

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on April 18, 2014 by EPA START (Team 1) sampling teams. Water sample measurements are in milligrams per liter (mg/L) and/or micrograms per liter (µg/L) for these samples. The data is being compared to EPA ecological risk screening levels (ERSLs) to protect aquatic life in the surface water of the Dan River. Specific qualifiers and footnotes are listed below the summary table. These samples were collected at various locations along the river (refer to map for generalized locations). The detected concentrations in surface water are all below the EPA ERSLs with the exception of aluminum, copper, iron, and lead. EPA typically screens the surface water concentrations using total metals samples, because this is a conservative practice for screening. Copper was not detected above screening levels in any of the samples of the dissolved fraction of surface water (i.e., samples that were filtered to remove particulates), therefore there is no threat of toxicity from this compound to aquatic organisms. When chemical concentrations exceed the screening values it doesn't mean there will be adverse health or ecological effects, but recommends further investigation may be needed.

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Abreu-Grogan Park Boat Dock		S Boston WTP Intake	
Sample Information						
Sample ID	-		EDEN-DWTP-RAW-3-20140418		EDEN-SBWTP-RAW-3-20140418	
Date	-		04/18/2014		04/18/2014	
Time	-		0320		1600	
Status	-		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water	
Dissolved metals						
Aluminum	87	µg/L	1,100J	µg/L	1,300J	µg/L
Antimony	5.6	µg/L	1U	µg/L	1U	µg/L
Arsenic	10	µg/L	1U	µg/L	0.55J	µg/L
Barium	220	µg/L	23J+	µg/L	25J+	µg/L
Beryllium	0.66	µg/L	0.4U	µg/L	0.4U	µg/L
Boron	0.36	mg/L	0.048J+	mg/L	0.1U	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	5,300	µg/L	5,200	µg/L
Chromium	25	µg/L	2.2J	µg/L	2.5J	µg/L
Cobalt	3	µg/L	0.2J	µg/L	0.23J	µg/L
Copper	3	µg/L	1.4	µg/L	3	µg/L
Iron	1,000	µg/L	1,000J	µg/L	1,200J	µg/L
Lead	0.59	µg/L	0.43	µg/L	0.89	µg/L
Magnesium	-	-	2,200	µg/L	2,200	µg/L
Manganese	200	µg/L	5.6	µg/L	7.1	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	0.47J	µg/L	1U	µg/L
Nickel	17	µg/L	0.91J	µg/L	1.3	µg/L
Potassium	53,000	µg/L	1,900	µg/L	2,100	µg/L
Selenium	5	µg/L	2U	µg/L	2U	µg/L
Silver	0.06	µg/L	1U	µg/L	1U	µg/L
Sodium	680,000	µg/L	4,000	µg/L	4,800	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	7.3J	µg/L	8.8J	µg/L
Zinc	39	µg/L	20U	µg/L	6.2J	µg/L

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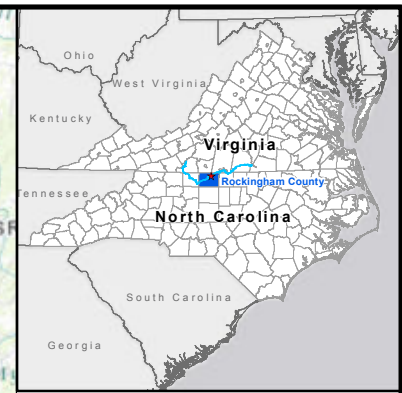
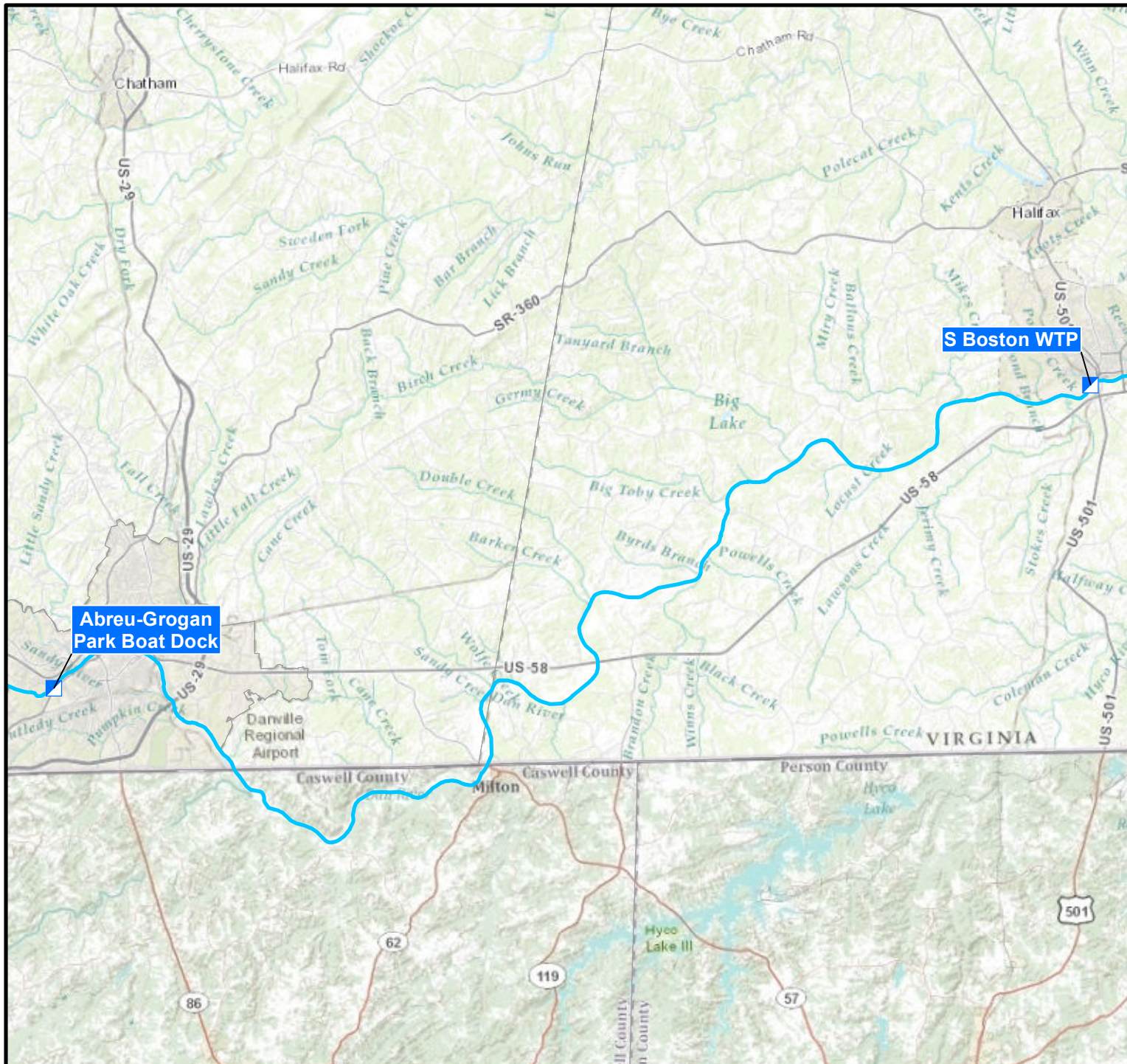
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Type	-		Surface Water		Surface Water	
Total Dissolved Solids						
Total Dissolved Solids	-	-	81	mg/L	74	mg/L
Total Suspended Solids						
Total Suspended Solids	-	-	39	mg/L	73	mg/L
Total Metals						
Aluminum	2,000	µg/L	350J+	µg/L	340J+	µg/L
Antimony	5.6	µg/L	1U	µg/L	0.45J	µg/L
Arsenic	10	µg/L	1U	µg/L	1U	µg/L
Barium	220	µg/L	29J+	µg/L	38J+	µg/L
Beryllium	0.66	µg/L	0.4U	µg/L	0.4U	µg/L
Boron	0.36	mg/L	0.049J	mg/L	0.1U	mg/L
Cadmium	2	µg/L	0.1U	µg/L	0.16	µg/L
Calcium	-	-	5,500	µg/L	5,500	µg/L
Chromium	29	µg/L	2UJ	µg/L	1.3J	µg/L
Cobalt	24	µg/L	0.45	µg/L	0.77	µg/L
Copper	3	µg/L	1.6	µg/L	4.4	µg/L
Iron	2,300	µg/L	610J+	µg/L	710J+	µg/L
Lead	0.6	µg/L	0.89	µg/L	2.6	µg/L
Magnesium	-	-	2,300	µg/L	2,200	µg/L
Manganese	200	µg/L	41	µg/L	81	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	-	-	1U	µg/L	1U	µg/L
Nickel	17	µg/L	0.58J	µg/L	1.3	µg/L
Potassium	53,000	µg/L	1,900	µg/L	2,200	µg/L
Selenium	5	µg/L	2U	µg/L	2U	µg/L
Silver	0.06	µg/L	1U	µg/L	1U	µg/L
Sodium	680,000	µg/L	4,000	µg/L	5,100	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	5J	µg/L	6.8J	µg/L
Zinc	39	µg/L	3.5J	µg/L	14J	µg/L
Anions						
Bromide	-	-	35J	µg/L	42J-	µg/L
Chloride	230	mg/L	5.3	mg/L	6.5	mg/L

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Type	-		Surface Water		Surface Water	
Wet Chemistry						
Alkalinity, Total (As CaCO ₃)	-	-	18	mg/L	18	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	23	mg/L	23	mg/L
Organic Carbon, Dissolved	-	-	2.7	mg/L	3.3	mg/L
pH	6.5 - 9.0		std	7.34J	std	7.24J

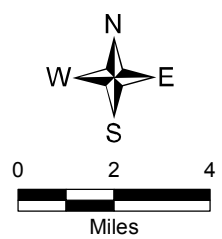
Notes

- ¹ Value obtained from the GL Tier 2 Values; National Recommended Water Quality Criteria; Suter and Tsao (1996); Reference condition for EcoRegion XI (25 percentile); NCDENR State Standards for surface water
- EPA U.S. Environmental Protection Agency
- J Value is estimated
- J+ Value is estimated with a possible high bias
- J- Value is estimated with a possible low bias
- µg/L micrograms per liter
- mg/L milligrams per liter
- std standard
- U Analyte was not detected at the listed reporting limit.



Legend

- ★ Approximate Spill Location
- Surface Water Sample Location
- Dan River



Map Source: ArcGIS Online World Map Topo, 2014

**Surface Water
Sample Locations
April 18, 2014**

