

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT-WATER INTERFACE RESULTS

NOTE: The data below represents sediment-water interface samples that were collected on May 5, 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 sediment-water interface are all below the EPA ERSLs with the exception of aluminum, arsenic, cadmium, iron, lead, and mercury. 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		Transect EPA 04 Left Descending		Transect EPA 04 Left Descending		Transect EPA 05 Left Descending	
Sample Information								
Sample ID	-		EDEN-EPA04-L-BW-20140505		EDEN-EPA04-L-BW-20140505-DUP		EDEN-EPA05-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1540		1545		1640	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Dissolved metals								
Aluminum	87	µg/L	58J	µg/L	60J	µg/L	46J+	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	12J	µg/L	6.2J	µg/L	0.72J	µg/L
Barium	220	µg/L	22J	µg/L	23J	µg/L	22J	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.077J	mg/L	0.072J	mg/L	0.075J	mg/L
Cadmium	0.1	µg/L	0.1UJ	µg/L	0.1UJ	µg/L	0.1UJ	µg/L
Calcium	-	-	7,200J	µg/L	6,800J	µg/L	6,800J	µg/L
Chromium	25	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	3	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Copper	3	µg/L	0.97J	µg/L	1J	µg/L	0.95J	µg/L
Iron	1,000	µg/L	260J	µg/L	250J	µg/L	230J	µg/L
Lead	0.59	µg/L	0.3UJ	µg/L	0.3UJ	µg/L	0.3UJ	µg/L
Magnesium	-	-	2,700J	µg/L	2,500J	µg/L	2,600J	µg/L
Manganese	200	µg/L	13J	µg/L	14J	µg/L	12J	µg/L
Mercury	0.000012	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L
Molybdenum	800	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	1UJ	µg/L	1UJ	µg/L	0.4J	µg/L
Potassium	53,000	µg/L	1,700J	µg/L	1,600J	µg/L	1,600J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	5,200J	µg/L	4,800J	µg/L	4,800J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	1.1J	µg/L	1J	µg/L	0.83J	µg/L
Zinc	39	µg/L	20UJ	µg/L	20UJ	µg/L	20UJ	µg/L
Total Dissolved Solids								
Total Dissolved Solids	-	-	84J	mg/L	74J	mg/L	82J	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	8.5J	mg/L	8J	mg/L	7.5J	mg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 04 Left Descending		Transect EPA 04 Left Descending		Transect EPA 05 Left Descending	
Sample Information								
Sample ID	-		EDEN-EPA04-L-BW-20140505		EDEN-EPA04-L-BW-20140505-DUP		EDEN-EPA05-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1540		1545		1640	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Total Metals								
Aluminum	2,000	µg/L	190J	µg/L	220J	µg/L	190J	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	10J	µg/L	11J	µg/L	8J	µg/L
Barium	220	µg/L	26J	µg/L	26J	µg/L	25J	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.077J	mg/L	0.076J	mg/L	0.08J	mg/L
Cadmium	2	µg/L	0.1UJ	µg/L	0.1UJ	µg/L	0.1UJ	µg/L
Calcium	-	-	7,200J	µg/L	7,100J	µg/L	7,300J	µg/L
Chromium	29	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	24	µg/L	0.24J	µg/L	0.23J	µg/L	0.22J	µg/L
Copper	3	µg/L	1.4J	µg/L	1.1J	µg/L	1J	µg/L
Iron	2,300	µg/L	530J	µg/L	530J	µg/L	530J	µg/L
Lead	0.6	µg/L	0.37J+	µg/L	0.3UJ	µg/L	0.3UJ	µg/L
Magnesium	-	-	2,700J	µg/L	2,700J	µg/L	2,800J	µg/L
Manganese	200	µg/L	42J	µg/L	40J	µg/L	39J	µg/L
Mercury	0.000012	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L
Molybdenum	-	-	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	0.47J	µg/L	0.54J	µg/L	0.47J	µg/L
Potassium	53,000	µg/L	1,700J	µg/L	1,700J	µg/L	1,700J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	5,100J	µg/L	5,000J	µg/L	5,300J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	1.4J	µg/L	1.6J	µg/L	1.4J	µg/L
Zinc	39	µg/L	20UJ	µg/L	20UJ	µg/L	20UJ	µg/L
Anions								
Bromide	-	-	46J	µg/L	46J	µg/L	47J	µg/L
Chloride	230	mg/L	6.7J	mg/L	6.7J	mg/L	7J	mg/L
Sulfate	-	-	4.7J	mg/L	4.7J	mg/L	5J	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT-WATER INTERFACE RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 04 Left Descending		Transect EPA 04 Left Descending		Transect EPA 05 Left Descending	
Sample Information								
Sample ID	-		EDEN-EPA04-L-BW-20140505		EDEN-EPA04-L-BW-20140505-DUP		EDEN-EPA05-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1540		1545		1640	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	22J	mg/L	25J	mg/L	24J	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	29J	mg/L	29J	mg/L	30J	mg/L
Organic Carbon, Dissolved	-	-	1.7J	mg/L	1.6J	mg/L	1.6J	mg/L
pH	6.5 - 9.0		7.51J	std	7.53J	std	7.47J	std

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.

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect DUKE DRB Left Descending		Transect DUKE DRE Left Descending		Transect DUKE SBD Left Descending	
Sample Information								
Sample ID	-		EDEN-DUKEDRB-L-BW-20140505		EDEN-DUKEDRE-L-BW-20140505		EDEN-DUKESBD-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1140		0920	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Dissolved metals								
Aluminum	87	µg/L	59	µg/L	54	µg/L	85	µg/L
Antimony	5.6	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Arsenic	10	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Barium	220	µg/L	23	µg/L	23	µg/L	24	µg/L
Beryllium	0.66	µg/L	0.4U	µg/L	0.4U	µg/L	0.4U	µg/L
Boron	0.36	mg/L	0.086J	mg/L	0.087J	mg/L	0.075J	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.11J+	µg/L	0.1U	µg/L
Calcium	-	-	7,100	µg/L	7,000	µg/L	6,800	µg/L
Chromium	25	µg/L	2U	µg/L	2U	µg/L	2U	µg/L
Cobalt	3	µg/L	0.4U	µg/L	0.4U	µg/L	0.16J	µg/L
Copper	3	µg/L	0.77J	µg/L	0.65J	µg/L	0.86J	µg/L
Iron	1,000	µg/L	240	µg/L	250	µg/L	310	µg/L
Lead	0.59	µg/L	0.3U	µg/L	0.3U	µg/L	0.3U	µg/L
Magnesium	-	-	2,600	µg/L	2,600	µg/L	2,600	µg/L
Manganese	200	µg/L	16J+	µg/L	18J+	µg/L	44	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0014	mg/L
Molybdenum	800	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Nickel	17	µg/L	0.52J	µg/L	0.46J	µg/L	0.49J	µg/L
Potassium	53,000	µg/L	1,900	µg/L	1,800	µg/L	1,700	µg/L
Selenium	5	µg/L	2U	µg/L	2U	µg/L	2U	µg/L
Silver	0.06	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Sodium	680,000	µg/L	13,000	µg/L	8,800	µg/L	6,900	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	0.85J	µg/L	0.85J	µg/L	1.1	µg/L
Zinc	39	µg/L	3J	µg/L	20U	µg/L	20U	µg/L
Total Dissolved Solids								
Total Dissolved Solids	-	-	100	mg/L	110	mg/L	96	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	19	mg/L	23	mg/L	28	mg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect DUKE DRB Left Descending		Transect DUKE DRE Left Descending		Transect DUKE SBD Left Descending	
Sample Information								
Sample ID	-		EDEN-DUKEDRB-L-BW-20140505		EDEN-DUKEDRE-L-BW-20140505		EDEN-DUKESBD-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1140		0920	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Total Metals								
Aluminum	2,000	µg/L	160	µg/L	200	µg/L	190	µg/L
Antimony	5.6	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Arsenic	10	µg/L	11	µg/L	1.1	µg/L	0.76J	µg/L
Barium	220	µg/L	25	µg/L	29	µg/L	30	µg/L
Beryllium	0.66	µg/L	0.4U	µg/L	0.4U	µg/L	0.4U	µg/L
Boron	0.36	mg/L	0.089J	mg/L	0.091J	mg/L	0.082J	mg/L
Cadmium	2	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	7,400	µg/L	7,400	µg/L	7,500	µg/L
Chromium	29	µg/L	2U	µg/L	2U	µg/L	2U	µg/L
Cobalt	24	µg/L	0.28J	µg/L	0.39J	µg/L	0.47	µg/L
Copper	3	µg/L	0.96J	µg/L	1.2	µg/L	1.3	µg/L
Iron	2,300	µg/L	520	µg/L	640	µg/L	690	µg/L
Lead	0.6	µg/L	0.36J+	µg/L	0.54J+	µg/L	0.61J+	µg/L
Magnesium	-	-	2,700	µg/L	2,800	µg/L	2,900	µg/L
Manganese	200	µg/L	47	µg/L	59	µg/L	98	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.005	mg/L
Molybdenum	-	-	1U	µg/L	1U	µg/L	1U	µg/L
Nickel	17	µg/L	0.52J	µg/L	0.59J	µg/L	0.62J	µg/L
Potassium	53,000	µg/L	1,900	µg/L	1,800	µg/L	1,900	µg/L
Selenium	5	µg/L	2U	µg/L	2U	µg/L	2U	µg/L
Silver	0.06	µg/L	1U	µg/L	1U	µg/L	1U	µg/L
Sodium	680,000	µg/L	13,000	µg/L	9,100	µg/L	7,700	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	1.3	µg/L	1.7	µg/L	1.8	µg/L
Zinc	39	µg/L	4.2J	µg/L	20U	µg/L	2.8J	µg/L
Anions								
Bromide	-	-	200	µg/L	120	µg/L	91	µg/L
Chloride	230	mg/L	20	mg/L	14	mg/L	11	mg/L
Sulfate	-	-	5.4	mg/L	5.2	mg/L	5.5	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT-WATER INTERFACE RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect DUKE DRB Left Descending		Transect DUKE DRE Left Descending		Transect DUKE SBD Left Descending	
Sample Information								
Sample ID	-		EDEN-DUKEDRB-L-BW-20140505		EDEN-DUKEDRE-L-BW-20140505		EDEN-DUKESBD-L-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1140		0920	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	24	mg/L	24	mg/L	25	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	30	mg/L	30	mg/L	31	mg/L
Organic Carbon, Dissolved	-	-	1.7	mg/L	1.7	mg/L	2.1	mg/L
pH	6.5 - 9.0		std	7.42J	std	7.42J	std	7.44J

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.

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 06 Mid-Channel		Transect EPA 07 Left Descending		Transect EPA 08 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA06-C-BW-20140505		EDEN-EPA07-L-BW-20140505		EDEN-EPA08-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1030		1130		1250	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Dissolved metals								
Aluminum	87	µg/L	86J	µg/L	110J	µg/L	120J	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	0.37J	µg/L	0.96J	µg/L	1.1J+	µg/L
Barium	220	µg/L	24J	µg/L	25J	µg/L	25J	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.081J	mg/L	0.08J	mg/L	0.075J	mg/L
Cadmium	0.1	µg/L	0.1UJ	µg/L	0.1UJ	µg/L	0.1UJ	µg/L
Calcium	-	-	7,000J	µg/L	7,100J	µg/L	6,900J	µg/L
Chromium	25	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	3	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.15J	µg/L
Copper	3	µg/L	1.1J	µg/L	1.1J	µg/L	1.1J	µg/L
Iron	1,000	µg/L	280J	µg/L	370J	µg/L	370J	µg/L
Lead	0.59	µg/L	0.3UJ	µg/L	0.3UJ	µg/L	0.3UJ	µg/L
Magnesium	-	-	2,700J	µg/L	2,700J	µg/L	2,700J	µg/L
Manganese	200	µg/L	4.4J	µg/L	23J	µg/L	36J	µg/L
Mercury	0.000012	mg/L	0.00084J	mg/L	0.000098J	mg/L	0.00046J	mg/L
Molybdenum	800	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	0.47J	µg/L	0.44J	µg/L	0.42J	µg/L
Potassium	53,000	µg/L	1,800J	µg/L	1,800J	µg/L	1,800J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	7,300J	µg/L	6,800J	µg/L	6,100J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	1J	µg/L	0.98J	µg/L	1.1J	µg/L
Zinc	39	µg/L	20UJ	µg/L	20UJ	µg/L	20UJ	µg/L
Total Dissolved Solids								
Total Dissolved Solids	-	-	100J	mg/L	77J	mg/L	78J	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	23J	mg/L	42J	mg/L	27J	mg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 06 Mid-Channel		Transect EPA 07 Left Descending		Transect EPA 08 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA06-C-BW-20140505		EDEN-EPA07-L-BW-20140505		EDEN-EPA08-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1030		1130		1250	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Total Metals								
Aluminum	2,000	µg/L	170J	µg/L	190J	µg/L	180J+	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	9.9J	µg/L	1UJ	µg/L	12J+	µg/L
Barium	220	µg/L	28J	µg/L	37J	µg/L	29J+	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.085J	mg/L	0.081J	mg/L	0.078J	mg/L
Cadmium	2	µg/L	0.1UJ	µg/L	0.1UJ	µg/L	0.18J+	µg/L
Calcium	-	-	7,300J	µg/L	7,400J	µg/L	7,200J	µg/L
Chromium	29	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	24	µg/L	0.3J	µg/L	0.81J	µg/L	0.35J	µg/L
Copper	3	µg/L	1.3J	µg/L	1.6J	µg/L	1.4J	µg/L
Iron	2,300	µg/L	550J	µg/L	950J	µg/L	610J+	µg/L
Lead	0.6	µg/L	0.45J+	µg/L	1.2J	µg/L	0.49J+	µg/L
Magnesium	-	-	2,800J	µg/L	2,900J	µg/L	2,800J	µg/L
Manganese	200	µg/L	36J	µg/L	130J	µg/L	67J+	µg/L
Mercury	0.000012	mg/L	0.00017J	mg/L	0.0022J	mg/L	0.00057J	mg/L
Molybdenum	-	-	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	0.53J	µg/L	0.59J	µg/L	0.47J	µg/L
Potassium	53,000	µg/L	1,800J	µg/L	1,900J	µg/L	1,800J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	7,600J	µg/L	7,000J	µg/L	6,200J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	1.5J	µg/L	2.1J	µg/L	1.6J	µg/L
Zinc	39	µg/L	20UJ	µg/L	3.1J	µg/L	20UJ	µg/L
Anions								
Bromide	-	-	94J	µg/L	80J	µg/L	69J	µg/L
Chloride	230	mg/L	11J	mg/L	9.8J	mg/L	8.8J	mg/L
Sulfate	-	-	5.6J	mg/L	5.6J	mg/L	5.7J	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT-WATER INTERFACE RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 06 Mid-Channel		Transect EPA 07 Left Descending		Transect EPA 08 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA06-C-BW-20140505		EDEN-EPA07-L-BW-20140505		EDEN-EPA08-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1030		1130		1250	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	25J	mg/L	26J	mg/L	26J	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	30J	mg/L	30J	mg/L	30J	mg/L
Organic Carbon, Dissolved	-	-	1.8J	mg/L	1.9J	mg/L	1.9J	mg/L
pH	6.5 - 9.0		7.32J	std	7.26J	std	7.11J	std

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.

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 09 Left Descending		Transect EPA 10 Left Descending		Transect EPA 11 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA09-L-BW-20140505		EDEN-EPA10-L-BW-20140505		EDEN-EPA11-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1143		1240	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Dissolved metals								
Aluminum	87	µg/L	100J	µg/L	670J	µg/L	92J	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	0.94J+	µg/L	1UJ	µg/L	0.4J+	µg/L
Barium	220	µg/L	23J	µg/L	28J	µg/L	25J	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.071J	mg/L	0.1UJ	mg/L	0.07J	mg/L
Cadmium	0.1	µg/L	0.1UJ	µg/L	0.17J+	µg/L	0.1UJ	µg/L
Calcium	-	-	7,100J	µg/L	4,800J	µg/L	6,900J	µg/L
Chromium	25	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	3	µg/L	0.4UJ	µg/L	0.16J	µg/L	0.4UJ	µg/L
Copper	3	µg/L	1.2J	µg/L	1.4J	µg/L	0.9J	µg/L
Iron	1,000	µg/L	280J	µg/L	1,100J	µg/L	290J	µg/L
Lead	0.59	µg/L	0.3UJ	µg/L	0.43J+	µg/L	0.3UJ	µg/L
Magnesium	-	-	2,700J	µg/L	2,000J	µg/L	2,700J	µg/L
Manganese	200	µg/L	3J	µg/L	21J	µg/L	11J	µg/L
Mercury	0.000012	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L
Molybdenum	800	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	0.4J	µg/L	0.81J	µg/L	0.5J	µg/L
Potassium	53,000	µg/L	1,800J	µg/L	2,000J	µg/L	1,800J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	6,200J	µg/L	4,400J	µg/L	6,300J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	1.1J	µg/L	1.9J	µg/L	1.2J	µg/L
Zinc	39	µg/L	20UJ	µg/L	20UJ	µg/L	20UJ	µg/L
Total Dissolved Solids								
Total Dissolved Solids	-	-	73J	mg/L	74J	mg/L	73J	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	490J	mg/L	26J	mg/L	59J	mg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT-WATER INTERFACE RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 09 Left Descending		Transect EPA 10 Left Descending		Transect EPA 11 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA09-L-BW-20140505		EDEN-EPA10-L-BW-20140505		EDEN-EPA11-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1143		1240	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Total Metals								
Aluminum	2,000	µg/L	290J+	µg/L	270J+	µg/L	180J+	µg/L
Antimony	5.6	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Arsenic	10	µg/L	1UJ	µg/L	1.3J+	µg/L	0.83J+	µg/L
Barium	220	µg/L	40J+	µg/L	36J+	µg/L	33J+	µg/L
Beryllium	0.66	µg/L	0.4UJ	µg/L	0.4UJ	µg/L	0.4UJ	µg/L
Boron	0.36	mg/L	0.073J	mg/L	0.1UJ	mg/L	0.075J	mg/L
Cadmium	2	µg/L	0.1UJ	µg/L	0.1UJ	µg/L	0.1UJ	µg/L
Calcium	-	-	7,500J	µg/L	5,100J	µg/L	7,300J	µg/L
Chromium	29	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Cobalt	24	µg/L	1J	µg/L	0.52J	µg/L	0.58J	µg/L
Copper	3	µg/L	2J	µg/L	1.4J	µg/L	1.5J	µg/L
Iron	2,300	µg/L	1,100J+	µg/L	1,100J+	µg/L	690J+	µg/L
Lead	0.6	µg/L	1.6J	µg/L	0.85J+	µg/L	0.83J+	µg/L
Magnesium	-	-	2,900J	µg/L	2,100J	µg/L	2,900J	µg/L
Manganese	200	µg/L	120J+	µg/L	140J+	µg/L	90J+	µg/L
Mercury	0.000012	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L	0.0002UJ	mg/L
Molybdenum	-	-	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Nickel	17	µg/L	0.8J	µg/L	0.56J	µg/L	0.78J	µg/L
Potassium	53,000	µg/L	1,900J	µg/L	2,000J	µg/L	1,900J	µg/L
Selenium	5	µg/L	2UJ	µg/L	2UJ	µg/L	2UJ	µg/L
Silver	0.06	µg/L	1UJ	µg/L	1UJ	µg/L	1UJ	µg/L
Sodium	680,000	µg/L	6,300J	µg/L	4,500J	µg/L	6,600J	µg/L
Thallium	0.24	µg/L	0.2UJ	µg/L	0.2UJ	µg/L	0.2UJ	µg/L
Vanadium	27	µg/L	2.6J	µg/L	1.7J	µg/L	2J	µg/L
Zinc	39	µg/L	5J	µg/L	20UJ	µg/L	20UJ	µg/L
Anions								
Bromide	-	-	71J	µg/L	18J	µg/L	70J	µg/L
Chloride	230	mg/L	8.9J	mg/L	3.4J	mg/L	8.9J	mg/L
Sulfate	-	-	5.8J	mg/L	4.2J	mg/L	5.6J	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT-WATER INTERFACE RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Transect EPA 09 Left Descending		Transect EPA 10 Left Descending		Transect EPA 11 Right Descending	
Sample Information								
Sample ID	-		EDEN-EPA09-L-BW-20140505		EDEN-EPA10-L-BW-20140505		EDEN-EPA11-R-BW-20140505	
Date	-		05/05/2014		05/05/2014		05/05/2014	
Time	-		1015		1143		1240	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment-Water Interface		Sediment-Water Interface		Sediment-Water Interface	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	25J	mg/L	17J	mg/L	23J	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	31J	mg/L	21J	mg/L	30J	mg/L
Organic Carbon, Dissolved	-	-	1.9J	mg/L	3.8J	mg/L	1.8J	mg/L
pH	6.5 - 9.0		7.3J	std	7.23J	std	7.21J	std

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

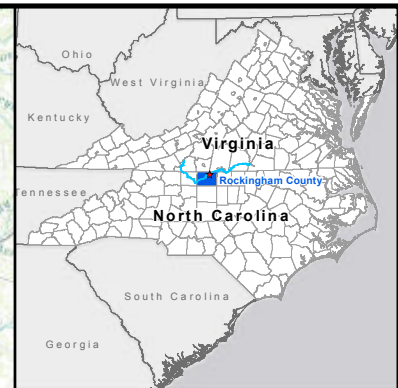
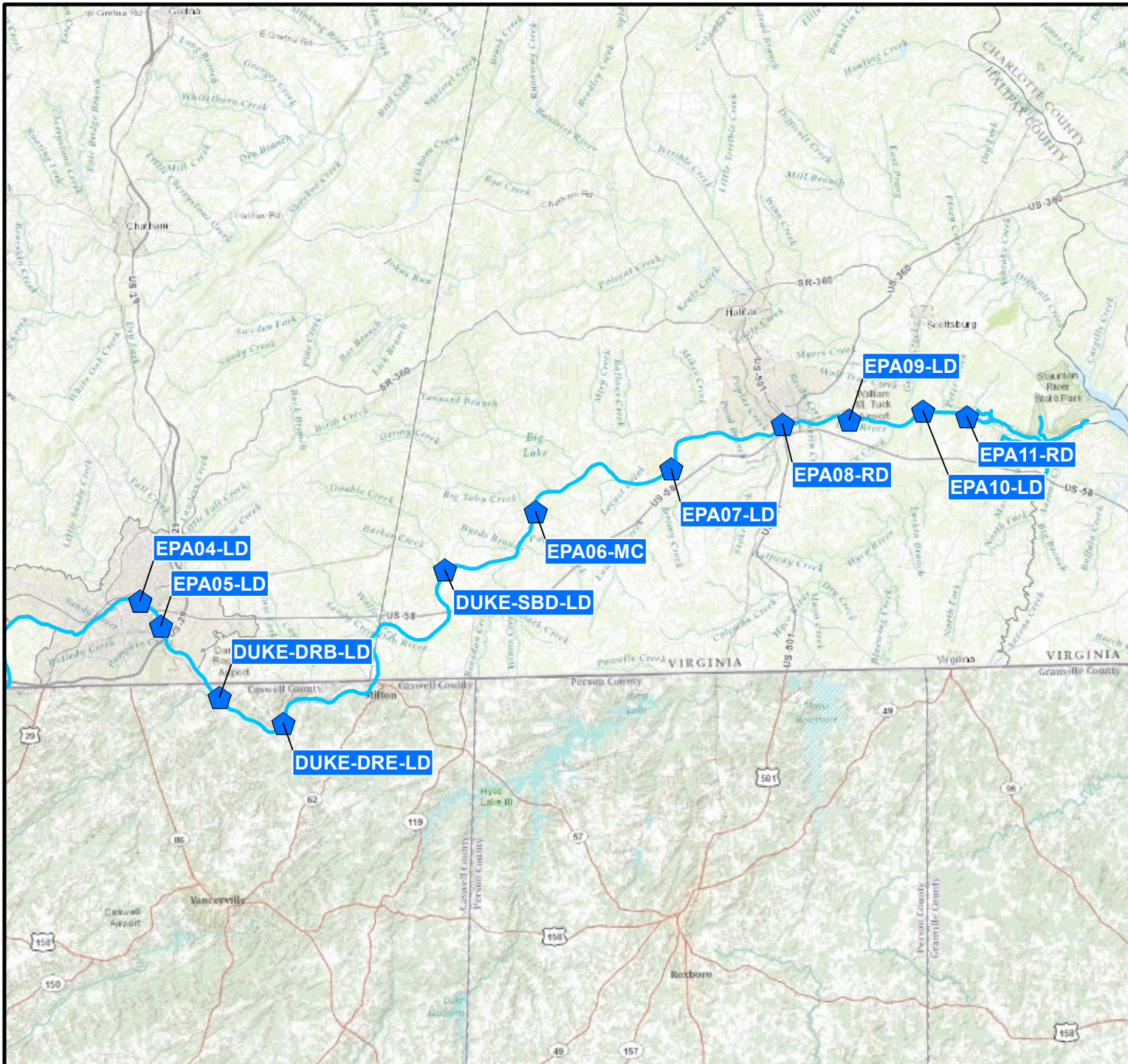
J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

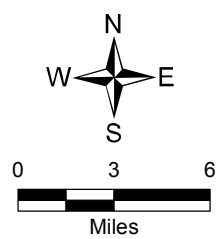
std standard

U Analyte was not detected at the listed reporting limit.



Legend

- ★ Approximate Spill Location
- ⬠ Sediment-Water Interface Sample Location
- Dan River



Map Source: ArcGIS Online World Map Topo, 2014

Sediment-Water Interface Sample Locations
May 5, 2014

