EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on Feb 27, 2014 by EPA START (Team 1). Water sample measurements are in milligrams per liter (mg/L), 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, arsenic, boron, iron, lead, and manganese. The majority of these analytes were detected in the total metals ananlysis of the sample that contained ash. EPA typically screens the surface water concentrations using total metals samples, because this is a conservative practice for screening. Aluminum, arsenic, boron, iron, and manganese exceed the screening level in the dissolved metals analysis and will continue to be monitored. 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]		DRSS Boat Ramp		Duke Outfall A		Duke Outfall A (10 feet out from Left Descending Bank)	
Sample Information								
Sample ID	-		EDEN-DRSSBR-SW-20140227		EDEN-OUTFL-A-SW-20140227		EDEN-OUTFL-A-L-SW-20140227	
Date	-		02/27/2014		02/27/2014		02/27/2014	
Time	-		1507		1550		1530	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Dissolved metals								
Aluminum	87	µg/L	90.9	µg/L	10U	µg/L	83.6	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	4.5U	µg/L	38.7	µg/L	0.356J	µg/L
Barium	220	µg/L	15.2	µg/L	61.3	µg/L	15.4	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L	0.65U	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0784J+	mg/L	0.744	mg/L	0.0709J+	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	5,700J-	µg/L	72,000J-	µg/L	5,900J-	µg/L
Chromium	25	µg/L	2.5U	µg/L	2.5U	µg/L	2.5U	µg/L
Cobalt	3	µg/L	5U	µg/L	0.808J	µg/L	0.0976J	µg/L
Copper	3	µg/L	0.605J	µg/L	2U	µg/L	0.568J	µg/L
Iron	1,000	µg/L	177	µg/L	1,610	µg/L	181	µg/L
Lead	0.59	µg/L	0.5U	µg/L	0.5U	µg/L	0.5U	µg/L
Magnesium	-	-	2,560J	µg/L	14,800	µg/L	2,610J	µg/L
Manganese	200	µg/L	10.2	µg/L	1,030	µg/L	12.2	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	5U	µg/L	44.5	µg/L	5U	µg/L
Nickel	17	µg/L	5U	µg/L	0.821J	µg/L	5U	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	10,600	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silica	-	-	6.28J-	mg/L	7.23J-	mg/L	6.26J-	mg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	3,730J	µg/L	21,300	µg/L	3,870J	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	0.411J	µg/L	5U	µg/L	0.456J	µg/L
Zinc	39	µg/L	10U	µg/L	4.64J	µg/L	10U	µg/L

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Sample Information								
Sample ID	-		EDEN-DRSSBR-SW-20140227		EDEN-OUTFL-A-SW-20140227		EDEN-OUTFL-A-L-SW-20140227	
Total Metals								
Aluminum	2,000	µg/L	505	µg/L	62.9	µg/L	446	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	0.193J	µg/L	183	µg/L	0.576J	µg/L
Barium	220	µg/L	20.2	µg/L	69.4	µg/L	19.5	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L	0.123J	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0835J+	mg/L	0.762	mg/L	0.0752J+	mg/L
Cadmium	2	µg/L	0.0412J	µg/L	0.0791J	µg/L	0.0595J	µg/L
Calcium	-	-	6,200	µg/L	72,500	µg/L	6,160	µg/L
Chromium	29	µg/L	2.5U	µg/L	2.5U	µg/L	2.5U	µg/L
Cobalt	24	µg/L	0.542J	µg/L	0.951J	µg/L	0.437J	µg/L
Copper	3	µg/L	2.29	µg/L	2U	µg/L	2U	µg/L
Iron	2,300	µg/L	1,060	µg/L	11,900	µg/L	1,060	µg/L
Lead	0.6	µg/L	0.81J+	µg/L	0.5U	µg/L	0.5U	µg/L
Magnesium	-	-	2,720J	µg/L	14,700	µg/L	2,730J	µg/L
Manganese	200	µg/L	36.2	µg/L	1,050	µg/L	39.4	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	-	-	0.216J	µg/L	47.3	µg/L	0.59J	µg/L
Nickel	17	µg/L	5U	µg/L	0.99J	µg/L	5U	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	9,900J+	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silica	-	-	7.09J+	mg/L	8.1J+	mg/L	6.95J+	mg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	4,060J	µg/L	21,000	µg/L	4,030J	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Zinc	39	µg/L	19.4J+	µg/L	20J+	µg/L	10U	µg/L

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

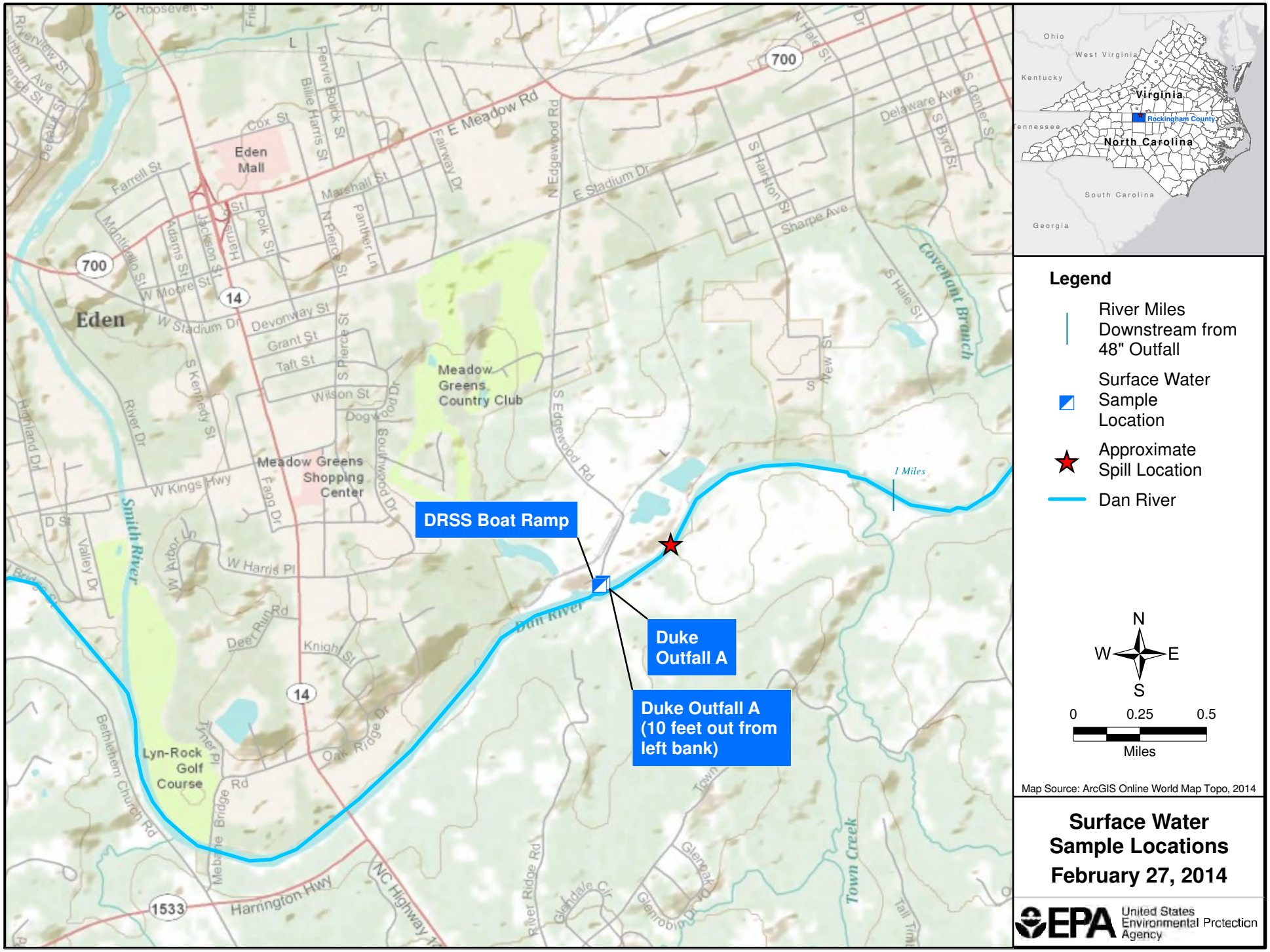
J+ Value is estimated with a possible high bias

J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

U Analyte was not detected at the listed reporting limit.



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