

Development of On-Site Wastewater Management in North Carolina-A BRIEF HISTORY

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Water/Wastewater Conference**

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On-Site Wastewater Management- The Early Years (pre 1973)

Rural Sanitation Prior to Electrical Power

- Privy Program (Rockefeller Foundation, CCC)

Finally, private well water under pressure!

- Straight Pipes to Surface waters or back “Forty”
- Development of Septic Systems (USDA, VA, FHA)

Rural to Suburban-Problems Arise!

Why a “New” OSWM Program

- 📄 **Preception that Septic Systems were impacting Groundwater, Streams, & Shellfishing Waters**
- 📄 **“Ground Absorption Sewage Disposal System Act of 1973”**
- 📄 **Local Health Departments Enforcing ~100 Different Regulations**
- 📄 **Need for 1 Comprehensive Set of Rules**

History-OSWM (Outline)

Laying the Foundation

- Early Studies, Research, & Demonstration
- Legislation & Regulation

Education & Training

- Authorization, Licensing, & Certification
- Cooperative Support

Continued Research & Development

Life Cycle Management of OSWS

Early US Studies & Documents

- 📄 **“Studies on Household Sewage Disposal Systems”** Parts I, II, & III (USPHS 1946-1951)
- 📄 **“Manual of Septic Tank Practice”** (USPHS # 526, 1957)
- 📄 **“Small Scale Waste Management Project”** (USEPA-600/2-78-173, 1978)
- 📄 **“Design Manual - Onsite Wastewater Treatment & Disposal Systems”** (USEPA, Oct. 1980)

Early NC Studies, Research & Demonstration Projects

- 📄 **“Individual Wastewater Project-Task A-F & Final Reports”** 208 Water Quality Management Program, Triangle J Council of Gov., 1978-1980, RTP, NC
- 📄 **“Low Pressure Pipe Distribution Systems- Design & Installation”** TJCOG, 1979
- 📄 **“Demonstration & Evaluation of Alternative Treatment & Disposal Methods”** R. L. Uebler, TJCOG, 1980

Early NC Studies, Research & Demonstration Projects (cont.)

☞ **“Movement & Fate of Septic Tank Effluent in Soils of NC Coastal Plain”** Oct. 1981, C. G. Cogger, B. L. Carlile, M. D. Sobsey, J. Scandura, & S. J. Steinbeck; NCSU, UNC-CH, & DHS.

☞ **“The NC Septage Study”** July, 1982; S. Grayson, F. Olive, S. Steinbeck; Sanitation Branch, NC Division of Health Services

☞ **“Joint Wastewater Treatment Management Project-Madison Co. NC; 1980, Land of Sky Regional Council**

First On-Site Wastewater Management Conference in NC

“1982 Southeastern On-Site Sewage Treatment Conference”

- September 28-30, 1982**
- NCSU McKimmon Center**
- Sponsors**
 - Sanitation Branch, Division of Health Services**
 - Soil Science Dept., CES, NCSU**
- Co-chairmen**
 - Craig G. Cogger, Soil Science, NCSU**
 - Steve J. Steinbeck, Sanitation Branch, DHS**

Some Early Contributors-OSWM

- **David Flarety; Secretary, NC DHR**
- **Jim Harrington; Secretary, NC DENR**
- **Marshall Staton; Chief, Sanitary Engineering Section, DHS**
- **Everette Knight; Director, Division of Water Quality, DENR**
- **Stacy Covil, Ed Ruppert, & Steve Steinbeck; DHS**
- **Joe Phillips, Louis Aull, B. L. Carlile, & D. Osborne; NCSU**
- **Jesse Meredith, Commission for Health Services**
- **Gordan Wicker; Lee Co. Commissioner**
- **Mitch Duke; Wake Co. H. D. Owen Braughler; Guilford Co. H**
- **Milton Heath; UNC Institute of Government**
- **& Many others, too numerous to list!**

Responsible Parties - OSWM

-  **NC General Assembly**
-  **NC Public Health Commission**
-  **State & Local Environmental Health Professionals**
-  **Consultants & Designers**
-  **Suppliers**
-  **Contractors & Installers**
-  **Operators**
-  **On-Site System Owners**

Legislation & Regulation

On-Site Wastewater Management

NC Constitution

- Enables NCGS to Make Laws to Protect the Public's Health and Environment




NC General Assembly

- Enact Laws for the Wastewater Management

NC Public Health Commission

- Adopt Rules Governing Wastewater Management





“Ground Absorption Sewage Disposal System Act of 1973” (Art. 13C, Chap.130 of NCGS)

-  **Required wastewater system permits prior to obtaining construction permits**
-  **Limited electrical service until completion and approval of wastewater system**
-  **Authorized the NC Commissions for Public Health & Environmental Management to adopt rules governing siting, construction and use of OSWW systems**

Comprehensive Rules Governing OSWW Systems (1973-1977)

- 📄 **Commissions adopt rules effective Oct. 1, 1975 (EMC) & July 1, 1977(CHS)**
 - **Coastal Impacts Delayed CHS Rules**
- 📄 **Soil Morphology included as ‘Technical Guide’ in 1977 CHS Rules**
- 📄 **Site Suitability (S=1.5, PS=.75, or U-PS=.5 LTAR)**
- 📄 **Percolation Tests phasing out**
- 📄 **Applied to ALL Counties**

Revised Ground Absorption Act of 1980 (Art. 11, Chap. 130A of NCGS)


-  **Strengthened System Siting Requirements**
-  **Required Operation Permits for select systems-Life Cycle Management**
-  **Authorized the CHS to require operation and maintenance of classified OSWW systems**
-  **Penalty Laws-Administrative Fines**

1982 OSWW Rules (Eff. July 1, 1982)


 **“838” Ad Hoc Committee**

 **Develop Science Based Rules**

 **Perc Tests Phased Out**

 **Soil Morphology included in
Comprehensive Rules**

 **LPP and Fill Systems Included**

 **Governed all ‘Private’ Subsurface
Sewage disposal Systems**

1990 OSWW Rules

- 📄 **Wastewater Laws Amended to shift ALL Subsurface OSWW Systems to CHS/LHD**
- 📄 **Rules Classified Systems**
- 📄 **O & M of Systems Required**
- 📄 **Modified Systems (Saprolite, LDP, PPBPS)**
- 📄 **Innovative & Experimental Systems**
- 📄 **Numerous Amendments (Fill, LPP, ATUs, etc.)**

2000 & Beyond OSWM Rules

- 📄 **Soil Wetness/ Redoximorphic Features**
- 📄 **Water Table Monitoring and Modeling**
- 📄 **E & I Expanded**
- 📄 **Options for Unsuitable Sites**
- 📄 **O & M for All On-Site Systems**
- 📄 **Capacity Use for On-Site Water Supplies & Wastewater Dispersal**

Education & Training - OSWM

 **Conferences**

 **Workshops**

 **Authorization**

 **Certification**

 **Licensing**

 **Continuing Education**

Success of NC's OSWM Program

“Striving to be better than the best.”

- ☞ **Good Legal Foundation (Constitution & Laws)**
- ☞ **Supporting Public Health Commission (Rules)**
- ☞ **Cooperation between DEH/On-Site & Soils Extension, NCSU (Research, Demonstration, & Education)**
- ☞ **Annual OSWM Conference, Numerous Workshops, & Continuing Education (All Parties)**
- ☞ **Dedicated State and Local Staff**
- ☞ **Legal Support (AGO)**
- ☞ **Educated Consultants, Installers, Operators, & Inspectors**

On-site Wastewater Management--Next 25 Years?

- 📄 **Training & Education of All Parties**
- 📄 **Research & Development for Better OSWM Technologies**
- 📄 **Operation & Maintenance for Improved System Performance**
- 📄 **Quality Assurance of System Products**
- 📄 **Enforcement for Complete Life-Cycle Management (OSWS Surveillance)**



On-Site Wastewater Management - A Brief & Abridged History

***Remember - Onsite Wastewater
Management is Not Rocket Science-
It's More Complicated Than That.***

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