

DAN RIVER COAL ASH SPILL



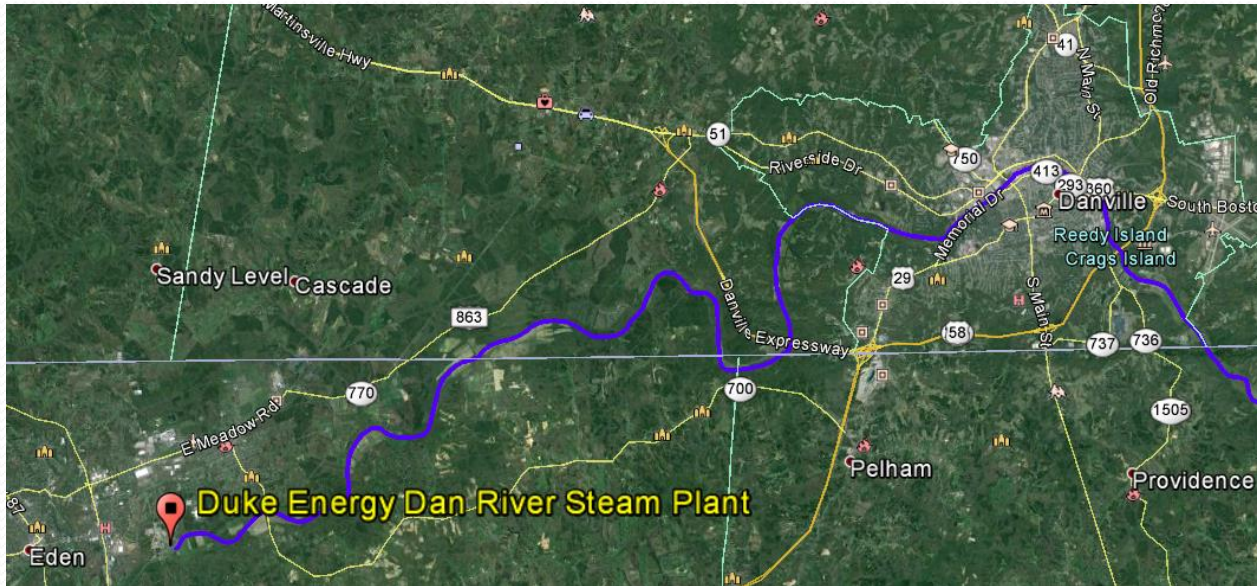
VA Roanoke River Basin Advisory Committee

April 21, 2014

John Kennedy, Office of Ecology & Infrastructure

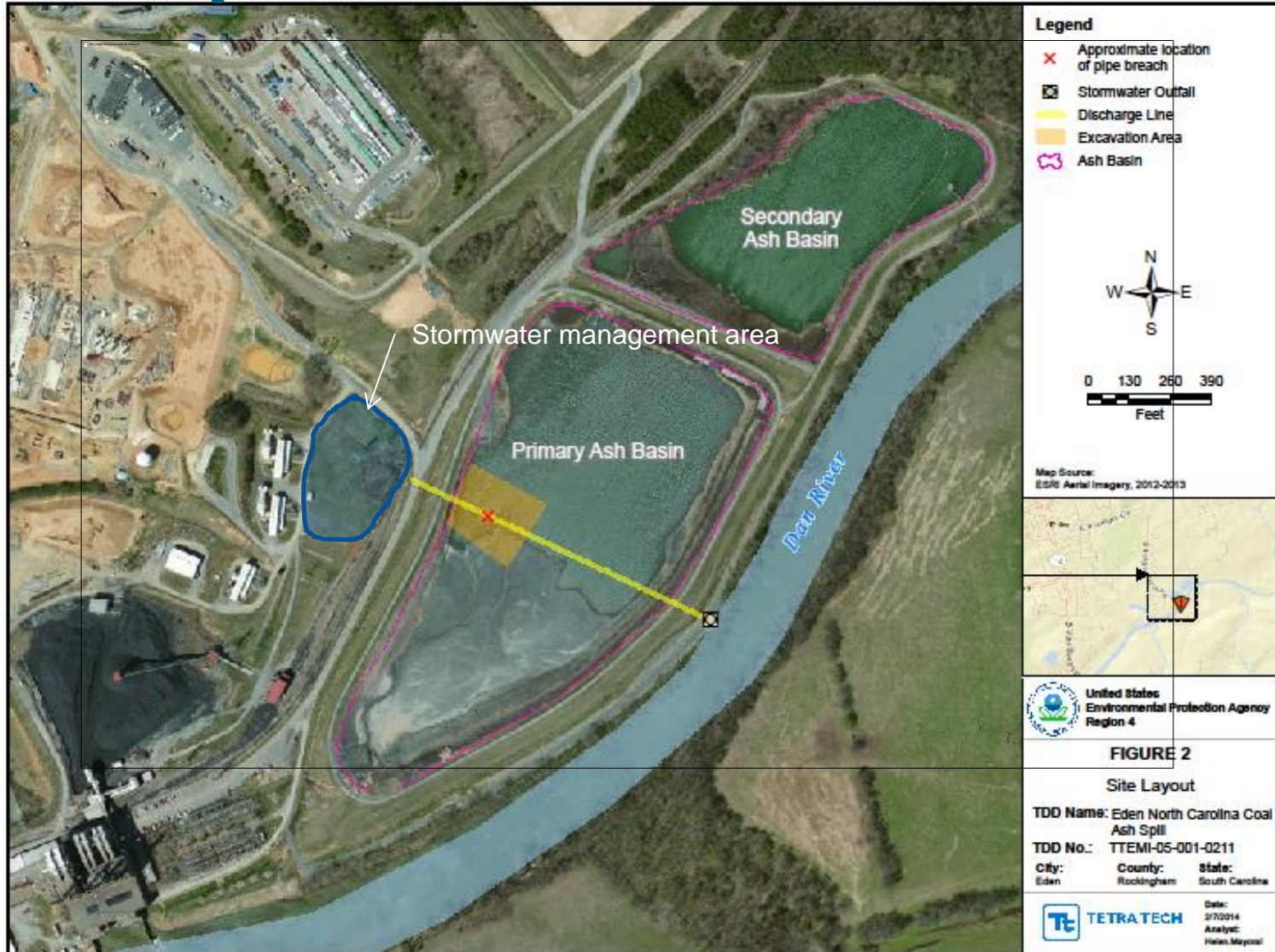


Background:

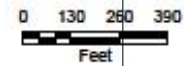
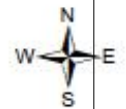


- Feb. 2, 2014: coal ash and contaminated water spilled into Dan River from Duke Energy site near Eden, NC.
- Estimated 39,000 tons of coal ash entered river.
- On Scene Coordinators on site by Feb. 4th: EPA, North Carolina, DEQ, U.S. Fish and Wildlife Service and Duke Energy.

Site Map:



- Legend**
- X Approximate location of pipe breach
 - X Stormwater Outfall
 - Discharge Line
 - Excavation Area
 - Ash Basin



Map Source:
ESRI Aerial Imagery, 2012-2013



United States
Environmental Protection Agency
Region 4

FIGURE 2
Site Layout

TDD Name: Eden North Carolina Coal Ash Spill
TDD No.: TTEMI-05-001-0211
City: Eden **County:** Rockingham **State:** South Carolina

TETRA TECH
 Date: 3/7/2014
 Analyst: Helen Mayoral

What is Coal Ash:

- Residue generated from burning coal; generally stored at power plants or placed in landfills.
- Ash has large variety of constituents – mostly silicon oxide, iron oxide, and aluminum oxide, with trace amounts of arsenic, selenium, mercury, boron, thallium, cadmium, chlorides, bromine, magnesium, chromium, copper, nickel, and other metals.

Emergency Response Actions:

- Immediately began river water monitoring at drinking water intakes.
- All drinking water has met standards; monitoring continues.
- Saturday, 2/8 – Duke plugged damaged 48” storm water pipe.
- Friday, 2/21 - second, 36” pipe discharging arsenic-contaminated groundwater was plugged.
- Water quality, sediment and fish monitoring ongoing by DEQ, North Carolina, and EPA contractor.



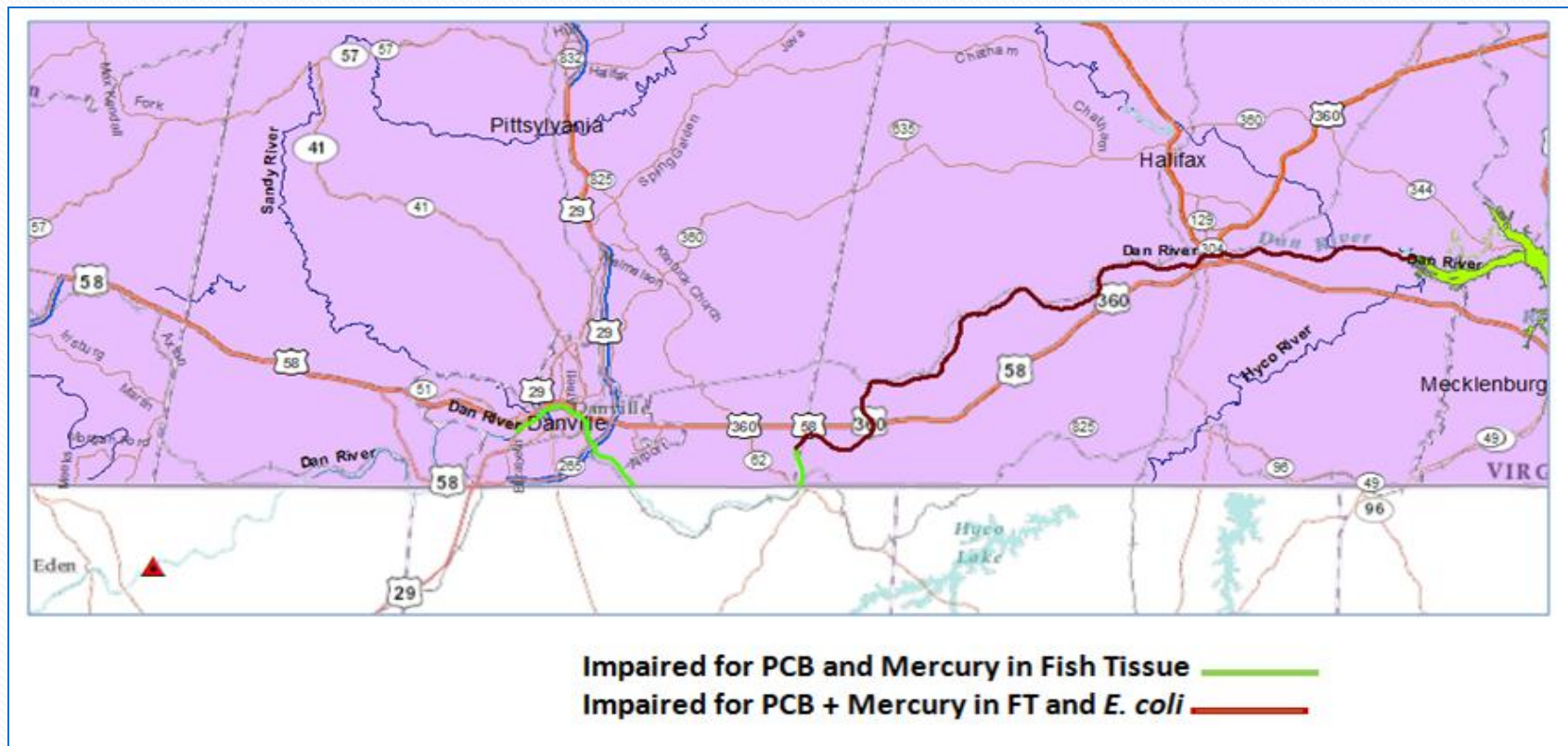
Emergency Response Actions (cont):



- Crews recovered coal ash deposit just below discharge.
- Ash recovery at two additional sites planned:
 - west of Schoolfield Dam
 - near Towns Creek, downstream of Eden, NC
- VA Health Dept. posted signs along Dan River advising limited contact with coal ash; adverse health effects not likely.

Fish Consumption Advisory:

- VA Health Dept. fish consumption advisory exists for Dan River, due to PCBs and mercury from historical activities.



Environmental Assessments:

- 2/11 – VADEQ collected water and sediment samples at 4 sites from state line to halfway between Danville and South Boston.
- Samples analyzed for metals:
 - Water sample concentrations did not exceed VA Water Quality Standards.
 - No sediment levels above freshwater screening values.
- Preliminary review of all other Virginia water quality data collected by EPA contractor shows no exceedances of VA Water Quality Standards.



Environmental Assessments (cont.):

- 2/20 – fish collected upstream of Schoolfield Dam.
- 25 fish tissue samples analyzed for 23 metals:
 - Arsenic level not elevated; per VA Health Dept., no reason found to change current advisory.
 - Mercury concentration below VA Health Dept. level of concern.
 - Levels of other 21 metals either:
 - Below detection limit, or
 - Screening value not available
- Too soon for fish to take up recently spilled coal ash metals.



Looking Ahead:

- Summarize all existing DEQ water quality data for area.
- Await NC DENR fish tissue results.
- Technical Workgroup has drafted coal ash survey plan; under review.
- Duke Energy secured permits to allow ash removal from the river.
- Long-Term Environmental Impact Assessment:
 - Develop cooperative state/federal monitoring plan; assess any long-term impacts to fish and metals bioaccumulation.
 - Will require several years monitoring to detect changes and trends.
 - Also assess any impacts to habitat, especially river bottom where sediment can affect living resources.
 - Consider need to monitor in lakes/reservoirs.

DEQ's Long-Term Monitoring Plan

4ADAN059.97/**FishTissue2** (Above Schoolfield Dam)
Monthly Metals in Water Column and Sediment

FishTissue3 (Union Street Dam)

FishTissue4 (Anglers Park)

FishTissue5 (South Boston)

FishTissue6
(Near State Park)

FishTissue8 (Clover, VA)
Control Site on Roanoke River

FishTissue7 (Clarksville Marina)

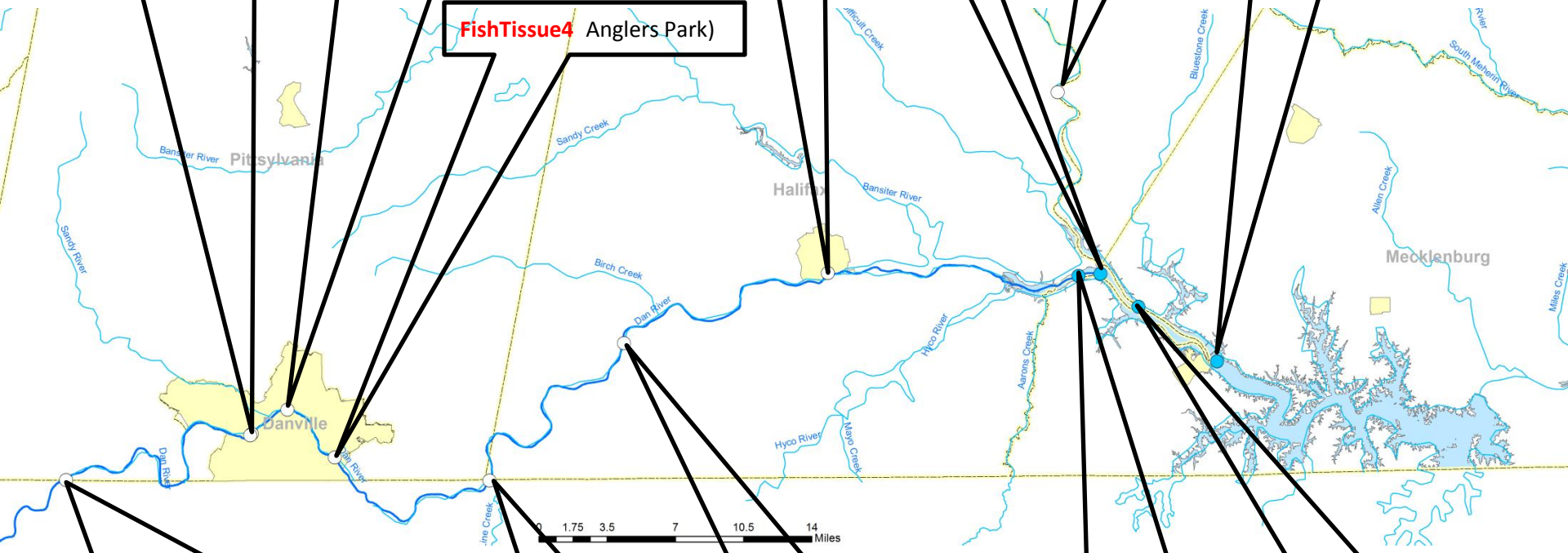
4ADAN075.22/**FishTissue1** (Rte. 880)
Monthly Metals in Water Column and Sediment
Boatable Probabilistic Site

4ADAN028.90 (Rte. 691)
Monthly Metals in Water Column and Sediment

4AROA043.14
(Lake Site April - October)
Monthly Metals in Water Column and Sediment

4ADAN042.80 (Rte. 62)
Monthly Metals in Water Column and Sediment
Boatable Probabilistic Site

4ADAN000.00 (**Lake Site April - October**)
Monthly Metals in Water Column and Sediment



Holding Duke Energy Fully Accountable:

- Enforcement action and civil damage claims being evaluated.
- DEQ working with Duke Energy on cost reimbursements for emergency response:
 - Include interested VA agencies and localities
 - DEQ “clearing house” for documentation with direct payment to localities
 - Localities and agencies retain option to take independent action
 - Separate from any enforcement or damage claims

Assessment of Virginia's Impoundments:

- Coal ash managed/regulated in VA as both a waste and a resource. Material can be beneficially reused or recycled, disposed as dry waste in nonhazardous industrial landfills, or impounded as wet waste.
- In 2013, EPA reviewed structural integrity of Virginia's coal ash impoundments; none received an unsatisfactory rating.
- EPA noted deficiencies needing attention; all have been corrected except 2:
 - Corrections scheduled to be completed next month at one.
 - Other will be closed by the end of the year.



Questions?