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527SERBSF10,631

Site Name (Subject):	THOMASVILLE FURNITURE INDS/LENOIR
Site ID (Document ID):	NCD054290770
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Document Category:	FACILITY

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Screening Site Investigation Report

Thomasville Furniture Industries

NCD 054 290 770

CERCLA

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director

5 December 1988

Mr. Robert Morris
NC CERCLA Project Officer
Region IV Waste Division
345 Courtland Street, NE
Atlanta, GA 30365

SUBJECT: Site Investigation Report
Thomasville Furniture Industries, NCD054290770
315 Elizabeth Street, NW
Lenoir, NC 28645

Dear Mr. Morris:

Submitted herewith is the Site Investigation report for the subject site. Based on our review of the available data and analyses of samples of the suspected wastes, we have concluded the following.

Most of the area residents within four miles of the site are supplied with drinking water by the Lenoir and Caldwell County Water Systems. The Lenoir water system draws drinking water from Lake Rhodhiss, approximately 10 miles south of Lenoir. Approximately 6100 people within three miles of the site use groundwater as their drinking water source. The nearest well is approximately 2,500 feet from the site.

Reportedly, formaldehyde and poly vinyl acetate based glues, steel wool and scrapings from filler and lacquer booths were buried in on-site trenches between 1975 and 1979. The trenches may now be beneath a parking lot.

Formaldehyde based glue reportedly once spilled from a tanker truck into a near-site tributary. It is also reported that the spill was properly contained.

Samples taken of waste and soil in the solvent drum storage area showed elevated concentrations of bis (2-ethylhexyl) phthalate and dibutyl phthalate. Samples taken of stream sediment and site stream water showed no contamination.

If you have any questions, please call me at (919) 733-2801.

Sincerely,

David Lilley

David Lilley, Industrial Hygienist
Superfund Branch
Solid Waste Management Section

DL/ds/thomas.doc.1-1.1

SITE SCREENING INVESTIGATION REPORT

Thomasville Furniture Industries
NCD054290770
Lenoir, NC

December 1988

Superfund Branch
Solid Waste Management Section
North Carolina Division of Health Services

Prepared by:
David Lilley
Industrial Hygienist

Assisted By:
Mark Durway
Geologist
Project Leader

Assisted By:
Pat DeRosa
Environmental Chemist

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EXECUTIVE SUMMARY

The Thomasville Furniture Industries site has been used for furniture manufacturing by various companies since the early 1900's. Wastes generated at the facility have included flammable solids and non-halogenated solvents. Reportedly, between 1975 and 1979, scrapings from filler and lacquer booths were disposed of in on-site trenches, along with solidified formaldehyde-based and poly-vinyl acetate-based glues (Reference 2). These trenches could not be located during the investigation, it is believed the waste may now be beneath a hard packed gravel parking lot (Reference 3). It has also been reported that formaldehyde based glue was once spilled from a tanker truck into a near-site tributary (Reference 3).

1.0 Background

1.1 Location

Thomasville Furniture Industries is located at 315 Elizabeth Street, NW, Lenoir, Caldwell County, North Carolina, 28645. The latitude is 35 56′ 10" and the longitude is 80 32′ 10" (Map 1, Appendix A). The county code is 14 and is in the tenth Congressional District.

1.2 Site Layout

Allegedly, poly vinyl acetate based glues and steel wool scraping from filler and lacquer booths were buried in trenches of unknown dimensions on the thirty acre site. These trenches could not be located during the investigation; it is believed they may be beneath a parking lot near the old cotton mill. Thomasville Furniture also operated an incinerator near the site until 1983 (References 2 and 3).

1.3 Ownership and Site Use History

The Thomasville Furniture Industries site has been used for furniture manufacturing by various companies since the early 1900's. The site is currently owned by Armstrong World Industries, Inc., P.O. Box 339, Thomasville, North Carolina (Reference 4).

Wastes generated at the facility have included flammable D001 solids and non-halogenated F003 and F005 solvents. Thomasville Furniture operated an incinerator on the site until 1983. Presently the facility is regulated as a RCRA large quantity generator (Reference 2).

Sherry Stookey of Thomasville Furniture Industries has indicated that between 1975 and 1979, scrapings from filler and lacquer booths were disposed in on-site trenches, along with solidified formaldehyde-based and polyl vinyl acetate-based glues. It has also been reported that a formaldehyde-based glue spill once caused a release to a nearby tributary. The facility has underground storage tanks for fuel oil, naptha, and varsol (Reference 2).

1.4 Permit and Regulatory Information

Thomasville Furniture Industries, Inc. filed its RCRA Part A on November 17, 1980 and received its RCRA 3001 permit on May 15, 1986 (Reference 4). The site also received an air discharge permit, number 4172R5 on March 15, 1984, which expired October 1, 1987 (Reference 5). Presently, the facility is regulated as a RCRA large quantity generator (Reference 2).

1.5 Remedial Action to Date

No remedial actions have been taken at this site to date. It is believed that the burial trenches have been covered by a hard packed gravel parking lot (Reference 3).

1.6 Summary Trip Report

On October 28, 1987, a site investigation was conducted at Thomasville Furniture Industries in Lenoir, Caldwell County, NC. Solidified formaldehyde-based and poly-vinyl acetate-based glues are alleged to have been buried on site; however, the burial areas(s) could not be located during the investigation. Although the Thomasville Furniture site did not appear to pose a public health or environmental threat, a strong chemical odor was detected at Blair Fork Creek. Surface water and stream sediment samples taken in this area did not indicate a contamination problem. Thomasville Furniture representatives suggest that Reliance Universal could be the source of the chemical odor (Reference 1).

2.0 Environmental Setting

2.1 Topography

Lenoir, NC is located in the foothills of NC. The area is characterized by rolling hills leading to the mountains. The Thomasville Furniture Industries site is in the flood plain of Blair Fork Creek, and a tributary to the Blair Fork Creek runs through the site. The land at this site is essentially flat (the slope of the site and intervening terrain is 0%) at an elevation of approximately 1200 feet above mean sea level (Map 1, Appendix A).

2.2 Surface Water

The Thomasville Furniture Industries site is in the flood plain of Blair Fork Creek, and less than 1000 feet from Spainhour Creek.

A small intermittent tributary to the Blair Fork Creek runs through the site. Blair Fork Creek and Spainhour join approximately 1500 feet south of the site. Spainhour Creek flows approximately 2-1/2 miles south before entering Lower Creek. Lower Creek empties into the Catawba River and a main stream reservoir named Lake Rhodhiss about 10 miles from the confluence of Spainhour and Lower Creek. Blair Fork, Spainhour, and Lower Creeks are all Class C waters, not used for anything (including fishing) within 3 miles of the site (References 8,25, and Map 1, Appendix A).

2.3 Geology, Soils, and Groundwater

The metamorphic rock types of Caldwell County are heterogeneous and complex, but mica gneiss, mica schisit, and granitic gneiss predominate in the inner Piedmont province. Schistose quartzite and layered gneiss predominate in the Blue Ridge part of the county. Structural trends of these rocks are generally oriented northeastward. A deeply weathered residual mantle of saprolite is present over most of the inner-Piedmont part of Caldwell County. It is thin or absent on the Blue Ridge front (Reference 6).

Ground water is used for farms and outlying residences throughout Caldwell County. Most of the drilled wells are less than 200 feet deep. Of 59 such wells the average depth is 123 feet and average depth to the water table is 22 feet. Drilled wells having the highest yields are located in: low, flat areas; relatively narrow, linear valleys; or draws.

Springs are commonly used in the Blue Ridge part of the area to provide domestic water supplies (Reference 6). Because the Thomasville Furniture Industries is in the flood plain to Blairs Fork Creek, the on-site depth to groundwater is estimated to be 5 to 10 feet.

2.4 Climate and Meteorology (References 9,10,11)

Seasonal Temperatures:	(°F)	January	July
	Mean Max.	46 - 50	84 - 86
	Mean Min.	28 - 32	64 - 68
	Mean	40 - 42	72 - 76

Precipitation:	(inches)	
	Mean annual precipitation:	52
	Mean annual evaporation:	38
	Net annual precipitation:	14
	Mean annual snowfall:	10
	One year 24-hr. rainfall:	2.8

Storm Events:		
	Mean days/year with thunderstorms:	40 - 60
	Prevailing winds and wind speeds:	NE at 7 mph.

Emissions Inventory Summary for Caldwell County (Tons/year) (Reference 12)

Type	Area Sources	Point Sources
Particulates	6,070	3,850
Sulfur Dioxide	581	383
Nitrogen Oxides	3,408	435
Volatile Organics & Hydrocarbons	4,897	5,680
Carbon Monoxide	19,740	69

2.5 Land Use

All of Lenoir, NC, population approximately 14,000, is within 3 miles of the Thomasville Furniture Industries site (Reference 12, and Map 1, Appendix A). The area immediately surrounding the site is largely industrial, with some commercial properties and 1 or 2 homes within a quarter mile of the site (Reference 23).

2.6 Population Distribution and Water Supply

The water supply for people within five miles of the site comes from four sources. The first source is Lenoir water distribution system which draws its water from Lake Rhodiss approximately 10 miles south of Lenoir (References 16,17). All of Lenoir, NC, population approximately 14,000, is located within 3 miles of the site (Reference 12) and uses the Lenoir system. Areas outside the Lenoir city limits use either the Lenoir water distribution system or the Caldwell County system, which purchases its water from the City of Lenoir (Reference 16). The city limits and water line boundaries are marked on the USGS topographic map (Map 1, Appendix A). The third water source is various community and non-community groundwater systems, and forth, private wells supply many area residents.

Within one mile of the site, the Lenoir water system, private, community, and non-community groundwater systems supply water (References 18,19,20). The single community groundwater system services 44 people, the single non-community groundwater system services 215 people, and private wells service 700 people (Map 1, Appendix A, References 20,21). Between one and two miles from the site, four community groundwater systems service a total of 781 people, two non-community groundwater systems service a total of 55 people, and private wells service 1,122 people (Map 1, Appendix A, References 20,21). Between two and three miles from the site, four community groundwater systems service a total of 469 people, two non-community groundwater systems a total of 90 people, and private wells service 2,583 people (Map 1, Appendix A, References 20, 21). Between three and four miles from the site, private wells service 3,612 people (Map 1, Appendix A, References 20,21).

In summary, the Lenoir and Caldwell county water distribution systems supply most of the people within three miles of the site. Nine community groundwater systems service 1,294 people within three miles of the site, and five non-community systems service 360 people within three miles of the site. Additionally, private wells within three miles of the site supply 4,405 people, for a total of 6,059 people using groundwater within three miles of the site.

2.7 Critical Habitats

The nearest critical habitat to the Thomasville Furniture Industries Site is in Burke county approximately 25 miles west of the site (References 13,14,15). Two plants, the Spreading Avens and the Bent Avens, both found in the Lenoir area, are undergoing status review to determine if they should be added to the endangered species list (Reference 22).

3.0 Waste Types and Quantities (References 1,2,3,4)

From 1975 to 1979, an unknown quantity of steel wool scrapings and solidified formaldehyde based and poly-vinyl acetate based glues from filler and lacquer booths were allegedly buried on-site in trenches. The burial area(s) could not be located during the investigation, but it is believed the trenches may be beneath a parking lot near the old cotton mill building. Reportedly, a tanker truck spilled a formaldehyde based glue into a nearby tributary (Reference 3).

4.0 Laboratory Data

Summary

During the site visit on October 28, 1987, surface water and surface soils were collected. A composite sample taken of the waste and soil in the solvent drum storage area showed concentrations of bis (2-ethylhexyl) phyhlate (552,000 ppb) and dibutyl phthalate (2,700 ppb). Samples taken of stream sediment and on site surface water showed no contamination.

Quality Assurance Review

All sampling equipment used was unused disposable equipment or thoroughly cleaned before use to minimize the possibility of contamination. All sample containers were thoroughly cleaned by DHR/DHS laboratory personnel prior to use.

5.0 Toxicological/Chemical Characteristics

The toxicological and chemical characteristics for the major contaminants found at the Lenoir Refining site are presented on the following pages (Reference 24).

BIS(2-ETHYLHEXYL)PHTHALATE

CAS RN: 117817 NIOSH #: TI 0350000
mf: $C_{24}H_{38}O_4$; mw: 390.62

SYNS:

BIS(2-ETHYLHEXYL)-1,2-BENZENEDICARBOXYLATE
DI(2-ETHYLHEXYL)ORTHO-PHTHALATE
DI(2-ETHYLHEXYL)PHTHALATE
DI-SEC-OCTYL PHTHALATE
DOP
2-ETHYLHEXYL PHTHALATE
NCI-C52733
OCTOIL

TOXICITY DATA: 3-2-1	CODEN:
skn-rbt 500 mg/24H MLD	28ZPAK -,48,72
eye-rbt 500 mg	AJOPAA 29,1363,46
eye-rbt 500 mg/24H MLD	28ZPAK -,48,72
ipr-rat TDLo:30 gm/kg/(5-15D preg):TER	JPMSAE 61,51,72
orl-mus TDLo:7500 mg/kg/(8D preg):TER	TJADAB 14,259,76
orl-man TDLo:143 mg/kg:GIT	JIHTAB 27,130,45
orl-rat LD50:31 gm/kg	UCDS** 7/20/67
ipr-rat LD50:30700 mg/kg	JIHTAB 27,130,45
ivn-rat LD50:250 mg/kg	TXAPA9 45,230,78
unk-rat LD50:37000 mg/kg	GTPZAB 24(3),25,80
orl-mus LD50:30 gm/kg	TJADAB 14,259,76
ipr-mus LD50:14 gm/kg	JPMSAE 55,158,66
unk-mus LD50:37000 mg/kg	GTPZAB 24(3),25,80
orl-rbt LD50:34 gm/kg	EVHPAZ 4,3,73
skn-rbt LD50:25 gm/kg	JIHTAB 27,130,45
skn-gpg LD50:10 gm/kg	EVHPAZ 4,3,73
unk-gpg LD50:37000 mg/kg	GTPZAB 24(3),25,80
ihl-mam LC50:30000 mg/m3	GTPZAB 24(3),25,80
orl-rat TDLo:35 mg/kg (14D male/14D pre)	FCTXAV 15,389,77
orl-rat TDLo:8400 ug/kg (7D male)	TXAPA9 53,35,80
orl-rat TDLo:17200 mg/kg (MGN)	NEZAAQ 31,507,76
orl-rat TDLo:43 gm/kg (MGN)	NEZAAQ 31,507,76
ipr-rat TDLo:10 gm/kg (5-15D preg)	JPMSAE 61,51,72
ipr-rat TDLo:5 gm/kg (5-15D preg)	JPMSAE 61,51,72
orl-mus TDLo:1 gm/kg (7D preg)	JEPTDQ 4,533,80
orl-mus TDLo:1260 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:3420 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:7200 mg/kg (1-18D preg)	ENVRAL 22,245,80

TLV: Air: 5 mg/m3 DTLVS* 4,159,80. *Toxicology Review:* EVHPAZ (3),73,73; RREVAH 54,1,75; JOCMA7 15(10),808,73; CMIVAS 10(3),49,73; ESKHA5 93,1,75; TXAPA9 45,1,78. OSHA Standard: Air: TWA 5 mg/m3 (SCP-D) FEREAC 39,23540,74. NTP Carcinogenesis Bioassay Completed as of December 1980. "NIOSH Manual of Analytical Methods" Vol 1 S40. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: An exper TER, GIT (man). Possible hmn CARC. HIGH ivn; LOW orl, ipr, unk, skn; MLD skn, eye irr.

Disaster Hazard: When heated to decomp it emits acrid smoke.

For further information see Di-(2-Ethylhexyl)Phthalate, Vol. 1, No. 7 and Vol. 2, No. 2 of *DPIM Report.*

DI-n-BUTYL PHTHALATE

CAS RN: 84742 NIOSH #: TI 0875000
mf: $C_{16}H_{22}O_4$; mw: 278.38

Oily liquid, mild odor. bp: 340°, fp: −35°, flash p: 315°F (CC), d: 1.047-1.049 @ 20°/20°, autoign. temp.: 757°F, vap. d: 9.58.

SYNS:

O-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER
BENZENE-O-DICARBOXYLIC ACID DI-N-BUTYL ESTER
DIBUTYL-1,2-BENZENEDICARBOXYLATE
DIBUTYL PHTHALATE

TOXICITY DATA: 3	CODEN:
ipr-rat TDLo:874 mg/kg/(5-15D preg) TFX:TER	JPMSAE 61,51,72
orl-rat TDLo:8400 ug/kg (7D male)	TXAPA9 53,35,80
ipr-rat TDLo:1017 mg/kg (5-15D preg)	JPMSAE 61,51,72
ipr-rat TDLo:305 mg/kg (5-15D preg)	JPMSAE 61,51,72
orl-mus TDLo:1440 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:12 gm/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:38 gm/kg (1-18D preg)	ENVRAL 22,245,80
ihl-rat LC50:7900 ug/m3	GTPZAB 17(10),51,73
orl-mus LD50:5282 ug/kg	GTPZAB 17(10),51,73
ihl-mus LC50:2100 ug/m3	GTPZAB 17(10),51,73
cyt-ham:fbr 30 mg/L/24H	MUREAV 48,337,77
ipr-rat TDLo:874 mg/kg/(5-15D preg):TER	JPMSAE 61,51,72
orl-hmn TDLo:140 mg/kg:EYE	SMWOAS 84,1243,54
orl-rat LD50:12000 mg/kg	SPEADM 74-1,-,74
ipr-rat LD50:3050 mg/kg	JPMSAE 61,51,72
unk-rat LD50:10000 mg/kg	GTPZAB 24(3),25,80
ipr-mus LD50:3570 mg/kg	JSCCA5 28,667,77
unk-mus LD50:10000 mg/kg	GTPZAB 24(3),25,80
unk-gpg LD50:10000 mg/kg	GTPZAB 24(3),25,80
ihl-mam LC50:9620 mg/m3	GTPZAB 24(3),25,80

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74.

TLV: Air: 5 mg/m3 DTLVS* 4,124,80. *Toxicology Review:* RREVAH 54,1,75; EVHPAZ 4,3,73; CMTVAS 10(3),49,73; ESKHA5 93,1,75; 27ZTAP 3,28,69. OSHA Standard: Air: TWA 5 mg/m3 (SCP-D) FEREAC 39,23540,74. "NIOSH Manual of Analytical Methods" VOL 2 S33. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MUT data. An exper TER. A hmn EYE. MOD ipr. LOW orl, unk, ihl. See esters, phthalic acid and butyl alcohol.

Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials. Violent reaction with Cl_2.

To Fight Fire: CO_2, dry chemical.

Incomp: Chlorine.

REFERENCES

1. Memo from Mark Durway, NC DHR/DHS to Lee Crosby, NC DHR/DHS, Thomasville Furniture Site Screening Inspection, November 2, 1987.

2. Memo from Mark Durway, NC DHR/DHS to Ms. Denise Smith, EPA CERCLA Project Officer, September 13, 1987.

3. Memo from Mark Durway, NC DHR/DHS to file, Conversation with Sherry Stookey, August 31, 1987.

4. Potential Hazardous Waste Site Preliminary Assessment, Thomasville Furniture Industries, from Mark Durway, NC DHR/DHS.

5. NC Environmental Management Commission permit.

6. Sumsir, Carlton T., Geology and Groundwater Resources of the Morganton Area of North Carolina, Division of Ground Water, NC Department of Water Resources. Groundwater Bulletin #2, March 1967.

7. Memorandum from Regional Director, FWS, Atlanta, GA, to Regional Environmental Officer, Southeast Region, Department of Interior, Atlanta, GA, December 2, 1983.

8. Memo from Jack Butler to file, telephone conversation with Bill Forbes, Caldwell County Manager, February 5, 1988.

9. Clay, J.W., Orr, D.M. Jr., and Stuart, A.W. North Carolina Atlas. Chapel Hill, NC. 1975.

10. Mean Annual Precipitation and Mean Annual Evaporation Map, adapted from North Carolina Atlas, The University of NC Press, Chapel Hill, NC, Figure 5.15 pg. 101 and Figure 5.20 pg. 103.

11. Rainfall Frequency Atlas of the United States, Technical Paper No. 40, Department of Commerce, US Government Printing Office, Washington, DC, 1963.

12. NC State Government Statistical Abstract, 5th Edition. NC State Data Center, Research and Planning Services, Office of Budget and Management, Raleigh, NC. 1984.

13. Letter and enclosures from Warren T. Parker, United States Department of the Interior, to Pat DeRosa, NC Solid and Hazardous Waste Management Branch, 21 June 1985.

14. Memo and attachments from Pat DeRosa, NC CERCLA Unit, to CERCLA Unit staff, 12 August 1986.

15. Memo from Pat DeRosa, NC CERCLA Unit, to file, 15 June 1987.

16. Memo from Jack Butler, NC DHR/DHS, to file, Public water service near Lenoir Refining, December 7, 1987.

17. Memo from Jack Butler, NC DHR/DHS, to file, Telephone conversation with Jake Harrison, Lenoir Water Plant, August 6, 1987.

18. Letter from Regonald Bryant, City of Lenoir Water and Sewer Distribution Superintendent, to Jack Butler, NC Solid and Hazardous Waste Management Branch, 7 December 1987.

19. Letter from Charles Poovey, Caldwell County Water Department, to Jack Butler, Solid and Hazardous Waste Branch, 9 December 1987.

20. Computer printouts from NC Public Water Supply, Raleigh, NC.

21. Memo from David Lilley, NC DHR/DHS, to file, House county from USGS topographic map, December 1, 1988.

22. Memo from David Lilley, NC DHR/DHS, to file, Critical Habitats of Federally Listed Endangered Species in North Carolina, December 2, 1988.

23. Memo from David Lilley, NC DHR/DHS, to file, telephone conversation with Bill Forbes, Caldwell County, December 2, 1988.

24. Dangerous Properties of Industrial Materials, Sixth Edition, by N. Irving Sax. Van Nostrand Reinhold Company, 1984.

25. Classifications and Water Quality Standards Assigned to The Waters of the Catawba River Basin, Departmnet of Natural Resources and Community Development. Raleigh, NC. 1981.

Appendix A
Maps and Photographs

(Please see back cover)

Appendix B
Laboratory Data

[redacted] Department of Human Resources
[redacted]vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

[redacted]te Number 14 D054290770 Field Sample Number 3580

[redacted]e of Site THOMASVILLE FURN---INDS Site Location Lenoir, Caldwell Co.

[redacted]ollected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1715

[redacted]e of Sample:

Environmental	Concentrate	Comments
[redacted] Groundwater (1)	Solid (5)	#5 site stream (DG)
X Surface Water (2)	Liquid (6)	
Soil (3)	Sludge (7)	
[redacted] Other (4)	Other (8)	

RECEIVED NOV 17 1987 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

RECEIVED NOV 16 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		X Arsenic	<0.01	X Silver	<0.05
Barium		X Barium	<0.1	Sulfates	
Cadmium		X Cadmium	<0.005	Zinc	
Chromium		Chloride		Ph	
Lead		X Chromium	<0.01	Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		X Lead	<0.03		
		Manganese			
		X Mercury	<0.0002		
		Nitrate			
		X Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

[redacted]te Received Date Reported 11/12/87

[redacted]ate Extracted Date Analyzed

[redacted]ported By Lab Number 020713 NOV 387

[redacted]HS 3191 (Revised 7/85)

[redacted]. Department of Human Resources
[redacted]vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

[redacted]te Number 14 D054290770 Field Sample Number 3582

[redacted]me of Site THOMASVILLE FURN--INDS Site Location Lenoir, Caldwell Co.

[redacted]ollected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1730

[redacted]e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#6
X Surface Water (2)	___ Liquid (6)	UG Blair Fork Ch.
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED NOV 17 1987 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

RECEIVED NOV 16 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		X Arsenic	<0.01	X Silver	<0.05
___ Barium		X Barium	<0.1	___ Sulfates	
___ Cadmium		X Cadmium	<0.005	___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		X Chromium	<0.01	___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		X Lead	<0.03		
		___ Manganese			
		X Mercury	<0.0002		
		___ Nitrate			
		X Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

[redacted]te Received ___ Date Reported 11/12/87

[redacted]ate Extracted ___ Date Analyzed ___

[redacted]ported By ___ Lab Number 020914 NOV 387

[redacted]HS 3191 (Revised 7/85)

[redacted]. Department of Human Resources
[redacted]vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

[redacted]ite Number 14 D054290770 Field Sample Number 3584

[redacted]e of Site THOMASVILLE FURN-INDS Site Location Lenoir, Caldwell Co.

[redacted]ollected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1745

[redacted]e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#7
X Surface Water (2)	___ Liquid (6)	DG Blair Fork Ck
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED NOV 17 1987 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

RECEIVED NOV. 16 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		X Arsenic	<0.01	X Silver	<0.05
___ Barium		X Barium	<0.1	___ Sulfates	
___ Cadmium		X Cadmium	<0.005	___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		X Chromium	<0.01	___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		X Lead	<0.03		
		___ Manganese			
		X Mercury	<0.0002		
		___ Nitrate			
		X Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

[redacted]e Received ___ Date Reported 11/12/87

Date Extracted ___ Date Analyzed ___

[redacted]ported By ___ Lab Number 020915 NOV 387

DHS 3191 (Revised 7/85)

Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D054290770 Field Sample Number 3574

e of Site THOMASVILLE FURN-INDS Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1600

e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	site stream (UG) - Background
X Surface Water (2)	___ Liquid (6)	N of Valmeade St.
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED NOV 17 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

RECEIVED NOV 16 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		X Arsenic	<0.01	X Silver	<0.05
___ Barium		X Barium	<0.1	___ Sulfates	
___ Cadmium		X Cadmium	<0.005	___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		X Chromium	<0.01	___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		X Lead	<0.03		
		___ Manganese			
		X Mercury	<0.0002		
		___ Nitrate			
		X Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

te Received ___ Date Reported 11/12/87

Date Extracted ___ Date Analyzed ___

ported By ___ Lab Number 020911 NOV 387

DHS 3191 (Revised 7/85)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D054290770 Field Sample Number 3578

e of Site THOMASVILLE FURN--INDS Site Location Lenoir, Caldwell Co.

ollected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1650

e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#4 site stream (DG) below
X Surface Water (2)	___ Liquid (6)	solvent storage area (stream
___ Soil (3)	___ Sludge (7)	is ~~[illegible]~~ diverted thru man-made
___ Other (4)	___ Other (8)	concrete trench)

RECEIVED NOV 17 1987 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

RECEIVED NOV 16 1987 HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		X Arsenic	<0.01	X Silver	<0.05
___ Barium		X Barium	<0.1	___ Sulfates	
___ Cadmium		X Cadmium	<0.005	___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		X Chromium	<0.01	___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		X Lead	<0.03		
		___ Manganese			
		X Mercury	<0.0002		
		___ Nitrate			
		X Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

ate Received ___ Date Reported 11/12/87

Date Extracted ___ Date Analyzed ___

eported By ___ Lab Number 020712 NOV 387

DHS 3191 (Revised 7/85)

C Department of Human Resources
vi ort of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3575

me of Site Thomasville Furn Ind Site Location Lenoir, Caldwell Co.

lected By D. Mark Dunway ID# 35 Date Collected 10/28/87 Time 1600

pe of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#1 site stream sed (UG) - Background
___ Surface Water (2)	___ Liquid (6)	N of Valmeade St.
___ Soil (3)	___ Sludge (7)	
X Other (4)	___ Other (8)	

RECEIVED FEB 16 1988 CERCLA HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/Kg	Parameter	Results mg/Kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<10
Barium	0.06	X Barium	25	Sulfates	
X Cadmium	<0.08	X Cadmium	<4.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
Lead	<1.00	X Chromium	<10	Conductivity	
X Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
Silver	<0.20	Iron			
		X Lead	59		
		Manganese			
		X Mercury	<0.1		
		Nitrate			
		X Selenium	<2.5		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received ___ Date Reported 10 Feb 88

e Extracted ___ Date Analyzed ___

eported By ___ Lab Number 020874 NOV 287

5 3191 (Revised 7/85)
olid and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

t Number 14 D 054290770 Field Sample Number 3576

ame of Site Thomasville Furn Ind. Site Location Lenoir, Caldwell Co.

ollected By D. Marc Dunwoy ID# 35 Date Collected 10/28/87 Time 1618

y of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#2 Bg soil in field N of
___ Surface Water (2)	___ Liquid (6)	Valmonde St.
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 16 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/kg	Parameter	Results mg/kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<10
Barium	0.14	X Barium	144	Sulfates	
Cadmium	<0.08	X Cadmium	6.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
X Lead	<1.00	X Chromium	<10	Conductivity	
Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
X Silver	<0.20	Iron			
		X Lead	38		
		Manganese			
		X Mercury	<0.1		
		Nitrate			
		X Selenium	<2.5		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received ___ Date Reported 10 Feb 88

Date Extracted ___ Date Analyzed ___

Reported By ___ Lab Number 020875 NOV 287.

3191 (Revised 7/85)
and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3577

me of Site Thomasville Furn Ind. Site Location Lenoir, Caldwell Co.

llected By D. Mark Dunway ID# 35 Date Collected 10/28/87 Time 1630

e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#3 soil & waste from solvent drum
___ Surface Water (2)	___ Liquid (6)	storage area - composite
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/Kg	Parameter	Results mg/Kg
X Arsenic	<0.01	X Arsenic	<4	X Silver	<9.0
X Barium	0.20	X Barium	170	Sulfates	
Cadmium	<0.08	X Cadmium	7.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
X Lead	<1.00	X Chromium	18	Conductivity	
Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
X Silver	<0.20	Iron			
		X Lead	130		
		Manganese			
		X Mercury	0.1		
		Nitrate			
		X Selenium	<2.2		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

te Received ___ Date Reported 10 Feb 88

Extracted ___ Date Analyzed ___

eported By ___ Lab Number 020876 NOV 287

3191 (Revised 7/85)
and Hazardous Waste (Review 7/87)

C. Department of Human Resources
[redacted]on of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

[redacted] Number 14 D 054290770 Field Sample Number 3579

[redacted]me of Site Thomasville Furn Indy Site Location Lenoir, Caldwell Co.

[redacted]ected By D. Mark Dunway ID# 35 Date Collected 10/28/87 Time 1650

[redacted] of Sample:

Environmental	Concentrate
[redacted] Groundwater (1)	____ Solid (5)
[redacted] Surface Water (2)	____ Liquid (6)
[redacted] Soil (3)	____ Sludge (7)
X Other (4)	____ Other (8)

Comments: #4 stream fed (DG) below solvent storage area in concrete lined stream diversion ditch.

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INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/Kg	Parameter	Results mg/Kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<9.0
[redacted] Barium	0.11	X Barium	27	____ Sulfates	
[redacted] Cadmium	<0.08	X Cadmium	<4.0	____ Zinc	
X Chromium	<0.20	____ Chloride		____ Ph	
[redacted] Lead	<1.00	X Chromium	<9.0	____ Conductivity	
[redacted] Mercury	<0.02	____ Copper		____ TDS	
X Selenium	<0.005	____ Fluoride		____ TOC	
X Silver	<0.20	____ Iron			
[redacted]		X Lead	5.0		
[redacted]		____ Manganese			
[redacted]		X Mercury	<0.1		
[redacted]		____ Nitrate			
[redacted]		X Selenium	<2.3		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
[redacted] P&T:GC/MS		____ EDB		____ Methoxychlor	
[redacted] Acid:B/N Ext.		____ PCB's		____ Toxaphene	
____ TOX		____ Petroleum		____ 2,4-D	
[redacted]		____ Endrin		____ 2,4,5-TP (silvex)	
[redacted]		____ Lindane			

MICROBIOLOGY

Parameter
____ (MF) Coliform Colonies/100mls
[redacted] (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
____ Gross Alpha	
____ Gross Beta	

[redacted]ate Received ____ Date Reported 10 Feb 88

[redacted] Extracted ____ Date Analyzed 020877 NOV 287

[redacted]eported By ____ Lab Number ____

[redacted]H 3191 (Revised 7/85)
[redacted]ste and Hazardous Waste (Review 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D 054290770 Field Sample Number 3581

e of Site Thomasville Furn Ands Site Location Lenoir, Caldwell Co.

llected By D. Marie Dunway ID# 35 Date Collected 10/28/87 Time 1715

of Sample:

Environmental	Concentrate
___ Groundwater (1)	___ Solid (5)
___ Surface Water (2)	___ Liquid (6)
___ Soil (3)	___ Sludge (7)
X Other (4)	___ Other (8)

Comments: #5 Stream sed from site stream (DG)

RECEIVED FEB 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/Kg	Parameter	Results mg/Kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<10
X Barium	0.06	X Barium	25	Sulfates	
Cadmium	<0.08	X Cadmium	<4.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
X Lead	<1.00	X Chromium	<10	Conductivity	
Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
X Silver	<0.20	Iron			
		X Lead	6.4		
		Manganese			
		X Mercury	<0.1		
		Nitrate			
		X Selenium	<2.5		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

te Received ___ Date Reported 10 Feb 88

a Extracted ___ Date Analyzed ___

eported By ___ Lab Number U20878 NOV 287

H 3191 (Revised 7/85)
ol and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 0542907 70 Field Sample Number 3583

e of Site Thomasville Furn Ind. Site Location Lenoir, Caldwell Co.

lected By D. Mark Dunway ID# 35 Date Collected 10/28/87 Time 1730

of Sample:

Environmental	Concentrate
___ Groundwater (1)	___ Solid (5)
___ Surface Water (2)	___ Liquid (6)
___ Soil (3)	___ Sludge (7)
X Other (4)	___ Other (8)

Comments #6 Blair Fork Ck (UG) Sediment

RECEIVED FEB 16 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/kg	Parameter	Results mg/kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<9.0
Barium	0.10	X Barium	53	Sulfates	
Cadmium	<0.08	X Cadmium	<4.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
X Lead	<1.00	X Chromium	<9.0	Conductivity	
Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
X Silver	<0.20	Iron			
		X Lead	10		
		Manganese			
		X Mercury	<0.1		
		Nitrate			
		X Selenium	<2.3		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received ___ Date Reported 10 Feb 88

Date Extracted ___ Date Analyzed ___

Reported By ___ Lab Number 020879 NOV 287

DH 3191 (Revised 7/85)
and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 0542907 70 Field Sample Number 3585

e of Site Thomasville Furn Andy Site Location Lenoir, Caldwell Co.

llected By D. Marie Dunwoy ID# 35 Date Collected 10/28/87 Time

of Sample:

Environmental	Concentrate	Comments
Groundwater (1)	Solid (5)	#7 Blair Fork Crk (DG) stream sediment
Surface Water (2)	Liquid (6)	
Soil (3)	Sludge (7)	
X Other (4)	Other (8)	

RECEIVED
FEB 16 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables Parameter	Results mg/1	Total Parameter	Results mg/kg	Parameter	Results mg/kg
X Arsenic	<0.01	X Arsenic	<5	X Silver	<10
X Barium	0.07	X Barium	29	Sulfates	
Cadmium	<0.08	X Cadmium	<4.0	Zinc	
X Chromium	<0.20	Chloride		Ph	
X Lead	<1.00	X Chromium	<1.0	Conductivity	
Mercury	<0.02	Copper		TDS	
X Selenium	<0.005	Fluoride		TOC	
X Silver	<0.20	Iron			
		X Lead	8.0		
		Manganese			
		X Mercury	<0.1		
		Nitrate			
		X Selenium	<2.5		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received Date Reported 10 Feb 88

Date Extracted Date Analyzed

Reported By Lab Number 020000 NOV 287

H 3191 (Revised 7/85)
st and Hazardous Waste (Review 7/87)

DIVISION OF HEALTH SERVICES
SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

Receipt for Samples

The samples described below were collected in connection with the administration, enforcement, and documentation of the:

( ) North Carolina Hazardous Waste Management Rules, 10 NCAC 10F

( ) North Carolina Solid Waste Management Rules, 10 NCAC 10G

(X) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

( ) Toxic Substances Control Act (TSCA). 15 U.S.C. §2601, et seq., specifically Section 11 of TSCA, 15 U.S.C. § 2610.

MARK DURWAY / PAT DEROSA	N.C. DIV. OF HEALTH SERVICES PO BOX 2091 RALEIGH NC 27602
Inspector's Name	Inspector's Address
THOMASVILLE FURNITURE INDUSTRIES, INC.	315 ELIZABETH ST. NW LENOIR NC 28645
Name of Firm	Firm Address
SHERRY STOOKEY	SUPERVISOR OF ENVIRONMENTAL COMPLIANCE AND INSPECTION
Firm Owner, Operator, or Agent	Title

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE TYPE WATER	SOIL	OTHER	DUPLICATE SAMPLES OFFERED	ACCEPTED	REJECTED	SAMPLE LOCATION ON-SITE	OFF-SITE
1	10/28/87	1600	✓		SED	✓	✓		✓	
2	10/28/87	1618		✓		✓	✓		✓	
3	10/28/87	1630		✓		✓	✓		✓	
4	10/28/87	1650	✓		SED	✓	✓		✓	
5	10/28/87	1715	✓		SED	✓	✓		✓	
6	10/28/87	1730	✓		SED	✓	✓			✓
7	10/28/87	1745	✓		SED	✓	✓			✓

Receipt for the sample(s) described above is hereby acknowledged:

D. Mark Durway
Signature of Inspector

GEOLOGIST NC CERCLA UNIT
Title

Receipt/rejection of duplicate or split samples is hereby acknowledged:

Sherry D. Stookey
Signature of Firm Owner, Operator, or Agent

SUPERVISOR OF ENVIRONMENTAL COMPLIANCE AND INSPECTION
Title

COMMENTS

DIVISION OF HEALTH SERVICES
SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

Chain of Custody Record

Hazardous Waste Materials

Location of Sampling: X Generator ___ Transporter ___ Treatment Facili
___ Storage Facility ___ Disposal Facility ___ Landfill
___ Other: ___

Company's Name THOMASVILLE FURNITURE INDUSTRIES INC Telephone (704) 754-4581

Address 315 ELIZABETH ST NW LENOIR NC 28645

Collector's Name D. Mark Dunway (signature) Telephone (919) 733-2801

Date Sampled 28 OCTOBER 1987 Time Sampled ___

Type of Process Generating Waste FURNITURE MANUFACTURING

RECEIVED FEB 16 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

Field Information

Field Sample No. 3575 3576 3577 3579 3581 3583 3585

Chain of Possession:

	signature	title	inclusive dates
1.	D. Mark Dunway	Geologist	10/28/87 to 11/2/87
2.	[illegible]	Chemist	2 Nov 87
3.	Annette L. Jay	Chem Analyst	10 Feb 88

Results reported

signature	title	date

Instructions: Complete all applicable information including signatures, and submit with analysis request forms.

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3738

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 16:00

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#1 site stream (ug) - Background
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Date Received 11-2-87 M.B. Date Reported 1-29-88

te Extracted Date Analyzed 12-1-87 mw

ported By John L. Neal Lab Number 702948

#702948-702964

3191 (Revised 7/85)
d Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D 054290770 Field Sample Number 3739

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1600

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#1 site stream (ug)/Background
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
X Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Date Received 11-2-87 M.B. Date Reported

te Extracted 11-16-87 PW VP Date Analyzed 11-25-87 BD

Reported By Lab Number 702949

S 3191 (Revised 7/85)
Land Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D 054290770 Field Sample Number 3740

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1600

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#1 site stream (US) Background SEDIMENT
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
X Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

te Extracted Date Analyzed PT 11-20-87 MW

eported By Lab Number 702850

3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3741

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1618

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#2 BG SOIL
___ Surface Water (2)	___ Liquid (6)	
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received 11-2-87 M.B. Date Reported

te Extracted Date Analyzed PT 11-20-87 MW

Reported By Lab Number 702951

DHS 3191 (Revised 7/85)
Soil and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3742

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1630

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#3 waste and soil at solvent
___ Surface Water (2)	___ Liquid (6)	drum storage area
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED FEB 1 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
X Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Date Received 11-2-87 M.B. Date Reported

e Extracted 11-12-87 MW, LB Date Analyzed 12-15-87 BRD

Reported By Lab Number 702952

S 3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

te Number 14 D 054290770 Field Sample Number 3743

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1650

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#4 site stream
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED DC. FEB 1 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted Date Analyzed 12-1-87 mw

eported By Lab Number 702853

3191 (Revised 7/85)
and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3744

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1650

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#4 site stream DG
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED FEB 1 1989 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
X Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

ate Extracted 11-16-87 PW Date Analyzed 11-25-87 BD

eported By Lab Number 702954

HS 3191 (Revised 7/85)
Soil Lab / Hazardous Waste (Revised 7/87)

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3745

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1650

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#4 site stream sed
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
X Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received 11-2-87 M.B. Date Reported

ate Extracted Date Analyzed PT 11-20-87 nw

eported By Lab Number 702955

HS 3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3746

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1715

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#5 site stream DG
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
CERCLA
HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

ate Extracted Date Analyzed 12-1-87 nur

eported By Lab Number 702856

S 3191 (Revised 7/85)
ol Land Hazardous Waste (Review 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3747

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1715

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#5 site stream DG
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
X Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted 11-16-87 VP PW Date Analyzed 11-25-87 BD

Reported By Lab Number 702957

DHS 3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3748

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1715

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#5 site stream SED/VEGET (DG)
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
X Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted Date Analyzed PT 11-30-87 mw

eported By Lab Number 702858

3191 (Revised 7/85)
ol and Hazardous Waste (Revised 7/87)

Department of Human Resources
Division of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3749

Name of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

Collected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1730

Type of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#6 Blair Fork Creek (UG)
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of Dioxolane ?
___ Other (4)	___ Other (8)	

RECEIVED HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received 11-2-87 M.B. Date Reported

Date Extracted Date Analyzed 12-1-87 nw

Reported By Lab Number 702859

3191 (Revised 7/85)
Hazardous Waste (Review: 7/87)

C. Department of Human Resources
sion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3750

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1730

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#6 Blair Fork Creek UG
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of dioxolane
___ Other (4)	___ Other (8)	

RECEIVED FEB 1 1988 HAZARDOUS WASTE MANAGEMENT BRANCH CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
X Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received 11-2-87 M.B. Date Reported

Date Extracted 11-16-87 Date Analyzed 11-25-87 BQ

Reported By Lab Number 702960

DES 3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
sion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3757

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1730

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#6 Blair Fork (each SEDIMENT (ug)
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of Dioxolane ?
X Other (4)	___ Other (8)	

RECEIVED 1988 CERCLA HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted Date Analyzed PT 11-30-87 MW

eported By Lab Number 702861

3191 (Revised 7/85)
Solid and Hazardous Waste (Revised 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3752

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1745

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#7 Blair Fork Creek (DS)
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of Dioxolane ?
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted Date Analyzed 12-1-87 mw

eported By Lab Number 702862

S 3191 (Revised 7/85)
ol Land Hazardous Waste (Review 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number 14 D 054290770 Field Sample Number 3753

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

lected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1745

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#7 Blair Fork Creek (DG)
X Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of Dioxolane ?
___ Other (4)	___ Other (8)	

RECEIVED
FEB 1988
CERCLA
HAZARDOUS WASTE MANAGEMENT BRANCH

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted 11-20-87 Date Analyzed 12-16-87 BLD

Reported By Lab Number 702953

D 3191 (Revised 7/85)
Solid and Hazardous Waste (Review 7/87)

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

e Number 14 D 054290770 Field Sample Number 3754

ame of Site Thomasville Furniture Inds Site Location Lenoir, Caldwell Co.

llected By D. MARK DURWAY ID# 35 Date Collected 10/28/87 Time 1745

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	#7 Blair Fork Ck SEDIMENT (DG)
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	presence of Dioxane ?
X Other (4)	___ Other (8)	

RECEIVED
FEB 1 1988
HAZARDOUS WASTE MANAGEMENT BRANCH
CERCLA

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
X P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

ate Received 11-2-87 M.B. Date Reported

e Extracted Date Analyzed PT 11-30-87 mw

eported By Lab Number 702554

S 3191 (Revised 7/85)
Solid and Hazardous Waste (Review 7/87)

DIVISION OF HEALTH SERVICES
SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

Receipt for Samples

he samples described below were collected in connection with the administration, nforcement, and documentation of the:

( ) North Carolina Hazardous Waste Management Rules, 10 NCAC 10F

( ) North Carolina Solid Waste Management Rules, 10 NCAC 10G

(X) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

( ) Toxic Substances Control Act (TSCA). 15 U.S.C. §2601, et seq., specifically Section 11 of TSCA, 15 U.S.C. § 2610.

MARK DURWAY / PAT DEROSA — N.C. DIV. OF HEALTH SERVICES, PO BOX 2091 RALEIGH NC 27602
Inspector's Name — Inspector's Address

THOMASVILLE FURNITURE INDUSTRIES, INC. — 315 ELIZABETH ST. NW LENOIR NC 28645
Name of Firm — Firm Address

SHERRY STOOKEY — SUPERVISOR OF ENVIRONMENTAL COMPLIANCE AND INSPECTION
Firm Owner, Operator, or Agent — Title

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE TYPE WATER	SAMPLE TYPE SOIL	SAMPLE TYPE OTHER	DUPLICATE SAMPLES OFFERED	DUPLICATE SAMPLES ACCEPTED	DUPLICATE SAMPLES REJECTED	SAMPLE LOCATION ON-SITE	SAMPLE LOCATION OFF-SITE
1	10/28/87	1600	✓		SED	✓	✓		✓	
2	10/28/87	1618		✓		✓	✓		✓	
3	10/28/87	1630		✓		✓	✓		✓	
4	10/28/87	1650	✓		SED	✓	✓		✓	
5	10/28/87	1715	✓		SED	✓	✓		✓	
6	10/28/87	1730	✓		SED	✓	✓			✓
7	10/28/87	1745	✓		SED	✓	✓			✓

Receipt for the sample(s) described above is hereby acknowledged:

D. Mark Durway
Signature of Inspector

GEOLOGIST NC CERCLA UNIT
Title

Receipt/rejection of duplicate or split samples is hereby acknowledged:

Sherry D. Stookey
Signature of Firm Owner, Operator, or Agent

SUPERVISOR OF ENVIRONMENTAL COMPLIANCE AND INSPECTION
Title

COMMENTS

DIVISION OF HEALTH SERVICES
SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

0

Chain of Custody Record

Hazardous Waste Materials

Location of Sampling: X Generator ___ Transporter ___ Treatment Facil
___ Storage Facility ___ Disposal Facility ___ Landfill
___ Other: _____

Company's Name THOMASVILLE FURNITURE INDUSTRIES INC Telephone (704) 754-4581

Address 315 ELIZABETH ST NW LENOIR NC 28645

Collector's Name D. Mark Dewey (signature) Telephone (919) 733-2801

Date Sampled 28 OCTOBER 1987 Time Sampled _____

Type of Process Generating Waste FURNITURE MANUFACTURING

Field Information

Field Sample No. 3738 3739 3740 3741 3742 3743 3744
3745 3746 3747 3748 3749 3750 3751
3752 3753 3754

Chain of Possession:

	signature	title	inclusive dates
1.	D. Mark Dewey	Geologist	10/28/87 to 11/2/87
2.	Vicki S. Painter	Chemical Analyst II	11-2-87
3.			

Results reported

signature	title	date

Instructions: Complete all applicable information including signatures, and submit with analysis request forms.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	702949	702952	702954	702957	702960	702963
	FIELD #	3739	3742	3744	3747	3750	3753
COMPOUND	TYPE	(2)	(3)	(2)	(2)	(2)	(2)
	UNITS	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~
N-nitrosodimethylamine	10/330	u	u	u	u	u	u
bis(2-chloroethyl)ether							
2-chlorophenol							
phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
bis(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
nitrobenzene							
isophorone							
2-nitrophenol							
2,4-dimethylphenol							
bis(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
naphthalene							
hexachlorobutadiene							
4-chloro-m-cresol							
hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330						
4-chlorophenylphenylether							
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
diphenylamine							
azobenzene							
4-bromophenylphenylether	10/330						
hexachlorobenzene	10/330						
pentachlorophenol	50/1650						
phenanthrene	10/330						
anthracene							
dibutyl phthalate			2700				
fluoranthene			u				

MDL H_2O/SOIL

J - Estimated value.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
U - Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
NA - Not analyzed.
1/ - Tentative identification.
2/ - On NRDC List of Priority Pollutants.

N.C. Division of Health Services
DHS 3068-0 (4/86 Laboratory)

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	702949	702952	702954	702957	702960	702963
	FIELD #	3739	3742	3744	3747	3750	3753
COMPOUND	TYPE	(2)	(3)	(2)	(2)	(2)	(2)
	UNITS	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~	µg/l ~~µg/kg~~
pyrene	10/330	u	u	u	u	u	u
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene							
chrysene							
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330		552,000				
di-n-octyl phthalate	10/330		u				
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene							
benzo(a)pyrene							
indeno(1,2,3-cd)pyrene							
dibenzo(a,h)anthracene							
benzo(g,h,i)perylene							
aniline	50/1650	u	u	u	u	u	u
benzoic acid							
benzyl alcohol							
4-chloroaniline	10/330						
dibenzofuran							
2-methylnaphthalene							
2-methylphenol							
4-methylphenol							
2-nitroaniline	50/1650						
3-nitroaniline							
4-nitroaniline							
2,4,5-trichlorophenol							

MDL H_2O/SOIL

J - Estimated value.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
U - Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
NA - Not analyzed.
1/ - Tentative identification.
2/ - On NRDC List of Priority Pollutants.

N.C. Division of Health Services
DHS 3068-0 (4/86 Laboratory)

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	702948	702950	702951	702953	702955	702956
	FIELD #	3738	3740	3741	3743	3745	3746
COMPOUND	TYPE	(2)	(4)	(3)	(1)	(4)	(2)
	UNITS	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg
chloromethane	10	U	U	U	U	U	U
bromomethane	10						
dichlorodifluoromethane	20						
vinyl chloride	10						
chloroethane	10						
methylene chloride	5						
trichlorofluoromethane	20						
ethene, 1,1-dichloro	5						
ethane, 1,1-dichloro-							
1,2-trans-dichloroethene							
chloroform							
ethane, 1,2-dichloro-							
ethane, 1,1,1-trichloro-							
carbontetrachloride							
bromodichloromethane							
propane, 1,2-dichloro-							
1,3-trans-dichloropropene							
trichloroethylene							
chlorodibromomethane							
benzene							
ethane, 1,1,2-trichloro-							
1,3-cis-dichloropropene							
2-chloroethyl vinyl ether	10						
bromoform	5						
ethane, 1,1,2,2-tetrachloro-							
ethene, tetrachloro-							
toluene							
chlorobenzene							
ethylbenzene							
acetone	10	U	U	U	U	U	U
2-butanone	10						
carbondisulfide	5						
2-hexanone	10						
4-methyl-2-pentanone	10						
styrene	5						
vinyl acetate	10						
xylenes (total)	5						
	MDL						
	µg/l (water)						

J - Estimated value.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.
NA - Not analyzed.
1/ - Tentative identification.
2/ - On NRDC List of Priority Pollutants.

N.C. Division of Health Services

DHS 3068-O (4/86 Laboratory)

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	702958	702959	702961	702962	702964	
	FIELD #	3748	3749	3751	3752	3754	
COMPOUND	TYPE	(4)	(2)	(4)	(2)	(4)	( )
	UNITS	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg
chloromethane	10	u	u	u	u	u	
bromomethane	10						
dichlorodifluoromethane	20						
vinyl chloride	10						
chloroethane	10						
methylene chloride	5						
trichlorofluoromethane	20						
ethene, 1,1-dichloro	5						
ethane, 1,1-dichloro-							
1,2-trans-dichloroethene							
chloroform							
ethane, 1,2-dichloro-							
ethane, 1,1,1-trichloro-							
carbontetrachloride							
bromodichloromethane							
propane, 1,2-dichloro-							
1,3-trans-dichloropropene							
trichloroethylene							
chlorodibromomethane							
benzene							
ethane, 1,1,2-trichloro-							
1,3-cis-dichloropropene							
2-chloroethyl vinyl ether	10						
bromoform	5						
ethane, 1,1,2,2-tetrachloro-							
ethene, tetrachloro-							
toluene							
chlorobenzene							
ethylbenzene							
acetone	10	u	u	u	u	u	
2-butanone	10						
carbondisulfide	5						
2-hexanone	10						
4-methyl-2-pentanone	10						
styrene	5						
vinyl acetate	10						
xylenes (total)	5						
	MDL						
	µg/l						
	(water)						

J - Estimated value.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.
NA - Not analyzed.
1/ - Tentative identification.
2/ - On NRDC List of Priority Pollutants.

N.C. Division of Health Services

DHS 3068-O (4/86 Laboratory)

Appendix C
References

Ref. 1

November 2, 1987

TO: Lee Crosby

FROM: Mark Durway MD

RE: Thomasville Furniture Site Screening Inspection, Lenoir, Caldwell County

On 10-28-87 a NC CERCLA site screening inspection was conducted at Thomasville Furniture Industries (NCD054290770) in Lenoir, NC. Present for the inspection were:

Mark Durway, NC CERCLA
Pat DeRosa, NC CERCLA
Grover Nicholson, NC CERCLA
Tom Gibson, Thomasville Furniture
Sherry Stookey, Thomasville Furniture
Ted White, Radian Corporation (sampling for Thomasville Furniture)

Solidified formaldehyde-based and poly-vinyl acetate-based glues are alleged to have been buried on-site; however, the burial area(s) could not be located during the inspection. Surface water and surface soil samples were collected during the inspection. Although the Thomasville Furniture site did not appear to pose a public health or environmental threat, a strong chemical odor was detected at Blair Fork Creek. Thomasville Furniture representatives suggested that Reliance Universal (NCD053009510) could be the source of the chemical odor.

MD/ds/ibm.7

Ref. 2

North Carolina Department of Human Resources
Division of Health Services
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director

September 3, 1987

Ms. Denise Smith
EPA NC CERCLA Project Officer
EPA Region IV Waste Division
345 Courtland Street, N.E.
Atlanta, GA 30365

Dear Ms. Smith:

RE: Preliminary Assessment Report
Thomasville Furniture Industries
NC D054290770

Please find attached the Preliminary Assessment Report for the subject site. This report is based on documents on file at this office, and on communication with persons knowledgeable of this site.

The thirty acre Thomasville Furniture Industries site has been used for furniture manufacturing by various companies since the early 1900s. Wastes generated at the facility have included flammable D001 solids and non-halogenated F003 and F005 solvents. Thomasville Furniture operated an incinerator on the site until 1983. Presently the facility is regulated as a RCRA large quantity generator.

Sherry Stookey of Thomasville Furniture Industries has indicated that between 1975 and 1979, scrapings from filler and lacquer booths were disposed in on-site trenches, along with solidified formaldehyde-based and poly vinyl acetate-based glues. It has also been reported that formaldehyde-based glue spill once caused a release to a nearby tributary. The facility has underground storage tanks for fuel oil, naptha, and varsol.

There are an estimated 1694 ground water users within three miles of Thomasville Furniture whose water supply could potentially be impacted from past waste handling practices at the site. Although there is no indication that the Thomasville Furniture site poses a public health threat at present, it is recommended that a site inspection be conducted. Priority assigned for inspection is Medium.

On September 3, 1987, this Preliminary Assessment was reviewed by CERCLA Unit personnel, and by the following representatives from the North Carolina Department of Natural Resources and Community Development, Division of Environmental Management: Glenn Ross, Air Quality Section, and; Vince Schneider, Water Quality Section.

Please contact me at (919) 733-2801, if you have any questions concerning this report.

Sincerely,

D. Mark Durway

D. Mark Durway, Geologist
CERCLA Unit
Solid and Hazardous Waste Management Branch
Environmental Health Section

Ref. 3

August 31, 1987

TO: File

FROM: D. Mark Durway DMD

RE: Comments from Sherry Stookey re. Thomasville Furniture Industries' (NC D054290770) plant in Lenoir, Caldwell Co., NC

Ms. Stookey, environmental compliance officer with Thomasville Furniture Industries (tel. 919/472-4000), told me the following:

1) According to Dan Little, formaldehyde and poly vinyl acetate based glues, steel wool and scrapings from filler and lacquer booths were buried in on-site trenches between 1975 and 1979. The trenches, which may now be beneath a parking lot, were near the old cotton mill building.

2) According to Jim Siceloff, plant manager at the Lenoir plant, formaldehyde based glue once spilled from a tanker truck into a near-site tributary. The spill was properly contained.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART I - INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: NC | 02 SITE NUMBER: D 0542900770

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): Thomasville Furniture Industries
02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Blowing Rock Highway

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Lenoir	NC	28645	Caldwell	14	10

09 COORDINATES: LATITUDE 35°56'10" | LONGITUDE 81°32'10"

10 DIRECTIONS TO SITE (Starting from nearest public road) From downtown Lenoir, take Main Street 1.2 miles miles north. Find facility on right.

III RESPONSIBLE PARTIES

01 OWNER (If known): Armstrong World Industries, Inc.
02 STREET (Business, mailing, residential): PO Box 339

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Thomasville	NC	27360	(919) 472-4000

07 OPERATOR (If known and different from owner): Thomasville Furniture Industries
08 STREET (Business, mailing, residential): Blowing Rock Highway

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Lenoir	NC	28645	(704) 754-4581

13 TYPE OF OWNERSHIP (Check one)
[x] A. PRIVATE [ ] B. FEDERAL: _____ (Agency) [ ] C. STATE [ ] D. COUNTY [ ] E. MUNICIPAL
[ ] F. OTHER: _____ (Specify) [ ] G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) (CERCLA 103c)
[x] A. RCRA 3001 DATE RECEIVED: 5/15/86 RCRA Part A on 11-17-80 [ ] B. UNCONTROLLED WASTE SITE DATE RECEIVED [ ] C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION BY (Check all that apply)
[ ] YES DATE [ ] A. EPA [ ] B. EPA CONTRACTOR [ ] C. STATE [ ] D. OTHER CONTRACTOR
[ ] E. LOCAL HEALTH OFFICIAL [ ] F. OTHER: _____
[x] NO CONTRACTOR NAME(s): _____

02 SITE STATUS (Check one)
[x] A. ACTIVE [ ] B. INACTIVE [ ] C. UNKNOWN

03 YEARS OF OPERATION
Early 1900's | [ ] UNKNOWN
(Thomasville Furniture Industries acquired plant in 1968.)
BEGINNING YEAR ENDING YEAR

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED This 30 acre site has been used for furniture manufacturing since the early 1900's. Wastes known to have been generated on-site have included flammable solids (D001) and non-halogenated solvents (F003 and F005). Thomasville Furniture operated an incinerator until the

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION early 1980's, and is currently classified as a large generator. Between 1975 and 1979, scrapings from filler and lacquer booths were disposed in on-site trenches, along with solidified formaldehyde-based and poly vinyl acetate-based glues. Reported formaldehyde-based glue spill into nearby tributary. Fuel oil, naptha, and varsol underground tanks. Estimated 1694 ground water users within 3 mi. of site.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
[ ] A. HIGH (Inspection required promptly) [X] B. MEDIUM (Inspection required) [ ] C. LOW (Inspection on time available basis) [ ] D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Sherry Stookey, Environ. Compliance	Armstrong World Inds., Thomasville, NC	(919) 472-4000

02 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	ORGANIZATION	03 TELEPHONE NUMBER	08 DATE
D. Mark Durway	NC S&HW Mg	CERCLA	(919) 733-2801	8/5/87

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ?-[X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	unknown		wastes were disposed in on-site
PSD	PESTICIDES			trenches between 1975 and 1979.
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	non-haloq. solvents	------	stored or incinerated on-site		
OOC	spray booth scrapings	------	buried on-site		
OOC	dried glues	------	"		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1) Files at NC S&HWM
2) Sherry Stookey of Thomasville Furniture Industries, pers. comm., 8-31-87
3) Records from the NC Public Water Supply Branch, Raleigh, NC

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [X] B. SURFACE WATER CONTAMINATION
02 [ ] OBSERVED (DATE: UNKNOWN) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

Formaldehyde based glue reported to have spilled into near-site tributary.

01 [ ] C. CONTAMINATION OF AIR
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [X] E. DIRECT CONTACT
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [X] F. CONTAMINATION OF SOIL
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
04 NARRATIVE DESCRIPTION

Potentially hazardous wastes were disposed into on-site trenches between 1975 and 1979.

01 [X] G. DRINKING WATER CONTAMINATION
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [X] H. WORKER EXPOSURE/INJURY
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

01 [ ] I. POPULATION EXPOSURE/INJURY
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

UNKNOWN

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

UNKNOWN

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/runoff/standing liquids/leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

UNKNOWN

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

UNKNOWN

III. TOTAL POPULATION POTENTIALLY AFFECTED: UNKNOWN

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

As previously cited

Ref. 5

NORTH CAROLINA

ENVIRONMENTAL MANAGEMENT COMMISSION

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

RALEIGH

P E R M I T

For the Discharge of Air Contaminants Into the Atmosphere

In accordance with the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations,

PERMISSION IS HEREBY GRANTED TO

Thomasville Furniture Industries, Inc.
Lenoir Plant
Lenoir, North Carolina

FOR THE

construction and operation of air cleaning devices and appurtenances consisting of two fabric filters (4800 square feet of filter area each, ID No. F9 and F10) installed in parallel on the machine room wood dust collection system, and the

operation of:

1. A closed loop classifier cyclone,

2. A natural gas fired, 380 pounds per hour, Type 0 waste, multiple chambered incinerator with a 400,000 BTU per hour (minimum) primary burner and a 400,000 BTU per hour (minimum) secondary burner,

3. Thirty-five (35) paint spray booths, utilizing nonphotochemically reactive or exempt painting materials, installed on furniture finishing operations,

and air cleaning devices and appurtenances consisting of:

4. A baghouse (3255 square feet of filter area) and a simple cyclone (96 inches in diameter) installed in series on the exhausts of sanding equipment,

5. Thirteen baghouses (5130, 5130, 3825, 3825, 3825, 3020, 3020, 3020, 2460, 1155, 1155, 1155, and 600 square feet of cloth area, respectively) installed on the woodwaste collection system, and

6. Two multicyclones (20 nine inch diameter tubes each) installed one each on two finishing wastes/woodwaste/coal fired boilers (26.8 MBTU/hour maximum heat input each),

to remove particulate and visible emissions,

and for the discharge of the associated stack gases and treated air into the outdoor atmosphere at its facility located at 315 Elizabeth Street, Lenoir, North Carolina, Caldwell County,

in accordance with the application received February 2, 1984 and in conformity with the plans, specifications, and other supporting data, all of which are filed with the Department of Natural Resources and Community Development and are incorporated as part of this Permit.

This Permit shall be effective from the date of its issuance until October 1, 1987, is nontransferable to future owners and operators, and shall be subject to the following specified conditions and limitations:

1. The facilities shall be properly operated and maintained at all times in such a manner as to effect an overall reduction in air pollution in keeping with the application and otherwise to reduce air contamination to the extent necessary to comply with applicable Environmental Management Commission Regulations, including 15 NCAC 2D .0503, .0504, .0505, .0512, .0515, .0516, .0518, .0521, and .0535(f).

2. Reports on the operation and maintenance of the facilities shall be submitted to the Division of Environmental Management at such intervals and in such form and detail as may be required by the Division. Information required in such reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and preventive maintenance schedules.

3. As required by 15 NCAC 2D .0535(f), when particulate and/or visible emissions exceed Environmental Management Commission Regulations for more than four hours the Regional Supervisor, Mooresville Region, of the Division of Environmental Management shall be notified as promptly as possible but in no case later than 24 hours of becoming aware of the occurrence. Such notice shall specify the facility name and location, the nature and cause of the excess emissions, the time when first observed, the expected duration, and the estimated rate of emissions. This reporting requirement does not allow the operation of the facility in excess of Environmental Management Regulations.

4. The total amount of finishing wastes burned in the boiler shall not exceed 180 pounds per hour. Halogenated wastes and PCB's shall not be burned in the boiler.

5. The Permittee shall retain records at the facility of all finishing wastes that are burned in the boiler for a period of two years. These records shall include the type of finishing wastes burned and the amount of each waste burned hourly.

6. This Permit does not relieve the Permittee of the responsibility of complying with any Federal, State, or local requirements governing the handling, disposal, or incinerator of hazardous wastes, including the Resource Conservation and Recovery Act (RCRA) administered by the North Carolina Department of Human Resources.

7. This Permit does not relieve the Permittee of the responsibility of complying with all applicable requirements of any Federal, State, or local water quality or land quality control authority.

8. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the Division of Environmental Management. If appropriate, modifications to the permit may then be made by the Division of Environmental Managemnt to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

9. The Permittee at least 90 days prior to the expiration of this Permit, shall request its extension by letter. The letter should include the Permit number and a description of modifications, if any, that have been made.

10. This Permit is subject to revocation or modification upon a determination that information contained in the application or presented in support thereof is incorrect, conditions under which the Permit renewal was granted have changed, or violations of conditions contained in the Permit have occurred.

11. A violation of any term or condition of this Permit shall subject the Permittee to enforcement procedures contained in North Carolina General Statutes 143-215.114, including assessment of civil penalties.

Permit issued this the 15th day of March, 1984.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

Richard R. Peace, Jr.

Richard R. Peace, Jr., Regional Supervisor
Division of Environmental Management
By Authority of the Environmental Management Commission

NC
GW-B-12

Ref. 6

GEOLOGY AND GROUND-WATER RESOURCES of the MORGANTON AREA NORTH CAROLINA

ENVIRONMENTAL MANAGEMENT
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DEPARTMENT OF ADMINISTRATION
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N. C. DEPT. OF NATURAL
RESOURCES & COMM. DEV.

DIVISION OF GROUND WATER

GROUND WATER BULLETIN NUMBER 12

North Carolina
Department of Water Resources

CERCLA

CERCLA

RALEIGH
MARCH
1967

GEOLOGY AND GROUND-WATER RESOURCES of the MORGANTON AREA NORTH CAROLINA

By

Carlton T. Sumsion
Geologist, U. S. Geological Survey

Chemical Quality of Water Section
By
R. L. Laney
Chemist, U. S. Geological Survey

GROUND WATER BULLETIN NUMBER 12

NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES
George E. Pickett, *Director*

Division of Ground Water
Harry M. Peek, *Chief*

PREPARED COOPERATIVELY BY THE GEOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF THE INTERIOR
AND THE
NORTH CAROLINA DEPARTMENT OF WATER RESOURCES

MARCH 1967

Caldwell County

(Area, 476 square miles; 1960 population, 49,552)

Caldwell County is in the eastern part of the area of investigation (fig. 1). The northwestern part of the county lies on the deeply dissected slope of the eastern Blue Ridge front, and the lower ground in the southeast is within the inner Piedmont province. Topography in Caldwell County is of mounting relief from southeast to northwest; monadnock-like hills separated by moderately broad valleys of the inner Piedmont give way to high gradients on the rugged slopes of the Blue Ridge front. Altitudes range from less than 1,000 feet near Lake Rhodhiss to over 5,900 feet above mean sea level on Grandfather Mountain at the northwest corner of the county. Caldwell County lies mostly in the Catawba River drainage basin, but the northeast part of the county is drained by the Yadkin River and its tributaries. Streams and drainage courses are believed to be of subsequent development as they appear to be closely related to structural geologic features; joint and shear systems are coincident to most streams.

Lenoir, the county seat, is the largest town in Caldwell County. Other towns of substantial size are Whitnel, Hudson, Granite Falls, and Patterson. Caldwell County is predominantly agricultural; about 31 percent of the county is farmland. Forest products supplement agriculture. Manufacturing, mainly of textiles and furniture, is localized in the larger towns.

The metamorphic rock types of Caldwell County are heterogeneous and complex, but mica gneiss, mica schist, and granitic gneiss predominate in the inner Piedmont province. Schistose quartzite and layered gneiss predominate in the Blue Ridge part of the county. Structural trends of these rocks are generally oriented northeastward (pl. 2). A deeply weathered residual mantle of saprolite is present over most of the inner Piedmont part of Caldwell County. It is thin or absent on the Blue Ridge front.

Surface-water storage, principally from impoundment of the Catawba River in Lake Rhodhiss, provides most of the municipal and industrial water supplies in Caldwell County. The water is filtered, chlorinated and additionally treated before use. Ground water is the source of the municipal supply at Hudson. Drilled wells provide water

for farms and outlying residences throughout the county. Most of the drilled wells are less than 200 feet deep. Of 59 such wells the average depth is 123 feet and average yield is 9 gallons per minute. Dug and bored wells are common in the inner Piedmont part of the county. Their average depth is 30 feet and average depth to the water table is 22 feet. Drilled wells having the highest yields are located in: low, flat areas; relatively narrow, linear valleys; or draws. Springs are most commonly used in the Blue Ridge part of the area to provide domestic water supplies.

Analyses of ground water from Caldwell County are shown in table 14. Water from wells 20, 36, and 88 had iron concentrations above 0.3 ppm. Dug wells 36 and 85 contained water with high concentrations of nitrate and chloride.

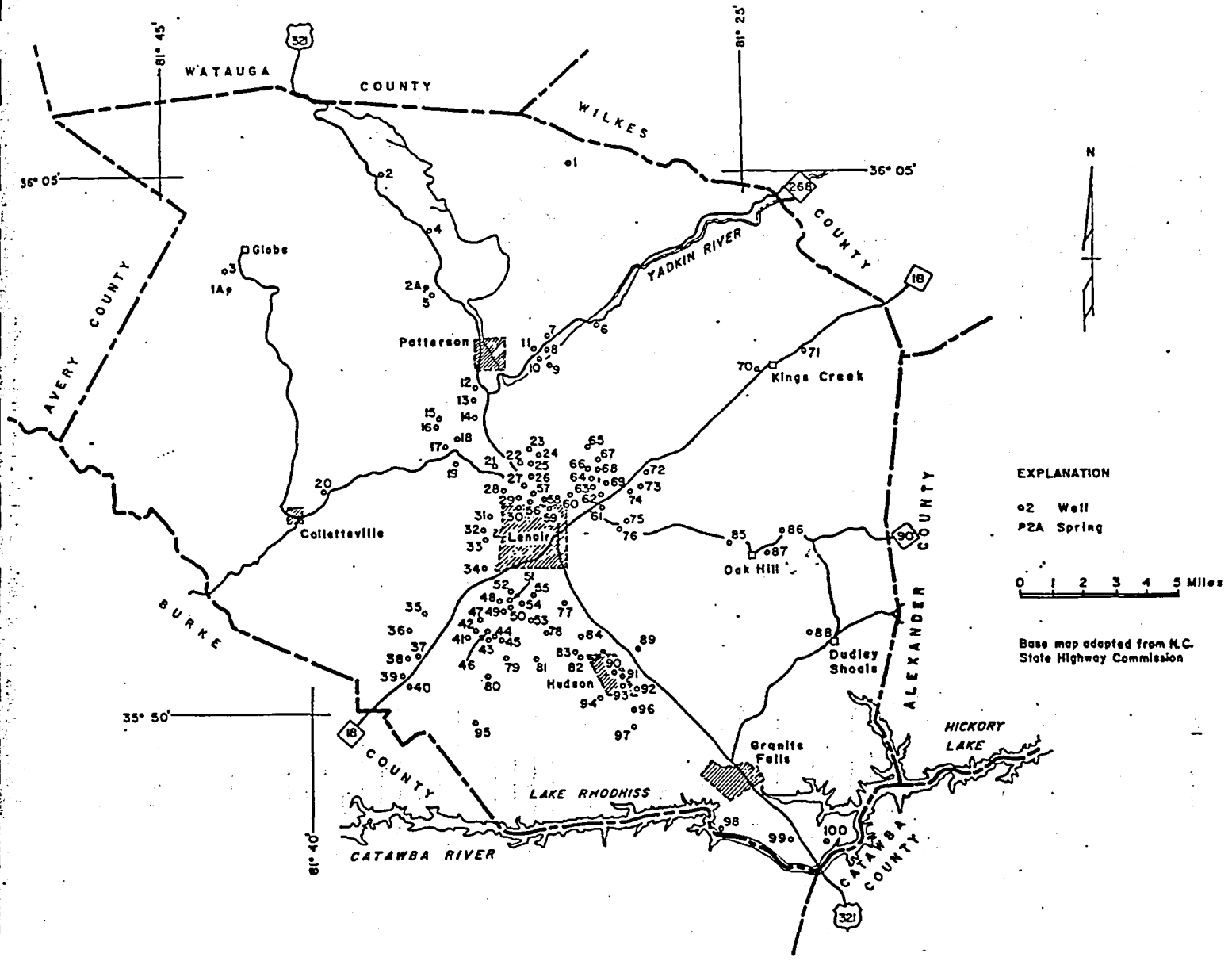

Figure 20. Map of Caldwell County showing locations of wells and springs.

TABLE 12. RECORDS OF WELLS IN CALDWELL COUNTY

Well No.	Location	Owner	Type of Well	Depth (ft)	Diameter (in)	Depth of casing (ft)	Water-bearing material	Water level (ft)	Yield (gpm)	Drawdown (ft)	Topography	Remarks
1	10.4 Mi. NE of Patterson	J. W. Hawkins	Drilled	55	6	32	Mica gneiss	—	6.0	—	Slope	
2	7.5 Mi. NW of Patterson	R. A. Harrison	do	337	6	37	Schistose quartzite	—	12.0	—	do	
3	10.6 Mi. NW of Colletts-ville	N. Gragg	do	86	6	66	Augen gneiss	—	4.0	—	do	
4	4.9 Mi. NW of Patterson	C. Hartley	do	280	6	33	Layered gneiss	—	6.0	—	do	
5	2.7 Mi. NW of Patterson	C. Lee	do	114	6	30	do	18	7.0	—	do	
6	3.9 Mi. NE of Patterson	C. B. Taylor	Dug	19	36	—	Saprolite	15	—	—	Flat	Observation well
7	1.9 Mi. NE of Patterson	E. Dobbins	Drilled	105	6	80	Mica gneiss	50	8.0	—	do	
8	1.7 Mi. NE of Patterson	L. Dillard	do	66	6	61	do	—	7.0	—	do	
9	3.0 Mi. E of Patterson	J. Melton	do	90	6	45	do	50	6.0	—	do	
10	1.3 Mi. E of Patterson	G. W. Watson	do	115	6	93	do	—	6.0	—	do	
11	1.5 Mi. E of Patterson	G. Callis	do	103	6	85	do	50	8.0	—	do	
12	1.0 Mi. S of Patterson	D. Gentry	do	99	6	86	do	—	2.0	—	Slope	
13	1.4 Mi. SW of Patterson	W. McLean	do	100	6	60	do	—	3.0	—	do	
14	2.0 Mi. SW of Patterson	F. McLeary	do	107	6	77	do	—	4.0	—	do	
15	3.0 Mi. SW of Patterson	C. Miller	do	86	6	66	do	50	5.0	—	do	
16	3.2 Mi. SW of Patterson	R. Miller	do	110	6	39	do	—	8.0	—	Flat	
17	3.5 Mi. SW of Patterson	E. Woodruff	do	100	6	50	do	50	10.0	—	do	
18	3.3 Mi. SW of Patterson	H. S. Rich	do	136	6	50	do	—	10.0	—	do	
19	4.2 Mi. SW of Patterson	C. R. Whisnant	do	100	6	50	do	—	10.0	—	do	
20	1.3 Mi. NE of Colletts-ville	A. F. Setzer	Dug	38	36	38	Saprolite	24	—	—	Slope	Observation well
21	2.0 Mi. NW of Lenoir	G. Little	Drilled	305	5	70	Mica gneiss	35	4.0	—	do	Hard water
22	2.5 Mi. N of Lenoir	I. Borders	do	121	6	38	Granitic gneiss	60	8.0	—	Flat	
23	2.8 Mi. N of Lenoir	B. Borders	do	157	6	63	Mica gneiss	—	8.0	—	do	
24	2.5 Mi. N of Lenoir	H. Arnett	do	174	6	97	Granitic gneiss	—	10.0	—	do	
25	2.6 Mi. N of Lenoir	R. Palmer	do	89	6	88	do	—	4.0	—	Slope	
26	2.2 Mi. N of Lenoir	J. Lynn	do	130	6	92	do	—	5.0	—	do	
27	1.8 Mi. N of Lenoir	Valmead Fire Dept.	do	74	6	69	do	—	12.0	—	Flat	
28	1.9 Mi. NW of Lenoir	B. Messick	do	100	6	75	Mica gneiss	—	5.0	—	Slope	
29	1.3 Mi. NW of Lenoir	G. McGennis	do	36	6	30	Granitic gneiss	—	3.0	—	Flat	
30	1.1 Mi. NW of Lenoir	J. Walker	do	326	6	140	do	—	6.0	—	do	
31	1.7 Mi. NW of Lenoir	R. Moore	do	100	6	65	Mica gneiss	—	7.0	—	Slope	
32	1.8 Mi. W of Lenoir	D. Dula	do	76	6	30	do	45	12.0	—	Flat	
33	1.8 Mi. W of Lenoir	L. Banner	do	101	6	91	do	—	7.0	—	Slope	
34	2.0 Mi. SW of Lenoir	C. W. Suddrith	do	—	6	33	Granitic gneiss	48	3.0	—	do	
35	4.7 Mi. SW of Lenoir	J. J. Wooten	do	133	6	58	Mica gneiss	55	4.0	—	do	
36	6.0 Mi. SW of Lenoir	T. J. Winkler	Dug	36	36	36	Saprolite	23	—	—	do	Observation well
37	5.7 Mi. SW of Lenoir	L. Star	Drilled	96	6	50	Granitic gneiss	50	5.0	—	do	
38	6.1 Mi. SW of Lenoir	J. Ragsdale	do	96	6	76	do	—	10.0	—	Flat	
39	7.2 Mi. SW of Lenoir	C. Herman	do	150	6	83	do	—	7.0	—	do	
40	7.3 Mi. SW of Lenoir	C. Goble	do	165	6	80	Mica gneiss	—	5.0	—	do	
41	5.0 Mi. SW of Lenoir	M. Corpening	do	178	6	156	Granitic gneiss	—	15.0	—	do	
42	4.8 Mi. SW of Lenoir	V. Corpening	do	280	6	90	do	—	10.0	—	do	
43	4.7 Mi. SW of Lenoir	H. Hartley	do	385	6	26	do	—	20.0	—	do	

44	5.2 Mi. SW of Lenoir	W. M. Stryken	do	308	6	28	do	—	15.0	—	Slope	
45	5.3 Mi. SW of Lenoir	A. West	do	125	6	88	do	—	10.0	—	Flat	
46	5.0 Mi. SW of Lenoir	J. V. Harper	do	216	6	37	do	—	10.0	—	Slope	
47	4.5 Mi. SW of Lenoir	J. Dula	do	194	6	36	do	—	4.0	—	do	
48	3.5 Mi. SW of Lenoir	C. R. Leonard	do	99	6	85	do	—	8.0	—	Flat	
49	3.7 Mi. SW of Lenoir	W. J. McGallinard	do	90	6	39	do	—	6.0	—	do	
50	3.6 Mi. SW of Lenoir	R. Smith	do	369	6	53	do	—	5.0	—	Hilltop	
51	3.5 Mi. SW of Lenoir	M. McNeil	do	88	6	62	do	—	10.0	—	Flat	
52	2.5 Mi. SW of Lenoir	D. Lackey	do	200	6	143	do	—	15.0	—	do	
53	2.9 Mi. S of Lenoir	C. Corpening	do	338	6	17	do	—	2.0	—	Slope	
54	3.5 Mi. SW of Lenoir	L. B. Eller	do	268	6	18	do	—	5.0	—	Flat	
55	2.7 Mi. S of Lenoir	C. Triplett	do	219	6	65	do	—	10.0	—	do	
56	1.2 Mi. N of Lenoir	C. Tuttle	do	87	6	65	do	—	6.0	—	Slope	
57	1.4 Mi. N of Lenoir	G. Kinkaid	do	110	6	86	do	—	2.0	—	do	
58	1.5 Mi. N of Lenoir	N. Taylor	do	169	6	127	do	—	3.0	—	do	
59	1.2 Mi. NE of Lenoir	H. Keys	do	99	6	86	do	—	5.0	—	Flat	
60	2.2 Mi. NE of Lenoir	M. M. Pennell	do	206	6	63	do	—	10.0	—	do	
61	2.9 Mi. NE of Lenoir	F. L. German	do	67	6	38	Mica gneiss	30	—	—	do	
62	3.0 Mi. NE of Lenoir	G. Sherril	do	122	6	36	Granitic gneiss	80	—	—	Slope	
63	3.2 Mi. NE of Lenoir	J. Triplett	do	147	6	97	do	—	12.0	—	Flat	
64	3.6 Mi. NE of Lenoir	J. German	do	237	6	42	do	—	12.0	—	do	
65	4.0 Mi. NE of Lenoir	J. Wilson	do	200	6	85	do	—	15.0	—	do	
66	3.5 Mi. NE of Lenoir	G. B. Laws	do	414	6	26	do	—	15.0	—	do	
67	4.0 Mi. NE of Lenoir	H. Ervin	do	88	6	50	do	—	7.0	—	Slope	
68	3.9 Mi. NE of Lenoir	J. B. Teeters	do	391	6	73	do	—	11.0	—	Flat	
69	3.0 Mi. NE of Lenoir	W. B. Bare	do	90	6	30	do	50	—	—	do	
70	7.4 Mi. NE of Lenoir	V. Keller	do	305	5	72	do	50	4.0	250 ft. in 1 hr. @ 4 gpm	Slope	Hard water
71	8.8 Mi. NE of Lenoir	C. Hedrick	Bored	28	36	28	Saprolite	17	—	—	do	Observation well
72	5.1 Mi. NE of Lenoir	A. Verbyla	Drilled	225	5	51	Mica gneiss	55	8.0	215 ft. in 3 hrs. @ 8 gpm	do	
73	4.9 Mi. NE of Lenoir	D. Olbeck	do	445	6	16	Granitic gneiss	105	7.0	—	Slope	
74	4.5 Mi. NE of Lenoir	A. Walsh	do	180	6	62	Mica gneiss	—	9.0	—	do	
75	4.1 Mi. E of Lenoir	R. Barlow	do	242	5	26	do	35	2.0	—	do	
76	3.8 Mi. E of Lenoir	C. Taylor	Dug	30	48	—	Saprolite	26	—	—	do	Observation well
77	2.8 Mi. S of Lenoir	R. F. Shipley	Drilled	137	6	72	Mica gneiss	—	5.0	—	Flat	
78	5.2 Mi. S of Lenoir	K. Kirby	do	77	6	38	do	—	10.0	—	do	
79	6.3 Mi. S of Lenoir	C. Price	do	116	6	42	do	70	10.0	—	do	
80	7.2 Mi. SW of Lenoir	Church	do	132	6	67	Granitic gneiss	—	7.0	—	do	
81	6.2 Mi. S of Lenoir	R. T. Andrews	do	130	6	66	Mica gneiss	—	10.0	—	do	
82	7.3 Mi. SE of Lenoir	Joyceton Mill	do	305	6	27	Mica schist	32	10.0	—	do	
83	7.0 Mi. SE of Lenoir	do	do	400	6	27	do	32	10.0	—	do	
84	5.0 Mi. SE of Lenoir	Blowing Rock Furniture Co.	do	150	6	80	do	—	10.0	—	do	
85	6.0 Mi. E of Lenoir	F. West	Bored	11	24	11	Saprolite	8	—	—	Slope	Observation well
86	7.6 Mi. E of Lenoir	Church	Drilled	385	5	58	Mica gneiss	75	3.0	—	do	
87	6.7 Mi. E of Lenoir	V. White	do	61	6	49	Mica schist	—	3.0	—	do	
88	11.1 Mi. SE of Lenoir	Church	do	345	5	73	Granitic gneiss	60	5.0	300 ft. in 1 hr. @ 5 gpm	do	
89	4.9 Mi. SE of Lenoir	H. C. Huffman	do	225	5	71	Mica schist	60	60.0	75 ft. in 4 hrs. @ 60 gpm	Draw	

TABLE 12. RECORDS OF WELLS IN CALDWELL COUNTY (Continued)

Well No.	Location	Owner	Type of Well	Depth (ft)	Diameter (in)	Depth of casing (ft)	Water bearing material	Water level (ft)	Yield (gpm)	Drawdown (ft)	Topography	Remarks
90	5.2 Mi. SE of Lenoir	Hudson Cotton Mfg. Co.	Drilled	1,058	8	—	Mica schist	—	300.0	—	Flat	Yield questionable
91	5.3 Mi. SE of Lenoir	do	do	159	6	62	do	—	10.0	—	do	
92	6.2 Mi. SE of Lenoir	W. Bolick	do	130	6	95	do	—	12.0	—	do	
93	6.0 Mi. SE of Lenoir	E. Shoun	Dug	50	36	50	Saprolite	40	—	—	Slope	Observation well
94	7.0 Mi. SE of Lenoir	S. Lingle	Drilled	101	6	33	Mica schist	—	5.0	—	do	
95	9.2 Mi. SW of Lenoir	W. Cook	do	170	5	46	Granitic gneiss	40	75.0	100 ft. in 5 hrs. @ 75 gpm	Draw	
96	7.0 Mi. SE of Lenoir	C. Presswood	do	330	5	23	Mica schist	15	10.0	110 ft. in 10 hrs. @ 10 gpm	do	
97	7.6 Mi. SE of Lenoir	F. L. German	do	86	6	22	do	—	10.0	—	Flat	
98	1.6 Mi. SW of Granite Falls	Rhodhiss Mills	do	386	8	—	do	30	105.0	—	do	
99	2.7 Mi. SE of Granite Falls	B. Huffman	do	245	5	135	Mica gneiss	80	25.0	150 ft. in 3 hrs. @ 25 gpm	do	Hard water
100	3.8 Mi. SE of Granite Falls	J. Hilkes	do	217	5	67	do	35	5.5	120 ft. in 4 hrs. @ 5.5 gpm	do	Hard water

TABLE 13. RECORDS OF SPRINGS IN CALDWELL COUNTY

Well No.	Location	Owner	Type of Well	Depth (ft)	Diameter (in)	Depth of casing (ft)	Water bearing material	Water level (ft)	Yield (gpm)	Drawdown (ft)	Topography	Remarks
1A	10.5 Mi. NW of Collettsville	C. Moore					Augen gneiss		0.8		Slope	Observation spring
2A	2.8 Mi. NW of Patterson	F. Woods					Layered gneiss		0.5		Flat	do

TABLE 14.- CHEMICAL ANALYSES OF GROUND WATER FROM CALDWELL COUNTY

Chemical analyses, in parts per million

Number	Rock type	Water type	Source and depth (ft.)	Date of collection	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Non-carbonate	Specific conductance (micromhos at 25°C)	pH	Color
	1/	2/	3/																							
6	mgn	III	Du- 19	Jan. 17, 1962.	2.7	0.3	0.07		9.6	2.4	6.5	11	0.4	55	11	3.7	0.1	0.9	0.1	79	76	36	0	127	7.0	30
7	mgn	III	Dr-105	Jan. 12, 1963.	25	--	.01		4.3	2.5	5.3	.8	--	35	1.0	2.7	.2	.9	--	--	60	21	0	68	6.6	--
20	mgn	III	Du- 38	Jan. 17, 1962.	20	.0	.42		3.8	1.5	4.7	1.6	.0	30	.2	2.1	.1	.3	.1	--	49	16	0	53	6.1	5
36	mgn	I	Du- 36	Jan. 17.....	25	.0	.59		24	3.1	4.8	2.3	.1	88	.2	2.7	.0	7.3	.0	--	112	72	0	156	6.8	0
71	mgn	I	B - 28	Jan. 16.....	22	.0	.29		12	1.7	3.4	.9	.0	52	.4	1.2	.0	.2	.0	65	68	37	0	85	6.4	0
75	mgn	I	Dr-242	Jan. 12, 1963.	33	--	.22		27	4.5	7.1	4.5	--	101	22	1.3	.2	.0	--	--	150	86	0	200	7.0	--
76	gr	C	Du- 30	Jan. 17, 1962.	4.0	.2	.15		2.8	.6	2.0	4.9	.1	12	4.0	2.6	.1	2.3	.1	--	30	10	0	46	5.6	25
85	msh	II	B - 11	Jan. 16.....	4.1	.1	.09		13	.4	2.3	3.3	.1	46	.2	3.8	.1	1.7	.0	56	52	34	0	81	7.7	0
88	gr	II	Dr-345	Jan. 11, 1963.	8.7	--	1.5		7.3	.8	1.6	.8	--	30	.2	.1	.1	.0	--	--	34	21	0	50	6.5	--
93	msh	C	Du- 50	Jan. 16, 1962.	5.9	.0	.27	0.04	12	3.6	30	3.1	.2	52	22	27	.1	6.1	1.0	--	138	44	2	250	6.5	5
1A	augn	III	S	Jan. 17.....	13	.0	.02		1.7	.5	2.1	.9	.0	14	.2	.6	.1	.0	.2	--	26	6	0	23	5.3	0
2A	lgn	IV	S	Jan. 17.....	16	.1	.03		1.3	.2	3.1	.8	.1	14	.2	1.1	.1	.1	.0	29	30	4	0	23	5.6	0

1/ Rock Type

qm - quartz-monzonite gneiss
msh - sillimanite-mica schist
gr - granitic gneiss
mgn - quartz-biotite gneiss
lgn - layered gneiss
amgn - amphibolite gneiss
augn - augen gneiss
Begn - Beech Granite
arph - argillite and phyllite
akp - arkosic and pyroclastic rocks
qsh - schistose quartzitic rocks
qtz - quartzite

2/ Water Type

I - calcium, magnesium, sodium bicarbonate
II - calcium, sodium, magnesium bicarbonate
III - calcium-sodium, magnesium bicarbonate
IV - sodium, calcium, magnesium bicarbonate
V - magnesium, calcium, sodium bicarbonate
D - dissolved solids too low to reflect effects of lithology upon water composition
C - excessive chloride and/or nitrate masks effects of lithology upon water composition

3/ Source

S - spring
Dr - drilled well
Du - dug well
B - bored well

(e) Reading the Index Number. The index number appearing in the column so designated is an identification number assigned to each stream or segment of a stream, indicating the specific tributary progression between the main stem stream and the tributary stream. For example, Parish Branch is assigned index number 11-7-5; Parish Branch is tributary to Mill Creek, to which index number 11-7 is assigned; Mill Creek is tributary to Catawba River, which is assigned index number 11. Numbers appearing in parenthesis indicate the position of the upstream boundary of the stream segments, e.g., the segment of Catawba River with its upstream boundary between Mill Creek, index number 11-7, and Burgen Creek, index number 11-9, is therefore assigned index number 11-(8).

(f) The Catawba River Basin Schedule of Classifications and Water Quality Standards was amended effective:

(1) March 1, 1977;

(2) August 12, 1979.

History Note: Statutory Authority G.S. 143-214.1; 143-215.1; 143-215.3(a)(1);
Eff. February 1, 1976;
Amended Eff. August 12, 1979; November 1, 1978; March 1, 1977.

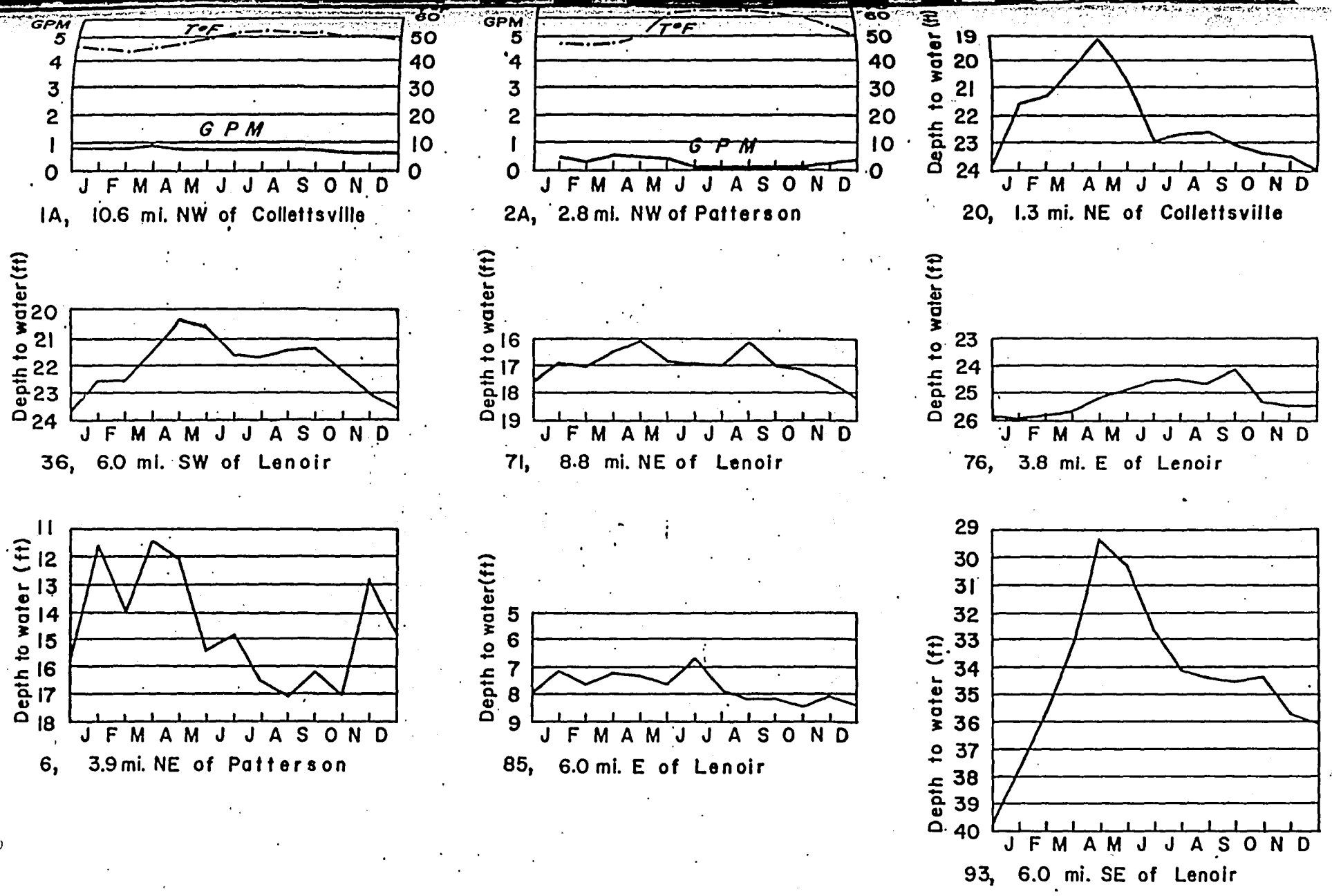

Figure 21. Caldwell County observation spring and well hydrographs, 1962.

.0301 CLASSIFICATIONS; GENERAL

(a) Schedule of Classifications. The classifications assigned to the waters of the State of North Carolina are set forth in the schedules of classifications and water quality standards assigned to the waters of the river basins of North Carolina, 15 NCAC 2B .0302 to .0317. These classifications are based upon the existing or contemplated best usage of the various streams and segments of streams in the basin, as determined through studies and evaluations and the holding of public hearings for consideration of the classifications proposed.

(b) Stream Names. The names of the streams listed in the schedules of assigned classifications were taken as far as possible from United States Geological Survey topographic maps. Where topographic maps were unavailable, U.S. Corps of Engineers maps, U.S. Department of Agriculture soil maps, and North Carolina highway maps were used for the selection of stream names.

(c) Classifications. The classifications assigned to the waters of North Carolina are denoted by the letters A-I, A-II, B, C, SA, SB, and SC in the column headed "class." These class designations refer to the classifications established by the Rules, Regulations, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, as adopted by the North Carolina Board of Water and Air Resources on October 13, 1970, and approved by the Environmental Protection Agency on January 20, 1971. A brief explanation of the "best usage" for which the waters in each class must be protected is given as follows:

Fresh Waters

Class A-1:	source of water supply for drinking, culinary, or food processing purposes after treatment by approved disinfection only, and any other usage requiring waters of lower quality;
Class A-II:	source of water supply for drinking, culinary, or food processing purposes after approved treatment equal to coagulation, sedimentation, filtration, and disinfection, etc., and any other usage specified by the "C" classification;
Class B:	primary recreation and any other usage specified by the "C" classification;
Class C:	fish and wildlife propagation, secondary recreation, agriculture and other uses requiring waters of lower quality.

Tidal Salt Waters

Class SA:	shellfishing for market purposes and any other usage specified by the "SB" and "SC" classification;
Class SB:	primary recreation and any other usage specified by the "SC" classification;
Class SC:	fish and wildlife propagation, secondary recreation, and other uses requiring waters of lower quality.

(d) Water Quality Standards. The water quality standards applicable to each classification assigned are those established in 15 NCAC 2B .0200, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, as adopted by the North Carolina Environmental Management Commission.

(e) Designation

(1) Trout Waters. Those streams suitable for the propagation of natural trout and those suitable for the maintenance of trout when stocked by the North Carolina Wildlife Resources Commission are designated in the appropriate columm in the schedule of classifications by the letters "Tr."

(2) Swamp Waters. Those waters which are topographically located so as to generally have low velocities and certain other characteristics which are different from adjacent streams draining steeper topography are designated by the letters "Sw" in the schedule.

(f) Index Number

(1) Reading the Index Number. The index number appearing in the column so designated is an identification number assigned to each stream or segment of a stream, indicating the specific tributary progression between the main stem stream and the tributary stream.

(2) Cross-Referencing the Index Number. The inclusion of the index nmber in the Schedule is to provide an adequate cross reference between the classification schedules and an alphabetic list of streams.

(g) Classification Date. The classification date indicates the date on which enforcement of the provisions of Section 143-215.1 of the General Statutes of North Carolina became effective with reference to the classification assigned to the various streams in North Carolina .

(h) Reference. Copies of the schedules of classifications adopted and assigned to the waters of the various river basins may be obtained at no charge by writing to:

Director
Division of Environmental Management
Department of Natural Resources
and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611

History Note: Statutory Authority G.S. 143-214.1; 143-215.1; 143-215.3(a)(1); Eff. February 1, 1976; Amended Eff. September 9, 1979; November 1, 1978; March 1, 1977.

Note: Nutrient Sensitive Waters: Waters which are experiencing or are subject to excessive growths of microscopic or macroscopic vegetation or which are tributary to such waters. (Nitrogen and phosphorus are the usually controlled nutrients but other parameters may be restricted.) They are designated in the schedule of classifications by the letters "NSW".

SECTION .0300 - ASSIGNMENT OF STREAM CLASSIFICATIONS

.0308 CATAWBA RIVER BASIN

(a) Schedule of Classifications. The classifications assigned to the waters within the Catawba River Basin are set forth in the Schedule of Classifications and Water Quality Standards Assigned to the Waters of the Catawba River Basin, which is on file in the Office of the Attorney General of North Carolina.

(b) Places where the schedule may be obtained:

Director
Division of Environmental Management
Department of Natural Resources
and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611

(c) Places where the schedules may be inspected:

(1) Clerk of Court:
Alexander County
Avery County
Burke County
Caldwell County
Catawba County
Gaston County
Iredell County
Lincoln County
McDowell County
Mecklenburg County
Union County
Watauga County

(2) North Carolina Department of Natural Resources and Community Development:
(A) Mooresville Regional Office
1119 North Main Street
Mooresville, North Carolina
(B) Asheville Regional Office
Interchange Building
159 Woodfin Street
Asheville, North Carolina

(3) Division of State Library
Archives -- State Library Building
109 E. Jones Street
Raleigh, North Carolina

(d) Unnamed Streams. Any stream which is not named in the schedule of classifications carries the same classification as that assigned to the stream or segment thereof to which it is tributary, unless otherwise indicated in the schedule of classifications. Such streams entering South Carolina are classified "A-II."

CTB 9

Name of Stream	Description	Classification Class	Date	Index No.
Turkey Branch (Turke Branch)	From source to Little Laurel Creek	C Tr	3/1/62	11-38-34-7-1
Laurel Mountain Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-8
Crusher Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-9
Laurel Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-10
Poplar Spring Branch	From source to Laurel Creek	C Tr	3/1/62	11-38-34-10-1
Lost Cove Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-11
Sassafras Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-1
Little Lost Cove Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-2
Gragg Prong	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-3
Ling Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-1
Major Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-2
Webb Creek	From source to Gragg Prong	C Tr	7/1/73	11-38-34-11-3-3
Webb Prong	From source to Webb Creek	C Tr	7/1/73	11-38-34-11-3-3-1
Fork Timber Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-4
Marks Mountain Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-5
Rockhouse Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-6
Still Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-7
Rockhouse Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-4
Big Cove Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-1
Maple Tree Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-2
Sandy Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-3
Hughs Ridge Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-4
Estes Mill Creek	From source to Wilson Creek	C Tr	7/1/73	11-38-34-12
Thorps Creek	From source to Estes Mill Creek	C Tr	7/1/73	11-38-34-12-1
Harper Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-14
Hull Branch	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-1
North Harper Creek	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-2
Chestnut Cove Branch	From source to North Harper Creek	C Tr	3/1/62	11-38-34-14-2-1
Hollander Branch	From source to North Harper Creek	C Tr	3/1/62	11-38-34-14-2-2
Raider Camp Creek	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-3
Phillips Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-15
Craig Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-16
Horsepen Creek	From source to Craig Creek	C Tr	3/1/62	11-38-34-16-1
Bee Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-17
Carroll Mill Creek	From source to Wilson Creek	C Tr	7/1/73	11-38-34-18
Parks Creek	From source to Johns River	C	3/1/62	11-38-35
Carroll Creek	From source to Parks Creek	C Tr	7/1/73	11-38-35-1
Pearcey Creek	From source to Parks Creek	C	3/1/62	11-38-35-2
Sims Branch	From source to Johns River	C	3/1/62	11-38-36
Lower Creek	From source to Rhodhiss Lake, Catawba River	C	9/1/74	11-39
Zacks Fork Creek	From source to Dam at Lenoir Water Supply	A-II	3/1/62	11-39-1-(1)
Zacks Fork Creek	From Dam at Lenoir Water Supply to Lower Creek	C	9/1/74	11-39-1-(2)
Town Creek	From source to Lower Creek	C	9/1/74	11-39-2
Spainhour Creek	From source to Lower Creek	C (1)	3/1/77	11-39-3
Blair Fork	From source to Spainhour Creek	C	9/1/74	11-39-3-1
Greasy Creek	From source to Lower Creek	C	9/1/74	11-39-4
Millers Creek	From source to Lower Creek	C	9/1/74	11-39-5
Abingdon Creek	From source to Lower Creek	C	9/1/74	11-39-6
Husband Creek	From source to Lower Creek	C	9/1/74	11-39-7
Celia Creek	From source to Husband Creek	C	9/1/74	11-39-7-1
Bristol Creek	From source to Lower Creek	C	9/1/74	11-39-8
White Mill Creek	From source to Bristol Creek	C	9/1/74	11-39-8-1
Jumping Branch	From source to Rhodhiss Lake, Catawba River	C	3/1/62	11-40
Smoky Creek	From source to Rhodhiss Lake, Catawba River	C	3/1/62	11-41

DEC 2 1983

Ref. 7

Memorandum

To: Regional Environmental Officer, Southeast Region, Department of the Interior, Atlanta, GA

From: Regional Director, FWS, Atlanta, Georgia (AHR)

Subject: Preliminary Natural Resources Survey, Lenoir Refining Site, Lenoir, North Carolina

In response to Mr. Bruce Blanchard's request of November 2, 1983, we have conducted a preliminary survey of the Lenoir Refining Site, Lenoir, Caldwell County, North Carolina, to determine whether or not natural resources under the trusteeship of the Department of the Interior are present in the vicinity of the site and, if present, whether or not damages have occurred. This survey was conducted according to procedures outlined in PEP-Environmental Review Memorandum No. ER 83-2.

Site Description

The Lenoir Refining Site occupies three acres in an open field within a residential and commercial area. The refining facility was used to store used solvents and to clean rags which were then resold. From the late 1940's until the mid 1970's there was a direct discharge from Lenoir Refining into Zack's Creek. After the State Division of Environmental Management determined that direct discharges were undesirable, discharges were made into the city sewer system until 1976. It was then determined that separate waste management facilities were needed. This option was rejected by the site owners because of expense, and the facility was modified to eliminate discharges.

The hazardous waste site is in the floodplain of Zack's Creek which has a history of flooding. This site served as a disposal area for drums containing non-halogenated solvents. The solvents stored included benzene, acetone, methyl ethyl ketone and toluene, which are toxic, flammable and explosive materials. An extensive area within the site was found to have contaminated soils. Groundwater contamination was not considered a problem because most of the solvents in contact with the ground were sludges, not liquids, thereby limiting the leaching potential. Surface water contamination caused by this facility was not verified since many of the contaminants present in the area could have come from the many furniture-making facilities in the vicinity.

DEC 0 9 1983

In past years, full drums from the Lenoir Refining Site were found immediately downstream of the site in Zack's Creek and further downstream in the Lower Creek. It was determined that this site should be cleaned up under the Comprehensive Environmental Response, Compensation and Liability Act of 1980. Clean-up procedures were completed on this site between October 13 and October 22, 1982. A total of 1,301 drums and 160 yards of soil were removed from the site. A total of 20,000 gallons of non-halogenated liquids were disposed of at a hazardous waste landfill in Emille, Alabama, and 40 drums of flammable solids were incinerated. Approximately 160 yards of clean fill were then deposited at the site, and the area has been seeded.

Interior's Trusteeship

Our investigation reveals that there are no known natural resources that occur within the boundaries of the site. However, downstream of the site, the riverine system and adjacent wetlands provide habitat for fish and wildlife populations. No National Parks, National Wildlife Refuges, or Indian reservations occur in the immediate vicinity of the Lenoir Refining Site. Although Santee National Wildlife Refuge is located approximately 350 miles downstream of the site, no impacts are expected because of dilution factors and the presence of several dams.

Natural Resources Survey

Survey investigation of this site included examination of aerial photography of the site, contact with the State Department of Human Resources, discussions with several State wildlife and fisheries biologists familiar with the general area, and consultation with the Service's Asheville, North Carolina, Endangered Species Office.

Lower Creek is the receiving stream for the waters of Zack's Creek. The confluence is located approximately 0.7 mile downstream of the Lenoir Refining Site. Lower Creek empties into the Catawba River and a main stem reservoir named Lake Rhodhiss about 12 miles from the confluence of Zack's and Lower Creek. Intermittent areas of forested wetlands and sloughs containing emergent wetlands occur adjacent to Lower Creek between Lenoir and the Catawba River.

Migratory birds utilize the floodplain of Lower Creek during migration and for breeding and rearing purposes. Migratory waterfowl that use this area include wood ducks, mallards and black ducks, and to a lesser extent, blue-wing and green-wing teal. Wood ducks are the only waterfowl breeding in the area; the others use adjacent wetlands as roosting sites during migration, and to a lesser extent, as wintering areas. Green heron and great blue heron use the area for breeding. Raptors found in the immediate vicinity include the red-tailed hawk, broad-winged hawk, Cooper's hawk, and sharp-shinned hawk. In addition, many passerine bird species would be expected to use this area during migration and during breeding.

Anadromous fish, including several species of clupeids and striped bass, occur in receiving streams downstream of the Lenoir Refining Site. However, because of the long distance to the sea and the presence of several dams, it is highly unlikely that any anadromous fish species would migrate to the study area. Striped bass were stocked in Lake Rhodhiss during the 1960's but stocking has not occurred since 1970. Downstream main stem reservoirs, including Lake Hickory and Lake Norman, also have been stocked with striped bass, but the last known stocking occurred in 1975. Very limited fish and invertebrate populations were found in Lower Creek approximately six miles downstream of the study area in 1964 and again in about 1980. State biologists felt that these low populations were the result of heavy pollution loads in Lower Creek.

The U.S. Fish and Wildlife Service has no endangered species listed for Caldwell County, North Carolina.

Conclusions and Recommendations

The natural resources inventory indicates that there will probably not be any effects to endangered species or anadromous fish resulting from impacts associated with the Lenoir Refining Site. The major reasons for this conclusion are the current lack of viable populations on the site and in the immediate vicinity, and the already heavily polluted nature of available habitat. Although this site probably has contributed to the overall poor environmental quality of aquatic habitat associated with Zack's Creek and Lower Creek it is impossible to ascertain the magnitude of impact associated with the Lenoir Refining Site at this time.

Migratory bird populations are using wetland habitats downstream of the site. It is unknown at this time what effects the release of solvents from the Lenoir Refining Site have had on these populations. In order to determine what the potential impacts are, extensive sampling and studies would be necessary and because of other sources of pollutants in the area, it would be very difficult to ascertain if potential impacts are directly associated with subject site.

As a result of: 1) the difficulty of ascertaining what impacts may be directly associated with the Lenoir Refining Site; and, 2) the fact that the site has been cleaned up, thereby no longer contributing further contaminants to the environment, we recommend that the DOI not pursue further action regarding this site at this time. The problems associated with pollution of aquatic habitats in this area are manifold and chronic in nature. Although the cleanup of this site has improved the existing situation, it is our opinion that potential impacts, especially to migratory birds, may have occurred. In addition to impacts from the Lenoir Refining Site, additive or

synergistic effects of other releases of toxic substances in the watershed present a potentially serious impact to fish and wildlife resources. However, because impacts associated with other hazardous waste sites in the State are potentially of greater magnitude, further studies on this site are not currently warranted.

/s/ James W. Pulliam

cc:
FWS/EC Washington Attn: Lynn Lewis
FWS/RCA Washington Attn: George Hanson
✓Raleigh ES

WJohnson:DSchultz:TH:11/30/83

Ref. 8

February 5, 1988

TO: File

FROM: Jack Butler

SUBJECT: Telephone conversation with Bill Forbes, Caldwell County Manager (704-758-8451) about Lenoir Refining Company, NCD079066833.

Mr. Forbes was contacted on this date concerning well locations and surface water use in the area of the Lenoir Refining site. Mr. Forbes did not know where the nearest well was but said it was probably in the Valmead area 1 to 2 miles northwest of the site. Mr. Forbes also reported that Zack's Creek and Lower Creek were not used for anything such as fishing that he knew of because there were much better fishing creeks, ponds, and lakes in the nearby mountains.

JB/ds/0526b-87

NORTH CAROLINA ATLAS

PORTRAIT OF A CHANGING SOUTHERN STATE

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Edited by JAMES W. CLAY
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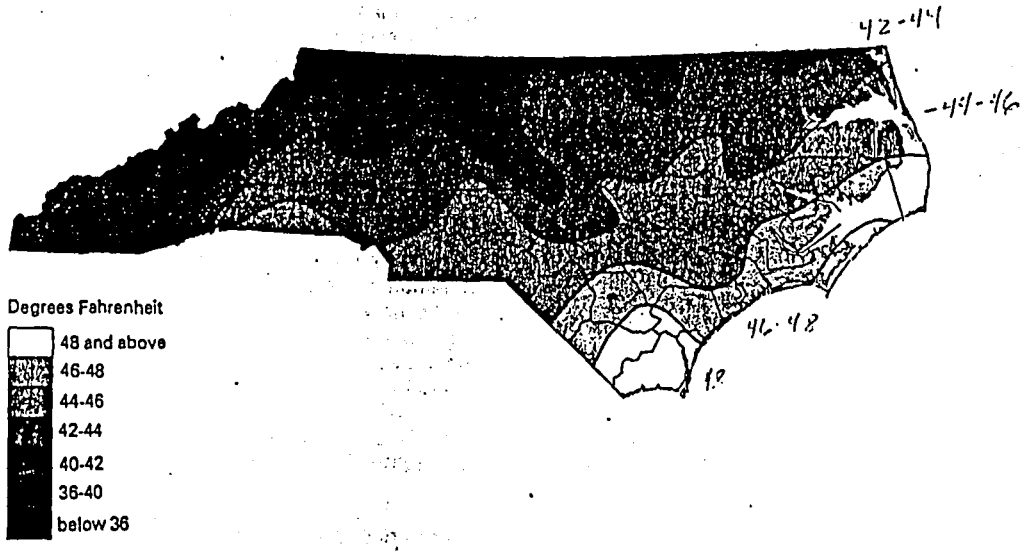
ALFRED W. STUART

Foreword by JAMES E. HOLSHOUSER, JR.

The University of North Carolina Press • Chapel Hill

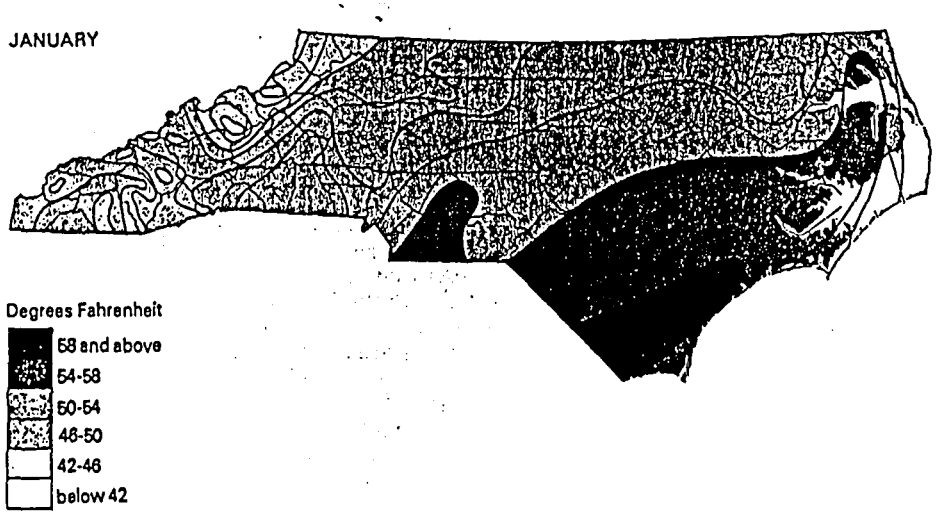
Ref. 9

Figure 5.2. Average January Temperatures in N.C.



Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

Figure 5.3. Mean Maximum Temperature in N.C.



Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

Seasonal Changes in Climate

Winter The alternate passage of low- and high-pressure systems over the state during winter months results in changing weather conditions. Moisture and warmer temperatures are characteristically associated with frequently passing low-pressure cells. Lows are followed by polar highs, which bring lower temperatures and clear skies. However, even when under the influence of these polar highs, temperatures seldom fall below 10° F., and midday temperatures reach into the forties, making the winter season very tolerable by northern standards.

January average temperatures shown in Figure 5.2 illustrate the mildness of winters. Only at the highest elevations do temperatures average below freezing. The mean temperature for January at Mount Mitchell is 28.7° F., the lowest in the state. Yet, at Asheville, located on the lee side of the mountains, temperatures for January average 39.4° F.

Nowhere else in North Carolina is the local contrast in temperatures as great as in the western counties. Temperature contrasts are least where the climate is mildest. Hatteras, on the Outer Banks, has a January mean of 48.0° F., and only thirteen days each year when temperatures of 32° F. and below are recorded.

The tendency for January isotherms to parallel the coast shows the influence of the Atlantic Ocean. Wilmington, in southeastern North Carolina, the most subtropical area in the state, exemplifies the maritime effect. This coastal city has a January mean temperature of 47.8° F., and an average of only eight days during January when temperatures dip to 32° F. or less, as compared with eighteen days at Raleigh and nineteen at Asheville.

In the Piedmont, latitude is the primary control on temperature, and the isotherms maintain a zonal pattern. As might be expected, temperature averages lie between those exhibited by the surrounding regions. Charlotte has a mean January temperature of 42.3° F., Greensboro, 39.0° F., and Raleigh, 42.7° F.

However, whereas Asheville averages eighty-three days each year when temperatures drop below freezing, Winston-Salem has freezing temperatures eighty-eight days annually, and Greensboro has eighty-four days with freezing temperatures.

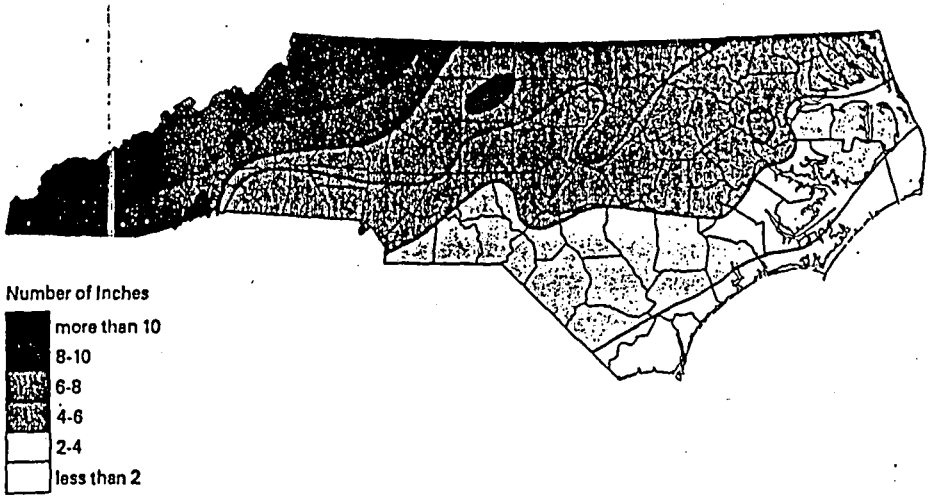
When high-pressure systems (anticyclones) dominate, clear to partly cloudy weather prevails. Receiving, on the average, 50 to 60 percent of total possible sunshine, North Carolina receives more hours of winter sunshine than do states to the north and to the immediate west. Sunshine is more prevalent in the southeast around Wilmington, and diminishes rapidly as the Mountains are approached. The Mountains receive about one-third less sunshine than does the rest of North Carolina.

Spring For many North Carolinians, this season is the most preferable of all. With the northward shifting of the noon sun, the storm track normal to North Carolina during the winter retreats northward and fewer and fewer cyclonic storms occur. Cold spells are less numerous and periods of high temperatures and balmy days become longer and more pronounced. Rainfall diminishes slightly in April, but increases toward the summer as cyclonic activity gives way to thundershowers and their heavy downpours. Although more precipitation is received in the state during May and June, there are fewer hours and days in which rainfall occurs, indicating a higher precipitation intensity.

Mean temperatures range from the fifties in April to the seventies in June for all places save those at high elevations. The days are marked by cool nights and warm afternoons with relative humidities at optimal levels for human comfort. As the daylight period lengthens, sunshine percentages and totals increase to their highest values for the year. For the eastern two-thirds of the state, sunshine during April, May, and June is received approximately 70 percent of the time and in amounts exceeding three hundred hours for the latter part of the season.

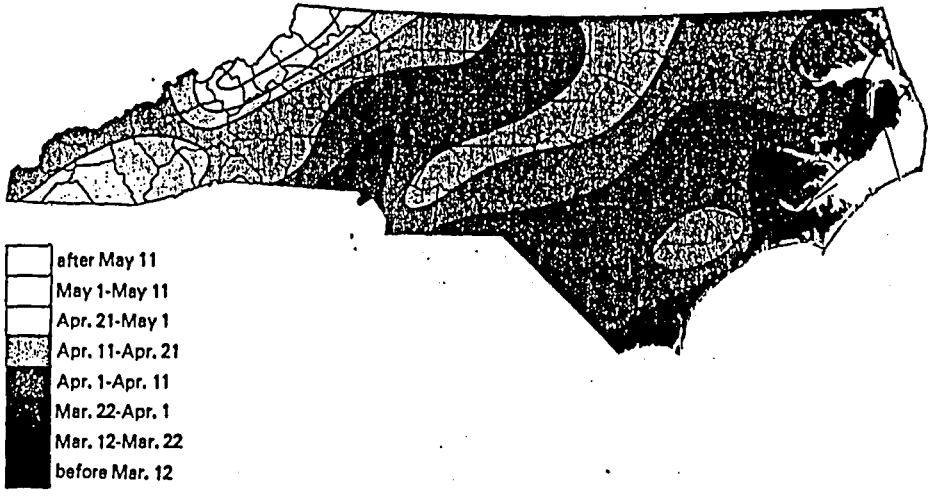
Average Date of the Last Freeze in Spring As illustrated by Figure 5.8, the beginning of the freeze-free season varies across the state from 1 March to 10 May, a difference in time of over two months. As expected, the milder climate along North Carolina's coast engenders early dates, whereas the more severe climate of the Mountains retards the start of the freeze-free period longer than elsewhere. In most areas of the Coastal Plain, the last spring freeze generally occurs by the first of April. The Piedmont has its last freezes between 1 and 10 April, about ten to fifteen days later than the Coastal Plain. In the Mountains, there is greater variation in mean dates for both the beginning and the end of the freeze season. Because air chills more quickly at higher elevations, and because cold air is denser than warm air, the cold air drains into the valleys where it is contained and continues to lose heat by radiation. The result of this process is that in certain Mountain areas some valleys are more often colder than their slopes at intermediate altitudes. Lying between the below-freezing temperatures of the valleys and the higher elevations are "verdant" or "thermal" belts.

Figure 5.7: Average Annual Snowfall in N.C.



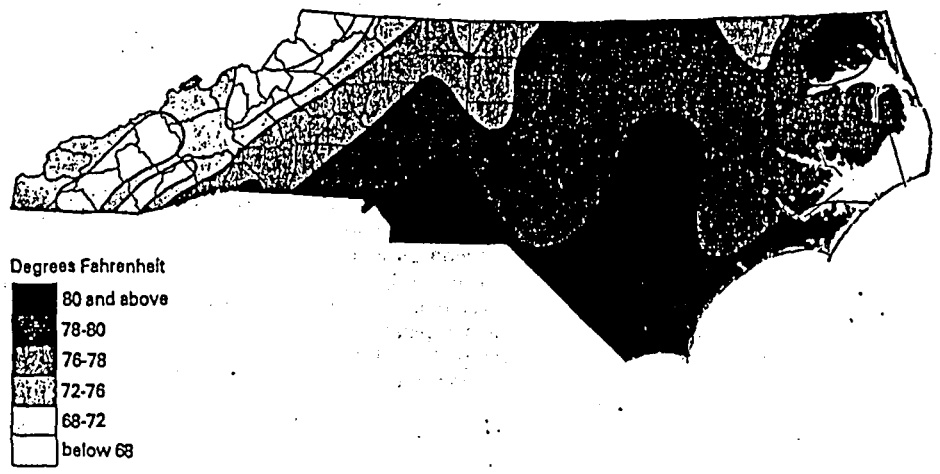
Source: U.S. Department of Commerce, *Climatological Summary*, 1966.

Figure 5.8. Average Date of Last Freezing Temperature in N.C.



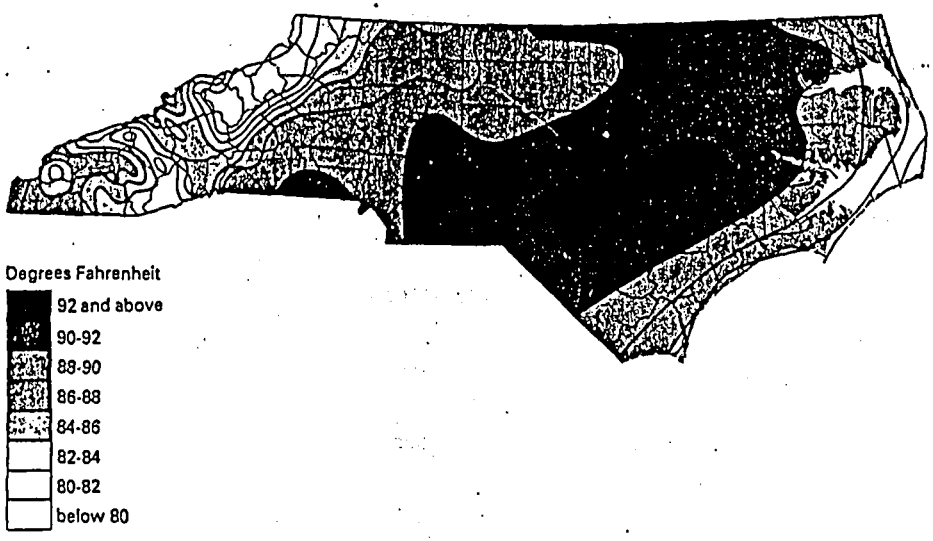
Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

Figure 5.9. Average July Temperature in N.C.



Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

Figure 5.10. Mean Maximum July Temperature in N.C.



Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

These strip-like regions have longer freeze-free seasons and thereby show earlier dates for the end of the freeze period than their surroundings. They support frost-susceptible vegetation long after the greenery has disappeared in nearby areas. Often in early winter or even in midwinter a contrasting belt of green flanked above and below by brown may be seen. These green belts are characteristically located along slopes that face the winter sun, are protected from cold northern winds, and have cold air drainage to lower valleys. The blossoming of dogwood and redbud moves across the state in a pattern similar to that of the end of the freeze season to blanket North Carolina with color and beauty.

Summer Summer is characterized by its high temperatures, high humidities, high amounts of rainfall, and high physiological stress. Except for the amelioration of these climatic elements in the Mountains, and the relief afforded by sea breezes along the coast, elsewhere in the state summer is a season of extremes. Mean monthly minimum temperatures for July and August are in the upper seventies and eighties and mean maximum temperatures reach into the nineties.

However, to quote a popular adage, "it's not the heat but the humidity," and North Carolina's temperatures in combination with the high water vapor amounts prevalent during the summer months are definitely uncomfortable. In addition, high sunshine percentages and a predominance of southerly winds tend to aggravate an already unpleasant climatic condition. Only the periodic passage of cool, dry air masses from the north and sea breezes in the coastal areas alleviate the discomfort of summer weather for North Carolina's low-lying counties.

July Average Temperatures The pattern of mean temperatures in July is similar to the pattern in January (Figure 5.9). However, in the Piedmont and Coastal Plain, isotherms are fewer in number and farther apart. In the Mountains, the reverse is true. The widespread isotherms east of the Mountains indicate that temperature averages across central and eastern North Carolina exhibit little contrast. From the western Piedmont to the coast, the difference in mean temperatures is only 4° F. Although the influence of the ocean is not evident in the arrangement of isotherms, the high temperatures of the Coastal Plain are made less severe by the cooling power of the sea breeze. Hatteras, on the Outer Banks, records a temperature of 90° F. on the average of only one day each year, while Wilmington, a short distance from the coast, has an occurrence of 90° F. temperatures about twenty-four days annually. In contrast with these locations, Raleigh and Winston-Salem mean temperatures for July are slightly lower, but the average number of days on which a temperature of 90° F. or above is experienced increases to more than forty.

Autumn is the driest season of the year and rainfall amounts drop below 3 inches throughout central and eastern North Carolina during October and November. Cyclonic activity increases as thunderstorms become less frequent until by late November they seldom occur.

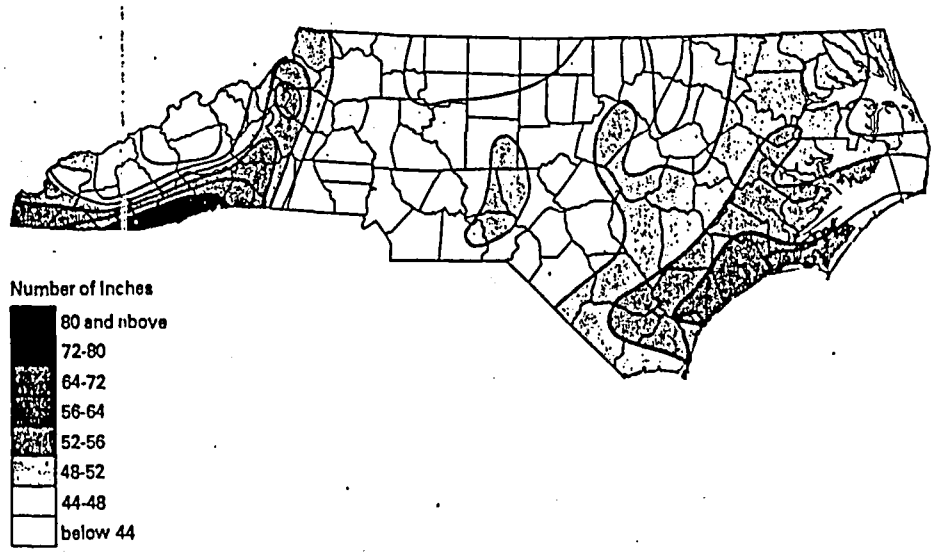
As illustrated in Figure 5.14, freezes begin early in October in the Mountains and slowly move eastward toward the coast. In early December, the freeze-free season reluctantly comes to a close in the Wilmington-Southport area. Deciduous trees begin their dormancy period and the color of the state gradually changes from the quiet greens of summer to the fiery reds and brilliant yellows of fall. By late autumn the highlands, now a mottled brown and green, show an occasional sprinkling of white as temperatures in the Mountains fall below freezing and the possibility of snow increases. However, in the Piedmont and Coastal Plain, tennis, sailing, and picnicking, for example, continue into November and football games played late in the season are often attended by fans dressed in warm-season attire.

Annual Precipitation and Humidity

Although a considerable variation in the distribution of rainfall exists throughout the state, everywhere precipitation is high (Figure 5.15). In the Coastal Plain, rainfall totals average from 44 to 55 inches; the highest amounts were received at the Outer Banks. Across the Piedmont, yearly rainfall averages range from 43 to 48 inches, with the northern and southern sectors having the lower totals. The greatest variability in rainfall distribution is found in the Mountains. Here, south-facing slopes along the North Carolina-South Carolina border receive as much as 80 inches of precipitation each year. Nearby, Asheville, lying in a sheltered valley, records only 37 inches, the lowest rainfall average reported in the state. More commonly, average annual precipitation in the Mountains ranges from 44 to 58 inches. For the state as a whole, an average total of 50 inches is representative.

The distribution of rainfall throughout the year is reasonably uniform. Although there are no pronounced wet and dry seasons, a profile of average annual precipitation indicates a bimodal distribution, i.e., two periods of higher rainfall separated by two periods during the year when rainfall amounts are lower than the norm. Generally, the highest precipitation totals are associated with the summer months. In the fall, the season of the least rainfall, the lowest yearly totals usually occur in October or November. Precipitation increases slightly during the winter season and then decreases to a secondary low in April. This precipitation regime is common to the state and varies only slightly from place to place.

Figure 5.15. Average Annual Precipitation in N.C.



Source: U.S. Department of Commerce, *Weather and Climate in North Carolina*, 1972.

Although rainfall is heaviest in the summer, evaporation and transpiration losses are also great. Consequently, the summer season is deficient in its supply of soil moisture and irrigation may be required to sustain crop needs.

Although it is considered to be a wet state, North Carolina nevertheless has its occasional "bout with drought." Recently, the Piedmont and Inner Coastal Plain suffered through an especially severe drought. In 1968, negative rainfall departures amounting to as much as 26 inches were computed by individual stations within this area. On the other hand, 1972 proved to be an abnormally wet year. During that year, Raleigh, which has an average annual precipitation of 46.35 inches, experienced a total rainfall of 51.74 inches. Raleigh's weather records may be used to illustrate the variations in yearly precipitation amounts. In the capital city, annual totals have varied from a low of 30 inches in 1933 to a high of 64 inches in 1936. On a monthly basis, rainfall variation for July has ranged from 12.36 inches in 1931 to as little as 0.38 inches in 1953. Yet precipitation variability in North Carolina is moderate compared with those states where rainfall totals are significantly less and consequently precipitation patterns and regimes are more unpredictable.

Average Number of Days with 0.01 Inches of Precipitation or More Figure 5.16 shows the pattern of days with measurable precipitation in North Carolina. The Mountains have the greatest number of days with measurable precipitation, averaging 10 to 20 more rainy days per year than the coast and 20 to 30 days more than the southern Piedmont. In the northwest corner of the state precipitation occurs 4 out of every 10 days. By contrast, the sandhills in the Southern Piedmont experiences precipitation on only 30 percent of the days. In fact, a "tongue" of fewer rainy days penetrates the state from south to north, through North Carolina's central counties. For the state as a whole, 125 days with measurable precipitation is a representative figure.

Water Balance

The "wetness" or "dryness" of any region is mirrored by its natural vegetation. Indigenous plant life is an indicator of a region's precipitation effectiveness and its capacity to support plant growth. The minimal moisture requirements of plant communities are quite specific, and in situ vegetation reflects the amounts of water annually and seasonally available for its use. As the size of a bank account depends upon the balance between deposits and withdrawals, so precipitation effectiveness

soil moisture requirement is satisfied, additional precipitation will drain to the underground water table or run off the land as surplus water.

Figure 5.18 provides the water balance deficits for the state and shows that everywhere except for the Asheville area and the northern Piedmont, the annual water deficit is less than one inch. By contrast, Figure 5.19 gives water balance surpluses. Being a wet state, North Carolina's water budget indicates surpluses exceeding deficits by large amounts. While most of the Piedmont and Coastal Plain have surplus water up to 15 inches, the Outer Banks and the Mountains show surpluses above 15 inches. In the southwest corner of the state, water surpluses amount to as much as 30 inches.

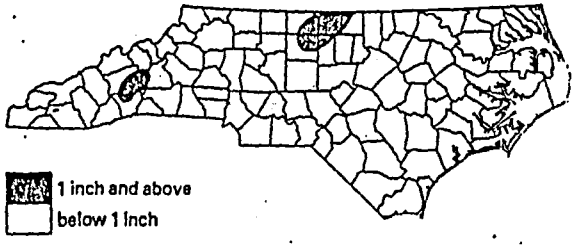
Mean annual evaporation for North Carolina is shown in Figure 5.20. Evaporation rates and totals are related to temperature, wind velocity, and relative humidity. Where temperatures are highest and humidities lowest, evaporation intensities will be greatest. Since temperatures throughout the Coastal Plain and the Piedmont are highest for the state and since humidity percentages are greater in the vicinity of the ocean, evaporation totals are lower in the Mountains and along the coast, and highest in the southern Piedmont and Coastal Plain. A comparison of the maps showing precipitation, evaporation, water surplus, and water deficit will provide the reader with a fairly complete picture of North Carolina's water balance.

Winds and Storms

Three types of storms and their associated winds are common to North Carolina: cyclonic and convectional thunderstorms, hurricanes, and tornadoes. These storms are integral parts of the state's climatic pattern. In analyzing the importance of winds, direction and speed are major considerations.

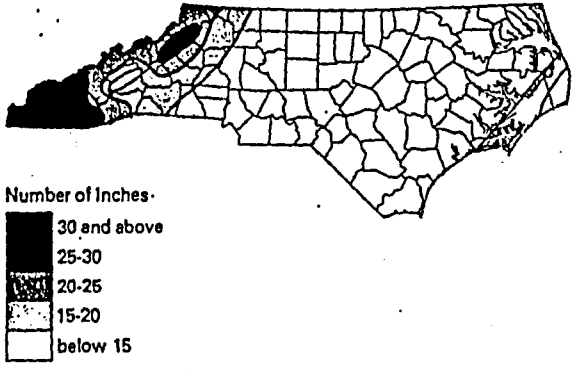
Although prevailing winds (winds that persist in blowing from one direction more so than any other) characterize given geographical areas, wind direction changes frequently. A northwesterly wind (coming from the northwest) will be, relatively speaking, a cooling and drying wind, whereas a southeasterly wind will bring warm, moist air to the state. The passage of cyclones and anticyclones with their characteristic wind patterns will change the wind's direction so that it may come across North Carolina from any point of the compass.

Figure 5.18. Water Balance Deficit in N.C.



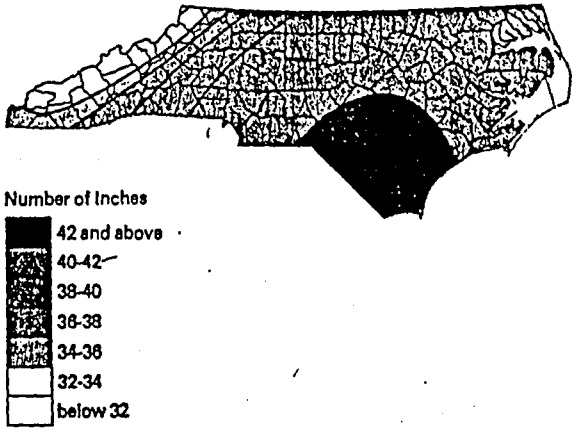
Source: U.S. Department of Commerce, *Climatic Summary of the U.S.*, 1972.

Figure 5.19. Water Balance Surplus in N.C.



Source: U.S. Department of Commerce, *Climatic Summary of the U.S.*, 1972.

Figure 5.20. Mean Annual Evaporation in N.C.

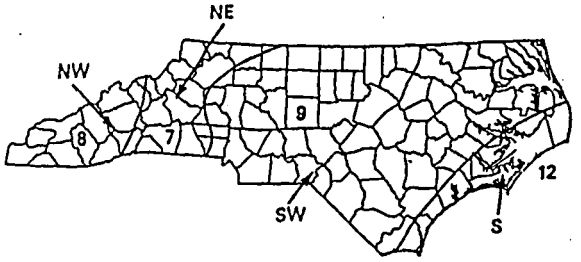


Source: U.S. Department of Commerce, *Climatic Summary of the U.S.*, 1972.

The velocity of the wind is relevant to ventilation of air pollutants, evaporation rates, and thus cooling and chilling indexes. On those occasions when winds reach gale force and higher, their velocities are of singular importance because of their destructive capabilities. Damaging winds are usually associated with infrequent hurricanes and tornadoes and, at times, with severe thunderstorms.

The prevailing winds and mean wind speeds averaged for the year are given in Figure 5.21. For the eastern two-thirds of the state, winds blow most frequently from the southwest and south. Throughout the Mountains and the western Piedmont, winds prevail from northerly directions. This annual pattern of prevailing winds persists for most months of the year except September and October when winds are dominantly from the northeast. During these months, the clockwise flow of air from seasonal anticyclones lying poleward of North Carolina, and the counterclockwise winds associated with an increased number of offshore storms cause northeasterlies to prevail across the state.

Figure 5.21. Prevailing Winds and Mean Annual Wind Speed in N.C.



Source: U.S. Department of Commerce, *Climatic Summary of the U.S.*, 1972.

Note: Wind speeds are noted in miles per hour.

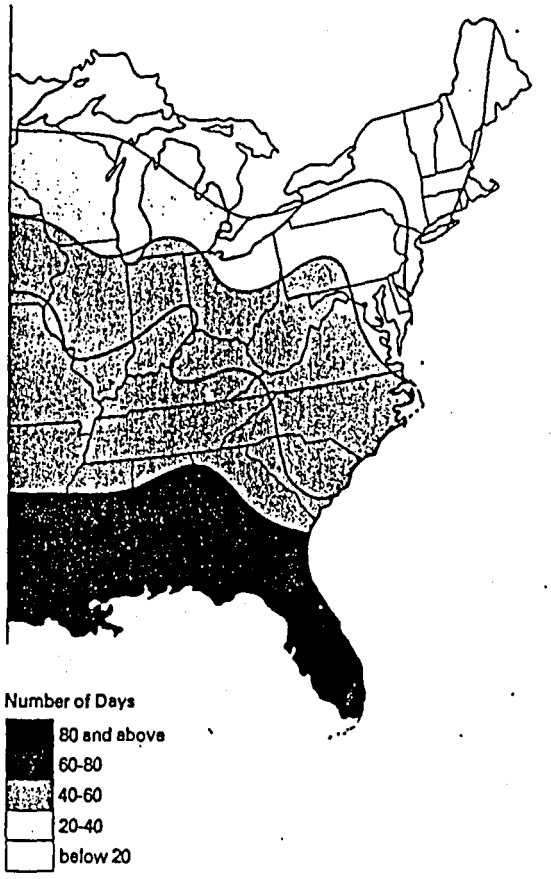
Wind speeds have been averaged for each zone of prevailing winds. Winds tend to diminish in speed westward from the coast where sea breezes and offshore storms contribute to velocities that average twelve miles per hour. Throughout the Inner Coastal Plain and the Piedmont, the mean wind speed is nine miles per hour, and in the western counties, representative wind speeds are seven and eight miles per hour. On a daily basis, wind velocities are lowest before dawn and highest around midafternoon. Seasonally, winter, with greater temperature and pressure contrasts, shows the most rapid air movement and summer is the time of lowest wind speeds.

Thunderstorms Thunderstorms are vertically developed storm systems that involve lightning and thunder. Produced by instability in the atmosphere, these storms are sustained by the conversion of water vapor into rain and hail, which causes the release of enormous amounts of energy. This energy results in vigorous updrafts of rapidly moving air. The intensity and turbulence of an individual thunderstorm is related to the degree of atmospheric instability and the supply of latent energy released by the condensing of water vapor. In structure, the typical thunderstorm is a collection of convective cells each averaging a mile or more in diameter. A cell is comprised of columns of rapidly rising air separated and counterbalanced by downdrafts of slower moving air. Associated with thunderstorms and their bulbous facade are heavy downpours of rain, hail, gusty and squally winds, and of course, lightning and thunder.

Because thunderstorm development and frequency is enhanced by (1) atmospheric instability that is linked to high surface temperatures, (2) atmospheric moisture that supplies the latent energy requirements, and (3) some triggering device to start the convection process, thunderstorms occur more frequently in regions of warm temperatures and high humidities. North Carolina's climate is conducive to thunderstorm development and the state experiences violent local storms forty to fifty days each year. For the United States, Florida and the Gulf Coast lead in the number of days with thunderstorms. Here, seventy to ninety days per year with thunderstorms is normal. In the northern states and along the West Coast, thunderstorm activity drops off because of colder temperatures over land and coastal waters. North Carolina's pattern of thunderstorm activity shows fewest storms off the northeast coast where coastal waters also are cooler. Inland, thunderstorms are more frequent, increasing to fifty days as the Mountains are approached. In the Mountains, the higher frequency of storm activity (all types) and the triggering supplied by mountain and frontal slopes results in the most thunderous area to be found in the state (Figure 5.22).

Hurricanes In the latter half of the year, the United States is visited by hurricanes. Originating over tropical oceans as small cyclones, under favorable conditions hurricanes become large, intense storm systems. Their winds exceed seventy-five miles per hour and spiral counterclockwise around an "eye" of very low pressure. Sustained by the ocean that breeds them, these storms are driven by the heat released from condensing water vapor. Covering tens of thousands of square miles, hurricanes move slowly and deliberately, at speeds between fifteen and fifty miles per hour, delivering prodigious amounts of precipitation to areas over which they pass. Moving out of the tropics, hurricanes of the Atlantic Ocean generally invade the Gulf of Mexico, or veer northward toward the middle latitudes, occasionally penetrating the continent, or skirting the coastline as far north as New England. Hurricanes are sea monsters and diminish in intensity as they move inland and away from their source of energy. Although capable of great destruction, hurricanes nevertheless benefit the southeastern states to a substantial degree. As the eastern states are subject to periodic summer droughts, the vast amounts of water delivered to this region by these giant tropical storms have served more than once to alleviate or terminate the disastrous effects of drought conditions. However, hurricanes are killer storms, and their long-range benefits are obscured by the more obvious death, destruction, and damage accompanying them. On the average, the Atlantic Ocean generates six hurricanes a year, but as many as eleven in one year have been observed. North Carolina has experienced twelve especially disastrous hurricanes since 1900. Cape Hatteras, extending as it does into the ocean, is affected by hurricanes more than any other area of North Carolina (Figure 5.23). Its low-lying sandy surface is especially vulnerable to the combined effects of high winds, high tides, and flooding associated with these storms.

Figure 5.22. Average Number of Days with Thunderstorms

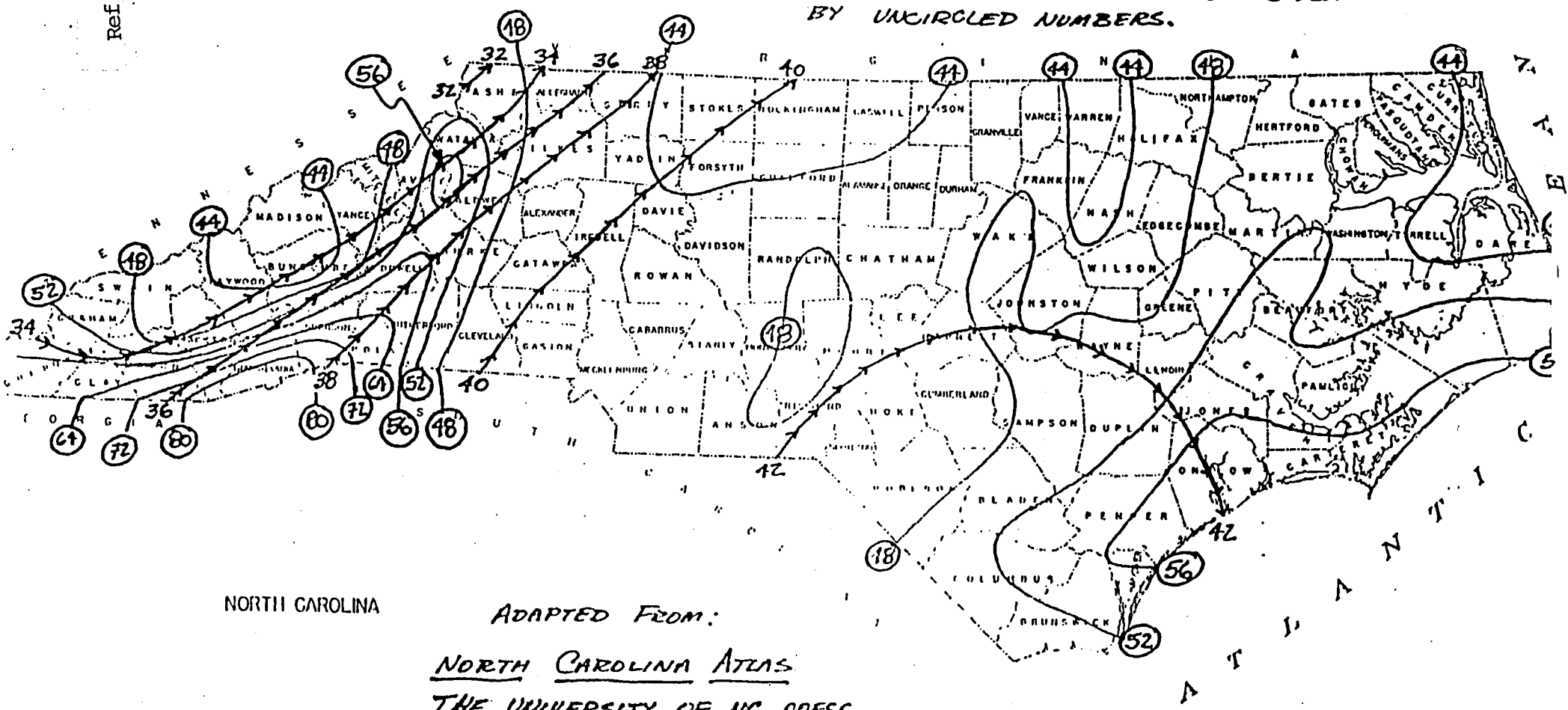


Source: Glenn T. Trewartha, Arthur H. Robinson, and Edwin H. Hammond, eds., *Elements of Geography*, 5th ed. (New York: McGraw-Hill Book Co., 1967).

MEAN ANNUAL PRECIPITATION AND MEAN ANNUAL EVAPORATION

NOTE: PRECIPITATION ISOGRAMS ARE SOLID LINES (——) WITH INCHES OF RAINFALL GIVEN BY CIRCLED NUMBERS. EVAPORATION ISOGRAMS ARE NOTCHED LINES (→→→) WITH INCHES OF EVAPORATION GIVEN BY UNCIRCLED NUMBERS.

Ref. 10



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Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

Kris W. Barrett
S. Steven Chang
Stuart A. Haus
Andrew M. Platt

August 1982

MTR-82W111

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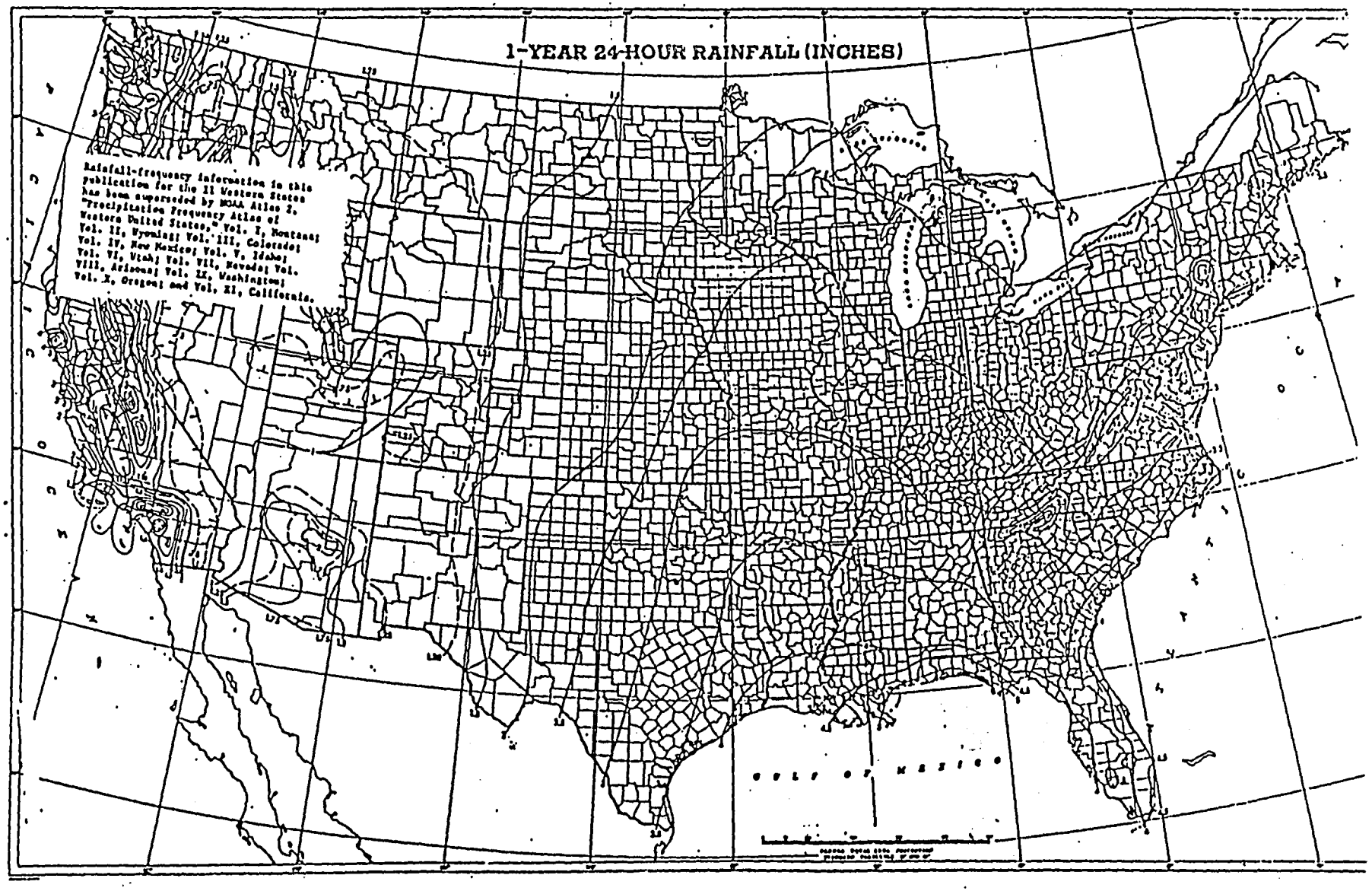
1-YEAR 24-HOUR RAINFALL (INCHES)
Rainfall-frequency information in this publication for the 11 Western States has been superseded by NOAA Atlas 2, "Precipitation Frequency Atlas of Western United States," Vol. I, Montana; Vol. II, Wyoming; Vol. III, Colorado; Vol. IV, New Mexico; Vol. V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; and Vol. XI, California.
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Fifth Edition, 1984

North Carolina State Government

Statistical Abstract

North Carolina State Data Center

Research and Planning Services
Office of State Budget and Management

Table 178

EMISSIONS INVENTORY SUMMARY (IN TONS)
FROM POINT AND AREA SOURCES, BY COUNTY
1979

County	Particulates		Sulfur Dioxide		Nitrogen Oxides		Volatile Organic Compounds and Hydrocarbons		Carbon Monoxide	
	Area Sources	Point Sources	Area Sources	Point Sources	Area Sources	Point Sources	Area Sources	Point Sources	Area Sources	Point Sources
State Total	553,662	222,263	43,247	731,157	334,896	290,035	560,734	114,695	2,416,683	130,670
Alamance	7,718	868	818	1,428	5,890	266	11,748	3	45,688	21
Alexander	2,150	633	173	128	1,150	32	1,634	535	6,880	2
Alleghany	2,168	-	63	-	611	-	924	-	3,931	-
Anson	2,537	201	183	2	1,618	16	2,700	92	10,909	4
Ashe	5,022	422	127	9	1,127	74	1,713	231	7,535	12
Avery	1,785	78	89	83	799	50	797	8	4,116	7
Beaufort	5,334	1,079	307	21,236	2,731	1,145	4,277	23	19,654	51
Bertie	2,927	1,688	144	316	1,598	312	2,107	63	11,434	101
Bladen	3,565	135	191	551	1,935	99	2,731	184	12,777	8
Brunswick	3,293	913	284	16,816	2,818	3,418	3,285	29,359	16,967	10,845
Buncombe	15,826	4,523	1,036	101,634	8,073	34,108	17,219	536	66,409	2,245
Burke	5,906	568	485	1,528	4,066	671	6,335	1,486	27,446	109
Cabarrus	6,136	765	581	2,638	4,775	1,126	8,704	998	45,995	94
Caldwell	6,070	3,850	581	383	3,408	435	4,897	5,680	19,740	69
Camden	707	3	47	-	517	-	825	-	4,021	-
Carteret	1,949	8	270	81	2,269	16	5,080	-	20,446	2
Caswell	2,438	899	124	-	1,160	-	1,516	-	8,438	-
Catawba	7,537	19,814	1,345	75,338	7,829	33,880	13,934	3,016	40,662	1,932
Chatham	4,994	9,679	349	12,208	2,464	5,352	3,999	756	15,675	889
Cherokee	3,332	50	104	1	1,050	6	1,750	1	7,010	1
Chowan	747	54	93	326	795	54	1,405	227	6,347	4
Clay	2,096	-	71	-	1,200	-	2,076	-	17,224	-
Cleveland	6,160	365	945	406	4,030	929	6,461	-	15,717	46
Columbus	5,840	1,406	391	7,739	3,216	2,082	4,170	412	20,182	12,427
Craven	6,901	3,358	399	6,706	3,677	2,614	6,682	1,048	32,514	7,083
Cumberland	17,810	586	1,120	2,927	9,493	681	17,624	834	90,631	74
Currituck	1,100	159	700	-	1,200	2	1,400	-	4,900	-
Dare	605	5	104	240	932	71	3,926	2	14,035	12
Davidson	10,207	355	756	998	6,301	629	10,328	2,470	44,355	144
Davie	2,233	428	149	66	1,259	31	5,206	181	8,938	5
Duplin	4,789	105	273	763	2,949	154	3,668	41	18,942	13
Durham	10,624	836	778	860	6,398	194	12,903	703	58,610	15
Edgecombe	3,302	3,041	491	407	4,010	81	4,720	1,367	21,017	17
Forsyth	17,838	528	2,173	5,837	16,754	2,152	24,192	21,488	95,712	186
Franklin	2,850	-	181	-	1,771	-	3,165	83	13,286	-
Gaston	10,171	7,566	1,145	62,730	8,842	29,610	15,598	687	61,159	1,789
Gates	1,298	-	69	-	729	-	740	-	4,277	-
Graham	842	44	35	60	364	19	479	3	2,231	4
Granville	5,457	78	206	720	2,277	1,028	4,013	515	19,515	188
Greene	1,329	11	87	-	998	-	1,330	-	7,063	-
Guilford	33,493	2,702	2,769	3,330	20,142	989	31,063	14,057	139,198	495
Halifax	5,044	1,306	315	9,556	2,903	2,485	5,316	329	25,552	10,410
Harnett	5,575	143	306	765	3,268	169	4,489	5	24,530	14
Haywood	4,414	682	285	9,768	2,528	4,703	5,531	49	17,166	43,964
Henderson	6,842	308	370	2	3,040	28	5,703	3	21,248	7
Hertford	2,085	885	152	276	1,410	2,615	2,278	54	11,197	111
Hoke	897	31	122	193	979	54	1,834	-	6,977	3
Hyde	828	148	95	-	814	-	3,074	-	11,064	-
Iredell	10,157	2,169	729	916	4,958	665	9,541	1,025	37,946	114
Jackson	4,694	99	153	5	2,007	30	3,203	6	18,948	6
Johnston	7,755	1,671	429	138	4,069	31	5,726	718	24,989	3
Jones	995	-	70	-	862	-	962	-	5,573	-
Lee	1,935	81	329	75	2,459	25	4,465	274	15,602	314
Lenoir	32,597	451	368	2,979	2,828	1,094	4,523	15	22,470	282
Lincoln	2,892	116	275	714	2,126	173	3,292	167	11,732	13
McDowell	2,645	185	179	1,042	1,690	392	2,698	230	12,728	44
Macon	3,282	16	263	-	2,016	-	3,091	-	16,300	-
Madison	3,444	1	160	14	1,165	7	1,442	2	7,027	2
Martin	3,523	3,738	93	18,647	863	7,719	1,039	1,093	5,528	12,789
Mecklenburg	20,607	3,335	3,503	3,531	24,745	813	36,601	5,707	156,662	1,758
Mitchell	1,591	124	106	52	780	13	745	520	4,161	1
Montgomery	1,949	365	190	35	1,465	31	3,339	13	9,172	23
Moore	4,418	97	265	71	2,464	46	4,293	60	18,219	9
Nash	5,322	559	594	1,203	4,373	323	8,367	309	35,371	30
New Hanover	4,042	4,675	1,080	35,483	5,411	13,197	10,379	8,344	40,872	853
Northampton	2,193	232	144	627	1,607	280	1,999	150	10,632	43
Onslow	6,007	39	485	48	4,326	10	7,447	-	35,360	-
Orange	6,169	90	336	1,194	2,929	615	4,846	57	28,470	31
Pamlico	995	-	91	-	773	-	1,635	-	6,356	-
Pasquotank	1,508	432	166	140	1,238	211	2,436	38	11,882	40
Pender	2,248	-	130	-	1,628	-	2,232	-	12,482	-
Perquimans	1,004	21	76	-	755	-	1,065	-	5,249	-
Person	4,221	15,859	195	73,710	1,533	34,504	2,968	593	11,446	1,923
Pitt	8,053	390	423	1,580	3,970	312	6,656	30	37,356	26
Polk	1,917	37	82	34	703	56	970	-	4,441	1
Randolph	11,786	83	627	64	3,543	31	9,203	377	27,791	-
Richmond	2,983	21	485	38	2,663	8	4,786	-	17,374	80
Robeson	9,120	452	621	6,434	5,365	2,634	8,985	631	41,534	154
Rockingham	10,052	34,193	586	7,270	4,726	3,390	8,993	251	36,540	199
Rowan	7,590	3,548	698	10,791	5,126	4,909	9,062	139	39,959	272
Rutherford	6,778	2,994	331	37,872	2,930	14,013	4,912	382	21,356	787
Sampson	5,988	101	345	723	3,321	136	4,839	95	23,036	11
Scotland	1,780	272	171	545	1,663	191	3,385	2,458	12,465	22
Stanly	3,915	1,288	321	2,327	2,745	385	3,764	130	17,428	11,436
Stokes	4,908	38,172	186	146,468	1,627	63,072	2,138	1,052	10,278	3,504
Surry	8,047	1,285	521	1,413	3,908	445	6,333	154	23,729	66
Swain	988	182	53	-	532	-	838	-	3,290	-
Transylvania	2,181	31	116	807	935	201	1,968	3	6,691	12
Tyrrell	674	3	70	-	627	-	1,139	-	4,752	-
Union	6,003	896	534	152	4,126	72	6,294	784	23,997	7
Vance	2,452	267	280	66	2,193	33	3,913	50	16,660	1
Wake	25,540	214	1,839	255	16,875	119	26,854	891	144,690	699
Warren	2,761	-	108	-	1,183	-	1,584	-	8,294	-
Washington	1,494	930	622	35	1,317	173	2,501	36	7,466	35
Watauga	4,143	47	176	585	1,509	140	2,268	33	11,054	9
Wayne	6,682	29,890	564	21,759	5,475	6,828	9,922	144	37,706	1,619
Wilkes	9,765	1,081	415	1,074	3,589	327	3,732	189	17,403	41
Wilson	4,374	202	539	86	4,449	18	8,416	16	30,283	1
Yadkin	3,292	10	189	15	1,718	4	2,171	-	11,255	1
Yancey	1,831	13	95	152	771	19	1,023	-	5,368	2

SOURCE: North Carolina Department of Natural Resources and Community Development, Division of Environmental Management.

Table 16

POPULATION DENSITY AND LAND AREA BY COUNTY
1960, 1970 AND 1980

County	Density[a] 1960	Density[a] 1970	Density[a] 1980	1980 Land Area (Sq. Mi.)
State Total	93	104	120	48,843
Alamance	197	226	229	433
Alexander	61	75	97	259
Alleghany	34	36	41	234
Anson	47	44	48	533
Ashe	46	46	52	426
Avery	49	52	58	247
Beaufort	43	44	49	826
Bertie	35	29	30	701
Bladen	33	30	35	879
Brunswick	23	28	42	861
Buncombe	202	221	244	659
Burke	104	118	144	505
Cabarrus	189	206	236	364
Caldwell	104	121	144	471
Camden	23	23	24	241
Carteret	52	59	78	525
Caswell	46	45	49	427
Catawba	180	231	266	396
Chatham	38	42	47	708
Cherokee	36	36	42	452
Chowan	65	62	69	181
Clay	26	25	31	214
Cleveland	142	155	178	468
Columbus	52	50	54	939
Craven	81	89	101	702
Cumberland	225	324	376	657
Currituck	24	28	43	256
Dare	15	18	34	391
Davidson	146	174	207	548
Davie	63	71	92	267
Duplin	49	47	50	819
Durham	375	450	513	298
Edgecombe	106	103	111	506
Forsyth	447	513	592	412
Franklin	58	55	61	494
Gaston	355	417	455	357
Gates	27	25	26	338
Graham	22	22	25	289
Granville	61	61	64	534
Greene	62	56	61	266
Guilford	379	441	487	651
Halifax	82	73	76	724
Harnett	80	82	99	601
Haywood	73	76	84	555
Henderson	95	113	156	375
Hertford	64	69	66	356
Hoke	50	42	52	391
Hyde	9	9	9	624
Iredell	106	126	144	574
Jackson	36	44	53	490
Johnston	79	77	89	795
Jones	24	21	21	470
Lee	104	119	142	259
Lenoir	141	138	149	402
Lincoln	94	110	142	298
McDowell	61	70	80	437
Macon	29	31	39	517
Madison	38	36	37	451
Martin	56	54	56	461
Mecklenburg	502	669	766	528
Mitchell	63	63	65	222
Montgomery	38	39	46	490
Moore	48	55	72	701
Nash	111	109	124	540
New Hanover	370	449	559	185
Northampton	50	43	42	538
Onslow	114	135	148	763
Orange	108	144	193	400
Pamlico	29	28	31	341
Pasquotank	112	118	125	228
Pender	22	21	25	875
Perquimans	35	34	39	246
Person	66	65	73	398
Pitt	107	113	137	656
Polk	49	49	55	238
Randolph	77	96	116	789
Richmond	82	84	95	477
Robeson	94	89	107	949
Rockingham	122	127	147	569
Rowan	160	172	191	519
Rutherford	80	84	95	568
Sampson	50	48	53	947
Scotland	79	84	101	319
Stanly	102	108	123	396
Stokes	49	52	73	452
Surry	90	96	110	539
Swain	16	17	20	526
Transylvania	43	52	62	378
Tyrrell	11	10	10	407
Union	70	86	110	639
Vance	129	131	148	249
Wake	196	267	353	854
Warren	44	37	38	427
Washington	40	41	45	332
Watauga	55	74	101	314
Wayne	148	153	175	554
Wilkes	59	65	78	752
Wilson	155	153	169	374
Yadkin	68	73	85	336
Yancey	45	40	48	314

(a) Population per square mile of land area. Land area calculations for 1960 and 1970 differ slightly from those for 1980.

SOURCE: U.S. Department of Commerce, Bureau of the Census.
Office of State Budget and Management, Research and Planning Services.

Table 17

NORTH CAROLINA POPULATION OF INCORPORATED PLACES AND THEIR PERCENTAGE GROWTH
1970 TO 1980

City	County Location	1970 Census	1980 Census	Percentage Change
Aberdeen	Moore	1,592	1,945	22.2%
Ahoskie	Hertford	5,105	4,887	-4.3
Alamance	Alamance	NA	320	NA
Albemarle	Stanly	11,126	15,110	35.8
Alexander Mills	Rutherford	988	643	-34.9
Alliance	Pamlico	577	616	6.8
Andrews	Cherokee	1,384	1,621	17.1
Angier	Harnett	1,431	1,709	19.4
Ansonville	Anson	694	794	14.4
Apex	Wake	2,234	2,847	27.4
Arapahoe	Pamlico	212	467	120.3
Archdale	Guilford, Randolph	4,874	5,745	17.9
Arlington	Yadkin	711	872	22.6
Ashaboro	Randolph	10,797	15,252	41.3
Asheville	Buncombe	57,929	53,583	-7.5
Askewville	Bertie	247	227	-8.1
Atkinson	Pender	325	298	-8.3
Atlantic	Carteret	NA	NA	NA
Atlantic Beach	Carteret	300	941	213.7
Aulander	Bertie	947	1,214	28.2
Aurora	Beaufort	620	698	12.6
Autryville	Sampson	213	228	35.2
Aydon	Pitt	3,450	4,361	26.4
Bailey	Nash	724	685	-5.4
Bakersville	Mitchell	409	373	-8.8
Banner Elk	Avery	754	1,087	44.2
Bath	Beaufort	231	207	-10.4
Battleboro	Edgecombe, Nash	562	632	12.5
Bayboro	Pamlico	665	759	14.1
Bear Grass	Martin	99	82	-17.2
Beaufort	Carteret	3,368	3,826	13.6
Belhaven	Beaufort	2,259	2,430	7.6
Belmont	Gaston	5,054	4,607	-8.8
Belville	Brunswick	59	102	72.9
Belwood	Cleveland	736	613	-16.7
Benson	Johnson	2,267	2,792	23.2
Bessemer City	Gaston	4,991	4,787	-4.1
Bethel	Pitt	1,514	1,825	20.5
Beulaville	Duplin	1,156	1,060	-8.3
Biltmore Forest	Buncombe	1,298	1,499	15.5
Biscoe	Montgomery	1,244	1,334	7.2
Black Creek	Wilson	449	523	16.5
Black Mountain	Buncombe	3,204	4,083	27.4
Bladenboro	Bladen	783	1,428	82.4
Blowing Rock	Caldwell, Watauga	801	1,337	66.9
Boiling Spring Lakes	Brunswick	245	998	307.8
Boiling Springs	Cleveland	2,284	2,381	4.2
Bolivia	Brunswick	185	252	36.2
Bolton	Columbus	534	563	5.4
Boone	Watauga	8,754	10,191	16.4
Boonville	Yadkin	687	1,028	49.6
Bostic	Rutherford	289	476	64.7
Brevard	Transylvania	5,243	5,323	1.5
Bridgeton	Craven	520	461	-11.3
Broadway	Lee	694	908	30.8
Brookford	Catawba	590	467	-20.8
Brunswick	Columbus	206	223	8.3
Bryson City	Swain	1,290	1,556	20.6
Bunn	Franklin	284	505	77.8
Burgaw	Pender	1,744	1,586	-9.1
Edenton	Chowan	4,956	5,357	8.1
Elizabeth City	Camden, Pasquotank	14,381	14,004	-2.6
Elizabethtown	Bladen	1,418	3,551	150.4
Elk Park	Avery	503	535	6.4
Elkin	Surry, Wilkes	2,899	2,858	-1.4
Ellenboro	Rutherford	465	560	20.4
Ellerbe	Richmond	913	1,415	55.0
Elm City	Wilson	1,201	1,561	30.0
Elon College	Alamance	2,150	2,873	33.6
Emerald Isle	Carteret	122	865	609.0
Enfield	Halifax	3,272	2,995	-8.5
Erwin	Harnett	2,852	2,828	-0.8
Eureka	Wayne	263	303	15.2
Everetts	Martin	198	213	7.6
Fair Bluff	Columbus	1,039	1,095	5.4
Fairmont	Robeson	2,827	2,658	-6.0
Falson	Duplin	598	636	6.4
Faith	Rowan	506	552	9.1
Falcon	Cumberland, Sampson	357	339	-5.0
Falkland	Pitt	130	118	-9.2
Fallston	Cleveland	301	614	104.0
Farmville	Pitt	4,424	4,707	6.4
Fayetteville	Cumberland	53,510	59,507	11.2
Forest City	Rutherford	7,179	7,688	7.1
Fountain	Pitt	434	424	-2.3
Four Oaks	Johnston	1,057	1,049	-0.8
Foxfire	Moore	9	153	1,600.0
Franklin	Macon	2,336	2,640	13.0
Franklinton	Franklin	1,459	1,394	-4.5
Franklinville	Randolph	794	607	-23.6
Fremont	Wayne	1,596	1,736	8.8
Fuquay-Varina	Wake	3,576	3,110	-13.0
Garland	Sampson	656	885	34.9
Garner	Wake	4,923	10,073	104.6
Garysburg	Northampton	231	1,434	520.8
Gaston	Northampton	1,105	883	-20.1
Gastonia	Gaston	47,322	47,333	0.0
Gatesville	Gates	338	363	7.4
Germanton	Stokes	NA	NA	NA
Gibson	Scotland	502	533	6.2
Gibsonville	Alamance, Guilford	2,019	2,865	41.9
Glen Alpine	Burke	797	645	-19.1
Godwin	Cumberland	129	233	80.6
Gold Point	Martin	108	NA	NA
Goldsboro	Wayne	26,960	31,871	18.2
Goldston	Chatham	364	353	-3.0
Graham	Alamance	8,172	8,674	6.1
Grainger	Lenoir	NA	NA	NA
Granite Falls	Caldwell	2,388	2,580	8.0
Granite Quarry	Rowan	1,344	1,294	-3.7
Greenevers	Duplin	424	477	12.5
Greensboro	Guilford	144,076	155,642	8.0
Greenville	Pitt	29,063	35,740	23.0
Grifton	Lenoir, Pitt	1,860	2,179	17.2
Grimesland	Pitt	394	453	15.0
Grover	Cleveland	555	597	7.6
Halifax	Halifax	335	253	-24.5
Hamilton	Martin	579	638	10.2
Hamlet	Richmond	4,627	4,720	2.0
Harmony	Iredell	377	470	24.7

Burlington	Alamance	35,930	37,266	3.7
Burnsville	Yancey	1,348	1,457	7.7
Calabash	Brunswick	154	128	-16.9
Calypso	Duplin	462	689	49.1
Cameron	Moore	204	225	10.3
Candor	Montgomery	561	868	54.7
Canton	Haywood	5,158	4,631	-10.2
Cape Carteret	Carteret	616	914	53.2
Carolina Beach	New Hanover	1,663	2,000	20.3
Carrboro	Orange	5,058	7,336	45.0
Carthage	Moore	1,034	925	-10.5
Cary	Wake	7,686	21,763	183.2
Casar	Cleveland	339	346	2.1
Cashiers	Jackson	230	553	140.4
Castalia	Nash	265	358	35.1
Caswell Beach	Brunswick	28	110	292.9
Catawba	Catawba	565	509	-9.9
Centerville	Franklin	123	135	9.8
Cerro Gordo	Columbus	322	295	-8.4
Chadbourn	Columbus	2,213	1,975	-10.8
Chadwick Acres	Onslow	12	15	25.0
Chapel Hill	Durham, Orange	26,199	32,421	23.7
Charlotte	Mecklenburg	241,420	314,447	30.2
Cherryville	Gaston	5,258	4,844	-7.9
China Grove	Rowan	1,788	2,081	16.4
Chocowinity	Beaufort	566	644	13.8
Claremont	Catawba	788	880	11.7
Clarkton	Bladen	662	664	0.3
Clayton	Johnston	3,103	4,091	31.8
Cleveland	Rowan	614	595	-3.1
Clinton	Sampson	7,157	7,552	5.5
Clyde	Haywood	814	1,008	23.8
Coakley	Edgecombe	NA	NA	NA
Coats	Harnett	1,051	1,385	31.8
Cofield	Hertford	318	465	46.2
Colerain	Bertie	373	284	-23.9
Columbia	Tyrrell	902	758	-16.0
Columbus	Polk	731	727	-0.5
Como	Hertford	211	89	-57.8
Concord	Cabarrus	18,464	16,942	-8.2
Conetoe	Edgecombe	160	215	34.4
Conover	Catawba	3,355	4,245	26.5
Conway	Northampton	694	678	-2.3
Cornelius	Mecklenburg	1,296	1,460	12.7
Cove City	Craven	485	500	3.1
Cramerton	Gaston	2,142	1,869	-12.7
Creedmoor	Granville	1,405	1,641	16.8
Creswell	Washington	633	426	-32.7
Crossnore	Avery	264	297	12.5
Dallas	Gaston	4,059	3,340	-17.7
Danbury	Stokes	152	140	-7.9
Davidson	Iredell, Mecklenburg	2,931	3,241	10.6
Delview	Gaston	11	7	-36.4
Denton	Davidson	1,017	949	-6.7
Dillsboro	Jackson	215	179	-16.7
Dobson	Surry	933	1,222	31.0
Dorches	Nash	686	885	29.0
Dover	Craven	585	600	2.6
Drexel	Burke	1,431	1,392	-2.7
Dublin	Bladen	283	477	68.6
Dudley	Wayne	199	NA	NA
Dundarrach	Hoke	53	NA	NA
Dunn	Harnett	8,302	8,962	7.9%
Durham	Durham	95,438	100,831	5.7
Earl	Cleveland	195	206	5.6
East Arcadia	Bladen	556	461	-17.1
East Bend	Yadkin	485	602	24.1
East Laurinburg	Scotland	487	536	10.1
East Spencer	Rowan	2,217	2,150	-3.0
Eden	Rockingham	15,871	15,672	-1.3

Harrells	Duplin, Sampson	249	[illegible]	[illegible]
Harrellsville	Hertford	165	191	-18.5
Harrisburg	Cabarrus	1,098	1,433	30.5
Hassell	Martin	160	109	-31.9
Havelock	Craven	3,012	17,718	488.2
Haw River	Alamance	1,944	1,858	-4.4
Haynsville	Clay	428	376	-12.1
Haywood	Chatham	NA	190	NA
Hazelwood	Haywood	2,057	1,811	-12.0
Henderson	Vance	13,096	13,922	-2.7
Hendersonville	Henderson	6,443	6,862	6.5
Hertford	Perquimans	2,023	1,941	-4.1
Hickory	Burke, Catawba	20,569	20,757	0.9
High Point	(a)	63,229	63,380	0.2
High Shoals	Gaston, Lincoln	563	586	4.1
Highlands	Macon	583	653	12.0
Hildebran	Burke	521	628	20.5
Hillsborough	Orange	1,444	3,019	109.1
Hobgood	Halifax	530	483	-8.9
Hoffman	Richmond	434	389	-10.4
Holden Beach	Brunswick	136	232	70.6
Holly Springs	Wake	697	688	-1.3
Holly Ridge	Onslow	415	465	12.0
Hollyville	Pamlico	NA	100	NA
Hookerton	Greene	441	460	4.3
Hope Mills	Cumberland	1,866	5,412	190.0
Hot Springs	Madison	653	678	3.8
Hudson	Caldwell	2,820	2,888	2.4
Huntersville	Mecklenburg	1,538	1,294	-15.9
Indian Beach	Carteret	245	54	-78.0
Indian Trail	Union	405	811	100.2
Jackson	Northampton	762	720	-5.5
Jackson Springs	Moore	NA	NA	NA
Jacksonville	Onslow	16,289	17,056	4.7
Jamestown	Guilford	1,297	2,148	65.6
Jamesville	Martin	533	604	13.3
Jason	Greene	NA	NA	NA
Jefferson	Ashe	943	1,086	15.2
Jonesville	Yadkin	1,659	1,752	5.6
Jupiter	Buncombe	208	NA	NA
Kelford	Bertie	295	254	-13.9
Kenansville	Duplin	762	931	22.2
Kenly	Johnston, Wilson	1,370	1,433	4.6
Kernersville	Forsyth	4,815	6,802	41.3
Kill Devil Hills	Dare	357	1,796	403.1
Kings Mountain	Cleveland, Gaston	8,465	9,080	7.3
Kinston	Lenoir	23,020	25,234	9.6
Kittrell	Vance	427	225	-47.3
Knightdale	Wake	815	985	20.9
Kure Beach	New Hanover	394	611	55.1
LaGrange	Lenoir	2,679	3,147	17.5%
Lake Lure	Rutherford	456	488	7.0
Lake Waccamaw	Columbus	924	1,133	22.6
Landis	Rowan	2,297	2,092	-8.9
Lansing	Ashe	283	194	-31.4
Lasker	Northampton	114	96	-15.8
Lattimore	Cleveland	257	237	-7.8
Laurel Park	Henderson	581	764	31.5
Laurinburg	Scotland	8,859	11,480	29.6
Lawndale	Cleveland	544	469	-13.8
Lawrence	Edgecombe	NA	NA	NA
Leggett	Edgecombe	120	99	-17.5
Lenoir	Caldwell	14,705	13,748	-6.5
Lewiston	Bertie	327	459	40.4
Lexington	Davidson	17,205	15,711	-8.7
Liberty	Randolph	2,167	1,997	-7.8
Lilesville	Anson	641	588	-8.3
Lillington	Harnett	1,155	1,948	68.7
Lincolnton	Lincoln	5,293	4,879	-7.8
Linden	Cumberland	205	365	78.0

City	County Location	1970 Census	1980 Census	Percentage Change
Linville	Avery	NA	244	NA
Littleton	Halifax	903	820	-9.2
Locust	Stanly	1,484	1,590	7.1
Long Beach	Brunswick	493	1,844	274.0
Long View	Burke, Catawba	3,360	3,587	6.8
Louisburg	Franklin	2,941	3,238	10.1
Love Valley	Iredell	40	55	37.5
Lowell	Gaston	3,307	2,917	-11.8
Lucama	Wilson	610	1,070	75.4
Lumber Bridge	Robeson	117	171	46.2
Lumberton	Robeson	16,961	18,241	7.5
McAdenville	Gaston	950	947	-0.3
McDonald	Robeson	80	117	46.3
McFarlan	Anson	140	133	-5.0
Macclesfield	Edgecombe	536	504	-6.0
Macon	Warren	179	153	-14.5
Madison	Rockingham	2,018	2,806	39.0
Maggie Valley	Haywood	159	202	27.0
Magnolia	Duplin	614	592	-3.6
Maiden	Catawba, Lincoln	2,416	2,574	6.5
Manteo	Dare	547	902	64.9
Marietta	Robeson	70	NA	NA
Marion	McDowell	3,335	3,684	10.5
Mars Hill	Madison	1,623	2,126	31.0
Marshall	Madison	982	809	-17.6
Marshville	Union	1,405	2,011	43.1
Matthews	Mecklenburg	783	1,648	110.5
Maury	Greene	421	NA	NA
Maxton	Robeson, Scotland	1,885	2,711	43.8
Mayodan	Rockingham	2,875	2,627	-8.6
Maysville	Jones	912	877	-3.8
Mebane	Alamance, Orange	2,573	2,782	8.1
Mesic	Pamlico	369	390	5.7
Micro	Johnston	300	438	46.0
Middleburg	Vance	149	185	24.2
Middlesex	Nash	729	837	14.8
Mildred	Edgecombe	NA	NA	NA
Milton	Caswell	235	235	0.0
Minnesott Beach	Pamlico	41	171	317.1
Mint Hill	Mecklenburg	2,262	7,915	249.9
Mocksville	Davie	2,529	2,637	4.3
Monroe	Union	11,282	12,639	12.0
Montreat	Buncombe	581	741	27.5
Mooresboro	Cleveland	453	405	-8.6
Mooresville	Iredell	8,808	8,575	-2.6
Morehead City	Carteret	5,233	4,359	-16.7
Morganton	Burke	13,625	13,763	1.0
Morrisville	Wake	209	251	20.1
Morven	Anson	562	765	36.1
Mount Airy	Surry	7,325	6,862	-6.3
Mount Gilead	Montgomery	1,286	1,423	10.7
Mount Holly	Gaston	5,107	4,530	-11.3
Mount Olive	Duplin, Wayne	4,914	4,876	-0.8
Mount Pleasant	Cabarrus	1,174	1,210	3.1
Murfreesboro	Hertford	4,418	3,007	-31.9
Murphy	Cherokee	2,082	2,070	-0.6
Nags Head	Dare	414	1,020	146.4
Nashville	Nash	1,670	2,678	60.4
Navassa	Brunswick	487	439	-9.9
New Bern	Craven	14,660	14,557	-0.7

City	County Location	1970 Census	1980 Census	Percentage Change
Rockwell	Rowan	999	1,339	34.0
Rocky Mount	Edgecombe, Nash	34,284	41,283	20.4
Rolesville	Wake	533	381	-28.5
Ronda	Wilkes	465	457	-1.7
Roper	Washington	649	795	22.5
Rose Hill	Duplin	1,448	1,508	4.1
Roseboro	Sampson	1,235	1,227	-0.6
Rosman	Transylvania	407	512	25.8
Rowland	Robeson	1,358	1,841	35.6
Roxboro	Person	5,370	7,532	-86.4
Roxobel	Bertie	347	278	-19.9
Rural Hall	Forsyth	1,289	1,336	3.6
Ruth	Rutherford	360	381	5.8
Rutherford College	Burke	821	1,108	35.0
Rutherfordton	Rutherford	3,245	3,434	5.8
Salemburg	Sampson	669	742	10.9
Salisbury	Rowan	22,515	22,677	0.7
Saluda	Polk	546	607	11.2
Sanford	Lee	11,716	14,773	26.1
Saratoga	Wilson	391	381	-2.6
Scotland Neck	Halifax	2,869	2,834	-1.2
Seaboard	Northampton	611	687	12.4
Seagrove	Randolph	354	294	-16.9
Selma	Johnston	4,356	4,762	9.3
Seven Devils	Avery, Watauga	0	54	0
Seven Springs	Wayne	188	166	-11.7
Severn	Northampton	356	309	-13.2
Shady Forest	Brunswick	17	43	152.9
Shallotte	Brunswick	597	680	13.9
Sharpsburg	(b)	789	997	26.4
Shelby	Cleveland	16,328	15,310	-6.2
Siler City	Chatham	4,689	4,446	-5.2
Simpson	Pitt	383	407	6.3
Sims	Wilson	205	192	-6.3
Smithfield	Johnston	6,677	7,288	9.2
Snow Hill	Greene	1,359	1,374	1.1
Southern Pines	Moore	5,937	8,620	45.2
Southern Shores	Dare	75	395	NA
Southport	Brunswick	2,220	2,824	27.2
Sparta	Alleghany	1,304	1,687	29.4
Speed	Edgecombe	142	95	-33.1
Spencer	Rowan	3,075	2,938	-4.5
Spencer Mountain	Gaston	300	169	-43.7
Spindale	Rutherford	3,848	4,246	10.3
Spring Hope	Nash	1,334	1,254	-6.0
Spring Lake	Cumberland	3,968	6,273	58.1
Spruce Pine	Mitchell	2,333	2,282	-2.2
St. Pauls	Robeson	2,011	1,639	-18.5
Staley	Randolph	239	204	-14.6
Stallings	Union	726	1,826	151.5
Stanfield	Stanly	458	463	1.1
Stanley	Gaston	2,336	2,341	0.2
Stantonsburg	Wilson	869	920	5.9
Star	Montgomery	892	816	-8.5
Statesville	Iredell	20,007	18,622	-6.9
Stedman	Cumberland	505	723	43.2
Stem	Granville	242	222	-8.3
Stoneville	Rockingham	1,030	1,054	2.3
Stonewall	Pamlico	335	360	7.5
Stovall	Granville	405	417	3.0

New London	Stanly	285	454	59.3
Newland	Avery	524	722	37.8
Newport	Carteret	1,735	1,883	8.5
Newton	Catawba	7,857	7,624	-3.0
Newton Grove	Sampson	546	564	3.3
Norlina	Warren	969	901	-7.0
Norman	Richmond	157	252	60.5
North Wilkesboro	Wilkes	3,357	3,260	-2.9
Norwood	Stanly	1,896	1,818	-4.1
Oak City	Martin	559	475	-15.0
Oakboro	Stanly	568	587	3.3
Ocean Isle Beach	Brunswick	78	143	83.3
Old Fort	McDowell	676	752	11.2
Old Sparta	Edgecombe	NA	NA	NA
Oriental	Pamlico	445	536	20.4
Orrum	Robeson	162	167	3.1
Oxford	Granville	7,178	7,603	5.9
Pantego	Beaufort	218	185	-15.1
Parkton	Robeson	550	564	2.5
Parmele	Martin	373	484	29.8
Patterson Springs	Cleveland	478	731	52.9
Peachland	Anson	556	506	-9.0
Pembroke	Robeson	1,982	2,698	36.1
Pikeville	Wayne	580	662	14.1
Pilot Mountain	Surry	1,309	1,090	-16.7
Pine Knoll Shores	Carteret	62	646	941.9
Pine Level	Johnston	983	953	-3.1
Pinebluff	Moore	570	935	64.0
Pinehurst	Moore	1,056	NA	NA
Pinetops	Edgecombe	1,379	1,465	6.2
Pineville	Mecklenburg	1,948	1,525	-21.7
Pink Hill	Lenoir	522	644	23.4
Pittsboro	Chatham	1,447	1,332	-7.9
Plymouth	Washington	4,774	4,571	-4.3
Polkton	Anson	845	762	-9.8
Polkville	Cleveland	494	528	6.9
Pollocksville	Jones	456	318	-30.3
Powellsville	Bertie	247	320	29.6
Princeton	Johnston	1,044	1,034	-1.0
Princeville	Edgecombe	654	1,508	130.6
Proctorville	Robeson	157	205	30.6%
Raeford	Hoke	3,180	3,630	14.2
Raleigh	Wake	122,830	150,255	22.3
Ramseur	Randolph	1,328	1,162	-12.5
Randleman	Randolph	2,312	2,156	-6.7
Ranlo	Gaston	2,092	1,774	-15.2
Raynham	Robeson	75	83	10.7
Red Oak	Nash	359	314	-12.5
Red Springs	Robeson	3,383	3,607	6.6
Reidsville	Rockingham	13,636	12,492	-8.4
Rennert	Robeson	175	178	1.7
Rhodhiss	Burke, Caldwell	784	727	-7.3
Rich Square	Northampton	1,254	1,057	-15.7
Richfield	Stanly	306	373	21.9
Richlands	Onslow	935	825	-11.8
Roanoke Rapids	Halifax	13,508	14,702	8.8
Robbins	Moore	1,059	1,256	18.6
Robbinsville	Graham	777	1,370	76.3
Robersonville	Martin	1,910	1,981	3.7
Rockingham	Richmond	5,852	8,300	41.8
Sunset Beach	Brunswick	108	304	181.5
Surf City	Pender	166	391	135.5
Swansboro	Onslow	1,207	976	-19.1
Sylva	Jackson	1,561	1,699	8.8
Tabor City	Columbus	2,400	2,710	12.9
Tar Heel	Bladen	87	118	35.6
Tarboro	Edgecombe	9,425	8,634	-8.4
Taylorville	Alexander	1,231	1,103	-10.4
Teachey	Duplin	219	373	70.3
Thomasville	Davidson	15,230	14,144	-7.1
Topsail Beach	Pender	108	264	144.4
Trent Woods	Craven	719	1,177	63.7
Trenton	Jones	539	407	-24.5
Troutman	Iredell	797	1,360	70.6
Troy	Montgomery	2,429	2,702	11.2
Tryon	Polk	1,951	1,796	-7.9
Turkey	Sampson	329	417	26.7
Unionville	Union	NA	NA	NA
Valdese	Burke	3,182	3,364	5.7
Vanceboro	Craven	758	833	9.9
Vandemere	Pamlico	379	335	-11.6
Vass	Moore	885	828	-6.4
Waco	Cleveland	245	322	31.4
Wade	Cumberland	315	474	50.5
Wadesboro	Anson	3,977	4,206	5.8
Wagram	Scotland	718	617	-14.1
Wake Forest	Wake	3,148	3,780	20.1
Wallace	Duplin, Pender	2,905	2,903	-0.1
Walnut Cove	Stokes	1,213	1,147	-5.4
Walnut Creek	Wayne	81	343	323.5
Walstonburg	Greene	176	181	2.8
Warrenton	Warren	1,035	908	-12.3
Warsaw	Duplin	2,701	2,910	7.7
Washington	Beaufort	8,961	8,418	-6.1
Washington Park	Beaufort	517	514	-0.6
Watha	Pender	181	196	8.3
Waxhaw	Union	1,248	1,208	-3.2
Waynesville	Haywood	6,488	6,765	4.3
Weaverville	Buncombe	1,280	1,495	16.8
Webster	Jackson	181	200	10.5%
Weldon	Halifax	2,304	1,844	-20.0%
Wendell	Wake	1,929	2,222	15.2
West Jefferson	Ashe	889	822	-7.5
Whispering Pines	Moore	362	1,160	220.4
Whitakers	Edgecombe, Nash	926	924	-0.2
White Lake	Bladen	232	968	317.2
Whiteville	Columbus	4,195	5,565	32.7
Wilkesboro	Wilkes	2,038	2,335	14.6
Williamsboro	Vance	NA	59	NA
Williamston	Martin	6,570	6,159	-6.3
Wilmington	New Hanover	46,169	44,000	-4.7
Wilson	Wilson	29,347	34,424	17.3
Windsor	Bertie	2,199	2,126	-3.3
Winfall	Perquimans	581	634	9.1%
Wingate	Union	2,569	2,615	1.8
Winston-Salem	Forsyth	133,683	131,885	-1.3
Winterville	Pitt	1,437	2,052	42.8
Winton	Hertford	917	825	-10.0
Woodfin	Buncombe	2,831	3,260	15.2
Woodland	Northampton	744	861	15.7
Woodville	Bertie	253	212	-16.2
Wrightsville Beach	New Hanover	1,701	2,910	71.1
Yadkinville	Yadkin	2,232	2,216	-0.7
Yaupon Beach	Brunswick	334	569	70.4
Youngsville	Franklin	555	486	-12.4
Zebulon	Wake	1,839	2,055	11.7
North Carolina Municipal Population		2,210,008	2,476,041	15.6

(a) Davidson, Guilford, and Randolph counties.
(b) Edgecombe, Nash, and Wilson counties.
NA - Not Available

SOURCE: U.S. Department of Commerce, Bureau of the Census.
Office of State Budget and Management, Research and Planning Services.

Table 18

POPULATION DENSITY[a] OF PLACES WITH 2,500 OR MORE INHABITANTS
YEARS 1960, 1970 AND 1980

Place	1960	1970	1980
Ahoskie	3,274	2,687	1,880
Albemarle	2,151	1,918	1,035
Apex	1,052	NA	1,139
Archdale	1,382	1,130	942
Asheboro	2,197	2,076	1,387
Asheville	2,774	2,587	1,867
Ayden	2,072	2,029	1,817
Beaufort	5,844	3,062	1,594
Belmont	2,635	2,292	1,772
Benson	2,355	NA	2,148
Bessemer City	1,217	1,581	1,496
Black Mountain	1,313	1,001	972
Bonnie Doone (CDP)	953	NA	1,700
Boone	2,304	2,245	2,682
Brevard	2,057	2,497	2,047
Brogden (CDP)	NA	NA	1,358
Burlington	2,677	2,364	2,231
Butner (CDP)	NA	1,220	1,514
Camp Lejeune Central (CDP)	NA	2,107	1,636
Canton	973	2,715	2,437
Carrboro	2,853	1,265[b]	2,934
Cary	1,243	1,161	2,176
Chapel Hill	3,592	3,274	2,594
Charlotte	3,199	3,173	2,251
Cherryville	2,576	1,813	1,794
Clayton	1,660	1,939	1,023
Clemmons (CDP)	NA	NA	705
Clinton	2,487	2,105	1,678
Concord	3,632	2,676	2,017
Conover	2,851	2,237	1,249
Dallas	1,721	2,136	2,386
Davidson	2,573	1,466	1,350
Dunn	3,153	2,025	1,867
Durham	3,676	2,608	2,484
East Flat Rock (CDP)	822	938	990
East Rockingham (CDP)	2,676	2,382	1,442
Eden	NA	1,356	1,339
Edenton	2,026	1,362	1,488
Elizabeth City	3,430	2,814	2,980
Elizabethtown	2,321	NA	986
Elkin	896	906	752
Elon College	2,140	NA	2,394
Elroy (CDP)	NA	NA	590
Enfield	2,482	2,727	2,496
Enka (CDP)	NA	NA	843
Enochville (CDP)	NA	NA	696
Erwin	2,449	2,194	1,760
Fairmont	1,203	1,767	1,477
Fairplains (CDP)	NA	NA	634
Farmville	3,075	2,458	2,241
Fayetteville	3,205	2,287	1,803
Forest City	1,681	825	1,220
Fort Bragg (CDP)	NA	2,701	2,213
Franklin	701	NA	852
Fuquay-Varina	1,093	1,192	972
Garner	1,726	2,140	2,143
Gastonia	3,584	2,369	2,181
Gibsonville	1,784	NA	1,791
Glen Raven (CDP)	1,051	1,499	672
Goldsboro	4,067	2,979	2,213
Gorman (CDP)	NA	NA	256
Graham	2,340	2,335	1,807
Granite Falls	1,469	NA	992
Lumberton	2,834	3,141	1,614
Madison	2,731	NA	510
Maldon	NA	NA	1,287
Marion	2,573	2,382	2,047
Mar-Mac (CDP)	NA	NA	732
Masonboro (CDP)	NA	NA	616
Maxton	1,950	NA	1,595
Mayodan	3,380	2,875	1,751
Mebane	1,689	NA	1,855
Mint Hill	NA	NA	574
Mocksville	743	790	733
Monroe	1,727	1,736	1,620
Moorosville	2,096	1,957	1,824
Morehead City	3,722	3,489	2,180
Morganton	2,355	1,841	1,012
Mount Airy	2,822	1,592	1,430
Mount Holly	2,125	1,459	1,562
Mount Olive	3,115	2,730	2,438
Murfreesboro	1,888	2,339	1,769
Myrtle Grove (CDP)	NA	NA	381
Nashville	2,372	NA	1,275
New Bern (CDP)	6,287	3,858	2,510
New Hope (CDP) (Wake County)	NA	NA	602
New Hope (CDP) (Wayne County)	NA	NA	942
New River Station (CDP)	NA	1,192	711
Newton	2,018	2,910	1,588
North Belmont (CDP)	1,028	1,098	1,170
North Wilkesboro	976	746	724
Ogden (CDP)	NA	NA	574
Oxford	2,251	1,795	2,001
Parkwood (CDP)	NA	NA	1,710
Pembroke	1,524	NA	3,373
Pinehurst (CDP)	934	NA	135
Pine Valley (CDP)	NA	NA	929
Piney Green-White Oak (CDP)	NA	NA	556
Plymouth	1,728	1,540	1,203
Poplar Tent (CDP)	NA	NA	461
Pumpkin Center (CDP)	NA	NA	852
Raeford	1,176	1,178	1,344
Raleigh	2,787	2,708	2,793
Red Springs	2,516	1,990	1,202
Reidsville	1,877	1,794	1,666
Roanoke Rapids	2,562	2,289	2,014
Rockingham	1,969	1,773	1,627
Rocky Mount	3,457	2,765	2,281
Rosewood (CDP)	NA	NA	564
Roxboro	2,145	2,238	2,036
Rutherfordton	1,305	1,248	1,374
St. Stephens (CDP)	NA	NA	900
Salem (CDP) (Burke County)	NA	NA	601
Salisbury	3,435	2,649	1,718
Sanford	2,785	2,663	1,252
Scotland Neck	2,704	2,391	1,889
Seagate (CDP)	NA	NA	815
Selma	2,585	2,904	2,381
Shelby	2,493	2,206	1,988
Siler City	1,142	1,172	1,112
Silver Lake (CDP)	NA	NA	541
Smithfield	2,781	2,087	1,157
Southern Pines	1,181	1,142	1,119
South Gastonia (CDP)	1,344	NA	1,362
South Goldsboro (CDP)	NA	NA	791
Southport	1,071	NA	1,569

Groonsboro	2,411	2,640	2,581
Groonville	3,629	2,549	2,383
Half Moon (CDP)	NA	NA	570
Hamlet	2,478	2,012	1,883
Havelock	1,217	1,506(b)	979
Hendorson	3,267	3,563	2,940
Hendersonville	2,815	2,478	2,214
Hickory	2,196	2,078	1,715
Hickory North (CDP)	467	NA	636
High Point	2,035	2,052	2,012
Hillsborough	2,698	NA	1,372
Hope Mills	652	NA	1,546
Hudson	960	1,175	1,155
Jacksonville	4,352	3,815	2,159
Jacksonville East (CDP)	NA	NA	3,083
James City (CDP)	921	1,432	1,055
Kannapolis (CDP)	1,403	1,214	1,434
Kernersville	1,634	1,605	1,620
King (CDP)	NA	NA	431
Kings Grant (CDP)	NA	NA	1,238
Kings Mountain	2,503	1,881	1,816
Kinston	5,065	3,718	2,804
La Grange	2,370	NA	1,574
Laurinburg	2,010	1,926	1,573
Lenoir	2,385	1,400	1,109
Lewisville (CDP)	NA	NA	433
Lexington	2,775	1,670	2,123
Lincolnton	2,850	2,647	1,877
Long View	2,141	2,100	2,110
Louisburg	2,044	2,101	1,542
Lowell	1,326	1,575	1,167
Sponcor	1,815	1,922	1,399
Spindale	1,856	1,749	923
Spring Lake	3,736	3,607	2,163
Stanleyville (CDP)	711	NA	646
Statesville	2,181	2,127	1,663
Swannanoa (CDP)	1,288	NA	266
Tabor City	2,126	NA	1,084
Tarboro	4,427	2,547	2,272
Thomasville	2,713	2,343	2,080
Trinity (CDP)	NA	NA	604
Troy	1,564	NA	1,589
Valdose	1,279	1,326	1,085
Wadesboro	1,783	1,591	1,682
Wake Forest	1,776	2,099	1,800
Wallace	1,904	2,421	1,075
Warsaw	1,709	1,422	1,213
Washington	5,231	2,358	1,913
Waynesville	2,124	2,093	1,990
Welcome (CDP)	NA	NA	345
West Concord (CDP)	2,204	2,228	792
Whiteville	2,036	1,678	1,357
Williamston	2,473	2,666	2,053
Wilmington	5,791	2,638	2,047
Wilson	4,228	3,623	2,608
Windemere (CDP)	NA	NA	1,055
Wingate	1,449	NA	2,012
Winston-Salem	3,399	2,352	2,173
Winter Park (CDP)	NA	NA	1,732
Woodfin	NA	NA	959
Wrightsboro (CDP)	NA	NA	486
Wrightsville Beach	NA	NA	2,079

(a) Population per square mile of land area.
(b) Revised.
CDP Census Designated Place.
NA Not Available

NOTE: Figures are shown as they appear in the Census Bureau's published documents and do not reflect any corrections that were made to the population counts since revisions to the land area are not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census.

United States Department of the Interior
FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES FIELD STATION
100 OTIS STREET, ROOM 224
ASHEVILLE, NORTH CAROLINA 28801

Ref. 13

June 21, 1985

Ms. Pat Derosa
Solid and Hazardous Waste Management Branch
Environmental Health Section
North Carolina Department of Human Resources
P. O. Box 2091
Raleigh, North Carolina 27602

Dear Ms. Derosa,

In response to your telephone conversation with John Fridell on May 30, 1985, we are enclosing the following items of information:

A. North Carolina county distribution records of Federally listed, proposed and status review species,

B. map of the critical habitat of the threatened spotfin chub (Hybopsis monacha),

C. map of the critical habitat of mountain golden heather (Hudsonia montana), and

D. copy of the U.S. Fish and Wildlife Service interagency Section 7 consultation process guidelines (included for your information)

The abbreviations following the species names on the North Carolina species distribution records (A. above) indicate Federal status, i.e., E - endangered, T - threatened, PE - proposed endangered, PT - proposed threatened and SR - under status review. Status review species are not legally protected under the Endangered Species Act. However, they are subject to being listed and agencies should be cognizant of their potential presence in a project area.

Since additions and deletions are made to the list of species on a regular basis, questions regarding updates of the list should be made to this office.

We hope this information will be of use to you. If we can be of any further assistance, please call John Fridell or Nora Murdock at (704) 259-0321.

Sincerely yours,

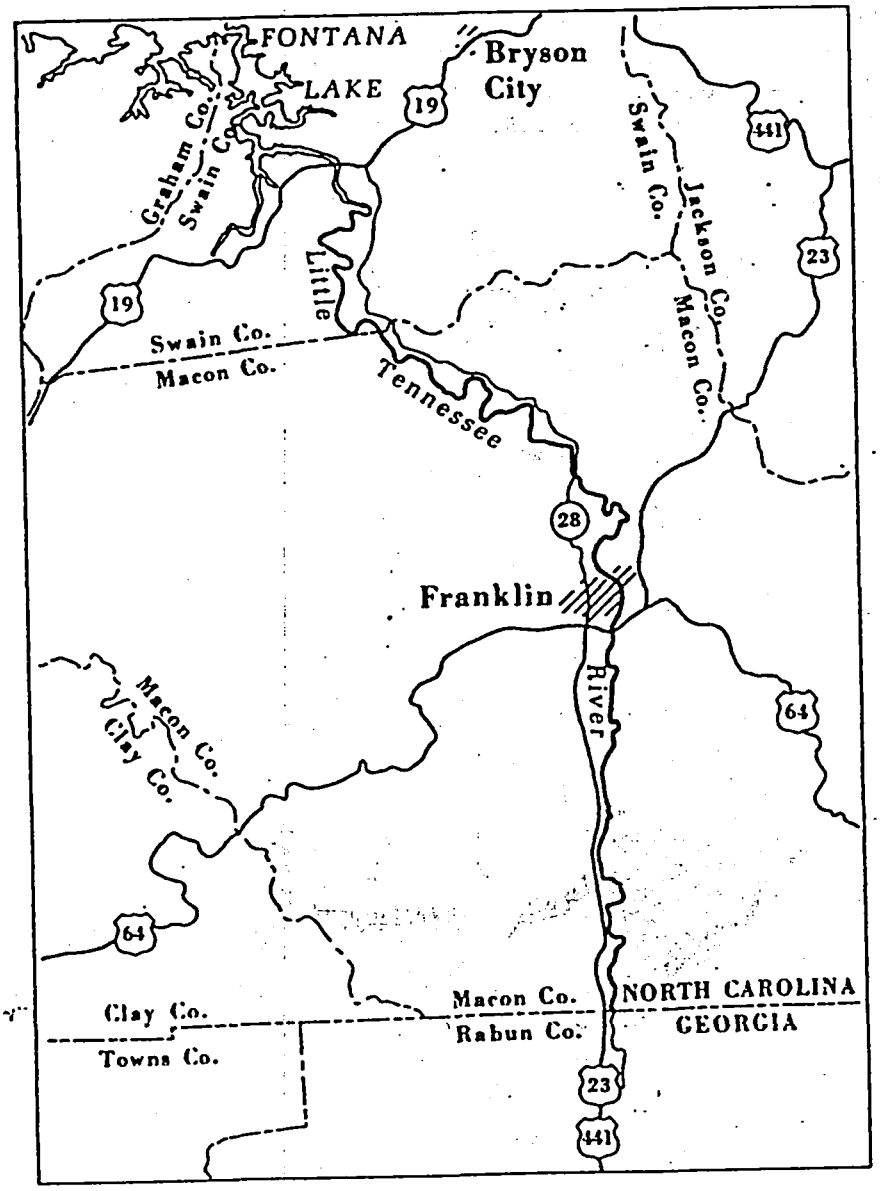
Warren T. Parker

Warren T. Parker
Field Supervisor

NORTH CAROLINA - Critical Habitat

Hybopsis monacha, "spotfin chub"

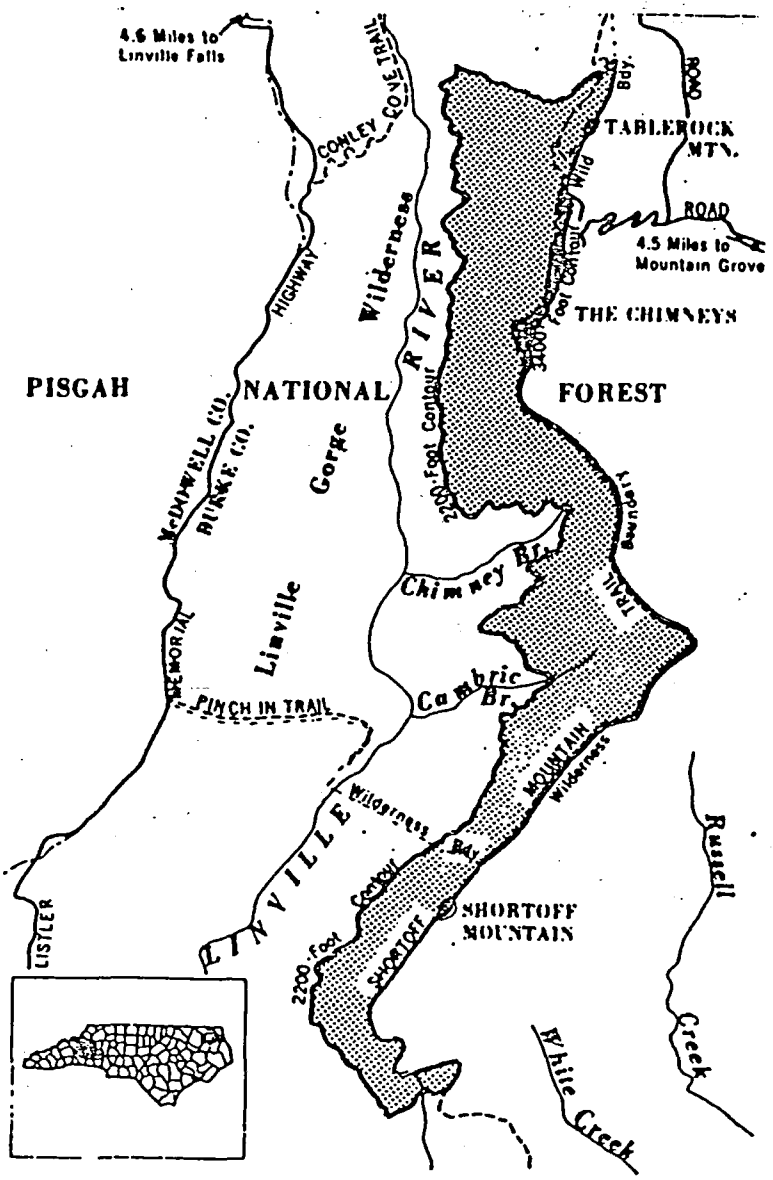
Macon and Swain Counties. Little Tennessee River, main channel from the backwaters of Fontana Lake upstream to the North Carolina-Georgia state line.



NORTH CAROLINA - Critical Habitat

Hudsonia montana, "mountain golden heather"

Burke County. The area bounded by the following: on the west by the 2200' contour; on the east by the Linville Gorge Wilderness Boundary north from the intersection of the 2200' contour and the Shortoff Mountain Trail to where it intersects the 3400' contour at "The Chimneys"--then follow the 3400' contour north until it reintersects the Wilderness Boundary--then follow the Wilderness Boundary again northward until it intersects the 3200' contour extending west from its intersection with the Wilderness Boundary until it begins to turn south--at this point the Boundary extends due east until it intersects the 2200' contour.



Ref. 14

12 August 1986

TO: CERCLA Unit Staff

FROM: Pat DeRosa

RE: Critical Habitats of Federally Listed Endangered Species in N.C.

I spoke by telephone today with John Fridell, US Fish and Wildlife Service (704) 259-0321 to request an update on critical habitats in NC. Mr. Fridell informed me that the only change since our previous correspondence of June 21, 1985 has been a "Proposal to List the Cape Fear Shiner as an Endangered Species with Critical Habitats" in NC. (FR Vol. 51, No. 133, July 11, 1986). A copy of the proposed rule is attached for your information.

PD/tb/0221b

$$= \frac{C_{TRS}}{C_{RC}} \times 100 \quad \text{Eq. 15A-A}$$

7. *Bibliography*

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5. Margeson, J.H., J.E. Knoll, M.R. Midgett, B.B. Ferguson, and P.J. Schworer. A Manual Method for TRS Determination. Journal of Air Pollution Control Association. 35:1280–1286. December 1985.

[FR Doc. 86–15268 Filed 7–10–86; 8:45 am]

BILLING CODE 6560–50–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposal to List the Cape Fear Shiner as an Endangered Species with Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to list the Cape Fear shiner (*Notropis mekistocholas*) as an endangered species with critical habitat under the Endangered Species Act of 1973, as amended. This fish has recently undergone a reduction in range and population. It is currently known from only three small populations in the Cape Fear River drainage in Randolph, Moore, Lee, and Chatham Counties, North Carolina. Due to the species' limited distribution, any factor that degrades habitat or water quality in the short river reaches it inhabits—*e.g.*, land use changes, chemical spills, wastewater discharges, impoundments, changes in stream flow, or increases in agricultural runoff—could threaten the species' survivial. Comments and information pertaining to this proposal are sought from the public.

DATES: Comments from all interested parties must be received by September 9, 1986. Public hearing requests must be received by August 25, 1986.

ADDRESSES: Comments and materials concerning this proposal should be sent to Field Supervisor, Endangered Species Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Richard G. Biggins, at the above address (704/259–0321 or FTS 672–0321).

SUPPLEMENTARY INFORMATION:

Background

The Cape Fear shiner (*Noropis mekistocholas*), the only endemic fish known from North Carolina's Cape Fear River drainage, was discovered in 1962 and described by Snelson (1971). This fish has been collected from nine stream reaches in North Carolina (Bear Creek, Rocky River, and Robeson Creek, Chatham County; Fork Creek, Randolph County; Deep River, Moore and Randolph Counties; Deep River, Chatham and Lee Counties; and Cape Fear River, Kenneth Creek, and Parkers Creek, Harnett County (Snelson 1971, W. Palmer and A. Braswell, North Carolina State Museum of Natural History, personal communication 1985, Pottern and Huish 1985, 1986). Based on a recently completed Service-funded study (Pottern and Huish 1985, 1986) involving extensive surveys in the Cape Fear River Basin (including all historic sites) and a review of historical fish collection records from the Cape Fear, Neuse, and Yadkin River systems, the fish is now restricted to only three populations. The strongest population (101 individuals collected in 1984 and 1985) is located around the junction of the Rocky River and Deep River in Chatham and Lee Counties where the fish inhabits the Deep River from the upstream limits of the backwaters of Locksville Dam upstream to the Rocky River then upstream from the Rocky River to Bear Creek and upstream from Bear Creek to the Chatham County Road 2156 Bridge. A few individuals were collected just downstream of the Locksville Dam, but because of the limited extent of Cape Fear shiner habitat at this site, it is not believed this is a separate population. Instead, it is thought these fish represent a small number of individuals that periodically drop down from the population above Locksville Dam pool.

The second population, represented by the collection of a specimen near State Highway Bridge 902 in Chatham County, is located above the Rocky River Hydroelectric Dam. This population was historically the best, but the area yielded only the one specimen after extensive surveys by Pottern and Huish (1985). The third population was found in the Deep River system in Randolph and Moore Counties. This population is believed to be small (Pottern and Huish 1985, 1986). Three individuals were found above the Highfalls Hydroelectric Reservoir; one in Fork Creek, Randolph County, and two in the Deep River, Moore County. The species was also found downstream of the highfalls Dam. However, the extent of suitable habitat in this stream reach is limited, and it is thought that these individuals likely result from downstream movement from above the reservoir where Cape Fear shiner habitat is more extensive.

The Caper Fear shiner is small, rarely exceeding 2 inches in length. The fish's body is flushed with a pale silvery yellow, and a black band runs along its sides (Snelson 1971). The fins are yellowish and somewhat pointed. The upper lip is black, and the lower lip bears a thin black bar along its margin. The Cape Fear shiner, unlike most other members of the large genus *Notropis*, feeds extensively in plant material, and its digestive tract is modified for this diet by having an elongated, convoluted intestine. The species is generally associated with gravel, cobble, and boulder substates and has been observed to inhabit slow pools, riffles, and slow runs (Snelson 1971, Pottern and Huish 1985). In these habitats, the species is typically associated with schools of other related species, but it is never the numerically dominant species. Juveniles are often found in slackwater, among large rock outcrops in mid-stream, and in flooded side channels and pools (Pottern and Huish 1985). No information is presently available on breeding behavior, fecundity, or longevity.

The Cape Fear shiner may always have existed in low numbers. However, its recent reduction in range and its small population size (Pottern and Huish 1985, 1986) increases the species' vulnerability to a catastrophic event, such as a toxic chemical spill. Dam construction in the Cape Fear system has probably had the most serious impact on the species by inundating the species' rocky riverine habitat. Dams

presently under study by the U.S. Department of the Army, Corps of Engineers (COE), for the Deep River and changes in flow regulation at existing hydroelectic facilities could further threaten the species. The deterioration of water quality has likely been another factor in the species' decline. The North Carolina Department of Natural Resources and Community Development (1983) classified water quality in the Deep River, Rocky River, and Bear Creek as good to fair, and referred to the Rocky river below Siler City as an area where their sampling indicates degradation. That report also stated: "Within the Cape Fear Basin, estimated average annual soil losses from cropland ranged from 3 tons per acre in the lower basin to 12 tons in the headwaters." The North Carolina State Division of Soil and Water Conservation considers 5 tons of soil loss per acre as the maximum allowable.

The Cape Fear shiner was one of 29 fish species included in a March 18, 1975, Notice of Review published by the Service in the Federal Register (40 FR 12297). On December 30, 1982, the Service announced in the Federal Register (47 FR 58454) that the Cape Fear shiner, along with 147 other fish species, was being considered for possible addition to the list of Endangered and Threatened Wildlife. On April 4, 1985, the Service notified Federal, State, and local governmental agencies and interested parties that the Asheville Endangered Species Field Station was reviewing the species' status. That notification requested information on the species' status and threats to its continued existence. Twelve responses to the April 4, 1985, notification were received. The COE, Wilmington District; North Carolina Division of Parks and recreation, Natural Heritage Program; and the North Carolina State Museum of Natrual History provided for the species. Concern for the species' welfare was also expressed by private individuals. The other respondents provided no information on threats, and did not take a position on the species' status. The Cape Fear shiner was included in the Services' September 18, 1985, Notice of review of Vertebrate Wildlife (50 FR 37958) as a category 1 species, indicating that the Service had substantial biological data to support a proposal to list the species as endangered or threatened.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Cape Fear shiner (*Notropis mekistocholas*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* A review of historic collection records (Snelson 1971, W. Palmer and A. Braswell personal communication 1985), along with recent survey results (Pottern and Huish 1985, 1986), indicates that the Cape Fear shiner is presently restricted to only three populations (see "Background" section). Three historic populations have apparently been extirpated (Pottern and Huish 1985, 1986). Robeson Creek, Chatham County, was believed lost when Jordan Lake flooded part of the creek. The reasons for the loss of populations from Parkers Creek and Kenneth Creek in Harnett County are not known. The shiner has also not been recollected (Pottern and Huish 1985) from the Cape Fear River in Harnett County. However, review of historical and current collection records reveals that only one specimen has ever been collected from this river, and the fish likely was a stray individual from an upstream or tributary population. Since much of the Deep, Haw, and Cape Fear Rivers and their major tributaries has been impounded for hydroelectric power, and much of the rocky shoal habitat inundated, other populations and population segments that were never discovered have likely been lost to these reservoirs.

Of the three remaining populations, only the one located around the confluence of the Deep and Rocky Rivers in Chatham and Lee Counties (inhabiting a total of about 7.3 river miles) appears strong (Pottern and Huish 1985). The second population in the Rocky River, above the Rocky River hydroelectric facility, was the source of the type specimens used to describe the species (Snelson 1971). Historic records (W. Palmer and A. Braswell, personal communication 1985) reveal that collections of 15 to 30 specimens could be expected in this stretch of the Rocky River (State Route 902 or Chatham County Road 1010 Bridge) during a sampling visit in the late 1960s and early 1970s. Pottern and Huish (1985) sampled the Rocky River throughout this reach on numerous occasions and were able to collect only one specimen. The reason for the apparent decline in this population is unknown. The third population, located in the Deep River system in Moore and Randolph Counties, is represented by the collection of six individuals (Pottern Huish 1986). Three individuals were taken from below the dam. As the available habitat below the dam is limited, it is believed these fish are migrants from the upstream populatio

Potential threats to the species and habitat could come from such activitie as road construction, stream channel modification, changes in stream flows for hydroelectric power, impoundmen land use changes, wastewater discharges, and other projects in the watershed if such activities are not planned and implement with the survival of the species and the protection of its habitat in mind. The species is also potentially threatened two U.S. Army Corps of Engineers projects presently under review for the Deep River. The Randleman Dam project would consist of a reservoir of the Deep River in Randolph County, above known Cape Fear shiner habita The Howards Mill Reservoir would be on the Deep River in Moore and Randolph Counties and would flood presently used Cape Fear shiner habita

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Most of the present range of the Cape Fear shiner is relatively inaccessible and overutilization of the species has not been and is not expected to be a problem.

C. *Disease or predation.* Although the Cape Fear shiner is undoubtedly consumed by predatory animals, there i no evidence that this predation is a threat to the species.

D. *The inadequacy of existing regulatory mechanisms.* North Carolina State law (Subsection 113–272.4) prohibits collecting wildlife and fish for scientific purposes without a State permit. However, this State law does no protect the species' habitat from the potential impacts of Federal actions. Federal listing will provide protection for the species under the Endangered Species Act by requiring a Federal permit to take the species and requiring Federal agencies to consult with the Service when projects they fund, authorize, or carry out may affect the species.

E. *Other natural or manmade factors affecting its continued existence.* The major portion of the best Cape Fear shiner population is located at the junction of the Deep and Rocky Rivers in Chatham and Lee Counties. A major toxic chemical spill at the U.S. Highway 15–105 Bridge upstream of this site on

the Rocky River could jeopardize this population, and as the other populations are extremely small and tenuous, the species' survival could be threatened.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list the Cape Fear shiner (*Notropis mekistocholas*) as an endangered species. Because of the species' restricted range and vulnerability of these isolated populations to a single catastrophic accident, threatened status does not appear to be appropriate for this species (see "Critical Habitat" section for a discussion of why critical habitat is being proposed for the Cape Fear shiner).

Critical Habitat

Critical habitat, as defined by section 3 of the Act means: (i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection, and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4(a)(3) of the Act requires that critical habitat be designated to the maximum extent prudent and determinable concurrently with the determination that a species is endangered or threatened. Critical habitat is being proposed for the Cape Fear shiner to include: (1) Approximately 5 miles of the Rocky River in Chatham County, North Carolina; (2) approximately 8 miles of Bear Creek, Rocky River, and Deep River in Chatham and Lee Counties, North Carolina; (3) approximately 6 miles of Fork Creek and Deep River in Randolph and Moore Counties, North Carolina.

(See "Regulation Promulgation" section for this proposed rule for the precise description of critical habitat.) These stream sections contain gravel, cobble, and boulder substrates with pools, riffles, and shallow runs for adult fish and slackwater areas with large rock outcrops and side channels and pools for juveniles. These areas also provide water of good quality with relatively low silt loads.

Section 4(b)(8) requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities (public or private) that may adversely modify such habitat or may be affected by such designation. Activities which presently occur within the designated critical habitat include, in part, fishing, boating, scientific research, and nature study. These activities, at their present use level, do not appear to be adversely impacting the area.

There are also Federal activities that do or could occur within the Deep River Basin and that may be affected by protection of critical habitat. These activities include, construction of impoundments (in particular, U.S. Army Corps of Engineers reservoirs under study for the upper Deep River), stream alterations, bridge and road construction, and discharges of municipal and industrial wastes, and hydroelectric facilities. These activities could, if not carried out with the protection of the species in mind, degrade the water and substrate quality of the Deep River, Rocky River, Bear Creek, and Fork Creek by increasing siltation, water temperatures, organic pollutants, and extremes in water flow. If any of these activities may affect the critical habitat area and are the result of a Federal action, section 7(a)(2) of the Act, as amended, requires the agency to consult with the Service to ensure that actions they authorize, fund, or carry out, are not likely to destroy or adversely modify critical habitat.

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service will consider the critical habitat designation in light of all additional relevant information obtained at the time of final rule.

Available to Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to it critical habitat, if any is being proposed or designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 (see revision at 51 FR 19926; June 3, 1986). Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service. The Service is presently aware of only two Federal actions under consideration (Randleman and Howards Mill Reservoirs) that may affect the species and the proposed critical habitat. The Service has been in contact with the U.S. Army Corps of Engineers concerning the potential impacts of these projects on the species and its habitat. The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to prossess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions would apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not available.

Public Comments Solicited

The Service intends that any final action from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposal are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of this species;

(4) current or planned activities in the subject area and their possible impacts on this species; and

(5) Any foreseeable economic and other impacts resulting from the proposed designation of critical habitat.

Final promulgation of the regulations on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Endangered Species Field Office, 100 Otis Street, Room 224, Asheville, North Carolina 28801.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

North Carolina Department of Natural Resources and Community Development. 1983. Status of Water Resources in the Cape Fear River Basin. 135 pp.

Pottern, G.B., and M.T. Huish. 1985. Status survey of the Cape Fear shiner (*Notropis mekistocholas*). U.S. Fish and Wildlife Service Contract No. 14-16-0009-1522. 44 pp.

Pottern, G.B., and M.T. Huish. 1986. Supplement to the status survey of the Cape Fear shiner (*Notropis mekistocholas*). U.S. Fish and Wildlife Service Contract No. 14-16-0009-1522. 11 pp.

Snelson, F.F. 1971. *Notropis mekistocholas*, a new cyprinid fish endemic to the Cape Fear River basin, North Carolina. Copeia 1971:449-462.

Author

The primary author of this proposed rule is Richard G. Biggins, Endangered Species Field Office, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 672-0321).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Proposed Regulations Promulgation.

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "FISHES," to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species: Common name	Species: Scientific name	Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
FISHES							
Shiner, Cape Fear	*Notropis mekistocholas*	U.S.A. (NC)	Entire	E		17.95(e)	NA

3. It is further proposed to amend § 17.95(e) by adding critical habitat of the "Cape Fear shiner," in the same alphabetical order as the species occurs in § 17.11(h).

§ 17.95 Critical habitat—fish and wildlife.

(e) * * *

* * * * *

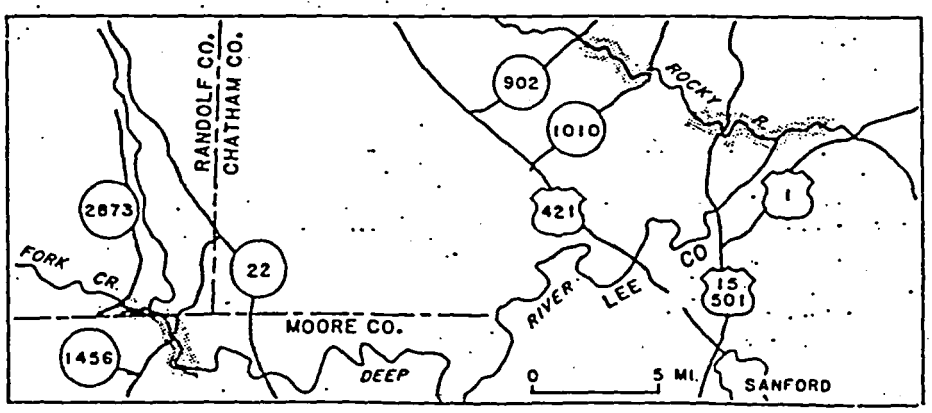
Cape Fear Shiner

(Notropis mekistocholas)

(1) *North Carolina.* Chatham County. Approximately 4.1 miles of the Rocky River from North Carolina State Highway 902 Bridge downstream to Chatham County Road 1010 Bridge;

(2) *North Carolina.* Chatham and Lee Counties. Approximately 0.5 miles of Bear Creek, from Chatham County Road 2156 Bridge downstream to the Rocky River, then downstream in the Rocky River (approximately 4.2 miles) to the Deep River, then downstream in the Deep River (approximately 2.6) in Chatham and Lee Counties, to a point 0.3 river miles below the Moncure, North Carolina, U.S. Geological Survey Gaging Station; and

(3) *North Carolina.* Randolph and Moore Counties. Approximately 1.5 miles of Fork Creek, from a point 0.1 creek miles upstream of Randolph County Road 2873 Bridge downstream to the Deep River then downstream appoximately 4.1 miles to the Deep River in Randolph and Moore Counties, North Carolina, to a point 2.5 river miles below Moore County Road 1456 Bridge.



Constituent elements include clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs and slackwater areas with large rock outcrops and side channels and pools with water of good quality with relatively low silt loads.

* * * * *

Dated: May 30, 1986.

P. Daniel Smith,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 86-15643 Filed 7-10-86; 8:45 am]

BILLING CODE 4310-55-M

Ref. 15

15 June 1987

TO: File

FROM: Pat DeRosa PD

RE: Critical Habitats of Federally Listed Endangered Species in N.C.

I spoke by telephone today with John Fridell, US Fish and Wildlife Service (704) 259-0321 to request an update on critical habitats in NC. Mr. Fridell informed me that there have been no changes since our previous correspondence of August 12, 1986. The "Proposal to List the Cape Fear Shiner as an Endangered Species with Critical Habitats" in NC (FR Vol. 51, No. 133, July 11, 1986) is expected to be finalized in the next month or so.

PD/tb/0338b

Ref. 16

07 December 1987

TO: File

FROM: Jack Butler

RE: Public water service near Lenoir Refining, NCD079066833.

Mr. Regonal Bryant, Lenoir Water and Sewer Distribution Superintendent (704-758-0011), was contacted on this date to obtain information on the water service in Lenoir, N.C. The city of Lenoir draws water from Lake Rhodhiss. Caldwell County purchases water from the City of Lenoir. Mr. Charles Poovey is the contact person for the county system. He can be reached at (704) 758-8451. Mr. Bryant agreed to send a copy of the water distribution map for the city of Lenoir. The city also sells water to several small community systems.

Mr. Poovey was also contacted on this date. He agreed to send a county map with the areas they serve marked. Mr. Poovey reported that all county water was purchased from Lenoir.

JB/pb/pb

Ref. 17

6 August 1987

To: File

From: Jack Butler

Re: Telephone conversation with Jake Harrison, Lenoir Water Plant (704-396-1006) about area served by Lenoir Water.

Mr. Harrison reported that Lenoir receives water from Lake Rhodhiss and that they serve all of Caldwell County with the exception of Granite Falls which has its own system.

JB/ta/0434b

Ref. 18

CITY MANAGER
JAMES H. HIPP

CITY OF LENOIR
NORTH CAROLINA

MAYOR
ROBERT A. GIBBONS

CITY COUNCIL
D.E. ANDERSON
G.L. BERNHARDT
J.S. GREENE
L. HORTON, JR.
M.A. MANSHIP
M.O. STRAWN
J.T. WATSON

December 7, 1987

Mr. Jack Butler
NC Division of Health Services
Solid and Hazard Waste Management Branch
Cerola Unit
P. O. 2091
Raleigh, North Carolina 27602

Dear Mr. Butler:

Enclosed is the water distribution map you requested by phone, Monday, December 7, 1987.

If you have any questions please contact me.

Sincerely,

CITY OF Lenoir

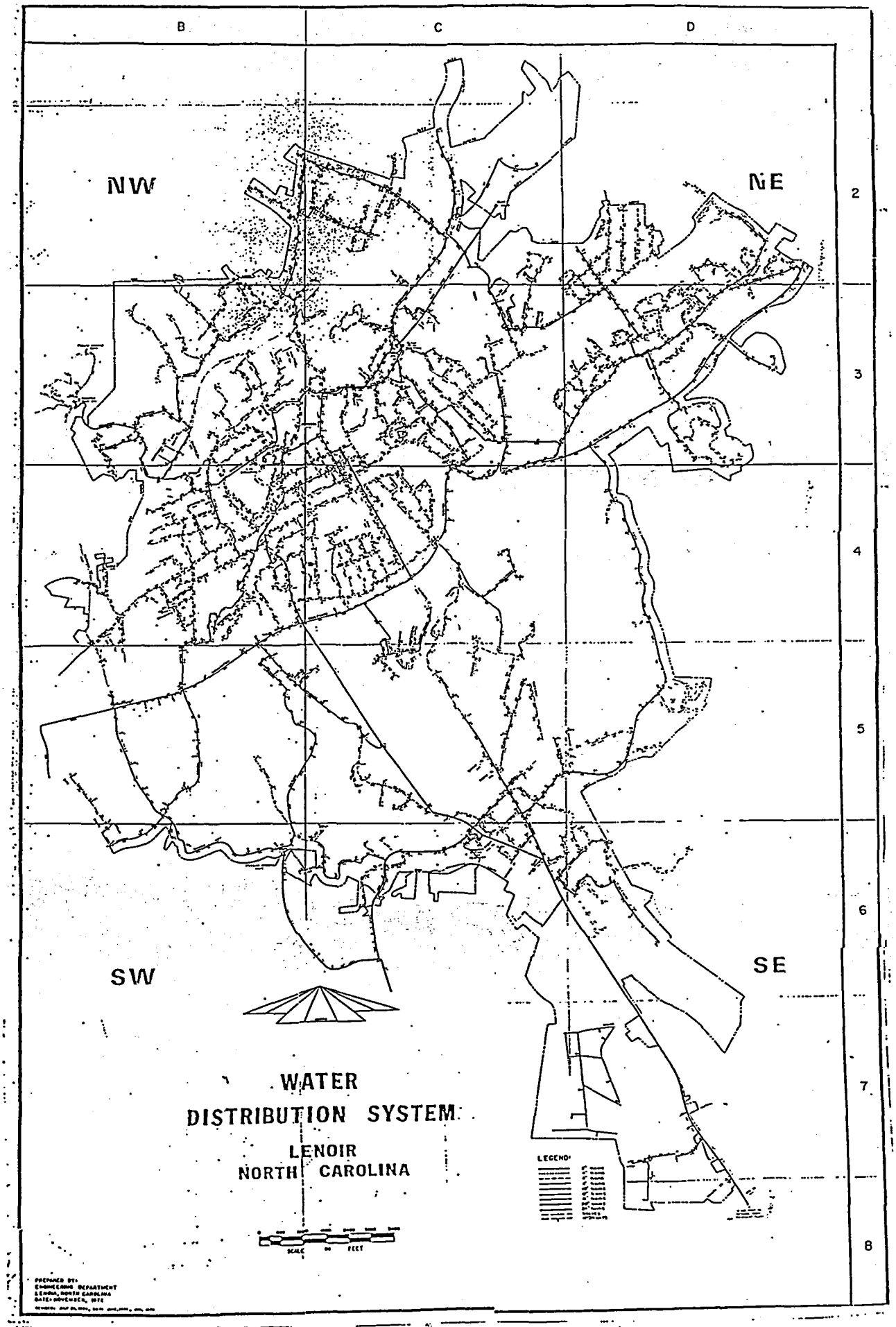
Regonald Bryant (jg)

Regonald Bryant
Water and Sewer Distribution Superintendent

RB/jg

Enclosure

POST OFFICE BOX 958 • LENOIR, NORTH CAROLINA 28645-0958 • (704) 758-0011


B
C
D
2
3
4
5
6
7
8
NW
NE
SW
SE
WATER
DISTRIBUTION SYSTEM
LENOIR
NORTH CAROLINA
LEGEND:
SCALE IN FEET
PREPARED BY:
ENGINEERING DEPARTMENT
LENOIR, NORTH CAROLINA
DATE: NOVEMBER, 1972

CALDWELL COUNTY
POST OFFICE BOX 1078
LENOIR, NORTH CAROLINA 28645

L. NORMAN SHRONCE
COUNTY MANAGER

Ref. 19

tel 704/758-8451

December 9, 1987

Mr. Jack Butler
N.C. Division of Health Services
Solid and Hazardous Waste Management Branch
CERCLA Unit
P.O. Box 2091
Raleigh, N. C. 27602

Dear Mr. Butler:

Enclosed is the map of the Caldwell County Water System, showing water lines on the east and southeast sides of Lenoir within a five mile radius.

If more information is needed, please advise.

Very truly yours,

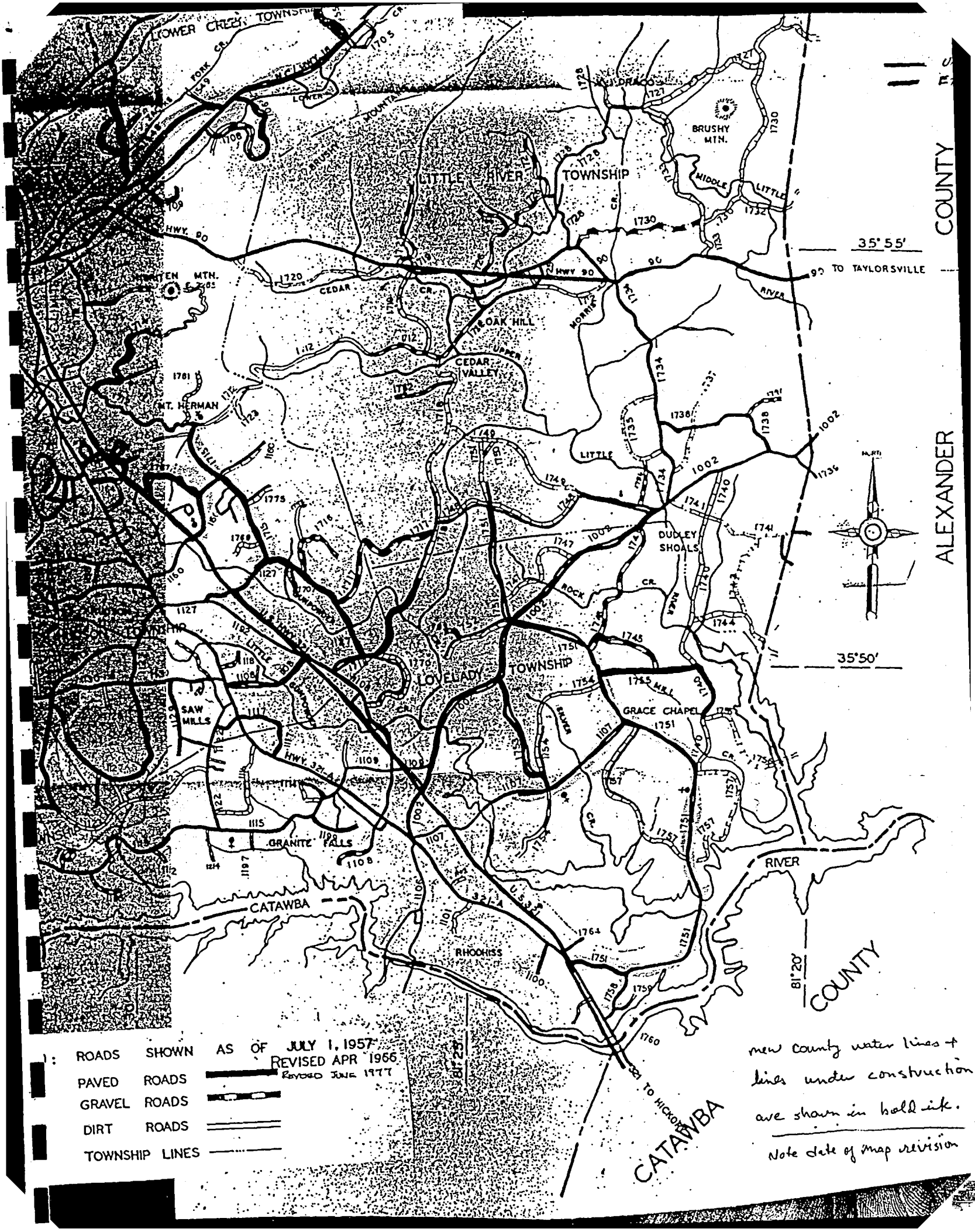
Charles W. Poovey mt

Margaret

Charles W. Poovey, Director
Caldwell County Water Department

CWP:mt

Enclosure



new county water lines + lines under construction are shown in bold ink.

Note date of map revision

8/07/87 MARK DURWAY--COMMUNITY LISTING PAGE 0001

PWID	PWMANAME	PWMAARCO	PWMAPNUM	PWPLSOC1	PWPLPOPL	PWPLTYPE	PWPLACTV	PWPLLAT1	PWPLLON1	Distance From Site
~~0114010~~	~~LENOIR WATER TREATMENT PLANT~~	~~704~~	~~3961006~~	~~S~~	~~000015200~~	~~C~~	~~A~~	~~0355700~~	~~0812800~~	
~~0114046~~	~~CALDWELL CO. WATER SYS. NORTH~~	~~704~~	~~7588454~~	~~P~~	~~000000120~~	~~C~~	~~A~~	~~0355400~~	~~0813500~~	
0114105	FAIRWAY-ACRES	704	7588851	G	000000180	C	A	0355400	0813415	2-3miles
0114126	WINDSOR PARK SUBDIVISION		0000000	G	000000080	C	A	0355536	0813032	2-3miles
0114160	KILLIAN WATER SYSTEM		0000000	G	000000025	C	A	0355500	0813510	2-3miles
0114161	INDIAN-GRAVE-MHP		0000000	G	000000080	C	A	0355710	0813330	1-2miles
0114401	B & F MHP		0000000	G	000000184	C	A	0355650	0813145	2-3 miles
0114412	HOWARDS MHP		0000000	G	000000176	C	A	0355725	0813210	1-2miles
0114434	TEETER-MHP	704	7543827	G	000000044	C	A	0355659	0813015	<1mile
0114459	GREEN MOUNTAIN PARK	704	7580241	G	000000500	C	A	0355729	0813110	1-2miles
0114517	QUALITY CARE CENTER REST HOME	704	7588886	G	000000025	C	A	0355655	0813350	1-2miles

1294 people

8/07/87 MARK DURWAY--NON-COMMUNITY LISTING PAGE 0001

PWID	PWMANAME	PWMAARCO	PWMAPNUM	PWPLSOC1	PWPLPOPL	PWPLTYPE	PWPLACTV	PWPLLAT1	PWPLLON1	
~~0114445~~	~~WALSH MOBILE HOME PARK~~		~~0000000~~	~~G~~	~~000000040~~	~~N~~	~~A~~	~~0355448~~	~~0813500~~	
~~0114439~~	~~IVA'S COUNTRY MUSIC & 321LOUNG~~	~~704~~	~~7548915~~	~~G~~	~~000000200~~	~~N~~	~~A~~	~~0355622~~	~~0813240~~	
~~0114447~~	~~OUTPOST FISH CAMP~~	~~704~~	~~3961066~~	~~G~~	~~000000160~~	~~N~~	~~A~~	~~0355733~~	~~0813003~~	
~~0114448~~	~~SEAFOOD HARBOR~~	~~704~~	~~7543207~~	~~G~~	~~000000070~~	~~N~~	~~A~~	~~0355730~~	~~0813425~~	
~~0114462~~	~~GREER LABS~~	~~704~~	~~7580031~~	~~G~~	~~000000030~~	~~N~~	~~A~~	~~0355401~~	~~0812001~~	
~~0114433~~	~~MT. VIEW BAPT CHURCH~~	~~704~~	~~7581572~~	~~G~~	~~000000060~~	~~N~~	~~A~~	~~0355720~~	~~0813560~~	
~~0114485~~	~~HIGHTEN BAPTIST CHURCH~~	~~704~~	~~7286588~~	~~G~~	~~000000150~~	~~N~~	~~A~~	~~0355325~~	~~0813008~~	
~~0114484~~	~~CLEARVIEW BAPT CHURCH~~	~~704~~	~~7283540~~	~~G~~	~~000000110~~	~~N~~	~~A~~	~~0355730~~	~~0813820~~	
~~0114494~~	~~JACKS FORK BAPT CH~~	~~704~~	~~7585063~~	~~G~~	~~000000060~~	~~N~~	~~A~~	~~0355730~~	~~0813030~~	
~~0114495~~	~~PISGAH CHURCH~~	~~704~~	~~7544072~~	~~G~~	~~000000080~~	~~N~~	~~A~~	~~0355630~~	~~0813505~~	
~~0114504~~	~~CRESTVIEW BAPT CHURCH~~	~~704~~	~~7584060~~	~~G~~	~~000000300~~	~~N~~	~~A~~	~~0355645~~	~~0813245~~	
~~0114540~~	~~CEDAR ROCK BAPT CHURCH~~	~~704~~	~~7547750~~	~~G~~	~~000000045~~	~~N~~	~~A~~	~~0355633~~	~~0812900~~	
~~0114535~~	~~LENOIR MOOSE LODGE #385~~	~~704~~	~~7586817~~	~~G~~	~~000000300~~	~~N~~	~~A~~	~~0355450~~	~~0812035~~	
~~0114535~~	~~ANDERSON TRUCK LINES~~	~~704~~	~~7289268~~	~~G~~	~~000000175~~	~~N~~	~~A~~	~~0355300~~	~~0812900~~	
0114537	CELLU-PRODUCTS	704	7585151	G	000000030	N	A	0355640	0813430	1-2miles
0114538	CELLU-PRODUCTS WARRIOR PLT	704	7585151	G	000000215	N	A	0355630	0813330	<1mile
0114540	WOODBURY LUMBER CO	704	7543468	G	000000025	N	A	0355730	0813420	1-2miles
0114558	CALDWELL WOODCARVING	704	7580186	G	000000050	N	A	0355420	0813440	2-3miles
~~0114560~~	~~CEDAR VALLEY METH CHURCH~~	~~704~~	~~7545960~~	~~G~~	~~000000030~~	~~N~~	~~A~~	~~0355324~~	~~0813540~~	
0114564	GREER LAB	704	7580031	G	000000040	N	A	0355500	0813512	2-3miles
~~0114566~~	~~NORTHSIDE BAPT CHURCH~~	~~704~~	~~7283594~~	~~G~~	~~000000035~~	~~N~~	~~A~~	~~0355000~~	~~0813150~~	
~~0114567~~	~~WORSHIP POINT BAPT CHURCH~~	~~704~~	~~7286776~~	~~G~~	~~000000075~~	~~N~~	~~A~~	~~0355445~~	~~0813540~~	

360 people

Printouts from the NC Public Water Supply Branch, Raleigh, NC show community and non-community water supplies in the vicinity of Thomasville Furniture Industries (NCD054290770), Lenoir, Caldwell Co., NC. Water supplies listed lie within three miles of Thomasville Furniture.

Ref. 20

December 1, 1988

TO: File

FROM: David Lilley

RE: House count from USGS topographic map, Thomasville Furniture, NCD054290770

The limits of the Lenoir and Caldwell County water systems were drawn on the USGS 7-1/2' topographic maps Lenoir and King's Creek. Afterwards, all houses on the map not served by the water systems were counted.

Within one mile of the site, much of the water is supplied by the Lenoir water distribution system, a surface water system with intakes in Lake Rhodhiss, approximately 10 miles south Lenoir. Also, there are 700 people (128 houses x 1.44 growth factor since last census x 3.8 persons per house) using private wells, 44 people using groundwater from community systems, and 215 people using groundwater from non-community systems.

Between one and two miles, there are 1,122 people (205 houses x 1.44 growth factor since last census x 3.8 persons per house) using private wells, 781 people using groundwater from community systems, and 55 people using groundwater from non-community systems.

Between two and three miles, there are 2583 people (472 houses x 1.44 growth factor since last census x 3.8 persons per house) using private wells, 469 people using groundwater from community systems, and 90 using groundwater from non-community systems.

Between three and four miles, there are 3612 people (660 houses x 1.44 growth factor since last census x 3.8 persons per house). No community or non-community groundwater systems are listed.

DL/ds/ibm.1

Ref. 22

2 December 1988

TO: File

FROM: David Lilley

RE: Critical Habitats of Federally Listed Endangered Species in North Carolina

Today I contacted John Fridell, US Fish and Wildlife Service (704) 259-0321 to request an update on critical habitats in the Lenoir area of North Carolina. Mr. Fridell informed me that two plants, the Spreading Avens (Geum Radiatum) and Bent Avens (Geum Geninculatum) are now undergoing status review; they are candidates for the endangered species list.

DL/ds/ibm.3

December 2, 1988

TO: File

FROM: David Lilley

RE: Land and water use around Thomasville Furniture Industries

I contacted Mr. Bill Forbes, Caldwell County Manager, (704) 757-1111 to discuss land and water usage around the Thomasville Furniture Industries site (NCD054290770). He informed me that the area around the site was largely industrial, with some commercial properties, and one or two homes within a quarter mile of the site.

On December 5, Ms. Vicki Sawyer from Caldwell County called to tell me neither she nor Bill Forbes knew the classification of Blair's Fork and Spainhour Creeks. In Mr. Forbes opinion, neither of the creeks should be used for swimming or fishing, however, he was not sure if such activities are taking place.

DL/ds/thomas.39

Ref. 24

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger

4-985-$198.00 SPIRAL (2.C.)

WA 440 S298d 1984 c.2

VAN NOSTRAND REINHOLD COMPANY
New York

DI-n-BUTYL PHTHALATE

CAS RN: 84742 NIOSH #: TI 0875000
mf: $C_{16}H_{22}O_4$; mw: 278.38

Oily liquid, mild odor. bp: 340°, fp: −35°, flash p: 315°F (CC), d: 1.047-1.049 @ 20°/20°, autoign. temp.: 757°F, vap. d: 9.58.

SYNS:

O-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER
BENZENE-O-DICARBOXYLIC ACID DI-N-BUTYL ESTER
DIBUTYL-1,2-BENZENEDICARBOXYLATE
DIBUTYL PHTHALATE

TOXICITY DATA: 3	CODEN:
ipr-rat TDLo:874 mg/kg/(5-15D preg) TFX:TER	JPMSAE 61,51,72
orl-rat TDLo:8400 ug/kg (7D male)	TXAPA9 53,35,80
ipr-rat TDLo:1017 mg/kg (5-15D preg)	JPMSAE 61,51,72
ipr-rat TDLo:305 mg/kg (5-15D preg)	JPMSAE 61,51,72
orl-mus TDLo:1440 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:12 gm/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:38 gm/kg (1-18D preg)	ENVRAL 22,245,80
ihl-rat LC50:7900 ug/m3	GTPZAB 17(10),51,73
orl-mus LD50:5282 ug/kg	GTPZAB 17(10),51,73
ihl-mus LC50:2100 ug/m3	GTPZAB 17(10),51,73
cyt-ham:fbr 30 mg/L/24H	MUREAV 48,337,77
ipr-rat TDLo:874 mg/kg/(5-15D preg):TER	JPMSAE 61,51,72
orl-hmn TDLo:140 mg/kg:EYE	SMWOAS 84,1243,54
orl-rat LD50:12000 mg/kg	SPEADM 74-1,-,74
ipr-rat LD50:3050 mg/kg	JPMSAE 61,51,72
unk-rat LD50:10000 mg/kg	GTPZAB 24(3),25,80
ipr-mus LD50:3570 mg/kg	JSCCA5 28,667,77
unk-mus LD50:10000 mg/kg	GTPZAB 24(3),25,80
unk-gpg LD50:10000 mg/kg	GTPZAB 24(3),25,80
ihl-mam LC50:9620 mg/m3	GTPZAB 24(3),25,80

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74.

TLV: Air: 5 mg/m3 DTLVS* 4,124,80. *Toxicology Review:* RREVAH 54,1,75; EVHPAZ 4,3,73; CMTVAS 10(3),49,73; ESKHA5 93,1,75; 27ZTAP 3,28,69. OSHA Standard: Air: TWA 5 mg/m3 (SCP-D) FEREAC 39,23540,74. "NIOSH Manual of Analytical Methods" VOL 2 S33. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MUT data. An exper TER. A hmn EYE. MOD ipr. LOW orl, unk, ihl. See esters, phthalic acid and butyl alcohol.

Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials. Violent reaction with Cl_2.

To Fight Fire: CO_2, dry chemical.

Incomp: Chlorine.

BIS(2-ETHYLHEXYL)PHTHALATE

CAS RN: 117817 NIOSH #: TI 0350000
mf: $C_{24}H_{38}O_4$; mw: 390.62

SYNS:

BIS(2-ETHYLHEXYL)-1,2-BENZENEDICARBOXYLATE
DI(2-ETHYLHEXYL)ORTHO-PHTHALATE
DI(2-ETHYLHEXYL)PHTHALATE
DI-SEC-OCTYL PHTHALATE
DOP
2-ETHYLHEXYL PHTHALATE
NCI-C52733
OCTOIL

TOXICITY DATA: 3-2-1	CODEN:
skn-rbt 500 mg/24H MLD	28ZPAK -,48,72
eye-rbt 500 mg	AJOPAA 29,1363,46
eye-rbt 500 mg/24H MLD	28ZPAK -,48,72
ipr-rat TDLo:30 gm/kg/(5-15D preg):TER	JPMSAE 61,51,72
orl-mus TDLo:7500 mg/kg/(8D preg):TER	TJADAB 14,259,76
orl-man TDLo:143 mg/kg:GIT	JIHTAB 27,130,45
orl-rat LD50:31 gm/kg	UCDS** 7/20/67
ipr-rat LD50:30700 mg/kg	JIHTAB 27,130,45
ivn-rat LD50:250 mg/kg	TXAPA9 45,230,78
unk-rat LD50:37000 mg/kg	GTPZAB 24(3),25,80
orl-mus LD50:30 gm/kg	TJADAB 14,259,76
ipr-mus LD50:14 gm/kg	JPMSAE 55,158,66
unk-mus LD50:37000 mg/kg	GTPZAB 24(3),25,80
orl-rbt LD50:34 gm/kg	EVHPAZ 4,3,73
skn-rbt LD50:25 gm/kg	JIHTAB 27,130,45
skn-gpg LD50:10 gm/kg	EVHPAZ 4,3,73
unk-gpg LD50:37000 mg/kg	GTPZAB 24(3),25,80
ihl-mam LC50:30000 mg/m3	GTPZAB 24(3),25,80
orl-rat TDLo:35 mg/kg (14D male/14D pre)	FCTXAV 15,389,77
orl-rat TDLo:8400 ug/kg (7D male)	TXAPA9 53,35,80
orl-rat TDLo:17200 mg/kg (MGN)	NEZAAQ 31,507,76
orl-rat TDLo:43 gm/kg (MGN)	NEZAAQ 31,507,76
ipr-rat TDLo:10 gm/kg (5-15D preg)	JPMSAE 61,51,72
ipr-rat TDLo:5 gm/kg (5-15D preg)	JPMSAE 61,51,72
orl-mus TDLo:1 gm/kg (7D preg)	JEPTDQ 4,533,80
orl-mus TDLo:1260 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:3420 mg/kg (1-18D preg)	ENVRAL 22,245,80
orl-mus TDLo:7200 mg/kg (1-18D preg)	ENVRAL 22,245,80

TLV: Air: 5 mg/m3 DTLVS* 4,159,80. *Toxicology Review:* EVHPAZ (3),73,73; RREVAH 54,1,75; JOCMA7 15(10),808,73; CMIVAS 10(3),49,73; ESKHA5 93,1,75; TXAPA9 45,1,78. OSHA Standard: Air: TWA 5 mg/m3 (SCP-D) FEREAC 39,23540,74. NTP Carcinogenesis Bioassay Completed as of December 1980. "NIOSH Manual of Analytical Methods" Vol 1 S40. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: An exper TER, GIT (man). Possible hmn CARC. HIGH ivn; LOW orl, ipr, unk, skn; MLD skn, eye irr.

Disaster Hazard: When heated to decomp it emits acrid smoke.

For further information see Di-(2-Ethylhexyl)Phthalate, Vol. 1, No. 7 and Vol. 2, No. 2 of *DPIM Report.*

Ref. 25

STATE OF NORTH CAROLINA

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

CLASSIFICATIONS AND WATER QUALITY STANDARDS ASSIGNED TO THE WATERS OF THE CATAWBA RIVER BASIN

DIVISION OF ENVIRONMENTAL MANAGEMENT

RALEIGH, NORTH CAROLINA

Reprint from North Carolina Administrative Code: 15 NCAC 2B .0308
Current through: September 1, 1981

.0301 CLASSIFICATIONS; GENERAL

(a) Schedule of Classifications. The classifications assigned to the waters of the State of North Carolina are set forth in the schedules of classifications and water quality standards assigned to the waters of the river basins of North Carolina, 15 NCAC 2B .0302 to .0317. These classifications are based upon the existing or contemplated best usage of the various streams and segments of streams in the basin, as determined through studies and evaluations and the holding of public hearings for consideration of the classifications proposed.

(b) Stream Names. The names of the streams listed in the schedules of assigned classifications were taken as far as possible from United States Geological Survey topographic maps. Where topographic maps were unavailable, U.S. Corps of Engineers maps, U.S. Department of Agriculture soil maps, and North Carolina highway maps were used for the selection of stream names.

(c) Classifications. The classifications assigned to the waters of North Carolina are denoted by the letters A-I, A-II, B, C, SA, SB, and SC in the column headed "class." These class designations refer to the classifications established by the Rules, Regulations, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, as adopted by the North Carolina Board of Water and Air Resources on October 13, 1970, and approved by the Environmental Protection Agency on January 20, 1971. A brief explanation of the "best usage" for which the waters in each class must be protected is given as follows:

Fresh Waters

Class A-1:	source of water supply for drinking, culinary, or food processing purposes after treatment by approved disinfection only, and any other usage requiring waters of lower quality;
Class A-II:	source of water supply for drinking, culinary, or food processing purposes after approved treatment equal to coagulation, sedimentation, filtration, and disinfection, etc., and any other usage specified by the "C" classification;
Class B:	primary recreation and any other usage specified by the "C" classification;
Class C:	fish and wildlife propagation, secondary recreation, agriculture and other uses requiring waters of lower quality.

Tidal Salt Waters

Class SA:	shellfishing for market purposes and any other usage specified by the "SB" and "SC" classification;
Class SB:	primary recreation and any other usage specified by the "SC" classification;
Class SC:	fish and wildlife propagation, secondary recreation, and other uses requiring waters of lower quality.

(d) Water Quality Standards. The water quality standards applicable to each classification assigned are those established in 15 NCAC 2B .0200, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, as adopted by the North Carolina Environmental Management Commission.

(e) Designation

(1) Trout Waters. Those streams suitable for the propagation of natural trout and those suitable for the maintenance of trout when stocked by the North Carolina Wildlife Resources Commission are designated in the appropriate columm in the schedule of classifications by the letters "Tr."

(2) Swamp Waters. Those waters which are topographically located so as to generally have low velocities and certain other characteristics which are different from adjacent streams draining steeper topography are designated by the letters "Sw" in the schedule.

(f) Index Number

(1) Reading the Index Number. The index number appearing in the column so designated is an identification number assigned to each stream or segment of a stream, indicating the specific tributary progression between the main stem stream and the tributary stream.

(2) Cross-Referencing the Index Number. The inclusion of the index nmber in the Schedule is to provide an adequate cross reference between the classification schedules and an alphabetic list of streams.

(g) Classification Date. The classification date indicates the date on which enforcement of the provisions of Section 143-215.1 of the General Statutes of North Carolina became effective with reference to the classification assigned to the various streams in North Carolina .

(h) Reference. Copies of the schedules of classifications adopted and assigned to the waters of the various river basins may be obtained at no charge by writing to:

Director
Division of Environmental Management
Department of Natural Resources
and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611

History Note: Statutory Authority G.S. 143-214.1; 143-215.1; 143-215.3(a)(1); Eff. February 1, 1976; Amended Eff. September 9, 1979; November 1, 1978; March 1, 1977.

Note: Nutrient Sensitive Waters: Waters which are experiencing or are subject to excessive growths of microscopic or macroscopic vegetation or which are tributary to such waters. (Nitrogen and phosphorus are the usually controlled nutrients but other parameters may be restricted.) They are designated in the schedule of classifications by the letters "NSW".

SECTION .0300 - ASSIGNMENT OF STREAM CLASSIFICATIONS

.0308 CATAWBA RIVER BASIN

(a) Schedule of Classifications. The classifications assigned to the waters within the Catawba River Basin are set forth in the Schedule of Classifications and Water Quality Standards Assigned to the Waters of the Catawba River Basin, which is on file in the Office of the Attorney General of North Carolina.

(b) Places where the schedule may be obtained:

Director
Division of Environmental Management
Department of Natural Resources
and Community Development
Post Office Box 27687
Raleigh, North Carolina 27611

(c) Places where the schedules may be inspected:

(1) Clerk of Court:
Alexander County
Avery County
Burke County
Caldwell County
Catawba County
Gaston County
Iredell County
Lincoln County
McDowell County
Mecklenburg County
Union County
Watauga County

(2) North Carolina Department of Natural Resources and Community Development:
(A) Mooresville Regional Office
1119 North Main Street
Mooresville, North Carolina
(B) Asheville Regional Office
Interchange Building
159 Woodfin Street
Asheville, North Carolina

(3) Division of State Library
Archives -- State Library Building
109 E. Jones Street
Raleigh, North Carolina

(d) Unnamed Streams. Any stream which is not named in the schedule of classifications carries the same classification as that assigned to the stream or segment thereof to which it is tributary, unless otherwise indicated in the schedule of classifications. Such streams entering South Carolina are classified "A-II."

(e) Reading the Index Number. The index number appearing in the column so designated is an identification number assigned to each stream or segment of a stream, indicating the specific tributary progression between the main stem stream and the tributary stream. For example, Parish Branch is assigned index number 11-7-5; Parish Branch is tributary to Mill Creek, to which index number 11-7 is assigned; Mill Creek is tributary to Catawba River, which is assigned index number 11. Numbers appearing in parenthesis indicate the position of the upstream boundary of the stream segments, e.g., the segment of Catawba River with its upstream boundary between Mill Creek, index number 11-7, and Burgen Creek, index number 11-9, is therefore assigned index number 11-(8).

(f) The Catawba River Basin Schedule of Classifications and Water Quality Standards was amended effective:

(1) March 1, 1977;

(2) August 12, 1979.

History Note: Statutory Authority G.S. 143-214.1; 143-215.1; 143-215.3(a)(1);
Eff. February 1, 1976;
Amended Eff. August 12, 1979; November 1, 1978; March 1, 1977.

Reference Material to Regulation 15 NCAC 2B .0308 Catawba River Basin, entitled CLASSIFICATION AND WATER QUALITY STANDARDS ASSIGNED TO THE WATERS OF THE CATAWBA RIVER BASIN, has been amended 4-1-82 as follows:

Name of Stream	Description	Class	Index No.
Spainhour Creek	From source to Lower Creek	C	11-39-3
Allen Creek	From source to Maiden Creek	A-II	11-129-5-7-2-4

.0308 CATAWBA RIVER BASIN

Name of Stream	Description	Classification Class	Date	Index No.
CATAWBA RIVER	From source to Old Fort Finishing Plant Water Supply Intake	A-II Tr	7/1/73	11-(1)
Chestnut Branch (Fork)	From source to Catawba River	A-II Tr	7/1/73	11-2
Clover Patch Branch	From source to Catawba River	A-II Tr	7/1/73	11-3
Youngs Fork Creek	From source to Catawba River	A-II Tr	7/1/73	11-4
Spring Branch	From source to Catawba River	A-II Tr	7/1/73	11-5
Left Prong Catawba River	From source to Catawba River	A-II Tr	7/1/73	11-6
Mill Creek	From source to Catawba River	C Tr	3/1/62	11-7
Right Prong Mill Creek	From source to Mill Creek	C Tr	3/1/62	11-7-1
Left Prong Mill Creek	From source to Mill Creek	C Tr	3/1/62	11-7-2
Slaty Branch	From source to Left Prong Mill Creek	C	3/1/62	11-7-2-1
Acron Branch	From source to Mill Creek	C Tr	3/1/62	11-7-3
Big Creek	From source to Mill Creek	C Tr	7/1/73	11-7-4
Paris Branch	From source to Mill Creek	C Tr	7/1/73	11-7-5
Fall Branch	From source to Paris Branch	C Tr	7/1/73	11-7-5-1
Boardpen Branch	From source to Paris Branch	C Tr	7/1/73	11-7-5-2
Barn Branch	From source to Paris Branch	C Tr	7/1/73	11-7-5-3
Prichard Creek	From source to Mill Creek	C Tr	7/1/73	11-7-6
Long Branch	From source to Mill Creek	C Tr	7/1/73	11-7-7
Brushy Branch	From source to Mill Creek	C Tr	3/1/62	11-7-8
Swannanoa Creek	From source to Mill Creek	C Tr	3/1/62	11-7-9
Jarrett Creek	From source to Old Fort Water Supply Intake	A-I	3/1/62	11-7-10-(1)
Lost Cove Creek	From source to Jarrett Creek	A-I	3/1/62	11-7-10-2
Jarrett Creek	From Old Fort Water Supply Intake to Mill Creek	C	3/1/62	11-7-10-(3)
Unnamed Tributary at Camp Grier Lake [Camp Grier Lake (Lake Refuge)]	From source to Camp Grier Lake Dam	B Tr	7/1/73	11-7-10-4-(1)
Unnamed Tributary at Camp Grier Lake	From Camp Grier Dam to Jarrett Creek	C Tr	7/1/73	11-7-10-4-(2)
CATAWBA RIVER (including backwaters of Lake James below elevation 1200)	From Dam at Old Fort Finishing Plant Water Supply Intake to North Fork Catawba River	C	3/1/62	11-(8)
Burgen Creek (Butch Branch)	From source to Catawba River	C	9/1/74	11-9
Curtis Creek	From source to Long Branch	A-I Tr	3/1/62	11-10-(1)
Bear Drive Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-2
Licklog Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-3
Big Camp Rock Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-4
Rest Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-5
Curtis Creek (including proposed Dam and Reservoir)	From Long Branch to a point located 250 feet upstream from U.S. Hwy. 70 Bridge	A-II Tr	10/1/66	11-10-(6)
Long Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-7
Hickory Branch	From source to Long Branch	A-I Tr	3/1/62	11-10-7-1
Slick Falls Branch	From source to Curtis Creek	A-I Tr	3/1/62	11-10-8
Newberry Creek	From source to Newberry Road Bridge, located 1.5 miles more or less upstream from Curtis Creek	A-I Tr	3/1/62	11-10-9-(1)
Chute Branch	From source to Newberry Creek	A-I Tr	3/1/62	11-10-9-2
Laurel Jog Creek	From source to Newberry Creek	A-I Tr	3/1/62	11-10-9-3
Left Prong Laurel Jog Creek	From source to Laurel Jog Creek	A-I Tr	3/1/62	11-10-9-3-1
Right Prong Laurel Jog Creek	From source to Laurel Jog Creek	A-I Tr	3/1/62	11-10-9-3-2
Newberry Creek	From Newberry Road Bridge, located 1.5 miles more or less upstream from Curtis Creek, to Curtis Creek	A-II Tr	10/1/66	11-10-9-(4)
Horse Branch	From source to Newberry Creek	A-II Tr	10/1/66	11-10-9-5
Chest Cove Branch	From source to Newberry Creek	A-II Tr	10/1/66	11-10-9-6
Tantrough Branch	From source to Curtis Creek	A-II Tr	10/1/66	11-10-10
Pail Branch	From source to Curtis Creek	A-II Tr	10/1/66	11-10-11

Name of Stream	Description	Classification Class	Date	Index No.
Deep Branch	From source to Curtis Creek	A-II Tr	10/1/66	11-10-12
Paddys Branch	From source to Curtis Creek	A-II Tr	10/1/66	11-10-13
Curtis Creek	From a point located 250 feet upstream from U.S. Hwy. 70 to Catawba River	C Tr	3/1/62	11-10-(14)
Brevard Creek	From source to Catawba River	C	3/1/62	11-11
Crooked Creek	From source to Catawba River	C	3/1/62	11-12
Bird Creek	From source to Crooked Creek	C Tr	7/1/73	11-12-1
Hodges Creek	From source to Crooked Creek	C	3/1/62	11-12-2
Big Branch	From source to Crooked Creek	C	3/1/62	11-12-3
Jackson Creek	From source to Crooked Creek	C	3/1/62	11-12-4
Lytle Branch	From source to Jackson Creek	C	3/1/62	11-12-4-1
Little Crooked Creek	From source to Crooked Creek	C	3/1/62	11-12-5
Pine Cove Branch	From source to Little Crooked Creek	C	3/1/62	11-12-5-1
Clarks Branch	From source to Little Crooked Creek	C	3/1/62	11-12-5-2
Guthrie Branch	From source to Little Crooked Creek	C	3/1/62	11-12-5-3
Jordan Branch	From source to Crooked Creek	C	3/1/62	11-12-6
Camp Creek	From source to Crooked Creek	C	3/1/62	11-12-7
Dill Branch	From source to Camp Creek	C	3/1/62	11-12-7-1
Bradley Creek	From source to Crooked Creek	C	3/1/62	11-12-8
Loom Creek	From source to Crooked Creek	C	3/1/62	11-12-9
Little Toe River	From source to Crooked Creek	C	3/1/62	11-12-10
Haw Branch	From source to Crooked Creek	C	3/1/62	11-12-11
Glades Creek	From source to Catawba River	C	3/1/62	11-13
Cane Creek	From source to Catawba River	C Tr	3/1/62	11-14
Cave Creek	From source to Cane Creek	C Tr	3/1/62	11-14-1
Mackey Creek	From source to Marion Water Supply Intake	A-I Tr	3/1/62	11-15-(1)
Mackey Creek	From Marion Water Supply Intake to Catawba River	C	3/1/62	11-15-(2)
Laurel Fork Creek	From source to Mackey Creek	C Tr	7/1/73	11-15-3
Knife Branch	From source to Mackey Creek	C Tr	7/1/73	11-15-4
Stillhouse Branch	From source to Mackey Creek	C	3/1/62	11-15-5
Jake Creek	From source to Catawba River	C	3/1/62	11-16
Beatty Branch	From source to Catawba River	C	3/1/62	11-17
Carson Branch	From source to Beatty Branch	C	3/1/62	11-17-1
Licklog Branch	From source to Beatty Branch	C	3/1/62	11-17-2
Paxton Creek	From source to Beatty Branch	C	3/1/62	11-17-3
Poplar Cove Creek	From source to Paxton Creek	C	3/1/62	11-17-3-1
Clear Creek	From source to Marion Water Supply Intake	A-I	3/1/62	11-18-(1)
Clear Creek	From Marion Water Supply Intake to Catawba River	C	3/1/62	11-18-(2)
Deep Cove Creek	From source to Clear Creek	C	3/1/62	11-18-3
Tan Branch	From source to Clear Creek	C	3/1/62	11-18-4
Buck Creek (Lake Tahoma)	From source to Dam at Lake Tahoma	B Tr	7/1/73	11-19-(1)
Singecat Branch	From source to Buck Creek	B	3/1/62	11-19-2
Licklog Creek	From source to Buck Creek	B Tr	3/1/62	11-19-3
Walnut Creek	From source to Licklog Creek	B Tr	3/1/62	11-19-3-1
Sugar Cove Creek	From source to Licklog Creek	B Tr	3/1/62	11-19-3-2
Duncan Cove Creek	From source to Sugar Cove Creek	B Tr	3/1/62	11-19-3-2-1
Sams Creek	From source to Licklog Creek	B Tr	7/1/73	11-19-3-3
Burgins Fork	From source to Buck Creek	B	3/1/62	11-19-4
Straight Branch	From source to Buck Creek	B	3/1/62	11-19-5
Locust Creek	From source to Buck Creek	B	3/1/62	11-19-6
Bear Cave Branch	From source to Locust Creek	B	3/1/62	11-19-6-1
Long Branch	From source to Buck Creek	B Tr	7/1/73	11-19-7
Reedy Branch	From source to Buck Creek	B	3/1/62	11-19-8
Chestnut Branch	From source to Lake Tahoma, Buck Creek	B Tr	7/1/73	11-19-9
Orchard Creek	From source to Lake Tahoma, Buck Creek	B	3/1/62	11-19-10
Little Buck Creek	From source to Lake Tahoma, Buck Creek	B Tr	3/1/62	11-19-11

Name of Stream	Description	Classification Class	Date	Index No.
Rattlesnake Branch	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-1
Sheehan Creek (Shoehan Creek)	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-2
Deerstand Creek	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-3
Slim Creek	From source to Deerstand Creek	B Tr	7/1/73	11-19-11-3-1
Firescald Creek	From source to Slim Creek	B Tr	7/1/73	11-19-11-3-1-1
Long Branch	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-4
Possey Branch	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-5
Bee Branch	From source to Little Buck Creek	B Tr	7/1/73	11-19-11-6
Buck Creek	From Dam at Lake Tahoma to Marion Water Supply Intake	A-II Tr	7/1/73	11-19-(12)
Persimmon Creek	From source to Buck Creek	A-II	3/1/62	11-19-13
Buck Creek	From Marion Water Supply Intake to Catawba River	C Tr	7/1/73	11-19-(14)
Nicks Creek	From source to Catawba River	C	3/1/62	11-20
Toms Creek (Fall Branch)	From source to Harris Creek	C Tr	7/1/73	11-21-(1)
Toms Creek (Morgan Lake)	From Harris Creek to Catawba River	C	3/1/62	11-21-(2)
Harris Creek	From source to Toms Creek	C Tr	7/1/73	11-21-3
South Fork Toms Creek	From source to Toms Creek	C Tr	7/1/73	11-21-4
Betsy Creek	From source to Toms Creek	C Tr	7/1/73	11-21-5
Johns Creek	From source to Catawba River	C Tr	3/1/62	11-22
CATAWBA RIVER (Lake James below elevation 1200)	From North Fork Catawba River to Bridgewater Dam	A-II&B	3/1/62	11-(23)
North Fork Catawba River	From source to Armstrong Creek	C Tr	3/1/62	11-24-(1)
Locust Spring Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-2
Laurel Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-3
Pond Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-4
Dogback Spring Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-5
Chestnut Cove Branch	From source to Dogback Spring Branch	C Tr	7/1/73	11-24-5-1
Stillhouse Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-6
Bridge Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-7
Honeycutt Creek	From source to North Fork Catawba River	C Tr	7/1/73	11-24-8
Stillhouse Branch	From source to North Fork Catawba River	C Tr	7/1/73	11-24-9
Pepper Creek	From source to North Fork Catawba River	C Tr	7/1/73	11-24-10
Lonon Branch	From source to Pepper Creek	C Tr	7/1/73	11-24-10-1
Van Noy Branch	From source to Lonon Branch	C Tr	7/1/73	11-24-10-1-1
Martin Branch	From source to North Fork Catawba River	C Tr	3/1/62	11-24-11
Conley Branch	From source to North Fork Catawba River	C Tr	3/1/62	11-24-12
North Fork Catawba River	From Armstrong Creek to Lake James, Catawba River	C	3/1/62	11-24-(13)
Armstrong Creek	From source to American Thread Company Water Supply Dam	A-II Tr	3/1/62	11-24-14-(1)
Bee Rock Creek	From source to Armstrong Creek	A-II Tr	3/1/62	11-24-14-2
House Branch	From source to Bee Rock Creek	A-II Tr	3/1/62	11-24-14-2-1
Cow Creek	From source to Armstrong Creek	A-II Tr	3/1/62	11-24-14-3
Middle Fork Cow Creek	From source to Cow Creek	A-II Tr	3/1/62	11-24-14-3-1
North Fork Cow Creek	From source to Cow Creek	A-II Tr	3/1/62	11-24-14-3-2
Pups Branch	From source to Armstrong Creek	A-II Tr	3/1/62	11-24-14-4

CTB 4

Name of Stream	Description	Classification Class	Date	Index No.
Bad Fork	From source to Armstrong Creek	A-II Tr	3/1/62	11-24-14-5
Roses Creek	From source to Armstrong Creek	A-II Tr	3/1/62	11-24-14-6
South Fork Roses Creek	From source to Roses Creek	A-II Tr	3/1/62	11-24-14-6-1
Rich Branch	From source to Armstrong Creek	A-II	3/1/62	11-24-14-7
Roaring Fork	From source to Armstrong Creek	A-II Tr	7/1/73	11-24-14-8
Long Branch	From source to Armstrong Creek	A-II	3/1/62	11-24-14-9
Three Mile Creek	From source to Armstrong Creek	A-II	3/1/62	11-24-14-10
Buchanan Creek	From source to Three Mile Creek	A-II	3/1/62	11-24-14-10-1
Sycamore Branch	From source to Three Mile Creek	A-II	3/1/62	11-24-14-10-2
O'Dear Creek	From source to Three Mile Creek	A-II	3/1/62	11-24-14-10-3
Bartlett Creek	From source to O'Dear Creek	A-II	3/1/62	11-24-14-10-3-1
Caney Branch	From source to Armstrong Creek	A-II	3/1/62	11-24-14-11
Muddy Branch	From source to Caney Branch	A-II	3/1/62	11-24-14-11-1
Cox Creek	From source to Armstrong Creek	A-II	3/1/62	11-24-14-12
Rag Creek	From source to Cox Creek	A-II	3/1/62	11-24-14-12-1
Mace Branch	From source to Rag Creek	A-II	3/1/62	11-24-14-12-1-1
Hickory Bottom Branch	From source to Armstrong Creek	A-II	3/1/62	11-24-14-13
Armstrong Creek	From American Thread Company Water Supply Dam to North Fork Catawba River	C Tr	3/1/62	11-24-14-(14)
Limekiln Creek	From source to North Fork Catawba River	C	9/1/74	11-24-15
McGegers Branch	From source to North Fork Catawba River	C	3/1/62	11-24-16
Forsyth Creek	From source to Lake James, Catawba River	C	9/1/74	11-25
Bailey Creek	From source to Lake James, Catawba River	C	3/1/62	11-26
Bear Creek	From source to Bailey Creek	C	3/1/62	11-26-1
Dales Creek	From source to Lake James, Catawba River	C	3/1/62	11-27
Paddy Creek	From source to Lake James, Catawba River	C Tr	3/1/62	11-28
Black Fork	From source to Paddy Creek	C Tr	7/1/73	11-28-1
Yellow Fork	From source to Paddy Creek	C Tr	7/1/73	11-28-2
Linville River	From source to Linville Falls	C Tr	3/1/62	11-29-(1)
Little Grassy Creek	From source to Linville River	C Tr	3/1/62	11-29-2
Big Grassy Creek	From source to Linville River	C Tr	7/1/73	11-29-3
West Fork Linville River	From source to Linville River	C Tr	7/1/73	11-29-4
Grandmother Creek [Lake Kawahna (Linville Lake)]	From source to Lake Kawahna	B Tr	7/1/73	11-29-5-(1)
Grandmother Creek	From Dam at Lake Kawahna to Linville River	C Tr	7/1/73	11-29-5-(2)
Anthony Creek	From source to Linville River	C Tr	3/1/62	11-29-6
Bunt Creek (Burnt Creek)	From source to Anthony Creek	C Tr	3/1/62	11-29-6-1
Stacey Creek	From source to Linville River	C Tr	7/1/73	11-29-7
Jenny Branch	From source to Linville River	C Tr	3/1/62	11-29-8
Cow Branch	From source to Linville River	C	3/1/62	11-29-9
Mill Timber Creek	From source to Linville River	C Tr	7/1/73	11-29-10
White Pine Creek	From source to Mill Timber Creek	C Tr	7/1/73	11-29-10-1
Crossnore Creek	From source to Mill Timber Creek	C	9/1/74	11-29-10-2
Clark Branch	From source to Crossnore Creek	C	9/1/74	11-29-10-2-1
Bill White Creek (White Creek)	From source to Linville River	C	3/1/62	11-29-11
Buckwheat Branch	From source to Linville River	C	3/1/62	11-29-12
Stamey Creek (Golden Creek)	From source to Linville River	C	3/1/62	11-29-13
Canoe Branch	From source to Linville River	C	3/1/62	11-29-14
Camp Creek	From source to Linville River	C Tr	3/1/62	11-29-15
Linville River	From Linville Falls to Southern Boundary of Daniel Boone Wildlife Management Area	B Tr	7/1/73	11-29-(16)

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Gulf Branch	From source to Linville River	C	3/1/62	11-29-17
Bull Branch	From source to Linville River	C	3/1/62	11-29-18
Linville River	From Southern Boundary of Daniel Boone Wildlife Management Area to Lake James, Catawba River	B	7/1/73	11-29-(19)
Chimney Branch	From source to Linville River	C	3/1/62	11-29-20
Cambric Branch	From source to Linville River	C	3/1/62	11-29-21
Shooks Creek	From source to Linville River	C Tr	7/1/73	11-29-22
Sandy Branch	From source to Shooks Creek	C Tr	7/1/73	11-29-22-1
White Creek	From source to Lake James, Catawba River	C	3/1/62	11-30
CATAWBA RIVER (including backwaters of Rhodhiss Lake below elevation 995)	From Bridgewater Dam (Linville Dam) to Johns River	A-II	3/1/62	11-(31)
Muddy Creek	From source to Catawba River	C	9/1/74	11-32
North Muddy Creek	From source to Muddy Creek	C	9/1/74	11-32-1
Hicks Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-1
Goose Creek (Glade Creek)	From source to North Muddy Creek	C	9/1/74	11-32-1-2
Stanfords Creek (Camp Branch)	From source to Goose Creek	C	9/1/74	11-32-1-2-1
Huntsville Creek	From source to Stanfords Creek	C	9/1/74	11-32-1-2-1-1
Bobs Creek	From source to North Muddy Creek	C	9/1/74	11-32-1-3
Youngs Fork (Copperning Creek)	From source to North Muddy Creek	C	9/1/74	11-32-1-4
Jacktown Creek	From source to Youngs Fork	C	9/1/74	11-32-1-4-1
Bledsoe Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-5
Huckleberry Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-6
White Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-7
Caleb Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-8
Big Camp Creek	From source to North Muddy Creek	C	9/1/74	11-32-1-9
Little Camp Creek	From source to Big Camp Creek	C	9/1/74	11-32-1-9-1
Walton Crawley Branch	From source to North Muddy Creek	C	9/1/74	11-32-1-10
Neighbors Branch	From source to Walton Crawley Branch	C	9/1/74	11-32-1-10-1
Ferguson Branch	From source to Walton Crawley Branch	C	9/1/74	11-32-1-10-2
Thompsons Fork	From source to North Muddy Creek	C	9/1/74	11-32-1-11
Shehan Branch	From source to Thompsons Fork	C	9/1/74	11-32-1-11-1
Big Branch	From source to Shehan Branch	C	9/1/74	11-32-1-11-1-1
Hemphill Creek	From source to Thompsons Fork	C	9/1/74	11-32-1-11-2
South Muddy Creek	From source to Muddy Creek	C	9/1/74	11-32-2
Cove Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-1
Newcombe Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-2
Moores Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-3
Jackson Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-4
Spruce Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-5
High Shoals Creek	From source to South Muddy Creek	C	9/1/74	11-32-2-6
Baker Branch	From source to High Shoals Creek	C	9/1/74	11-32-2-6-1
Barnes Branch	From source to High Shoals Creek	C	9/1/74	11-32-2-6-2
Katy Creek (Allens Mill Creek)	From source to South Muddy Creek	C	9/1/74	11-32-2-7
Mill Branch (Lake David)	From source to Katy Creek	C	9/1/74	11-32-2-7-1
Alexander Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-8
Hoppers Creek (Southeast Muddy Creek)	From source to South Muddy Creek	C	9/1/74	11-32-2-9
South Fork Hoppers Creek	From source to Hoppers Creek	C	9/1/74	11-32-2-9-1
Magazine Branch	From source to Hoppers Creek	C	9/1/74	11-32-2-9-2
Mollys Branch	From source to Hoppers Creek	C	9/1/74	11-32-2-9-3
Long Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-10
Large Branch	From source to Long Branch	C	9/1/74	11-32-2-10-1

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Patten Branch	From source to South Muddy Creek	C	9/1/74	11-32-2-11
Old Catawba River	From Catawba River Dam at N.C. Hwy. 26 to Muddy Creek	C	9/1/74	11-32-3
Shadrick Creek	From source to Old Catawba River	C	9/1/74	11-32-3-1
Nix Branch	From source to Shadrick Creek	C	9/1/74	11-32-3-1-1
Reedy Creek	From source to Muddy Creek	C	9/1/74	11-32-4
Paddy Creek	From source to Muddy Creek	C	9/1/74	11-32-5
Canoe Creek	From source to Catawba River	C	3/1/62	11-33
Silver Creek	From source to Catawba River	C	3/1/62	11-34
Brindle Creek	From source to Silver Creek	C	3/1/62	11-34-1
Hall Creek	From source to Silver Creek	C	3/1/62	11-34-2
Lane Branch	From source to Hall Creek	C	3/1/62	11-34-2-1
Anderson Branch	From source to Silver Creek	C	3/1/62	11-34-3
Jack Branch	From source to Silver Creek	C	3/1/62	11-34-4
James Branch	From source to Silver Creek	C	3/1/62	11-34-5
Clear Creek (State Hospital Reservoir)	From source to Broughton Hospital Water Intake	A-I	3/1/62	11-34-6-(1)
Clear Creek	From Broughton Hospital Water Intake to Silver Creek	C	3/1/62	11-34-6-(2)
Sutterwhite Creek	From source to Clear Creek	C	3/1/62	11-34-6-3
Shoal Creek	From source to Broughton Hospital Water Intake	A-I	3/1/62	11-34-6-3-1-(1)
Shoal Creek	From Broughton Hospital Water Intake to Sutterwhite Creek	C	3/1/62	11-34-6-3-1-(2)
Chestnut Flat Branch	From source to Shoal Creek	A-I	3/1/62	11-34-6-3-1-3
Double Branch	From source to Clear Creek	C	3/1/62	11-34-6-4
Little Silver Creek	From source to Silver Creek	C	3/1/62	11-34-7
Bailey Fork (formally called Burkmont Creek)	From source to School for Deaf Water Intake	A-I	3/1/62	11-34-8-(1)
Bailey Fork	From School for Deaf Water Intake to Silver Creek	C	3/1/62	11-34-8-(2)
Warrior Fork	From source to Rhodhiss Lake, Catawba River	A-II	3/1/62	11-35
Upper Creek	From source to Holly Spring Branch	C Tr	7/1/73	11-35-2-(1)
Joe Branch	From source to Upper Creek	C Tr	7/1/73	11-35-2-2
Cranberry Creek	From source to Upper Creek	C Tr	7/1/73	11-35-2-4
Burnthouse Branch	From source to Upper Creek	C Tr	3/1/62	11-35-2-5
Ripskin Branch	From source to Upper Creek	C Tr	7/1/73	11-35-2-6
Griffith Branch	From source to Upper Creek	C Tr	3/1/62	11-35-2-8
Timbered Branch	From source to Upper Creek	C Tr	7/1/73	11-35-2-9
Upper Creek (Clear Water Beach Lake)	From Holly Spring Branch to Dam at Clear Water Beach Lake	B Tr	7/1/73	11-35-2-(10)
Holly Spring Branch	From source to Upper Creek	C Tr	7/1/73	11-35-2-11
Steels Creek	From source to Little Fork	C Tr	3/1/62	11-35-2-12-(1)
Right Fork Steels Creek	From source to Steels Creek	C Tr	3/1/62	11-35-2-12-2
Gingercake Creek	From source to Steels Creek	C Tr	3/1/62	11-35-2-12-3
Buck Creek	From source to Steels Creek	C Tr	3/1/62	11-35-2-12-4
Steels Creek	From Little Fork to a point 1.7 miles upstream from N.C. Highway 181 Bridge	B Tr	3/1/62	11-35-2-12-(5)
Little Fork	From source to Steels Creek	C Tr	3/1/62	11-35-2-12-6
Steels Creek	From a point 1.7 miles upstream from N.C. Highway 181 Bridge to Clear Water Beach Lake, Upper Creek	B	3/1/62	11-35-2-12-(7)
Upper Creek	From Dam at Clear Water Beach Lake to Warrior Fork	A-II Tr	7/1/73	11-35-2-(13)

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Irish Creek	From source to Reedys Fork Creek	C Tr	3/1/62	11-35-3-(1)
Irish Creek	From Reedys Fork Creek to Warrior Fork	A-II	3/1/62	11-35-3-(2)
Reedys Fork Creek	From source to Irish Creek	A-II	3/1/62	11-35-3-3
Back Creek	From source to Irish Creek	A-II	3/1/62	11-35-3-4
Russell Creek	From source to Irish Creek	A-II	3/1/62	11-35-3-5
Roses Creek (Table-rock Creek)	From source to Irish Creek	A-II Tr	7/1/73	11-35-3-6
Rich Cove Branch	From source to Roses Creek	A-II Tr	3/1/62	11-35-3-6-1
Simpson Creek	From source to Roses Creek	A-II Tr	7/1/73	11-35-3-6-2
Wilson Creek	From source to Warrior Fork	C	3/1/62	11-35-4
Hunting Creek	From source to Rhodhiss Lake, Catawba River	C	9/1/74	11-36
East Prong Hunting Creek	From source to Hunting Creek	C	9/1/74	11-36-1
Fiddlers Run	From source to East Prong Hunting Creek	C	9/1/74	11-36-1-1
Pee Dee Branch	From source to Hunting Creek	C	9/1/74	11-36-2
CATAWBA RIVER (Rhodhiss Lake below elevation 995)	From Johns River to Rhodhiss Dam	A-II&B	3/1/62	11-(37)
Johns River	From source to Gragg Prong (previously called Anthony Creek)	C Tr	3/1/62	11-38-(1)
Honey Branch	From source to Johns River	C	3/1/62	11-38-2
Wildcat Branch	From source to Johns River	C	3/1/62	11-38-3
Anthony Bolick Branch (Anthony Creek)	From source to Johns River	C Tr	7/1/73	11-38-4
Thunderhole Branch	From source to Johns River	C	3/1/62	11-38-5
China Creek	From source to Thunderhole Branch	C Tr	7/1/73	11-38-5-1
Long Branch	From source to China Creek	C	3/1/62	11-38-5-1-1
New Years Creek	From source to Thunderhole Creek	C Tr	7/1/73	11-38-5-2
Phillips Creek	From source to Thunderhole Creek	C	3/1/62	11-38-5-3
Curtis Creek	From source to Thunderhole Creek	C Tr	7/1/73	11-38-5-4
Persimmon Branch	From source to Curtis Creek	C	3/1/62	11-38-5-4-1
Gibbert Branch	From source to Johns River	C Tr	7/1/73	11-38-6
Stein Branch	From source to Johns River	C Tr	7/1/73	11-38-7
Crooked Branch	From source to Johns River	C	3/1/62	11-38-8
Orchard Branch (Long Branch)	From source to Crooked Creek	C	3/1/62	11-38-8-1
Johns River	From Gragg Prong to Reids Creek	B	7/1/73	11-38-(9)
Gragg Prong	From source to Johns River	C Tr	3/1/62	11-38-10
Racket Creek	From source to Gragg Prong	C Tr	3/1/62	11-38-10-1
Dixon Creek	From source to Racket Creek	C	3/1/62	11-38-10-1-1
Green Mountain Creek	From source to Dixon Creek	C	3/1/62	11-38-10-1-1-1
White Spring Branch	From source to Racket Creek	C	3/1/62	11-38-10-1-2
Ballew Creek (Bellows Creek)	From source to Racket Creek	C	3/1/62	11-38-10-1-3
Dare Coffee Branch	From source to Racket Creek	C	3/1/62	11-38-10-1-4
Tough Hill Branch	From source to Gragg Prong	C	3/1/62	11-38-10-2
Anthony Creek	From source to Gragg Prong	C Tr	3/1/62	11-38-10-3
Big Branch	From source to Anthony Creek	C Tr	3/1/62	11-38-10-3-1
Woodruff Branch	From source to Anthony Creek	C Tr	3/1/62	11-38-10-3-2
Cooper Branch	From source to Johns River	B	3/1/62	11-38-11
Walnut Bottom Creek	From source to Johns River	B	3/1/62	11-38-12
Dyson Creek	From source to Johns River	B	3/1/62	11-38-13
Shop Branch	From source to Johns River	B	3/1/62	11-38-14
Globe Mountain Branch	From source to Johns River	B	3/1/62	11-38-15
Burntfield Branch	From source to Johns River	B	3/1/62	11-38-16
Coldwater Creek (Cold A. Creek)	From source to Johns River	B Tr	7/1/73	11-38-17
Pinchgut Creek	From source to Johns River	B	3/1/62	11-38-18
Cline Creek	From source to Johns River	B	3/1/62	11-38-19
McLean Branch	From source to Johns River	B	3/1/62	11-38-20

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Lick Branch	From source to Johns River	B	3/1/62	11-38-21
House Branch	From source to Johns River	B	7/1/73	11-38-23
Hopewell Branch	From source to Johns River	B	7/1/73	11-38-24
Simmons Branch	From source to Johns River	B	7/1/73	11-38-25
Larkin Estes Mill Creek (Penley Branch)	From source to Johns River	B	7/1/73	11-38-26
Elijah Estes Mill Creek	From source to Johns River	B	7/1/73	11-38-27
Eliza Estes Mill Creek	From source to Elijah Estes Mill Creek	B	7/1/73	11-38-27-1
Johns River	From Reids Creek to Rhodhiss Lake, Catawba River	C	3/1/62	11-38-(28)
Reids Creek	From source to Johns River	C	3/1/62	11-38-29
Sally Creek	From source to Reids Creek	C	3/1/62	11-38-29-1
Crawley Branch	From source to Johns River	C	3/1/62	11-38-30
Franklin Branch	From source to Johns River	C	3/1/62	11-38-31
Benbo Branch	From source to Franklin Creek	C	3/1/62	11-38-31-1
Mulberry Creek	From source to Boone Fork	C Tr	7/1/73	11-38-32-(1)
Left Fork Mulberry Creek	From source to Mulberry Creek	C Tr	7/1/73	11-38-32-2
Right Fork Mulberry Creek	From source to Mulberry Creek	C Tr	7/1/73	11-38-32-3
Amos Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-4
Bills Branch	From source to Amos Creek	C	3/1/62	11-38-32-4-1
Mills Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-5
Friddle Creek	From source to Mills Creek	C	3/1/62	11-38-32-5-1
Cane Branch	From source to Mulberry Creek	C	3/1/62	11-38-32-6
Rush Branch	From source to Mulberry Creek	C	3/1/62	11-38-32-7
Roaring Creek	From source to Mulberry Creek	C Tr	7/1/73	11-38-32-8
Frankum Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-9
Georges Creek	From source to Frankum Creek	C	3/1/62	11-38-32-9-1
Clark Branch	From source to Mulberry Creek	C Tr	7/1/73	11-38-32-10
Mulberry Creek	From Boone Branch to Dam at Mulberry Beach	B	3/1/62	11-38-32-(11)
Boone Branch (Fork)	From source to Mulberry Creek	B	3/1/62	11-38-32-12
Laurel Fork	From source to Boone Branch	B	3/1/62	11-38-32-12-1
Brown Branch	From source to Mulberry Creek	B	3/1/62	11-38-32-13
Moore Branch	From source to Mulberry Creek	B	3/1/62	11-38-32-14
Mulberry Creek	From Dam at Mulberry Beach to Johns River	C	3/1/62	11-38-32-(15)
Anderson Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-16
Little Mulberry Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-17
Stapps Branch	From source to Little Mulberry Creek	C	3/1/62	11-38-32-17-1
Loving Branch	From source to Little Mulberry Creek	C	3/1/62	11-38-32-17-2
Mitchell Branch	From source to Little Mulberry Creek	C	3/1/62	11-38-32-17-3
Spencer Branch	From source to Little Mulberry Creek	C	3/1/62	11-38-32-17-4
Little Mulberry Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-18
Coffey Creek	From source to Mulberry Creek	C	3/1/62	11-38-32-19
Guys Creek	From source to Johns River	C	3/1/62	11-38-33
Wilson Creek	From source to Johns River	B Tr	7/1/73	11-38-34
Linn Cove Branch	From source to Wilson Creek	B Tr	7/1/73	11-38-34-2
Little Wilson Creek (Burnt Timber Branch)	From source to Wilson Creek	C Tr	7/1/73	11-38-34-3
Bee Branch	From source to Wilson Creek	B Tr	7/1/73	11-38-34-4
Stack Rock Creek (Gabes Mountain Branch)	From source to Wilson Creek	C Tr	7/1/73	11-38-34-5
Andrews Creek	From source to Stack Rock Creek	B Tr	7/1/73	11-38-34-5-1
Cary Flat Branch (Coffey Trout Lake)	From source to Wilson Creek	C Tr	7/1/73	11-38-34-6
Bucks Timber Creek	From source to Cary Flat Branch	C Tr	7/1/73	11-38-34-6-1
Flat Land Branch	From source to Cary Flat Branch	C Tr	7/1/73	11-38-34-6-2
Little Laurel Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-7

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Name of Stream	Description	Classification Class	Date	Index No.
Turkey Branch (Turke Branch)	From source to Little Laurel Creek	C Tr	3/1/62	11-38-34-7-1
Laurel Mountain Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-8
Crusher Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-9
Laurel Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-10
Poplar Spring Branch	From source to Laurel Creek	C Tr	3/1/62	11-38-34-10-1
Lost Cove Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-11
Sassafras Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-1
Little Lost Cove Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-2
Gragg Prong	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-3
Ling Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-1
Major Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-2
Webb Creek	From source to Gragg Prong	C Tr	7/1/73	11-38-34-11-3-3
Webb Prong	From source to Webb Creek	C Tr	7/1/73	11-38-34-11-3-3-1
Fork Timber Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-4
Marks Mountain Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-5
Rockhouse Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-6
Still Branch	From source to Gragg Prong	C Tr	3/1/62	11-38-34-11-3-7
Rockhouse Creek	From source to Lost Cove Creek	C Tr	3/1/62	11-38-34-11-4
Big Cove Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-1
Maple Tree Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-2
Sandy Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-3
Hughs Ridge Branch	From source to Rockhouse Creek	C Tr	3/1/62	11-38-34-11-4-4
Estes Mill Creek	From source to Wilson Creek	C Tr	7/1/73	11-38-34-12
Thorps Creek	From source to Estes Mill Creek	C Tr	7/1/73	11-38-34-12-1
Harper Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-14
Hull Branch	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-1
North Harper Creek	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-2
Chestnut Cove Branch	From source to North Harper Creek	C Tr	3/1/62	11-38-34-14-2-1
Hollander Branch	From source to North Harper Creek	C Tr	3/1/62	11-38-34-14-2-2
Raider Camp Creek	From source to Harper Creek	C Tr	3/1/62	11-38-34-14-3
Phillips Branch	From source to Wilson Creek	C Tr	3/1/62	11-38-34-15
Craig Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-16
Horsepen Creek	From source to Craig Creek	C Tr	3/1/62	11-38-34-16-1
Bee Creek	From source to Wilson Creek	C Tr	3/1/62	11-38-34-17
Carroll Mill Creek	From source to Wilson Creek	C Tr	7/1/73	11-38-34-18
Parks Creek	From source to Johns River	C	3/1/62	11-38-35
Carroll Creek	From source to Parks Creek	C Tr	7/1/73	11-38-35-1
Pearcey Creek	From source to Parks Creek	C	3/1/62	11-38-35-2
Sims Branch	From source to Johns River	C	3/1/62	11-38-36
Lower Creek	From source to Rhodhiss Lake, Catawba River	C	9/1/74	11-39
Zacks Fork Creek	From source to Dam at Lenoir Water Supply	A-II	3/1/62	11-39-1-(1)
Zacks Fork Creek	From Dam at Lenoir Water Supply to Lower Creek	C	9/1/74	11-39-1-(2)
Town Creek	From source to Lower Creek	C	9/1/74	11-39-2
Spainhour Creek	From source to Lower Creek	C (1)	3/1/77	11-39-3
Blair Fork	From source to Spainhour Creek	C	9/1/74	11-39-3-1
Greasy Creek	From source to Lower Creek	C	9/1/74	11-39-4
Millers Creek	From source to Lower Creek	C	9/1/74	11-39-5
Abingdon Creek	From source to Lower Creek	C	9/1/74	11-39-6
Husband Creek	From source to Lower Creek	C	9/1/74	11-39-7
Celia Creek	From source to Husband Creek	C	9/1/74	11-39-7-1
Bristol Creek	From source to Lower Creek	C	9/1/74	11-39-8
White Mill Creek	From source to Bristol Creek	C	9/1/74	11-39-8-1
Jumping Branch	From source to Rhodhiss Lake, Catawba River	C	3/1/62	11-40
Smoky Creek	From source to Rhodhiss Lake, Catawba River	C	3/1/62	11-41

Appendix D
Site Inspection Form

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Thomasville Furniture Industries	315 Elizabeth Street, NW

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Lenoir	NC	28645	Caldwell	14	10

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
35° 56 10.	81 32 10 .	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
10 28 87 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	Thomasville Furniture Inds. aquired plant early 1900's in 1968. (BEGINNING YEAR) (ENDING YEAR) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☒ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
D. Mark Durway	Geologist	Superfund	(919) 733-2801

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Pat DeRosa	Environmental Chemist	Superfund	(919) 733-2801
Grover Nicholson	Geologist	Superfund	(919) 733-2801
Ted White	Chemical Engineer	Radian Corp.	(919) 541-9100
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Tom Gibson	Plant Ind. Eng.	Thomasville Fur. Ind. PO Box 640, Lenoir, NC 28645	(704) 754-4581
Sherry Stookey	Environmental Compliance Off.	Armstrong World Industries Thomasville, NC	(919) 472-4000
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Sherry Stookey	Armstrong World Industries, Thomasville	(919) 472-4000

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
David Lilley	NC S&HW Mgt.	NC Superfund	919-733-2801	11 3 88 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [X] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	unknown		Waste were disposed in on-site
PSD	PESTICIDES			trenches between 1975 and 1979
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OOC	bis(2-ethylhexyl) phthalate	117-81-7	waste and soil found in	552,000	ppb
OOC	dibutyl phthalate	84-74-2	drum storage area	2,700	ppb
			on concrete pad next to		
			5 55 gal. drums, waste		
			in solid form		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1) Files at NC Solid and Hazardous Waste Management Section
2) Sherry Stookey of Thomasville Furniture Industries, personal communication, 8-31-87
3) Records from the NC Public Water Supply Branch, Raleigh, NC

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: unknown) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Formaldehyde based glue reported to have spilled into near-site tributary, no surface water contamination was found on NC CERCLA Units October 28, 1987 investigation.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
02 ☒ OBSERVED (DATE: October 28, 1987) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potentially hazardous wastes were disposed into on-site trenches between 1975 and 1979. Wastes and soil samples taken in the solvent drum storage area showed elevated levels of bis(2-ethyl hexyl) phthalate and dibutyl phthalate during SI on 10-28-87 by NC CERCLA Unit.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/Runoff/Standing liquids, Leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: unknown

IV. COMMENTS

Burial trenches may be located beneath a parking lot.

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☒ C. AIR	4172 R5	3-15-84	10-1-87	
☒ D. RCRA	3001	5-15-86		Filed RCRA Part A
☐ E. RCRA INTERIM STATUS				on November 17, 1980.
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☒ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☒ I. OTHER Surface spillage/trench disposal (Specify)		

04 TREATMENT (Check all that apply)

- ☒ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☒ H. OTHER burial (Specify)

05 OTHER

- ☒ A. BUILDINGS ON SITE

3 or 4

06 AREA OF SITE

30 acres (Acres)

07 COMMENTS

Underground tanks storage tanks contain fuel oil, naptha, and varsol. Incenerator has not been operational since 1983.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

It is believed the trenches where the waste was buried is now under a parking lot.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY *(Check as applicable)*

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☒	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 10 (mi)
B. 0.5 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY *(Check one)*

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING *(Other sources available)* COMMERCIAL, INDUSTRIAL, IRRIGATION *(No other water sources available)* ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION *(Limited other sources available)* ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 6059

03 DISTANCE TO NEAREST DRINKING WATER WELL approx. 0.5 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
5-10 ft (assumed) (ft)	undetermined	(ft)	(gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS *(Including useage, depth, and location relative to population and buildings)*

The nearest well is approximately 2,500 feet north west of the site.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE *(Check one)*

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Blair Fork Creek	☐	approx. 0.1 (mi)
Spainhour Creek	☐	less than 0.2 (mi)
Blair Fork Creek intermittant tributary	☐	on site (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. _____ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE _____

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0 (mi)

05 POPULATION WITHIN VICINITY OF SITE *(Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)*

The area immediately surrounding the site is largely industrial, with some commercial properties and 1 or 2 homes within a quarter mile of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D054290770

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE *(Check one)* estimate

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK *(Check one)* unknown

☐ A. IMPERMEABLE *(Less than 10^{-6} cm/sec)* ☐ B. RELATIVELY IMPERMEABLE *($10^{-4} - 10^{-6}$ cm/sec)* ☐ C. RELATIVELY PERMEABLE *($10^{-2} - 10^{-4}$ cm/sec)* ☐ D. VERY PERMEABLE *(Greater than 10^{-2} cm/sec)*

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
unknown (ft)	not determined (ft)	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
14 (in)	2.8 (in)	0 %	SW	0 %

09 FLOOD POTENTIAL

SITE IS IN _____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS *(5 acre minimum)*

ESTUARINE: A. 3 (mi) OTHER: B. 3 (mi)

12 DISTANCE TO CRITICAL HABITAT *(of endangered species)*

25 (mi)

ENDANGERED SPECIES: Mountain Golden Heather

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0 (mi)	B. 0 (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is in floodplain of Blair Fork Creek

VII. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER	5	NC DHR/DHS	
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	NC DHR/DHS	
VEGETATION			
OTHER stream sediment	5	NC DHR/DHS	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NC CERCLA Unit
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NC CERCLA Unit

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Armstrong World Industries	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
PO Box 339	

05 CITY	06 STATE	07 ZIP CODE
Thomasville	NC	27360

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

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EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME Thomasville Furniture Industries		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Blowing Rock Highway		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY Lenoir	06 STATE NC	07 ZIP CODE 28645	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER Armstrong World Industries				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Thomasville Furniture Industries	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Blowing Rock Highway	

05 CITY	06 STATE	07 ZIP CODE
Lenoir	NC	28645

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

As previously cited.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D054290770

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

As previously cited.

Appendix E
Site Safety Plan

SITE SAFETY PLAN

A. GENERAL INFORMATION

Site Name Thomasville Furniture Industries EPA ID # NCD 054290770
Location Blowing Rock Highway Date
Lenoir NC

Purpose of Visit ___ PA X SI ___ Other

Proposed Date of Inspection 10-28-87

Date of Briefing 10-27-87

Priority Ranking X Low ___ Medium ___ High

Site Investigation Team

Personnel	Responsibilities
Pat Derosa	Team Leader, Sampling
Mark Durway	sampling
Grover Nicholson	sampling

PLAN PREPARATION:
Prepared By Mary Geyere CIH
Reviewed By Lee CROSBY

B. SITE/WASTE CHARACTERISTICS

Waste Type(s) X Liquid ___ Solid X Sludge ___ Gas

Characteristics ___ Corrosive ___ Ignitable ___ Radioactive
X Volatile X Toxic ___ Reactive ___ Other

List Known or Suspected Hazards (physical,chemical biological or radioactive) on Site and their toxicological effects. Also, if known, list chemical amounts

HAZARD	EFFECT(S)
fuel oil	no TLV Toluene TLV-100 ppm
VM & P Naphtha	TLV-300 ppm Butyl Acetate TLV-150-200 ppm
Stoddard Solvent (Varsol)	TLV-100 ppm
Formaldehyde	TLV-1 ppm
Acetone	TLV-750 ppm
Methyl Isobutyl Ketone	TLV-50 ppm
Methyl Ethyl ketone	TLV-200 ppm
Xylene	TLV-100 ppm

EPA ID # NCD054290770

Facility Description: Size 30 acres Buildings 3 or 4

Disposal Methods Being Investigated surface spillage, trench disposal

Unusual Features on Site (dike integrity, power lines, terrain etc.):
None known

History of the Site: The site has been used by different companies since the early 1900's as a furniture manufacturing facility. Thomasville furniture operated an incinerator until 1973. From 1975-79 scrapings from filler and lacquer booths and solidfied polyvinyl acetate and solidfied formaldehyde based glues were disposed of on-site in trenches. The facility has underground storage tanks for fuel oil, naphtha and varsol.

C. HAZARD EVALUATION

Sampling is to consist of surface soil, subsurface soil, and possibly water samples. This is an active facility that uses non-hologenated solvents. There should be no inhalation hazard present when touring and conducting surface soil sampling. When doing auger sampling tyveks will be worn and the HNU used for surveillance. If an HNU reading is greater than 50 ppm, respirators with organic vapor cartridge will be worn. If levels of greater than 100 ppm are encountered, the site will be vacated. Boots will be worn on site.

D. WORK PLAN INSTRUCTION

Map or Sketch Attached? NO
Perimeter Identified? Yes-fenced in
Command Post Identified? NO
Zones of Contamination Identified? NO

Personal Protective Equipment

Level of Protection ____A ____B ____C ____X D-with upgrade to Level C possible

Modifications Goggles and gloves will be worn when preparing and collecting acid preserved samples.

EPA ID # NCD 054290770

Surveillance Equipment:

x	H Nu		Detector Tubes and Pumps
	Explosimeter		O2 Meter
	TLD		(Radiation Monitor)

Decontamination Procedures

	Level A	Segregated equipment drop, boot cover and glove wash, boot cover and glove rinse, tape removal, suit and hard hat removal, SCBA backpack removal, inner glove wash, inner glove removal, inner clothing removal, field wash, redress
	Level B	Segregated equipment drop, boot cover and glove wash,boot cover and glove rinse, tape removal. boot cover removal outer glove removal, suit/safety removal, SCBA backpack removal, inner glove wash, inner glove rinse, facepiece removal, inner glove removal, inner clothing removal, field wash, redress.
x	Level C	Respirator wash, respirator removal, suit wash (if needed), suit removal, boot wash, boot removal and glove removal.
X	Level D	Boot wash and rinse and boot removal.

Modifications Dispose of trash properly

Work Schedule/ Limitations Samples to be taken: surface soil and possibly surface water and/or private drinking water wells.

EMERGENCY PRECAUTIONS

Route of Exposure	First Aid
eyes	irrigate immediately
skin	soap and water wash promptly
inhalation	fresh air and artificial respiration
ingestion	prompt medical attention

EPA ID # NCD 054290770

Hospital (Address and Phone Number)
Caldwell Memorial Hospital

Emergency Transportation Systems (Phone Numbers)
Fire Use 911

Ambulance Use 911

Rescue Squad Use 911

Emergency Route to Hospital Take Main St. South; take a left onto Harper Ave. and the first right onto Mulberry St. Hospital will be on your left.

PREVAILING WEATHER CONDITIONS AND FORECAST Partly cloudy, breezy and cool; high in the upper 50's

EQUIPMENT CHECKLIST

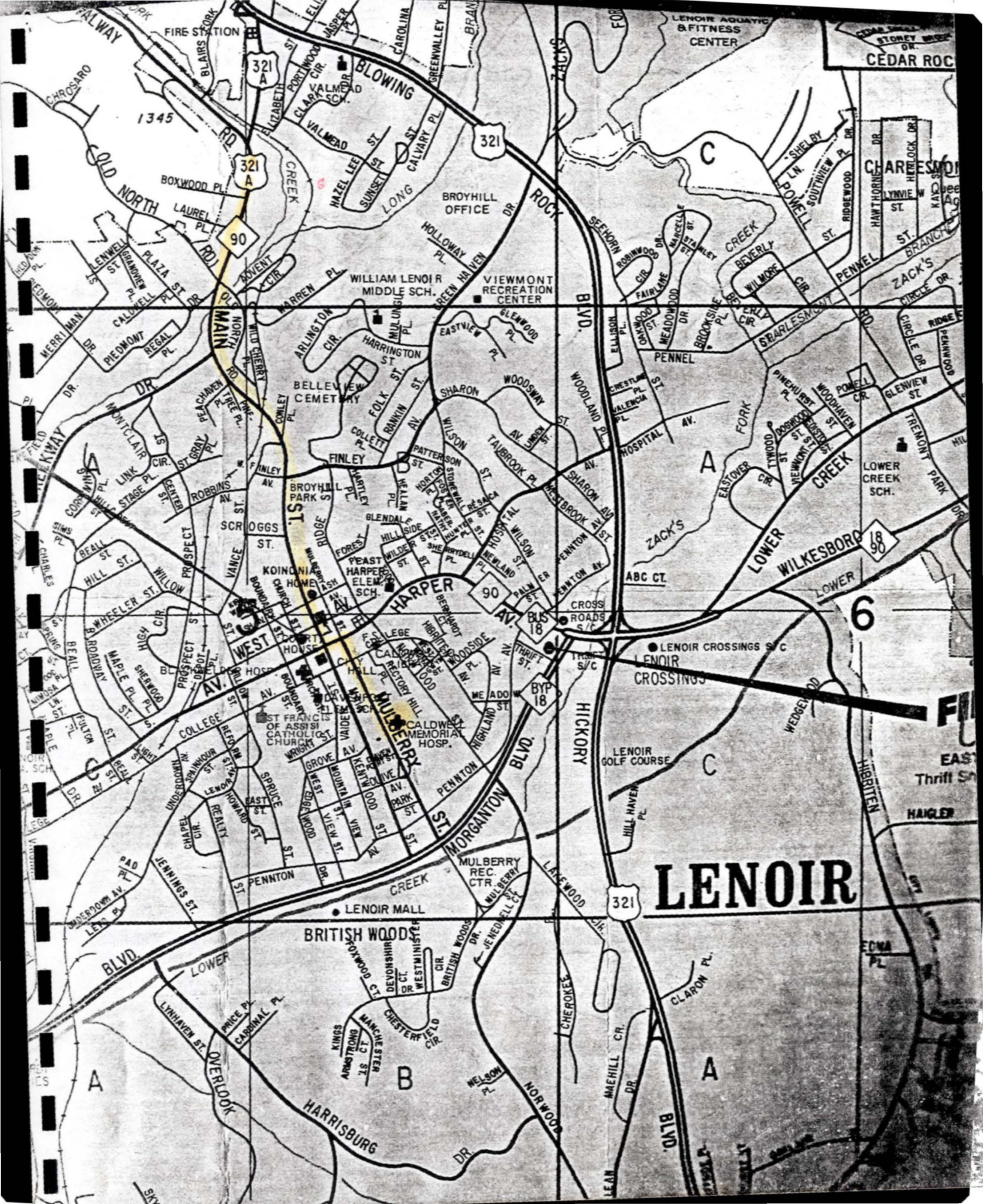
	Air purifying respirator	X	First Aid Kit
	Cartridges for respirator	X	3 gal. Distilled H2O
	3M 8710 Respirator	X	Personal Protective Clothing
	02 Indicator		
	Detector Tube & Pump	X	Boots or Boot Covers
	Eye Wash Unit		Coveralls (tyvek)
X	H Nu	X	Eye Protection
	pH Meter		Hard Hat
	Explosimeter	X	Decontamination Materials.
	Radioactive Monitor		

Poison Control Center - State Coordinator
Duke University Medical Center
Telephone: 1-800-672-1697
Box 3024
Durham, NC 27710

ASHEVILLE 704-255-4490	Western NC Poison Control Center Memorial Mission Hosp. 509 Biltmore Ave. 28801	HENDERSONVILLE 704-693-6522 Ext. 555, 556	Margaret R. Pardee Memorial Hospital Fleming St., 28739
CHARLOTTE 704-379-5827	Mercy Hospital 2001 Vail Ave, 28207	HICKORY 704-322-6649	Catawba Mem. Hosp. Fairgrove Chur. Rd 28601
DURHAM 1-800-672-1697	Duke Univ Medical Center Box 3007, 27710	JACKSONVILLE 919-577-2555	Onslow Mem. Hospital Western Blvd. 28540
GREENSBORO 919-379-4105	Moses Cone Hospital 1200 N. Elm St, 27420	WILMINGTON 919-343-7046	New Hanover Mem. Hospital 2131 S. 17th St, 28401

1-800-722-2222

CERCLA/MG/7-85/Revised 5-87
Form 1


LENOIR
FIRE STATION
LENOIR AQUATIC & FITNESS CENTER
CEDAR ROCK
VALMEAD SCH.
BROYHILL OFFICE
WILLIAM LENOIR MIDDLE SCH.
VIEWMONT RECREATION CENTER
BELLEVIEW CEMETERY
BROYHILL PARK
KOINONIA HOME
PEAST HARPER ELEM. SCH.
COURT HOUSE
CITY HALL
ST. FRANCIS OF ASSISI CATHOLIC CHURCH
CALDWELL MEMORIAL HOSP.
MULBERRY REC. CTR
LENOIR MALL
BRITISH WOODS
LENOIR CROSSINGS S/C
LENOIR GOLF COURSE
LOWER CREEK SCH.
CROSS ROADS S/C
ABC CT.
HARPER AV.
MULBERRY ST.
MAIN ST.
WEST AV.
MORGANTON BLVD.
HICKORY BLVD.
WILKESBORO BLVD.
HARRISBURG DR.
OLD NORTH RD.
BLOWING ROCK BLVD.
ZACK'S CREEK
LONG CREEK
LOWER CREEK
POWELL CREEK
PENNEL ST.
HOSPITAL AV.
PENNTON ST.
COLLEGE ST.
WOODSIDE AV.
HIBRITEN
WEDGEWOOD
LAKEWOOD CIR.
NORWOOD
OVERLOOK
CHEROKEE
CLARON PL.
MAEHILL CR.
HAIGLER
Thrift Sh
EAST
ECNA PL.
321
321 A
90
18
BUS 18
BYP 18
1345
A
B
C
6

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Stoddard Solvent (Mineral Spirits/Varsol)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula C9 H20	1
Natural Physical State at 25°C liquid	2
Vapor Pressure 2 mm Hg at 20°C	2
Melting Point °F/°C Boiling Point 154-202 °F/°C	1
Flash Point (open or closed cup) 102-140 °C/°F	2
Solubility - H_2O insoluble	1,2
Other miscible with ether, absolute alcohol	2

Physical Features: (odor, color, etc.) Stoddard solvent is a mixture of straight and branched chain hydrocarbons, naphthenes and aromatic hydrocarbons. Is is a colorless liquid with a kerosene like odor.

II. TOXICOLOGICAL DATA

Standards: 100 ppm TLV 500 ppm PEL 500 ppm IDLH 2

Routes of Exposure: Inhalation

Acute/Chronic Symptoms: Defatting and irritation of the skin; irritation of the eyes, nose, and throat, and dizziness.

First Aid: Eyes: Irrigate immediately; skin: soap and water wash promptly; inhalation: fresh air artificial respiration; ingestion: medical attention immediately.

Chemical Name: Stoddard Solvent

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ___ No ___ ___

Toxic by-products ___ ___

___ ___

B. Flammability LEL 0.8% UEL ? 2

C. Reactivity Hazard Strong oxidizers 2

D. Corrosivity Hazard yes/no pH: ___ ___

Neutralizing agent: ___ ___

E. Radioactive Hazard — Exposure Rate

Background	yes/no	___	___
Alpha particles	yes/no	___	___
Beta particles	yes/no	___	___
Gamma radiation	yes/no	___	___

IV. REFERENCES

Documentation of the TLVs, 4th Edition 1980

Pocket Guide to Chemical Hazards, NIOSH, September 1985

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Fuel oil

I. PHYSICAL/CHEMICAL PROPERTIES

Reference

Chemical Formula ------ _____

Natural Physical State at 25°C liquid _____

Vapor Pressure ----- mm Hg at 20°C _____

Melting Point ----- °F/°C Boiling Point -------- °F/°C _____

Flash Point (open or closed cup) 100 °C/°F _____

Solubility - H_2O _____ _____

Other _____ _____

Physical Features: (odor, color, etc.) Can be a distilled fraction of petroleum, a residuum from refinery operations or a blend. No. 2 is a straight run or cracked distallate.

II. TOXICOLOGICAL DATA

Standards: none given TLV none given PEL none given IDLH _____

Routes of Exposure: inhalation, skin

Acute/Chronic Symptoms: _____

First Aid: eye: flush immediately with water, skin: soap & water wash immediately, inhalation: fresh air & artificial respiration, ingestion: medical attention promptly.

Chemical Name: Fuel oil

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ _____

Toxic by-products None given _____ _____

_____ _____

B. Flammability LEL _____ UEL _____ _____

C. Reactivity Hazard No _____ _____

D. Corrosivity Hazard yes/no pH: _____ _____

Neutralizing agent: _____ _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	_____	_____
Alpha particles	yes/no	_____	_____
Beta particles	yes/no	_____	_____
Gamma radiation	yes/no	_____	_____

IV. REFERENCES

The Condensed Chemical Dictionary

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: VM & P Naphtha (Ligroin)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula typical composition is:	1
paraffins 55.4, naphthens 30.3, alkyl benzene 11.7	
dicycloparaffins 2.4, benzene (less than) 0.1	
Natural Physical State at 25°C liquid	1,2
Vapor Pressure -- mm Hg at 20°C	
Melting Point °F/°C Boiling Point 118 - 179 °F/°C	
Flash Point (open or closed cup) 57 °C/°F	
Solubility - H_2O insoluble	
Other organic solvents	

Physical Features: (odor, color, etc.) clear, mobile, flammable liquid odor of kerosene or gasoline.

II. TOXICOLOGICAL DATA

Standards: 300 ppm TLV _____ PEL _____ IDLH _____

Routes of Exposure: inhalation

Acute/Chronic Symptoms: upper resp. tract irritation at 800 ppm eye irritation at 88 ppm.

First Aid: eyes: irrigate immediately, skin: soap and water wash, inhalation: fresh air and artificial resp., ingestion: medical attention.

Chemical Name: VM & P Naphtha

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ ____

Toxic by-products No ____

B. Flammability LEL 1.2 UEL 6.0 — 1

C. Reactivity Hazard ____

D. Corrosivity Hazard yes/no pH: ____

Neutralizing agent: ____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	
Alpha particles	yes/no	
Beta particles	yes/no	
Gamma radiation	yes/no	

IV. REFERENCES

Documentation of the TLV, 4th Edition, 1980.

The Merck Index, 10th Edition, 1983.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Acetone

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula CH3COCH3	1,2
Natural Physical State at 25°C liquid	1,2
Vapor Pressure 226 mm Hg at 20°C	1
Melting Point - 95 °F/°C Boiling Point 57 °F/°C	
Flash Point (open or closed cup) 1.4 °C/°F	
Solubility - H_2O soluble	
Other	

Physical Features: (odor, color, etc.) colorless liquid with a sweetish odor.

II. TOXICOLOGICAL DATA

Standards: 750 ppm TLV 1000 ppm PEL 20,000 ppm IDLH 2

Routes of Exposure: Inhalation, contact with skin will cause dryness.

Acute/Chronic Symptoms: Irritation of eyes, nose and throat. Headaches, dizziness, and dermatitis.

First Aid: Eyes: irrigate immed. for 15 mins., Skin: soap and water wash, Inhalation: fresh air & art. resp., Ingestion: medical attention.

Chemical Name: Acetone

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ ____

Toxic by-products None ____

B. Flammability LEL 2.6% UEL 12.8% 2

C. Reactivity Hazard oxidizing material & acids ____

D. Corrosivity Hazard yes/no pH: ____ ____

Neutralizing agent: ____ ____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	____	____
Alpha particles	yes/no	____	____
Beta particles	yes/no	____	____
Gamma radiation	yes/no	____	____

IV. REFERENCES

Chemical Safety Data Guide, BNA - 1985.

Pocket Guide to Chemical Hazards, NIOSH - 1985.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Methyl Isobutyl Ketone (4-methyl-2, pentanone isopropyl acetone)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula CH3 CO CH2 CH3 H7	1,2,3
Natural Physical State at 25°C liquid	1,2,3
Vapor Pressure 15 mm Hg at 20°C	3
Melting Point ~~119~~ -84.7 °F/°C Boiling Point 119 °F/°C	1,2,3
Flash Point (open or closed cup) 73 °C/°F	1,2,3
Solubility - H_2O 1.91 g/ml	1,2,3
Other miscible with alcohol, benzene, ether	1

Physical Features: (odor, color, etc.) colorless liquid with a faint ketonic and camphoric odor

II. TOXICOLOGICAL DATA

Standards: 50 TLV 100 PEL 3000 IDLH 3

Routes of Exposure: inhalation

Acute/Chronic Symptoms: high vapor conc. are irritating to eyes, nose and throat, weakness, headache, nausea and lightheadedness can also occur.

First Aid: inhalation: fresh air & artificial resp., skin: soap & water wash, eyes: irrigate immediately, ingestion: medical attention.

Chemical Name: Methyl Isobutyl Ketone

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ — 3

Toxic by-products ____

B. Flammability LEL 1.4 UEL 7.5% — 3

C. Reactivity Hazard strong oxidizers — 3

D. Corrosivity Hazard yes/no pH: ____

Neutralizing agent: ____

E. Radioactive Hazard — Exposure Rate

Background	yes/no		
Alpha particles	yes/no		
Beta particles	yes/no		
Gamma radiation	yes/no		

IV. REFERENCES

The Merck Index.

Documentation of the TLV.

NIOSH Pocket Guide to Chemical Hazards.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Methyl Ethyl Ketone (2 Butanone)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula C4 H8 O	1,2,3
Natural Physical State at 25°C liquid	1,2,3
Vapor Pressure 70.6 mm Hg at 20°C	2,3
Melting Point ____ °F/°C Boiling Point 80 °F/°C	2
Flash Point (open or closed cup) 35 °C/°F	1,2
Solubility - H_2O 27%	1,3
Other common organic solvents	2

Physical Features: (odor, color, etc.) clear, colorless liquid with acetone-like odor, odor detection 10 ppm IP - 9.48 eV

II. TOXICOLOGICAL DATA

Standards: 200 ppm TLV 200 ppm PEL 3000 ppm IDLH 3

Routes of Exposure: inhalation

Acute/Chronic Symptoms: irritation of eyes, nose and throat at approx. 200 ppm

First Aid: eyes: irrigate immediately, skin: soap and water wash, inhalation: fresh air & artificial resp., ingestion: medical attention.

Chemical Name: Methyl Ethyl Ketone

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ — 2

Toxic by-products ____

B. Flammability LEL 12% UEL 20% — 2

C. Reactivity Hazard very strong oxidizers — 3

D. Corrosivity Hazard yes/no pH: ____

Neutralizing agent: ____

E. Radioactive Hazard — Exposure Rate

Background	yes/no		
Alpha particles	yes/no		
Beta particles	yes/no		
Gamma radiation	yes/no		

IV. REFERENCES

The Merck Index

Documentation of the TLV's

NIOSH Pocket Guide to Chemical Hazards

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Xylene,O, M & P (Dimethyl benzene)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula C8 H10	1,2,3,4
Natural Physical State at 25°C liquid	1,2,3
Vapor Pressure 7 - 9 mm Hg at 20°C	3
Melting Point 13 - 14 °F/°C Boiling Point 137 - 140 °F/°C	1,2,3
Flash Point (open or closed cup) 90/84/81 °C/°F	1,2,3,4
Solubility - H_2O insoluble	1,2,3
Other soluble in alcohol, ether and most other organic solvents.	1,2,3

Physical Features: (odor, color, etc.) colorless liquid with aromatic/benzene odor. Common solvent for paints and coatings, especially alkyd resin type.

II. TOXICOLOGICAL DATA

Standards: 100 TLV 100 PEL 10,000 IDLH 4

Routes of Exposure: inhalation

Acute/Chronic Symptoms: headache, fatigue, dizziness, lassitude, narcotic effects in high concentrations (2,3). Chronic effects not well defined (1).

First Aid: eyes: irrigate immed., skin: soap and water wash immed., inhalation: fresh air and artificial resp., ingestion: medical attention.

Chemical Name: Xylene, O, M, & P

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No _____ — 1,2,3,4

Toxic by-products _____

B. Flammability LEL 1.4% UEL 6.7% — 2

C. Reactivity Hazard strong oxidizers — 4

D. Corrosivity Hazard yes/no pH: _____

Neutralizing agent: _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no		
Alpha particles	yes/no		
Beta particles	yes/no		
Gamma radiation	yes/no		

IV. REFERENCES

The Merck Index, 10th Edition, 1983.

NFPA, Fire Protection Guide on Hazardous Materials, 8th Edition, 1984.

Documentation of the TLV, 4th Edition, 1980.

NIOSH Pocket Guide to Chemical Hazards, 1985.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Toluene (Methyl benzene, toluol)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula C7H8	1,2,3,4
Natural Physical State at 25°C liquid	1,2,3,4
Vapor Pressure 2 mm Hg at 20°C	4
Melting Point - 95 °F/°C Boiling Point 110.6 °F/°C	1,3,4
Flash Point (open or closed cup) 40 °C/°F	1,2,3,4
Solubility - H_2O slightly sol.	1,3,4
Other miscible with alcohol, chloroform, ether, acetone, glacial acetic acid, carbon disulfide	1,3,4

Physical Features: (odor, color, etc.) colorless liquid with an aromatic odor, IP 8.82 eV, derived from coal tar oil or petroleum

II. TOXICOLOGICAL DATA

Standards: 100 TLV 200 PEL 2000 IDLH 4

Routes of Exposure: inhalation

Acute/Chronic Symptoms: Narcotic in high concentrations, headache, lassitude, and nausea. Chronic: anemia and dermatitis.

First Aid: skin: soap and water wash immed., eye: irrigate immed. inhalation: fresh air and artificial resp., ingestion: medical attention (4).

Chemical Name: Toluene

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ — 4

Toxic by-products ____

B. Flammability LEL 1.0% UEL 7.0% — 4

C. Reactivity Hazard strong oxidizers — 3

D. Corrosivity Hazard yes/no pH: ____

Neutralizing agent: ____

E. Radioactive Hazard — Exposure Rate

Background	yes/no		
Alpha particles	yes/no		
Beta particles	yes/no		
Gamma radiation	yes/no		

IV. REFERENCES

The Merck Index, 10th Edition, 1983.

Documentation of the TLV, 4th Edition, 1980.

NIOSH Pocket Guide for Chemical Hazards, 1985.

NFPA, Protection Guide on Hazardous Materials, 8th Edition 8th Edition, 1984.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Formaldehyde/Formalin (37% by wt. formaldehyde gas in water.)

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula CH2O	1
Natural Physical State at 25°C liquid solution	1
Vapor Pressure --- mm Hg at 20°C	
Melting Point --- °F/°C Boiling Point 96 °F/°C	1
Flash Point (open or closed cup) 122 °C/°F	2
Solubility - H_2O miscible	3
Other miscible with alcohol, acetone	1

Physical Features: (odor, color, etc.) colorless liquid with pungent odor. Usually Formalin is stabilized with 10-15% methanol. On standing esp. in the cold may become cloudy and at very low temp. a ppt of trioxymethlene is formed. When evaporated some formaldehyde escapes but most of it is changed to trioxymethylene (paraformaldehyde) (1). In air it slowly oxidizes to formic acid.

II. TOXICOLOGICAL DATA

Standards: 1 ppm TLV 3 ppm PEL 100 ppm IDLH 3

Routes of Exposure: inhalation, formic acid is dangerously caustic to the skin

Acute/Chronic Symptoms: vapors intensely irritating to mucous membranes, irritant dermatitis possible, ingestion: severe abd. pain blood in urine, inability to urinate, acidosis, vertigo, coma and death.

First Aid: Eyes and skin: water flush, Inhalation: fresh air and artificial resp., Ingestion: medical attention immediately.

Chemical Name: Butyl Acetate

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes X No ____ — ____

Toxic by-products Unknown — ____

____ — ____

B. Flammability LEL 2.6% UEL 13.4% — 2

C. Reactivity Hazard in contact with peroxides may polymerize violently. — 2

D. Corrosivity Hazard yes/(no) pH: ____ — ____

Neutralizing agent: ____ — ____

E. Radioactive Hazard — Exposure Rate

Background	yes/(no)	____	____
Alpha particles	yes/(no)	____	____
Beta particles	yes/(no)	____	____
Gamma radiation	yes/(no)	____	____

IV. REFERENCES

Documentation of the TLV, 4th Edition, 1980.

The Merck Index, 10th Edition, 1983.

Fire Protection Guide on Hazardous Chemicals, 8th Edition, 1984.

HAZARDOUS SUBSTANCE INFORMATION FORM

Chemical Name: Butyl Acetate

I. PHYSICAL/CHEMICAL PROPERTIES

	Reference
Chemical Formula CH3 COO (CH2)3 CH3 - n butylacetate	1
Natural Physical State at 25°C liquid	1
Vapor Pressure 10 mm Hg at 20°C	1
Melting Point -146 to -77°F/°C Boiling Point 122 & 126 °F/°C	1
Flash Point (open or closed cup) 88 & 92 °C/°F	1
Solubility - H_2O slightly Autoignition - 790°F	1
Other miscible with alcohol, ether and hydrocarbons.	

Physical Features: (odor, color, etc.) colorless liquid with a fruity odor. I.P. - n-butylacetate - 9.56 eV
sec-butylacetate - 9.91 eV

II. TOXICOLOGICAL DATA

Standards: 150-200ppm TLV 150-200ppm PEL 10,000 IDLH 2

Routes of Exposure: Inhalation

Acute/Chronic Symptoms: respiratory irritant with narcotic effect: headache, dizziness, drowsiness.

First Aid: Skin: soap & water wash, Eyes: irrigation, Inhalation: fresh air & artificial resp., Ingestion: medical attention.

Chemical Name: Formaldehyde/Formalin

III. HAZARDOUS CHARACTERISTICS — Reference

A. Combustibility Yes ____ No X — 1

Toxic by-products _____

B. Flammability LEL 7 UEL 73 — 1,2,3

C. Reactivity Hazard strong oxidizers, alkalies, and acids; phenols; urea

D. Corrosivity Hazard yes/no pH: 2.8 - 4.0 — 1

Neutralizing agent: _____

E. Radioactive Hazard — Exposure Rate

Background	yes/no	
Alpha particles	yes/no	
Beta particles	yes/no	
Gamma radiation	yes/no	

IV. REFERENCES

The Merck Index, 10th Edition, 1983.

Documentation of the TLV, 4th Edition, 1980.

Pocket Guide to Chemical Hazards, 1985.

16 October 1987

TO: File

From: Mary Giguere MG

RE: Thomasville Furniture Inds. NCD 054290770

All samples collected during a site investigation will be preserved by storing them on ice. Water samples for metal and volatile organics analyses should also be preserved with acid unless they contain visible sediment.

The metals samples should be preserved with nitric acid to a pH of less than 2 but greater than 1. To do this start by adding 3 mls of nitric acid to the sampling container. After collecting the sample, check the pH, if more acid is needed add it and note how much was added. Put a check mark on the cap of the metal samples that have been preserved wtih 3 mls of acid. If more than 3 mls of acid have been added indicate the total amount of acid added on the sample container top.

For the VOA samples 4 drops of hydrochloric acid should be added before the sample is collected. Collect the sample as usual.

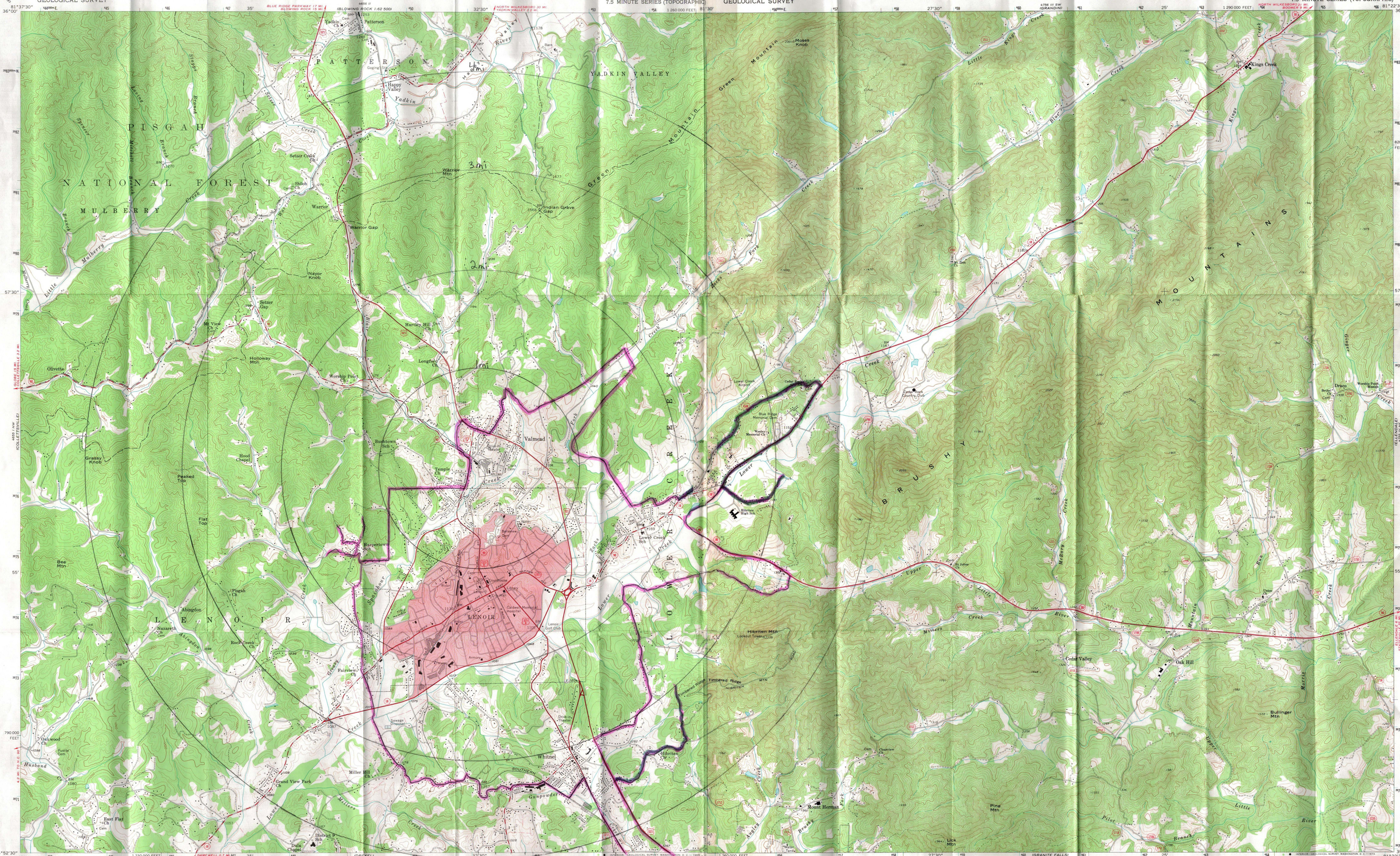
Goggles and gloves wil be worn while measuring acids and collecting samples. Pasteur pipets will be used for measuring the hydrochloric acid. Graduated pipets will be used for nitric acid. Pipets will be rinsed and then disposed of.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LENOIR QUADRANGLE
NORTH CAROLINA–CALDWELL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

KINGS CREEK QUADRANGLE
NORTH CAROLINA–CALDWELL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1947. Field check 1956

Polyconic projection. 1927 North American datum
10,000-foot grid based on North Carolina coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue

Fine red dashed lines indicate selected fence and field lines
visible on aerial photographs. This information is unchecked

Red tint indicates area in which only
landmark buildings are shown

Unchecked elevations are shown in brown

UTM GRID AND 1956 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route

LENOIR, N. C.
N3552.5—W8130/7.5
1956
AMS 4655 I NE—SERIES V842

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial
photographs taken 1966. Field checked 1970

Polyconic projection. 1927 North American datum
10,000-foot grid based on North Carolina coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue

UTM GRID AND 1970 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
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QUADRANGLE LOCATION

ROAD CLASSIFICATION
Primary highway, hard surface — Light-duty road, hard or improved surface
Secondary highway, hard surface — Unimproved road
Interstate Route — U. S. Route — State Route

KINGS CREEK, N. C.
N3552.5—W8122.5/7.5
1970
AMS 4755 IV NW—SERIES V842