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663SERBSF10,637

Site Name (Subject):	UNITEX CHEMICALS
Site ID (Document ID):	NCD061795696
Document Name (DocType):	Preliminary Assessment/Site Inspection (PA/SI)
Report Segment:	
Description:	Screening Site Investigation Report
Date of Document:	10/11/1988
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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

11 October 1988

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

CERCLA

SUBJECT: Site Investigation Report
Unitex Chemical Corporation, NCD 061 795 696
520 Broome Road
Greensboro, NC 27406

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 Greensboro Water System. This system draws water from lakes 12 miles north and upstream of the site. However, approximately 3250 people within three miles of the site use groundwater as their drinking water source. the nearest well is 5500 feet from the site. Groundwater is obtained from the saprolite/bedrock aquifer of the Carolina Slate Belt.

Reportedly, prior to the property being used by Unitex Chemical Corporation in 1976, waste waters from a potassium silicofluoride plant were impounded on the site and allowed to seep into a swampy area bordering South Buffalo Creek. An investigation done in 1972? by the NC Division of Environmental Management found the waste stream to have a high pH and to contain high concentration of fluoride and phosphorus. Samples of soil taken in the impoundment area in 1982 and again in 1988 by Unitex Chemical Corporation were analyzed and do not show any contamination, however.

Based on the sampling results and the lack of groundwater or surface water targets, we recommend No Further Remedial Action planned for this site.

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

Sincerely,

Grover Nicholson, Geologist
Superfund Branch
Solid Waste Management Section

GCN/pb/4

cc: Susan Deihl

SSI REPORT

SITE SCREENING INVESTIGATION REPORT

Unitex Chemical Corporation
NCD 061 795 696
Greensboro, NC

September 1988

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

Prepared by:

Grover Nicholson
Project Team Leader

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Site Inspection Report Form EPA2070-13

EXECUTIVE SUMMARY

Unitex Chemical Corporation is located in Greensboro, North Carolina on land that includes old settling ponds that received discharge from Armour Agrico Fertilizer Company. Armour Agrico, located north of I-85, caused waste water from the production of potassium silicofluoride to flow southward under I-85 to the ponds. The ponds were diked, but waste water seeped through the dikes (and sometimes overflowed the dikes) and ran into a swampy area bordering South Buffalo Creek (Reference 19). The waste stream was found to have a low pH and high concentrations of fluorides and phosphates (Reference 19).

Unitex Chemical Corporation purchased the site in 1976. The impoundment, approximately 230′ x 120′ x 2′-6′, was closed. In 1982 and again in 1988 the solidified material in the impoundment (similar in appearance to clay soils) was sampled (References 5,6, and 7). No hazardous constituents were found in any of the samples.

1.0 BACKGROUND

1.1 Location

Unitex Chemical Corporation is located at 520 Broome Road, Greensboro, Guilford County, NC, 27406. The latitude is 36 02′ 22" and the longitude is 79 46′ 46" (Reference 8). The county code is 41 and the Congressional District code is 06.

1.2 Site Layout

The site consists of an old surface impoundment 230 feet by 120 feet by 2 to 6 feet in depth. The impoundment was not used by Unitex but was used by the former site owner, Armour Agrico (References 4,5, & 16).

1.3 Ownership and Site Use History

The site is presently owned by Unitex Chemical Corporation, 520 Broome Road, Greensboro, NC 27406. This company manufactures benzoic and phthalac esters, blend dye carriers, textile softeners, surfactants, dye leveling agents, retarding agents, and general textile specialty chemicals (Reference: PA-Interim Status Application). All wastes generated have been discharged to the Greensboro Waste Treatment System, transported off-site for treatment, or burned with fuel oil on-site (Reference: PA-Inspection Report and Reference 15). Unitex bought the property from Amour Agrico in 1976. Armour Agrico manufactured fertilizer and discharged filter press material and wastewater to the impoundment on site (References 4 and 16).

1.4 Permit and Regulatory History

Unknown

1.5 Remedial Actions to Date

Unknown

1.6 Summary Trip Report

A reconnaissance of the site and the surrounding area was conducted on 24 August 1988 by Grover Nicholson in conjunction with the reconnaissance of another site. The site was not entered nor were samples taken. Samples were taken and analyzed by J. L. Rogers and Callcott Engineers, Inc. at two other times; once on 8 December 1982 (Reference 6) and once on 1 and 2 March 1988 (Reference 7). The sampling done in March 1988 was based on a sampling plan for the site developed by Grover Nicholson of the NC Superfund Branch.

2.0 ENVIRONMENTAL SETTING

2.1 Topography

Reference 8, the USGS 7 1/2 minute topographic maps Greensboro, McLeansville, Climax, and Pleasant Garden, forms the basis for this section. The site lies in gently rolling Piedmont terrain where the land surface has an elevation of roughly 700 to 800 feet above mean sea level. Run-off from the site, which is on the side of a small hill, flows eastward into South Buffalo Creek. The site slope is roughly 6% and the slope of the intervening terrain is about 2.8%.

2.2 Surface Water

South Buffalo Creek, the only surface water potentially affected by the site, is about 900 feet to the southeast. The stream is Class C water (Reference 17) and, about 2 miles downstream, a Greensboro sewage treatment plant dumps effluent into it. Within five miles of the site, recreational fishing is probably the only use made of the stream.

2.3 Geology, Soils, and Groundwater

The site lies in the Carolina Slate Belt (Reference 18) and the rocks consists of sheared granite and greenstone schist (Reference 1). Well records in Reference 1 for wells near the site show 50 to 75 feet of casing in wells that range from 271 to 521 feet deep. This indicates 50 to 75 feet of saprolite overlying the fractured bedrock from which water is obtained. Typically in the Carolina Slate Belt, fractured metavolcanic rock is overlain by saprolite (weathered rock). Groundwater is found in the pore spaces of the saprolite and in the fractures of the bedrock. Water is obtained from wells completed either into the saprolite or into the bedrock; water in the saprolite moves downwards and recharges the fracture system (Reference 3). The saprolite/fractured bedrock acts as one aquifer. Hydraulic conductivities are similar and are in the 10^{-3} cm/sec range (Reference 3).

2.4 Climate and Meteorology:

Mean Annual Precipitation	45.00 inches
Mean Annual Evaporation	40.75 inches
Net Annual Precipitation	4.25 inches
1-Year 24 Hour Rainfall	2.6 inches
Average January Temperature	40-42 F
Average July Temperature	76-78 F
Prevailing Winds	9 MPH SW

Air quality: About 250 tons of pollutants were emitted per square mile in 1970. These pollutants include particulates, sulfur dioxide, carbon monoxide, hydrocarbons, and nitrogen dioxide.

References 2 and 9.

2.5 Land Use

The site is in the southeastern sector of Greensboro and about one mile inside the city limits. The immediate area around the site is industrial and commercial; however, residential areas are within one mile. The areas to the north, northwest, and west are part of Greensboro proper and are more urban and residential. Areas within five miles of the site in the southwest quadrant and south to northeast quadrants are mostly outside the city limits and are generally suburban, rural, and agricultural. Reference 8, the USGS topographic map, shows these land use divisions clearly.

2.6 Population Distribution and Water Supply

The water supply for people within five miles of the site comes from three sources. The first source is the Greensboro water distribution system which uses surface water from Lakes Townsend and Brandt. These intakes are about 12 miles north and upstream of the site (Reference 10). This system serves about 170,000 people, including the population inside the city limits and some extraterritorial areas (References 10 and 11). The city limits and extraterritorial water lines are marked on the USGS topographic map (Reference 8). Secondly, water is supplied by various community groundwater systems around the site, and, thirdly, private wells supply many area residents.

2.6 Population Distribution and Water Supply (Continued)

Within one mile of the site, the Greensboro Water Distribution System is the sole water supply (References 8,10,12, and 13). Between one and two miles of the site are three community groundwater systems serving 403 people (Reference 12), a number of private wells serving 988 people (Reference 13), and the Greensboro system serving a large number of people. Between two and three miles of the site are four community groundwater systems serving 381 people (Reference 12), private wells serving 1478 people (Reference 13), and the Greensboro system, again serving a large number of people.

In summary, the Greensboro water distribution system, which uses surface water, supplies many people within three miles of the site. Seven community groundwater systems obtain groundwater from the saprolite/bedrock aquifer within three miles of the site and supply 784 people. Additionally, private wells within three miles of the site supply 2466 people.

2.7 Critical Environments

There are no critical environments within three miles of the site (References 8 and 14).

3.0 WASTE TYPES AND QUANTITIES

Armour Agrico discharged waste water and filter press materials from their manufacturing process into the impoundment (Reference 4). Waste types reportedly deposited include wastewater from potassium silicofluoride production, sulfuric acid cooling water, ammonia scrubber water, and stack washdown water (Reference 19).

Samples of the material in the impoundment were taken by J.L. Rogers and Callcott Engineers, Inc. on 8 December ~~1986~~ 1988 and analyses by them revealed no pesticides or extractable inorganics (Reference 6). Further sampling and analysis done by them in March 1988 showed no pesticides, no extractable organics, and no purgeable organics (Reference 7).

Based on a description of the impoundment (Reference 5), waste quantities are between 2044 and 6133 cubic yards:

$$\frac{230' \times 120' \times 2'}{27\ ft^3/yd^3} = 2044\ yd^3 \qquad \frac{230' \times 120' \times 6'}{27\ ft^3/yd^3} = 6133\ yd^3$$

PA

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

James G. Martin, Governor
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.
State Health Director
919/733-3446

15 March 1985

Ms. Denise Bland
EPA NC 3012 Project Officer
Air and Hazardous Material Division
345 Courtland Street, N.E.
Atlanta, GA 30365

Re: Preliminary Assessment Reports
Transmittal Letter

West Point Pepperell Ahoskie, NC 27910	NC D050412923
Alumark Corporation Roxboro, NC 27573	NC D003194271
Unitex Chemical Greensboro, NC 27406	NC D061795696
Eaton Corporation Roxboro, NC 27573	NC D004520136
National Starch and Chemical Corp. Salisbury, NC 28144	NC D048469993

Dear Ms. Bland:

Enclosed please find the Preliminary Assessment Reports for the subject sites.

West Point Pepperell NC D050412923
Ahoskie, NC 27910

West Point Pepperell began operations in 1969 as a knitting plant. Boxes of yarn transported to the facility left as cloth. No hazardous materials have been buried or released at the plant. No Further Action is recommended.

An Equal Opportunity / Affirmative Action Employer

Alumark Corporation NC D003194271
Roxboro, NC 27573

Alumark Corporation began operations in 1952 as Hunter Douglas. From the time the company began operations process wastes containing chromium and cyanide have been discharged into the municipal waste water treatment system. There is no indication of disposal or releases of hazardous substances on site. No Further Action is recommended.

Unitex Chemical Corporation NC D061795696
Greensboro, NC

Unitex Chemical submitted a letter notifying EPA of a surface impoundment used by Armour Agrico, a fertilizer plant across the street. Laboratory analyses (1982) for four pesticides do not indicate the presence of hazardous waste and do not exceed hazardous waste levels for heavy metals. Before the area is excavated, soil samples should be checked for other pesticides and hazardous waste. There is no indication of disposal of releases of hazardous substances at the plant site by Unitex Chemical. A Low Priority for inspection is recommended.

Eaton Corporation NC D004520136
Roxboro, NC

Eaton Corporation began operations at the plant site in 1964, and from this date until 1971 all process waste was routed to the storm drain. In 1971 all spent solutions and rinse water flowed to surface impoundments where metals were precipitated and the water was released to the municipal waste water treatment system. In 1979 the sludge was removed from the impoundments and landfilled on Eaton property. A Low Priority for inspection is recommended.

National Starch and Chemical
Corporation NC D048469993

National Starch and Chemical began operations at the Lumber Street location in 1938. Process waste was neutralized and channeled to the municipal waste water treatment system. No burial of hazardous waste has occurred on site. Two spills of sulfuric acid have been reported; the NC Division of Environmental Management investigated and reported no adverse effects on Town Creek or the environment. No Further Action is recommended.

On 28 January 1985, each of the subject sites was reviewed by NC Department of Human Resources RCRA 3012 personnel, assistant branch head for Solid and Hazardous Waste Management and representatives from the NC Department of Natural Resources and Community Development from the Groundwater Section, Water Quality Section and Air Quality Section.

If you have any questions, please call me at (919) 733-2178.

Sincerely,

Lee Crosby

Lee Crosby
RCRA 3012 Project Officer
Solid and Hazardous Waste Management Branch
Environmental Health Section

LC/lw

Enclosures

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: NC
02 SITE NUMBER: D061795696

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): Unitex Chemical Corporation

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: 520 Broome Road

03 CITY: Greensboro | 04 STATE: NC | 05 ZIP CODE: 27406 | 06 COUNTY: Guilford | 07 COUNTY CODE: 41 | 08 CONG DIST: 06

09 COORDINATES LATITUDE: 19 47 04 7 | LONGITUDE: 036 02 03.0

10 DIRECTIONS TO SITE (Starting from nearest public road)
Travel west from Raleigh on Hwy. 85/70 towards Greensboro. Exit on Hwy. 421 South. Turn right onto Patton Avenue. Travel west approximately one mile and turn left onto Broome Road. Unitex is located on the left.

III. RESPONSIBLE PARTIES

01 OWNER (If known): Unitex Chemical Corporation

02 STREET (Business, mailing, residential): Post Office Box 16344

03 CITY: Greensboro | 04 STATE: NC | 05 ZIP CODE: 27406 | 06 TELEPHONE NUMBER: (919) 378-0965

07 OPERATOR (If known and different from owner):

08 STREET (Business, mailing, residential):

09 CITY: | 10 STATE: | 11 ZIP CODE: | 12 TELEPHONE NUMBER: ( )

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

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: 11 5 80 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 6 8 81 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☐ YES DATE ___ / ___ / ___ (MONTH DAY YEAR)
☒ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☐ A. ACTIVE ☒ B. INACTIVE impoundment ☐ C. UNKNOWN

03 YEARS OF OPERATION
1976 (BEGINNING YEAR) | active facility (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Unitex Chemical submitted a letter notifying EPA of a surface impoundment used by Armour Agrico, a fertilizer plant across the street. 1982 laboratory analysis for 4 pesticides do not indicate the presence of hazardous waste and do not exceed hazardous waste levels for heavy metals.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Before the area is excavated, soil samples should be checked for other pesticides & hazardous wastes (organics) to eliminate the possibility of a hazard to the environment or population.

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) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT: Melvin Hooper | 02 OF (Agency/Organization): Vice President, Unitex Chemical Corp. | 03 TELEPHONE NUMBER: (919) 378-0965

04 PERSON RESPONSIBLE FOR ASSESSMENT: Lee Crosby | 05 AGENCY: NC DHR/DHS | 06 ORGANIZATION: Solid & Hazardous Mgt. Branch | 07 TELEPHONE NUMBER: (919) 733-2178 | 08 DATE: 1 25 85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

LC

NCD061795696

L. ROGERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Road Greenville, South Carolina 29607 (803) 232-1556

L. Rogers, P.E.
Callcott, P.E.

Diplomate, American Academy of Environmental Engineers

January 10, 1983

Mr. George W. House
Brooks, Pierce, McLendon,
Humphrey and Leonard
Suite 1400 Wachovia Building
Greensboro, North Carolina 27402

Subject: Waste Analysis on two residue samples from Unitex site.

Dear George:

Please find enclosed laboratory analysis on two residue samples taken from the Unitex site. You will recall that in years past, a fertilizer plant across Highway 85 discharged certain of its residues to this sludge pond and on to the creek. During my visit on December 8, 1982, I collected two samples; one being at a one foot depth and a second sample being at approximately three foot depth. The sample at one foot depth was made up from ten points across the surface of the dried up pond, while the second sample was at a three foot depth. My interest in the one foot depth and three foot depth samples was simply that different processes could have been used at the fertilizer plant "over time" and that perhaps we would catch any differences by sampling at two depths.

As I mentioned on the telephone today, based on our results, it is our opinion that the waste residues would not be considered hazardous. The Federal Register, Volume 45, No. 98, dated Monday, May 19, 1980 on page 33121 and 33122 in subpart C- Characteristics of Hazardous Waste, gives the characteristics of a hazardous waste. These are: ignitability, corrosivity, reactivity, and EP toxicity. Based on our analysis, it is our opinion that the waste is not hazardous. The waste was not ignitable. It does not meet the characteristics of a corrosive waste and it was not reactive. Finally, we did the EP toxicity tests as listed on page 33122 of the referenced Federal Register and the chemical concentrations were less than the maximum concentrations of the contaminates listed thereon. So, from these laboratory tests, we conclude the waste is not hazardous.

Should you have any questions or comments, please call.

Very truly yours,

J. L. ROGERS AND CALLCOTT ENGINEERS, INC.

J. L. Rogers

J. L. Rogers, P.E.

JLR/dc

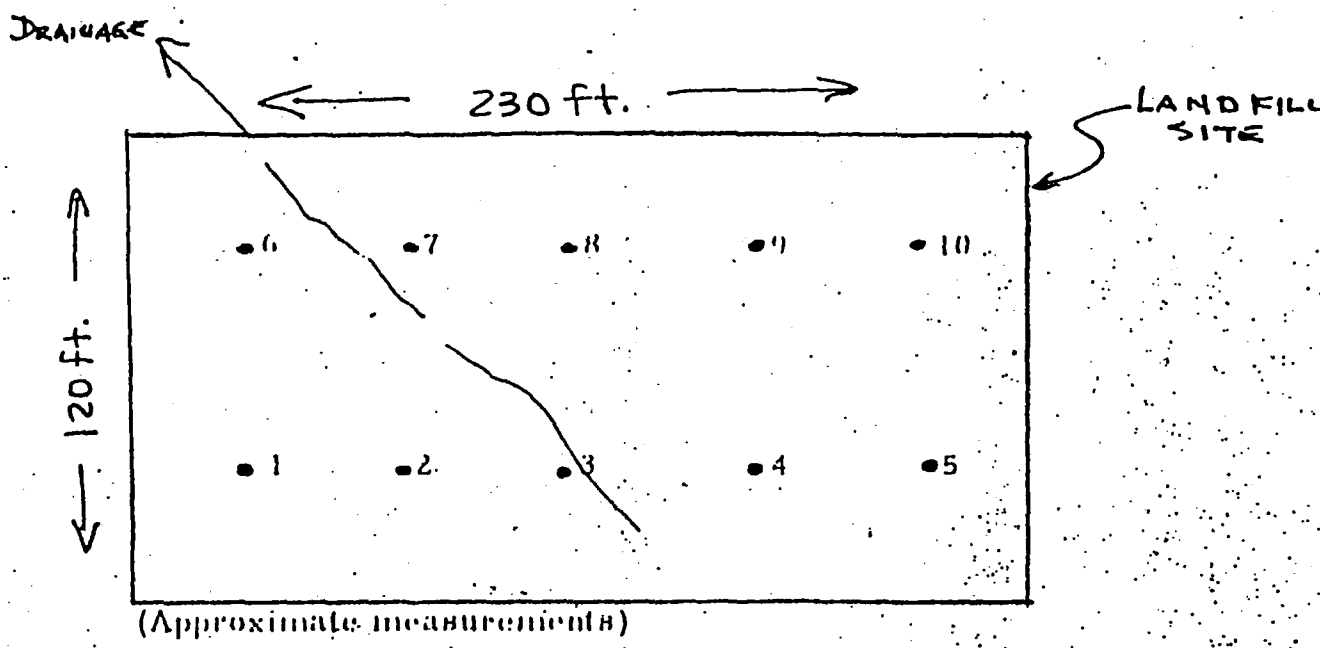
Enclosure

J. L. ROGERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Road Greenville, South Carolina 29607 (803) 232-1556

J.L. Rogers, P.E.
F.D. Callcott, P.E.

Diplomate, American Academy of Environmental Engineers

UNITEX - GREENSBORO, N. C.



(Approximate measurements)

Sample # 23064 - a composite of Jars # 1 - #5 - all samples taken at 1 foot depth.

Jar # 1 - Locations 1 & 2
Jar # 2 - Locations 3 & 4
Jar # 3 - Locations 5 & 6
Jar # 4 - Locations 7 & 8
Jar # 5 - Locations 9 & 10

Sample # 23065 - a composite of Jars # 6 - # 10 - all samples taken at 3 foot depth.

Jar # 6 - Locations 1 & 2
Jar # 7 - Locations 3 & 4
Jar # 8 - Locations 5 & 6
Jar # 9 - Locations 7 & 8
Jar #10 - Locations 9 & 10

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718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

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ent	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex - Greensboro, N.C.	69-1023	12-9-82

mple No:	Sample Description:	Date Transmitted:
# 23065	Locations 1 - 10 Lagoon sludge - 3 ft. depth- Leachate	1-7-33

Parameter	units			Parameter	units		
BOD, 5-Day				Cyanide			
COD				Aluminum			
Dissolved Oxygen				Antimony			
pH		3.7		Arsenic	ug/1	500	
Residual Chlorine				Barium		< 0.10	
Total Solids				Cadmium		0.02	
Suspended Solids				Calcium			
Dissolved Solids				Chromium, total		0.02	
Volatile Solids				Chromium, hexavalent			
Volatile Suspended Solids				Cobalt			
ttleable Solids				Copper			
Acidity (as $CaCO_3$)				Iron			
Alkalinity (as $CaCO_3$)				Lead		0.06	
Color				Magnesium			
Turbidity	J.T.U.			Manganese			
Specific Conductance	umhos/cm			Mercury	ug/1	< 0.5	
Hardness (EDTA)				Nickel			
Chloride				Potassium		650	
Flouride		310		Selenium	ug/1	15.5	
Total Phosphorus		112.5		Silver		< 0.01	
Ortho-Phosphorus				Sodium			
Total Kjeldahl Nitrogen		1.3		Tin			
Ammonia Nitrogen				Titanium			
Nitrate		0.69		Zinc			
Nitrite				Oil & Grease, Freon Extractable			
Sulfate				Surfactants			
Sulfite				Phenolics	ug/1		
Sulfide				Fecal Coliform, colonies/100 ml			
Silica		4.0		Fecal Streptococci; colonies/100 ml			
Endrin		< 0.0002		Total Coliform, colonies/100 ml			
Lindane		< 0.0004		2,4 - D		< 0.10	
Toxaphene		< 0.005		2,4,5 - TP(Silvex)		< 0.01	
Methoxychlor		< 0.10					

Results in milligrams per liter (mg/1) unless otherwise noted

Remarks:

Reported By: [illegible]

L. ROGERS & CALLCOTT ENGIN[illegible], INC.

718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

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Client	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex Greensboro, N.C.	69-1023	12-9-82

Sample No:	Sample Description:	Date Transmitted:
# 23065	Locations 1 - 10 Lagoon Sludge - 3 ft. depth- Leachate	1-7-83

Parameter	units			Parameter	units		
BOD, 5-Day				Cyanide			
COD				Aluminum			
Dissolved Oxygen				Antimony			
pH		3.7		Arsenic	ug/l	500	
Residual Chlorine				Barium		< 0.10	
Total Solids				Cadmium		0.02	
Suspended Solids				Calcium			
Dissolved Solids				Chromium, total		0.02	
Volatile Solids				Chromium, hexavalent			
Volatile Suspended Solids				Cobalt			
Settleable Solids				Copper			
Acidity (as $CaCO_3$)				Iron			
Alkalinity (as $CaCO_3$)				Lead		0.06	
Color				Magnesium			
Turbidity	J.T.U.			Manganese			
Specific Conductance	umhos/cm			Mercury	ug/l	< 0.5	
Hardness (EDTA)				Nickel			
Chloride				Potassium			
Flouride				Selenium	ug/l	15.5	
Total Phosphorus				Silver		< 0.01	
Ortho-Phosphorus				Sodium			
Total Kjeldahl Nitrogen				Tin			
Ammonia Nitrogen				Titanium			
Nitrate				Zinc			
Nitrite				Oil & Grease, Freon Extractable			
Sulfate				Surfactants			
Sulfite				Phenolics	ug/l		
Sulfide				Fecal Coliform, colonies/100 ml			
Endrin		<0.0002		Fecal Streptococci, colonies/100 ml			
Lindane		<0.0004		Total Coliform, colonies/100 ml			
Toxaphene		<0.005		2,4 - D		< 0.10	
Methoxychlor		<0.10		2,4,5 - TP(Silvex)		< 0.01	

Results in milligrams per liter (mg/l) unless otherwise noted

Remarks:

Reported By: Margaret S Boot

J. ... ROGERS & CALLCOTT ENGIN...ERS, INC.
718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

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Client	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex- Greensboro, N.C.	69-1023	12-9-82

Sample No:	Sample Description:	Date Transmitted:
# 23064	Locations 1 - 10 Lagoon sludge - 1ft. depth - Leachate	1-7-83

Parameter	Units		Parameter	Units		
BOD, 5-Day			Cyanide			
COD			Aluminum			
Dissolved Oxygen			Antimony			
pH		3.4	Arsenic	ug/l	430	
Residual Chlorine			Barium		<0.10	
Total Solids			Cadmium		<0.005	
Suspended Solids			Calcium			
Dissolved Solids			Chromium, total		0.15	
Volatile Solids			Chromium, hexavalent			
Volatile Suspended Solids			Cobalt			
...ettleable Solids			Copper			
Acidity (as $CaCO_3$)			Iron			
Alkalinity (as $CaCO_3$)			Lead		0.06	
Color			Magnesium			
Turbidity	J.T.U.		Manganese			
Specific Conductance	umhos/cm		Mercury	ug/l	0.7	
Hardness (EDTA)			Nickel			
Chloride			Potassium		700	
Flouride		350	Selenium	ug/l	15	
Total Phosphorus		17.5	Silver		<0.01	
Ortho-Phosphorus			Sodium			
Total Kjeldahl Nitrogen		1.6	Tin			
Ammonia Nitrogen			Titanium			
Nitrate		0.70	Zinc			
Nitrite			Oil & Grease, Freon Extractable			
Sulfate			Surfactants			
Sulfite			Phenolics	ug/l		
Sulfide			Fecal Coliform, colonies/100 ml			
Silica		310	Fecal Streptococci, colonies/100 ml			
Endrin		<0.0002	Total Coliform, colonies/100 ml			
Lindane		<0.0004	2,4 - D		<0.10	
Toxaphene		<0.005	2,4,5 - TP(Silvex)		<0.01	
Methoxychlor		<0.10				

Results in milligrams per liter (mg/l) unless otherwise noted

Remarks:

Reported By: Margaret A. Bell

J. ROGERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

Consulting Engineers
Water & Sewer Design
Industrial Wastes
Grants & Permits
Solid Wastes
Subdivisions
Recreational Facilities

"LABORATORY SERVICES"

Laboratory Service
NPDES Monitoring
Water Analysis
Stream Surveys
Treatability Studies
Plant Performance Studies
Sampling & Pick-up

Client	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex - Greensboro, N.C.	69-1023	12-9-82

Sample No:	Sample Description:	Date Transmitted:
# 23064	Locations 1 - 10 Lagoon Sludge - 1 ft. depth - Leachate	1-7-83

Parameter	units		Parameter	units	
BOD, 5-Day			Cyanide		
COD			Aluminum		
Dissolved Oxygen			Antimony		
pH	3.4		Arsenic	ug/l	430
Residual Chlorine			Barium		< 0.10
Total Solids			Cadmium		< 0.005
Suspended Solids			Calcium		
Dissolved Solids			Chromium, total		0.15
Volatile Solids			Chromium, hexavalent		
Volatile Suspended Solids			Cobalt		
Settleable Solids			Copper		
Acidity (as $CaCO_3$)			Iron		
Alkalinity (as $CaCO_3$)			Lead		0.06
Color			Magnesium		
Turbidity	J.T.U.		Manganese		
Specific Conductance	umhos/cm		Mercury	ug/l	0.7
Hardness (EDTA)			Nickel		
Chloride			Potassium		
Flouride			Selenium	ug/l	15
Total Phosphorus			Silver		< 0.01
Ortho-Phosphorus			Sodium		
Total Kjeldahl Nitrogen			Tin		
Ammonia Nitrogen			Titanium		
Nitrate			Zinc		
Nitrite			Oil & Grease, Freon Extractable		
Sulfate			Surfactants		
Sulfite			Phenolics	ug/l	
Sulfide			Fecal Coliform, colonies/100 ml		
Endrin	< 0.0002		Fecal Streptococci, colonies/100 ml		
Lindane	< 0.0004		Total Coliform, colonies/100 ml		
Toxaphene	< 0.005		2,4 - D		< 0.10
Methoxychlor	< 0.10		2,4,5 - TP(Silvex)		< 0.01

Results in milligrams per liter (mg/l) unless otherwise noted

Remarks:

Reported By: [illegible]

RCRA Inspection Report

1) Facility Information
Unitex Chemical Corporation
520 Broome Road
Greensboro, N. C. 27406
EPA ID# NCD061795696
Guilford County

2) Facility Contact
Melvin Hooper

3) Survey Participants
Melvin Hooper, Unitex Chemical Corporation
Steve Phibbs, District Sanitarian, Division of Health Services

4) Date of Inspection
May 24, 1982

5) Applicable Regulations
40 CFR Part 262

6) Scope of Survey
RCRA interim status inspection was conducted by the North Carolina Solid and Hazardous Waste Management Branch. The scope of the survey covered record review and site survey. Applicable regulations covered those in 40 CFR Part 262, Generator Standards, tanks checklist.

7) Facility Description
Unitex Chemical Company manufactures textile softeners, surfactants, dye leveling agents and general textile specialty chemicals. The hazardous wastes consists of spent toluene (F005) and isolutyl alcohol (U140). Currently these wastes are being stored in a 15,000-gallon storage tank with the area dyked for spill control.

The waste materials are being transported to Caldwell Systems in Lenoir for disposal. All manifests appear up to date.

8) Site Deficiencies
1) Failure to adopt and implement personnel training and maintain records of this training. 265.16.

Date: January 25, 1982

County: Guilford

Notifier's name and address: George W. Page President

3942 Starmount Dr., Greensboro, N. C. 27410

Contact's name: John Taylor (Plant Manager) (919) 378-0965

Site name and address: Unitex Chemical

520 Broome Rd., Greensboro, N. C. 27406

Site location: 520 Broome Rd., Greensboro, N. C. 27406

Type of waste: Solvents burned as fuel, Surface impoundment (waste analyzed by State)

What process generated the waste? Fertilizer production

Volume of waste:

Method of storage or disposal: Surface impoundment (Operated by previous owner, Armour Agrico). Unitex Chemical has not used the surface impoundment

Dates of waste activity: Not reported

Site history: John Taylor, plant manager of Unitex Chemical in Greensboro, reported that a surface impoundment was operated on the plant property by the previous owner of the property, Armour Agrico. Solvents also were burned by Armour Agrico for fuel. Armour Agrico is a fertilizer manufacturing company.

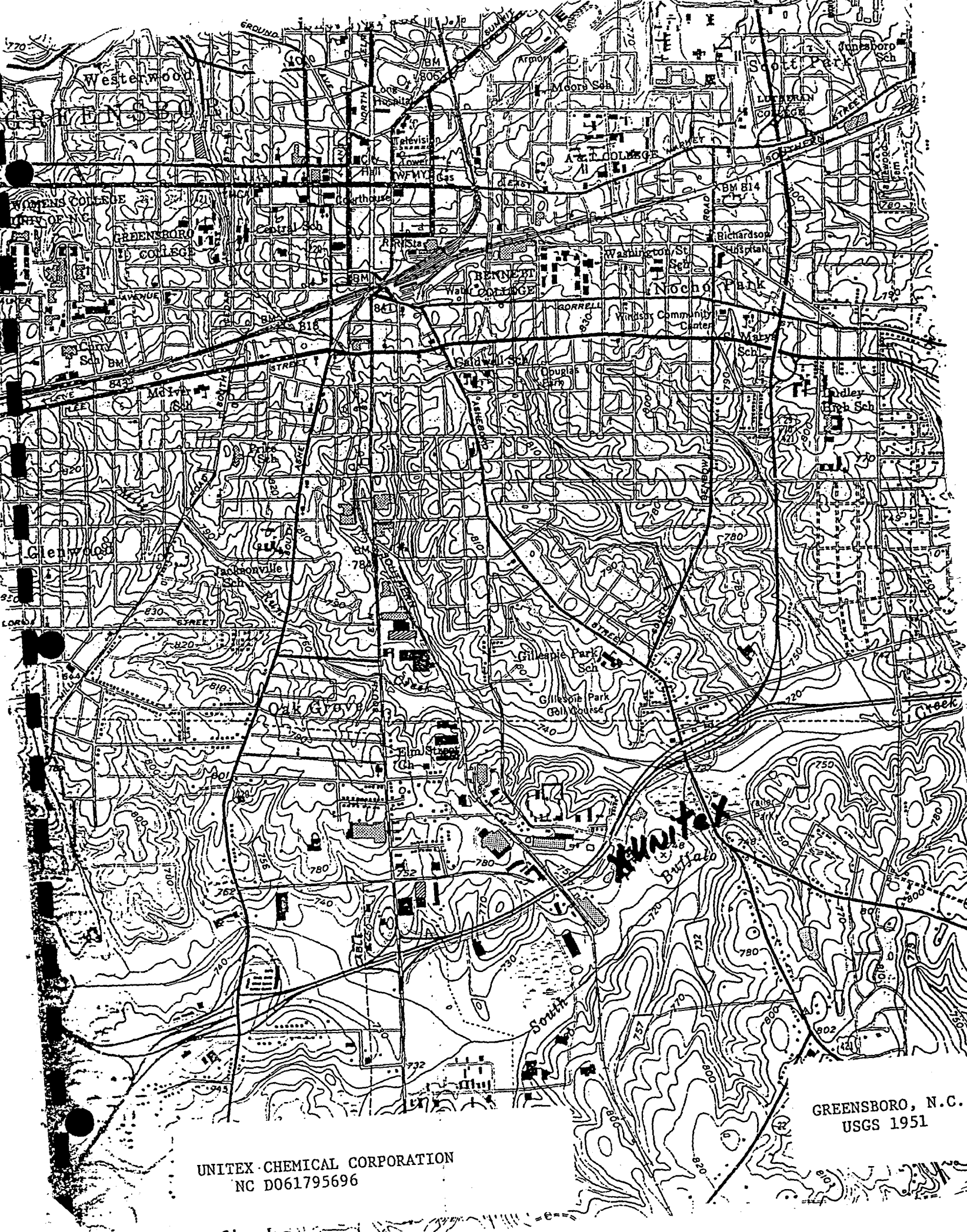
DEM EPA

UNITEX

GEN NCD 061795696

CHECK

*The preceding information is based on preliminary data supplied by the Environmental Protection Agency, and not on detailed site investigations.



UNITEX CHEMICAL CORPORATION
NC D061795696

ENVIRONMENTAL PROTECTION AGENCY
NOTIS DATA MANAGEMENT SYSTEM

NOTIS REPORT #4 — LISTING BY FACILITY — REPORT DATE: 10/20/81
REGION: 04 STATE: NC

NOTIFICATION ID NO.	SITE NAME / SITE STREET / SITE CITY / SITE COUNTY / EPA SITE ID NO.	NOTIFIER NAME / NOTIFIER STREET / NOTIFIER CITY / (CONTACT NAME/TITLE) / (CONTACT PHONE)	STATE	ZIP	NOTIFIER STATUS (PRES OWN, PAST OWN PRES OP, PAST OP TRANSPORTER, VOLUNTEER)
CS000001020	UNITEX CHEMICAL	GEORGE W. PAGE			PRES OWN
	520 BROOME RD	3942 STARMOUNT DR			
	GREENSBORO 27406	GREENSBORO	NC	27410	
	GUILFORD	(PAGE, GEORGE, PRESIDENT)			
	NCD061795696	(919-378-0965)			

RELEASES TO THE ENVIRONMENT: NONE

DATES OF WASTE HANDLING: TO

WASTE AMOUNT: 0 AREA: 1 ACRES MAP PRESENT: YES FORM TYPE: 8900-1

NOTIF. POSTMARKED DATE: 81/06/08 SIGNATURE PRESENT: YES DATE OF LAST UPDATE: 81/10/14

TYPE OF FACILITY	TYPES OF WASTES	SOURCES OF WASTE
IMPOUNDMENT	UNKNOWN	FERTILIZER
	OTHER	

COMMENTS	SEQ NO.
SEE FILE	1
MIX HAS BEEN ANALYZED BY EPA WINSTON-	300
SALEM OFFICE	301

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F

GENERAL INSTRUCTIONS

If a preprinted label has been provided it in the designated space. Review the i etion carefully; if any of it is incorrect through it and enter the correct data appropriate fill-in area below. Also, if the preprinted data is absent *(the area left of the label space lists the info that should appear)*, please provide it proper fill-in area(s) below. If the la complete and correct, you need not co Items I, III, V, and VI *(except VI-B must be completed regardless)*. Compl Items if no label has been provided. Re the Instructions for detailed item d tions and for the legal authorizations which this data is collected.

I. EPA I.D. NUMBER

II. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third colu if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activ is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	MARK "X" NO	MARK "X" FORM ATTACHED
A. Is this a facility currently operating treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or concentrated animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X	
D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this a facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

UNITEX CHEMICAL CORP

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title): HOOPER MELVIN VICE PRESIDENT

B. PHONE (area code & no.): 919 378 0965

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: PO BOX 16344

B. CITY OR TOWN: GREENSBORO

C. STATE: NC

D. ZIP CODE: 27406

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 520 BROOME ROAD

B. COUNTY NAME: GUILFORD

C. CITY OR TOWN: GREENSBORO

D. STATE: NC

E. ZIP CODE: 27406

F. COUNTY CODE (if known)

ED FROM THE FRONT

C CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
4 8 6 9 (specify) Industrial Organic Chemicals	C 7 (specify)
C. THIRD	**D. FOURTH**
(specify)	C 7 (specify)

OPERATOR INFORMATION

A. NAME: NITEX CHEMICAL CORP.

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL, S = STATE, P = PRIVATE, M = PUBLIC (other than federal or state), O = OTHER (specify)
P (specify)

D. PHONE (area code & no.): C A 919 378 0965

E. STREET OR P.O. BOX: BOX 16344

F. CITY OR TOWN: GREENSBORO | G. STATE: NC | H. ZIP CODE: 27406

IX. INDIAN LAND: Is the facility located on Indian lands? ☐ YES ☒ NO

EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): N
D. PSD (Air Emissions from Proposed Sources): C T I 9 P
B. UIC (Underground Injection of Fluids): U
E. OTHER (specify): C T I 9 (specify)
C. RCRA (Hazardous Waste): R APPLIED FOR
E. OTHER (specify): C T I 9 (specify)

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XI. NATURE OF BUSINESS (provide a brief description)

Manufacture esters of benzoic and phthalac esters. Blend dye carriers. Manufacture textile softeners, surfactants, dye leveling agents, retarding agents, general textile specialty chemicals.

XII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Melvin E. Hooper, Vice President	Melvin E. Hooper	11/5/80

D. SPACE FOR OFFICIAL USE ONLY

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(Its information is required under Section 3005 of RCRA)

RCRA

I. EPA I.D. NUMBER: F J C D 0 6 1 7 9 5 6 9

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

I. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facili revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your faci EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

C	YR.	MO.	DAY
8	7 6	0 2	2 6

[ ] 2. NEW FACILITY *(Complete item belo*

FOR NEW FACI PROVIDE THE D *(yr., mo., & day)* TION BEGAN O EXPECTED TO B

YR.	MO.	DAY

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provide entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS.

PROCESS	PROCESS CODE	APPROPRIATE UNITS O MEASURE FOR PROCES DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT MEAS CO
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	
LITERS	L	TONS PER HOUR	D	HECTARE-METER	
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP T A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FO OFF US ON
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 2	15,000	G		7				
		(to be used as fuel)			8				
3					9				
					10				

I. PROCESSES *(continued)*

SPACE FOR ADDITIONAL PROCESS CODES FOR DESCRIBING OTHER PROCESSES *(code 4")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four—digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four—digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non—listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous wastes: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non—listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non—listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.
2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
   Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

Photocopy is page 3 ore comp e ng i you ave more an wastes to ist. orm approve

EPA I.D. NUMBER (enter from page 1): A

FOR OFFICIAL USE ONLY: W DUP T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
1	F003	)	P	S02)	
2	F005	) 35,000)	P	S02)	SEE ATTACHED NOTE
3	U031		P	S02	Recovered & used as raw materia
4	U140		P	S02	" " " " " "
5	U140		P	S01	" " " " " "
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

EPA Form 3510-3 (6-80)

CONTINUE ON REVER

inued from the front.

DESCRIPTION OF HAZARDOUS WASTES (continued)

USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

															6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*
7 5 4 7 0 4 7	0 3 6 0 2 0 3 0

VIII. FACILITY OWNER

A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
	G		

IX. OWNER CERTIFICATION

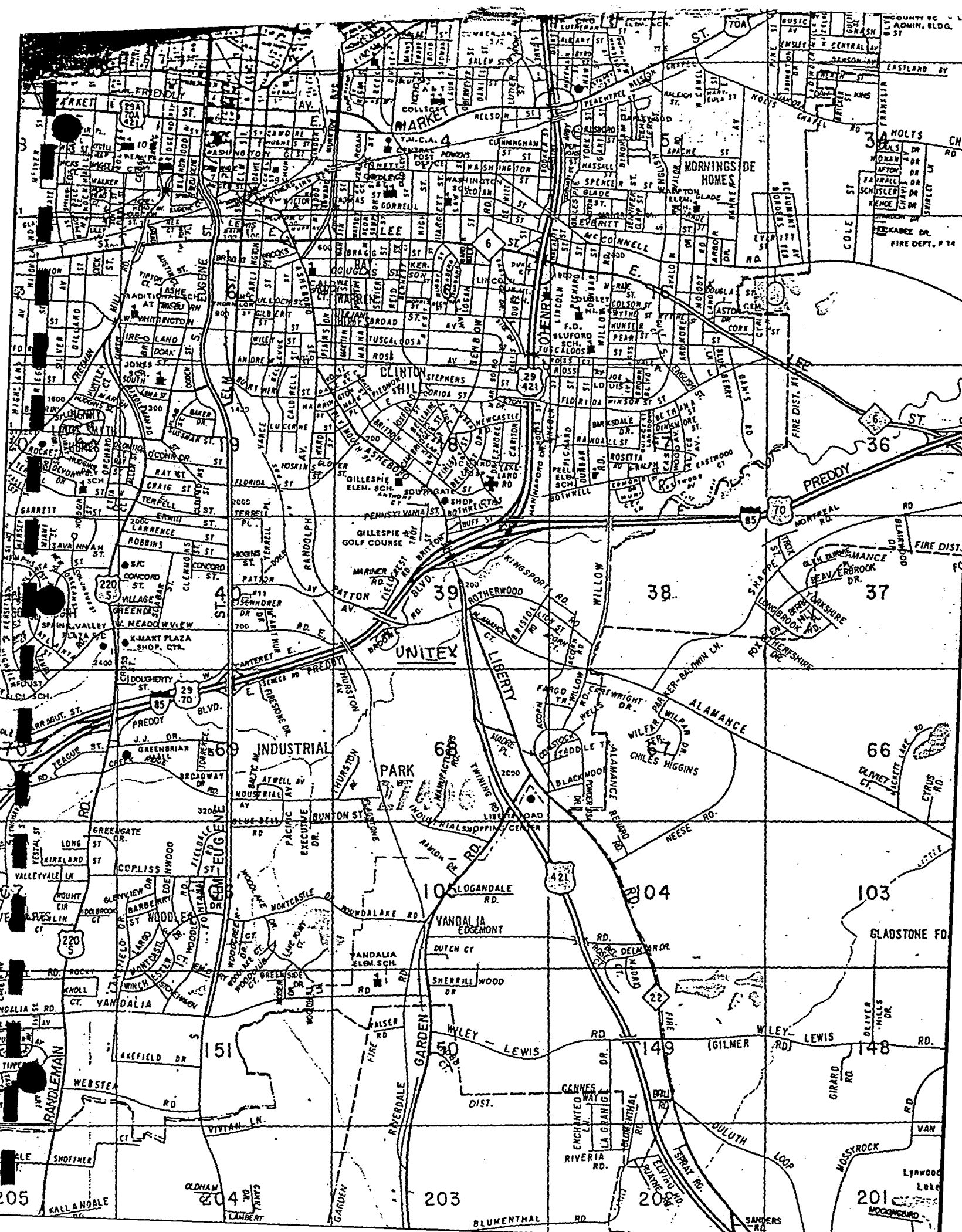
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
E. Hooper	M. E. Hooper	11/5/80

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED


MARKET
FREDDY
MARKET ST.
COLLEGE
Y.M.C.A.
CENTRAL POST OFFICE
MORNINGSIDE HOMES
LEE
RAY
COUGOS
CLINTON HILL
ASHEBORO
GILLESPIE ELEM. SCH.
GILLESPIE GOLF COURSE
PENNSYLVANIA
UNITEX
LIBERTY
INDUSTRIAL
PARK
VANDALIA
VANDALIA ELEM. SCH.
GLADSTONE
WILEY - LEWIS RD
(GILMER RD)
GARDEN
RIVERDALE
DULUTH
BLUMENTHAL RD
PREDDY
ALAMANCE
EUGENE
ELM
LAMBERT
KALLANDALE
OLDHAM
WEBSTER
VIVIAN LN.
SHOFFNER
MOCKINGBIRD
SANDERS RD
Lynwood Lake
FIRE DIST.
FIRE DEPT. P 14
COUNTY BC ADMIN. BLDG.
EASTLAND AV
HOLTS
CHAPEL
NELSON
CUNNINGHAM
PEACHTREE
WASHINGTON
SPENCER
BLADE
EVERITT
McCONNELL
GORRELL
TUSCALOOSA
ROSS
FLORIDA
STEPHENS
NEWCASTLE
BOTHWELL
BUFF ST
PATTON AV
ROTHERWOOD
KINGSPORT RD
WILLOW
MONTREAL RD
SHARPE
YORKSHIRE
HERFORDSHIRE
FOX
CREEWRIGHT DR.
PARKER-BALDWIN LN.
WILFAR
CHILES HIGGINS
BLACKMOOR
LIBERTY ROAD
INDUSTRIAL SHOPPING CENTER
LOGANDALE RD.
ROUNDALAKE RD
EDGEMONT
DUTCH CT
SHERRILLWOOD DR
GREENSIDE DR
WOODLAKE
MONTCASTLE
WOODRECH
WOODLAWN
WOODLEE
COPLISS
GREENGATE DR.
GREENBRIAR
BROADWAY DR
BUNTON ST
BLUE BELL RD
PACIFIC
EXECUTIVE DR.
THURSTON
FIRESTONE DR.
SENECA RD
CARTERET
DOUGHERTY ST.
PREDDY BLVD.
LEAGUE ST.
ARRAGUT ST.
SPRING VALLEY PLAZA S.C.
K-MART PLAZA SHOP. CTR.
MEADOWVIEW
GREENDALE
VILLAGE
CONCORD ST.
CLEMMONS
ROBBINS
LAWRENCE
SAVANNAH ST.
GARRETT
TERPELL
CRAIG ST
RAY ST
O'CONNOR DR.
DEVONPORT
HUDGINS ST.
SUSSMAN ST.
JONES SOUTH
LAMBS ST
BAKER DR.
WHITTINGTON
IRELAND
DOAK
TIPTON CT.
ASHE
RADITION AT
HILL
FREEMAN
HUNTLEY
LUTHER SMITH
ROCKET
DICKERSON
ELM
EUGENE
RANDOLPH
VANCE
LUCERNE
HOSKIN AV.
BURRIER
CALDWELL
HARRIS
WALNUT
BRITTON
JOCKEY
BRIGGS
BELLAMY
FINLAY
DALEMORE
CARLTON
DUKELAND RD
SOUTHGATE
SHOP
ANTHONY CT
BRIDGE
BRAGG
BROADS
WARREN
STEVENS
REID
KERSON
LINCOLN
PICKARD
DUDLEY
WILLOW
WERNE ST.
COLSON ST
HUNTER
PEAR ST
F.D. BLUFORD SCH.
TUSCALOOS
JOE
LOUIS
BARKSDALE DR.
RANDALL ST
ROSETTA RD
PEELE ELEM. SCH.
EASTWOOD CT
DANIEL
BLUE BERRY
ENGLISH
ASTON
CORK
DOUGLAS
MOODY
ARDMORE
ARBOR
BARNES
COLE
FIRE DIST.
GLEN DUNCE
BEAVERBROOK DR.
LONGBROOK HILL RD.
DUNCAN
GOODMAN
CYRUS RD.
HACKETT LAKE RD
DUNNET CT.
GIRARD RD.
OLIVER HILLS DR.
MOSSYROCK
LOOP
VAN
SPRAY RD.
ELVIRA RD.
RUANNE CIR.
RIVERIA RD.
ENCHANTED LN.
LA GRANGE
CANNES WAY
BRALL RD
BLOOMENTHAL RD.
DIST.
WALSER
FIRE RD
AKEFIELD DR
WINCHESTER
STONEWALL
VANDALIA
KNOLL CT.
ROCKY
DOLBROOK CT
GLENVIEW DR
BARBERRY
LARGO
MONTCASTLE
WOODLEE
FIELDALE
FIELDCREST DR
FOUNTAIN
EDGEWOOD
VALLEYVALE LN
KIRKLAND ST
LONG ST
VESTAL ST
ROUGH
DOLBROOK
ALAMANCE
REMBERT RD
NEESE RD.
CHEWSTOCK
SADDLE
MADDE PL.
TWINING RD
MANUFACTURERS
RAMION DR
CYRUS RD.
GLADSTONE FO
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NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
R. BRUCE ETHERIDGE, *Director*

DIVISION OF MINERAL RESOURCES
JASPER L. STUCKEY, *State Geologist*

BULLETIN NUMBER 55

Geology and Ground Water
IN THE
Greensboro Area, North Carolina

By
M. J. MUNDORFF

PREPARED IN COOPERATION WITH THE GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR

RALEIGH
1948

Geology.—The geology of Guilford County apparently is more complex than that of any other county of the Greensboro area. Seven of the nine geologic units crop out in Guilford County and the areal distribution of most of them is quite irregular.

The gneiss unit crops out in several irregular belts extending northeastward across the northwestern corner of the county. These belts are separated by areas of porphyritic granite, which was intruded into the gneiss. The principal rocks of the gneiss unit are banded quartz-mica-feldspar gneiss and quartz-mica schist. They are chiefly of sedimentary origin, and although the rocks have been greatly changed by metamorphism at many places the bedding planes can still be distinguished. The granite has intimately intruded the gneiss so that the boundaries between the two units necessarily are greatly generalized.

The greenstone schist crops out in large, irregularly shaped areas in the southeastern two-thirds of the county. These areas are separated by areas of sheared granite. The greenstone schist consists of a green fine- to medium-grained basic schistose rocks, chiefly of volcanic origin. At most places the rock is highly schistose but at a few places it is coarser and fairly massive.

The sericite schist crops out in a belt extending northeastward across the county from a point near Guilford College. It is closely associated with the greenstone schist and may be a metamorphosed tuff or possibly a metamorphosed clay. The rock is greatly weathered, and usually the only recognizable minerals are quartz, sericite and iron oxide, the latter apparently an oxidation product of chlorite and hornblende.

The slate unit is limited to a narrow, highly irregular belt extending across the southeastern corner of the county and to a small patch in the south edge of High Point. The rocks are mostly tuffaceous slates but include some clay slates.

The sheared granite is exposed over about 50 percent of the southeastern half of the county, where it forms a fairly continuous area interrupted by large patches of greenstone and slate. The granite is generally a moderately coarse pink schistose and gneissic rock consisting chiefly of quartz, biotite, and feldspar. The granite has been considerably metamorphosed and intensely sheared. The outstanding feature of the granite is the schistose and slaty dikes, which are green in color and greatly resemble the greenstone schists.

Diorite crops out at a number of places but was mapped separately at only two places. The outcrops otherwise are too small or not well enough exposed to map separately. Places where diorite crops out but is not shown on the map include the vicinity of Sedgefield, Pleasant Garden, along State highway 62 between Climax and High Point, and an area about 6 miles north of High Point. The diorite is a medium- to coarse-grained, dark-gray to greenish-gray rock consisting chiefly of plagioclase and hornblende. It generally is massive but at a few places is somewhat schistose.

The porphyritic granite outcrops in irregular, elongated patches across the northwestern corner of the county, where it is closely associated with the gneiss. In places the gneiss has been completely assimilated by the granite but in other places the gneiss has only been impregnated by emenations from the granitic magma. Because the granite has so intimately intruded the gneiss and because every gradation between true granite and true gneiss can be found, the map is necessarily greatly generalized.

The porphyritic granite is generally coarse-grained and medium gray, with large phenocrysts of feldspar. The ground mass consists of quartz, biotite, and feldspar. At most places the granite is entirely massive, but at some places the granite has some of the schistosity of the gneiss.

Ground water.—Nearly all domestic water supplies, many industrial supplies, and one of the three municipal water supplies are obtained from wells.

Dug wells are extensively used for domestic supplies in rural districts. Generally they are from about 15 to 50 feet deep and 2½ to 4 feet in diameter. Wells can generally be dug deep enough in gneiss and schist that they will not go dry even during a drought. However, at some places in granite, diorite, greenstone schist, and slate, the rock is so close to the surface that dug wells frequently go dry.

Bored wells are used considerably in suburban areas and are cheaply and easily constructed. They are bored by power-driven earth augers and cannot go below the completely weathered zone. For this reason, they are not always successful in rocks such as granite and diorite, where the water table at times declines below the weathered zone. Most bored wells are cased, and where they are properly constructed and of sufficient depth that they will not go dry, they are a satisfactory source of supply. Dug and bored wells

obtain their water from the weathered rock material at and just below the water table. For this reason, extra precautions must be observed to prevent contamination.

There are a large number of drilled wells in Guilford County. Records of more than 350 drilled wells are given in the tables of well data. Many of these were core-drilled with chilled shot and are 2 or 3 inches in diameter. There are many other core-drilled wells in Guilford County which do not appear in the table. Core-drilled wells have the advantages of all drilled wells and are cheaper than the larger percussion-drilled wells. However, although they are satisfactory for domestic wells, their small size makes them unsatisfactory for most industrial plants. About 7 or 8 gallons a minute is the maximum rate at which water can be removed from a 2-inch well by a deep-well pump. The average yield of 157 wells 2 inches in diameter in Guilford County is 6 gallons a minute and the average yield of 20 wells 3 inches in diameter is 10½ gallons a minute. These quantities are near the maximum amount that can be pumped from wells of that diameter and suggest that many of the wells would yield more than can be withdrawn from the well.

Most industrial, and public-supply wells are drilled with a percussion drill and are from 4 to 8 inches in diameter. The 6-inch well is by far the commonest. The larger-diameter wells encounter more fractures and cracks than small-diameter wells. Also, because a larger pump can be used, more water can be pumped from a large-diameter well than from a small-diameter well.

Drilled wells, both core-drilled and churn-drilled, have certain advantages over dug or bored wells. Because they are generally tightly cased and the water is obtained from crevices in the rock, they are much less liable to contamination. The depth of water in the well is generally large in comparison with the fluctuation of the water level, so that the yield decreases only slightly during a drought.

A summary of data on drilled wells 3 inches or more in diameter is given below:

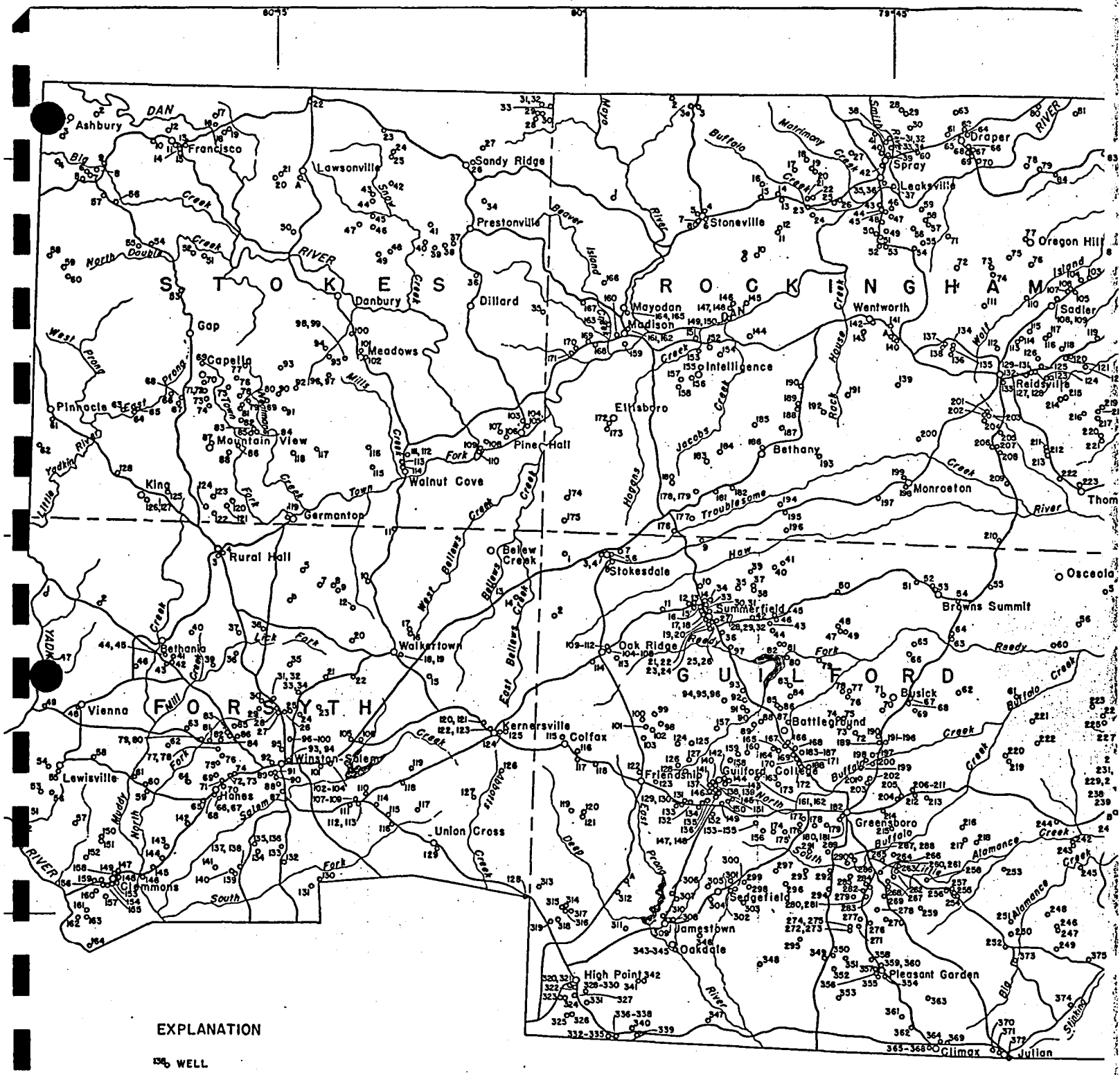
TABLE 16—SUMMARY OF DATA ON WELLS IN GUILFORD COUNTY
(Drilled wells 3 inches or more in diameter)

ACCORDING TO ROCK TYPE

Type of Rock	Number of Wells	Average Depth (feet)	Yield (gallons a minute)			Percent of wells yielding less than 1 gallon a minute
			Range	Average	Per foot of Well	
Gneiss	20	123	1—50	15.6	0.126	5.0
Greenstone schist	67	163	1—200	36.5	.223	3.0
Sericite schist	8	116	5—20	11.1	.105	0
Slate	4	273	5—15	10.5	.039	0
Sheared granite	54	175	0—70	14.4	.093	13.0
Porphyritic granite	26	137	½—30	10.9	.079	3.8
All wells	179	158	0—200	22.0	.139	6.1

ACCORDING TO TOPOGRAPHIC LOCATION

Topographic Location	Number of Wells	Average Depth (feet)	Yield (gallons a minute)			Percent of wells yielding less than 1 gallon a minute
			Range	Average	Per foot of Well	
Hill	41	203	0—100	15.5	0.076	24.4
Flat	44	170	0—200	22.2	.131	2.3
Slope	55	130	2—120	21.8	.168	0
Draw	16	125	2½—75	22.8	.182	0
Valley	22	158	10—100	34.4	.218	0



EXPLANATION

136 WELL

A SPRING

MAP OF THE

GREENSBORO AREA, NORTH CAROLINA

showing

LOCATION OF WELLS AND SPRINGS LISTED IN THE REPORT

SCALE

0 5 10 15 20 miles

Base compiled from County maps of the State Highway Department

RECORDS OF WELLS IN GUILFORD COUNTY—*Continued*

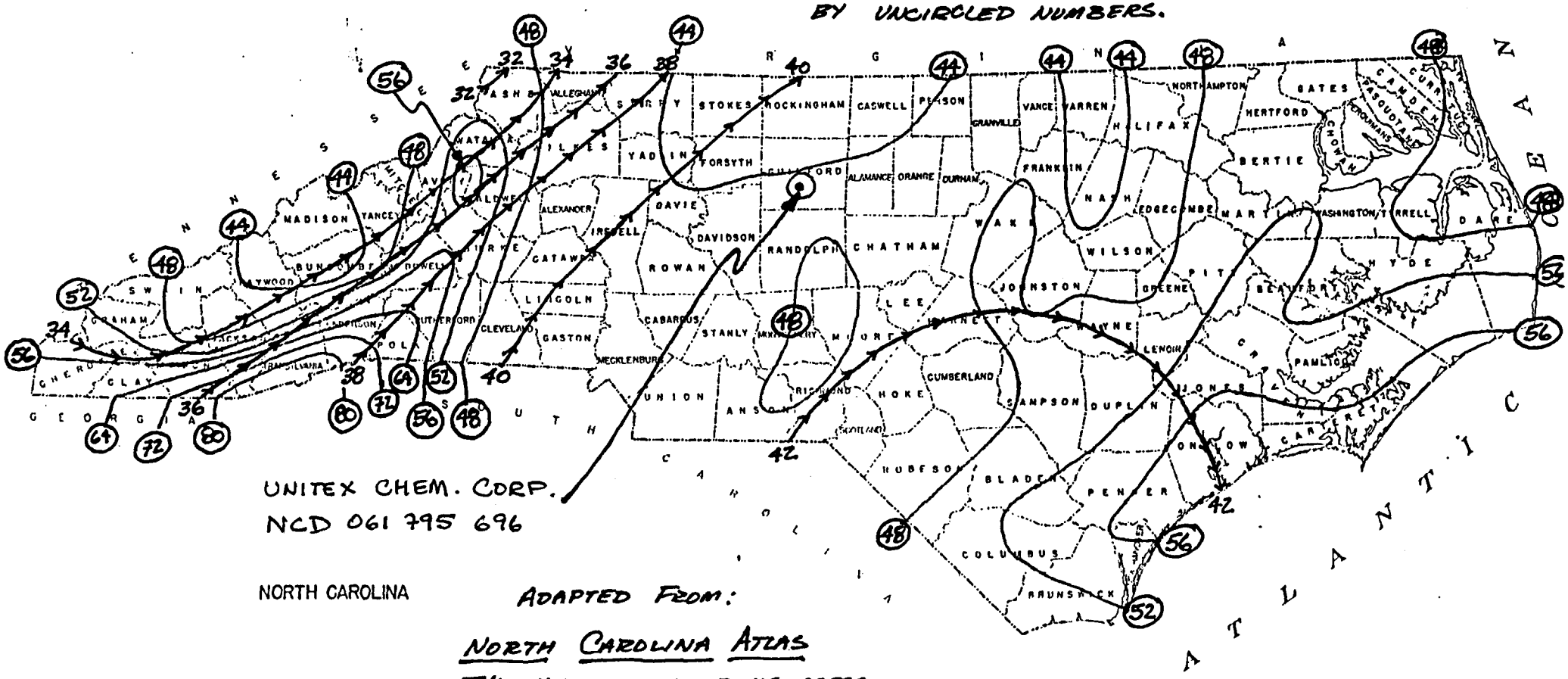
Well Number	Location	Owner	Driller[1]	Type of Well[2]	Depth of Well (feet)	Depth of Casing (feet)	Diameter of Well (inches)	Depth to Water (feet)[3]	Yield Gallons a Minute	Chief Aquifer	Topographic Location	Remarks
277	2¼ miles NW of Pleasant Garden	Alvin T. Haley	W. B. Mayhew?	Cr-Dr	72	68	2	35R	5-6	Granite	Hill	Water not hard, no iron.
278	3 miles N of Pleasant Garden	D. F. Engle	Carl Greggerson	Cr-Dr	117	32	2	35R	5-6	Greenstone	Slope	
279	4 miles S of Greensboro	C. E. Mosier	W. B. Mayhew	Cr-Dr	114	46	2	30R	4½	do		
280	Do	N L. Biggs	do	Cr-Dr	110	85±	2	30R	5-6	Granite		
281	Do	Kirby Kirtman	do	Cr-Dr	90	70	2		5-6	Greenstone		
282	3½ miles S of Greensboro	Mrs Sherril	do	Cr-Dr	60	50	2		8+	do	Slope	
283	Do	H A. Lane	do	Cr-Dr	55±		2		4	do	Hill	
284	Do	Mrs. D. W. Romsuer	do	Cr-Dr	98	80	2		5	do	Flat	
285	3 miles S of Greensboro	Charles B. Routh	Heater Well Co.	D-Dr	62	26	6	25R	3	do	Slope	Water somewhat hard.
286	2 miles S of Greensboro	American Agriculture Chemical Co.	Sydnor Well Co.	Dr	433	90	8	30R	35	do	Hill	Quartz vein at 400 feet.
287	Do	Carolina By-Products Co.	do	Dr	521		8		100+	do		
288	Do	do	do	Dr	299	50	8		13	do	Draw	Temperature 61° F. Water comes in at 176 feet.
289	1½ miles S of Greensboro	G. S. Miles, Stables	J. Stafford	Cr-Dr	198		2		5	do		
290	2 miles S of Greensboro	Armour Fertilizer Plant	Danville Well Co.	Dr	271	75	6	10R	60	do	Valley	Drawdown 35 feet. Temperature 61° F.
291	2½ miles SW of Greensboro	G. W. Crouse	W. B. Mayhew	Cr-Dr	80		2		7	Granite	do	
292	2¼ miles S of Greensboro	WGBG Radio Station	Heater Well Co.	Dr	58	43	6		20	Greenstone	do	Water from quartz veins.
293	3 miles SW of Greensboro	J. C. Inmon	W. B. Mayhew	Cr-Dr	90	60	2		5	Granite	Hill	Soft water, no iron.
294	3 miles S of Greensboro	O. D. Park	Danville Well Co.	Dr	85		6		15	Granite?		
295	4 miles SE of Sedgefield	Summer School		Dr	80		6		8-10	Granite	Flat	Water contains much iron.
296	2½ miles E of Sedgefield	W. R. Johnson	W. B. Mayhew	Cr-Dr	105	80	2		6-7	do	Hill	
297	2 miles NE of Sedgefield	R. H. Swiggart	Well Drillers Inc.	Dr	123		6		0	do	Flat	
298	1¼ miles NE of Sedgefield	H. A. McNary	W. B. Mayhew	Cr-Dr	60		2		6	Greenstone	Valley	
299	Do	Mrs. Jewel Smith	Heater Well Co.	Dr	87	76	6	30 R	20	do	Flat	Drawdown 12 feet. Log in table.
300	½ mile E of Sedgefield	Mrs. J. H. Adams	Sydnor Well Co.	Dr	900		6		0	Granite	Hill	
301	Sedgefield	Pilot Life Insurance Co.	Sydnor Well Co.	Dr	308		8		65	Greenstone	Slope	Water slightly hard
302	Do	Dr. A. T. Smith	J. Stafford	Cr-Dr	80		2		5-6	Granite	Hill	Soft water.
303	Do	R. E. Bowman, Dairy	J. R. Cummings	Dr	375		4		30-40	Greenstone		
304	½ mile SW of Sedgefield	Dr. R. F. Wakefield	J. Stafford	Cr-Dr	102		2		16	Granite	Flat	
305	1 mile W of Sedgefield	Mrs. J. H. Adams, Farm	Heater Well Co.	Dr	110		6		20	Greenstone?	Valley	Water somewhat hard. Temperature 59° F.
306	1½ miles N of Jamestown	Edward Armstrong John Aldred	do	Dr	51		6		8-10	Granite	Slope	
307	1¼ miles N of Jamestown	Edward Armstrong	F. L. Smith	Dr	146½		6		15-20	do	do	Water moderately hard.
308	Jamestown	Mrs. Lucie C. Ragsdale	Courson	Dr	150		4			do	Hill	Water slightly hard.
309	Do	R. E. Bundy	W. B. Mayhew	Cr-Dr	45		2		6	do	Slope	
310	Do	O. M. Bundy	do	Cr-Dr	90		2		6-7	do		
311	3 miles NE of High Point	Lindale Dairy Farm	F. L. Smith	Dr	240	32	6	10R	30±	Granite?	Valley	
312	4½ miles NE of High Point	Hortence White	Heater Well Co.	D-Dr	76		6		½	Granite	Hill	Dug 39 feet.
313	4½ miles NW of High Point	F. L. Warford	do	Dr	125	46	6		20	Gneiss	do	
314	3 miles N of High Point	Sherwood Forrest	Well Drillers Inc.	Dr	276	100+	6			Granite	Flat	Large yield.
315	Do	Mrs. Lena Thacker	L. R. Hartsell	Cr-Dr	80	40	4		15	do	Hill	
316	Do	O. W. Butner	M. A. Holder	Dr	164		5⅝		20	Granite?	Slope	Hardness 56 parts per million, some iron.
317	Do	Oak View School		Dr	90		6		20	Granite	do	
318	2¾ miles NW of High Point	J. C. Currie	L. C. Hartsell	Cr-Dr	57	50	4		30	do	do	Soft water.
319	Do	J. M. Young	do	Cr-Dr	53	54	4			do	Draw	Large yield. Hard water.
320	High Point	Adams Millis		Dr	120		4	40R	50	Greenstone	do	Hard water. Temperature 61° F.
321	Do	Adams Millis Corp. (Hosiery Mills)		Dr	124		6	35R	75	do	do	Temperature 62½° F.

[1], [2], [3] Footnotes given at beginning of table.

REF. #2

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.



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NCD 061 795 696

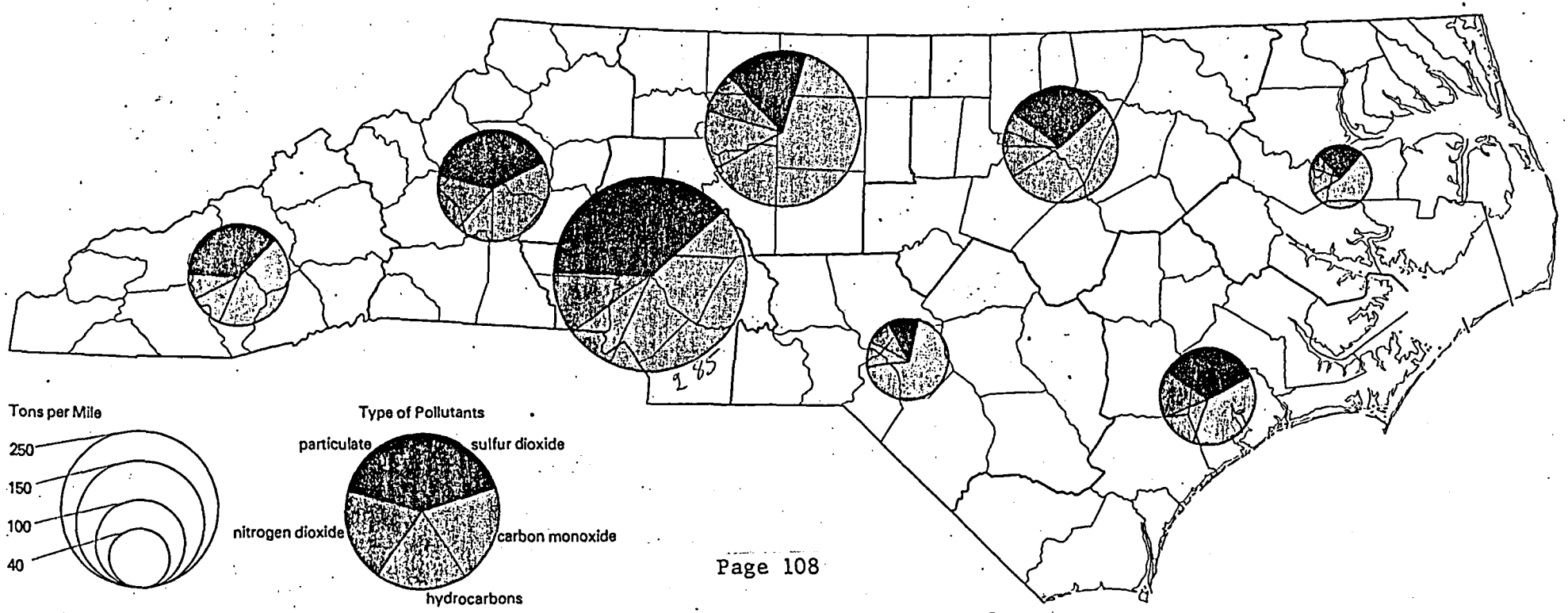
NORTH CAROLINA

ADAPTED FROM:

NORTH CAROLINA ATLAS
THE UNIVERSITY OF NC PRESS,
CHAPEL HILL, NC, FIGURE
5.15 PAGE 101 AND FIGURE
5.20 PAGE 103.

MEAN ANNUAL PRECIP. = 45.00"
MEAN ANNUAL EVAP. = 40.75"
NET PRECIP. = 4.25"

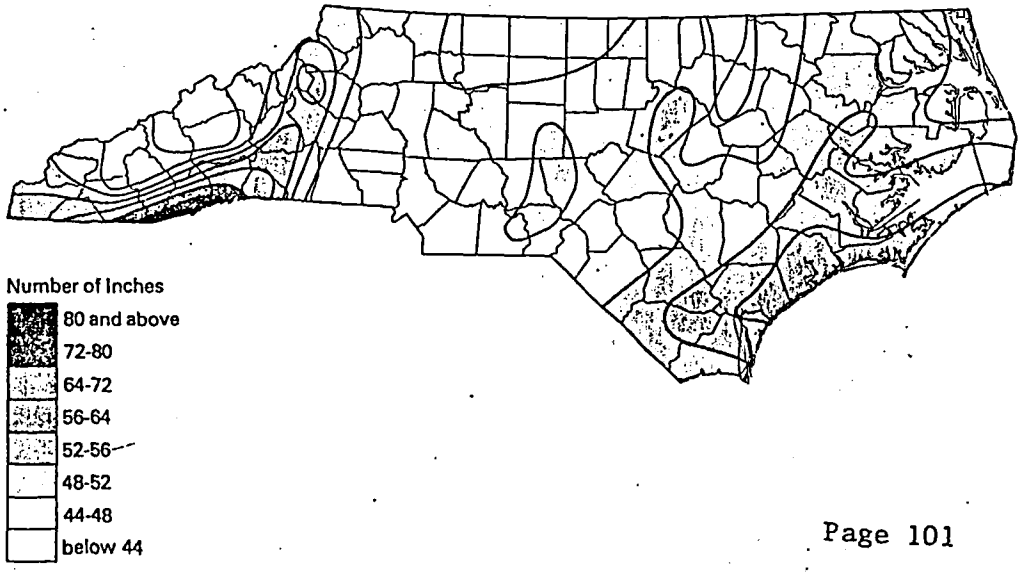
Figure 5.26. Emissions of Pollutants per Square Mile by N.C. Air Quality Control Regions, 1970



Source: N.C. Department of Natural and Economic Resources, *The North Carolina Plan for Implementing National Air Quality Standards*, 1970.

From: North Carolina Atlas, The University of North Carolina Press, Chapel Hill, N.C.

Figure 5.15. Average Annual Precipitation in N.C.



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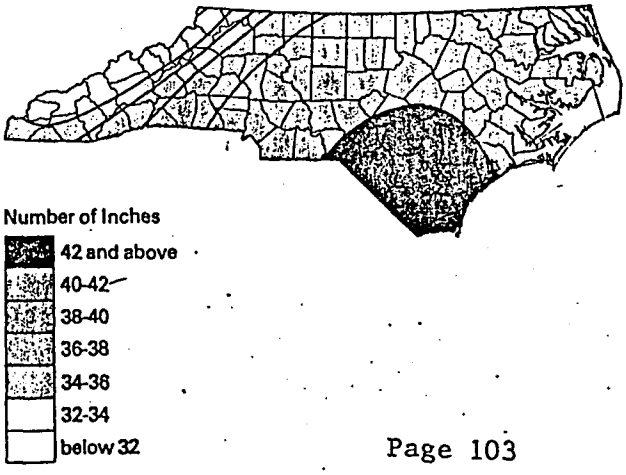
Source: U.S. Department of Commerce, *Weather and Climate in North Carolina,* 1972.

Figure 5.20. Mean Annual Evaporation in N.C.



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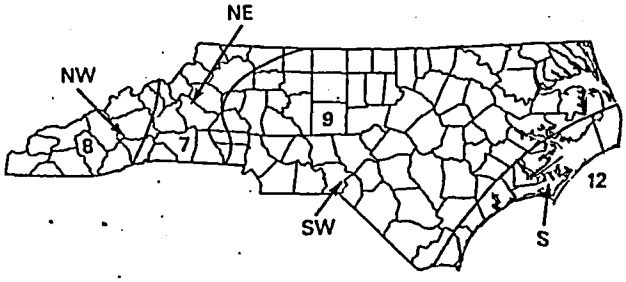
Source: U.S. Department of Commerce, *Climatic Summary of the U.S.,* 1972.

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.

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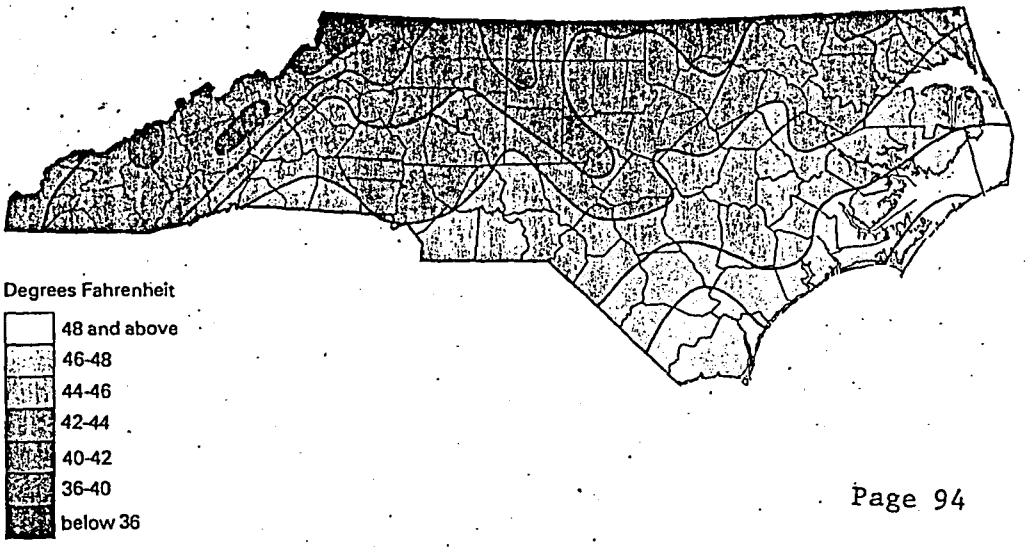
From: North Carolina Atlas, The University of North Carolina Press, Chapel Hill, N.C.

Figure 5.2. Average January Temperatures in N.C.



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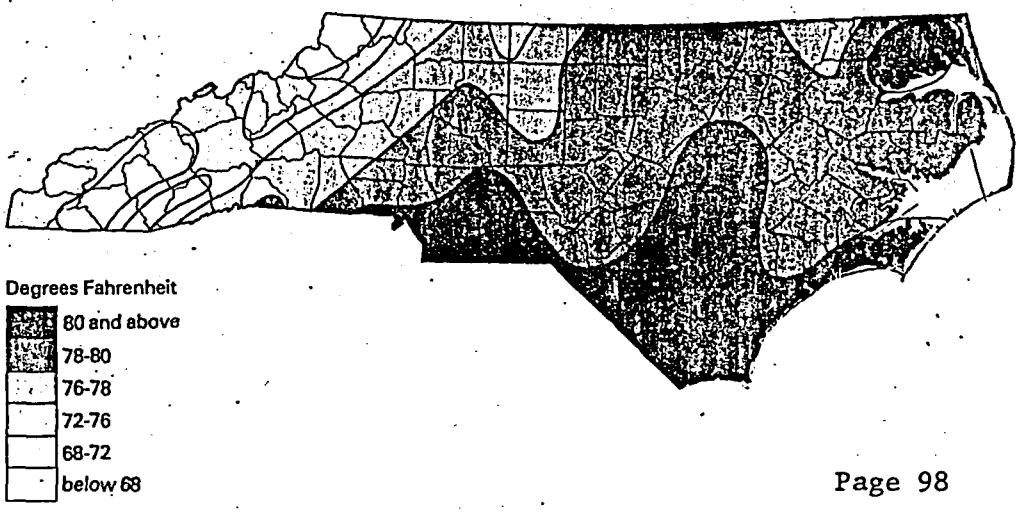
Source: U.S. Department of Commerce, *Weather and Climate in North Carolina,* 1972.

Figure 5.9. Average July Temperature in N.C.



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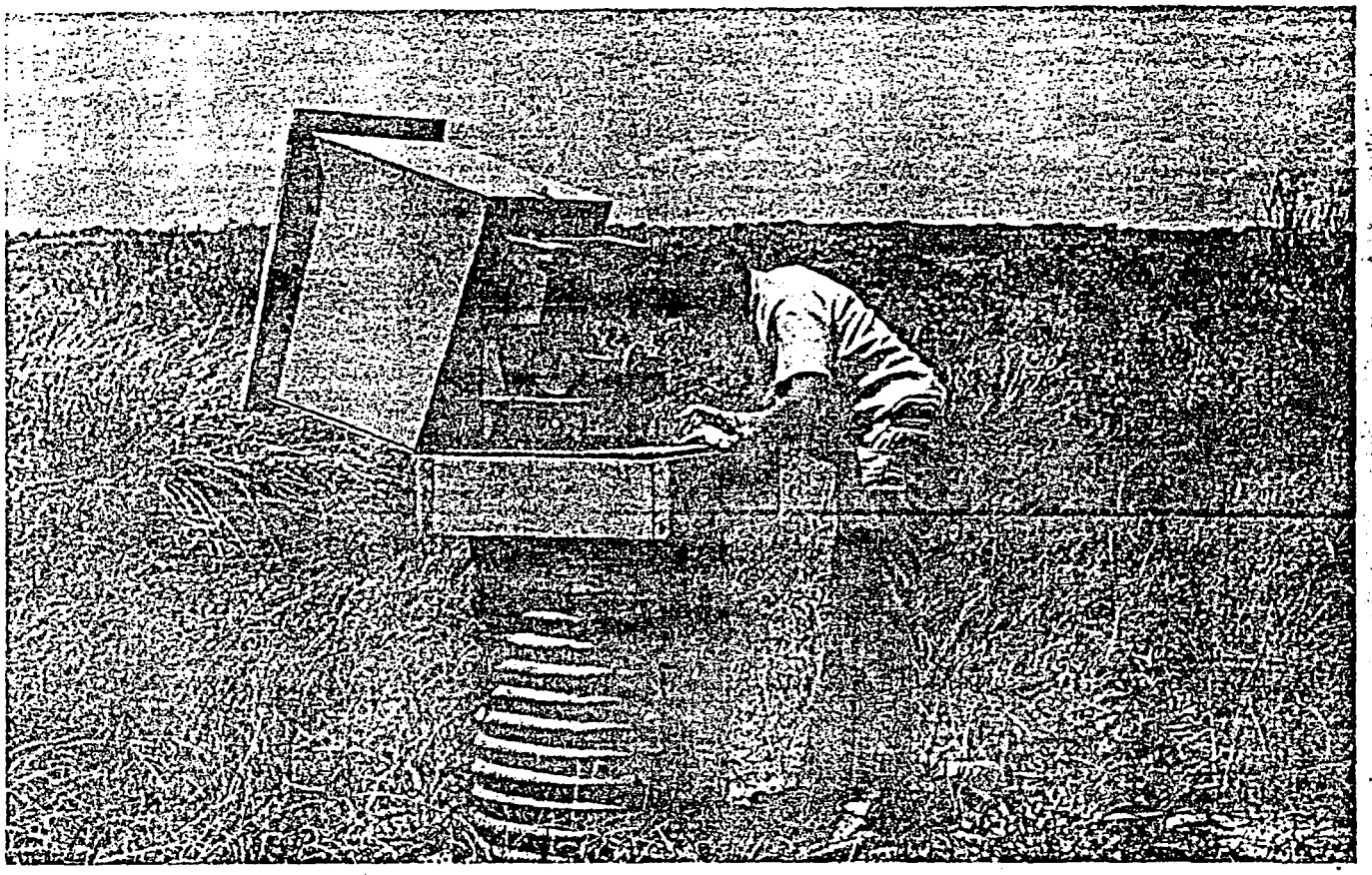
Source: U.S. Department of Commerce, *Weather and Climate in North Carolina,* 1972.

From: North Carolina Atlas, The University of North Carolina Press, Chapel Hill, N.C.

REF. #3

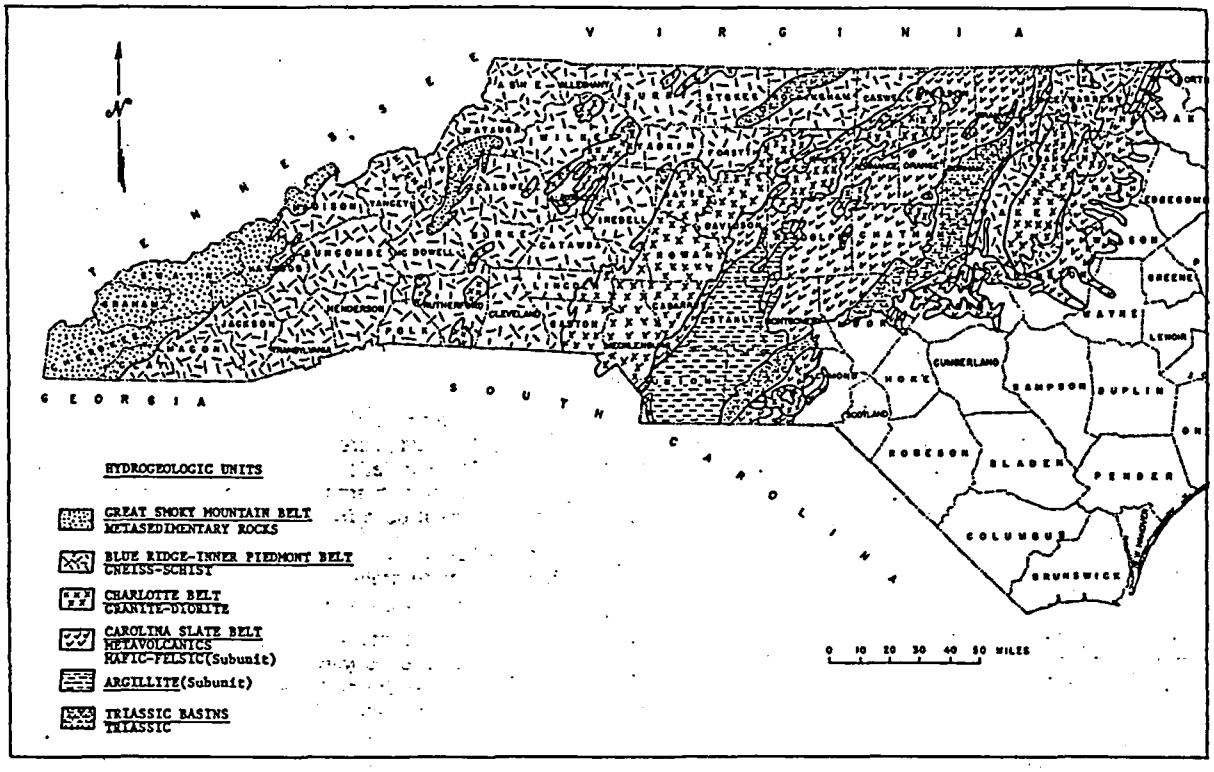
Basic Elements of Ground-Water Hydrology with Reference to Conditions in North Carolina



U.S. GEOLOGICAL SURVEY
WATER RESOURCES INVESTIGATIONS
OPEN-FILE REPORT 80-44

Prepared in cooperation with the
North Carolina Department of Natural
Resources and Community Development

Rock Units and Aquifers in the Piedmont and Mountains



The rocks underlying the Piedmont and mountains can be divided into two groups: (1) bedrock, and (2) saprolite (or residuum). The saprolite underlies the land surface and ranges in thickness from a foot or two near bedrock outcrops to more than 100 ft. Bedrock underlies the saprolite and is the parent rock from which the saprolite was derived in the process referred to as weathering.

Many stream valleys, especially those of larger streams, are underlain by a layer of material similar in composition to saprolite. This material, which has been deposited by the streams during floods, is correctly referred to as *alluvium*. However, to avoid unnecessary complications, we will lump the alluvium in with the saprolite for the purpose of this discussion.

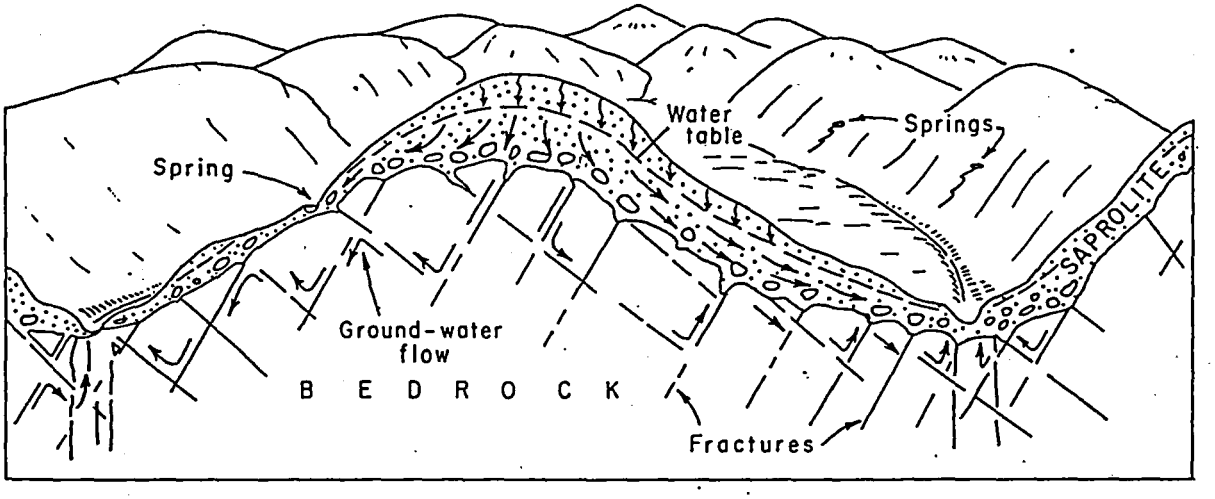
The bedrock underlying the Piedmont and mountains consists of many different types of igneous and metamorphosed igneous and sedimentary rocks. The Generalized Geological Map of North Carolina accompanying the discussion of WATER-BEARING ROCKS divides the bedrock in the Piedmont and mountains into six units. The 1:500,000 scale Geologic Map of North Carolina, published in 1958, divides the bedrock in the same area into 48 different units. But, a much larger number of units have been identified and are shown on large scale geologic maps.

The bedrock units differ from each other in mineral composition and other geologic characteristics. Fortunately, these differences do not result in large differences in hydraulic characteristics so that it is possible to combine the bedrock units into a relatively small number of hydrogeologic units.

The accompanying map shows the hydrogeologic units into which the bedrock in the Piedmont and mountains has been divided by the U.S. Geological Survey and the North Carolina Groundwater Section.

The most productive hydrogeologic units are the Great Smoky Mountain belt and the Blue Ridge-Inner Piedmont belt. The least productive units are the Carolina Slate Belt and the Triassic Basins. The Charlotte Belt is intermediate in productivity.

Ground-Water Situation in the Piedmont and Mountains



The *saprolite* (weathered rock) that forms the land surface in the Piedmont and mountains consists of unconsolidated granular material. It thus contains water in the pore spaces between rock particles.

The *bedrock*, on the other hand, does not have any significant intergranular (primary) porosity. It contains water, instead, in sheet-like openings formed along fractures (that is, breaks in the otherwise "solid" rock). Fractures in bedrock are of two types: (1) *joints*, which are breaks along which there has been no differential movement; and (2) *faults*, which are breaks along which the adjacent rocks have undergone differential movement.

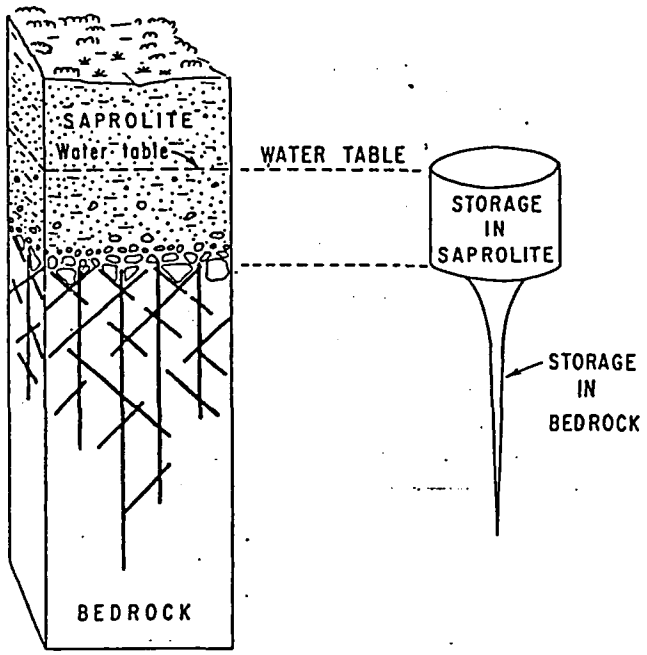
Faults are formed during earthquakes and generally contain larger and more extensive openings than those developed along joints. Joints, however, are far more numerous than faults.

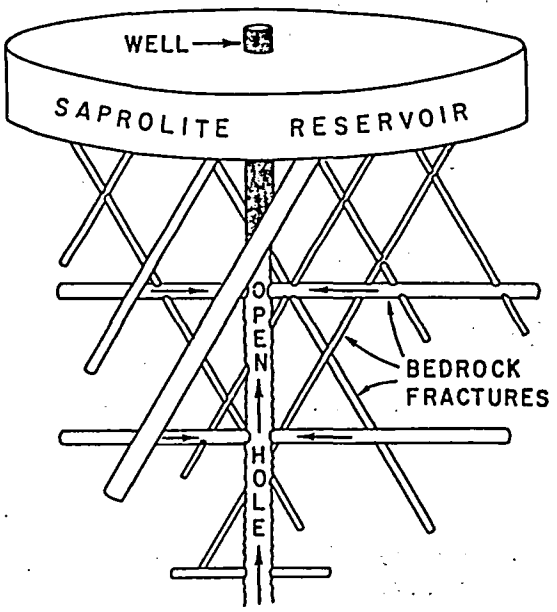
Fractures (joints and faults) are more abundant under valleys, draws, and other surface depressions than under hills. In fact, geologists assume that it is the presence of fractures that determined the position of valleys in the first place. Fractures tend to be more closely-spaced and the openings developed along them tend to be larger near the surface of the bedrock. Most fractures appear to be non water-bearing below a depth of 300 to 400 ft. Large water-bearing openings, penetrated below this depth are probably associated with faults.

The ground-water system in the Piedmont and mountains is recharged by precipitation on the interstream areas. A part of the precipitation infiltrates through the unsaturated zone to the water table, which normally occurs in the saprolite.

Ground water moves laterally and downward through the saprolite to points of ground-water seepage (springs) on the hillsides and to the streams in the adjacent valleys. Some of the water in the saprolite also moves downward into the bedrock and, thereafter, through the fractures to the adjacent valleys.

Hydraulic Characteristics of the Piedmont and Mountain Ground-Water System





One of the most basic concepts of ground-water hydrology is that aquifers function both as reservoirs, in which water is in storage, and as pipelines, which transmit water from one point to another. This is referred to as the *reservoir-pipeline concept.* This concept forms a useful basis on which to discuss the hydraulic characteristics of the Piedmont and mountain ground-water system.

The reservoir (storage) function of aquifers depends on the porosity. The pipeline function depends on the hydraulic conductivity and the thickness of the aquifer. The approximate range in porosity and hydraulic conductivity for the saprolite and bedrock is shown in the following table.

Rock type	Porosity in percent	Hydraulic conductivity in feet per day
Saprolite	20-30	1-20
Bedrock	0.1-1	1-20

The above values suggest that the principal difference between saprolite and bedrock is in water-storage capacity. In other words, the saprolite has the capacity to store a much larger quantity of water than does the bedrock. This is not the entire story, however.

As we noted above, the capacity of an aquifer to transmit water depends both on hydraulic conductivity and on aquifer thickness. The part of the bedrock containing water-bearing fractures is several times thicker than the saprolite.

We can then, without great error, view the ground-water system in the Piedmont and mountains as consisting of a saprolite reservoir overlying a bedrock pipeline consisting of numerous small, interconnected pipes. In the vicinity of a pumping well the bedrock fractures ("pipes") convey water from the saprolite reservoir to the well.

The yield of a well drawing from fractured bedrock depends on several factors. The most important of these are believed to be:

1. The number, size, areal extent, and degree of interconnection of the fractures penetrated by the well,
2. The thickness of saturated saprolite in the vicinity of the well and the specific yield of the saprolite, and
3. The hydraulic conductivity of the saprolite and the nature of the hydraulic connection between the saprolite and the bedrock.

The number and the size of the fractures control the rate at which water can enter the well. The areal extent and degree of interconnection of the fractures control the size of the area that supplies water to the well.

The thickness and the specific yield of the saprolite determines the volume of water available from storage in the saprolite. The hydraulic conductivity of the saprolite and the nature of the hydraulic connection between the saprolite and the bedrock determines the rate at which water can drain from the saprolite into the bedrock fractures.

HYDRAULIC CONDUCTIVITY AND TRANSMISSIVITY VALUES FOR TYPICAL NORTH CAROLINA ROCKS AND AQUIFERS

Hydraulic Conductivity of Selected Rocks

Material	Hydraulic conductivity (rounded values) (ft/day)	[(gal/day)/ft²]	(meters/day)	CM/SEC
Coarse sand	200	1500	60	7.06×10^{-2}
Medium sand	130	1000	40	4.59×10^{-2}
Silt	1	5	0.2	3.53×10^{-4}
Clay	0.001	0.01	0.0004	3.53×10^{-7}
Limestone (Castle Hayne)	300	2000	80	1.06×10^{-1}
Saprolite	5	50	2	1.77×10^{-3}
Granite and gneiss	5	50	2	1.77×10^{-3}
Slate	3	25	1	1.06×10^{-3}

Hydraulic conductivity replaces the term "field coefficient of permeability" and should be used when referring to the water-transmitting characteristic of material in quantitative terms. It is still permissible to refer in qualitative terms to "permeable" and "impermeable" material.

Average Values of Hydraulic Conductivity, Thickness, and Transmissivity for Selected Aquifers in North Carolina

Aquifer	CM/SEC	Hydraulic Conductivity (ft./day)	Thickness (ft.)	Transmissivity (ft²./day)
Post-Yorktown deposits	1.77×10^{-2}	50	20	1000
Yorktown Formation	1.77×10^{-2}	50	40	2000
Castle Hayne Limestone	1.06×10^{-1}	300	100	30000
Cretaceous deposits	7.06×10^{-3}	20	200	4000
Saprolite	1.77×10^{-3}	5	50	250
Granite and gneiss	1.77×10^{-3}	5	200	1000

Transmissivity replaces the term "coefficient of transmissibility" because, by convention, an aquifer is transmissive and the water in it is transmissible.

(from Heath, R. C., 1980, Basic elements of ground-water hydrology with reference to conditions in North Carolina; U.S. Geological Survey Water-Resources Investigations Report 80-44)

HYDRAULIC CONDUCTIVITY CONVERSION FACTORS:

$$\frac{FT}{DAY} \times \frac{30.5\ CM/FT}{86400\ SEC/DAY} = \frac{CM}{SEC}$$

OR

$$N\ \frac{FT}{DAY} = 3.53 \times 10^{-4}\ N\ \frac{CM}{SEC}$$

REFS. #4-#5

TO: RCRA 3012 File

FROM: Lee Crosby

RE: Unitex Chemical
NC D061795696

Unitex property was formerly owned by Armour Agrico Fertilizer Company located across the street from the Unitex facility. Armour Agrico discharged filter press material and waste water into a surface impoundment located on property which Unitex purchased from Armour Agrico in 1976. Unitex submitted a 103(c) CERCLA notification of hazardous waste site to EPA which has been requested from the Company.

LC/lw
1/85

UNITEX
Chemical Corp.
P. O. BOX 16344 • 520 BROOME ROAD • GREENSBORO, NORTH CAROLINA 27406
919 • 378-0965

January 21, 1985

RECEIVED
JAN 23 1985
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

Ms. Lee Crosby
Solids and Hazardous Waste Management Branch
Division of Health Services
P. O. Box 2091
Raleigh, North Carolina 27602-2091

Dear Ms. Crosby:

I am writing as you requested concerning the solid waste impounded on our plant property for which you have the analytical report.

The impoundment is approximately 230 ft. X 120 ft. x 2-6 ft. in depth. As you observed during your visit, the material is basically the appearance, consistency and particle size of dried filter aid. When surface is dry it is very hard; and firm when wet, similar to clay soils.

We trust this is the information you need, and hope we can get this site delisted and be able to cover over the area for parking or other uses.

Very truly yours,

Gene Hooper

M. E. Hooper
Executive Vice President

MEH/ph

CC: Mr. G. Page

REF. #6

J. L. [illegible]ERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Road - Greenville, South Carolina 29607 – (803) 232-1556

J. [illegible]ers, P.E.
F. [illegible]llcott, P.E.

Diplomate, American Academy of Environmental Engineers

January 10, 1983

Mr. George W. House
Brooks,Pierce, McLendon,
Humphrey and Leonard
Suite 1400 Wachovia Building
Greensboro, North Carolina 27402

Subject: Waste Analysis on two residue samples from Unitex site.

Dear George:

Please find enclosed laboratory analysis on two residue samples taken from the Unitex site. You will recall that in years past, a fertilizer plant across Highway 85 discharged certain of its residues to this sludge pond and on to the creek. During my visit on December 8, 1982, I collected two samples; one being at a one foot depth and a second sample being at approximately three foot depth. The sample at one foot depth was made up from ten points across the surface of the dried up pond, while the second sample was at a three foot depth. My interest in the one foot depth and three foot depth samples was simply that different processes could have been used at the fertilizer plant "over time" and that perhaps we would catch any differences by sampling at two depths.

As I mentioned on the telephone today, based on our results, it is our opinion that the waste residues would not be considered hazardous. The Federal Register, Volume 45, No. 98, dated Monday, May 19, 1980 on page 33121 and 33122 in subpart C- Characteristics of Hazardous Waste, gives the characteristics of a hazardous waste. These are: ignitability, corrosivity, reactivity, and EP toxicity. Based on our analysis, it is our opinion that the waste is not hazardous. The waste was not ignitable. It does not meet the characteristics of a corrosive waste and it was not reactive. Finally, we did the EP toxicity tests as listed on page 33122 of the referenced Federal Register and the chemical concentrations were less than the maximum concentrations of the contaminates listed thereon. So, from these laboratory tests, we conclude the waste is not hazardous.

Should you have any questions or comments, please call.

Very truly yours,

J. L. ROGERS AND CALLCOTT ENGINEERS, INC.

J. L. Rogers

J. L. Rogers, P.E.

JLR/dc

Enclosure

J. L. ROGERS & CALLCOTT ENGINEERS, INC.

718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

Consulting Engineers
Water & Sewer Design
Industrial Wastes
Grants & Permits
Solid Wastes
Subdivisions
Recreational Facilities

"LABORATORY SERVICES"

Laboratory Service
NPDES Monitoring
Water Analysis
Stream Surveys
Treatability Studies
Plant Performance Studies
Sampling & Pick-up

Client	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex Greensboro, N.C.	69-1023	12-9-82

Sample No:	Sample Description:	Date Transmitted:
# 23065	Locations 1 - 10 Lagoon Sludge - 3 ft. depth- Leachate	1-7-83

Parameter	units			Parameter	units		
BOD, 5-Day				Cyanide			
COD				Aluminum			
Dissolved Oxygen				Antimony			
pH		3.7		Arsenic	ug/l	500	
Residual Chlorine				Barium		< 0.10	
Total Solids				Cadmium		0.02	
Suspended Solids				Calcium			
Dissolved Solids				Chromium, total		0.02	
Volatile Solids				Chromium, hexavalent			
Volatile Suspended Solids				Cobalt			
Settleable Solids				Copper			
Acidity (as $CaCO_3$)				Iron			
Alkalinity (as $CaCO_3$)				Lead		0.06	
Color				Magnesium			
Turbidity	J.T.U.			Manganese			
Specific Conductance	umhos/cm			Mercury	ug/l	< 0.5	
Hardness (EDTA)				Nickel			
Chloride				Potassium			
Flouride				Selenium	ug/l	15.5	
Total Phosphorus				Silver		< 0.01	
Ortho-Phosphorus				Sodium			
Total Kjeldahl Nitrogen				Tin			
Ammonia Nitrogen				Titanium			
Nitrate				Zinc			
Nitrite				Oil & Grease, Freon Extractable			
Sulfate				Surfactants			
Sulfite				Phenolics	ug/l		
Sulfide				Fecal Coliform, colonies/100 ml			
Endrin		<0.0002		Fecal Streptococci, colonies/100 ml			
Lindane		<0.0004		Total Coliform, colonies/100 ml			
Toxaphene		<0.005		2,4 - D		< 0.10	
Methoxychlor		<0.10		2,4,5 - TP(Silvex)		< 0.01	

Results in milligrams per liter (mg/1) unless otherwise noted

Remarks:

Reported By: Margaret S Bart

J. L. ROGERS & CALLCOTT ENGINEERS, INC.

718 Lowndes Hill Rd.
Greenville, S.C. 29607
(803) 232-1556

Consulting Engineers
Water & Sewer Design
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Recreational Facilities

"LABORATORY SERVICES"

Laboratory Service
NPDES Monitoring
Water Analysis
Stream Surveys
Treatability Studies
Plant Performance Studies
Sampling & Pick-up

Client	Job No:	Date Received:
Brooks, Pierce, McLendon, Humphrey & Leonard - Unitex - Greensboro, N.C.	69-1023	12-9-82

Sample No:	Sample Description:	Date Transmitted:
# 23064	Locations 1 - 10 Lagoon Sludge - 1 ft. depth - Leachate	1-7-83

Parameter	units		Parameter	units	
BOD, 5-Day			Cyanide		
COD			Aluminum		
Dissolved Oxygen			Antimony		
pH		3.4	Arsenic	ug/l	430
Residual Chlorine			Barium		< 0.10
Total Solids			Cadmium		< 0.005
Suspended Solids			Calcium		
Dissolved Solids			Chromium, total		0.15
Volatile Solids			Chromium, hexavalent		
Volatile Suspended Solids			Cobalt		
Settleable Solids			Copper		
Acidity (as $CaCO_3$)			Iron		
Alkalinity (as $CaCO_3$)			Lead		0.06
Color			Magnesium		
Turbidity	J.T.U.		Manganese		
Specific Conductance	umhos/cm		Mercury	ug/l	0.7
Hardness (EDTA)			Nickel		
Chloride			Potassium		
Flouride			Selenium	ug/l	15
Total Phosphorus			Silver		< 0.01
Ortho-Phosphorus			Sodium		
Total Kjeldahl Nitrogen			Tin		
Ammonia Nitrogen			Titanium		
Nitrate			Zinc		
Nitrite			Oil & Grease, Freon Extractable		
Sulfate			Surfactants		
Sulfite			Phenolics	ug/l	
Sulfide			Fecal Coliform, colonies/100 ml		
Endrin		< 0.0002	Fecal Streptococci, colonies/100 ml		
Lindane		< 0.0004	Total Coliform, colonies/100 ml		
Toxaphene		< 0.005	2,4 - D		< 0.10
Methoxychlor		< 0.10	2,4,5 - TP(Silvex)		< 0.01

Results in milligrams per liter (mg/1) unless otherwise noted

Remarks:

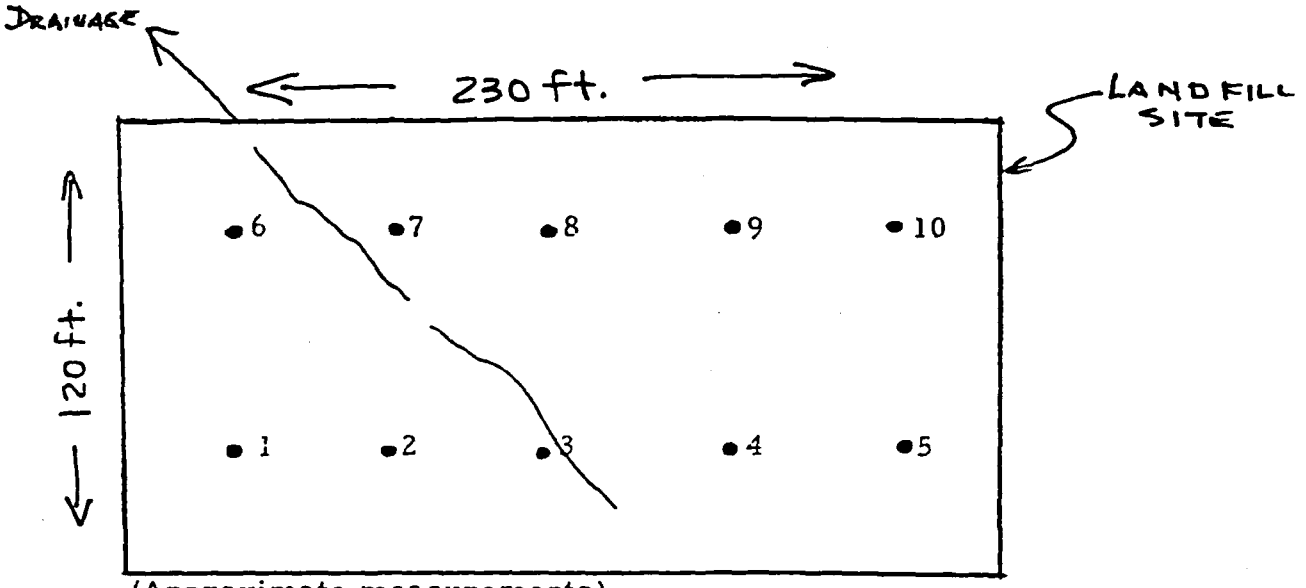
Reported By: Margaret S Bolt

J. L. ROGERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Road – Greenville, South Carolina 29607 – (803) 232-1556

L. Rogers, P.E.
D. Callcott, P.E.

Diplomate, American Academy of Environmental Engineers

UNITEX - GREENSBORO, N. C.



(Approximate measurements)

Sample # 23064 - a composite of Jars # 1 - #5 - all samples taken at 1 foot depth.

Jar # 1 - Locations 1 & 2
Jar # 2 - Locations 3 & 4
Jar # 3 - Locations 5 & 6
Jar # 4 - Locations 7 & 8
Jar # 5 - Locations 9 & 10

Sample # 23065 - a composite of Jars # 6 - # 10 - all samples taken at 3 foot depth.

Jar # 6 - Locations 1 & 2
Jar # 7 - Locations 3 & 4
Jar # 8 - Locations 5 & 6
Jar # 9 - Locations 7 & 8
Jar #10 - Locations 9 & 10

REF. #7

BROOKS, PIERCE, McLENDON, HUMPHREY & LEONARD
ATTORNEYS AND COUNSELLORS AT LAW
SUITE 1400 WACHOVIA BUILDING
GREENSBORO, NORTH CAROLINA 27402
(919) 373-8850

THORNTON H. BROOKS
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EDGAR B. FISHER, JR.
JERRY W. AMOS
W. ERWIN FULLER, JR.
JAMES T. WILLIAMS, JR.
M. DANIEL McGINN
MICHAEL D. MEEKER
JOHN L. SARRATT
WILLIAM G. McNAIRY
EDWARD C. WINSLOW III
HOWARD L. WILLIAMS
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JAN Y. BOSTIC
JOHN W. ORMAND III
SARAH F. SPARROW
V. RANDALL TINSLEY
STANLEY R. BARRINGER, JR.

AUBREY L. BROOKS (1872-1958)
W. H. HOLDERNESS (1904-1965)
L. P. McLENDON (1890-1968)
KENNETH M. BRIM (1898-1974)
C. T. LEONARD, JR. (1929-1983)

OF COUNSEL:
G. NEIL DANIELS

MAILING ADDRESS
P. O. DRAWER U

TELEX: 574301
FACSIMILE (919) 378-1001

March 30, 1988

Mr. Grover Nicholson
Solid Waste Management Section
Division of Health Services
North Carolina Department of Human Resources
P. O. Box 2091
Raleigh, NC 27602-2091

Re: Sampling of Unitex Lagoon

Dear Grover:

Rogers and Callcott Engineers, Inc. have completed a sampling program according to the sampling plan that you outlined for Unitex by letter dated October 25, 1985. Enclosed for your review are the Superfund Notice filed by Unitex, the January 10, 1983 letter from Rogers & Callcott reporting sampling results, your October 25, 1985 letter describing a sampling plan, and the March 28, 1988 report from Rogers & Callcott setting out the results of the sampling done according to your plan.

After you review these documents, please give me a call. In Unitex's view, the sampling results demonstrate that the Unitex lagoon does not contain organics (including pesticides), and that it is appropriate now to remove the lagoon from the Solid Waste Management Section's lists of potential hazardous waste sites.

Based on the sampling results, Unitex believes that it does not need to notify the Superfund Unit of the Solid Waste Management Section of an inactive hazardous substance or waste disposal site. I am sending a copy of this letter and the attachments to the Superfund Unit and asking the unit to let me know if they disagree about the need to give notice.

Unitex and I appreciate your assistance on this matter. I look forward to discussing it with you.

Sincerely,

Bill Ross, Jr.

William G. Ross, Jr.

WGR/cb

cc: Mr. George W. Page
State Superfund Unit

ROGERS & CALLCOTT
ENGINEERS, INC.
718 Lowndes Hill Road, Greenville, SC 29607
Phone (803) 232-1556

J. L. Rogers, P.E., Diplomate
F. D. Callcott, P.E.
S. W. Avery, Laboratory Director

March 28, 1988

Mr. William G. Ross Jr.
Brooks, Pierce, McLendon, Humphrey, and Leonard
1400 Wachovia Building, PO Drawer U
Greensboro, NC 27402

Dear Bill:

Enclosed please find the analysis result of sampling done by myself and Kathy Webb at the Unitex facility in Greensboro N.C.. Please note that the sampling was done in accordance with the schedule outlined in the October 25, 1985 letter to you from Grover Nichloson, Geologist with the state of N.C.

If you should have any questions regarding this report please call.

Sincerely,

J.L. ROGERS & CALLCOTT ENGINEERS, INC.

Sam W. Avery
Laboratory Manager

SWA/tlc: enclosure

ROGERS & CALLCOTT
ENGINEERS, INC.
718 Lowndes Hill Road, Greenville, SC 29607
Phone (803) 232-1556

J. L. Rogers, P.E., Diplomate
F. D. Callcott, P.E.
S. W. Avery, Laboratory Director

CLIENT: BROOKS, PIERCE, MCLENDON, HUMPHREY, AND LEONARD
PO DRAWER U
GREENSBORO, NC 27402
ATTENTION: BILL ROSS

PROJECT: UNITEX LAGOON SLUDGE SAMPLING AND ANALYSIS

DATE RECEIVED: 03/02/1988 DATE REPORTED: 03/28/1988

SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLING POINTS COMPOSITED
53309	#1 6" BELOW SURFACE	1, 2, 6
53310	#2 6" BELOW SURFACE	3, 7, 8
53312	#3 6" BELOW SURFACE	4, 5, 9, 10
53314	#4 6" ABOVE LAGOON BOTTOM	1, 2, 6
53311	#5 6" ABOVE LAGOON BOTTOM	3, 7, 8
53313	#6 6" ABOVE LAGOON BOTTOM	4, 5, 9, 10

PARAMETER	RESULT					
	53309	53310	53312	53314	53311	53313
PESTICIDES/HERBICIDES, ug/kg						
PESTICIDES						
Toxaphene	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Aldrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
BHC 1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
BHC 2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
BHC 3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
BHC 4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorodane	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4,4,-DDD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4,4,-DDE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
4,4,-DDT	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dieldrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Endosulfan I	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Endosulfan II	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Endosulfan Sulfate	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin Aldehyde	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Heptachlor	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Heptachlor Epoxide	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Lindane	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methoxychlor	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2,4 D	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2,4,5 TP	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PCB's	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

CONTINUED ON PAGE 2.

ROGERS & CALLCOTT
ENGINEERS, INC.
718 Lowndes Hill Road, Greenville, SC 29607
Phone (803) 232-1556

J. L. Rogers, P.E., Diplomate
F. D. Callcott, P.E.
S. W. Avery, Laboratory Director

CLIENT: BROOKS, PIERCE, MCLENDON, HUMPHREY, AND LEONARD
GREENSBORO, NC 27402

PROJECT: UNITEX LAGOON SLUDGE SAMPLING AND ANALYSIS

DATE RECEIVED: 03/02/1988 DATE REPORTED: 03/28/1988

SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLING POINTS COMPOSITE
53309	#1 6" BELOW SURFACE	1, 2, 6
53310	#2 6" BELOW SURFACE	3, 7, 8
53312	#3 6" BELOW SURFACE	4, 5, 9, 10
53314	#4 6" ABOVE LAGOON BOTTOM	1, 2, 6
53311	#5 6" ABOVE LAGOON BOTTOM	3, 7, 8
53313	#6 6" ABOVE LAGOON BOTTOM	4, 5, 9, 10

PARAMETER	RESULT					
	53309	53310	53312	53314	53311	53313
ACID EXTRACTABLES, ug/kg						
PHENOL	<250	<250	<250	<250	<250	<250
2-CHLOROPHENOL	<250	<250	<250	<250	<250	<250
2-NITROPHENOL	<250	<250	<250	<250	<250	<250
2,4-DIMETHYLPHEOL	<250	<250	<250	<250	<250	<250
2,4-DICHLOROPHENOL	<250	<250	<250	<250	<250	<250
P-CHLORO-M-CRESOL	<250	<250	<250	<250	<250	<250
2,4,6-TRICHLOROPHENOL	<250	<250	<250	<250	<250	<250
2,4-DINITROPHENOL	<250	<250	<250	<250	<250	<250
4-NITROPHENOL	<250	<250	<250	<250	<250	<250
4,6-DINITRO-O-CRESOL	<250	<250	<250	<250	<250	<250
PENTACHLOROPHENOL	<250	<250	<250	<250	<250	<250
BASE NEUTRAL EXTRACTABLES, ug/kg						
N-NITROSODIMETHYLAMINE	<250	<250	<250	<250	<250	<250
BIS (2-CHLOROETHYL) ETHER	<250	<250	<250	<250	<250	<250
1,3-DICHLOROBENZENE	<250	<250	<250	<250	<250	<250
1,4-DICHLOROBENZENE	<250	<250	<250	<250	<250	<250
1,2-DICHLOROBENZENE	<250	<250	<250	<250	<250	<250
BIS (2-CHLOROISOPROPYL) ETHER	<250	<250	<250	<250	<250	<250
HEXACHLOROETHANE	<250	<250	<250	<250	<250	<250
N-NITROSODI-N-PROPHYLAMINE	<250	<250	<250	<250	<250	<250
NITROBENZENE	<250	<250	<250	<250	<250	<250
ISOPHORONE	<250	<250	<250	<250	<250	<250
BIS (2-CHLOROETHOXY) METHANE	<250	<250	<250	<250	<250	<250
1,2,4-TRICHLOROBENZENE	<250	<250	<250	<250	<250	<250
NAPHTHALENE	<250	<250	<250	<250	<250	<250
HEXACHLOROBUTADIENE	<250	<250	<250	<250	<250	<250
HEXACHLOROCYCLOPENTADIENE	<250	<250	<250	<250	<250	<250

CONTINUED ON PAGE 3.

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F. D. Callcott, P.E.
S. W. Avery, Laboratory Director

CLIENT: BROOKS, PIERCE, MCLENDON, HUMPHREY, AND LEONARD
GREENSBORO, NC 27402

PROJECT: UNITEX LAGOON SLUDGE SAMPLING AND ANALYSIS

DATE RECEIVED: 03/02/1988 DATE REPORTED: 03/24/1988

SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLING POINTS COMPOSITE
53309	#1 6" BELOW SURFACE	1, 2, 6
53310	#2 6" BELOW SURFACE	3, 7, 8
53312	#3 6" BELOW SURFACE	4, 5, 9, 10
53314	#4 6" ABOVE LAGOON BOTTOM	1, 2, 6
53311	#5 6" ABOVE LAGOON BOTTOM	3, 7, 8
53313	#6 6" ABOVE LAGOON BOTTOM	4, 5, 9, 10

PARAMETER	RESULT					
BASE NEUTRAL EXTRACTABLES, ug/kg	53309	53310	53312	53314	53311	53313
2-CHLORONAPHTHALENE	<250	<250	<250	<250	<250	<250
DIMETHYLPHTHALATE	<250	<250	<250	<250	<250	<250
ACENAPHYLENE	<250	<250	<250	<250	<250	<250
2,6-DINITROTOLUENE	<250	<250	<250	<250	<250	<250
ACENAPHTHENE	<250	<250	<250	<250	<250	<250
2,4-DINITROTOLUENE	<250	<250	<250	<250	<250	<250
DIETHYLPHTHALATE	<250	<250	<250	<250	<250	<250
FLUORENE	<250	<250	<250	<250	<250	<250
4-CHLOROPHENYL PHENYL ETHER	<250	<250	<250	<250	<250	<250
DIPHENYLAMINE (N-NITROSO)	<250	<250	<250	<250	<250	<250
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	<250	<250	<250	<250	<250	<250
4-BROMOPHENYL PHENYL ETHER	<250	<250	<250	<250	<250	<250
HEXACHLOROBENZENE	<250	<250	<250	<250	<250	<250
PHENANTHRENE	<250	<250	<250	<250	<250	<250
ANTHRACENE	<250	<250	<250	<250	<250	<250
DI-N-BUTYLPHTHALATE	<250	<250	<250	<250	<250	<250
FLUORANTHENE	<250	<250	<250	<250	<250	<250
BENZIDINE	<250	<250	<250	<250	<250	<250
PYRENE	<250	<250	<250	<250	<250	<250
BUTYLBENZYLPHTHALATE	<250	<250	<250	<250	<250	<250
BENZO(A)ANTHRACENE	<250	<250	<250	<250	<250	<250
3,3'-DICHLOROBENZIDINE	<250	<250	<250	<250	<250	<250
CHRYSENE	<250	<250	<250	<250	<250	<250
BIS(2-ETHYLHEXYL)PHTHALATE	<250	<250	<250	<250	<250	<250
DI-N-OCTYLPHTHALATE	<250	<250	<250	<250	<250	<250
BENZO(B)FLUORANTHENE	<250	<250	<250	<250	<250	<250
BENZO(K)FLUORANTHENE	<250	<250	<250	<250	<250	<250
BENZO(A)PYRENE	<250	<250	<250	<250	<250	<250
INDENO(1,2,3-C,D)PYRENE	<250	<250	<250	<250	<250	<250
DIBENZO(A,H)ANTHRACENE	<250	<250	<250	<250	<250	<250
BENZO(G,H,I)PERYLENE	<250	<250	<250	<250	<250	<250

CONTINUED ON PAGE 4.

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718 Lowndes Hill Road, Greenville, SC 29607
Phone (803) 232-1556

J. L. Rogers, P.E., Diplomate
F. D. Callcott, P.E.
S. W. Avery, Laboratory Director

CLIENT: BROOKS, PIERCE, MCLENDON, HUMPHREY, AND LEONARD
GREENSBORO, NC 27402

PROJECT: UNITEX LAGOON SLUDGE SAMPLING AND ANALYSIS

DATE RECEIVED: 03/02/1988 DATE REPORTED: 03/24/1988

SAMPLE NUMBER	SAMPLE DESCRIPTION	SAMPLING POINTS COMPOSITED
53309	#1 6" BELOW SURFACE	1, 2, 6
53310	#2 6" BELOW SURFACE	3, 7, 8
53312	#3 6" BELOW SURFACE	4, 5, 9, 10
53314	#4 6" ABOVE LAGOON BOTTOM	1, 2, 6
53311	#5 6" ABOVE LAGOON BOTTOM	3, 7, 8
53313	#6 6" ABOVE LAGOON BOTTOM	4, 5, 9, 10

PARAMETER	RESULT					
VOLATILE, ug/kg	53309	53310	53312	53314	53311	53313
Benzene	<50	<50	<50	<50	<50	<50
Bromodichloromethane	<50	<50	<50	<50	<50	<50
Bromoform	<50	<50	<50	<50	<50	<50
Bromomethane	<50	<50	<50	<50	<50	<50
Carbon Tetrachloride	<50	<50	<50	<50	<50	<50
Chlorobenzene	<50	<50	<50	<50	<50	<50
Chloroethane	<50	<50	<50	<50	<50	<50
2-Chloroethylvinyl Ether	<50	<50	<50	<50	<50	<50
Chloroform	<50	<50	<50	<50	<50	<50
Chloromethane	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<50	<50	<50	<50	<50	<50
1,1 Dichloroethane	<50	<50	<50	<50	<50	<50
1,2 Dichloroethane	<50	<50	<50	<50	<50	<50
1,1 Dichloroethene	<50	<50	<50	<50	<50	<50
trans-1,2-Dichloroethene	<50	<50	<50	<50	<50	<50
1,2 Dichloropropane	<50	<50	<50	<50	<50	<50
cis-1,3-Dichloropropene	<50	<50	<50	<50	<50	<50
Trans 1,3 Dichloropropene	<50	<50	<50	<50	<50	<50
Ethyl benzene	<50	<50	<50	<50	<50	<50
Methylene Chloride	<50	<50	<50	<50	<50	<50
1,1,2,2 Tetrachloroethane	<50	<50	<50	<50	<50	<50
Tetrachloroethene	<50	<50	<50	<50	<50	<50
Toluene	<50	<50	<50	<50	<50	<50
1,1,1 Trichloroethane	<50	<50	<50	<50	<50	<50
1,1,2 Trichloroethane	<50	<50	<50	<50	<50	<50
Trichloroethene	<50	<50	<50	<50	<50	<50
Trichlorofluoromethane	<50	<50	<50	<50	<50	<50
Vinyl Chloride	<50	<50	<50	<50	<50	<50

REPORTED BY: Sam W. Avery
SAM W. AVERY, LABORATORY MANAGER

cc: GEORGE PAGE, UNITEX

J. L. ROGERS & CALLCOTT ENGINEERS, INC.
718 Lowndes Hill Road - Greenville, South Carolina 29607 – (803) 232-1556

J.L. Rogers, P.E.
F.D. Callcott, P.E.

Diplomate, American Academy of Environmental Engineers

CHAIN-OF-CUSTODY

Client: Unifi, Greensboro, N.C.

Job No.: #53309-14

Samplers: (Signature) Kathy Webb + Sam Avery					Remarks: composite samples @ 6" and 6' from old lagoon sludge	
Sample #	Date	Time	Comp.	Grab	Location	Preservation
	3-1-88	2:15	✓		No. 1	cool
	"	3:15	✓		No. 2	"
	"	3:30	✓		No. 5	"
	"	2:30	✓		No. 4	"
	3-2-88	3:45	✓		No. 3	"
	"	4:00	✓		No. 6	"

Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Relinquished by: (Signature) Kathy Webb	Date/Time 3-2-88 @ 3:20	Received for Lab by: (Signature) Sherry Padgett	Date/Time 3/2 @ 3:20

Remarks:
samples of sludge for Pest/Herb/A+B Neutrals and VOA

R 10/29

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

James G. Martin, Governor
Phillip J. Kirk, Jr., Secretary

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

25 October 1985

Mr. William G. Ross, Jr.
Brooks, Pierce, McLendon, Humphrey, and Leonard
1400 Wachovia Building, P.O. Drawer U
Greensboro, NC 27402

Subject: Sampling plan for Unitex Lagoon

Dear Bill:

As per our agreement of last week, I am sending you a sampling plan for the Unitex Chemical Lagoon. This plan describes practices that we would use and which, when coupled with the Rogers and Callcott report, would serve as the basis for our investigation of the site. When the analyses are finished, we will report our findings and make our recommendations to US EPA. It would help if the type and amount of waste originally deposited in the lagoon could be determined. We understand that you are pursuing that information. The plan is outlined below.

A. The purpose of this sampling plan is to determine the likelihood of any organics (including pesticides) being present in the old lagoon area. Since the waste deposit is reported to be between two and six feet deep, sampling will be done at two levels.

B. The original ten sampling points used by J.L. Rogers and Callcott Engineers, Inc., seem to give ample sampling coverage in this case. Their sampling point plan is attached. Samples of the material from approximately six inches below the surface and from approximately six inches above the lagoon bottom (above original soil) should be retrieved from each of the ten points. A hand auger hole can probably be used to locate the lagoon bottom at each point. Please use clean throwaway metal spoons or wooden tongue depressors (or similar devices) to retrieve the samples. Equipment used to dig at different sampling points (shovel, hand auger, etc.) should be decontaminated between each point by washing with soap and water, rinsing with de-ionized water, and then rinsing with isopropyl alcohol.

C. It is permissible to composite samples according to the following schedule. This practice will yield sufficient data on the site for present purposes, and still keep laboratory costs down. The samples of the upper six inches from points 1, 2, and 6 may be composited. The samples of the lower six inches from points 1, 2, and 6 may also be composited. Similarly, upper and lower samples from points 3, 7, and 8 and from points 4, 5, 9, and 10 may be composited. This practice should result in six samples for analyses. The following chart summarizes the compositing plan.

Sample No.	Sample Depth	Sampling Points Composited
1	6" below surface	1, 2, 6
2	6" below surface	3, 7, 8
3	6" below surface	4, 5, 9, 10
4	6" above lagoon bottom	1, 2, 6
5	6" above lagoon bottom	3, 7, 8
6	6" above lagoon bottom	4, 5, 9, 10

D. Please notify me or Lee Crosby at (919) 733-2178 at least 48 hours before sampling is to begin. We will plan to have a branch representative on-site prepared to split samples with your investigators.

E. Each of the six samples should undergo analyses for volatile and semi-volatile organics to include pesticide extractables. A list of the priority pollutants that should be analyzed for is attached. Analytical methods 8240 for purgeables (volatiles), 8270 for acid and base/neutral extractables (semi-volatiles) and pesticide extractables, or equivalent procedures, should be used. These methods are described in US EPA Publication SW 846.

Please call me or Lee Crosby at (919) 733-2178 if you have any questions about this plan and to notify us of your sampling date.

Sincerely,

Grover Nicholson, Geologist
Solid and Hazardous Waste Management Branch
Environmental Health Section

GN/lw/0102b

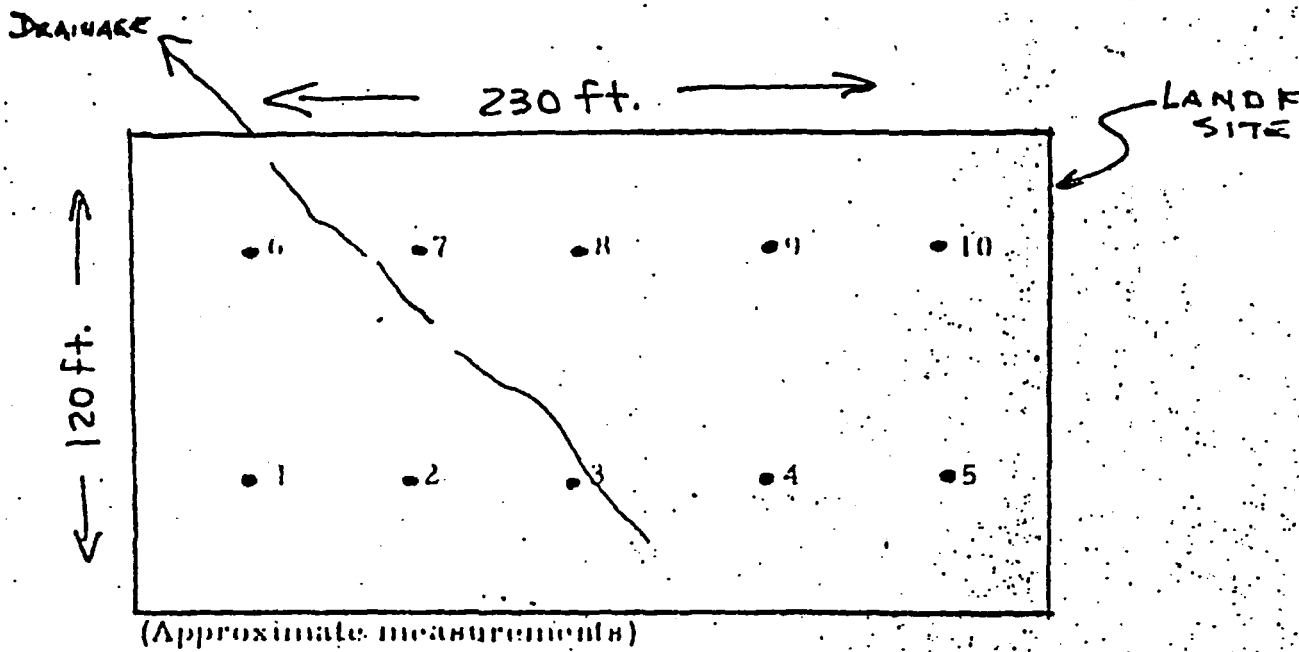
Lawndes Hill Road Greenville, South Carolina

J.L. Rogers, P.E.
F.D. Callcott, P.E.

Diplomate, American Academy of Environmental Eng

SAMPLING POINT PLAN

UNITEX - GREENSBORO, N. C.



(Approximate measurements)

COMPOUND	RESULTS
Chloromethane	----------
Bromomethane	----------
Vinyl chloride	----------
Chloroethane	----------
Methylene chloride	----------
Trichlorofluoromethane	----------
1,1-Dichloroethylene	----------
Bromochloromethane (SS)	----------
1,1-Dichloroethane	----------
Trans-1,2-Dichloroethene	----------
Chloroform	----------
1,2-Dichloroethane	----------
1,1,1-Trichloroethane	----------
Carbon Tetrachloride	----------
Bromodichloromethane	----------
1,2-Dichloropropane	----------
Trans-1,3-Dichloropropene	----------
Trichloroethylene	----------
Dibromochloromethane	----------
Cis-1,3-Dichloropropene	----------
1,1,2-Trichloroethane	----------
Benzene	----------
2-Chloroethylvinyl Ether	----------
2-Bromo-1-chloropropane (SS)	----------
Bromoform	----------
Tetrachloroethene	----------
1,1,2,2-Tetrachloroethane	----------
1,4-Dichlorobutane (SS)	----------
Toluene	----------
Chlorobenzene	----------
Ethylbenzene	----------
Acrolein	----------
Acrylonitrile	----------

ACID EXTRACTABLES

2-Chlorophenol	----------
2-Nitrophenol	----------
Phenol	----------
2,4-Dimethylphenol	----------
2,4-Dichlorophenol	----------
2,4,6-Trichlorophenol	----------
4-Chloro-3-methylphenol	----------
2,4-Dinitrophenol	----------
2-Methyl-4,6-dinitrophenol	----------
Pentachlorophenol	----------
4-Nitrophenol	----------
----------	----------
----------	----------

COMPOUND	RESULTS
1,3-Dichlorobenzene	----------
1,4-Dichlorobenzene	----------
Hexachloroethane	----------
Bis(2-chloroethyl)ether	----------
1,2-Dichlorobenzene	----------
Bis(2-chloroisopropyl)ether	----------
N-Nitrosodipropylamine	----------
Isophorone	----------
Nitrobenzene	----------
Hexachlorobutadiene	----------
1,2,4-Trichlorobenzene	----------
Naphthalene	----------
Bis(2-chloroethoxy)methane	----------
Hexachlorocyclopentadiene	----------
2-chloronaphthalene	----------
Acenaphthylene	----------
Acenaphthene	----------
Dimethylphthalate	----------
2,6-Dinitrotoluene	----------
Fluorene	----------
4-Chlorophenylphenylether	----------
2,4-Dinitrotoluene	----------
1,2-Diphenylhydrazine	----------
Diethylphthalate	----------
N-Nitrosodiphenylamine	----------
Hexachlorobenzene	----------
4-Bromophenylphenylether	----------
Phenanthrene	----------
Anthracene	----------
Dibutyl Phthalate	----------
Fluoranthene	----------
Pyrene	----------
Benzidine	----------
Butyl benzyl phthalate	----------
Bis (2-ethylhexyl)phthalate	----------
Chrysene	----------
Benzo(a)anthracene	----------
3,3'-Dichlorobenzidine	----------
Dioctylphthalate	----------
Benzo(b)fluoranthene	----------
Benzo(k)fluoranthene	----------
Benzo(a)pyrene	----------
Indeno(1,2,3-c,d)pyrene	----------
Dibenzo (a,h)anthracene	----------
Benzo(g,H,i)perylene	----------
N-nitrosodimethylamine	----------
Bis(chloromethyl)ether	----------
2,3,7,8-Tetrachlorodibenzo-p-dioxin	----------
----------	----------
----------	----------
----------	----------

COMPOUND	RESULTS
α-BHC	----------
β-BHC	----------
δ-BHC	----------
Heptachlor	----------
γ-BHC	----------
Aldrin	----------
Heptachlor epoxide	----------
Endosulfan I	----------
Dieldrin	----------
4,4'-DDE	----------
4,4'-DDD	----------
Endrin	----------
Endosulfan II	----------
4,4'-DDT	----------
Endosulfan sulfate	
Chlordane	----------
Toxaphene	----------
PCB-1242	----------
PCB-1254	----------
Monochloro Biphenyl	----------
Dichloro Biphenyl	----------
Trichloro Biphenyl	----------
Tetrachloro Biphenyl	----------
Pentachloro Biphenyl	----------
Hexachloro Biphenyl	----------

REFS: #8-#9

Reference #8.

USGS 7 1/2' Topographic Quadrangles

Greensboro, McLeansville, Climax,
and Pleasant Garden

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF NORTH CAROLINA
HIGHWAY AND PUBLIC WORKS COMMISSION

GREENSBORO QUADRANGLE
NORTH CAROLINA-GUILFORD CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

COMMUNITY WELL SYSTEMS

1109	Gambles MHP	2 wells	172 people
1113	Hadley MHP	1 well	74 people
1117	Holiday Hills	2 wells	182 people
1119	Jones MHP	1 well	88 people
1121	Lakeview Trailer Park	1 well	96 people
1126	Monroe's MHP	2 wells	203 people
1134	Pleasant Acres MHP	1 well	53 people
1143	Country Club MHP	3 wells	500 people
1147	Willard's Trailer Park	1 well	60 people
1150	Woolard's Trailer Park	1 well	91 people
1185	Bower's Memorial Rest Home	1 well	35 people
	AKA Serenity Care Rest Home		
1560	Greensboro Campground I (KOA)	1 well	252 people
1577	Clapp's Nursing Center	1 well	92 people

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1969. 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 10 FEET
DATUM IS MEAN SEA LEVEL

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

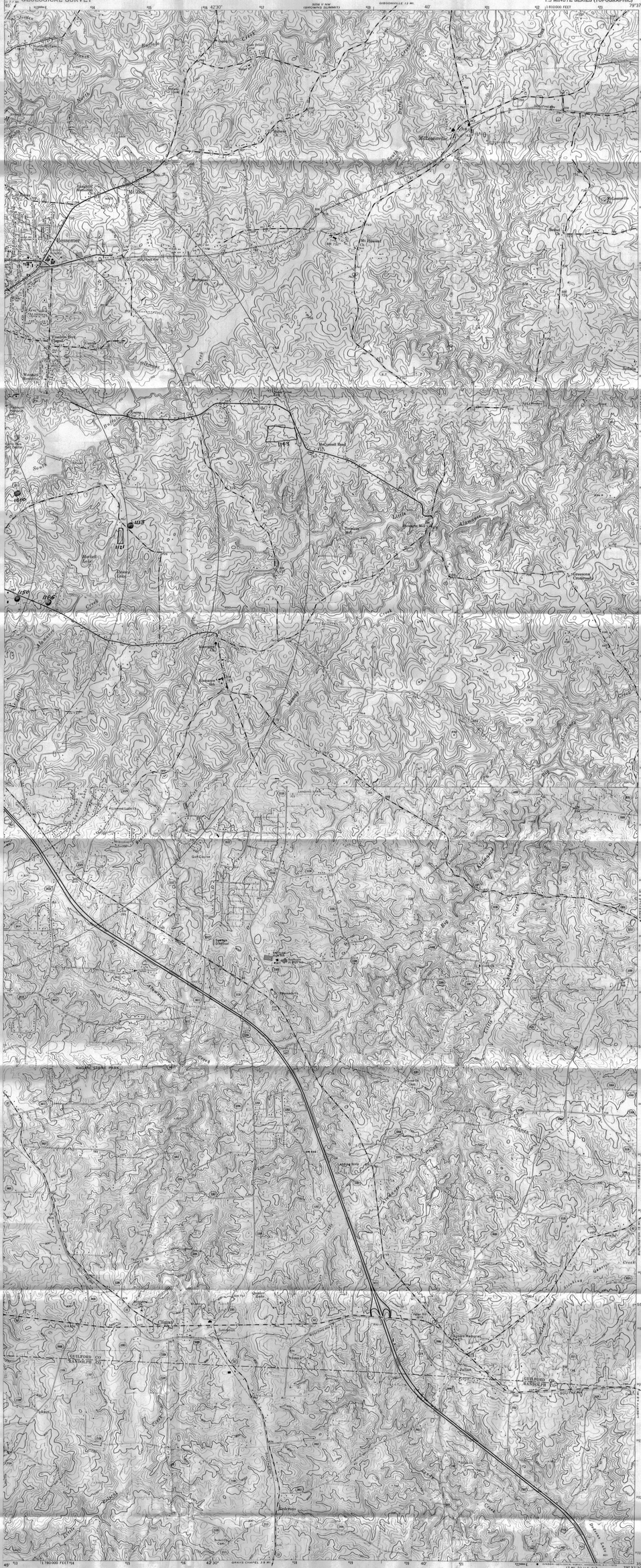
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

PLEASANT GARDEN, N.C.
N3552.5—W7945/7.5
1970

AMS 5055 IV NE—SERIES V842

UNITED STATES
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MC LEANSVILLE QUADRANGLE
NORTH CAROLINA-GUILFORD CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1969. Field checked 1970.

Projection and 10,000-foot grid ticks: North Carolina coordinate system (Lambert conformal conic)
1,000-meter Universal Transverse Mercator grid ticks, zone 17, shown in blue 1927 North American datum

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

UTM GRID AND 1970 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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

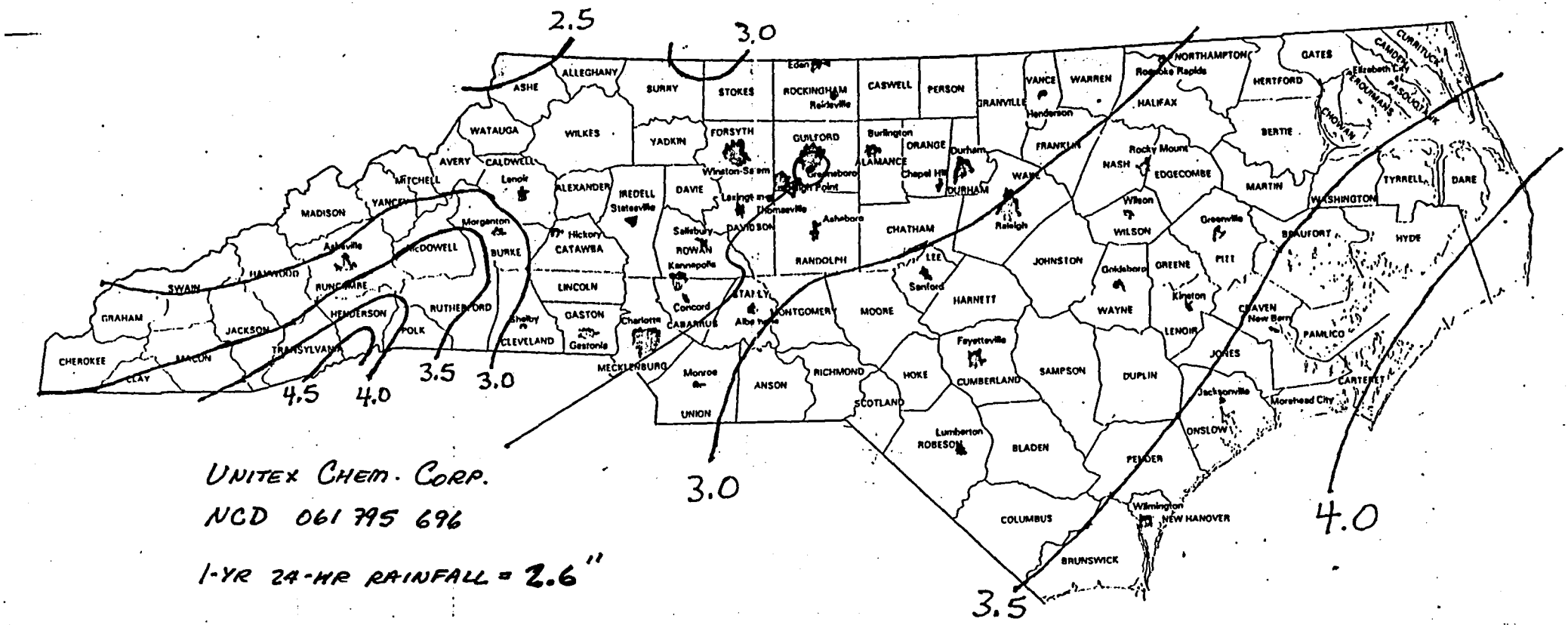
CLIMAX, N. C.
N.8552.5—W7937.5/7.5
1970

AMS 5055 I NW—SERIES V842

ONE-YEAR 24-HOUR RAINFALL IN INCHES

SOURCE: RAINFALL FREQUENCY ATLAS OF THE UNITED STATES, TECH. PAPER NO. 40, U.S. DEPT. OF COMMERCE, U.S. GOV'T PRINTING OFFICE, WASHINGTON DC, 1963.

TAKEN FROM: UNCONTROLLED HAZARDOUS WASTE SITE RANKING SYSTEM A USERS MANUAL (HW-10) PAGE 33 FIG. 8

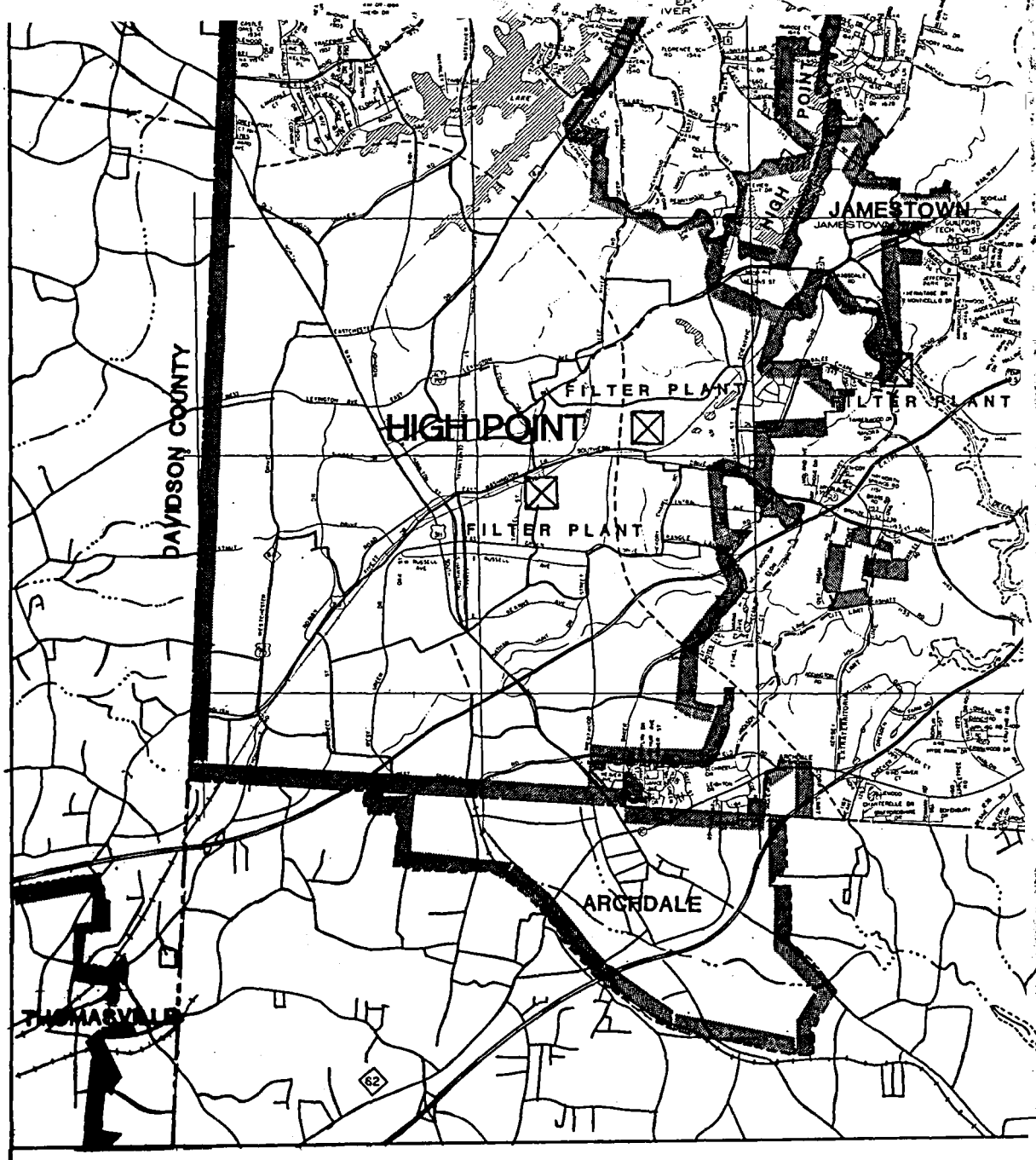


UNITEX CHEM. CORP.

NCD 061 795 696

1-YR 24-HR RAINFALL = 2.6"

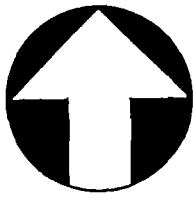
REFS. #10-#11



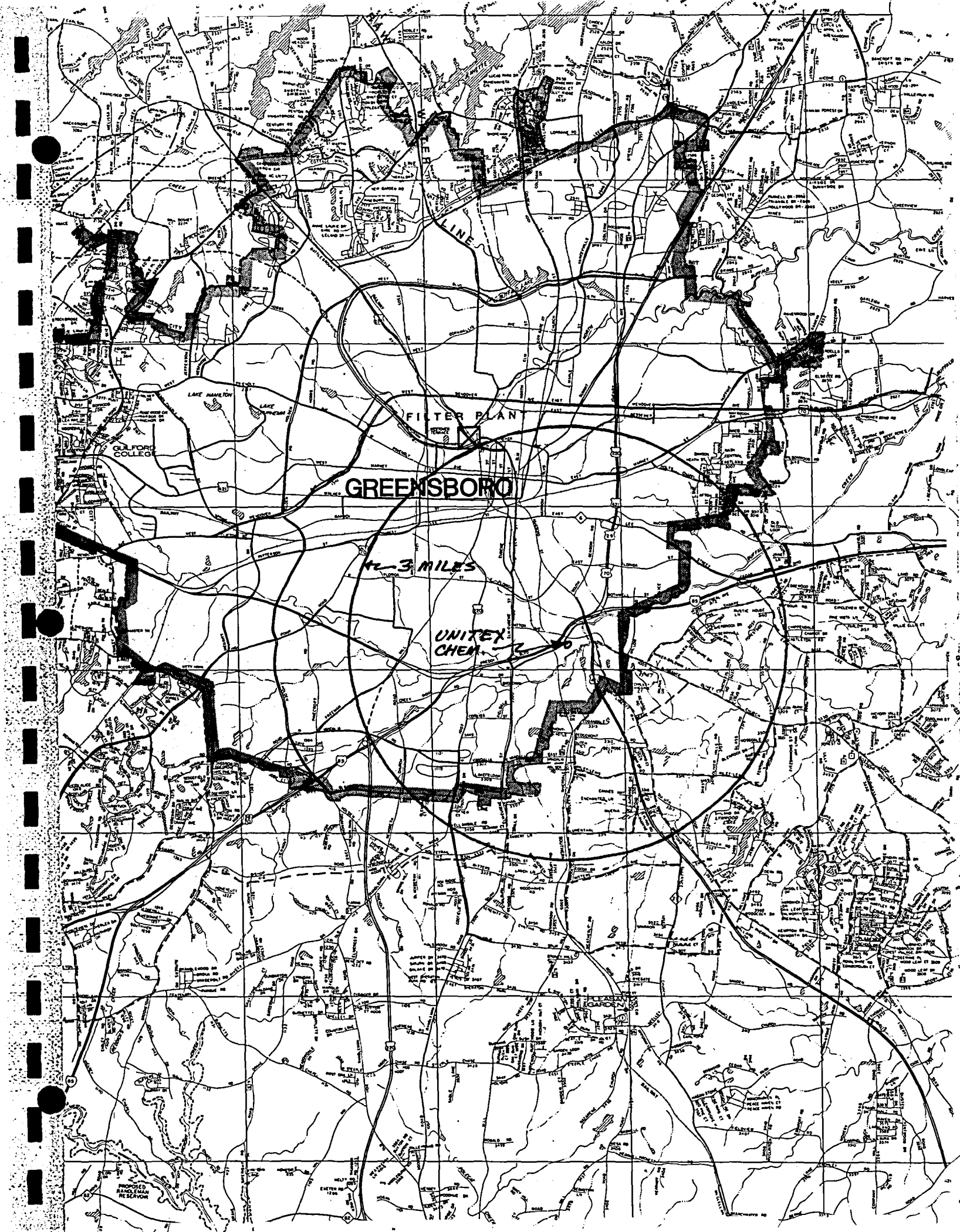
MAP 8

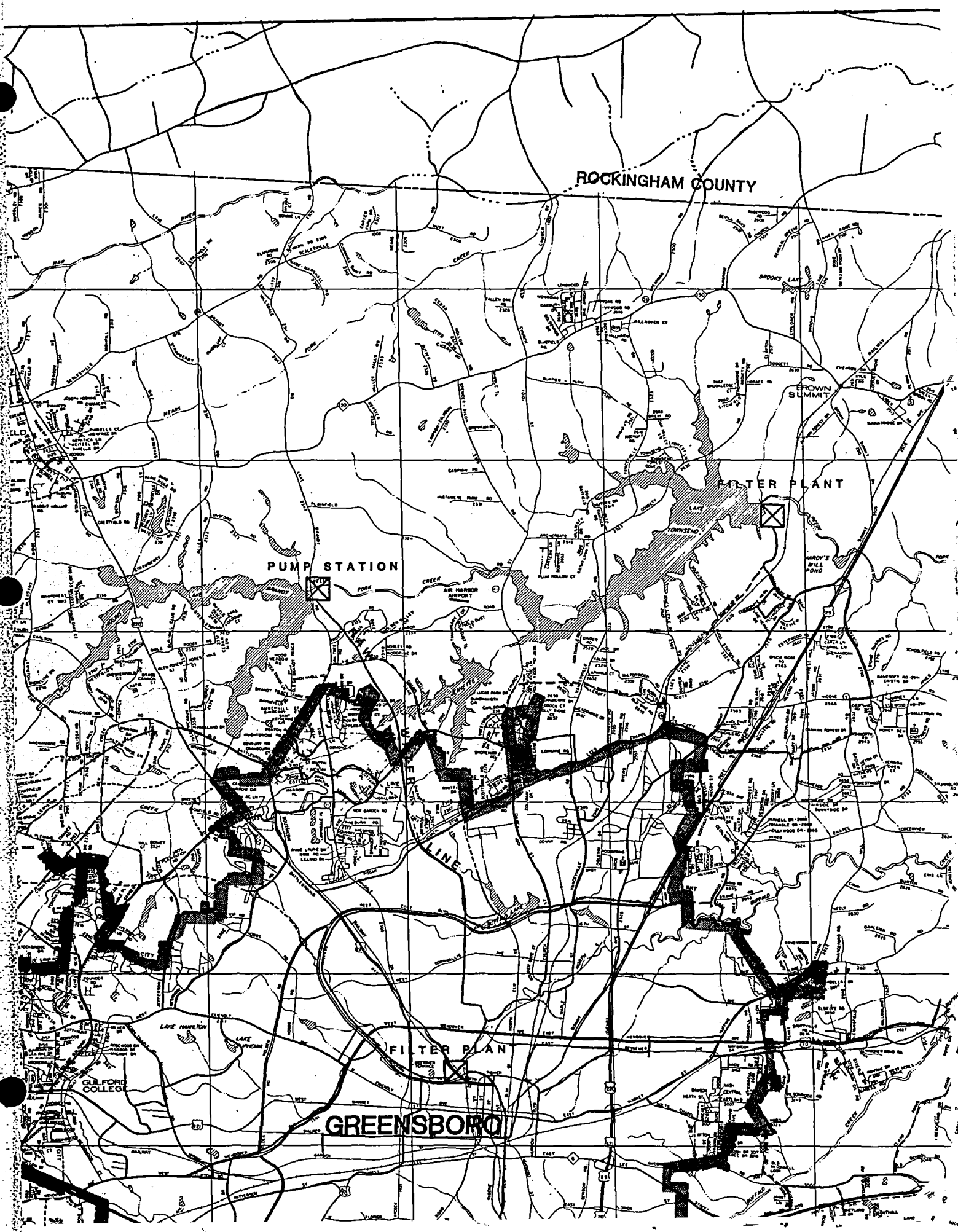
COMPREHENSIVE PLAN

GUILFORD COUNTY, NC



SCALE IN MILES


FILTER PLANT
GREENSBORO
GUILFORD COLLEGE
LAKE HAMILTON
3 MILES
UNITEX CHEM.
PROPOSED RANDLEMAN RESERVOIR


ROCKINGHAM COUNTY
BROWN SUMMIT
FILTER PLANT
PUMP STATION
AIR HARBOR AIRPORT
LAKE TOWNSEND
LAKE HAMILTON
FILTER PLANT
GUILFORD COLLEGE
GREENSBORO

DHR - ENVIRONMENTAL HEALTH SECTION - WATER SUPPLY BRANCH
ALPHABETICAL WITHIN COUNTY LISTING OF ACTIVE COMMUNITY PWS

PWS NAME	PWID	RES NAME	ADDRESS	CITY	ZIP	T	A	POP.SRV	S	PHONE
ARVAN TRAILER PARK	0241102	MR VAN HOOVER OR MGR	5505 HARVEY RD	JAMESTOWN	27282	C	A	147	G	919-454-2621
AUTUMN FOREST MOBILE HOM	0241103	RON WHARY OR MGR	RT 3 BOX 1	BROWNS SUMMI	27214	C	A	716	G	919-656-3276
BON AIRE ACRES SUBD	0241193	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	112	G	919-299-1325
BOWER'S MEMORIAL REST HO	0241185	BEVERLY MILLER OR MG	2500 OLIVET COURT	GREENSBORO	27406	C	A	50	G	919-275-6932
BRADY'S MOBILE HOME PARK	0241104	MRS EDGAR W BRADY OR	5044 RANDLEMAN RD	GREENSBORO	27406	C	A	77	G	919-674-2864
CEDAR PARK MHP	0241105	FRED D CURL OR MGR	707 ENGLISH ST	GREENSBORO	27405	C	A	130	G	919-379-9155
CEDAR VALLEY MHP	0241152	GARY E HEDRICK OR MG	PO BOX 16787	GREENSBORO	27416	C	A	298	G	919-694-2697
CIRCLE M MHP	0241106	JOHN E MARTIN OR CUR	4400 US-220 NORTH	SUMMERFIELD	27358	C	A	312	G	919-643-3873
CLAPP'S NURSING CENTER	0241577	RILEY CLAPP OR MGR	PO BOX 249	PLEASANT GAR	27313	C	A	58	G	919-674-2252
COUNTRY CLUB MHP	0241143	SID S CHAMPION OR MG	3823 MCCONNELL RD	GREENSBORO	27405	C	A	500	G	919-697-0515
COUNTRY LIVING MOBILE HM	0241114	NORRIS A DILLS OR MA	108 MIDLAND AVENUE	HIGH POINT	27260	C	A	88	G	919-885-5690
COUNTRY SIDE MANOR	0241120	CINDY KING OR MANAGE	7700 US 158	STOKESDALE	27357	C	A	105	G	919-643-6301
COUNTRYSIDE	0241191	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	70	G	919-299-1325
COUNTRYSIDE VILLAGE RET	0241192	CINDY KING OR MANAGE	7700 US 158	STOKESDALE	27357	C	A	25	G	919-643-6301
CROWN MHP	0241112	DANNY NELSON OR MGR	RT 7 BOX 830 LOT 97	GREENSBORO	27407	C	A	305	G	919-452-3260
GAMBLES MHP	0241107	MRS J F GAMBLE OR MG	5215 SHADD LANE	GREENSBORO	27406	C	A	172	G	919-674-0058
GIBSONVILLE TOWN OF	0241025	TOWN OF GIBSONVILLE-	129 W MAIN ST	GIBSONVILLE	27249	C	A	3,887	G	919-449-4144
GORDON'S TR PK	0241110	WILLIAM D. GORDON OR	305 GRASSY MEADOW C	GREENSBORO	27409	C	A	42	G	919-299-6107
GREENSBORO CAMPGROUNDS I	0241509	GEORGE J JONES JR OR	3909 RIVERDALE DRIV	GREENSBORO	27406	C	A	252	G	919-274-4143
GREENSBORO, CITY OF	0241010	MR BILL E BEAVER OR	PO DRAWER W-2	GREENSBORO	27402	C	A	170,000	S	919-373-2103
GUILFORD COUNTY PRISON F	0241583	CHARLES R. SOCKWELL	BOX 16	GIBSONVILLE	27249	C	A	75	G	919-373-3340
GUILFORD COUNTY SUBSIDAR	0241189	MR TOMMY LEE OR MGR	RT 1 BOX 480	MCLEANSVILLE	27301	C	A	346	G	919-375-5024
GUILFORD COUNTY SUBSIDIA	0241188	L H CASHION OR MGR	RT 1 BOX 124	HIGH POINT	27260	C	A	200	G	919-668-2711
HADLEY MHP	0241113	RUTH S HADLEY OR MGR	3610 E LEE ST	GREENSBORO	27406	C	A	74	G	919-697-8855
HICKORY RUN MHP	0241111	W H MILLER III OR MG	5626 ATWATER DR	GREENSBORO	27402	C	A	399	G	919-299-5028
HIDDEN VALLEY MHP	0241116	MS NANCY NAGEL OR MG	5901 W MARKET ST #1	GREENSBORO	27410	C	A	240	G	919-282-1151
HIGH POINT, CITY OF	0241020	THOMAS P GORE OR MGR	P O BOX 230	HIGH POINT	27261	C	A	67,509	S	919-887-2511
HOLIDAY HILLS	0241117	MANNEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	182	G	919-299-1325
JAMESTOWN, TOWN OF	0241030	BILLY E KING OR MGR	PO BOX 787	JAMESTOWN	27282	C	A	2,250	S	919-454-1144
JONES MHP	0241119	L O JONES OR MANAGER	1105 RITTERS LAKE R	GREENSBORO	27406	C	A	88	G	919-674-5163
LAKE VILLAGE WATER SYSTE	0241161	PEGGY ASBILL OR MGR	1500 LAKE VILLAGE D	HIGH POINT	27263	C	A	35	G	919-434-1244
LAKEVIEW TR PK	0241121	RICHARD GRUBB OR MGR	1664 WILEY LEWIS RD	GREENSBORO	27406	C	A	96	G	919-697-8976
LAKEWOOD TRAILER PARK	0241122	LAKEWOOD MHP--MGR	PO BOX 5	PLEASANT GAR	27313	C	A	105	G	- -
LITTMAN'S MOBILE HOME CO	0241124	MR DE LITTMAN OR MGR	260 EAST NC 62	GREENSBORO	27406	C	A	102	G	919-674-5050
MEADOWVIEW MHP	0241125	R W ELLISON OR MGR	5565 US 220 NORTH	SUMMERFIELD	27358	C	A	147	G	919-643-4516
MONROE'S MHP	0241126	THOMAS MONROE OR MGR	5111 MOCKINGBIRD RD	GREENSBORO	27406	C	A	203	G	919-674-9417
MONTICELLO ESTATES	0241154	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	277	G	919-299-1325
O'HENRY MHP	0241128	MR H F JOYCE OR MGR	5307 RANDLEMAN ROAD	GREENSBORO	27406	C	A	75	G	919-674-0578
OAK RIDGE MILITARY ACADE	0241539	WILLIAM CRABBE OR DI	HWY 150 AND HWY OAK	OAK RIDGE	27310	C	A	205	G	919-643-4131
PLEASANT ACRES MHP	0241134	H D OSBORNE OR MGR	P O BOX 3566	GREENSBORO	27402	C	A	53	G	919-375-5980
PMH RENTALS MHP	0241135	JOYCE PINNIX OR MGR	PO BOX 7881	GREENSBORO	27407	C	A	64	G	919-855-8513
QUAIL MEADOWS	0241136	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	72	G	919-299-1325
ROCK CREEK MOBILE HOME V	0241137	MR B H HODGIN OR MGR	1335 VILLAGE ROAD	WHITSETT	27377	C	A	700	G	919-299-6446
SHADY LANE MOBILE COURT	0241151	J HERBERT WAY	3649 IRWIN ST	GREENSBORO	27405	C	A	90	G	919-621-0859
STAFFORDSHIRE ESTATES	0241194	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	25	G	919-299-1325
WALKER ESTATES	0241144	MANUEL PERKINS OR MG	315-D SOUTH WESTGAT	GREENSBORO	27407	C	A	70	G	919-299-1325
WARD'S MOBILE HOME PARK	0241145	MRS D W WARD OR MGR	5039 RANDLEMAN RD	GREENSBORO	27406	C	A	60	G	919-674-2592
WILLARDS TP	0241147	W T WILLARD OR MGR	3620 PLEASANT GARDE	GREENSBORO	27406	C	A	60	G	919-272-0257
WOOLARD'S TRAILER PARK	0241150	MR H E WOOLARD, JR	1913 COVEY LANE	GREENSBORO	27406	C	A	91	G	919-271-3227

REFS. #12-#13

16 May 1988

TO: File

FROM: Grover Nicholson

RE: Community Water Systems around Greensboro
Unitex Chemical Corporation, NCD 061 795 696

Tabulated on the attached pages are the results of a telephone survey of community water systems around Greensboro. Thirteen of the systems are within five miles of the Unitex site. The number of people served by each system is based on data from NC Water Supply Branch Report WO-415A, page 34.

Within one mile of the site, there are no systems other than the Greensboro distribution system.

Between one and two miles of the site are Greensboro Campgrounds I, Map #1500, 252 people served; Willard's Trailer Park, Map #1147, 60 people served; and Woolard's Trailer Park, Map #1150, 91 people served.

Between two and three miles of the site are Bowers Memorial Rest Home (now Serenity Care Rest Home), Map #1185, 50 people served; Holiday Hills Subdivision, Map #1117, 182 people served; Lakeview Trailer Park, Map #1121, 96 people served; and Pleasant Acres Mobile Home Park, Map #1134, 53 people served.

Between three and four miles of the site are Jones Mobile Home Park, Map #1119, 88 people served and Hadley Mobile Home Park, Map #1113, 74 people served.

Between four and five miles of the site are Country Club Mobile Home Park, Map #1143, 500 people served; Gamble's Mobile Home Park, Map #1109, 172 people served, Monroe's Mobile Home Park, Map #1126, 203 people served; and Clapp's Nursing Center, Map #1577, 58 people served.

GN/ds/pc.2

Community Water System Name	Person Contacted	Date Contacted	Water Source Data	Water Use Data	Located on Map
Bon Aire Acres Subdivision	Mrs. Perkins 919-299-1325	5-12-88	2 wells	At present 9 houses, more to come	yes
Bowers Memorial Rest Home, now Serenity Care Rest Home	Beverly Miller Manager 919-275-6932	5-12-88	1 well	35 people	yes
Brady's Mobile Home Park	Mr. Brady, owner 919-674-2864	5-12-88	1 well-110' deep 1 well-140' deep	1 house 77 people	yes
Cedar Park MHP	Francis Manning, Sec. 919-379-9155	5-12-88			yes
Country Club MHP	Sid Champion 919-697-0515	5-13-88	3 wells		yes
Countryside	Mrs. Perkins 919-299-1325	5-12-88	1 well		yes
Crown MHP	Danny Nelson 919-852-3260	5-13-88	1 well-385' deep 1 well-65' deep	102 spaces	yes
Gamble's MHP	Mrs. Faye Gamble, 919-674-0058	5-13-88	2 wells	50 spaces	yes
Gordon's Trailer Park	Bill Gordon 919-299-6107	5-16-88	1 well-38' deep 1 well-80' deep both 6" diameter	1 house and 12 spaces	yes
Greensboro Campgrounds I (KOA)	Mrs. Jones 919-274-4143	5-12-88	1 well	70+ sites Used for camping	yes

Hadley MHP	Ruth Hadley 919-697-8855	5-12-88	1 well-97' deep	20 mobile homes	yes
Hickory Run MHP	Bill Miller 919-299-5028	5-13-88	1 well-275' deep 1 well-250' deep, 1 well chlorination water only	115 trailers	yes
Hidden Valley MHP	Nancy Nagel 919-282-1151	5-13-88	2 wells	65 trailers, about 200 people	yes
Holiday Hills	Mrs. Perkins 919-299-1325	5-12-88	2 wells		yes
Jones MHP	L. O. Jones 919-674-5163	5-13-88	1 well-255' deep	25 spaces, about 50 people	yes
Lakeview Trailer Park	Iva Coble 919-697-8976	5-12-88	1 well		yes
Littman's Mobile Home Co.	Mr. Littman 919-674-5050	5-13-88	1 well-122' deep	28 spaces, about 84 people	yes
Monroe's MHP	Mr. Monroe 919-674-9417	5-12-88	1 well-180' deep 1 well-190' deep		yes
O'Henry MHP	Francis Munday	5-13-88	2 wells		yes
Pleasant Acres MHP	Mr. Osborne 919-272-3163 (K.N. White, owner)	5-13-88	1 well-239' deep	16 spaces	yes
PMH Rentals MHP	Janice Pinnix 919-855-7363 919-852-7558	5-13-88		15 spaces(?)	yes

Shady Lane Mobile Court	J. Herbert Way 919-621-0859	5-12-88	1 well-130' to 135' deep(?)	31 trailers	yes
Staffordshire Estates	Mrs. Perkins 919-299-1325	5-12-88	2 or 3 wells		yes
Ward's MHP	Mr. Brady 919-674-2864	5-12-88			yes
Willards Trailer Park	Mrs. Willard 919-272-0257	5-12-88	1 well-343' deep	1 house & 13 mobile homes. About 31 people.	yes
Woolard's Trailer Park now Alamance Mobile Homes	Julia Woolard 919-275-2927	5-12-88	1 well	25 spaces	yes
Clapp's Nursing Center	Mrs. Clapp 919-674-2252	5-16-88	1 well-225' deep 1 well-575' deep (not used)	92 people	yes

16 May 1988

TO: File

FROM: Grover Nicholson

RE: House count from USGS topographic map
Unitex Chemical Corporation, NCD 061 795 696

The limits of the Greensboro water system and the locations of community water systems were drawn on the USGS 7 1/2' topographic maps Greensboro, Climax, Pleasant Garden, and McLeansville. Afterward, all houses on the map not served by the water systems were counted.

Within one mile of the site, all houses are served by the city water system, a surface water system with intakes on Lakes Townsend and Brandt to the north of Greensboro and about 12 miles from the site.

Between one and two miles of the site there are 260 houses (988 people: 260 houses x 3.8 persons per house) using water from private wells, and another 403 people using groundwater from community systems.

Between two and three miles of the site there are 389 houses (1478 people: 389 houses x 3.8 persons per house) using water from private wells and another 381 people using groundwater from community systems.

GN/ds/pc.1

REF. #14

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

United States Department of the Interior

FISH AND WILDLIFE SERVICE

ENDANGERED SPECIES FIELD STATION
100 OTIS STREET, ROOM 224
ASHEVILLE, NORTH CAROLINA 28801

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,

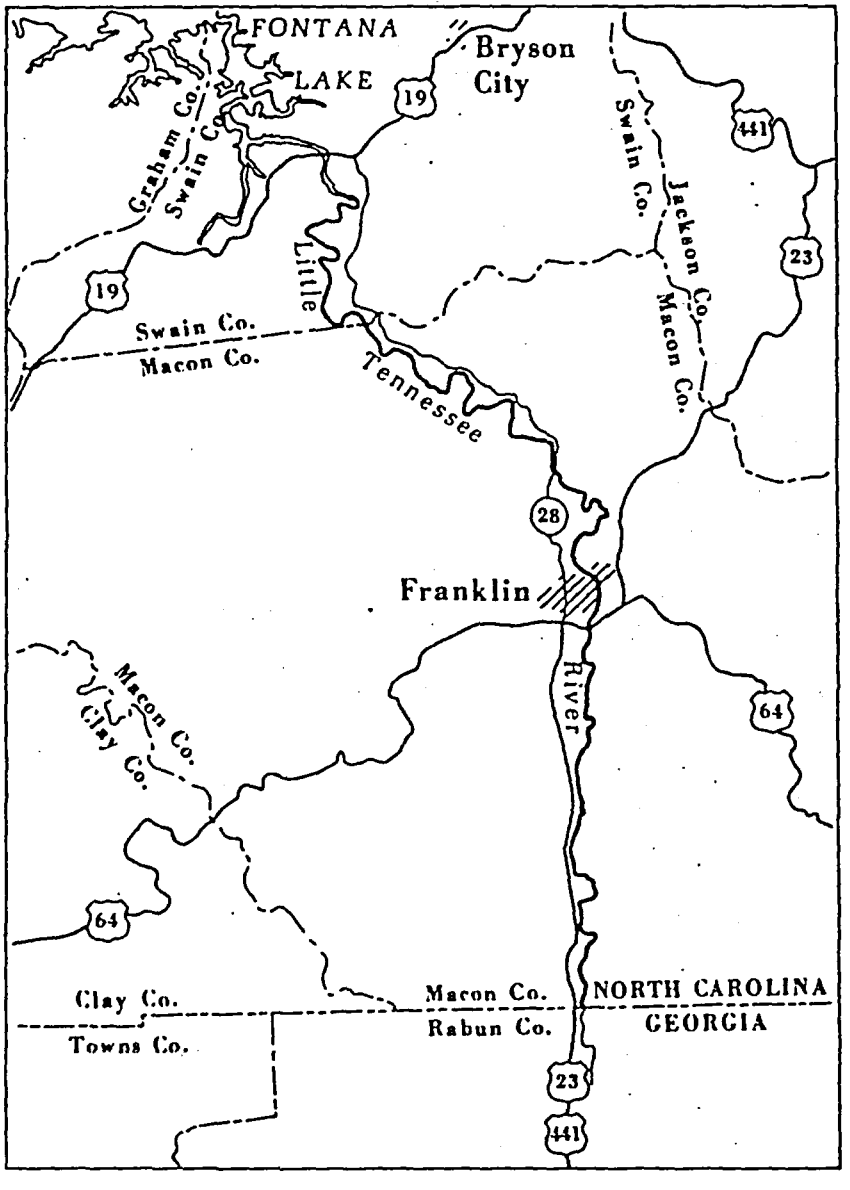
Warren T. Parker

Warren T. Parker
Field Supervisor

NORTH CAROLINA - Critical Habitat

Hybopsis monacha, "spotfin chub"

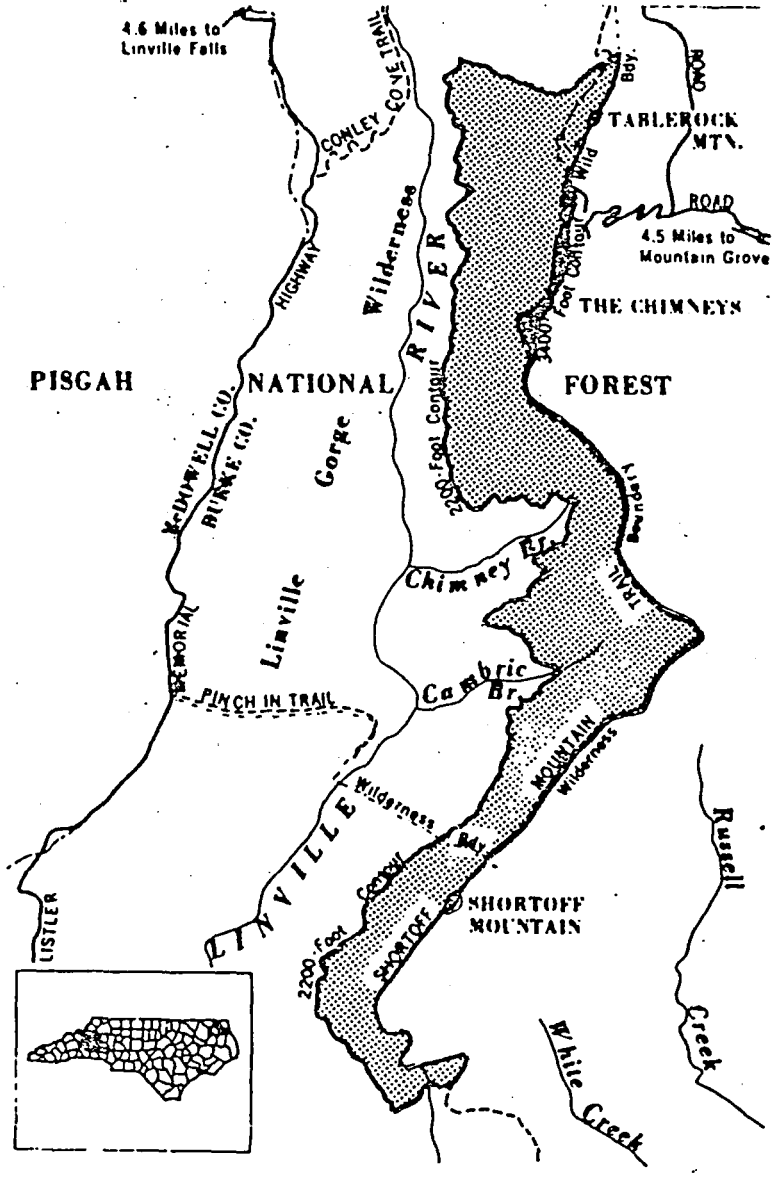
Macon and Swain Counties. Little Tennessee River, main channel from the backwaters of Fontana Lake upstream to the North Carolina-Georgia state line.



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.



Nestronia (*Nestronia umbellula*) - SR
Michaux' poison-sumac (*Rhus michauxii*) - SR

Gaston County

Nestronia (*Nestronia umbellula*) - SR

Gates County

Red-cockaded woodpecker (*Picoides borealis*) - E
Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) - SR
Riverbank sand grass (*Calamovilfa brevipilis*) - SR
Pine barren gentian (*Gentiana autumnalis*) - SR

Graham County

Hellbender (*Cryptobranchus alleganiensis*) - SR
Junaluska salamander (*Eurycea junaluska*) - SR
Smoky Mountains manna grass (*Glyceria nubigena*) - SR
Carey's saxifrage (*Saxifraga careyana*) - SR
Gray's saxifrage (*Saxifraga caroliniana*) - SR
Virginia spiraea (*Spiraea virginiana*) - SR

Granville County

Carolina madtom (*Noturus furiosus*) - SR
Smooth coneflower (*Echinacea laevigata*) - SR
Lewis' heartleaf (*Hexastylis lewisii*) - SR
Barbara's buttons (*Marshallia grandiflora*) - SR
Stream mock bishop-weed (*Ptilimnium fluviatile*) - SR

Green County

Carolina madtom (*Noturus furiosus*) - SR
Wireleaf dropseed (*Sporobolus teretifolius*) - SR

Guilford County

Nestronia (*Nestronia umbellula*) - SR

Halifax County

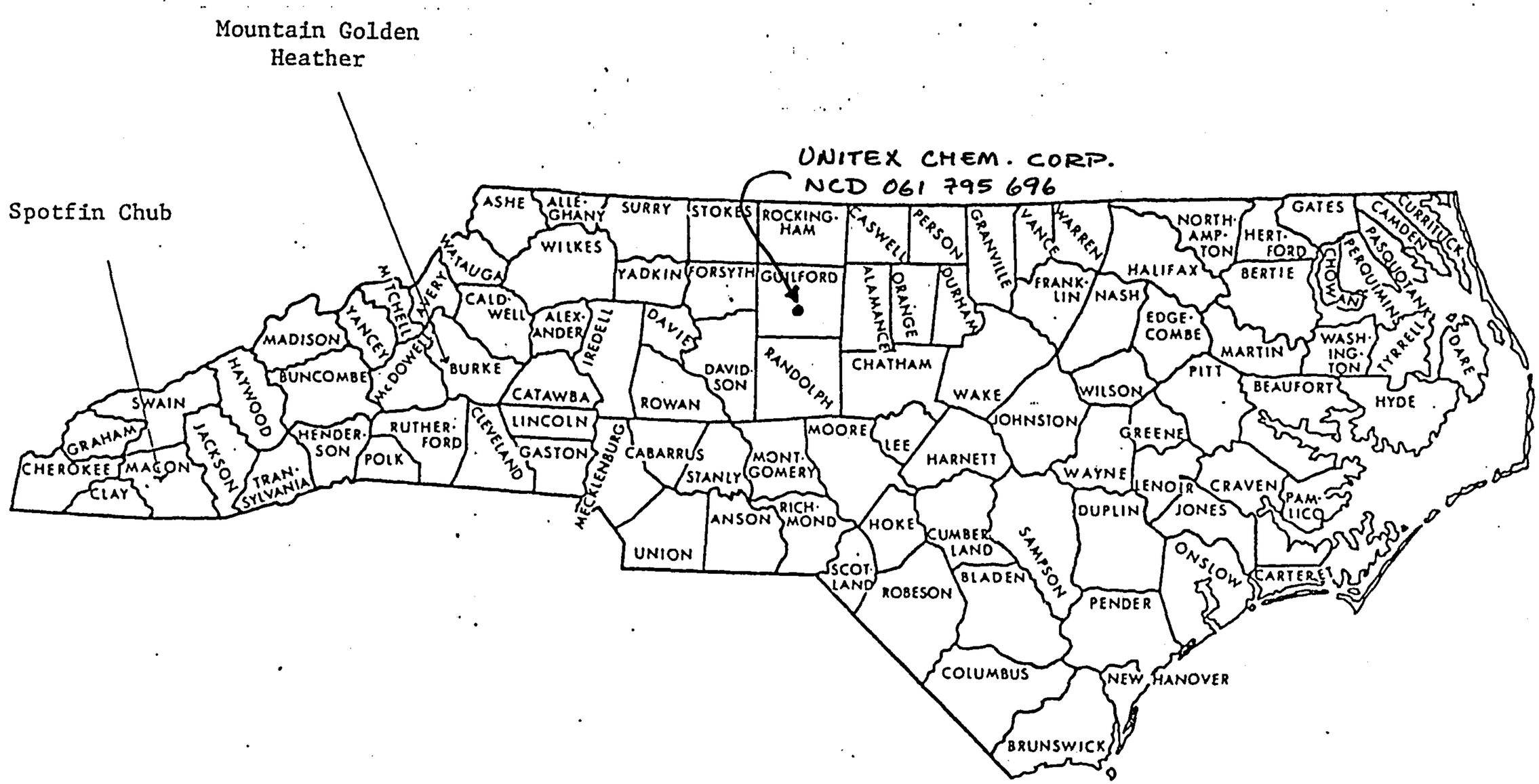
Red-cockaded woodpecker (*Picoides borealis*) - E
Carolina madtom (*Noturus furiosus*) - SR

Harnett County

Red-cockaded woodpecker (*Picoides borealis*) - E
Small whorled pogonia (*Isotria medeoloides*) - E
Cape Fear shiner (*Notropis mekistocholas*) - SR

CRITICAL HABITATS OF FEDERALLY LISTED

ENDANGERED SPECIES IN NC



1 inch = approx. 53 miles

REBS #15-#16

TO: RCRA 3012 File

FROM: Lee Crosby

RE: 13 December 1984 Interview with Gene Hooper
Unitex Chemical Corporation
NC D061795696

According to Gene Hooper, Vice President of Unitex Chemical, the company was constructed in 1976 as a batch and chemical blending operation for textile products. The only wastes were strictly kettle washings which were discharged to the city waste water treatment system. No process wastes from Unitex operations have been discarded on-site or transported off-site for burial. There has never been any leakage from storage tanks which are all stainless steel. When operations were expanded after 1978, Unitex became a RCRA facility. Cyclohexene (a flammable waste) builds up in a refluxing process over a period of time and must be replaced. The cyclohexene and other solvents are blended with fuel oil and burned; appropriate permits have been issued.

LC/lw

[illegible] NOTIFICATION OF HAZARDOUS [illegible]

Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: George W. Page
Street: 3942 STARMOUNT DR.
City: Greensboro, N.C. 27410 State: Zip Code:

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: AGRICO Fertilizer. (Now Unitex Chem.)
Street: 520 Broome Rd.
City: GREENSBORO County: Gal. Ford State: NC Zip Code: 27406

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): George Page Pres or Gene Hooper Ex. V.P.
Phone: 919 378-0965

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): To (Year): UNKNOWN.

WASTE WAS DEPOSITED BY AGRICO FERTILIZER. PRIOR TO OUR ACCUISITION

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☐ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☒ Unknown
11. ☐ Other (Specify)

MIX HAS BEEN BANDIZED BY EPA WINSTON SALEM OFFICE

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☒ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☐ Landfill
4. ☐ Tanks
5. ☑ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount

cubic feet _____

gallons _____

Total Facility Area

square feet TOTAL AREA IS APPROX

acres 1/2 ACRE POND

G Known, Suspected or Likely Releases to the Environment:

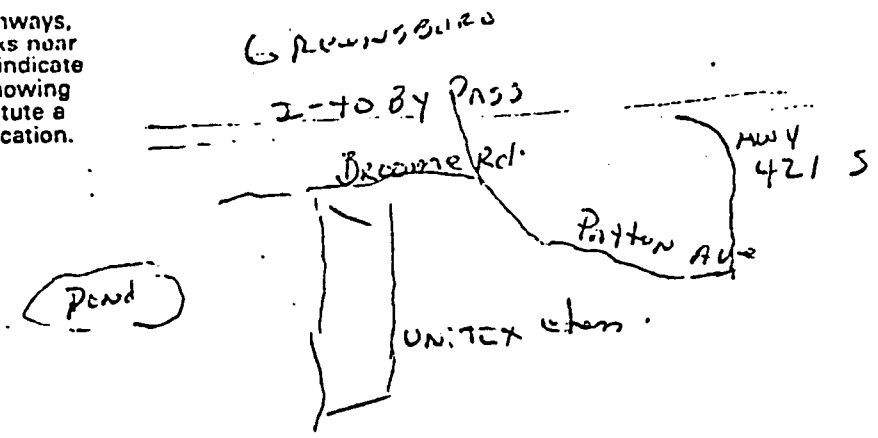
Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☐ Suspected ☐ Likely ☑ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.



I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

WASTE WAS CARRIED BY UNDER-GROUND PIPES UNDER I-4 TO PRESENT SITE-MATERIAL WAS PLACED INTO OPEN PONDS WHEN THIS SITE WAS PURCHASED FROM AGRICO THEY ADVISED THAT MATERIAL WAS NOT OF A TOXIC OR HAZARDOUS NATURE. ATTEMPTED ASCERTAIN THE EXACT NATURE OF THE MATERIAL WE NOTIFIED EPA WINSTON SALEM N.C. SINCE IT WAS IN LINE OF FUTURE EXPANSION BY UNITEX CHEM. AND MATERIAL WOULD NEED TO BE REMOVED ABOUT 100' AND RE-CLAIMED OR CONTAINED IN A EARTHEN POND. THEIR INITIAL REPORT SHOWED SITE TO CONTAIN MATERIALS WHICH WERE ABOVE NORMAL LEVELS FOR THE AREA BUT FROM THEIR REPORT I DO NOT BELIEVE IT IS A HAZARDOUS WASTE SITE. I AM PRESENTLY WAITING FOR THEIR REPORT AND FURTHER COMMENTS

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other".

Name George W. Page

Street 3942 SPARROWOOT DR.

City GREENSBORO State NC Zip Code 27410

Signature George W. Page Date 4-28-81

☐ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☐ Other

Agency

7331471

EPA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 PL 96-510 (commonly known as Superfund) mandates in Section 103(c) that certain persons notify the U.S. Environmental Protection Agency (EPA) by June 9, 1981 of the existence of sites where hazardous wastes from industries, businesses, governments, hospitals, and other sources are stored, treated, or disposed of.

Persons who believe they are required to notify have requested that EPA develop and distribute forms and accompanying guidance material in order that respondents can more easily comply with the new law. This in turn, will ensure that information submitted to EPA will be both consistent and useful.

Those required to notify must inform EPA that the site exists and provide details on its location, the amount and type of any hazardous wastes to be found there, and any known, suspected or likely releases of such wastes from the site. All of this information can be provided by completing the enclosed EPA Form 8900-1, Notification of Hazardous Waste Site. The notification form should be mailed to the EPA Regional Office serving the State in which the site is located by June 9, 1981.

The enclosed packet also includes the following:

- General Information
- A list of EPA Region mailing addresses and information telephone numbers
- Instructions for filling out the form

Receipt of this packet does not necessarily mean that you are required to notify. For example, certain locations (such as gasoline service stations and dry cleaning plants) which accumulated hazardous wastes only as a result of minor leakage or spillage that occurred in the course of normal operations are not expected to notify. To determine if you must notify please read the General Information portion of the notification packet.

EPA believes that those legally required to notify may not be able to identify every hazardous waste site. Therefore, we encourage the general public to fill out the notification form if they know of sites which otherwise might not be reported. This is most applicable to sites that are abandoned or where midnight dumping has occurred and where government investigators are not likely to know of the site.

These forms, along with other efforts EPA has underway, should help to compile a national inventory of hazardous waste sites. With this inventory, EPA and State and local governments can do a better job of remedying the problems created by uncontrolled hazardous waste disposal. If you have any questions regarding the notification process, please contact the EPA Region serving the State in which the site is located. We thank you for your cooperation.

Sincerely Yours,

Walter C Barber

Acting Administrator
Environmental Protection Agency

General Information

The primary purpose of this notification program is to locate hazardous waste sites which treated, stored, or disposed of hazardous waste in the past and at which hazardous waste is still present. The most important information you can provide to EPA is the existence of a hazardous waste site and its location. For purposes of describing the hazardous waste to be found at a site, the quantities of such waste and the type of activity at a site, EPA is not requiring that you painstakingly document the information submitted. This information may be based on your knowledge, belief, recollection or reasonably available records.

Who Must Notify

Section 103(c) of Superfund requires that, unless exempted, the following must notify EPA:

- Any person who presently owns or operates a site where there are facilities that store, treat, or dispose of hazardous wastes.
- Any person who, at the time of disposal, owned or operated a site where there are facilities that store, treat, or dispose of hazardous wastes.
- Any person who accepted hazardous wastes for transport and selected a site where there are facilities that store, treat, or dispose of hazardous wastes.

Persons required to notify include individuals and private, public, and government entities.

Who Need Not Notify

1. Section 3010 of the Resource Conservation and Recovery Act (RCRA) requires any person who generates or transports hazardous wastes or who owns or operates a facility that treats, stores, or disposes of hazardous wastes to notify EPA of such activities. For purposes of this notification any person who notified under Section 3010 for one or more treatment, storage, or disposal facilities does not have to notify EPA again of those specific facilities. However, notification is required for facilities not previously reported under Section 3010 that are on or contiguous to sites reported under Section 3010.

2. A person does not have to notify of facilities that have qualified for Interim Status under RCRA.

3. Facilities at which less than 55 gallons (or 7.4 cubic feet) of hazardous wastes have been disposed are not subject to this notification requirement.

4. Locations where hazardous waste accumulated only as a result of minor leakage or spillage that occurred in the course of normal operations are not considered hazardous waste sites for purposes of this notification unless such accumulation may pose significant risk to human health and the environment.

5. Municipal landfills, town dumps and other facilities that receive household wastes only, are not subject to notification. Municipal landfills that received hazardous wastes, especially wastes in segregated shipments from industrial services, would be expected to notify.

6. Facilities at which hazardous wastes had been treated or stored and from which all those hazardous wastes have been removed so as to eliminate any risk to human health and the environment are not subject to this notification requirement.

7. The application of pesticide products registered under the Federal Insecticide, Fungicide and Rodenticide Act and the handling and storage of such products by agricultural producers are not subject to this notification requirement. Sites at which pesticides have been disposed are subject to the notification requirement of Section 103(c). Farmers who have disposed of waste pesticide in a manner consistent with the disposal instruction on the pesticide label are not subject to this notification requirement.

8. Stoppage in transport of hazardous waste which is temporary, incidental to the transportation, or at the ordinary operating convenience of a common or contract carrier is not, for purposes of this notification, storage.

9. Certain facilities which handle hazardous wastes pursuant to RCRA are not subject to this notification requirement. They include:

- Product or raw material storage tanks and transportation vessels or vehicles which are presently in use are not considered hazardous waste storage facilities, even though hazardous waste may be generated in such units in the course of their use. This does not extend, however, to units which are no longer in use and in which hazardous waste remain.
- Short-term accumulation (90 days or less) of hazardous wastes by generators subject to RCRA regulations is not, for purposes of this notification, storage.
- Totally enclosed treatment facilities.
- Wastewater treatment tanks and neutralization tanks.

Wastes Subject To Notification

Wastes subject to notification under Superfund are listed or identified as hazardous in the regulations issued under Section 3001 of RCRA. You are not expected to sample wastes to determine if they are hazardous. Rather, you can use any knowledge you have of the wastes, including the materials or processes involved or the types of facilities that generate the wastes. You should notify about sites if you believe the wastes may be hazardous due to barrel labels, odors, health effects, or other indicators.

Polychlorinated biphenyls (PCBs) are not currently included within the RCRA Section 3001 regulations but are regulated under the Toxic Substances Control Act (TSCA). Consequently, notification of PCB treatment, storage, or disposal sites is not mandatory. However, in order to make this notification more comprehensive, EPA is requesting a voluntary notification of sites containing PCBs as part of this notification program.

Wastes Not Subject To Notification

The following wastes are not subject to notification under Section 103(c) of Superfund.

1. Solid wastes listed below not presently regulated as "hazardous waste" under RCRA.

- "Household waste", defined as any waste material (including garbage, trash, and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels, and motels):
- Solid wastes generated by any of the following and returned to the soil as fertilizers:

—The growing and harvesting of agricultural crops.

—The raising of animals, including animal manure.

- Mining overburden returned to the mine site.

- Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from combustion of coal or other fossil fuels.

- Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy.

- Solid waste from extraction, beneficiation and processing of ores or minerals, including phosphate rock and overburden from the mining of uranium ore.

- Cement kiln dust waste.

2. Natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

3. Petroleum, including crude oil or any fraction thereof which is not specifically listed under RCRA.

Penalties

Any person convicted of knowingly failing to notify may be fined not more than $10,000 or imprisoned for not more than 1 year, or both. In addition, violators shall not be entitled to the protections of the liability provisions of Section 107 of Superfund. Information received under Section 103(c) will not be used against any person in any criminal case, except a prosecution for perjury or for giving a false statement.

What Information Should Be Filed

When filing a notification, you must indicate the site location, specify the amount and type of any hazardous wastes to be found there, and show any known, suspected, or likely releases of such wastes from the site. You can provide all this information by completing and mailing the enclosed EPA Form 8900-1, Notification of Hazardous Waste Site.

The 53 chemical companies who submitted extensive facility information in previous responses to a survey conducted by the House Interstate and Foreign Commerce Committee in 1979 ("Waste Disposal Site Survey Directory"—Committee Print 96-IFC 33 pulished October 1979), may choose to

- complete Form 8900-1, or

- submit to EPA the information provided to the House Committee, updating and supplementing it as necessary to provide the information requested ih Form 8900-1.

How Many Forms Should Be Filed

You should provide one notification form per site, whether the site has one or more treatment, storage, or disposal facilities within its boundary (see facility and site definitions).

When to File

Envelopes must be postmarked no later than June 9, 1981.

Acknowledgement

EPA will send you a postcard acknowledging receipt of your notification.

Confidential Information

Industrial and commercial organizations may be concerned about public disclosure of information that they report. All information reported in a notification other than trade secrets can be disclosed to the public, according to the Freedom of Information Act and EPA Freedom of Information Regulations. Because notification information is very general, EPA believes that it is unlikely that information reported qualifies for protection from disclosure as trade secrets.

However, if you wish to claim confidentiality, print the word "confidential" on both sides of the Notification Form and any attachments. EPA encourages you to substantiate your claim at the time of notification by providing written answers to each of the questions listed below. Otherwise EPA may send notice promptly on receipt of notification requesting substantiation within 15 working days.

1. Which portions of the information do you claim are entitled to confidential treatment?

2. How long do you want this information treated confidentially?

3. What measures have you taken to guard against undesired disclosures of the information to others?

4. To what extent has the information been disclosed to others, and what precautions have you taken in connection with those disclosures?

5. Has EPA or any other Federal Agency made a pertinent confidentiality determination? (If so, include a copy of this determination or reference to it, if available).

6. Will disclosure of the information be likely to substantially harm your competitive position? If so, what would the harm be, and why should it be viewed as substantial? What is the relationship between disclosure and the harm?

Where to File

EPA Region Address	Area and Information Telephone Numbers	
US EPA Region 1 Sites Notification Boston, MA 02203	617-223-0090 617-223-0214	Massachusetts Maine, Rhode Island Connecticut, New Hampshire, Vermont
US EPA Region 2 Sites Notification New York, NY 10007	212-264-1573	New Jersey, New York, Virgin Islands, Puerto Rico
US EPA Region 3 Sites Notification Philadelphia, PA 19106	215-597-8751	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
US EPA Region 4 Sites Notification Atlanta, GA 30308	404-881-2234	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
US EPA Region 5 Sites Notification Chicago, ILL 60604	312-886-3500	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
US EPA Region 6 Sites Notification Dallas, TX 75270	214-767-4075	Arkansas, Louisiana, New Mexico Oklahoma, Texas
US EPA Region 7 Sites Notification Kansas City, MO 64106	816-374-6864	Iowa, Kansas, Missouri, Nebraska
US EPA Region 8 Sites Notification Denver, CO 80295	800-332-3321 800-525-3022	Colorado Montana, North Dakota, South Dakota, Utah, Wyoming
US EPA Region 9 Sites Notification San Francisco, CA 94105	415-556-1407	Arizona, California, Hawaii, Nevada, Guam, American Samoa, Commonwealth of the Northern Marianas
US EPA Region 10 Sites Notification Seattle, WA 98101	800-732-9319 800-426-9947	Washington Alaska, Idaho, Oregon

Definitions

The following definitions may assist you in completing the notification form.

Act: the "Comprehensive Environmental Response, Compensation, and Liability Act of 1980" (Superfund).

Administrator: the Administrator of the United States Environmental Protection Agency.

Disposal: the discharge, deposit, injection, dumping spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

Environment: (A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Fishery Conservation and Management Act of 1976, and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Facility: (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle rolling stock, or aircraft, or (B) any site or area where a hazardous waste has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel (for purposes of this notification, (A) is most applicable).

Hazardous Waste: for purposes of this notification requirement means any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of RCRA (but not including any waste the regulation of which under RCRA has been suspended by Act of Congress).

Owner or Operator: (A) in the case of an onshore facility, any person owning or operating such facility, and (B) in the case of any abandoned facility, any person who owned, operated, or otherwise controlled activities at such facility immediately prior to such abandonment.

Person: an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State or any interstate body.

Release: any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing, into the environment.

Site: the location at which hazardous wastes were stored, treated, or disposed of by persons required to notify under Section 103(c). This includes all contiguous land, structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous wastes. A site may consist of several treatment, storage, or disposal facilities.

Storage: the holding of hazardous waste for a temporary period at the end of which the hazardous waste is treated, stored, or disposed elsewhere.

Transport or Transportation: the movement of a hazardous substance by any mode, including pipeline (as defined in the Pipeline Safety Act), and in the case of a hazardous substance which has been accepted for transportation by a common or contract carrier, the term "transport" or "transportation" shall include any stoppage in transit which is temporary, incidental to the transportation movement, and at the ordinary operating convenience of a common or contract carrier, and any such stoppage shall be considered as continuity of movement and not as the storage of a hazardous waste.

Treatment: any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste to neutralize such waste, or so as to recover energy or material resources from the waste, or to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, or storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

Waste Quantity: the actual or estimated size of the area affected (such as square feet or acres) and/or amount of waste (such as gallons or cubic feet) for the various treatment, storage or disposal facilities used at a site.

Waste Type: the type of hazardous substance that has been treated, stored, or disposed at a site.

EPA

Official Business
Penalty for Private Use
$300

First-Class Mail
Postage and Fees Paid
EPA
Permit No. G-35

United States
Environmental Protection
Agency

Office of Hazardous
Emergency Response WH-548
Washington DC 20460

GREENSBORO NC 27406

NCD061795696
UNITEX CHEMICAL CORP
PO BOX 16344

REF #17

STATE OF NORTH CAROLINA

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT

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

DIVISION OF ENVIRONMENTAL MANAGEMENT

RALEIGH, NORTH CAROLINA

Reprint from North Carolina Administrative Code: 15 NCAC 2B .0311
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

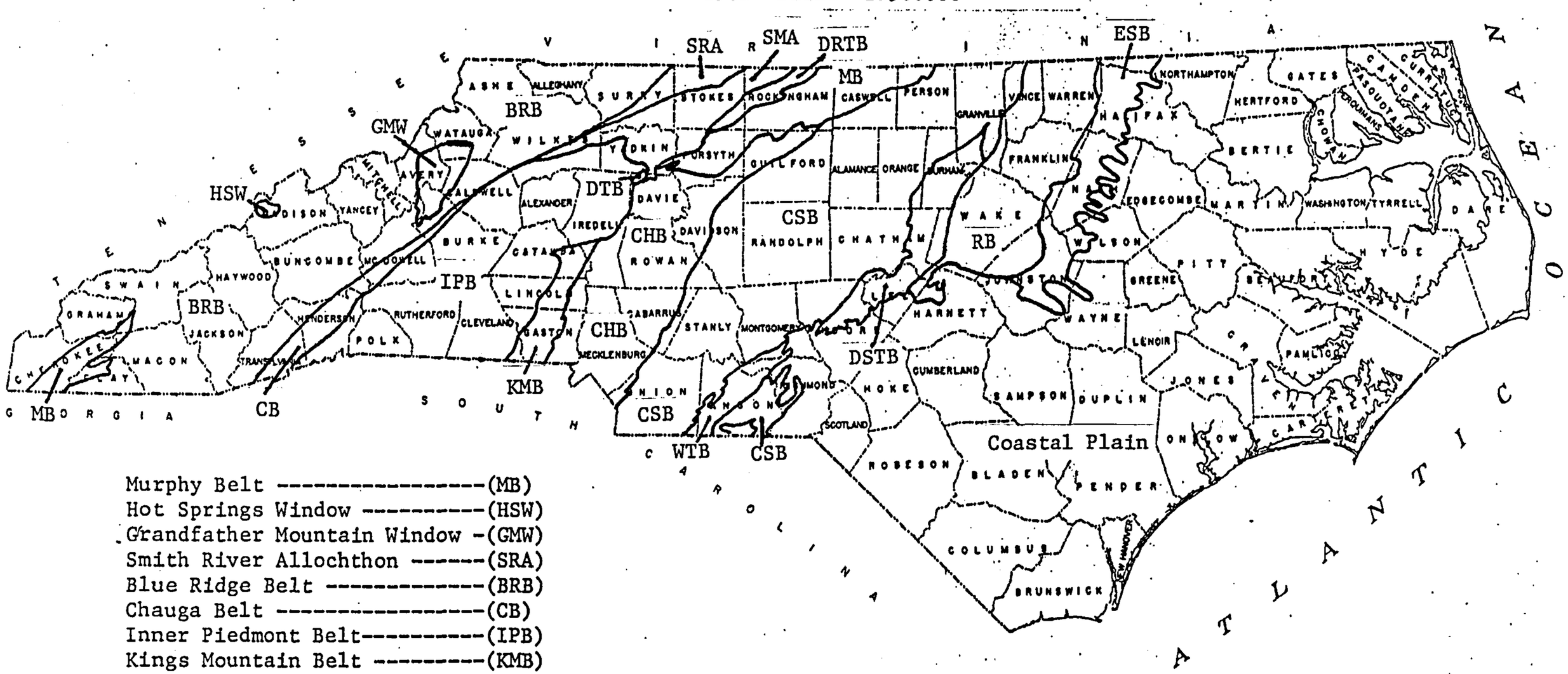
Class SA:	shellfishing for market purposes and any other usage specified by the "SB" and "SC" classification;
Class SB:	primary recreation and any other usage specified by the "SC" classification;
Class SC:	fish and wildlife propagation, secondary recreation, and other uses requiring waters of lower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

CPF 2

Name of Stream	Description	Classification Class	Classification Date	Index No.
Unnamed Tributary at Cone Mills (White Oak Lake)	From dam at Buffalo Lake to North Buffalo Creek	C	9/1/74	16-11-14-1-2-(2)
Muddy Creek	From source to North Buffalo Creek	C (1)	3/1/77	16-11-14-1-3
Jorden Branch	From source to North Buffalo Creek	C	3/1/77	16-11-14-1-4
South Buffalo Creek	From source to Buffalo Creek	C (1)	3/1/77	16-11-14-2
Piedmont Creek	From source to South Buffalo Creek	C	9/1/74	16-11-14-2-1
Glenwood Creek	From source to South Buffalo Creek	C	9/1/74	16-11-14-2-2
Ryan Creek	From source to South Buffalo Creek	C	9/1/74	16-11-14-2-3
Mile Run Creek	From source to South Buffalo Creek	C	9/1/74	16-11-14-2-4
Blackwood Creek	From source to Buffalo Creek	C	9/1/74	16-11-14-3
Parks Creek	From source to Reedy Fork	C	9/1/74	16-11-15
Travis Creek	From source to Haw River	C (1)	3/1/77	16-12
Tickle Creek (Trickle Creek)	From source to Travis Creek	C	9/1/74	16-12-1
Dry Creek	From source to Haw River	C	9/1/74	16-13
Stony Creek (Lake Burlington, Stony Creek Reservoir)	From source to dam at Copland Fabrics, Inc., water supply	A-II	4/1/59	16-14-(1)
Grays Branch	From source to Stony Creek	A-II	4/1/59	16-14-2
Benton Branch	From source to Stony Creek	A-II	4/1/59	16-14-3
Toms Creek	From source to Lake Burlington, Stony Creek	A-II	4/1/59	16-14-4
Buttermilk Creek	From source to Stony Creek	A-II	4/1/59	16-14-5
Jones Creek	From source to Buttermilk Creek	A-II	4/1/59	16-14-5-1
Laughin Creek	From source to Buttermilk Creek	A-II	4/1/59	16-14-5-2
Whittie Creek	From source to Buttermilk Creek	A-II	4/1/59	16-14-5-3
Jordan Creek	From source to Stony Creek	A-II	4/1/59	16-14-6
Hughes Mill Creek	From source to Jordan Creek	A-II	4/1/59	16-14-6-1
Owens Creek	From source to Jordan Creek	A-II	4/1/59	16-14-6-2
Mine Creek	From source to Stony Creek	A-II	4/1/59	16-14-7
Deep Creek	From source to Stony Creek	A-II	4/1/59	16-14-8
Stony Creek	From dam at Copland Fabrics, Inc., water supply to Haw River	C	9/1/74	16-14-(9)
Service Creek (Servis Creek)	From source to Haw River	C	9/1/74	16-15
Staley Creek	From source to Service Creek	C	9/1/74	16-15-1
Boyds Creek	From source to Haw River	C	9/1/74	16-16
Town Branch	From source to Haw River	C (1)	3/1/77	16-17
County Home Branch (Still House Branch)	From source to Town Branch	C	3/1/77	16-17-1
Back Creek (Graham Lake)	From source to dam at Graham water supply	A-II	4/1/59	16-18-(1)
Stagg Creek	From source to Back Creek	A-II	4/1/59	16-18-2
Frank Creek	From source to Stagg Creek	A-II	4/1/59	16-18-2-1
Mill Creek	From source to Back Creek	A-II	4/1/59	16-18-3
Lake Michael	Entire lake and connecting stream to Mill Creek	A-II	4/1/59	16-18-3-1
Forest Lake	Entire lake and connecting stream to Mill Creek	A-II	4/1/59	16-18-3-2
Quaker Creek (Quaker Creek Reservoir)	From source to Graham Lake, Back Creek	A-II	4/1/59	16-18-4
Scrub Creek	From source to Quaker Creek Reservoir, Quaker Creek	A-II	4/1/59	16-18-4-1
Otter Creek	From source to Graham Lake, Back Creek	A-II	4/1/59	16-18-5
Back Creek	From dam at Graham water supply to Haw River	C	7/1/73	16-18-(6)
Moadams Creek (Latham Lake)	From source to Back Creek	C	3/1/77	16-18-7
Big Alamance Creek (Alamance Creek)	From source to Kayser-Roth Hosiery Co., Inc., water intake	A-II	4/1/59	16-19-(1)

REF. #18

Adapted From:
Geologic Map of North Carolina
NC Dept. of NRCD Div. of Land Resources
NC Geological Survey
1985 Scale= 1:500000



Murphy Belt ----------(MB)
Hot Springs Window ----------(HSW)
Grandfather Mountain Window -(GMW)
Smith River Allochthon ------(SRA)
Blue Ridge Belt ----------(BRB)
Chauga Belt ----------(CB)
Inner Piedmont Belt----------(IPB)
Kings Mountain Belt ---------(KMB)
Sauratown Mountains
Anticlinorium ----------(SMA)
Charlotte Belt ----------(CHB)
Milton Belt ----------(MB)
Carolina Slate Belt ---------(CSB)
Durham-Sanford Triassic Basin(DSTB)
Wadesboro Triassic Basin ----(WTB)
Dan River Triassic Basin ----(DRTB)
Davie Triassic Basin --------(DTB)
Raleigh Belt ----------(RB)
Eastern Slate Belt ----------(ESB)

MAP SHOWING MAJOR

LITHO-TECTONIC FEATURES

REF. #19

To: Grover Nicholson
Room 203
Bath Bldg

circa 1972

From: Water Quality Section
Div. Environ. Management
Winston-Salem Office

Steve Mauney

REPORT

OF

WASTE DISCHARGES

FROM

AGRICO-CHEMICAL COMPANY

AND

USS AGRI-CHEMICALS

GREENSBORO, NORTH CAROLINA

Agrico Chemical Company and USS Agri-Chemicals operate fertilizer manufacturing facilities in Greensboro, North Carolina. While the plants are independent operations, they are located in such close proximity to each other that it is not practical to study wastewater discharges from the plants separately. Both plants discharge wastewater into South Buffalo Creek.

As can be seen from the attached sketch, Interstate Highway 85 is located between the two plants. There are two wastewater discharges from Agrico (located to the north of I-85) which flow to the south under I-85 to reach South Buffalo Creek. Wastewater discharged from USS Agri-Chemicals combines with one of the waste streams from Agrico before reaching South Buffalo Creek. A drainage ditch flows in a southerly direction along the west side of the USS Agri-Chemicals plant and discharges into South Buffalo.

Wastes discharged on the east side of Agrico are from the potassium silicofluoride plant. Waste is treated by pH adjustment and fluoride removal. pH is adjusted at the plant by means of automatically controlled lime slurry feed. The waste then flows under I-85 to two settling ponds in series. Overflow from the settling ponds flows to South Buffalo Creek.

Wastes discharged on the west side of Agrico are from three sources. A constant flow of water from pump seals, an intermittent discharge of excess ammonia scrubber water, and stack washdown water make up this waste stream. Most of the ammonia scrubber water is reused in the fertilizer process; the excess is discharged to a small pond which overflows to the waste stream. The pump seal water is a continuous discharge from pumps used for transfer of phosphoric acid and nitrogen solutions. The stack washdown water is an intermittent discharge. When the superphosphate stack is cleaned the washdown water is discharged to a small pond which overflows to the waste stream.

Waste discharges from USS Agri-Chemical are sulfuric acid cooling water and pump seal water from hydrofluorosilic acid transfer facilities. These wastes combine with the waste stream from the west side of Agrico before entering South Buffalo Creek. The drainage ditch on the west side of USS Agri-Chemicals receives run-off

from most of the manufacturing area at USS Agri-Chemicals. Also, a sump in the plant is used to collect ground water. This sump is pumped out into the drainage ditch as needed to prevent some areas of the plant from flooding.

Characteristics of Waste Streams:

During the last few years numerous samples have been collected for analyses of the wastewater from the potassium silicofluoride plant at Agrico. See Table 1 for data collected on this waste stream after treatment.

Stream monitoring data has been gathered upstream and downstream of the two fertilizer plants since 1968, and data on pH and fluorides is given in Table 2. South Buffalo Creek is classified as Class "D". Water Quality Standards assigned to Class "D" streams require that pH shall be normal for the waters in the area, which generally shall range between 6.0 and 8.5. Also fluoride concentrations in excess of 1.0 mg/l are considered to be in violation of Water Quality Standards for Class "D". As can be noted from Table 2, pH standards have been found to be violated on a number of occasions, and fluoride standards were being violated on every sampling.

Since no work on these plantswith respect to analyses of individual waste streams had been conducted, a study was conducted during January, 1972 of the two plants. Fifteen sampling stations were established and grab samples were collected for analyses. Results of those samples are listed in Table 3.

Station No. 1 - (pump seal water and excess ammonia scrubber water) was found to be low in pH and high in nitrogen and phosphate. The low pH and high phosphate is probably due to minor leakage on the phosphoric acid pumps. High nitrogen is attributable to ammonia scrubber water and possible leakage on pumps transferring nitrogen solutions.

Station No. 2 - (pump seal water, excess ammonia scrubber water, and stack washdown water) was found to be low in pH and high in fluorides, nitrogen, and phosphates. Low pH is due to pump seal water and stack washdown water. High fluoride and high nitrogen concentrations are primarily caused by stack washdown water. Phosphates are contributed by both pump seal water and stack washdown water.

Comparison of Station Nos. 3 and 4 (stack scrubber water before and after settling, respectively) indicates that the settling pond is having little effect on this waste stream except perhaps to equalize the flow. Low pH, high fluorides, and phosphates are problems here.

Comparing Station Nos. 5 and 6 (waste from potassium silicofluoride plant before and after neutralization, respectively) it is noted that on the first two sampling dates very little pH adjustment was being made. On the last two sampling dates, pH was being adjusted to appropriate levels but not with just lime. Ammonia and lime were being used in combination to adjust the pH. This is very apparent from the high nitrogen concentrations at Station No. 6 on January 13. Not only are high fluorides and low pH a problem in this waste stream, but high phosphates are significant in this waste.

Before reviewing the data collected on Stations Nos. 8 and 9 (overflow from settling ponds and discharge from settling ponds and discharge from settling ponds to South Buffalo Creek) it is necessary to explain that the settling ponds often do not have any overflow. This is partially due to evaporation but is primarily a result of much of the water discharged into these ponds seeping through the dikes which form the southern side of the ponds. Both the overflow from the ponds and seepage through the dikes of the ponds flow through a swampy area located to the south of the ponds. This swampy area is drained by a well-defined ditch into South Buffalo Creek. Station No. 9 is located in that ditch. (Data contained in Table No. 1 was on pond overflow or pond contents). pH at Station No. 8 was within a reasonable range; however, pH at Station No. 9 was very low, probably as a result of very low pH in the ponds in the recent past which were still draining from the swampy area described above. Fluorides had been reduced quite a bit by treatment but are still in the range of several hundred milligrams per liter. Phosphates are also being reduced down to approximately 100 mg/l. Nitrogen concentrations are high probably as a result of ammonia addition for neutralization. It was noted on January 18, that the first settling pond was about one-half full of sludge as the result of recent pH adjustment to this waste.

Station No. 10 (drainage ditch on west side of USS Agri-Chemicals) has flow only during wet weather and even then drains only a small area. It is apparent that run-off entering this ditch does become contaminated. Low pH, and high fluorides, nitrogen, and phosphate did show up, in the samples collected.

Low pH is the main problem at Station No. 11 (sulfuric acid cooling water and pump seal water from hydrofluorosilic acid transfer pumps). Once-through cooling water is used to cool sulfuric acid as it is being diluted. This process is in operation about four hours each day. The water is not changed other than temperature increase except when leaks in the acid cooling coils develop resulting in sulfuric acid getting into the cooling water. The main problem with system has been failure to monitor and correct acid leaks. Fluorides detected at Station No. 11 were a result of contamination of seal water from the hydrofluorosilicic acid facilities.

At Station No. 12 (combination of wastes from Agrico, Station No. 2, and USS Agri-Chemicals, Station No. 11) the low pH was caused by both companies. The high fluorides and nitrogen were caused by Agrico.

Data on Station Nos. 13 (South Buffalo Creek upstream of both plants), 14 (South Buffalo Creek downstream of combined waste stream but upstream of discharge from settling ponds), and 15 (South Buffalo Creek downstream of both plants) reflect the effect of these waste discharges on the receiving stream at the time of the study. As can be noted, pH in the stream was lowered as a result of these discharges but did not go below 6.0. The high fluorides are in violation of the standards which require no more than 1.0 mg/l. Phosphates are also higher than the proposed limit of 0.1 mg/l.

Conclusions:

The primary source of fluorides and phosphates is from the waste produced by the potassium silicofluoride plant at Agrico Chemical Company because of both poor design and inefficient operation of waste treatment facilities installed

to treat this waste stream. This waste stream has also contributed to pH violations in the stream in the past. Also contributing to pH violations has been the sulfuric acid cooling system at USS Agri-Chemicals because of inadequate monitoring and failure to repair leaks in that system. Each of the other discharges (excess ammonia scrubber water, pump seal water, and stack washdown water at Agrico Chemicals and pump seal water and surface run-off at USS Agri-Chemicals), contribute to pollution of the receiving stream and will have to be corrected.

Recommendations:

It is recommended that Agrico Chemical Company and USS Agri-Chemicals immediately initiate pollution abatement programs to protect Water Quality Standards and insure adequate control of all wastewater discharges by taking the following steps:

1. Agrico Chemical Company

   (a) Construct a two-stage chemical precipitation system for treatment of the wastes from the potassium silicofluoride plant so as to provide a fail-safe treatment system which will maintain final effluent pH between 6.0 and 8.5, to remove fluorides and phosphates to those levels normally obtainable with such a process, and to adequately dispose of the sludge which will be produced.

   (b) Construct necessary facilities to pump the stack washdown water into the chemical precipitation system for treatment.

   (c) Construct a recirculation system for pump seal water so as to prevent any discharge to the stream from that source or to discharge the pump seal water into the chemical precipitation system for treatment.

   (d) Eliminate the discharge of excess ammonia scrubber water by reuse of all this waste back to the process, or if that is not feasible provide nitrogen removal for this waste prior to discharge.

2. USS Agri-Chemicals

   (a) Install appropriate automatic monitoring equipment on the acid cooling water to detect any acid leaks in such a manner as to alert plant personnel, and construct a retention basin on the cooling water stream so as to hold any acid-bearing water to provide an opportunity for neutralization or reclamation.

   (b) Construct a recirculation system for the pump seal water so as to prevent any discharge from this source to the stream.

(c) Construct a holding basin at the end of the drainage ditch on the west side of their plant and monitor any discharge from that basin daily.

3. Agrico Chemical Company and USS Agri-Chemicals design and operate all treatment and control facilities so as to be fail-safe and eliminate the possibility of any untreated or partially treated wastewater from discharging to the receiving stream by the duplication of any equipment subject to mechanical failure.

TABLE 1 - Agrico Chemical Company
Settling Pond Effluent

	1-31-68	6-25-68	12-18-69	* 1-6-71	* 1-19-71
pH	1.5	1.1	1.5		1.2
Fluoride, mg/l	530	2100	510		
Nitrogen-Ammonia, mg/l				15	13
-Total Kjeldahl, mg/l				22	16
-Nitrate +Nitrite, mg/l				3.4	4.2
Total Phosphorous, mg/l				340	300
Total Organic Carbon, mg/l					94

	2-10-71	2-18-71	3-3-71	* 3-24-71
pH	1.1	1.1	1.1	
Fluoride, mg/l				
Nitrogen-Ammonia, mg/l	13	12	10	9.6
-Total Kjeldahl, mg/l	18	17	18	18
-Nitrate +Nitrite, mg/l	3.6	3.7	3.0	3.1
Total Phosphorous, mg/l	270	310	360	440
Total Organic Carbon, mg/l	84			

* No overflow - sampled pond contents.

TABLE 2

Stream Monitoring
South Buffalo Creek

Station No. 13 is located upstream of both fertilizer plants.

Station No. 15 is located downstream of both fertilizer plants.

Date	Station	pH	Fluoride, mg/l	Nitrogen			Phosphorus
				Ammonia	Total Kjeldahl	Nitrate & Nitrite	
6-26-68	13	7.3	0.4				
	15	6.8	19.0				
7-31-68	13	7.4	0.4				
	15	6.0	19.0				
9-4-68	13	7.6	0.3				
	15	5.9	12.0				
10-9-68	13	7.2	0.4				
	15	5.6	32.0				
4-9-69	13	7.5	0.2				
	15	6.4	13.0				
7-14-69	13	6.9	0.7				
	15	4.6	1.8				
8-6-69	13	6.8	0.3				
	15	6.1	16.0				
8-28-69	13	7.7	0.3				
	15	6.3	20.0				
9-17-69	13	7.3	0.3				
	15	3.6	42.0				
9-22-69	13	7.2	-				
	15	4.3	-				
9-25-69	13	6.1	0.2				
	15	3.7	23.0				
9-30-69	13	7.4	0.2				
	15	6.2	22.0				
10-8-69	13	6.1	0.2				
	15	3.0	61.0				
10-13-69	13	6.3	0.2				
	15	2.6	100.0				
10-20-69	13	7.2	0.2				
	15	6.0	25.0				
10-30-69	13	6.9	0.2				
	15	6.1	14.0				
7-9-70	13	8.4	-				
	15	3.3	-				
8-17-70	13	3.8	0.2				
	15	7.6	60.0				
11-30-70	13	6.8	0.2				
	15	3.8	37.0				

TABLE 2 - CONTINUED

Date	Station	pH	Fluoride, mg/l	Nitrogen			
				Ammonia	Total Kjeldahl	Nitrate & Nitrite	Phosphorus
1-6-71	13	6.4		0.6	2.9	0.4	0.2
	15	6.7		2.8	5.2	0.4	1.1
1-19-71	13	7.3		0.5	2.0	0.3	0.2
	15	6.7		1.8	3.0	0.6	0.8
2-2-71	13	6.4		0.7	1.8	0.3	0.3
	15	6.2		2.9	3.7	1.1	1.6
2-16-71	13	6.0		1.5	66.0	0.5	0.4
	15	6.1		2.3	6.3	0.9	0.7
3-10-71	13	6.3		0.4	0.8	0.3	0.3
	15	6.2		10.0	11.0	2.1	3.5
3-25-71	13	6.6		0.7	1.2	0.2	0.3
	15	2.8		19.0	21.0	3.6	10.0
5-12-71	13	7.0		0.3	1.0	0.3	0.2
	15	3.7		46.0	46.0	8.5	20.0
7-12-71	13	7.2	0.3	1.2	3.3	0.5	0.3
	15	6.1	5.9	2.3	4.2	1.1	0.5
8-19-71	13	6.4		0.3	0.3	0.5	0.2
	15	5.7		0.8	0.9	0.7	0.4

TABLE 3

Station No.	Description
1	Pump seal water and ammonia scrubber water at Agrico.
2	Pump seal water, ammonia scrubber water, and stack washdown at Agrico.
3	Stack washdown water before settling at Agrico.
4	Stack washdown water after settling at Agrico.
5	Waste from potassium silicofluoride plant before neutralization at Agrico.
6	Waste from potassium silicofluoride plant after neutralization at Agrico.
7	Same as #6 before entering settling ponds.
8	Discharge from settling ponds.
9	Discharge into South Buffalo Creek from settling ponds.
10	Drainage ditch on west side of USS Agri-Chemicals.
11	Cooling water and pump seal water from USS Agri-Chemicals.
12	Combined waste stream from Agrico and USS Agri-Chemicals.
13	South Buffalo Creek upstream of all discharges from either plant.
14	South Buffalo Creek downstream of combined waste stream from both plants but upstream from discharge from Agrico's settling ponds.
15	South Buffalo Creek downstream of all discharges from both plants.

Sample Station #1

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	5.4		3.7	5.2
Fluoride, mg/l	3.8		5.0	3.9
Nitrogen-Ammonia, mg/l	800.0		160.0	
Nitrogen-Total Kjeldahl, mg/l	800.0		160.0	
Nitrogen-Nitrate + Nitrite, mg/l	200.0		32.0	
Phosphorus, mg/l	120.0		170.0	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	5900.0		3840.0	7350.0
Total Volatile, mg/l	2360.0		1720.0	3600.0
Total Fixed, mg/l	3540.0		2130.0	3750.0
Suspended, mg/l	436.0		41.0	230.0
Suspended, Volatile, mg/l	92.0		5.0	76.0
Suspended, Fixed, mg/l	344.0		36.0	154.0
Dissolved, mg/l	5460.0		3800.0	7120.0
Dissolved, Volatile, mg/l	2270.0		1710.0	3530.0
Dissolved, Fixed, mg/l	3190.0		2090.0	3590.0

Sample Station # 2

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	1.8	5.6	4.9	3.7
Fluoride, mg/l	2300.0		830.0	2700.0
Nitrogen-Ammonia, mg/l	350.0		1000.0	2700.0
Nitrogen-Total Kjeldahl, mg/l	350.0		1100.0	2900.0
Nitrogen-Nitrate + Nitrite, mg/l	140.0		48.0	60.0
Phosphorus, mg/l	320.0		220.0	380.0
BOD, mg/l		53.0		
COD, mg/l		240.0		
Total Solids, mg/l	9310.0		7510.0	15,600.0
Total Volatile, mg/l	3540.0		4700.0	12,600.0
Total Fixed, mg/l	5860.0		2820.0	3010.0
Suspended, mg/l	73.0		889.0	1720.0
Suspended, Volatile, mg/l	10.0		71.0	120.0
Suspended, Fixed, mg/l	63.0		818.0	1600.0
Dissolved, mg/l	9230.0		6620.0	13,900.0
Dissolved, Volatile, mg/l	3530.0		4620.0	12,500.0
Dissolved, Fixed, mg/l	5800.0		2000.0	1420.0

Sample Station # 3

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	1.7		2.3	
Fluoride, mg/l	6200.0		1300.0	
Nitrogen-Ammonia, mg/l	2.6		92.0	
Nitrogen-Total Kjeldahl, mg/l	4.7		92.0	
Nitrogen-Nitrate + Nitrite, mg/l	.98		11.0	
Phosphorus, mg/l	210.0		250.0	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	2870.0		4890.0	
Total Volatile, mg/l	1370.0		1780.0	
Total Fixed, mg/l	1490.0		3100.0	
Suspended, mg/l	359.0		43.0	
Suspended, Volatile, mg/l	31.0		5.0	
Suspended, Fixed, mg/l	328.0		38.0	
Dissolved, mg/l	2510.0		4840.0	
Dissolved, Volatile, mg/l	1340.0		1780.0	
Dissolved, Fixed, mg/l	1160.0		3070.0	

Sample Station # 4

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	2.4		8.8	
Fluoride, mg/l	1200.0		1700.0	
Nitrogen-Ammonia, mg/l	39.0		3200.0	
Nitrogen-Total Kjeldahl, mg/l	66.0		3200.0	
Nitrogen-Nitrate + Nitrite, mg/l	8.6		10.0	
Phosphorus, mg/l	110.0		360.0	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	Oil in sample prevented meaningful solids determination		11,600.0	No discharge
Total Volatile, mg/l			9,700.0	
Total Fixed, mg/l			1890.0	
Suspended, mg/l			936.0	
Suspended, Volatile, mg/l			43.0	
Suspended, Fixed, mg/l			893.0	
Dissolved, mg/l			10,700.0	
Dissolved, Volatile, mg/l			9660.0	
Dissolved, Fixed, mg/l			999.0	

Sample Station # 5

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	0.8	0.5	1.1	0
Fluoride, mg/l	3000.0		36,000.0	19,000.0
Nitrogen-Ammonia, mg/l	1.3		1.1	
Nitrogen-Total Kjeldahl, mg/l	4.2		6.2	
Nitrogen-Nitrate + Nitrite, mg/l	.96		0.4	
Phosphorus, mg/l	1100.0		3800.0	
BOD, mg/l		8.9		
COD, mg/l		1100.0		
Total Solids, mg/l	26,500.0		65,100.0	47,000.0
Total Volatile, mg/l	3530.0		9770.0	4470.0
Total Fixed, mg/l	22,900.0		55,300.0	42,600.0
Suspended, mg/l	14,100.0		44,700.0	26,500.0
Suspended, Volatile, mg/l	1370.0		1870.0	1940.0
Suspended, Fixed, mg/l	12,800.0		42,800	24,600.0
Dissolved, mg/l	12,300.0		20,400.0	20,500.0
Dissolved, Volatile, mg/l	2170.0		7,900.0	2530.0
Dissolved, Fixed, mg/l	10,200.0		12,500.0	18,000.0

Sample Station #6

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	1.8		7.2	7.1
Fluoride, mg/l	1200.0		27,000.0	11,000.0
Nitrogen-Ammonia, mg/l	14.0		6,400.0	
Nitrogen-Total Kjeldahl, mg/l	35.0		17,000.0	
Nitrogen-Nitrate + Nitrite, mg/l	.54		2.8	
Phosphorus, mg/l	500.0		2,600.0	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	32,200.0		84,400.0	64,500.0
Total Volatile, mg/l	6,400.0		57,700.0	31,000.0
Total Fixed, mg/l	25,800.0		26,700.0	33,500.0
Suspended, mg/l	5,910.0		27,200.0	12,900.0
Suspended, Volatile, mg/l	508.0		3,470.0	1,380.0
Suspended, Fixed, mg/l	5,400.0		23,800.0	11,500.0
Dissolved, mg/l	26,300.0		57,100.0	51,700.0
Dissolved, Volatile, mg/l	5,890.0		54,200.0	29,600.0
Dissolved, Fixed, mg/l	20,400.0		2,910.0	22,000.0

Sample Station # 7

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	1.9	2.3	1.4	7.9
Fluoride, mg/l	900.0		26,000.0	7500.0
Nitrogen-Ammonia, mg/l	16.0		1,800.0	
Nitrogen-Total Kjeldahl, mg/l	36.0		1,800.0	
Nitrogen-Nitrate + Nitrite, mg/l	.66		1.4	
Phosphorus, mg/l	500.0		1,700.0	
BOD, mg/l		<4.0		
COD, mg/l		440.0		
Total Solids, mg/l	29,600.0		41,500.0	67,800.0
Total Volatile, mg/l	3,450.0		13,800.0	37,000.0
Total Fixed, mg/l	26,200.0		27,700.0	30,900.0
Suspended, mg/l	6,690.0		12,800.0	10,900.0
Suspended, Volatile, mg/l	628.0		690.0	1,180.0
Suspended, Fixed, mg/l	6,060.0		12,100.0	9,670.0
Dissolved, mg/l	22,900.0		28,600.0	57,000.0
Dissolved, Volatile, mg/l	2,820.0		13,100.0	35,800.0
Dissolved, Fixed, mg/l	20,100.0		15,500.0	21,200.0

Sample Station # 8

Parameters	1-6-72 *	1-11-72	1-13-72	1-18-72
pH	6.0	7.9	8.6	6.0
Fluoride, mg/l	300.0		220.0	260.0
Nitrogen-Ammonia, mg/l	5,400.0		3,600.0	
Nitrogen-Total Kjeldahl, mg/l	6,200.0		3,600.0	
Nitrogen-Nitrate + Nitrite, mg/l	3.8		1.5	
Phosphorus, mg/l	120.0		120.0	
BOD, mg/l		140.0		
COD, mg/l		560.0		
Total Solids, mg/l	14,600.0		15,800.0	15,300.0
Total Volatile, mg/l	12,100.0		14,000.0	12,800.0
Total Fixed, mg/l	2,480.0		1,740.0	2,500.0
Suspended, mg/l	319.0		223.0	98.0
Suspended, Volatile, mg/l	86.0		53.0	16.0
Suspended, Fixed, mg/l	223.0		170.0	82.0
Dissolved, mg/l	14,300.0		15,500.0	15,200.0
Dissolved, Volatile, mg/l	12,000.0		14,000.0	12,700.0
Dissolved, Fixed, mg/l	2,260.0		1,770.0	2,410.0

*No overflow-sampled pond contents.

Sample Station # 9

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	1.7	2.9	7.6	1.4
Fluoride, mg/l	750.0		360.0	550.0
Nitrogen-Ammonia, mg/l	13.0		1,800.0	740.0
Nitrogen-Total Kjeldahl, mg/l	18.0		1,800.0	740.0
Nitrogen-Nitrate + Nitrite, mg/l	2.1		1.9	2.1
Phosphorus, mg/l	75.0		76.0	78.0
BOD, mg/l		90.0		
COD, mg/l		400.0		
Total Solids, mg/l	11,300.0		11,700.0	10,800.0
Total Volatile, mg/l	3,950.0		8,230.0	5,300.0
Total Fixed, mg/l	7,370.0		3,510.0	5,500.0
Suspended, mg/l	19.0		1,820.0	133.0
Suspended, Volatile, mg/l	11.0		264.0	17.0
Suspended, Fixed, mg/l	8.0		1,550.0	116.0
Dissolved, mg/l	11,300.0		9,920.0	10,700.0
Dissolved, Volatile, mg/l	3,940.0		7,970.0	5,330.0
Dissolved, Fixed, mg/l	7,360.0		1,960.0	5,380.0

Sample Station # 10

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	4.8	8.3	6.8	
Fluoride, mg/l	39.0		1,500.0	
Nitrogen-Ammonia, mg/l	480.0		1,100.0	
Nitrogen-Total Kjeldahl, mg/l	480.0		1,100.0	
Nitrogen-Nitrate + Nitrite, mg/l	280.0		740.0	
Phosphorus, mg/l	580.0		200.0	
BOD, mg/l		13.0		
COD, mg/l		230.0		
Total Solids, mg/l	10,400.0		13,800.0	
Total Volatile, mg/l	3,310.0		6,220.0	Dry
Total Fixed, mg/l	7,120.0		7,230.0	
Suspended, mg/l	656.0		1,100.0	
Suspended, Volatile, mg/l	192.0		14.0	
Suspended, Fixed, mg/l	464.0		1,090.0	
Dissolved, mg/l	9,770.0		12,700.0	
Dissolved, Volatile, mg/l	3,120.0		6,210.0	
Dissolved, Fixed, mg/l	6,650.0		6,540.0	

Sample Station # 11

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	2.9	6.5	5.2	9.2
Fluoride, mg/l	180.0		30.0	25.0
Nitrogen-Ammonia, mg/l	3.2		52.0	
Nitrogen-Total Kjeldahl, mg/l	3.2		52.0	
Nitrogen-Nitrate + Nitrite, mg/l	.92		18.0	
Phosphorus, mg/l	4.0		11.0	
BOD, mg/l		5.7		
COD, mg/l		30.0		
Total Solids, mg/l	672.0		1160.0	1660.0
Total Volatile, mg/l	191.0		627.0	122.0
Total Fixed, mg/l	481.0		534.0	1540.0
Suspended, mg/l	19.0		102.0	404.0
Suspended, Volatile, mg/l	4.0		4.0	42.0
Suspended, Fixed, mg/l	15.0		98.0	362.0
Dissolved, mg/l	653.0		1060.0	1260.0
Dissolved, Volatile, mg/l	187.0		623.0	80.0
Dissolved, Fixed, mg/l	466.0		436.0	1180.0

Sample Station # 12

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	2.8		4.0	9.2
Fluoride, mg/l	160.0		230.0	150.0
Nitrogen-Ammonia, mg/l	4.1		190.0	72.0
Nitrogen-Total Kjeldahl, mg/l	4.1		190.0	74.0
Nitrogen-Nitrate + Nitrite, mg/l	1.6		13.0	3.1
Phosphorus, mg/l	5.8		40.0	15.0
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	855.0		1760.0	2850.0
Total Volatile, mg/l	284.0		682.0	167.0
Total Fixed, mg/l	541.0		1080.0	2680.0
Suspended, mg/l	7.0		328.0	500.0
Suspended, Volatile, mg/l	1.0		20.0	44.0
Suspended, Fixed, mg/l	6.0		308.0	456.0
Dissolved, mg/l	818.0		1430.0	2350.0
Dissolved, Volatile, mg/l	283.0		662.0	123.0
Dissolved, Fixed, mg/l	535.0		768.0	2230.0

Sample Station # 13

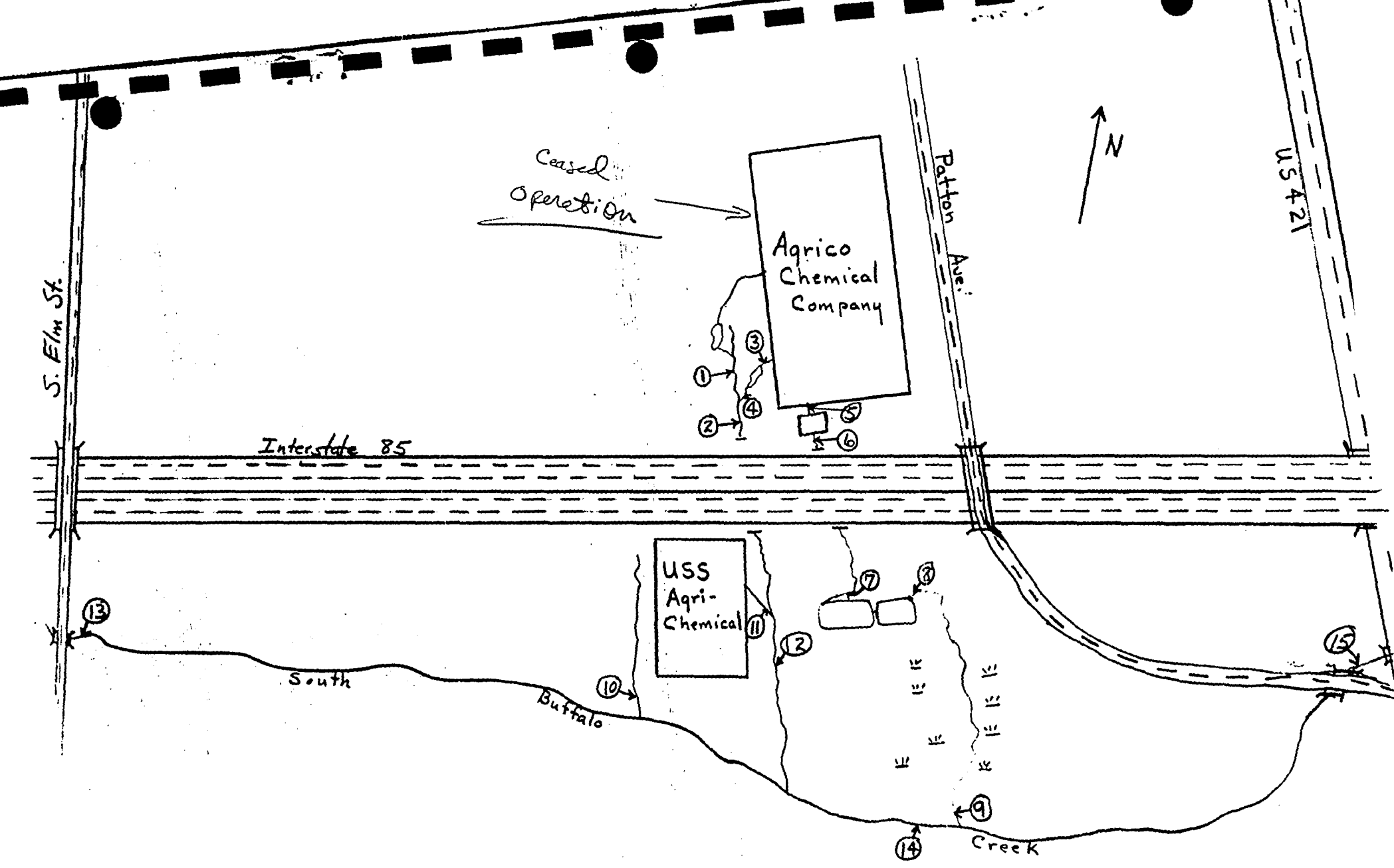
Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	7.9		8.2	6.9
Fluoride, mg/l	0.2		0.2	0.2
Nitrogen-Ammonia, mg/l	<0.05		0.08	
Nitrogen-Total Kjeldahl, mg/l	<0.1		2.0	
Nitrogen-Nitrate + Nitrite, mg/l	.17		0.25	
Phosphorus, mg/l	.12		0.45	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	393.0		1240.0	200.0
Total Volatile, mg/l	111.0		525.0	80.0
Total Fixed, mg/l	282.0		717.0	120.0
Suspended, mg/l	23.0		478.0	32.0
Suspended, Volatile, mg/l	8.0		11.0	4.0
Suspended, Fixed, mg/l	15.0		467.0	28.0
Dissolved, mg/l	370.0		764.0	168.0
Dissolved, Volatile, mg/l	103.0		514.0	76.0
Dissolved, Fixed, mg/l	267.0		250.0	92.0

Sample Station # 14

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	6.1			7.1
Fluoride, mg/l	16.0			39.0
Nitrogen-Ammonia, mg/l	1.3			
Nitrogen-Total Kjeldahl, mg/l	890.0			
Nitrogen-Nitrate + Nitrite, mg/l	.74			
Phosphorus, mg/l	1.1			
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	417.0			578.0
Total Volatile, mg/l	164.0			58.0
Total Fixed, mg/l	253.0			520.0
Suspended, mg/l	37.0			120.0
Suspended, Volatile, mg/l	10.0			18.0
Suspended, Fixed, mg/l	27.0			102.0
Dissolved, mg/l	380.0			458.0
Dissolved, Volatile, mg/l	154.0			40.0
Dissolved, Fixed, mg/l	226.0			418.0

Sample Station # 15

Parameters	1-6-72	1-11-72	1-13-72	1-18-72
pH	6.8		7.3	6.0
Fluoride, mg/l	5.8		1.3	16.0
Nitrogen-Ammonia, mg/l	0.20		2.8	
Nitrogen-Total Kjeldahl, mg/l	0.20		5.0	
Nitrogen-Nitrate + Nitrite, mg/l	0.36		0.49	
Phosphorus, mg/l	0.54		0.52	
BOD, mg/l				
COD, mg/l				
Total Solids, mg/l	405.0		1380.0	364.0
Total Volatile, mg/l	128.0		529.0	160.0
Total Fixed, mg/l	277.0		848.0	204.0
Suspended, mg/l	35.0		688.0	88.0
Suspended, Volatile, mg/l	10.0		23.0	12.0
Suspended, Fixed, mg/l	25.0		665.0	76.0
Dissolved, mg/l	370.0		689.0	276.0
Dissolved, Volatile, mg/l	118.0		506.0	148.0
Dissolved, Fixed, mg/l	252.0		183.0	128.0


Ceased Operation
Agrico Chemical Company
Patton Ave.
US 421
N
S. Elm St.
Interstate 85
USS Agri-Chemical
South Buffalo Creek
1
2
3
4
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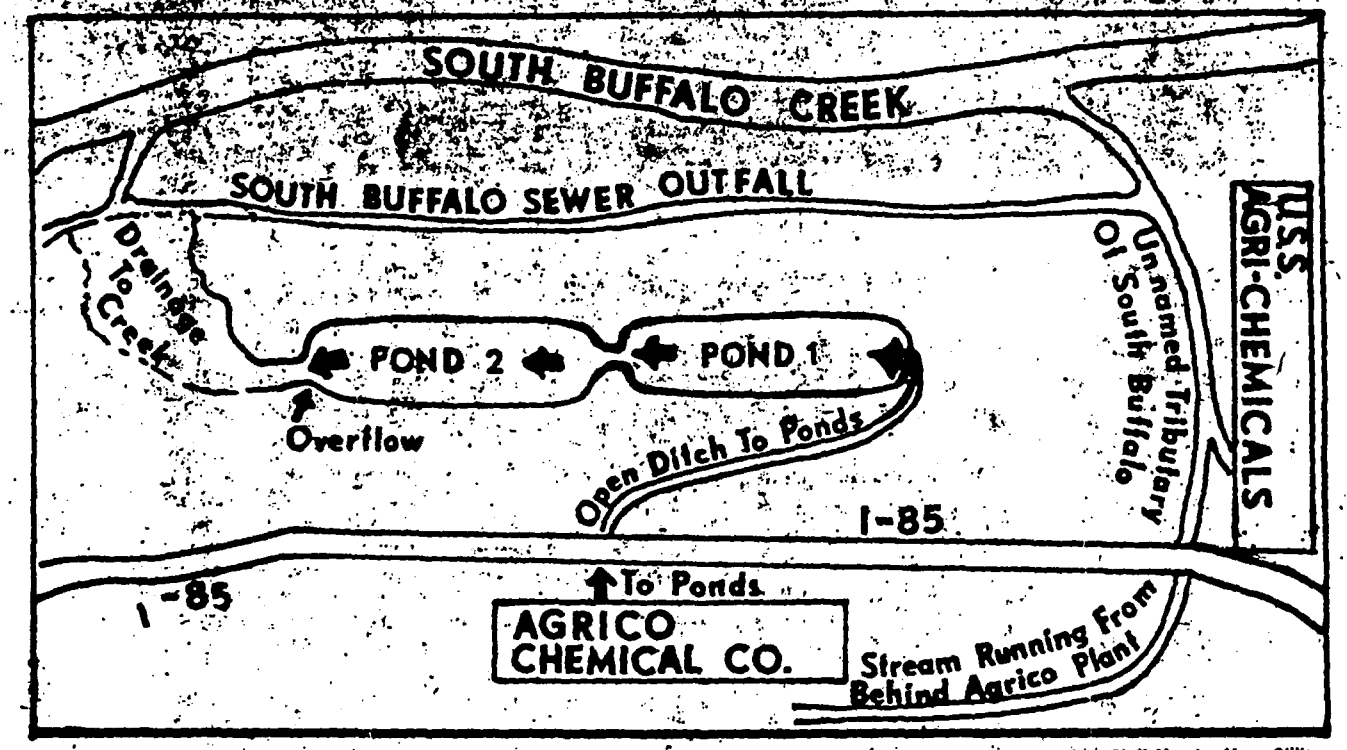
Sketch 1

Buffalo Creek.

The acid waste material which runs from the Agrico

exposing the aggregate surface.

Keep walking. There's more.



Staff Map by Mary Gilliam

Diagram Shows Discharge Points, Plants

EPA FORM 2070-13

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D061 795 696

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Unitex Chemical Corporation	520 Broome Road, P. O. Box 16344

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Greensboro	NC	27406	Guilford	41	06

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
36 02 22	079 46 46	☒ 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
None (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	? (BEGINNING YEAR) 1976 (ENDING YEAR) ☐ UNKNOWN Impoundment

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.
			( )

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
			( )
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

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.
William G. Ross, Jr.	Brooks, Pierce, McLendon, Humphrey, and Leonard Attorneys	919) 373-8850

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Grover Nicholson, Geologist	NC Div. Health SVS	NC Superfund Branch	919-733-2801	5 18 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	D 061 795 696

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ 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 UNK
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ 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			The former site owner, Armour
OLW	OILY WASTE			Agrico, discharged filter press
SOL	SOLVENTS			material and wastewater into
PSD	PESTICIDES			surface impoundments prior to
OCC	OTHER ORGANIC CHEMICALS			1976.
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

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)*

References 4 and 5.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

There are 3250 people using groundwater from within 3 miles of the site.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

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

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

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

01 ☒ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: approx. 3/4 (Acres) — 04 NARRATIVE DESCRIPTION

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

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

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 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	D 061 795 696

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: _____

IV. COMMENTS

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

References 4, 5, 16, and 19.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D 061 795 696

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				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ 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	2044 to 6133	yd^3
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (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 (Specify)

05 OTHER

☒ A. BUILDINGS ON SITE

approx. 3/4

06 AREA OF SITE

(Acres)

07 COMMENTS

Agrico Chemical Company discharged waste water and filter press materials from their manufacturing process into the impoundments. (Reference 4)

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.

The impoundments are not lined and overflow and seepage through the dikes released waste to the swampy area bordering South Buffalo Creek.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

There are no barriers around the old impoundment area. (Reference Site Reconnaissance of 24 August 1988.

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

References 4 and 19.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D 061 795 696

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. 1.5 (mi)
B. 1 (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 3250

03 DISTANCE TO NEAREST DRINKING WATER WELL _____ (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
10-50 (ft)		10-50 (ft)	(gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS *(Including useage, depth, and location relative to population and buildings)*

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
South Buffalo Creek	☐	900 Ft. (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE A. _____ NO. OF PERSONS
TWO (2) MILES OF SITE B. _____ NO. OF PERSONS
THREE (3) MILES OF SITE C. _____ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE Unknown

04 DISTANCE TO NEAREST OFF-SITE BUILDING approx. 400 ft. (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 site lies in the southeastern area of Greensboro, a city of about 170,000 people. Immediately around the site are industrial and commercial areas; however, residential areas are within one 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	D 061 795 696

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE *(Check one)*

☐ 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)*

☐ 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)	(ft)	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
4.25 (in)	2.6 (in)	6 %	SE	2.8 %

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. _____ (mi)

OTHER: B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT *(of endangered species)*

_____ (mi)

ENDANGERED SPECIES: _____

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. 0.5 (mi)	C. _____ (mi)	D. 1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is in an industrial-commercial section of Greensboro. To the north, northwest, and west lies the major portion of the city. To the east, southeast, and south lies rural, residential, and agricultural land. The site is in the gently rolling Piedmont terrain where the land surface has an elevation of 700 to 800 feet above mean sea level.

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

References 2, 3, 8, 9, and 14.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D 061 795 696

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	8	J. L. Rogers and Callcott Engineers, Inc.	March 1988
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS: Included in report.

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

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

References 6 and 7.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Unitex Chemical Corporation	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
520 Broome Road.	

05 CITY	06 STATE	07 ZIP CODE
Greensboro	NC	27406

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

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
Armour Agrico Fertilizer Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE
Greensboro	NC	27406

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)

Preliminary Assessment and Reference 4.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME: Unitex Chemical Corp.	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 520 Broome Road	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY: Greensboro	06 STATE: NC	07 ZIP CODE: 27406	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME: Same	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)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE

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)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

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

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

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)*

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D 061 795 696

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)*