

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT RESULTS

NOTE: The data below represents sediment samples that were collected on Feb 15, 2014 by EPA Sample Team 1. Sediment sample measurement are in milligrams per kilogram (mg/Kg), milligrams per liter (mg/L), and micrograms per kilogram (mg/kg). The data is being compared to ecological risk screening levels (ERSLs) to protect aquatic life in the sediments 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 sediment are all below the ERSLs with the exception of aluminum, arsenic, iron, manganese, selenium, silver, and thallium. There were no exceedances of the human health screening criteria for sediment. 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 Standards for Sediment ²	Duke Outfall A (near DRSS Boat Ramp)
Sample Information		
Sample ID	-	EDEN-OUTFL-A-SD-20140215
Date	-	2/15/2014
Time	-	1016
Status	-	Validation Complete
Type	-	Sediment
Total Metals		
Aluminum	3,200 (bkg)	mg/kg 5,530 mg/kg
Antimony	2 ^a	mg/kg 0.644J mg/kg
Arsenic	9.8	mg/kg 128 mg/kg
Barium	60 ^b	mg/kg 57.5 mg/kg
Beryllium	-	- 0.303J mg/kg
Boron	-	mg/kg 37.0U mg/kg
Cadmium	0.99	mg/kg 0.549J mg/kg
Calcium	-	- 1,850 mg/kg
Chromium	43.4	mg/kg 15.8 mg/kg
Cobalt	50	mg/kg 7.33 mg/kg
Copper	31.6	mg/kg 6.48 mg/kg
Iron	6,800 (bkg)	mg/kg 20,100 mg/kg
Lead	35.8	mg/kg 7.46U mg/kg
Magnesium	-	- 1,650 mg/kg
Manganese	460 ^c	mg/kg 682 mg/kg
Mercury	0.18	mg/kg 0.152U mg/kg
Molybdenum	-	mg/kg 11.6 mg/kg
Nickel	22.7	mg/kg 6.12J mg/kg
Potassium	-	- 1,380 mg/kg
Selenium	2 ^d	mg/kg 7.46U mg/kg
Silica	-	- 70.6 %
Silver	0.733	mg/kg 3.73U mg/kg
Sodium	-	- 41.9J mg/kg
Thallium	-	- 7.46U mg/kg
Vanadium	57 ^c	mg/kg 19.0 mg/kg
Zinc	121	mg/kg 46.9J+ mg/kg

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT RESULTS

Analyte	Ecological Screening Standards for Sediment ²		Duke Outfall A (near DRSS Boat Ramp)	
Sample Information				
Sample ID	-		EDEN-OUTFL-A-SD-20140215	
TCLP Metals				
	40 CFR 261.24			
Arsenic	5.0	mg/L	0.250U	mg/L
Barium	100.0	mg/L	0.351J	mg/L
Cadmium	1.0	mg/L	0.025U	mg/L
Chromium	5.0	mg/L	0.050U	mg/L
Lead	5.0	mg/L	0.050U	mg/L
Mercury	0.2	mg/L	0.0040U	mg/L
Selenium	1.0	mg/L	0.10U	mg/L
Silver	5.0	mg/L	0.025U	mg/L
BTEX				
Benzene	-	-	0.81U	µg/kg
Ethylbenzene	-	-	0.81U	µg/kg
m,p-Xylene	-	-	0.81U	µg/kg
o-Xylene	-	-	0.81U	µg/kg
Toluene	-	-	0.81U	µg/kg

Notes

² MacDonald, D.D.; Ingersoll, C.G.; Smorong, D.E.; Lindskoog, R.A.; Sloane, G; and T. Biernacki. 2003. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters. Florida Department of Environmental Protection, Tallahassee, FL. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida

^a The screening value for antimony is from Long, Edward R., and Lee G. Morgan. 1991. The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52.

^b The screening value for barium was the probable effect level (PEL) instead of the threshold effect level (TEL) because the TEL was below background

^c Sediment screening values for manganese and vanadium come from the NOAA SQuIRT.

<http://response.restoration.noaa.gov/sites/default/files/SQuiRTs.pdf>

^d The screening value for selenium is from Region 3 after Lemley, A.D. 2002. Selenium assessment in aquatic ecosystems. US Forest Service, Blacksburg, VA.

^e Cadmium from diet

^f Chromium (VI)

^g Methyl Mercury

^h Thallium Chloride

EPA U.S. Environmental Protection Agency

% Percent

J Value is estimated

J- Value is estimated with a possible low bias

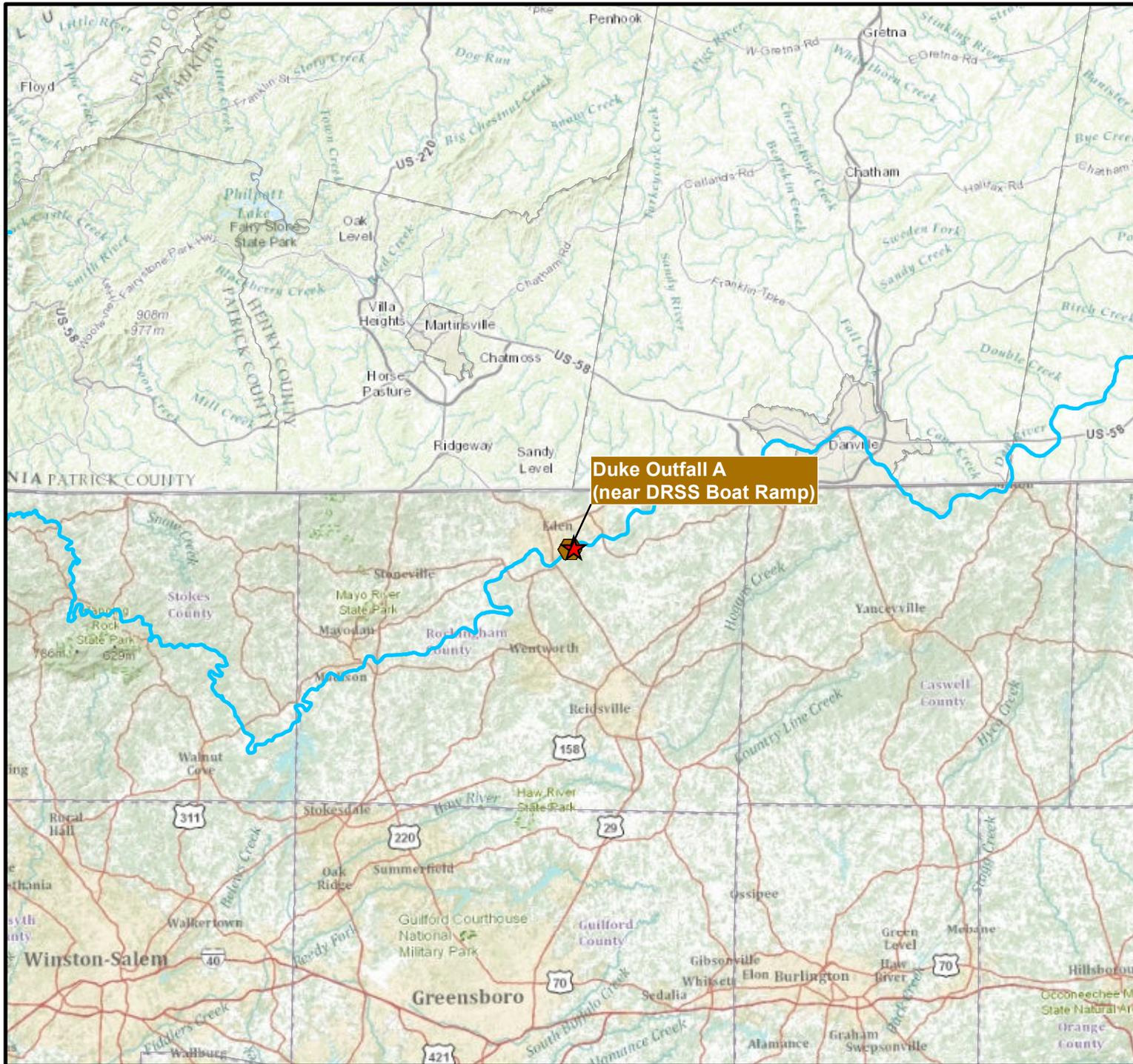
µg/kg micrograms per kilogram

mg/kg milligrams per kilogram

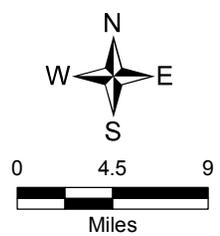
mg/L milligrams per liter

U Analyte was not detected at the listed reporting limit.

UJ Analyte was not detected at the listed reporting limit, which is an estimated quantitation.



- Legend**
- ★ Approximate Spill Location
 - ⬡ Sediment Sample Location
 - Dan River



Map Source: ArcGIS Online World Map Topo, 2014

**Sediment
Sample Locations
February 15, 2014**

