Avoidance Landfills....

Unleashing the Potential

APWA – NC Chapter
June 14, 2010

Pieter K. Scheer, P.E.
Outline

- Evolution of Landfill Siting Rules
  - “Sanitary” Landfill Rules
  - 40 CFR Part 258
  - NC Solid Waste Management Act of 2007
- Example No. 1 – Johnston County, NC
- Example No. 2 – Newton County, GA
- Example No. 3 – Perry County, AL
- Water Quality Permitting Example - High Point, NC
- Questions & Discussion
Rules,
Rules,
Rules...
RCRA (1976)

- Goals – Protect, Conserve, Reduce
- Subtitle D – Disposal of Non-Hazardous Solid Waste
  - State Solid Waste Plans
  - Sanitary Landfill Criteria
  - Closing or Upgrading of Open Dumps
“Sanitary” Landfill Rules
(NC - 15A NCAC 13B .0501 - .0510)

Siting Criteria Included:

- 100-Yr Floodplain
- Endangered/Threatened Species
- Archaeological/Historical Site
- State Park/Recreation/Scenic Area/Etc.
- Airports (5,000 ft./10,000 ft.)
- Wetlands
- 50’ to Property Lines
- 500’ to Residences/Wells
- 50’ to Streams/Rivers
New Siting Criteria Included:

- Fault Areas
- Seismic Impact Zones
- Unstable Areas
Not In My Back-Yard!!!
Regulatory Timetable

- Close by Oct. 9, 1991 = No New Requirements
- Close by Oct. 9, 1993 = Closure Requirements
- In NC – Closure of All Unlined MSWLFs by 1998
Decisions,

Decisions
avoidance landfill  

*n 1:* a landfill which is designed to stay away from conflicts with siting criteria.
Siting Criteria Include (for New “Green” Site Landfills):

- Wetlands & Perennial Streams Buffer: 200 feet
- National Wildlife Refuge Buffer: 5 Miles
- State Gameland Buffer: 1 Mile
- State Park Buffer: 2 Miles

Size Restrictions Also Added
Pre-Solid Waste Act of 2007
Post-Solid Waste Act of 2007

**Post SB 1402**

- **Active MSW Landfills**: Landfills that are currently accepting waste.
- **Former Proposed Sites and Locations**
- **S.W. 1407 Buffer**
- **Post-Solid Waste Act of 2007**

### Former Proposed MSW Landfills

<table>
<thead>
<tr>
<th>Distance to Lands</th>
<th>Distance to Parks</th>
<th>Distance to Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 miles</td>
<td>1.5 miles</td>
<td>3 miles</td>
</tr>
<tr>
<td>10 miles</td>
<td>3.5 miles</td>
<td>5 miles</td>
</tr>
<tr>
<td>15 miles</td>
<td>5 miles</td>
<td>&gt; 10 miles</td>
</tr>
</tbody>
</table>

*Note: Distances are approximate and may vary.*

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**Project Name**: Richardson Smith Gardner Engineering & Geological Services

**Map Name**: North Carolina Solid Waste Act of 2007

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**Post-Solid Waste Act of 2007**

**Map Description**: This map illustrates the potential sites for MSW landfills in North Carolina, adhering to the Post-Solid Waste Act of 2007. The map highlights various buffer zones and environmental considerations to ensure the proposed sites are ecologically sustainable. The map includes official distances from various natural features such as parks and nature reserves, ensuring regulatory compliance.
Example No. 1
Johnston County, NC Landfill
Johnston County, NC
Permitting Issues

- Wetlands
- Streams
- Stream Buffers
- Piggyback Landfills
Johnston County, NC
Technical Issues

- Piggybacking of Unlined Units
  - Double Liner System
  - Evaluation of Liner System Strain
  - Interface Shear Strength Requirements
  - Landfill Gas (LFG) Concerns
Johnston County, NC
Double Liner System
Piggyback Landfills: LFG Concerns

Passive LFG Collection Trenches @ 100’ Spacing

LFG Collection Trench
Johnston County, NC
Phase 4A MSW Piggyback Unit

Cell 1 - 2002

Cell 2 - 2005

Cell 3 - 2009
Example No. 2
Newton County, GA
Lower River Road Landfill
Newton County, GA
Permitting & Technical Issues

Permitting Issues:
- Floodplain Modification
- Wetlands & Streams
- Waste Removal & Relocation

Technical Issues:
- Redesign of Site 2 – Phase 3
  - Compatible with Long-Term Plan
- Waste Removal and Relocation
Newton County, GA
Waste Removal & Relocation – Key Aspects

Sequencing:

- In Harmony with Landfill Development
  - Manpower/Equipment Concerns
  - Time to Remove and Verify Cleanup
- Keep Existing Buildings Operational
Newton County, GA
Waste Removal & Relocation Plan

- Health & Safety
- Community Relations
- Environmental Controls & Monitoring
- Site Preparation Activities
- Excavation
- Material Segregation
- Redisposal Procedures
- Quality Assurance
- Testing to Confirm Clean Subgrade
Example No. 3
Perry County (AL) Associates Landfill
Perry County, AL
Permitting Issues

- Wetlands
- Streams
- Cultural Resources
Example Water Quality
Permitting Process
City of High Point, NC
Kersey Valley Landfill
Options for Solid Waste Disposal

- Option 1 – Continued Operation of Landfill
- Option 2 – Site a New Landfill
- Option 3 – Transfer of Waste
High Point, NC
Water Supply Watershed Rules

- Practical Difficulties/ Unnecessary Hardships Prevent Compliance
- Variance in Harmony with Purpose & Intent of Rules/Preserves Spirit
- Public Safety & Welfare Assured/Water Quality Protected/Justice Done
Conclusions

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Questions & Discussion
Thank You!

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