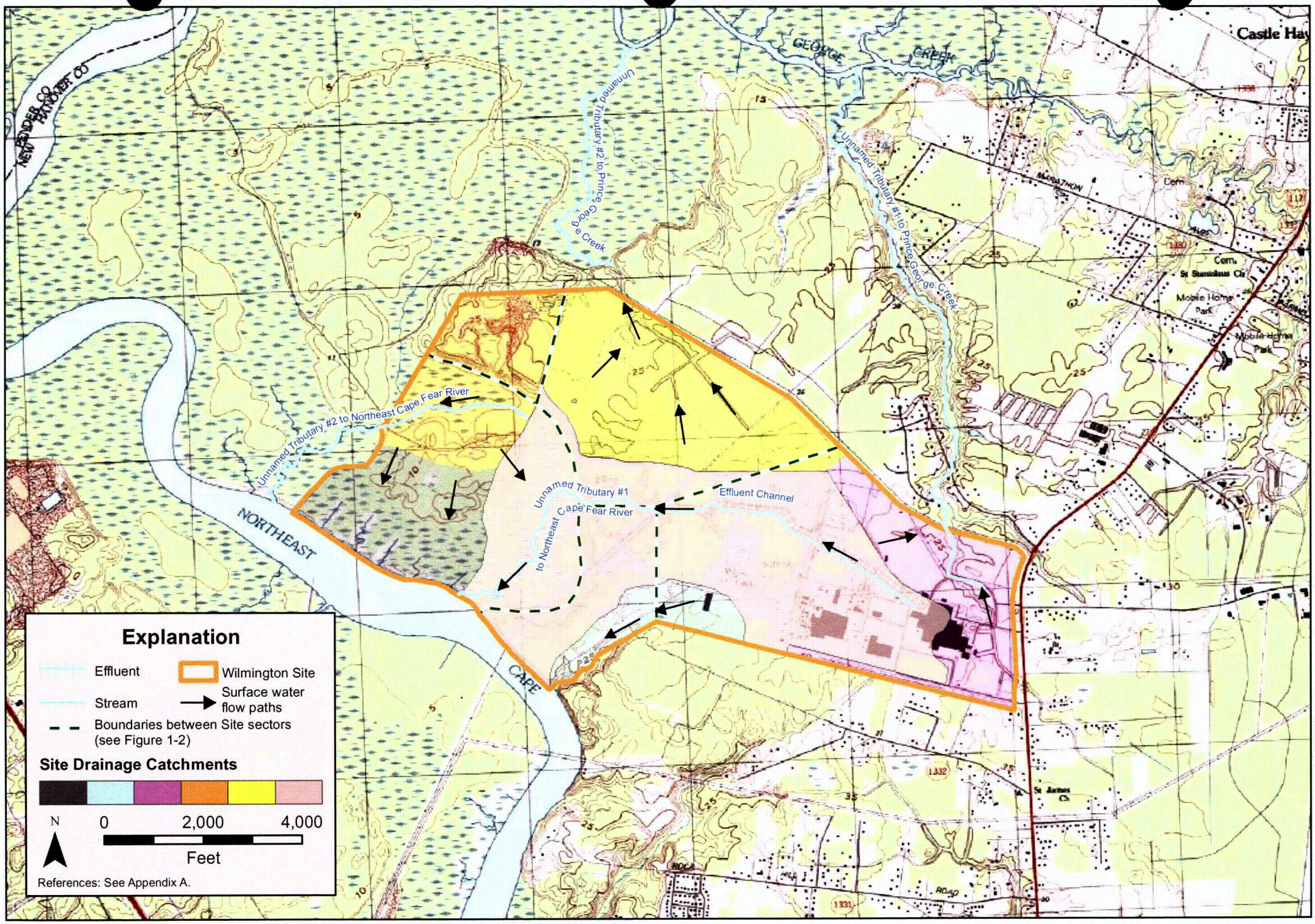


Figure 3.4-23. Current Wilmington Site drainage.

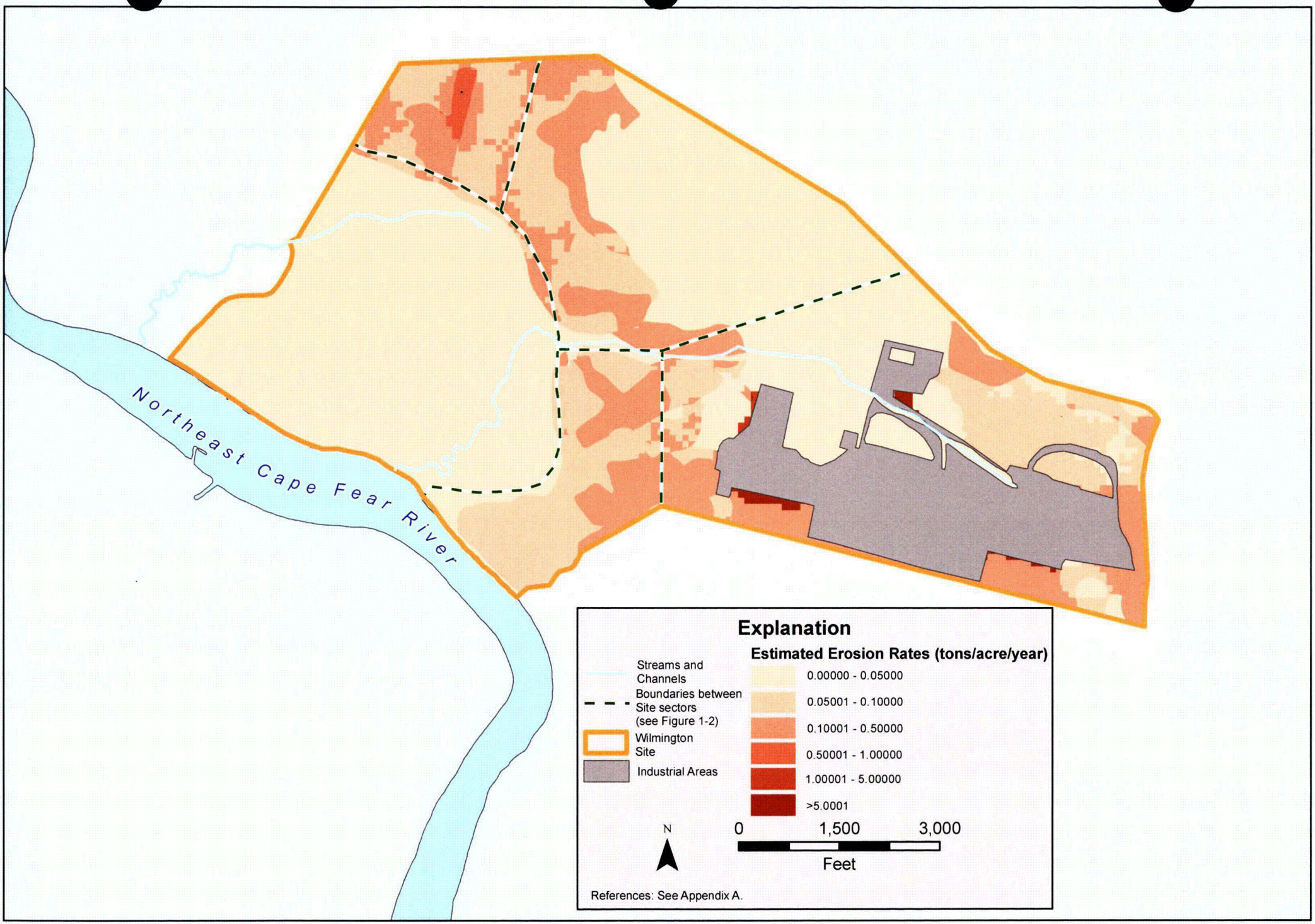


Figure 3.4-24. Estimated erosion rates.

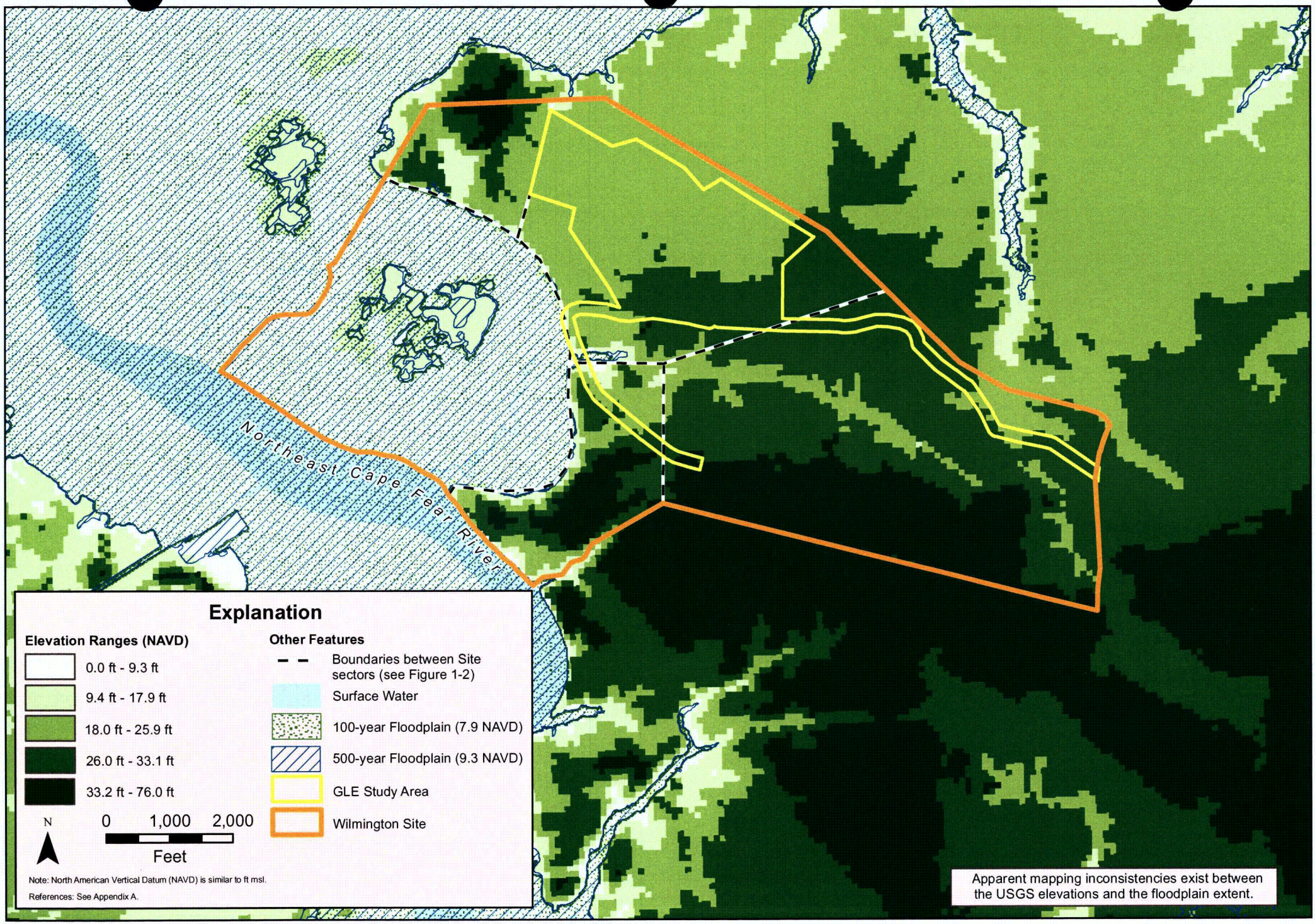


Figure 3.4-25. Floodplain and elevation distribution in the area of the Proposed GLE Facility.

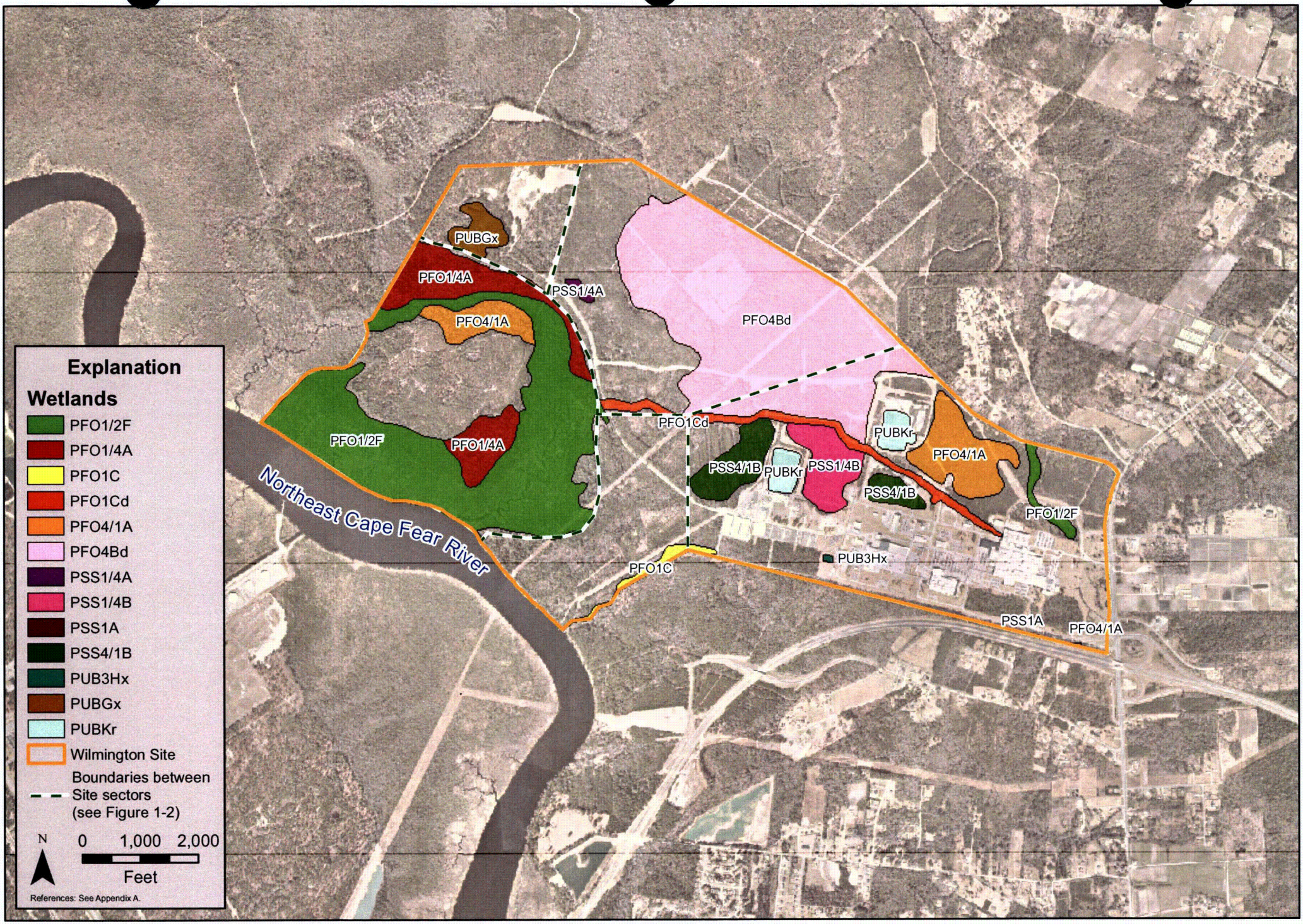


Figure 3.4-26. Wilmington Site wetlands as classified by the National Wetlands Inventory.

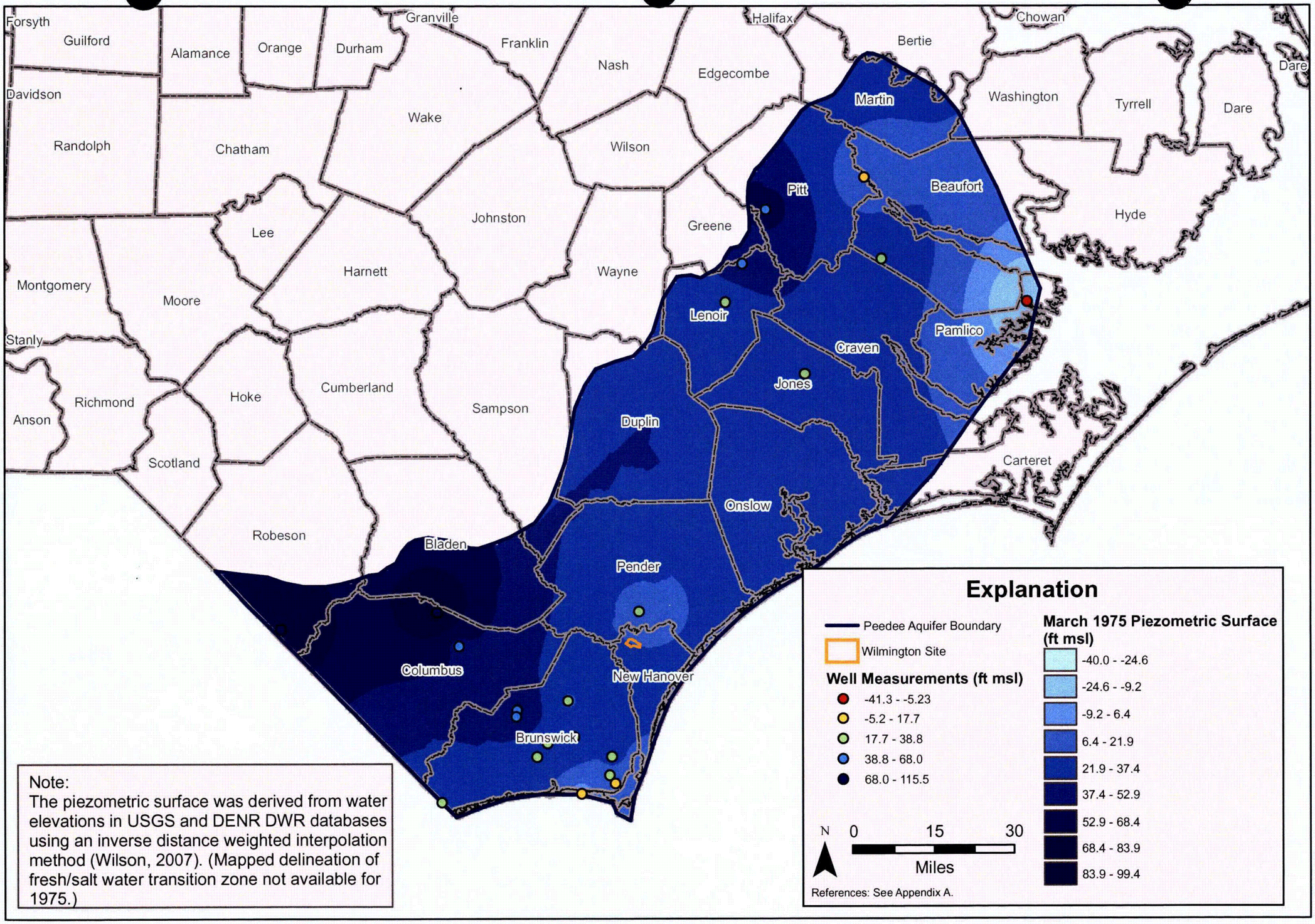


Figure 3.4-27. Peedee Aquifer groundwater elevations, 1975.

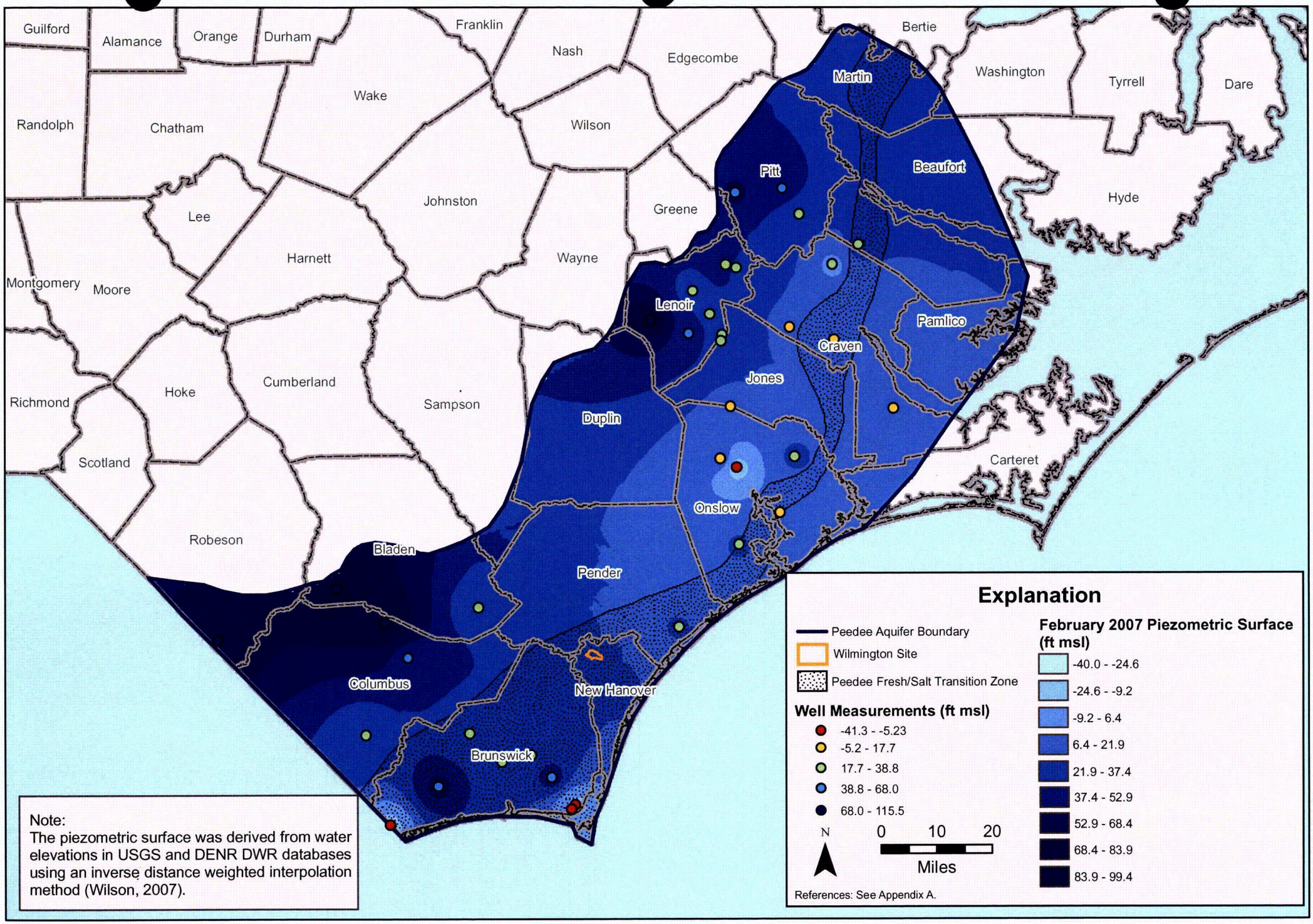


Figure 3.4-28. Peedee Aquifer groundwater elevations, 2007.

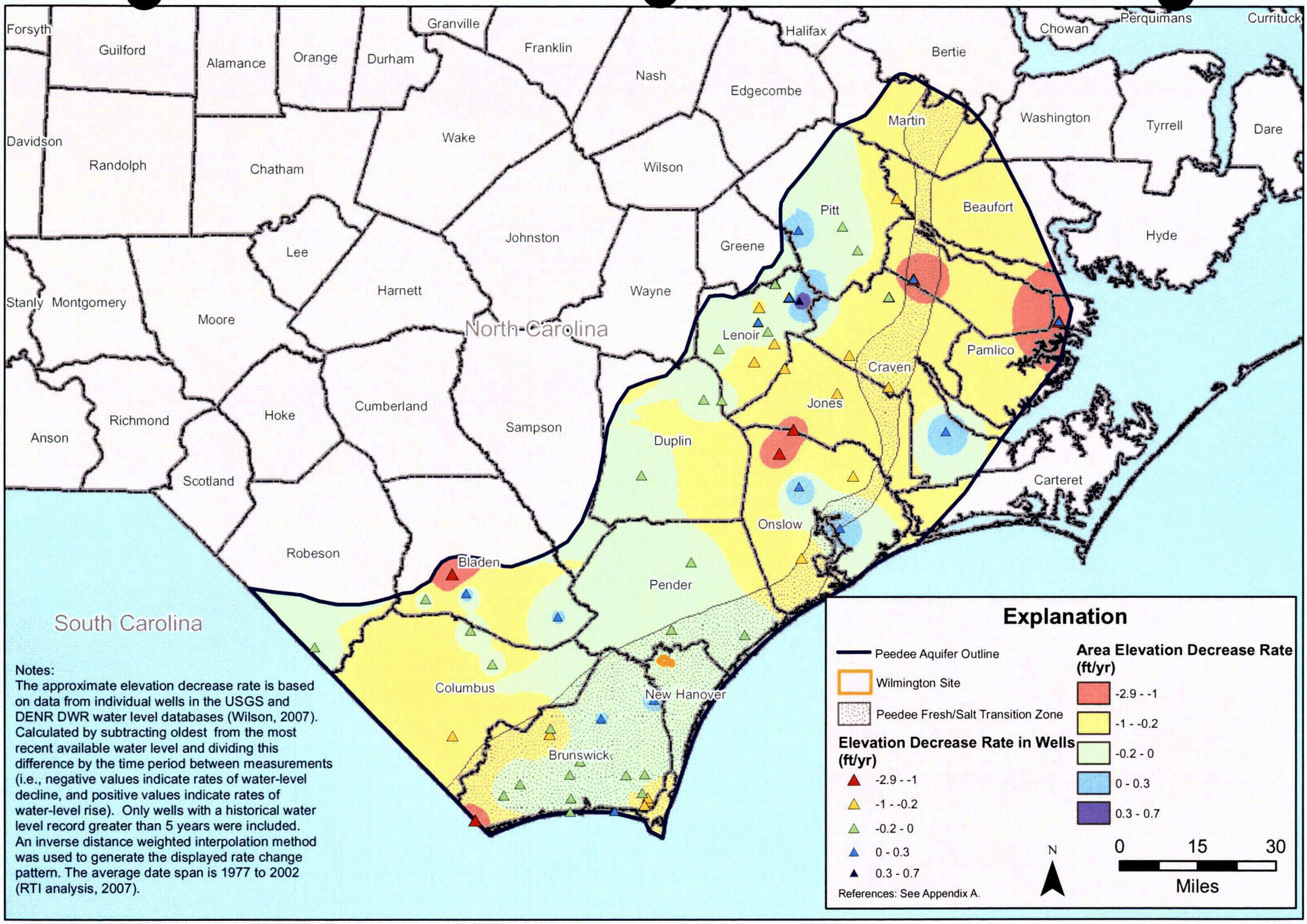
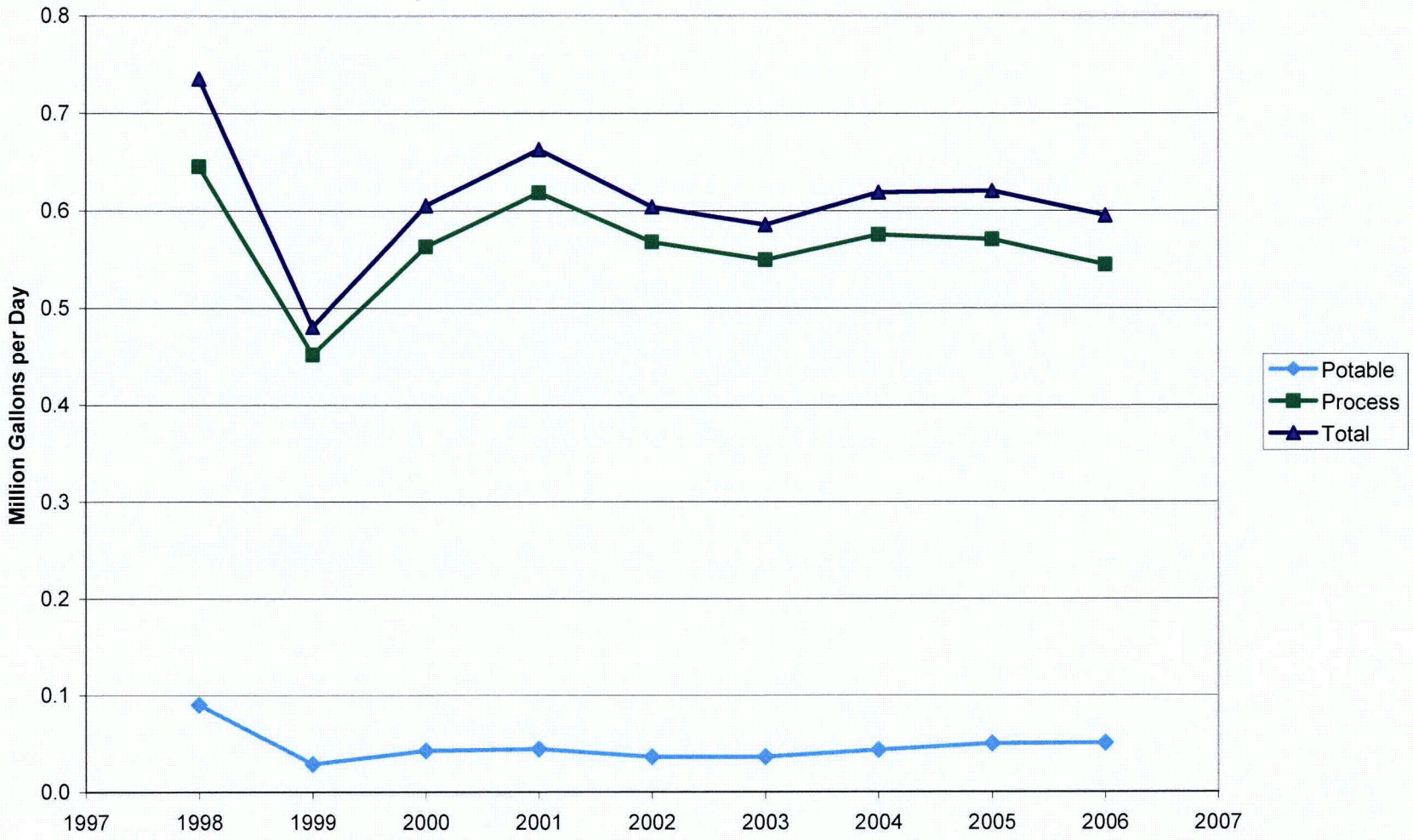


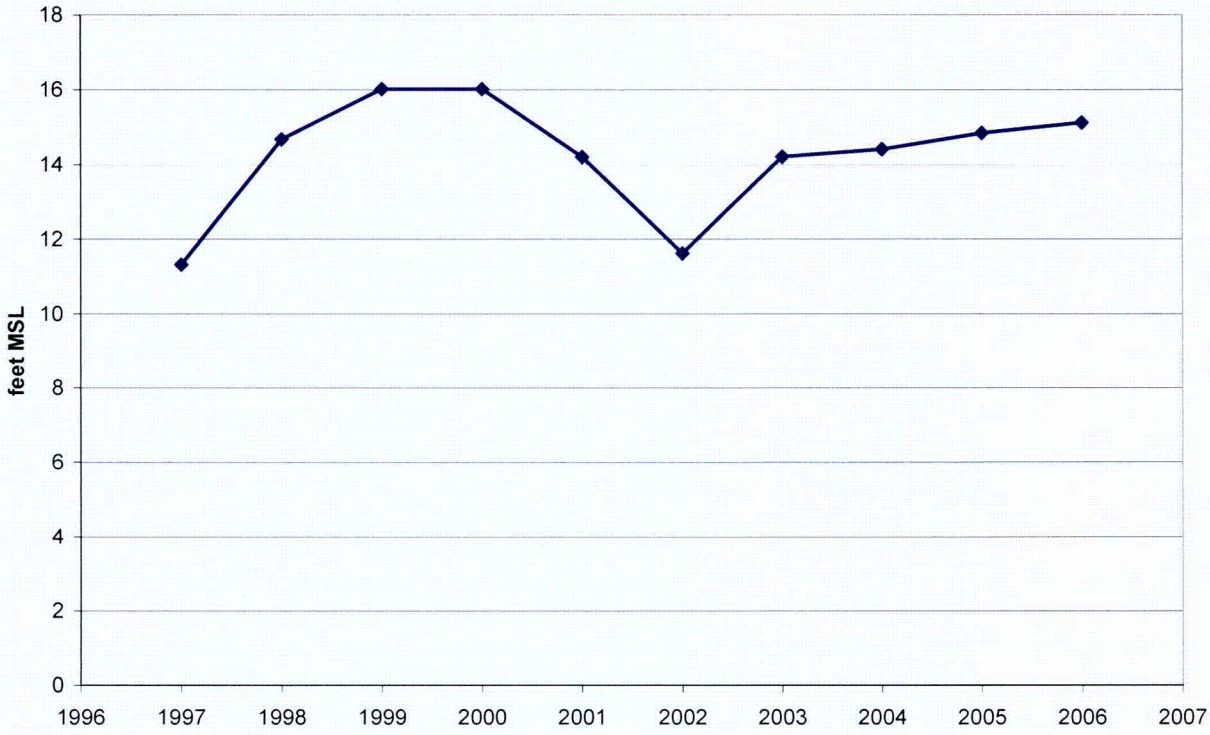
Figure 3.4-29. Approximate rate of groundwater elevation decrease in the Peedee Aquifer.



Note: Site potable water supply is provided by three wells just east of the Wilmington Site.

Reference: RTI data and analysis, 2007.

Figure 3.4-30. Annual groundwater withdrawals at the Wilmington Site.



Reference: RTI data and analysis, 2007.

Figure 3.4-31. Annual average water levels in monitoring wells installed in the Peedee Aquifer at the Wilmington Site.