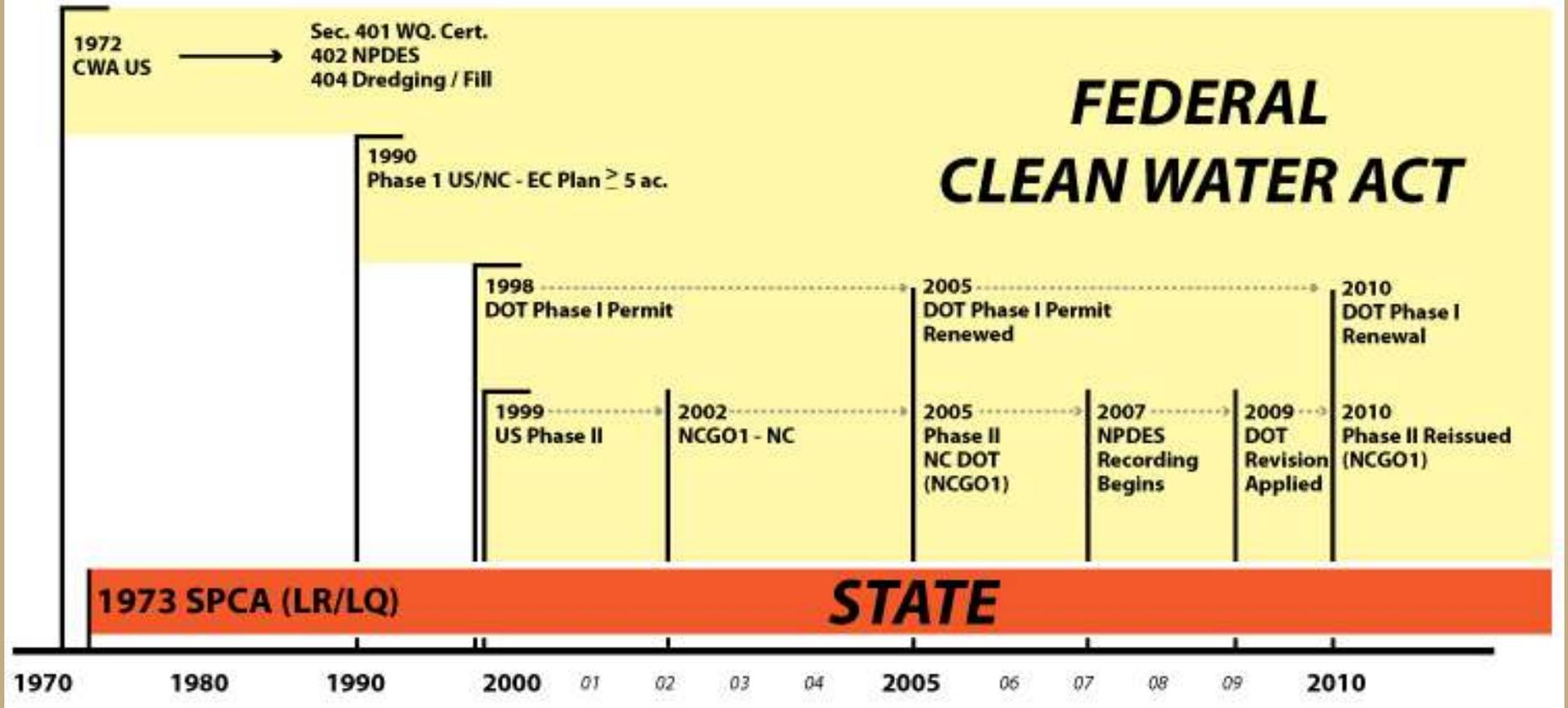


2011 CONSTRUCTION CONFERENCE

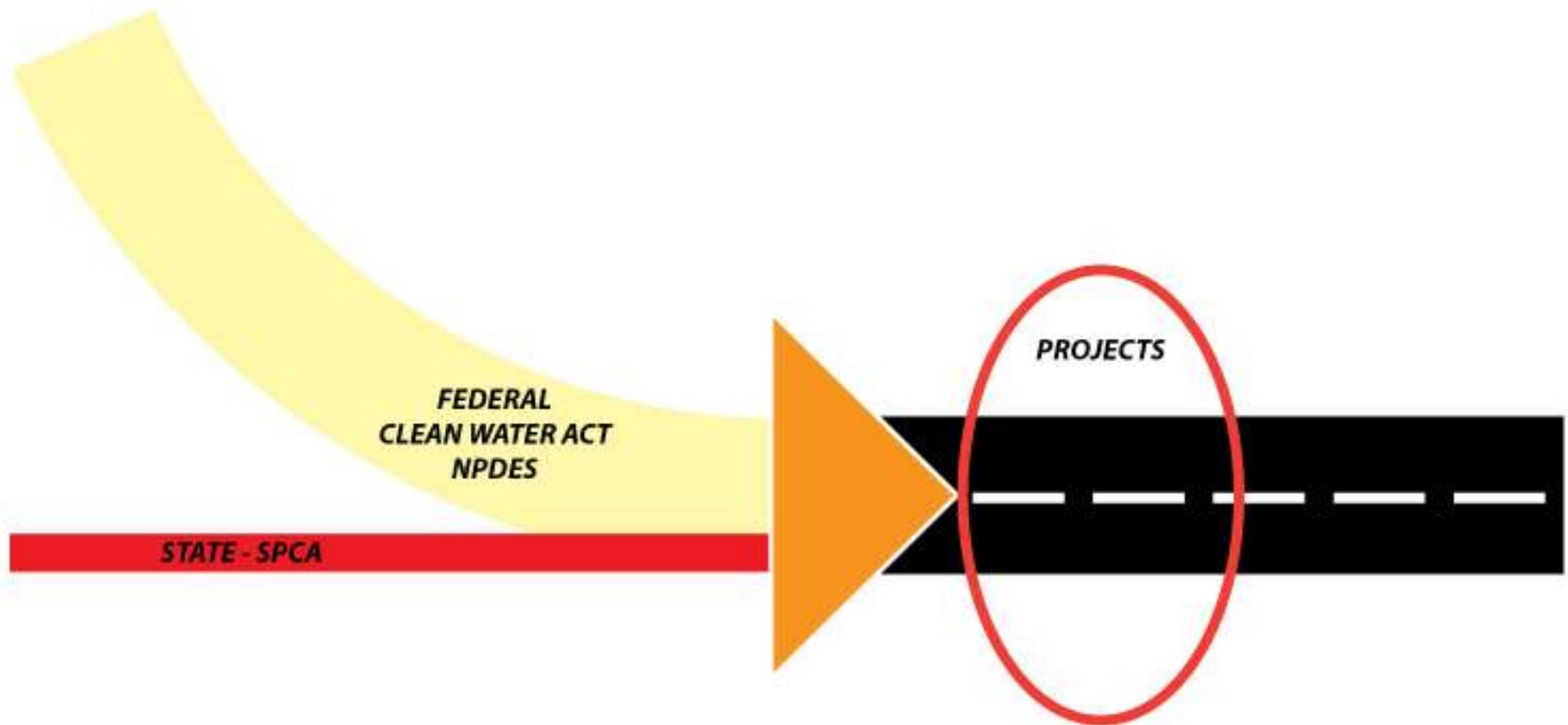


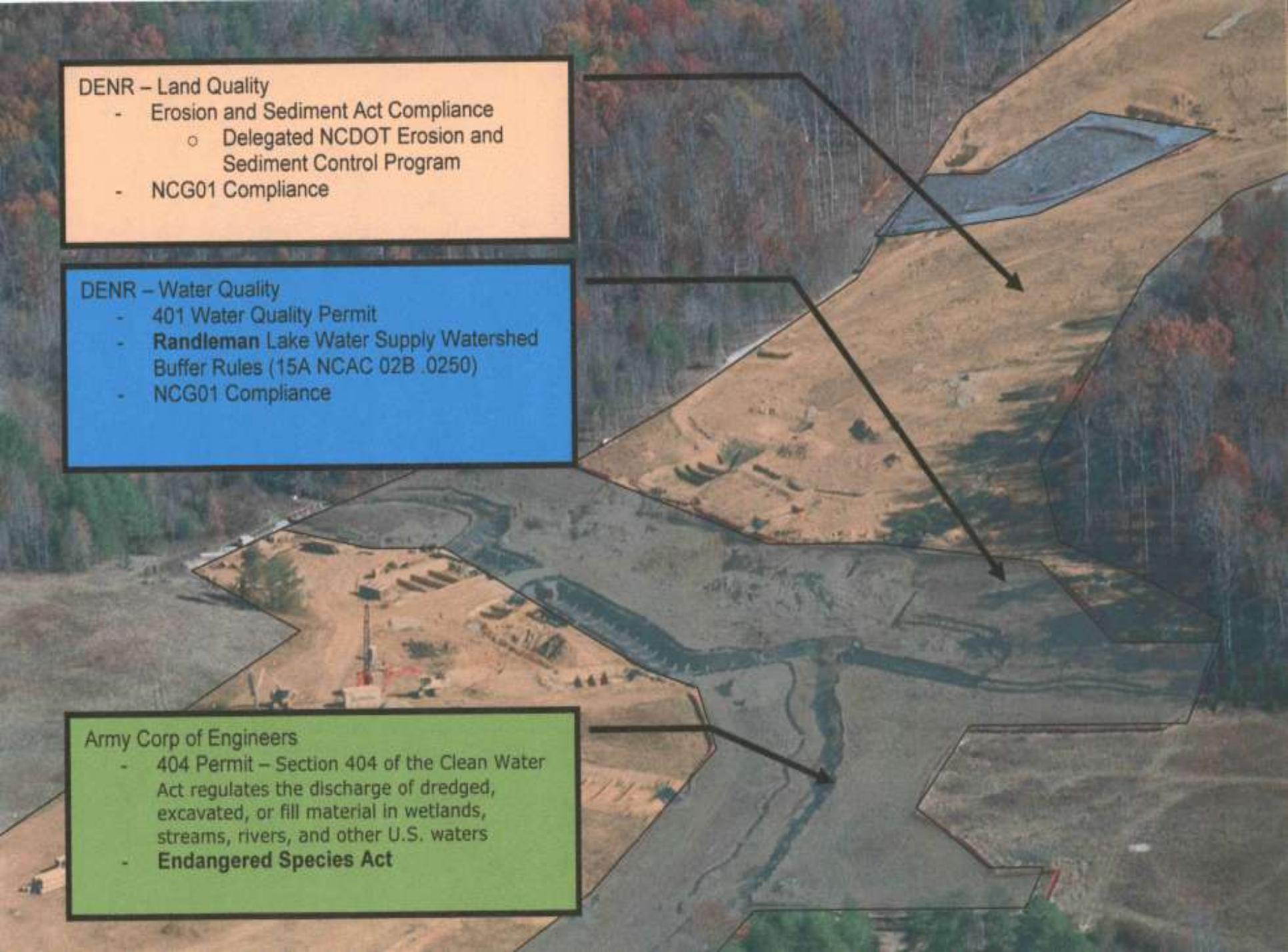
EROSION CONTROL UPDATE

Regulatory Requirements for Land Grading in N.C. (over one acre)



Where Compliance Hits the Road





DENR – Land Quality

- Erosion and Sediment Act Compliance
 - o Delegated NCDOT Erosion and Sediment Control Program
- NCG01 Compliance

DENR – Water Quality

- 401 Water Quality Permit
- **Randleman Lake Water Supply Watershed Buffer Rules (15A NCAC 02B .0250)**
- NCG01 Compliance

Army Corp of Engineers

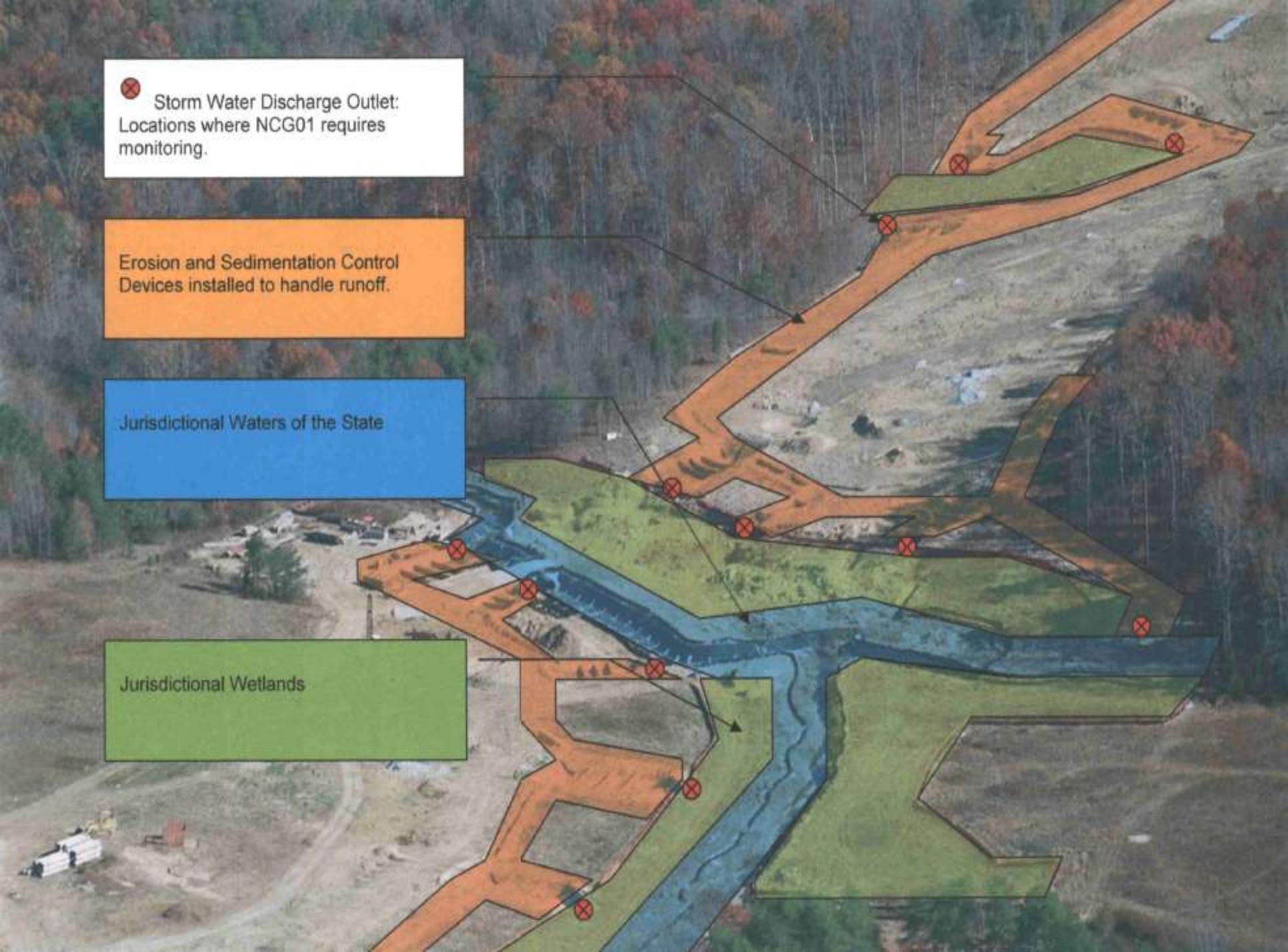
- 404 Permit – Section 404 of the Clean Water Act regulates the discharge of dredged, excavated, or fill material in wetlands, streams, rivers, and other U.S. waters
- **Endangered Species Act**

⊗ Storm Water Discharge Outlet:
Locations where NCG01 requires
monitoring.

Erosion and Sedimentation Control
Devices installed to handle runoff.

Jurisdictional Waters of the State

Jurisdictional Wetlands



NPDES Form 2007

FOR CONSTRUCTION
ACTIVITIES
SPPFORM30

North Carolina Department of Transportation
Stormwater Inspection Form
Permit NCG010000



Project No: _____ Division: _____	Indicate in Water Classification if it is: C-Standard Trout-Trout Waters HQW-High Quality Water 303d-Stream that has been identified as being impaired due to sediment or turbidity
County: _____ Project Type: _____	
Location: _____ Water Classification: _____	

Date: _____ Rainfall: No <input type="checkbox"/> Yes <input type="checkbox"/> amt. _____ in Evaluator: _____	Visible Sediment leaving the project right of way and into jurisdictional areas: Y/N _____ Are there any signs of fuels, lubricants, coolants, or other contaminants discharged on the ground or surface waters? Y/N _____	If the answer is YES, indicate locations and corrective actions taken below.
Inspect all erosion and sediment control measures on projects that are one acre or greater at least once every 7 calendar days (at least twice every 7 calendar days for facilities discharging to 303(d) listed waters impaired for turbidity or sediment) and within 24 hours after any storm event of greater than 0.5 inch of rain per 24 hour period.	Comments and Corrective Actions:	
_____ _____ _____		

Date: _____ Rainfall: No <input type="checkbox"/> Yes <input type="checkbox"/> amt. _____ in Evaluator: _____	Visible Sediment leaving the project right of way and into jurisdictional areas: Y/N _____ Are there any signs of fuels, lubricants, coolants, or other contaminants discharged on the ground or surface waters? Y/N _____	If the answer is YES, indicate locations and corrective actions taken below.
Inspect all erosion and sediment control measures on projects that are one acre or greater at least once every 7 calendar days (at least twice every 7 calendar days for facilities discharging to 303(d) listed waters impaired for turbidity or sediment) and within 24 hours after any storm event of greater than 0.5 inch of rain per 24 hour period.	Comments and Corrective Actions:	
_____ _____ _____		

Date: _____ Rainfall: No <input type="checkbox"/> Yes <input type="checkbox"/> amt. _____ in Evaluator: _____	Visible Sediment leaving the project right of way and into jurisdictional areas: Y/N _____ Are there any signs of fuels, lubricants, coolants, or other contaminants discharged on the ground or surface waters? Y/N _____	If the answer is YES, indicate locations and corrective actions taken below.
Inspect all erosion and sediment control measures on projects that are one acre or greater at least once every 7 calendar days (at least twice every 7 calendar days for facilities discharging to 303(d) listed waters impaired for turbidity or sediment) and within 24 hours after any storm event of greater than 0.5 inch of rain per 24 hour period.	Comments and Corrective Actions:	
_____ _____ _____		

Date: _____ Rainfall: No <input type="checkbox"/> Yes <input type="checkbox"/> amt. _____ in Evaluator: _____	Visible Sediment leaving the project right of way and into jurisdictional areas: Y/N _____ Are there any signs of fuels, lubricants, coolants, or other contaminants discharged on the ground or surface waters? Y/N _____	If the answer is YES, indicate locations and corrective actions taken below.
Inspect all erosion and sediment control measures on projects that are one acre or greater at least once every 7 calendar days (at least twice every 7 calendar days for facilities discharging to 303(d) listed waters impaired for turbidity or sediment) and within 24 hours after any storm event of greater than 0.5 inch of rain per 24 hour period.	Comments and Corrective Actions:	
_____ _____ _____		

Is the entire project vegetated and permanently stabilized? Yes No
 Final Inspection Date: _____ Evaluator: _____

NPDES Form 2010

07/2010 SPPPF0RM30

**INSPECTION RECORD FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000
 SELF-INSPECTION RECORD FOR LAND DISTURBING ACTIVITIES PER § 113A-54.1
 RESPONSE FOR EROSION CONTROL FORM 1675**

PROJECT LOCATION _____ **TIP #** _____
LEVEL II SUPERVISOR _____ **COUNTY** _____
CONTRACTOR _____

All erosion and sedimentation control measures and stormwater discharge outfalls must be inspected at least once (twice, if on 303(d) listed stream impaired by turbidity, see http://portal.ncdenr.org/c/document_library/get_file?uuid=d8cf0cc2-6d8d-47e8-96e6-f769fca0cca4&groupId=38364) per seven calendar days and within 24 hours of a rainfall of 0.5 inch per 24 hour period. Permittee must keep a record of inspections. Attach Multi Precipitation Estimator (MIPE) rainfall data for weekly period. If using on site rain gage, complete daily rainfall measurement.

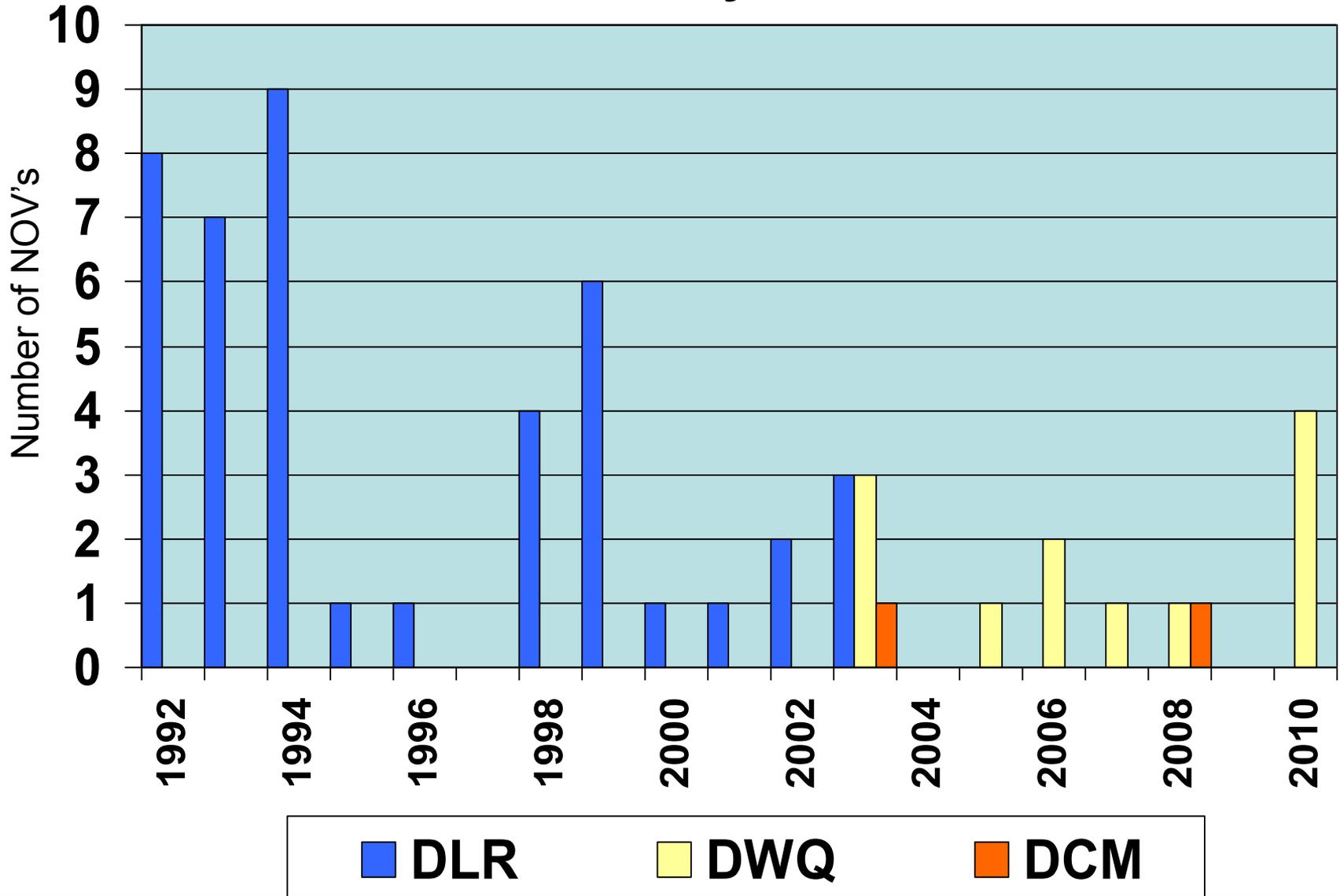
Day	Date	Rain Amt (in)	Notes
M			
T			
W			
Th			
F			
Sat			
Sun			

Phase of Grading (Place a check in the box of the current project phase)	
Installation of perimeter erosion and sediment control measures	<input type="checkbox"/>
Clearing and grubbing of existing ground cover	<input type="checkbox"/>
Completion of any phase of grading of slopes or fills	<input type="checkbox"/>
Installation of storm drainage facilities	<input type="checkbox"/>
Completion of construction or development	<input type="checkbox"/>
Establishment of permanent ground cover sufficient to restrain erosion	<input type="checkbox"/>

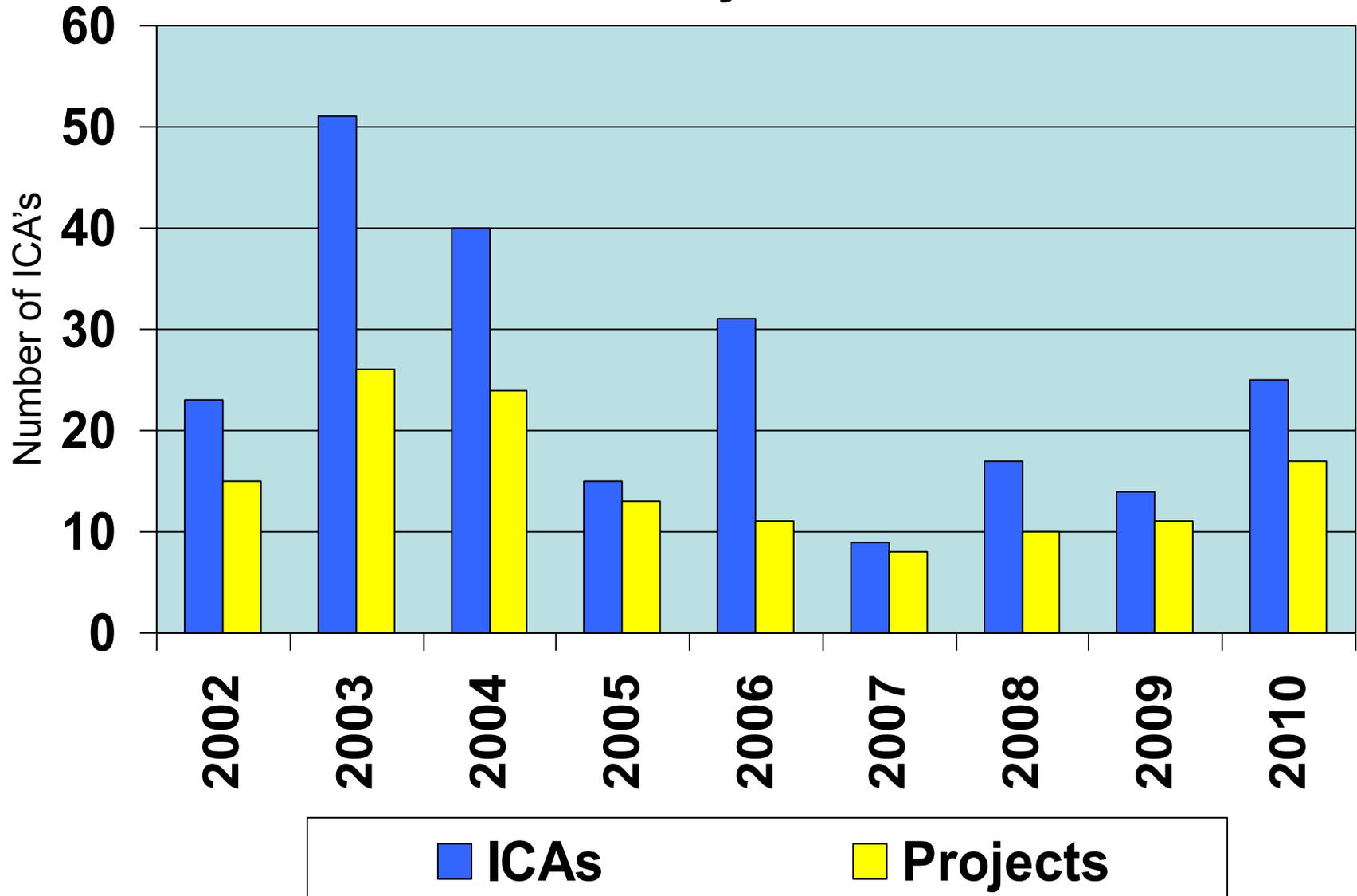
Has all land disturbing activity been completed? (Y/N) _____
 Has the final permanent ground cover been completed and established? (Y/N) _____

By this signature, I certify (in accordance with Part II Section B, 10 of the NCG010000 permit) that this report is accurate and complete to the best of my knowledge:	
_____	_____
Cert. Level II Supervisor	Cert. #
_____	_____
NCDOT Cert. Level II Representative	Cert. #

NOV's By Year



ICA's By Year



New Technology

Wattles and Polyacrylamide

- July 2008 introduced wattles/PAM on NCDOT bid-build projects
- Studies prove that Fiber Check Dams and PAM are superior to rock measures to reduce turbidity



Excelsior vs. Coir Fiber Wattle

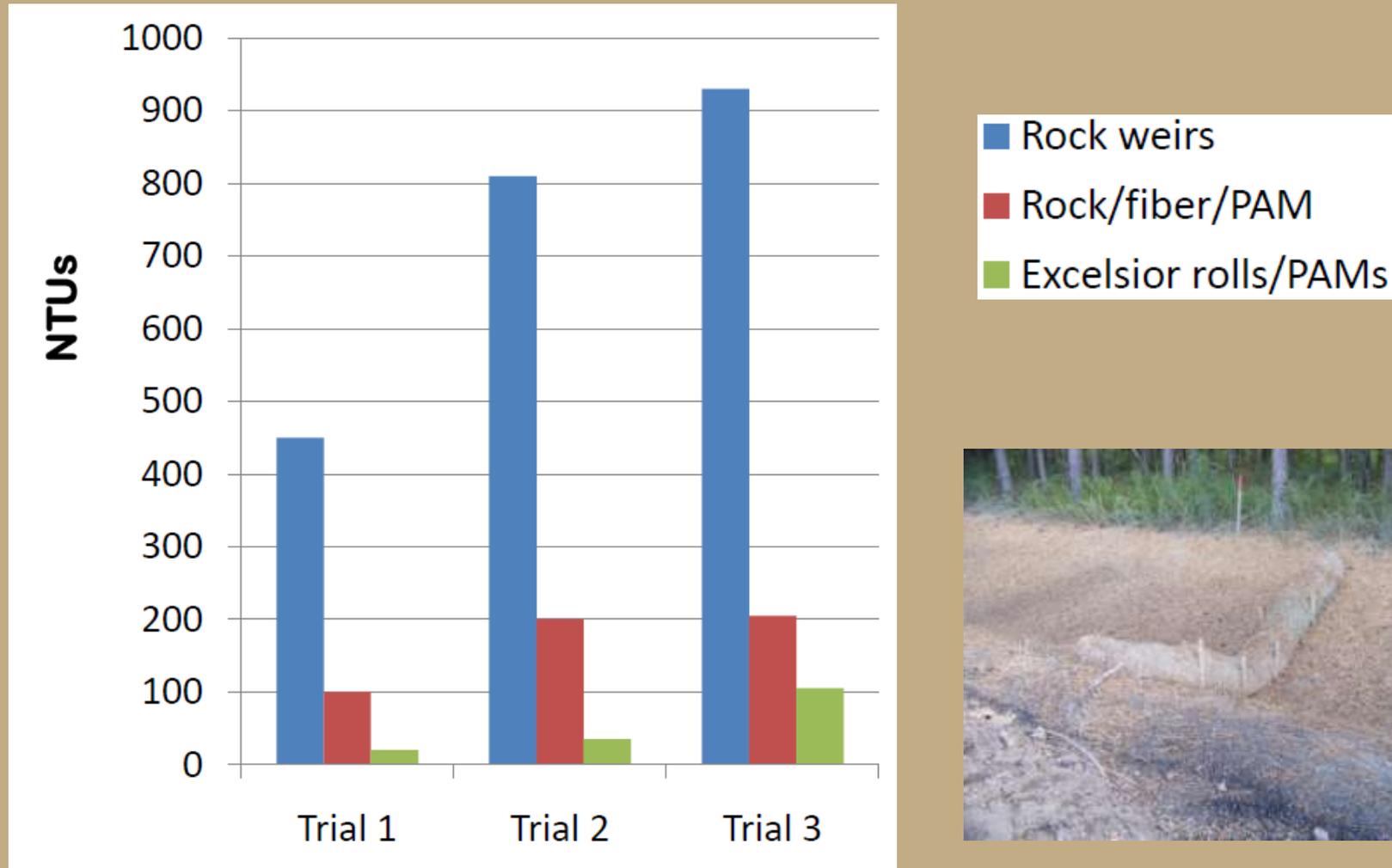
Excelsior Wattle

- Design Life: 12 – 24 months
- Average Cost: \$70 per wattle
- Placement: Projects with one year duration or less

Coir Fiber Wattle

- Design Life: less than two years
- Average Cost: \$80 per wattle
- Placement: Projects with greater than one year duration

Turbidity Reduction Traditional BMP's vs. New BMP's



Department of Soil Science NCSU

Wattle Bid Averages

- Excelsior Wattle with PAM & matting - \$100
- Coir Fiber Wattle with PAM & matting - \$110
- Silt Check Type A - \$270
- Silt Check B - \$75



US 19 Wattle Cost Comparison

	<u>Engineer Estimate</u>	<u>Contractor Bid Price</u>
• Silt Check A	\$378	\$323
• Silt Check B	\$85	\$71
• Wattle with PAM	\$28	\$81



Infiltration Basin

- Utilized in mountains and coastal plain
- Basin must drain in three days or less
- Cost \$1000 less than skimmer basin



Infiltration Basin Implementation



Earthen Dam with Skimmer



- Utilized throughout state
- Need large cross section and ditch grade of two percent or less
- Easier to install and remove than sediment basin
- Cheaper to construct than traditional basin

Project Profiles

Crescent Road - Lenoir County

- Staged construction and seeding of slopes
- Early installation and stabilization of perimeter EC devices



Crescent Road - Lenoir County

- Attention to detail
- DOT inspector worked thoroughly with contractor



Infiltration Basins



- Utilized permanent cross section of ditch
- Allowed for early establishment of permanent vegetation
- Do not have to rebuild typical section once device is removed

REU Overrun Strategies

- Reviewing Biannual HiCAMS Overrun Reports for all erosion control line items by division
- Adjusting quantity estimates based on biannual reports
- Quantity snapshot of overruns for current project corridors with multiple sections
- Alternative methods in the field to avoid quantity overrun

Overrun Review – Final Estimates Paid

Year	Average % Overrun of Erosion Control Line Items (10 or more Occurrences of 100% or more)
2007	740%
2008	520%
2009	509%
2010	400%

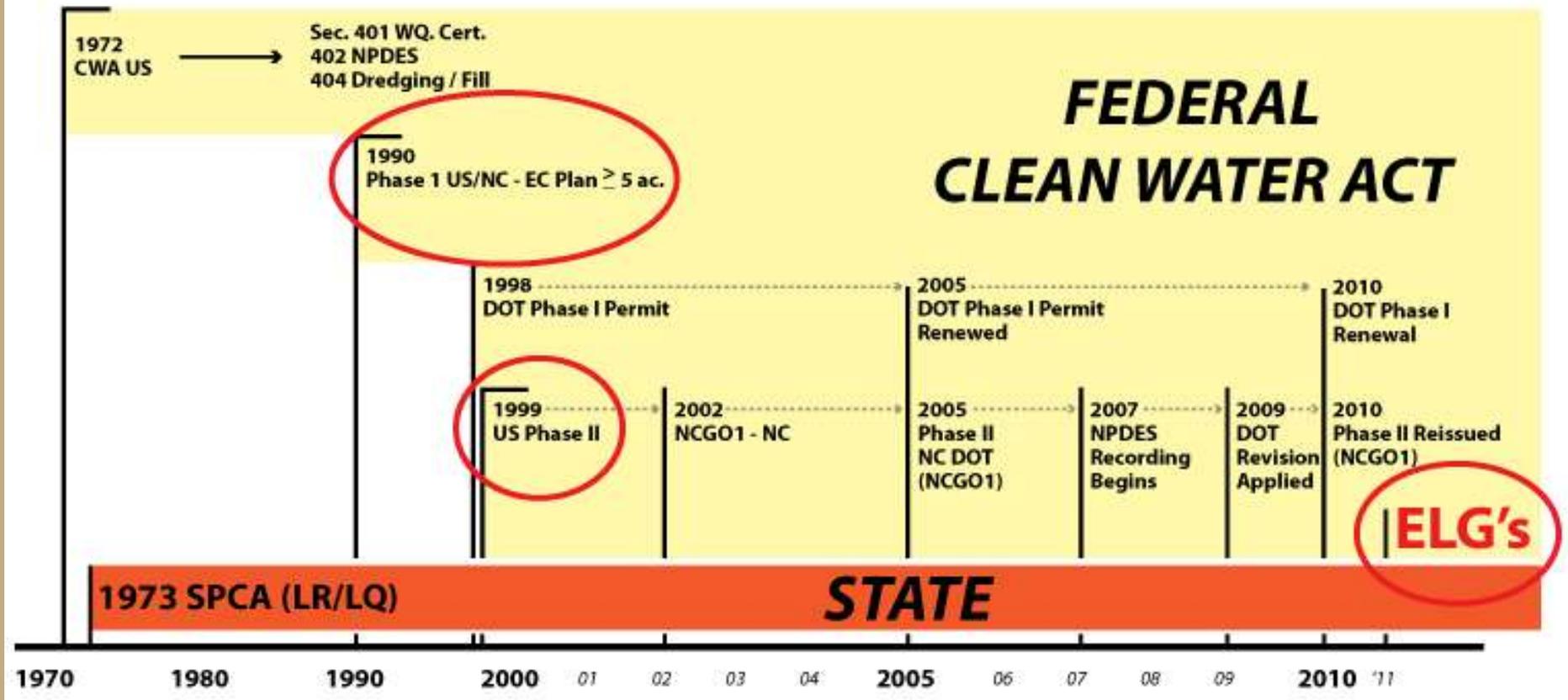
Year	No. of Erosion Control Line Items with Overruns 100% or more with 10 or more Occurrences
2007	243
2008	260
2009	222
2010	173

Average Percent Overrun*

EC Line Item	2007	2008	2009	2010
Matting for Erosion Control	1808	590	525	495
Silt Fence	289	285	328	261
Temporary Slope Drains	288	371	335	305
Seeding & Mulching	262	180	201	159
Seed for Repair Seeding	263	431	443	399
Fertilizer for Repair Seeding	315	443	441	390
Mowing	2840	328	557	-
Specialized Hand Mowing	855	2523	2092	-

* - 10 or more occurrences of 100% Overrun or more for Final Estimates Paid

Regulatory Requirements for Land Grading in N.C. (over one acre)



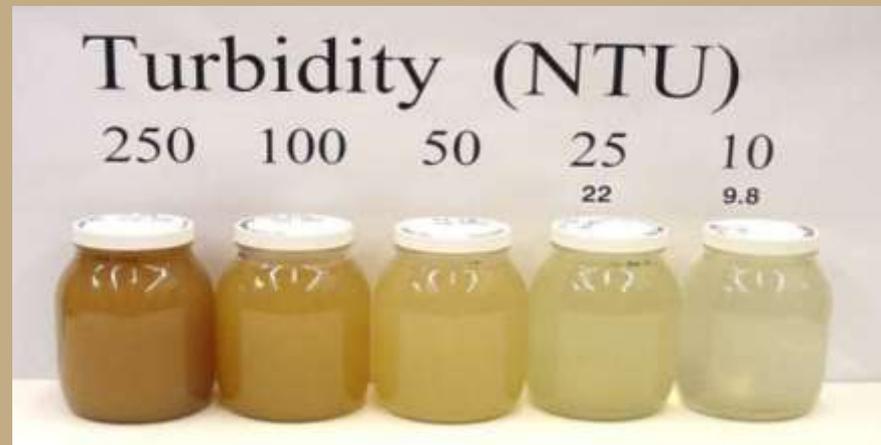
What are Effluent Limitation Guidelines?

- Technology-based standards for control of wastewater and stormwater discharges from various categories of industry
- Proposed revisions to NPDES Construction Stormwater Permit NCG01

Data Source: EPA

Construction ELG's – Two Parts

1. Numeric Limits – Turbidity runoff limit applicable to larger projects (20 ac/10 ac)
 - All discharges must be monitored
 - Daily average of 280 NTU's



Construction ELG's – Two Parts

2. Non-Numeric requirements (BMP's) applicable to all sites one acre or greater
 - 14 day ground cover requirements
 - Surface dewatering from basins (skimmers)

Data Source: EPA

Can You Ignore??

- Activity could be out of compliance with NPDES permit
- State or Federal Enforcement

Data Source: EPA

When will ELG's happen?

- Draft available for review early March
- Revisions must be complete by August 2, 2011

Data Source: EPA

2011 CONSTRUCTION CONFERENCE

An aerial photograph of a large-scale construction project. A wide, multi-lane road is under construction, cutting through a landscape of cleared earth and some remaining vegetation. In the background, there are rolling hills, a small pond, and clusters of trees with autumn foliage. The overall scene depicts a major infrastructure or development project in progress.

SIMPLIFICATION

EROSION CONTROL UPDATE