386SERBSF10,624

386SERBSF10,624

Site Name (Subject):	STANADYNE, INC/DIESEL SYSTEMS
Site ID (Document ID):	NCD091567065
Document Name (DocType):	Preliminary Assessment/Site Inspection (PA/SI)
Report Segment:	
Description:	FIT Report: Site Inspection Prioritization
Date of Document:	8/22/1994
Date Received:	8/29/1994
Box: *Enter SF and # with no spaces*	SF10,624
Access Level:	PUBLIC
Division:	WASTE MANAGEMENT
Section:	SUPERFUND
Program (Document Group):	SERB (SERB)
Document Category:	FACILITY

Print Report for Record | **Go to New Blank Record** | **Go to New Record - (default to last record values)** | **Delete Record**

To: NC.

BLACK & VEATCH Waste Science, Inc.

The Curtis Center, Suite 705, 601 Walnut Street, Philadelphia, Pennsylvania 19106-3307, (215) 928-0700, Fax: (215) 928-1780

Received 11/17/95 RDD.

U.S. Environmental Protection Agency
Stanadyne, Inc., Diesel Systems Group
Work Assignment 12

BVWS Project 52012.253
BVWS File D
August 22, 1994

REC'D
AUG 29 1994

10/27/1994
NFRAP

Mr. Narindar Kumar
Chief, Site Assessment Section
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Subject: Site Inspection Prioritization
Stanadyne, Inc., Diesel Systems Group
Washington, Beaufort County, NC
EPA ID NCD091567065

Dear Mr. Kumar:

BLACK & VEATCH Waste Science, Inc. has been tasked by the U.S. Environmental Protection Agency (EPA) to conduct a Site Inspection Prioritization at the Stanadyne, Inc., Diesel Systems Group (Stanadyne) site, located on Clark Neck Road in Washington, Beaufort County, North Carolina. In accordance with the scope of work, a preliminary Hazard Ranking System (HRS) score was prepared to determine the need for future activities at the site.

The Stanadyne site is an active manufacturing center of diesel engine parts, located in a relatively rural residental area just outside of the city of Washington, North Carolina (Refs. 1; 2, pp. 2, 12). Prior to 1968, when Sea Crest Marine purchased the site, the site was owned by the State of North Carolina and one of the buildings onsite was used as a jailhouse. Sea Crest Marine, a manufacturer of vacuum-formed plastic fishing boats, used the site from 1968 to either 1972 or 1973, when Sea Crest Marine ceased operations. The property was sold to Stanadyne in 1978 and is currently owned and operated by Stanadyne (Refs. 2, p. 7; 3, p. 9; 4). The Stanadyne site is located on approximately 32 acres and contains a 192,000 square foot building, and an unknown number of aboveground storage tanks (ASTs) used to store

solvents (Ref. 2, p. 9; 5). Reportedly, the ASTs are located on diked concrete pads (Ref. 2, p. 9).

The manufacturing processes at the Stanadyne site include aluminum die casting and machining, and diesel fuel filter assembly and testing. Wastes generated during these two processes include sludges from the recovery distillation of degreasing solvents and sludges from a zinc phosphate metal treating process (Ref. 2, p. 7). The solvents used onsite, and potentially contained within the waste sludge, include TF-7 (52 percent freon and 48 percent methylene chloride), perchloroethylene, and 1,1,1-trichloroethane. Reportedly, this waste was landfilled in local Beaufort County landfills until approximately 1987, when the waste was drummed and manifested offsite to treatment facilities such as SCA Services, Inc., in Pinewood, South Carolina, and Armagedon Chemical and McKesson Chemical in Kentucky (Ref. 4). The phosphate sludge was also disposed of in local Beaufort County landfills until 1982, when the waste was determined to be hazardous by the State of North Carolina and the waste sludge was drummed and disposed of offsite at unknown locations (Ref. 2, p. 7). Analytical results of the phosphate sludge, analyzed for limited inorganics and pesticides by Environmental Laboratory of Fayetteville, North Carolina, indicated the presence of mercury (Ref. 6). According to EPA Form - 3 for Stanadyne, wastes generated onsite include approximately 1,722,966.5 pounds of halogenated and nonhalogenated solvents, and spent cyanide plating bath solutions (Ref. 7). There are no records of onsite waste disposal (Ref. 2, p. 7).

On August 12, 1982 a Resource Conservation and Recovery Act (RCRA) Site Investigation was conducted at the Stanadyne site. Wastes shipped offsite were noted to include a water soluble cutting oil and drums of perchloroethylene still bottoms generated during distillation of this solvent. The cutting oil waste is stored in a 5,000-gallon tank prior to shipment to SO-Green Corporation in Tifton, Georgia. The perchloroethylene waste is stored in drums prior to shipment to Armagedon Chemical Sales. Reportedly, 25 drums were manifested offsite on April 5, 1982. In addition to these wastes, wastewater from the site is discharged to the city of Washington wastewater treatment system after a pH adjustment onsite (Ref. 5).

A July 24, 1984 RCRA Site Inspection found that manifests for shipping 20 drums of perchloroethylene offsite were missing. This violation was quickly corrected by Stanadyne personnel by obtaining the manifests from Environmental Recycling, the recipient of the

drums (Ref. 8).

During the week of June 10, 1990, EPA Field Investigation Team (FIT) personnel conducted a Site Investigation at the Stanadyne site (Ref. 2, p. 17). Five surface soil samples, three soil boring samples, four sediment samples, and three groundwater samples were collected. The samples were analyzed for organic and inorganic compounds following EPA Contract Laboratory Program (CLP) protocols (Ref. 2, pp. 17, 19). Analytical results of surface soil samples (one background and four samples collected from various locations onsite) indicated the presence of toluene, lead, and zinc (Ref. 2, pp. 19, 20, 24, 25, 57, 65). Analytical results of subsurface soil samples (one background and two samples collected from the northern portion of the site) collected from depths between 6 and 11 feet below land surface (bls) did not indicate the presence of organic compounds. Analytical results of inorganic analyses of the subsurface soil samples could not be used to characterize the site because of a sample processing error with the background sample container; therefore, a comparison to background conditions could not be performed (Ref. 2, pp. 19, 20, 27, 71). Analytical results of sediment samples (one background and three samples collected from drainage ditches surrounding the plant building) indicated the presence of phenol and aluminum (Ref. 2, pp. 19, 20, 28, 29, 96, 104). Analytical results of groundwater samples (one background and two downgradient samples collected in the northern portion of the site) indicated the presence of lead, manganese, and vanadium (Ref. 2, pp. 19, 20, 31, 32, 115, 120).

Based on the analytical results of the groundwater samples, lead was the only contaminant which could be attributed to site activities or known contamination. The presence of these contaminants did indicate a release of lead to the surficial aquifer; however, an observed release of contaminants to the aquifer of concern could not be established. The surficial aquifer is separated from the underlying aquifers by the Yorktown Formation, a confining layer. The Yorktown Formation in the site area is approximately 40 feet thick and is found at approximately 10 feet bls, and has an estimated hydraulic conductivity of the Yorktown Formation ranging between 10^{-9} to 10^{-7} cm/sec (Ref. 2, pp. 19, 20, 31, 32, 115, 120; 4; 5; 7; 9, pp. 18, 27, 32; 10). The site is located within the Central Coastal Plain Physiographic Province and is underlain by seven hydrologically distinct aquifers which occur between multiple geologic units and generally are separated by beds of clay (Refs. 9; 10).

Groundwater is the primary source of potable water within 4 miles of the site (Refs. 11; 12). Public supply wells within 4 miles of the site draw groundwater from the Castle Hayne

Limestone Aquifer, at a depth ranging between 70 and 94. Private wells in the Washington area also draw groundwater from the Castle Hayne Limestone Aquifer from an estimated average depth ranging betwen 80 and 100 feet bls (Refs. 9, pp. 27, 30 - 32; 12). Depth to groundwater onsite was estimated to be 6 feet bls, based on a subsurface soil sample collected within the "saturation zone" (Ref. 2, pp. 20). There are two public supply wells and approximately 1,762 private supply wells serving approximately 5,578 people with drinking water, distributed as follows: 0 - 0.25 mile, 0; 0.25 - 0.5 mile, 44; 0.5 - 1 mile, 341; 1 -2 miles, 846; 2 - 3 miles, 1,259; 3 - 4 miles, 3,088 (Refs. 1; 11; 12; 13; 14). Wellhead protection areas have not yet been delineated within the state of North Carolina (Ref. 15). In the Washington, North Carolina area, the average annual rainfall is 52 inches, and the average annual lake evaporation is 41 inches, yielding a net precipitation of 11 inches per year (Ref. 16).

No documentation exists to indicate a release of contaminants to surface water. Sediment samples collected during the 1989 Site Investigation were collected from onsite drainage ditches and not from perennially flowing waterbodies along the surface water pathway. Overland flow from the site is directed to the onsite drainage ditches and flows to the northwest through the site and enters a perennial tributary to Cherry Run at the Probable Point of Entry (PPE). The pathway continues along this tributary for 1,000 feet (0.2 mile) and enters Cherry Run. The pathway continues along Cherry Run for 500 feet (0.3 mile downstream of the PPE) and enters Tranters Creek, a tidally-influenced waterbody and the Point of Tidal Influence (PTI). The downstream pathway continues along Tranters Creek for 1 mile (1.3 mile downstream of the PPE) and enters the Pamlico River. The pathway continues along the Pamlico River for 6.0 miles (7.3 miles downstream of the PPE) and enters the Pamlico Bay. The pathway continues for 7.7 miles within the Pamlico Bay and includes the adjoining bays of Chocowinity and Blounts (Refs. 17; 18). The average annual flow of Cherry Run was estimated to be 9.76 cubic feet per second (cfs), and the average annual flow of the unnamed tributary to Cherry Run was estimated to be less than 10 cfs. The average annual flow of Tranters Creek was calculated to be 244 cfs. The average annual flow of the Pamlico River was calculated to be 3,135 cfs (Refs. 19; 20). During periods of tidal-influence, overland flow from the site would flow upstream from the PTI and would flow along Tranters Creek for 12.2 miles to a small pond, which would stop the upstream tidally influenced flow (Ref. 18). The 2-year, 24-hour rainfall in the Washington, North Carolina area is 4 inches (Ref. 21). The drainage area through the site is approximately 32 acres (Ref. 1). Based on the site topography and proximity to the wetlands surrounding the

unnamed tributary to Cherry Run and Cherry Run, the site was estimated to lie within the 100-year floodplain (Ref. 1).

There are no known drinking water intakes along the surface water pathway. Fisheries along the surface water pathway include Tranters Creek, Pamlico River, Chocowinity Bay, and Blounts Bay, and Sparrow Bay (Ref. 22). There are approximately 0.8 miles of wetland frontage along the unnamed tributary to Cherry Run and Cherry Run. There are greater than 20 miles of wetland frontage along Tranters Creek. There are approximately 10 miles of wetland frontage along the Pamlico River. There are greater than 20 miles of wetland frontage and a state park along the Pamlico River and adjoining bays (Ref. 18). There are no known habitats of threatened or endangered species along the 15-mile surface water pathway (Ref. 23).

Analytical results of surface soil samples and sediment samples collected from within the onsite intermittent drainage ditches indicated the presence of various volatile organic compounds and inorganics (Ref. 2, pp. 24 - 32). The area of contamination was estimated to be 18 acres based on the sample locations (Refs. 1; 2, p. 19). The active portion of the site and the area of known contamination is fenced (Ref. 2, p. 19). There are approximately 350 workers onsite (Ref. 24). There are no known residences, schools, day care facilities, terrestrial sensitive environments, commercial agriculture, or commercial silviculture located within 200 feet of a waste source onsite (Refs. 1; 2, p. 12; 22).

No documentation exists to indicate a release of contaminants to air (Ref. 2, pp. 17, 18). There are approximately 8,658 people living within a 4-mile radius of the Stanadyne site, distributed as follows: 0 -0.25 mile, 241; 0.25 - 0.5 mile, 62; 0.5 - 1 mile, 501; 1 - 2 miles, 2,466; 2 - 3 miles, 2,166; 3 - 4 miles, 3,222 (Refs. 1; 13; 14; 25). There are greater than 2,214 acres of wetlands within a 4-mile radius of the site (0 - 0.25 mile, 66; 0.25 - 0.5 mile, 216; 0.5 - 1 mile, 432; 1 - 2 miles, greater than 500; 2 - 3 miles, greater than 500; 3 - 4 miles, greater than 500) (Ref. 1). There are no known habitats of threatened or endangered species within 4-miles of the site (Ref. 23). The nearest school is located approximately 1.5 mile east-southeast of the site (Ref. 1). A potential exists for agricultural uses to be present within 0.5 mile of the site (Refs. 1; 2, p. 12).

The hazardous waste quantity (HWQ) of 100 was calculated using a wastestream (1,722,966.5 pounds), 45 drums, 18 acres of contaminated soil and sediment, and a 5,000-gallon tank. The

HRS Scoring is based on a potential release of contaminants to groundwater, surface water and air. Based on the findings of this report, no further action is recommended for the Stanadyne site.

Pathway	Site Score
Groundwater	4.71
Surface Water	5.88
Soil Exposure	2.16
Air	9.67
Overall Score	**6.22**

Enclosed are all the references used in this evaluation. If you have any questions, please do not hesitate to contact me at (215) 928-0700 or Victor Blix at (404) 643-2320.

Very truly yours,

BLACK & VEATCH Waste Science, Inc.

Corry T. Platt

Corry T. Platt
Site Manager

Enclosure

References

1. Four-Mile Vicinity Map for the Stanadyne, Inc. Diesel Systems Group site, U.S. Geological Survey, 7.5 minute series, Topographic Maps, Quadrangles for North Carolina: Grimesland, 1979; Leggetts Crossroads, 1979; Old Ford, 1979; Washington, 1951, photorevised 1974; scale 1:24,000.

2. U.S. Environmental Protection Agency, Field Investigation Team (FIT), *Screening Site Inspection, Phase II, for the Stanadyne, Inc., Diesel Systems Group site*, May 8, 1991.

3. EPA Form 2070-13, *Potential Hazardous Waste Site, Site Inspection Report for Stanadyne, Inc., Diesel Systems Group*, January, 9, 1991.

4. Grover Nicholson, North Carolina Department of Human Resources, in memorandum to file, September 18, 1987. Subject: Telephone conversation with Ray Linton, Plant Engineer, Stanadyne, Inc.

5. North Carolina Department of Human Resources, RCRA Site Inspection summary for Stanadyne, Inc. Diesel Systems Group, inspection date August 12, 1982.

6. Donald E. Williams, Stanadyne, Inc., in letter to O.W. Strickland, North Carolina Department of Human Resources, October 14, 1990. Subject: Sludge analysis.

7. EPA Form 3510 - 1, 3, "General Information and Hazardous Waste Permit Application for the Stanadyne, Inc., Diesel Systems Group", prepared by Paul H. Wabrek, Stanadyne, Inc. Vice President and General Manager, November 18, 1980.

8. Randy Varni, Stanadyne, Inc., in letter to O.W. Stickland, North Carolina Department of Human Resources, August 1, 1984. Subject: RCRA Inspection.

9. U.S. Geological Survey, *Geology and Ground Water Resources of Pitt County, North Carolina*, by Carlton T. Sumsion, Groundwater Bulletion No. 18, March 1970.

10. R. Allan Freeze and John A. Cherry, *Groundwater*. Englewood Cliffs, NJ: Prentice-Hall, Inc. 1979, p. 29.

11. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Frank Buck, Washington Water Department, July 19, 1994. Subject: Potable Water Supply in Washington, North Carolina.

12. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Jeff Hattock, Chocowinity Water Department, July 19, 1994. Subject: Potable Water Supply in Chocowinity, North Carolina.

13. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in memorandum to Stanadyne, Inc. File, July 21, 1994. Subject: Results of Calculation of Air and Groundwater Populations.

14. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, *1990 Census of Population and Housing, Summary Population and Housing Characteristics, North Carolina*, Document No. 1991 CPH-1-35.

15. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Randy Prillaman, North Carolina Department of Environmental Management, Groundwater Section, March 23, 1994. Subject: Wellhead Protection Areas.

16. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Climatic Atlas of the United States*, June 1968.

17. Fifteen-Mile Surface Water Pathway Map for the Stanadyne, Inc. site, U.S. Geological Survey, 7.5 minute series, Topographic Maps, Quadrangles for North Carolina: Leggetts Crossing, 1979; Washington, 1951, photorevised 1974; Blounts Bay, 1953, photorevised 1983.

18. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Jerry Bales, U.S.Geological Survey, July 21, 1994. Subject: Tidal Influence within the Pamlico and Tar River.

19. U.S. Department of the Interior, Geological Survey, *Water Resources Data, North Carolina, Water Year 1992*, U.S. Geological Survey Water-Data Report NC-92-2.

20. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., Calculation of average Annual Flows along the Surface Water Pathway, Stanadyne, Inc., July 21, 1994.

21. U.S. Department of Agriculture, Soil Conservation Service, *Urban Hydrology for Small Watersheds*, Technical Release 55, June 1985.

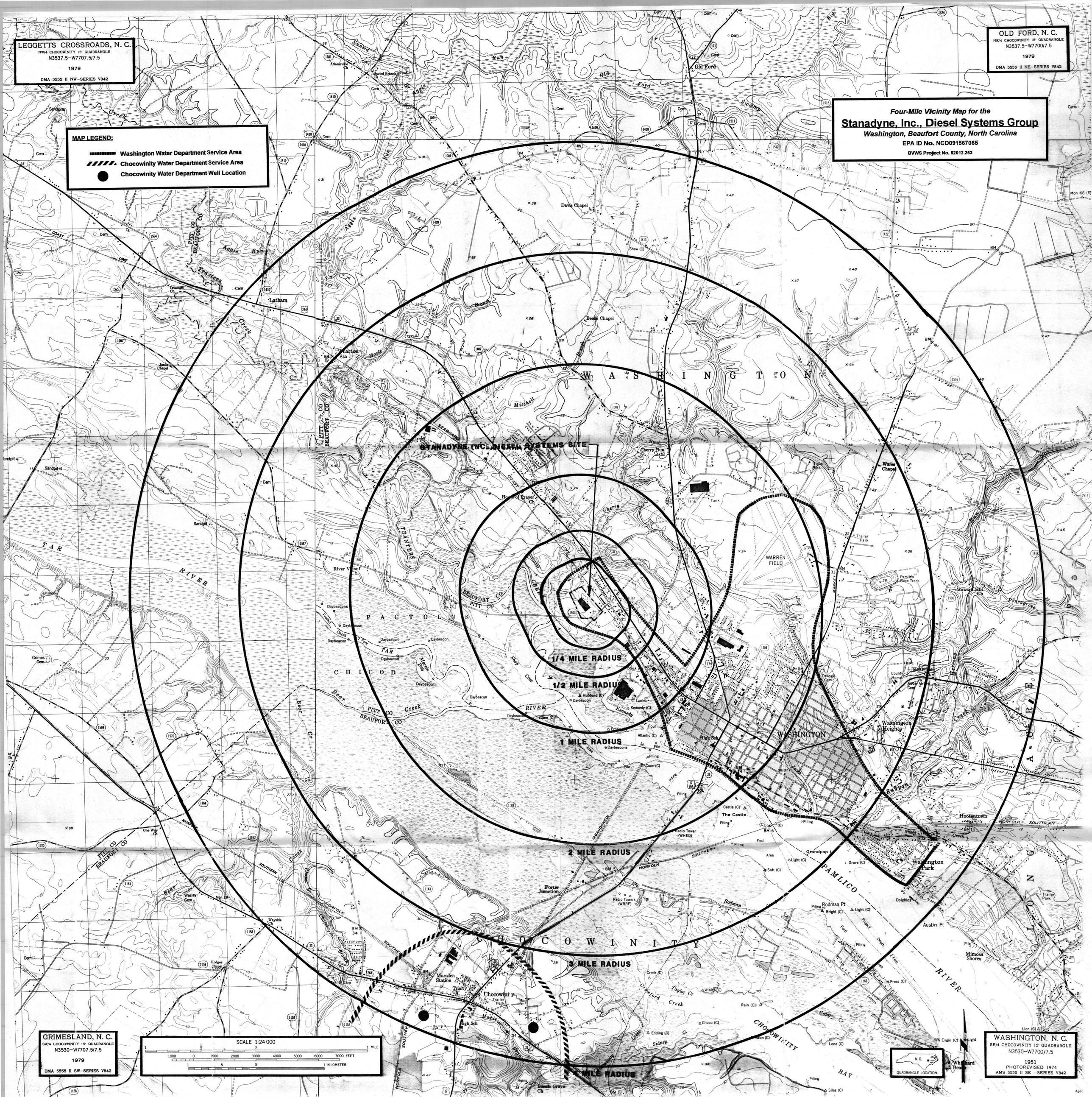
22. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Joan, NC Department of Fish and Wildlife, July 22, 1994. Subject: Fisheries.

23. Unites States Fish and Wildlife Service, *Endangered and Threatened Species*, Region 4 - Atlanta, 1983.

24. Corry T. Platt, BLACK & VEATCH Waste Science, Inc., in telephone memorandum with Receptionist, Stanadyne, Inc., July 22, 1994. Subject: Workers.

25. U.S. Environmental Protection Agency, *Graphical Exposure Modeling System (GEMS) Database*, Compiled from U.S. Bureau of the Census, 1990 Data.

REFERENCE NO. 1


LEGGETTS CROSSROADS, N. C.
NW/4 CHOCOWINITY 15' QUADRANGLE
N3537.5–W7707.5/7.5
1979
DMA 5555 II NW–SERIES V842
OLD FORD, N. C.
NE/4 CHOCOWINITY 15' QUADRANGLE
N3537.5–W7700/7.5
1979
DMA 5555 II NE–SERIES V842
Four-Mile Vicinity Map for the
Stanadyne, Inc., Diesel Systems Group
Washington, Beaufort County, North Carolina
EPA ID No. NCD091567065
BVWS Project No. 52012.253
MAP LEGEND:
Washington Water Department Service Area
Chocowinity Water Department Service Area
Chocowinity Water Department Well Location
STANADYNE, INC., DIESEL SYSTEMS SITE
1/4 MILE RADIUS
1/2 MILE RADIUS
1 MILE RADIUS
2 MILE RADIUS
3 MILE RADIUS
4 MILE RADIUS
WASHINGTON
CHOCOWINITY
PACTOLUS
CHICOD
WARREN FIELD
TAR RIVER
PAMLICO RIVER
Latham
Davis Chapel
Beebe Chapel
Old Ford
Tharrington Sta
Forter Junction
Marsden Station
Chocowinity
Washington Heights
Washington Park
Hootentown
Rodman Pt
Austin Pt
Mimosa Shores
Howard Hill Ch
Pamlico Race Track
Trailer Park
Warren Chapel
Cherry Run Ch
House of Prayer Ch
Wesley Cem
Wayside Ch
Hodges Chapel
Beech Grove Ch
Grimes Cem
Sandpits
Daybeacons
Radio Tower (WHED)
Radio Towers (WRRF)
Grandpap
The Castle
Dolphins
Oakdale Cem
County Home
Cedar Grove Cem
Mon 66 (E)
GRIMESLAND, N. C.
SW/4 CHOCOWINITY 15' QUADRANGLE
N3530–W7707.5/7.5
1979
DMA 5555 II SW–SERIES V842
SCALE 1:24 000
1 MILE
7000 FEET
1 KILOMETER
QUADRANGLE LOCATION
N.C.
WASHINGTON, N. C.
SE/4 CHOCOWINITY 15' QUADRANGLE
N3530–W7700/7.5
1951
PHOTOREVISED 1974
AMS 5555 II SE –SERIES V842

REFERENCE NO. 2

R-586-5-1-15

FINAL REPORT

SCREENING SITE INSPECTION, PHASE II
STANADYNE, INC., DIESEL SYSTEMS GROUP
WASHINGTON, BEAUFORT COUNTY, NORTH CAROLINA
EPA ID #: NCD091567065

Prepared Under
TDD No. F4-9004-73
CONTRACT NO. 68-01-7346

Revision 0

FOR THE

WASTE MANAGEMENT DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

MAY 8, 1991

NUS CORPORATION
SUPERFUND DIVISION

Prepared By	Reviewed By	Approved By
Ronald Wilde Project Manager	Bob Donaghue Assistant Regional Project Manager	Phil Blackwell Regional Project Manager

For the purposes of the Site Inspection Prioritization Report this reference was renumbered. Please follow these page numbers when referencing → (1)

Appendix A

Topographic Map

Appendix B

Site Inspection Report

Appendix C

Field Sampling Data

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47653 SAMPLE TYPE:
SOURCE:
STATION ID: SS-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0845 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T441

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
20U	METHYLENE CHLORIDE
11U	ACETONE
6U	CARBON DISULFIDE
6U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
6U	1,1-DICHLOROETHANE
6U	1,2-DICHLOROETHENE (TOTAL)
6U	CHLOROFORM
6U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
6U	1,1,1-TRICHLOROETHANE
6U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
6U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
6U	1,2-DICHLOROPROPANE
6U	CIS-1,3-DICHLOROPROPENE
6U	TRICHLOROETHENE(TRICHLOROETHYLENE)
6U	DIBROMOCHLOROMETHANE
6U	1,1,2-TRICHLOROETHANE
6U	BENZENE
6U	TRANS-1,3-DICHLOROPROPENE
6U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
6U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U	1,1,2,2-TETRACHLOROETHANE
2J	TOLUENE
6U	CHLOROBENZENE
6U	ETHYL BENZENE
6U	STYRENE
6U	TOTAL XYLENES
11	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

41

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47653 SAMPLE TYPE:
SOURCE:
STATION ID: SS-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0845 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T441

UG/KG	ANALYTICAL RESULTS
370U	PHENOL
370UR	BIS(2-CHLOROETHYL) ETHER
370U	2-CHLOROPHENOL
370U	1,3-DICHLOROBENZENE
370U	1,4-DICHLOROBENZENE
370U	BENZYL ALCOHOL
370U	1,2-DICHLOROBENZENE
370U	2-METHYLPHENOL
370U	BIS(2-CHLOROISOPROPYL) ETHER
370U	(3-AND/OR 4-)METHYLPHENOL
370U	N-NITROSODI-N-PROPYLAMINE
370UR	HEXACHLOROETHANE
370U	NITROBENZENE
370U	ISOPHORONE
370U	2-NITROPHENOL
370U	2,4-DIMETHYLPHENOL
1800U	BENZOIC ACID
370U	BIS(2-CHLOROETHOXY) METHANE
370U	2,4-DICHLOROPHENOL
370U	1,2,4-TRICHLOROBENZENE
370U	NAPHTHALENE
370U	4-CHLOROANILINE
370U	HEXACHLOROBUTADIENE
370U	4-CHLORO-3-METHYLPHENOL
370U	2-METHYLNAPHTHALENE
370U	HEXACHLOROCYCLOPENTADIENE (HCCP)
370U	2,4,6-TRICHLOROPHENOL
1800U	2,4,5-TRICHLOROPHENOL
370U	2-CHLORONAPHTHALENE
1800U	2-NITROANILINE
370U	DIMETHYL PHTHALATE
370U	ACENAPHTHYLENE
370U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1800U	3-NITROANILINE
370U	ACENAPHTHENE
1800UJ	2,4-DINITROPHENOL
1800U	4-NITROPHENOL
370U	DIBENZOFURAN
370U	2,4-DINITROTOLUENE
370U	DIETHYL PHTHALATE
370U	4-CHLOROPHENYL PHENYL ETHER
370U	FLUORENE
1800U	4-NITROANILINE
1800U	2-METHYL-4,6-DINITROPHENOL
370U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
370U	4-BROMOPHENYL PHENYL ETHER
370U	HEXACHLOROBENZENE (HCB)
1800U	PENTACHLOROPHENOL
370U	PHENANTHRENE
370U	ANTHRACENE
370U	DI-N-BUTYLPHTHALATE
370U	FLUORANTHENE
370U	PYRENE
370U	BENZYL BUTYL PHTHALATE
740U	3,3'-DICHLOROBENZIDINE
370U	BENZO(A)ANTHRACENE
370U	CHRYSENE
370U	BIS(2-ETHYLHEXYL) PHTHALATE
370U	DI-N-OCTYLPHTHALATE
370U	BENZO(B AND/OR K)FLUORANTHENE
370U	BENZO-A-PYRENE
370U	INDENO (1,2,3-CD) PYRENE
370U	DIBENZO(A,H)ANTHRACENE
370U	BENZO(GHI)PERYLENE
11	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47653 SAMPLE TYPE:
SOURCE:
STATION ID: SS-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0845 STOP: 00/00/00
D NUMBER: T441

UG/KG	ANALYTICAL RESULTS
9.0UJ	ALPHA-BHC
9.0UJ	BETA-BHC
9.0UJ	DELTA-BHC
9.0UJ	GAMMA-BHC (LINDANE)
9.0UJ	HEPTACHLOR
9.0UJ	ALDRIN
9.0UJ	HEPTACHLOR EPOXIDE
9.0UJ	ENDOSULFAN I (ALPHA)
18UJ	DIELDRIN
18UJ	4,4'-DDE (P,P'-DDE)
18UJ	ENDRIN
18UJ	ENDOSULFAN II (BETA)
18UJ	4,4'-DDD (P,P'-DDD)
18UJ	ENDOSULFAN SULFATE
18UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
90UJ	METHOXYCHLOR
18UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
90UJ	GAMMA-CHLORDANE /2
90UJ	ALPHA-CHLORDANE /2
180UJ	TOXAPHENE
90UJ	PCB-1016 (AROCLOR 1016)
90UJ	PCB-1221 (AROCLOR 1221)
90UJ	PCB-1232 (AROCLOR 1232)
90UJ	PCB-1242 (AROCLOR 1242)
90UJ	PCB-1248 (AROCLOR 1248)
180UJ	PCB-1254 (AROCLOR 1254)
180UJ	PCB-1260 (AROCLOR 1260)
11	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47653 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0845 STOP: 00/00/00
MD NUMBER: T441

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
4300	ALUMINUM	110	MANGANESE
6UJ	ANTIMONY	.10UR	MERCURY
2UJ	ARSENIC	3U	NICKEL
24	BARIUM	120U	POTASSIUM
1U	BERYLLIUM	.67U	SELENIUM
.67U	CADMIUM	.44U	SILVER
320U	CALCIUM	170U	SODIUM
4.3	CHROMIUM	.44UJ	THALLIUM
2U	COBALT	NA	TIN
4.9J	COPPER	6.2	VANADIUM
2800	IRON	6UJ	ZINC
4.2	LEAD	11	PERCENT MOISTURE
240	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47653 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-01
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0845 STOP: 00/00/00
D. NO.: T441 MD NO: T441

RESULTS	UNITS	PARAMETER
2.10U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SS-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T444

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
70U	METHYLENE CHLORIDE
11U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
13	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
6	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

46

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SS-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T444

UG/KG	ANALYTICAL RESULTS
350U	PHENOL
350UR	BIS(2-CHLOROETHYL) ETHER
350U	2-CHLOROPHENOL
350U	1,3-DICHLOROBENZENE
350U	1,4-DICHLOROBENZENE
350U	BENZYL ALCOHOL
350U	1,2-DICHLOROBENZENE
350U	2-METHYLPHENOL
350U	BIS(2-CHLOROISOPROPYL) ETHER
350U	(3-AND/OR 4-)METHYLPHENOL
350U	N-NITROSODI-N-PROPYLAMINE
350UR	HEXACHLOROETHANE
350U	NITROBENZENE
350U	ISOPHORONE
350U	2-NITROPHENOL
350U	2,4-DIMETHYLPHENOL
1700U	BENZOIC ACID
350U	BIS(2-CHLOROETHOXY) METHANE
350U	2,4-DICHLOROPHENOL
350U	1,2,4-TRICHLOROBENZENE
350U	NAPHTHALENE
350U	4-CHLOROANILINE
350U	HEXACHLOROBUTADIENE
350U	4-CHLORO-3-METHYLPHENOL
350U	2-METHYLNAPHTHALENE
350U	HEXACHLOROCYCLOPENTADIENE (HCCP)
350U	2,4,6-TRICHLOROPHENOL
1700U	2,4,5-TRICHLOROPHENOL
350U	2-CHLORONAPHTHALENE
1700U	2-NITROANILINE
350U	DIMETHYL PHTHALATE
350U	ACENAPHTHYLENE
350U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1700U	3-NITROANILINE
350U	ACENAPHTHENE
1700UJ	2,4-DINITROPHENOL
1700U	4-NITROPHENOL
350U	DIBENZOFURAN
350U	2,4-DINITROTOLUENE
350U	DIETHYL PHTHALATE
350U	4-CHLOROPHENYL PHENYL ETHER
350U	FLUORENE
1700U	4-NITROANILINE
1700U	2-METHYL-4,6-DINITROPHENOL
350U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
350U	4-BROMOPHENYL PHENYL ETHER
350U	HEXACHLOROBENZENE (HCB)
1700U	PENTACHLOROPHENOL
350U	PHENANTHRENE
350U	ANTHRACENE
350U	DI-N-BUTYLPHTHALATE
350U	FLUORANTHENE
350U	PYRENE
350U	BENZYL BUTYL PHTHALATE
700U	3,3'-DICHLOROBENZIDINE
350U	BENZO(A)ANTHRACENE
350U	CHRYSENE
350U	BIS(2-ETHYLHEXYL) PHTHALATE
350U	DI-N-OCTYLPHTHALATE
350U	BENZO(B AND/OR K)FLUORANTHENE
350U	BENZO-A-PYRENE
350U	INDENO (1,2,3-CD) PYRENE
350U	DIBENZO(A,H)ANTHRACENE
350U	BENZO(GHI)PERYLENE
6	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SS-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00
D NUMBER: T444

UG/KG	ANALYTICAL RESULTS
8.5UJ	ALPHA-BHC
8.5UJ	BETA-BHC
8.5UJ	DELTA-BHC
8.5UJ	GAMMA-BHC (LINDANE)
8.5UJ	HEPTACHLOR
8.5UJ	ALDRIN
8.5UJ	HEPTACHLOR EPOXIDE
8.5UJ	ENDOSULFAN I (ALPHA)
17UJ	DIELDRIN
17UJ	4,4'-DDE (P,P'-DDE)
17UJ	ENDRIN
17UJ	ENDOSULFAN II (BETA)
17UJ	4,4'-DDD (P,P'-DDD)
17UJ	ENDOSULFAN SULFATE
17UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
85UJ	METHOXYCHLOR
17UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
85UJ	GAMMA-CHLORDANE /2
85UJ	ALPHA-CHLORDANE /2
170UJ	TOXAPHENE
85UJ	PCB-1016 (AROCLOR 1016)
85UJ	PCB-1221 (AROCLOR 1221)
85UJ	PCB-1232 (AROCLOR 1232)
85UJ	PCB-1242 (AROCLOR 1242)
85UJ	PCB-1248 (AROCLOR 1248)
170UJ	PCB-1254 (AROCLOR 1254)
170UJ	PCB-1260 (AROCLOR 1260)
6	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

48

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00
MD NUMBER: T444

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
2700	ALUMINUM	26	MANGANESE
6.7UJ	ANTIMONY	.10UR	MERCURY
.78UR	ARSENIC	2.3U	NICKEL
14	BARIUM	100U	POTASSIUM
.26U	BERYLLIUM	.78U	SELENIUM
.78U	CADMIUM	.52U	SILVER
270U	CALCIUM	250U	SODIUM
3.6	CHROMIUM	.52UJ	THALLIUM
.78U	COBALT	NA	TIN
4.1UJ	COPPER	4.3	VANADIUM
1800	IRON	10UJ	ZINC
6.4	LEAD	23	PERCENT MOISTURE
130	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-02
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00
D. NO.: T444 MD NO: T444

RESULTS	UNITS	PARAMETER
2.50U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47661 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SS-02
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1115 STOP: 00/00/00
D. NO.: T444 MD NO: T444

ANALYTICAL RESULTS UG/KG

400J 1 UNIDENTIFIED COMPOUND

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47658 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1040 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T610

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
8U	METHYLENE CHLORIDE
11U	ACETONE
6U	CARBON DISULFIDE
6U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
6U	1,1-DICHLOROETHANE
6U	1,2-DICHLOROETHENE (TOTAL)
6U	CHLOROFORM
6U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
6U	1,1,1-TRICHLOROETHANE
6U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
6U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
6U	1,2-DICHLOROPROPANE
6U	CIS-1,3-DICHLOROPROPENE
6U	TRICHLOROETHENE(TRICHLOROETHYLENE)
6U	DIBROMOCHLOROMETHANE
6U	1,1,2-TRICHLOROETHANE
6U	BENZENE
6U	TRANS-1,3-DICHLOROPROPENE
6U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
6U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U	1,1,2,2-TETRACHLOROETHANE
6U	TOLUENE
6U	CHLOROBENZENE
6U	ETHYL BENZENE
6U	STYRENE
6U	TOTAL XYLENES
11	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47658 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1040 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T610

UG/KG	ANALYTICAL RESULTS
370U	PHENOL
370UR	BIS(2-CHLOROETHYL) ETHER
370U	2-CHLOROPHENOL
370U	1,3-DICHLOROBENZENE
370U	1,4-DICHLOROBENZENE
370U	BENZYL ALCOHOL
370U	1,2-DICHLOROBENZENE
370U	2-METHYLPHENOL
370U	BIS(2-CHLOROISOPROPYL) ETHER
370U	(3-AND/OR 4-)METHYLPHENOL
370U	N-NITROSODI-N-PROPYLAMINE
370UR	HEXACHLOROETHANE
370U	NITROBENZENE
370U	ISOPHORONE
370U	2-NITROPHENOL
370U	2,4-DIMETHYLPHENOL
1800U	BENZOIC ACID
370U	BIS(2-CHLOROETHOXY) METHANE
370U	2,4-DICHLOROPHENOL
370U	1,2,4-TRICHLOROBENZENE
370U	NAPHTHALENE
370U	4-CHLOROANILINE
370U	HEXACHLOROBUTADIENE
370U	4-CHLORO-3-METHYLPHENOL
370U	2-METHYLNAPHTHALENE
370U	HEXACHLOROCYCLOPENTADIENE (HCCP)
370U	2,4,6-TRICHLOROPHENOL
1800U	2,4,5-TRICHLOROPHENOL
370U	2-CHLORONAPHTHALENE
1800U	2-NITROANILINE
370U	DIMETHYL PHTHALATE
370U	ACENAPHTHYLENE
370U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1800U	3-NITROANILINE
370U	ACENAPHTHENE
1800UJ	2,4-DINITROPHENOL
1800U	4-NITROPHENOL
370U	DIBENZOFURAN
370U	2,4-DINITROTOLUENE
370U	DIETHYL PHTHALATE
370U	4-CHLOROPHENYL PHENYL ETHER
370U	FLUORENE
1800U	4-NITROANILINE
1800U	2-METHYL-4,6-DINITROPHENOL
370U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
370U	4-BROMOPHENYL PHENYL ETHER
370U	HEXACHLOROBENZENE (HCB)
1800U	PENTACHLOROPHENOL
370U	PHENANTHRENE
370U	ANTHRACENE
370U	DI-N-BUTYLPHTHALATE
370U	FLUORANTHENE
370U	PYRENE
370U	BENZYL BUTYL PHTHALATE
740U	3,3'-DICHLOROBENZIDINE
370U	BENZO(A)ANTHRACENE
370U	CHRYSENE
370U	BIS(2-ETHYLHEXYL) PHTHALATE
370U	DI-N-OCTYLPHTHALATE
370U	BENZO(B AND/OR K)FLUORANTHENE
370U	BENZO-A-PYRENE
370U	INDENO (1,2,3-CD) PYRENE
370U	DIBENZO(A,H)ANTHRACENE
370U	BENZO(GHI)PERYLENE
11	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47658 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-03
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1040 STOP: 00/00/00
D NUMBER: T610

UG/KG	ANALYTICAL RESULTS
9.0UJ	ALPHA-BHC
9.0UJ	BETA-BHC
9.0UJ	DELTA-BHC
9.0UJ	GAMMA-BHC (LINDANE)
9.0UJ	HEPTACHLOR
9.0UJ	ALDRIN
9.0UJ	HEPTACHLOR EPOXIDE
9.0UJ	ENDOSULFAN I (ALPHA)
18UJ	DIELDRIN
18UJ	4,4'-DDE (P,P'-DDE)
18UJ	ENDRIN
18UJ	ENDOSULFAN II (BETA)
18UJ	4,4'-DDD (P,P'-DDD)
18UJ	ENDOSULFAN SULFATE
18UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
90UJ	METHOXYCHLOR
18UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
90UJ	GAMMA-CHLORDANE /2
90UJ	ALPHA-CHLORDANE /2
180UJ	TOXAPHENE
90UJ	PCB-1016 (AROCLOR 1016)
90UJ	PCB-1221 (AROCLOR 1221)
90UJ	PCB-1232 (AROCLOR 1232)
90UJ	PCB-1242 (AROCLOR 1242)
90UJ	PCB-1248 (AROCLOR 1248)
180UJ	PCB-1254 (AROCLOR 1254)
180UJ	PCB-1260 (AROCLOR 1260)
11	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47658 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-03
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1040 STOP: 00/00/00
MD NUMBER: T610

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
3700	ALUMINUM	20	MANGANESE
5.7UJ	ANTIMONY	.10UR	MERCURY
.66UR	ARSENIC	2U	NICKEL
20U	BARIUM	80U	POTASSIUM
.22U	BERYLLIUM	.66U	SELENIUM
.66U	CADMIUM	.44U	SILVER
310U	CALCIUM	110U	SODIUM
4.6	CHROMIUM	.44UJ	THALLIUM
1U	COBALT	NA	TIN
3.5UJ	COPPER	8.7	VANADIUM
3900	IRON	6UJ	ZINC
4.4	LEAD	09	PERCENT MOISTURE
180	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47658 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-03
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1040 STOP: 00/00/00
D. NO.: T610 MD NO: T610

RESULTS	UNITS	PARAMETER
2.4U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47666 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-04

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1320 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T615

UG/KG	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
20U	METHYLENE CHLORIDE
10U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
10U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
2J	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
13	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
3	PERCENT MOISTURE

REMARKS ***REMARKS***

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47666 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-04

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1320 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T615

UG/KG	ANALYTICAL RESULTS
340U	PHENOL
340UR	BIS(2-CHLOROETHYL) ETHER
340U	2-CHLOROPHENOL
340U	1,3-DICHLOROBENZENE
340U	1,4-DICHLOROBENZENE
340U	BENZYL ALCOHOL
340U	1,2-DICHLOROBENZENE
340U	2-METHYLPHENOL
340U	BIS(2-CHLOROISOPROPYL) ETHER
340U	(3-AND/OR 4-)METHYLPHENOL
340U	N-NITROSODI-N-PROPYLAMINE
340UR	HEXACHLOROETHANE
340U	NITROBENZENE
340U	ISOPHORONE
340U	2-NITROPHENOL
340U	2,4-DIMETHYLPHENOL
1600U	BENZOIC ACID
340U	BIS(2-CHLOROETHOXY) METHANE
340U	2,4-DICHLOROPHENOL
340U	1,2,4-TRICHLOROBENZENE
340U	NAPHTHALENE
340U	4-CHLOROANILINE
340U	HEXACHLOROBUTADIENE
340U	4-CHLORO-3-METHYLPHENOL
340U	2-METHYLNAPHTHALENE
340U	HEXACHLOROCYCLOPENTADIENE (HCCP)
340U	2,4,6-TRICHLOROPHENOL
1600U	2,4,5-TRICHLOROPHENOL
340U	2-CHLORONAPHTHALENE
1600U	2-NITROANILINE
340U	DIMETHYL PHTHALATE
340U	ACENAPHTHYLENE
340U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1600U	3-NITROANILINE
340U	ACENAPHTHENE
1600UJ	2,4-DINITROPHENOL
1600U	4-NITROPHENOL
340U	DIBENZOFURAN
340U	2,4-DINITROTOLUENE
340U	DIETHYL PHTHALATE
340U	4-CHLOROPHENYL PHENYL ETHER
340U	FLUORENE
1600U	4-NITROANILINE
1600U	2-METHYL-4,6-DINITROPHENOL
340U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
340U	4-BROMOPHENYL PHENYL ETHER
340U	HEXACHLOROBENZENE (HCB)
1600U	PENTACHLOROPHENOL
340U	PHENANTHRENE
340U	ANTHRACENE
340U	DI-N-BUTYLPHTHALATE
340U	FLUORANTHENE
340U	PYRENE
340U	BENZYL BUTYL PHTHALATE
680U	3,3'-DICHLOROBENZIDINE
340U	BENZO(A)ANTHRACENE
340U	CHRYSENE
340U	BIS(2-ETHYLHEXYL) PHTHALATE
340U	DI-N-OCTYLPHTHALATE
340U	BENZO(B AND/OR K)FLUORANTHENE
340U	BENZO-A-PYRENE
340U	INDENO (1,2,3-CD) PYRENE
340U	DIBENZO(A,H)ANTHRACENE
340U	BENZO(GHI)PERYLENE
3	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47666 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-04
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1320 STOP: 00/00/00
U. NUMBER: T615

UG/KG	ANALYTICAL RESULTS
8.2UJ	ALPHA-BHC
8.2UJ	BETA-BHC
8.2UJ	DELTA-BHC
8.2UJ	GAMMA-BHC (LINDANE)
8.2UJ	HEPTACHLOR
8.2UJ	ALDRIN
8.2UJ	HEPTACHLOR EPOXIDE
8.2UJ	ENDOSULFAN I (ALPHA)
16UJ	DIELDRIN
16UJ	4,4'-DDE (P,P'-DDE)
16UJ	ENDRIN
16UJ	ENDOSULFAN II (BETA)
16UJ	4,4'-DDD (P,P'-DDD)
16UJ	ENDOSULFAN SULFATE
16UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
82UJ	METHOXYCHLOR
16UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
82UJ	GAMMA-CHLORDANE /2
82UJ	ALPHA-CHLORDANE /2
160UJ	TOXAPHENE
82UJ	PCB-1016 (AROCLOR 1016)
82UJ	PCB-1221 (AROCLOR 1221)
82UJ	PCB-1232 (AROCLOR 1232)
82UJ	PCB-1242 (AROCLOR 1242)
82UJ	PCB-1248 (AROCLOR 1248)
160UJ	PCB-1254 (AROCLOR 1254)
160UJ	PCB-1260 (AROCLOR 1260)
3	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47666 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-04
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1320 STOP: 00/00/00
MD NUMBER: T615

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
2600	ALUMINUM	22	MANGANESE
5.2UJ	ANTIMONY	.10UR	MERCURY
2UJ	ARSENIC	1.8U	NICKEL
10U	BARIUM	140U	POTASSIUM
.20U	BERYLLIUM	.60U	SELENIUM
.60U	CADMIUM	.40U	SILVER
290U	CALCIUM	80U	SODIUM
4.8	CHROMIUM	.40UJ	THALLIUM
1.2	COBALT	NA	TIN
14J	COPPER	5.1	VANADIUM
2300	IRON	20UJ	ZINC
5.4	LEAD	02	PERCENT MOISTURE
160	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47666 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-04
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1320 STOP: 00/00/00
D. NO.: T615 MD NO: T615

RESULTS	UNITS	PARAMETER
1.9U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-05

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1235 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T614

UG/KG	ANALYTICAL RESULTS
10U	CHLOROMETHANE
10U	BROMOMETHANE
10U	VINYL CHLORIDE
10U	CHLOROETHANE
20U	METHYLENE CHLORIDE
10U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
10U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
10U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
10U	METHYL ISOBUTYL KETONE
10U	METHYL BUTYL KETONE
5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
5U	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
3	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

** PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R WILDE
** SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
** STATION ID: SS-05 COLLECTION START: 06/13/90 1235 STOP: 00/00/00
**
** CASE NO.: 14282 SAS NO.: D. NO.: T614

UG/KG	ANALYTICAL RESULTS
340U	PHENOL
340UR	BIS(2-CHLOROETHYL) ETHER
340U	2-CHLOROPHENOL
340U	1,3-DICHLOROBENZENE
340U	1,4-DICHLOROBENZENE
340U	BENZYL ALCOHOL
340U	1,2-DICHLOROBENZENE
340U	2-METHYLPHENOL
340U	BIS(2-CHLOROISOPROPYL) ETHER
340U	(3-AND/OR 4-)METHYLPHENOL
340U	N-NITROSODI-N-PROPYLAMINE
340UR	HEXACHLOROETHANE
340U	NITROBENZENE
340U	ISOPHORONE
340U	2-NITROPHENOL
340U	2,4-DIMETHYLPHENOL
1600U	BENZOIC ACID
340U	BIS(2-CHLOROETHOXY) METHANE
340U	2,4-DICHLOROPHENOL
340U	1,2,4-TRICHLOROBENZENE
340U	NAPHTHALENE
340U	4-CHLOROANILINE
340U	HEXACHLOROBUTADIENE
340U	4-CHLORO-3-METHYLPHENOL
340U	2-METHYLNAPHTHALENE
340U	HEXACHLOROCYCLOPENTADIENE (HCCP)
340U	2,4,6-TRICHLOROPHENOL
1600U	2,4,5-TRICHLOROPHENOL
340U	2-CHLORONAPHTHALENE
1600U	2-NITROANILINE
340U	DIMETHYL PHTHALATE
340U	ACENAPHTHYLENE
340U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1600U	3-NITROANILINE
340U	ACENAPHTHENE
1600UJ	2,4-DINITROPHENOL
1600U	4-NITROPHENOL
340U	DIBENZOFURAN
340U	2,4-DINITROTOLUENE
340U	DIETHYL PHTHALATE
340U	4-CHLOROPHENYL PHENYL ETHER
340U	FLUORENE
1600U	4-NITROANILINE
1600U	2-METHYL-4,6-DINITROPHENOL
340U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
340U	4-BROMOPHENYL PHENYL ETHER
340U	HEXACHLOROBENZENE (HCB)
1600U	PENTACHLOROPHENOL
340U	PHENANTHRENE
340U	ANTHRACENE
340U	DI-N-BUTYLPHTHALATE
340U	FLUORANTHENE
340U	PYRENE
340U	BENZYL BUTYL PHTHALATE
680U	3,3'-DICHLOROBENZIDINE
340U	BENZO(A)ANTHRACENE
340U	CHRYSENE
340U	BIS(2-ETHYLHEXYL) PHTHALATE
340U	DI-N-OCTYLPHTHALATE
340U	BENZO(B AND/OR K)FLUORANTHENE
340U	BENZO-A-PYRENE
340U	INDENO (1,2,3-CD) PYRENE
340U	DIBENZO(A,H)ANTHRACENE
340U	BENZO(GHI)PERYLENE
3	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-05
CASE NUMBER: 14282 SAS NUMBER.

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1235 STOP: 00/00/00
ID NUMBER: 1614

UG/KG	ANALYTICAL RESULTS
8.2UJ	ALPHA-BHC
8.2UJ	BETA-BHC
8.2UJ	DELTA-BHC
8.2UJ	GAMMA-BHC (LINDANE)
8.2UJ	HEPTACHLOR
8.2UJ	ALDRIN
8.2UJ	HEPTACHLOR EPOXIDE
8.2UJ	ENDOSULFAN I (ALPHA)
16UJ	DIELDRIN
16UJ	4,4'-DDE (P,P'-DDE)
16UJ	ENDRIN
16UJ	ENDOSULFAN II (BETA)
16UJ	4,4'-DDD (P,P'-DDD)
16UJ	ENDOSULFAN SULFATE
16UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
82UJ	METHOXYCHLOR
16UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
82UJ	GAMMA-CHLORDANE /2
82UJ	ALPHA-CHLORDANE /2
160UJ	TOXAPHENE
82UJ	PCB-1016 (AROCLOR 1016)
82UJ	PCB-1221 (AROCLOR 1221)
82UJ	PCB-1232 (AROCLOR 1232)
82UJ	PCB-1242 (AROCLOR 1242)
82UJ	PCB-1248 (AROCLOR 1248)
160UJ	PCB-1254 (AROCLOR 1254)
160UJ	PCB-1260 (AROCLOR 1260)
3	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-05
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1235 STOP: 00/00/00
MD NUMBER: T614

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
3300	ALUMINUM	26	MANGANESE
5.4UJ	ANTIMONY	.10UR	MERCURY
2UJ	ARSENIC	2U	NICKEL
14	BARIUM	83	POTASSIUM
.21U	BERYLLIUM	.62U	SELENIUM
.62U	CADMIUM	.41U	SILVER
1400	CALCIUM	80U	SODIUM
4.6	CHROMIUM	.41UJ	THALLIUM
1U	COBALT	NA	TIN
7.3J	COPPER	5.6	VANADIUM
2300	IRON	20J	ZINC
15	LEAD	03	PERCENT MOISTURE
190	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-05
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1235 STOP: 00/00/00
D. NO.: T614 MD NO: T614

RESULTS	UNITS	PARAMETER
2U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47664 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SS-05
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1235 STOP: 00/00/00
D. NO.: T614 MD NO: T614

ANALYTICAL RESULTS UG/KG

600JN HYDROXYMETHYLDIMETHOXYFUROBENZOPYRANONE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47654 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0900 STOP: 00/00/00

CASE NO.: 14262 SAS NO.: D. NO.: T442

UG/KG	ANALYTICAL RESULTS
12U	CHLOROMETHANE
12U	BROMOMETHANE
12U	VINYL CHLORIDE
12U	CHLOROETHANE
20U	METHYLENE CHLORIDE
30U	ACETONE
6U	CARBON DISULFIDE
6U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
6U	1,1-DICHLOROETHANE
6U	1,2-DICHLOROETHENE (TOTAL)
6U	CHLOROFORM
6U	1,2-DICHLOROETHANE
12U	METHYL ETHYL KETONE
6U	1,1,1-TRICHLOROETHANE
6U	CARBON TETRACHLORIDE
12U	VINYL ACETATE
6U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
6U	1,2-DICHLOROPROPANE
6U	CIS-1,3-DICHLOROPROPENE
6U	TRICHLOROETHENE(TRICHLOROETHYLENE)
6U	DIBROMOCHLOROMETHANE
6U	1,1,2-TRICHLOROETHANE
6U	BENZENE
6U	TRANS-1,3-DICHLOROPROPENE
6U	BROMOFORM
12U	METHYL ISOBUTYL KETONE
12U	METHYL BUTYL KETONE
6U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U	1,1,2,2-TETRACHLOROETHANE
1J	TOLUENE
6U	CHLOROBENZENE
6U	ETHYL BENZENE
6U	STYRENE
6U	TOTAL XYLENES
15	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47654 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0900 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.. T442

UG/KG	ANALYTICAL RESULTS
390U	PHENOL
390UR	BIS(2-CHLOROETHYL) ETHER
390U	2-CHLOROPHENOL
390U	1,3-DICHLOROBENZENE
390U	1,4-DICHLOROBENZENE
390U	BENZYL ALCOHOL
390U	1,2-DICHLOROBENZENE
390U	2-METHYLPHENOL
390U	BIS(2-CHLOROISOPROPYL) ETHER
390U	(3-AND/OR 4-)METHYLPHENOL
390U	N-NITROSODI-N-PROPYLAMINE
390UR	HEXACHLOROETHANE
390U	NITROBENZENE
390U	ISOPHORONE
390U	2-NITROPHENOL
390U	2,4-DIMETHYLPHENOL
1900U	BENZOIC ACID
390U	BIS(2-CHLOROETHOXY) METHANE
390U	2,4-DICHLOROPHENOL
390U	1,2,4-TRICHLOROBENZENE
390U	NAPHTHALENE
390U	4-CHLOROANILINE
390U	HEXACHLOROBUTADIENE
390U	4-CHLORO-3-METHYLPHENOL
390U	2-METHYLNAPHTHALENE
390U	HEXACHLOROCYCLOPENTADIENE (HCCP)
390U	2,4,6-TRICHLOROPHENOL
1900U	2,4,5-TRICHLOROPHENOL
390U	2-CHLORONAPHTHALENE
1900U	2-NITROANILINE
390U	DIMETHYL PHTHALATE
390U	ACENAPHTHYLENE
390U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1900U	3-NITROANILINE
390U	ACENAPHTHENE
1900UJ	2,4-DINITROPHENOL
1900U	4-NITROPHENOL
390U	DIBENZOFURAN
390U	2,4-DINITROTOLUENE
390U	DIETHYL PHTHALATE
390U	4-CHLOROPHENYL PHENYL ETHER
390U	FLUORENE
1900U	4-NITROANILINE
1900U	2-METHYL-4,6-DINITROPHENOL
390U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
390U	4-BROMOPHENYL PHENYL ETHER
390U	HEXACHLOROBENZENE (HCB)
1900U	PENTACHLOROPHENOL
390U	PHENANTHRENE
390U	ANTHRACENE
390U	DI-N-BUTYLPHTHALATE
390U	FLUORANTHENE
390U	PYRENE
390U	BENZYL BUTYL PHTHALATE
780U	3,3'-DICHLOROBENZIDINE
390U	BENZO(A)ANTHRACENE
390U	CHRYSENE
390U	BIS(2-ETHYLHEXYL) PHTHALATE
390U	DI-N-OCTYLPHTHALATE
390U	BENZO(B AND/OR K)FLUORANTHENE
390U	BENZO-A-PYRENE
390U	INDENO (1,2,3-CD) PYRENE
390U	DIBENZO(A,H)ANTHRACENE
390U	BENZO(GHI)PERYLENE
15	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47654 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0900 STOP: 00/00/00
ID NUMBER: T442

UG/KG	ANALYTICAL RESULTS
9.4UJ	ALPHA-BHC
9.4UJ	BETA-BHC
9.4UJ	DELTA-BHC
9.4UJ	GAMMA-BHC (LINDANE)
9.4UJ	HEPTACHLOR
9.4UJ	ALDRIN
9.4UJ	HEPTACHLOR EPOXIDE
9.4UJ	ENDOSULFAN I (ALPHA)
19UJ	DIELDRIN
19UJ	4,4'-DDE (P,P'-DDE)
19UJ	ENDRIN
19UJ	ENDOSULFAN II (BETA)
19UJ	4,4'-DDD (P,P'-DDD)
19UJ	ENDOSULFAN SULFATE
19UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
94UJ	METHOXYCHLOR
19UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
94UJ	GAMMA-CHLORDANE /2
94UJ	ALPHA-CHLORDANE /2
190UJ	TOXAPHENE
94UJ	PCB-1016 (AROCLOR 1016)
94UJ	PCB-1221 (AROCLOR 1221)
94UJ	PCB-1232 (AROCLOR 1232)
94UJ	PCB-1242 (AROCLOR 1242)
94UJ	PCB-1248 (AROCLOR 1248)
190UJ	PCB-1254 (AROCLOR 1254)
190UJ	PCB-1260 (AROCLOR 1260)
15	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47654 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0900 STOP: 00/00/00
MD NUMBER: T442

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
NA	ALUMINUM	NA	MANGANESE
NA	ANTIMONY	NA	MERCURY
NA	ARSENIC	NA	NICKEL
NA	BARIUM	NA	POTASSIUM
NA	BERYLLIUM	NA	SELENIUM
NA	CADMIUM	NA	SILVER
NA	CALCIUM	NA	SODIUM
NA	CHROMIUM	NA	THALLIUM
NA	COBALT	NA	TIN
NA	COPPER	NA	VANADIUM
NA	IRON	NA	ZINC
NA	LEAD	NA	PERCENT MOISTURE
NA	MAGNESIUM		

REMARKS
NO SAMPLE CONTAINER RECEIVED

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47654 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-01
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0900 STOP: 00/00/00
D. NO.: T442 MD NO: T442

RESULTS	UNITS	PARAMETER
NA	MG/KG	CYANIDE

REMARKS
NO SAMPLE CONTAINER RECEIVED

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47662 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1140 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T608

UG/KG	ANALYTICAL RESULTS
14U	CHLOROMETHANE
14U	BROMOMETHANE
14U	VINYL CHLORIDE
14U	CHLOROETHANE
30U	METHYLENE CHLORIDE
14U	ACETONE
7U	CARBON DISULFIDE
7U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
7U	1,1-DICHLOROETHANE
7U	1,2-DICHLOROETHENE (TOTAL)
7U	CHLOROFORM
7U	1,2-DICHLOROETHANE
14U	METHYL ETHYL KETONE
7U	1,1,1-TRICHLOROETHANE
7U	CARBON TETRACHLORIDE
14U	VINYL ACETATE
7U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
7U	1,2-DICHLOROPROPANE
7U	CIS-1,3-DICHLOROPROPENE
7U	TRICHLOROETHENE(TRICHLOROETHYLENE)
7U	DIBROMOCHLOROMETHANE
7U	1,1,2-TRICHLOROETHANE
7U	BENZENE
7U	TRANS-1,3-DICHLOROPROPENE
7U	BROMOFORM
14U	METHYL ISOBUTYL KETONE
14U	METHYL BUTYL KETONE
7U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
7U	1,1,2,2-TETRACHLOROETHANE
7U	TOLUENE
7U	CHLOROBENZENE
7U	ETHYL BENZENE
7U	STYRENE
7U	TOTAL XYLENES
27	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47662 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1140 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T608

UG/KG	ANALYTICAL RESULTS
400U	PHENOL
400UR	BIS(2-CHLOROETHYL) ETHER
400U	2-CHLOROPHENOL
400U	1,3-DICHLOROBENZENE
400U	1,4-DICHLOROBENZENE
400U	BENZYL ALCOHOL
400U	1,2-DICHLOROBENZENE
400U	2-METHYLPHENOL
400U	BIS(2-CHLOROISOPROPYL) ETHER
400U	(3-AND/OR 4-)METHYLPHENOL
400U	N-NITROSODI-N-PROPYLAMINE
400UR	HEXACHLOROETHANE
400U	NITROBENZENE
400U	ISOPHORONE
400U	2-NITROPHENOL
400U	2,4-DIMETHYLPHENOL
1900U	BENZOIC ACID
400U	BIS(2-CHLOROETHOXY) METHANE
400U	2,4-DICHLOROPHENOL
400U	1,2,4-TRICHLOROBENZENE
400U	NAPHTHALENE
400U	4-CHLOROANILINE
400U	HEXACHLOROBUTADIENE
400U	4-CHLORO-3-METHYLPHENOL
400U	2-METHYLNAPHTHALENE
400U	HEXACHLOROCYCLOPENTADIENE (HCCP)
400U	2,4,6-TRICHLOROPHENOL
1900U	2,4,5-TRICHLOROPHENOL
400U	2-CHLORONAPHTHALENE
1900U	2-NITROANILINE
400U	DIMETHYL PHTHALATE
400U	ACENAPHTHYLENE
400U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1900U	3-NITROANILINE
400U	ACENAPHTHENE
1900UJ	2,4-DINITROPHENOL
1900U	4-NITROPHENOL
400U	DIBENZOFURAN
400U	2,4-DINITROTOLUENE
400U	DIETHYL PHTHALATE
400U	4-CHLOROPHENYL PHENYL ETHER
400U	FLUORENE
1900U	4-NITROANILINE
1900U	2-METHYL-4,6-DINITROPHENOL
400U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
400U	4-BROMOPHENYL PHENYL ETHER
400U	HEXACHLOROBENZENE (HCB)
1900U	PENTACHLOROPHENOL
400U	PHENANTHRENE
400U	ANTHRACENE
400U	DI-N-BUTYLPHTHALATE
400U	FLUORANTHENE
400U	PYRENE
400U	BENZYL BUTYL PHTHALATE
800U	3,3'-DICHLOROBENZIDINE
400U	BENZO(A)ANTHRACENE
400U	CHRYSENE
400U	BIS(2-ETHYLHEXYL) PHTHALATE
400U	DI-N-OCTYLPHTHALATE
400U	BENZO(B AND/OR K)FLUORANTHENE
400U	BENZO-A-PYRENE
400U	INDENO (1,2,3-CD) PYRENE
400U	DIBENZO(A,H)ANTHRACENE
400U	BENZO(GHI)PERYLENE
17	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47662 SAMPLE TYPE: SOIL
SOURCE:
STATION ID: SB-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1140 STOP: 00/00/00
ID NUMBER: T608

UG/KG	ANALYTICAL RESULTS
9.6UJ	ALPHA-BHC
9.6UJ	BETA-BHC
9.6UJ	DELTA-BHC
9.6UJ	GAMMA-BHC (LINDANE)
9.6UJ	HEPTACHLOR
9.6UJ	ALDRIN
9.6UJ	HEPTACHLOR EPOXIDE
9.6UJ	ENDOSULFAN I (ALPHA)
19UJ	DIELDRIN
19UJ	4,4'-DDE (P,P'-DDE)
19UJ	ENDRIN
19UJ	ENDOSULFAN II (BETA)
19UJ	4,4'-DDD (P,P'-DDD)
19UJ	ENDOSULFAN SULFATE
19UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
96UJ	METHOXYCHLOR
19UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
96UJ	GAMMA-CHLORDANE /2
96UJ	ALPHA-CHLORDANE /2
190UJ	TOXAPHENE
96UJ	PCB-1016 (AROCLOR 1016)
96UJ	PCB-1221 (AROCLOR 1221)
96UJ	PCB-1232 (AROCLOR 1232)
96UJ	PCB-1242 (AROCLOR 1242)
96UJ	PCB-1248 (AROCLOR 1248)
190UJ	PCB-1254 (AROCLOR 1254)
190UJ	PCB-1260 (AROCLOR 1260)
	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47662 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1140 STOP: 00/00/00
MD NUMBER: T608

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
1300	ALUMINUM	26	MANGANESE
5.8UJ	ANTIMONY	.08UR	MERCURY
.67UR	ARSENIC	2U	NICKEL
7U	BARIUM	80U	POTASSIUM
.22U	BERYLLIUM	.67U	SELENIUM
.67U	CADMIUM	.45U	SILVER
170U	CALCIUM	90U	SODIUM
1.7	CHROMIUM	.45UJ	THALLIUM
.67U	COBALT	NA	TIN
3.6UJ	COPPER	1.9	VANADIUM
1000	IRON	4UJ	ZINC
1.3	LEAD	13	PERCENT MOISTURE
70U	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47662 SAMPLE TYPE: SOIL
PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC
CITY: WASHINGTON ST: NC
STATION ID: SB-02
COLLECTION START: 06/13/90 1140 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.:
D. NO.: T608 MD NO: T608

RESULTS	UNITS	PARAMETER
1.6U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47659 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1050 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T611

UG/KG	ANALYTICAL RESULTS	UG/KG	ANALYTICAL RESULTS
12U	CHLOROMETHANE	6U	1,2-DICHLOROPROPANE
12U	BROMOMETHANE	6U	CIS-1,3-DICHLOROPROPENE
12U	VINYL CHLORIDE	6U	TRICHLOROETHENE(TRICHLOROETHYLENE)
12U	CHLOROETHANE	6U	DIBROMOCHLOROMETHANE
50U	METHYLENE CHLORIDE	6U	1,1,2-TRICHLOROETHANE
12U	ACETONE	6U	BENZENE
6U	CARBON DISULFIDE	6U	TRANS-1,3-DICHLOROPROPENE
6U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	6U	BROMOFORM
6U	1,1-DICHLOROETHANE	12U	METHYL ISOBUTYL KETONE
6U	1,2-DICHLOROETHENE (TOTAL)	12U	METHYL BUTYL KETONE
6U	CHLOROFORM	6U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U	1,2-DICHLOROETHANE	6U	1,1,2,2-TETRACHLOROETHANE
12U	METHYL ETHYL KETONE	2J	TOLUENE
6U	1,1,1-TRICHLOROETHANE	6U	CHLOROBENZENE
6U	CARBON TETRACHLORIDE	6U	ETHYL BENZENE
12U	VINYL ACETATE	6U	STYRENE
6U	BROMODICHLOROMETHANE	6U	TOTAL XYLENES
		16	PERCENT MOISTURE

REMARKS ***REMARKS***

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47659 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1050 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T611

UG/KG	ANALYTICAL RESULTS
390U	PHENOL
390UR	BIS(2-CHLOROETHYL) ETHER
390U	2-CHLOROPHENOL
390U	1,3-DICHLOROBENZENE
390U	1,4-DICHLOROBENZENE
390U	BENZYL ALCOHOL
390U	1,2-DICHLOROBENZENE
390U	2-METHYLPHENOL
390U	BIS(2-CHLOROISOPROPYL) ETHER
390U	(3-AND/OR 4-)METHYLPHENOL
390U	N-NITROSODI-N-PROPYLAMINE
390UR	HEXACHLOROETHANE
390U	NITROBENZENE
390U	ISOPHORONE
390U	2-NITROPHENOL
390U	2,4-DIMETHYLPHENOL
1900U	BENZOIC ACID
390U	BIS(2-CHLOROETHOXY) METHANE
390U	2,4-DICHLOROPHENOL
390U	1,2,4-TRICHLOROBENZENE
390U	NAPHTHALENE
390U	4-CHLOROANILINE
390U	HEXACHLOROBUTADIENE
390U	4-CHLORO-3-METHYLPHENOL
390U	2-METHYLNAPHTHALENE
390U	HEXACHLOROCYCLOPENTADIENE (HCCP)
390U	2,4,6-TRICHLOROPHENOL
1900U	2,4,5-TRICHLOROPHENOL
390U	2-CHLORONAPHTHALENE
1900U	2-NITROANILINE
390U	DIMETHYL PHTHALATE
390U	ACENAPHTHYLENE
390U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1900U	3-NITROANILINE
390U	ACENAPHTHENE
1900UJ	2,4-DINITROPHENOL
1900U	4-NITROPHENOL
390U	DIBENZOFURAN
390U	2,4-DINITROTOLUENE
390U	DIETHYL PHTHALATE
390U	4-CHLOROPHENYL PHENYL ETHER
390U	FLUORENE
1900U	4-NITROANILINE
1900U	2-METHYL-4,6-DINITROPHENOL
390U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
390U	4-BROMOPHENYL PHENYL ETHER
390U	HEXACHLOROBENZENE (HCB)
1900U	PENTACHLOROPHENOL
390U	PHENANTHRENE
390U	ANTHRACENE
390U	DI-N-BUTYLPHTHALATE
390U	FLUORANTHENE
390U	PYRENE
390U	BENZYL BUTYL PHTHALATE
790U	3,3'-DICHLOROBENZIDINE
390U	BENZO(A)ANTHRACENE
390U	CHRYSENE
390U	BIS(2-ETHYLHEXYL) PHTHALATE
390U	DI-N-OCTYLPHTHALATE
390U	BENZO(B AND/OR K)FLUORANTHENE
390U	BENZO-A-PYRENE
390U	INDENO (1,2,3-CD) PYRENE
390U	DIBENZO(A,H)ANTHRACENE
390U	BENZO(GHI)PERYLENE
16	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47659 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-03
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1050 STOP: 00/00/00
D. NUMBER: T611

UG/KG	ANALYTICAL RESULTS
9.5UJ	ALPHA-BHC
9.5UJ	BETA-BHC
9.5UJ	DELTA-BHC
9.5UJ	GAMMA-BHC (LINDANE)
9.5UJ	HEPTACHLOR
9.5UJ	ALDRIN
9.5UJ	HEPTACHLOR EPOXIDE
9.5UJ	ENDOSULFAN I (ALPHA)
19UJ	DIELDRIN
19UJ	4,4'-DDE (P,P'-DDE)
19UJ	ENDRIN
19UJ	ENDOSULFAN II (BETA)
19UJ	4,4'-DDD (P,P'-DDD)
19UJ	ENDOSULFAN SULFATE
19UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
95UJ	METHOXYCHLOR
19UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
95UJ	GAMMA-CHLORDANE /2
95UJ	ALPHA-CHLORDANE /2
190UJ	TOXAPHENE
95UJ	PCB-1016 (AROCLOR 1016)
95UJ	PCB-1221 (AROCLOR 1221)
95UJ	PCB-1232 (AROCLOR 1232)
95UJ	PCB-1242 (AROCLOR 1242)
95UJ	PCB-1248 (AROCLOR 1248)
190UJ	PCB-1254 (AROCLOR 1254)
190UJ	PCB-1260 (AROCLOR 1260)
16	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47659 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: SB-03 COLLECTION START: 06/13/90 1050 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T611

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
3200	ALUMINUM	17	MANGANESE
6.4UJ	ANTIMONY	.10UR	MERCURY
.74UR	ARSENIC	2.2U	NICKEL
20U	BARIUM	90U	POTASSIUM
.25U	BERYLLIUM	.74U	SELENIUM
.74U	CADMIUM	.50U	SILVER
260U	CALCIUM	180U	SODIUM
4.2	CHROMIUM	.50UJ	THALLIUM
1.5	COBALT	NA	TIN
4UJ	COPPER	7.3	VANADIUM
4900	IRON	5UJ	ZINC
2.6	LEAD	20	PERCENT MOISTURE
110	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

18

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47659 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SB-03
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1050 STOP: 00/00/00
D. NO.: T611 MD NO: T611

RESULTS	UNITS	PARAMETER
2.30U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PURGEABLE ORGANICS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1345 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T437

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
20U	METHYLENE CHLORIDE
11U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
6	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
8	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1345 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T437

UG/KG	ANALYTICAL RESULTS
360U	PHENOL
360UR	BIS(2-CHLOROETHYL) ETHER
360U	2-CHLOROPHENOL
360U	1,3-DICHLOROBENZENE
360U	1,4-DICHLOROBENZENE
360U	BENZYL ALCOHOL
360U	1,2-DICHLOROBENZENE
360U	2-METHYLPHENOL
360U	BIS(2-CHLOROISOPROPYL) ETHER
360U	(3-AND/OR 4-)METHYLPHENOL
360U	N-NITROSODI-N-PROPYLAMINE
360UR	HEXACHLOROETHANE
360U	NITROBENZENE
360U	ISOPHORONE
360U	2-NITROPHENOL
360U	2,4-DIMETHYLPHENOL
1700U	BENZOIC ACID
360U	BIS(2-CHLOROETHOXY) METHANE
360U	2,4-DICHLOROPHENOL
360U	1,2,4-TRICHLOROBENZENE
360U	NAPHTHALENE
360U	4-CHLOROANILINE
360U	HEXACHLOROBUTADIENE
360U	4-CHLORO-3-METHYLPHENOL
360U	2-METHYLNAPHTHALENE
360U	HEXACHLOROCYCLOPENTADIENE (HCCP)
360U	2,4,6-TRICHLOROPHENOL
1700U	2,4,5-TRICHLOROPHENOL
360U	2-CHLORONAPHTHALENE
1700U	2-NITROANILINE
360U	DIMETHYL PHTHALATE
360U	ACENAPHTHYLENE
360U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1700U	3-NITROANILINE
360U	ACENAPHTHENE
1700UJ	2,4-DINITROPHENOL
1700U	4-NITROPHENOL
360U	DIBENZOFURAN
360U	2,4-DINITROTOLUENE
360U	DIETHYL PHTHALATE
360U	4-CHLOROPHENYL PHENYL ETHER
360U	FLUORENE
1700U	4-NITROANILINE
1700U	2-METHYL-4,6-DINITROPHENOL
360U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
360U	4-BROMOPHENYL PHENYL ETHER
360U	HEXACHLOROBENZENE (HCB)
1700U	PENTACHLOROPHENOL
69J	PHENANTHRENE
360U	ANTHRACENE
360U	DI-N-BUTYLPHTHALATE
290J	FLUORANTHENE
270J	PYRENE
360U	BENZYL BUTYL PHTHALATE
720U	3,3'-DICHLOROBENZIDINE
100J	BENZO(A)ANTHRACENE
200J	CHRYSENE
360U	BIS(2-ETHYLHEXYL) PHTHALATE
360U	DI-N-OCTYLPHTHALATE
470J	BENZO(B AND/OR K)FLUORANTHENE
180J	BENZO-A-PYRENE
170J	INDENO (1,2,3-CD) PYRENE
360U	DIBENZO(A,H)ANTHRACENE
160J	BENZO(GHI)PERYLENE
8	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1345 STOP: 00/00/00
ID NUMBER: T437

UG/KG	ANALYTICAL RESULTS
8.7UJ	ALPHA-BHC
8.7UJ	BETA-BHC
8.7UJ	DELTA-BHC
8.7UJ	GAMMA-BHC (LINDANE)
8.7UJ	HEPTACHLOR
8.7UJ	ALDRIN
8.7UJ	HEPTACHLOR EPOXIDE
8.7UJ	ENDOSULFAN I (ALPHA)
17UJ	DIELDRIN
17UJ	4,4'-DDE (P,P'-DDE)
17UJ	ENDRIN
17UJ	ENDOSULFAN II (BETA)
17UJ	4,4'-DDD (P,P'-DDD)
17UJ	ENDOSULFAN SULFATE
17UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
87UJ	METHOXYCHLOR
17UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
87UJ	GAMMA-CHLORDANE /2
87UJ	ALPHA-CHLORDANE /2
170UJ	TOXAPHENE
87UJ	PCB-1016 (AROCLOR 1016)
87UJ	PCB-1221 (AROCLOR 1221)
87UJ	PCB-1232 (AROCLOR 1232)
87UJ	PCB-1242 (AROCLOR 1242)
87UJ	PCB-1248 (AROCLOR 1248)
170UJ	PCB-1254 (AROCLOR 1254)
170UJ	PCB-1260 (AROCLOR 1260)
8	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1345 STOP: 00/00/00
MD NUMBER: T437

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
13000	ALUMINUM	58	MANGANESE
5.6UJ	ANTIMONY	.10UR	MERCURY
8J	ARSENIC	12	NICKEL
32	BARIUM	870U	POTASSIUM
1U	BERYLLIUM	1.3	SELENIUM
3.3	CADMIUM	.43U	SILVER
55000	CALCIUM	1200	SODIUM
44	CHROMIUM	.43UJ	THALLIUM
2.7	COBALT	NA	TIN
20J	COPPER	28	VANADIUM
8700	IRON	76J	ZINC
35	LEAD	08	PERCENT MOISTURE
3000	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1345 STOP: 00/00/00
D. NO.: T437 MD NO: T437

RESULTS	UNITS	PARAMETER
2.5U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47655 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-01
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 05/12/90 1345 STOP: 00/00/00
D. NO.: T437 MD NO: T437

ANALYTICAL RESULTS UG/KG

N	PETROLEUM PRODUCT
10000J	15 UNIDENTIFIED COMPOUNDS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

88

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47656 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1420 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T438

UG/KG	ANALYTICAL RESULTS
14U	CHLOROMETHANE
14U	BROMOMETHANE
14U	VINYL CHLORIDE
14U	CHLOROETHANE
20U	METHYLENE CHLORIDE
14U	ACETONE
7U	CARBON DISULFIDE
7U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
7U	1,1-DICHLOROETHANE
7U	1,2-DICHLOROETHENE (TOTAL)
7U	CHLOROFORM
7U	1,2-DICHLOROETHANE
14U	METHYL ETHYL KETONE
7U	1,1,1-TRICHLOROETHANE
7U	CARBON TETRACHLORIDE
14U	VINYL ACETATE
7U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
7U	1,2-DICHLOROPROPANE
7U	CIS-1,3-DICHLOROPROPENE
7U	TRICHLOROETHENE(TRICHLOROETHYLENE)
7U	DIBROMOCHLOROMETHANE
7U	1,1,2-TRICHLOROETHANE
7U	BENZENE
7U	TRANS-1,3-DICHLOROPROPENE
7U	BROMOFORM
14U	METHYL ISOBUTYL KETONE
14U	METHYL BUTYL KETONE
7U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
7U	1,1,2,2-TETRACHLOROETHANE
7U	TOLUENE
7U	CHLOROBENZENE
7U	ETHYL BENZENE
7U	STYRENE
7U	TOTAL XYLENES
28	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47656 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1420 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.. T438

UG/KG	ANALYTICAL RESULTS
460U	PHENOL
460UR	BIS(2-CHLOROETHYL) ETHER
460U	2-CHLOROPHENOL
460U	1,3-DICHLOROBENZENE
460U	1,4-DICHLOROBENZENE
460U	BENZYL ALCOHOL
460U	1,2-DICHLOROBENZENE
460U	2-METHYLPHENOL
460U	BIS(2-CHLOROISOPROPYL) ETHER
460U	(3-AND/OR 4-)METHYLPHENOL
460U	N-NITROSODI-N-PROPYLAMINE
460UR	HEXACHLOROETHANE
460U	NITROBENZENE
460U	ISOPHORONE
460U	2-NITROPHENOL
460U	2,4-DIMETHYLPHENOL
2200U	BENZOIC ACID
460U	BIS(2-CHLOROETHOXY) METHANE
460U	2,4-DICHLOROPHENOL
460U	1,2,4-TRICHLOROBENZENE
460U	NAPHTHALENE
460U	4-CHLOROANILINE
460U	HEXACHLOROBUTADIENE
460U	4-CHLORO-3-METHYLPHENOL
460U	2-METHYLNAPHTHALENE
460U	HEXACHLOROCYCLOPENTADIENE (HCCP)
460U	2,4,6-TRICHLOROPHENOL
2200U	2,4,5-TRICHLOROPHENOL
460U	2-CHLORONAPHTHALENE
2200U	2-NITROANILINE
460U	DIMETHYL PHTHALATE
460U	ACENAPHTHYLENE
460U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
2200U	3-NITROANILINE
460U	ACENAPHTHENE
2200UJ	2,4-DINITROPHENOL
2200U	4-NITROPHENOL
460U	DIBENZOFURAN
460U	2,4-DINITROTOLUENE
460U	DIETHYL PHTHALATE
460U	4-CHLOROPHENYL PHENYL ETHER
460U	FLUORENE
2200U	4-NITROANILINE
2200U	2-METHYL-4,6-DINITROPHENOL
460U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
460U	4-BROMOPHENYL PHENYL ETHER
460U	HEXACHLOROBENZENE (HCB)
2200U	PENTACHLOROPHENOL
460U	PHENANTHRENE
460U	ANTHRACENE
460U	DI-N-BUTYLPHTHALATE
400J	FLUORANTHENE
400J	PYRENE
460U	BENZYL BUTYL PHTHALATE
920U	3,3'-DICHLOROBENZIDINE
140J	BENZO(A)ANTHRACENE
310J	CHRYSENE
460U	BIS(2-ETHYLHEXYL) PHTHALATE
460U	DI-N-OCTYLPHTHALATE
740J	BENZO(B AND/OR K)FLUORANTHENE
300J	BENZO-A-PYRENE
400J	INDENO (1,2,3-CD) PYRENE
460U	DIBENZO(A,H)ANTHRACENE
460U	BENZO(GHI)PERYLENE
28	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

06

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47656 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1420 STOP: 00/00/00
ID NUMBER: T438

UG/KG	ANALYTICAL RESULTS
11UJ	ALPHA-BHC
11UJ	BETA-BHC
11UJ	DELTA-BHC
11UJ	GAMMA-BHC (LINDANE)
11UJ	HEPTACHLOR
11UJ	ALDRIN
11UJ	HEPTACHLOR EPOXIDE
11UJ	ENDOSULFAN I (ALPHA)
22UJ	DIELDRIN
22UJ	4,4'-DDE (P,P'-DDE)
22UJ	ENDRIN
22UJ	ENDOSULFAN II (BETA)
22UJ	4,4'-DDD (P,P'-DDD)
22UJ	ENDOSULFAN SULFATE
22UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
110UJ	METHOXYCHLOR
22UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
110UJ	GAMMA-CHLORDANE /2
110UJ	ALPHA-CHLORDANE /2
220UJ	TOXAPHENE
110UJ	PCB-1016 (AROCLOR 1016)
110UJ	PCB-1221 (AROCLOR 1221)
110UJ	PCB-1232 (AROCLOR 1232)
110UJ	PCB-1242 (AROCLOR 1242)
110UJ	PCB-1248 (AROCLOR 1248)
220UJ	PCB-1254 (AROCLOR 1254)
220UJ	PCB-1260 (AROCLOR 1260)
28	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47656 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1420 STOP: 00/00/00
MD NUMBER: T438

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
9900	ALUMINUM	52	MANGANESE
6.8UJ	ANTIMONY	.13UR	MERCURY
6.1J	ARSENIC	7.2	NICKEL
33	BARIUM	320U	POTASSIUM
1U	BERYLLIUM	.78U	SELENIUM
2U	CADMIUM	2U	SILVER
8300	CALCIUM	430U	SODIUM
20	CHROMIUM	.52UJ	THALLIUM
2.1	COBALT	NA	TIN
23J	COPPER	20	VANADIUM
7600	IRON	170J	ZINC
77	LEAD	24	PERCENT MOISTURE
840	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47656 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-02
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1420 STOP: 00/00/00
D. NO.: T438 MD NO: T438

RESULTS	UNITS	PARAMETER
1.8U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.   08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530   SAMPLE NO. 47656   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: R WILDE
SOURCE: STANADYNE INC   CITY: WASHINGTON   ST: NC
STATION ID: SD-02   COLLECTION START: 06/12/90 1420   STOP: 00/00/00
CASE.NO.: 14282   SAS NO.:   D. NO.: T438   MD NO: T438

ANALYTICAL RESULTS UG/KG

6000J	9 UNIDENTIFIED COMPOUNDS
N	PETROLEUM PRODUCT
700JN	BENZOFLUORANTHENE (NOT B OR K)

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

94

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47657 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1450 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T439

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
20U	METHYLENE CHLORIDE
11U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
7	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
7	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47657 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1450 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T439

UG/KG	ANALYTICAL RESULTS
1600J	PHENOL
1800UR	BIS(2-CHLOROETHYL) ETHER
1800U	2-CHLOROPHENOL
1800U	1,3-DICHLOROBENZENE
1800U	1,4-DICHLOROBENZENE
1800U	BENZYL ALCOHOL
1800U	1,2-DICHLOROBENZENE
1800U	2-METHYLPHENOL
1800U	BIS(2-CHLOROISOPROPYL) ETHER
1800U	(3-AND/OR 4-)METHYLPHENOL
1800U	N-NITROSODI-N-PROPYLAMINE
1800UR	HEXACHLOROETHANE
1800U	NITROBENZENE
1800U	ISOPHORONE
1800U	2-NITROPHENOL
1800U	2,4-DIMETHYLPHENOL
8600U	BENZOIC ACID
1800U	BIS(2-CHLOROETHOXY) METHANE
1800U	2,4-DICHLOROPHENOL
1800U	1,2,4-TRICHLOROBENZENE
1800U	NAPHTHALENE
1800U	4-CHLOROANILINE
1800U	HEXACHLOROBUTADIENE
1800U	4-CHLORO-3-METHYLPHENOL
1800U	2-METHYLNAPHTHALENE
1800U	HEXACHLOROCYCLOPENTADIENE (HCCP)
1800U	2,4,6-TRICHLOROPHENOL
8600U	2,4,5-TRICHLOROPHENOL
1800U	2-CHLORONAPHTHALENE
8600U	2-NITROANILINE
1800U	DIMETHYL PHTHALATE
1800U	ACENAPHTHYLENE
1800U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
8600U	3-NITROANILINE
1800U	ACENAPHTHENE
8600UJ	2,4-DINITROPHENOL
8600U	4-NITROPHENOL
1800U	DIBENZOFURAN
1800U	2,4-DINITROTOLUENE
1800U	DIETHYL PHTHALATE
1800U	4-CHLOROPHENYL PHENYL ETHER
1800U	FLUORENE
8600U	4-NITROANILINE
8600U	2-METHYL-4,6-DINITROPHENOL
1800U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1800U	4-BROMOPHENYL PHENYL ETHER
1800U	HEXACHLOROBENZENE (HCB)
8600U	PENTACHLOROPHENOL
1800U	PHENANTHRENE
1800U	ANTHRACENE
1800U	DI-N-BUTYLPHTHALATE
1800U	FLUORANTHENE
1800U	PYRENE
1800U	BENZYL BUTYL PHTHALATE
3500U	3,3'-DICHLOROBENZIDINE
1800U	BENZO(A)ANTHRACENE
1800U	CHRYSENE
1800U	BIS(2-ETHYLHEXYL) PHTHALATE
1800U	DI-N-OCTYLPHTHALATE
1800U	BENZO(B AND/OR K)FLUORANTHENE
1800U	BENZO-A-PYRENE
1800U	INDENO (1,2,3-CD) PYRENE
1800U	DIBENZO(A,H)ANTHRACENE
1800U	BENZO(GHI)PERYLENE
7	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

96

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47657 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-03
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1450 STOP: 00/00/00
D NUMBER: T439

UG/KG	ANALYTICAL RESULTS
8.6UJ	ALPHA-BHC
8.6UJ	BETA-BHC
8.6UJ	DELTA-BHC
8.6UJ	GAMMA-BHC (LINDANE)
8.6UJ	HEPTACHLOR
8.6UJ	ALDRIN
8.6UJ	HEPTACHLOR EPOXIDE
8.6UJ	ENDOSULFAN I (ALPHA)
17UJ	DIELDRIN
17UJ	4,4'-DDE (P,P'-DDE)
17UJ	ENDRIN
17UJ	ENDOSULFAN II (BETA)
17UJ	4,4'-DDD (P,P'-DDD)
17UJ	ENDOSULFAN SULFATE
17UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
86UJ	METHOXYCHLOR
17UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
86UJ	GAMMA-CHLORDANE /2
86UJ	ALPHA-CHLORDANE /2
170UJ	TOXAPHENE
86UJ	PCB-1016 (AROCLOR 1016)
86UJ	PCB-1221 (AROCLOR 1221)
86UJ	PCB-1232 (AROCLOR 1232)
86UJ	PCB-1242 (AROCLOR 1242)
86UJ	PCB-1248 (AROCLOR 1248)
170J	PCB-1254 (AROCLOR 1254)
170UJ	PCB-1260 (AROCLOR 1260)
7	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

SOURCE:TSTANADYNE3INC SAMPLE NO. 47657 SAMPLE TYPE: SOIL CITY: WASHINGTON COLLECTED ST: NCWILDE
STATION ID: SD-03 COLLECTION START: 06/12/90 1450 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T439

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
1200	ALUMINUM	4.2	MANGANESE
5.3UJ	ANTIMONY	.09UR	MERCURY
.61UR	ARSENIC	1.8U	NICKEL
3U	BARIUM	80U	POTASSIUM
.20U	BERYLLIUM	.61U	SELENIUM
.61U	CADMIUM	.41U	SILVER
70U	CALCIUM	80U	SODIUM
5.2	CHROMIUM	.41UJ	THALLIUM
.61U	COBALT	NA	TIN
11J	COPPER	3.9	VANADIUM
1200	IRON	20UJ	ZINC
5.7	LEAD	02	PERCENT MOISTURE
90U	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47657 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-03
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 1450 STOP: 00/00/00
D. NO.: T439 MD NO: T439

RESULTS	UNITS	PARAMETER
2U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47657 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-03
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 05/12/90 1450 STOP: 00/00/00
D. NO.: T439 MD NO: T439

ANALYTICAL RESULTS UG/KG

2000JN	BICYCLOOCTATRIENE
5000JN	DIMETHYLBENZENEMETHANOL
700JN	TETRAMETHYLBUTYLPHENOL
3000JN	PHOSPHORIC ACID, TRIPHENYLESTER
1000JN	METHYLPHENYLAZETIDINE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-04

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1250 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T613

UG/KG	ANALYTICAL RESULTS
11U	CHLOROMETHANE
11U	BROMOMETHANE
11U	VINYL CHLORIDE
11U	CHLOROETHANE
20U	METHYLENE CHLORIDE
11U	ACETONE
5U	CARBON DISULFIDE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U	1,1-DICHLOROETHANE
5U	1,2-DICHLOROETHENE (TOTAL)
5U	CHLOROFORM
5U	1,2-DICHLOROETHANE
11U	METHYL ETHYL KETONE
5U	1,1,1-TRICHLOROETHANE
5U	CARBON TETRACHLORIDE
11U	VINYL ACETATE
5U	BROMODICHLOROMETHANE

UG/KG	ANALYTICAL RESULTS
5U	1,2-DICHLOROPROPANE
5U	CIS-1,3-DICHLOROPROPENE
5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
5U	DIBROMOCHLOROMETHANE
5U	1,1,2-TRICHLOROETHANE
5U	BENZENE
5U	TRANS-1,3-DICHLOROPROPENE
5U	BROMOFORM
11U	METHYL ISOBUTYL KETONE
11U	METHYL BUTYL KETONE
5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,1,2,2-TETRACHLOROETHANE
5U	TOLUENE
5U	CHLOROBENZENE
5U	ETHYL BENZENE
5U	STYRENE
5U	TOTAL XYLENES
8	PERCENT MOISTURE

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-04

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1250 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T613

UG/KG	ANALYTICAL RESULTS
360U	PHENOL
360UR	BIS(2-CHLOROETHYL) ETHER
360U	2-CHLOROPHENOL
360U	1,3-DICHLOROBENZENE
360U	1,4-DICHLOROBENZENE
360U	BENZYL ALCOHOL
360U	1,2-DICHLOROBENZENE
360U	2-METHYLPHENOL
360U	BIS(2-CHLOROISOPROPYL) ETHER
360U	(3-AND/OR 4-)METHYLPHENOL
360U	N-NITROSODI-N-PROPYLAMINE
360UR	HEXACHLOROETHANE
360U	NITROBENZENE
360U	ISOPHORONE
360U	2-NITROPHENOL
360U	2,4-DIMETHYLPHENOL
1700U	BENZOIC ACID
360U	BIS(2-CHLOROETHOXY) METHANE
360U	2,4-DICHLOROPHENOL
360U	1,2,4-TRICHLOROBENZENE
360U	NAPHTHALENE
360U	4-CHLOROANILINE
360U	HEXACHLOROBUTADIENE
360U	4-CHLORO-3-METHYLPHENOL
360U	2-METHYLNAPHTHALENE
360U	HEXACHLOROCYCLOPENTADIENE (HCCP)
360U	2,4,6-TRICHLOROPHENOL
1700U	2,4,5-TRICHLOROPHENOL
360U	2-CHLORONAPHTHALENE
1700U	2-NITROANILINE
360U	DIMETHYL PHTHALATE
360U	ACENAPHTHYLENE
360U	2,6-DINITROTOLUENE

UG/KG	ANALYTICAL RESULTS
1700U	3-NITROANILINE
360U	ACENAPHTHENE
1700UJ	2,4-DINITROPHENOL
1700U	4-NITROPHENOL
360U	DIBENZOFURAN
360U	2,4-DINITROTOLUENE
360U	DIETHYL PHTHALATE
360U	4-CHLOROPHENYL PHENYL ETHER
360U	FLUORENE
1700U	4-NITROANILINE
1700U	2-METHYL-4,6-DINITROPHENOL
360U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
360U	4-BROMOPHENYL PHENYL ETHER
360U	HEXACHLOROBENZENE (HCB)
1700U	PENTACHLOROPHENOL
47J	PHENANTHRENE
360U	ANTHRACENE
360U	DI-N-BUTYLPHTHALATE
330J	FLUORANTHENE
250J	PYRENE
360U	BENZYL BUTYL PHTHALATE
720U	3,3'-DICHLOROBENZIDINE
100J	BENZO(A)ANTHRACENE
200J	CHRYSENE
360U	BIS(2-ETHYLHEXYL) PHTHALATE
360U	DI-N-OCTYLPHTHALATE
390J	BENZO(B AND/OR K)FLUORANTHENE
82J	BENZO-A-PYRENE
87J	INDENO (1,2,3-CD) PYRENE
360U	DIBENZO(A,H)ANTHRACENE
360U	BENZO(GHI)PERYLENE
8	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-04
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1250 STOP: 00/00/00
ID NUMBER: T613

UG/KG	ANALYTICAL RESULTS
8.7UJ	ALPHA-BHC
8.7UJ	BETA-BHC
8.7UJ	DELTA-BHC
8.7UJ	GAMMA-BHC (LINDANE)
8.7UJ	HEPTACHLOR
8.7UJ	ALDRIN
8.7UJ	HEPTACHLOR EPOXIDE
8.7UJ	ENDOSULFAN I (ALPHA)
17UJ	DIELDRIN
17UJ	4,4'-DDE (P,P'-DDE)
17UJ	ENDRIN
17UJ	ENDOSULFAN II (BETA)
17UJ	4,4'-DDD (P,P'-DDD)
17UJ	ENDOSULFAN SULFATE
17UJ	4,4'-DDT (P,P'-DDT)

UG/KG	ANALYTICAL RESULTS
87UJ	METHOXYCHLOR
17UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
87UJ	GAMMA-CHLORDANE /2
87UJ	ALPHA-CHLORDANE /2
170UJ	TOXAPHENE
87UJ	PCB-1016 (AROCLOR 1016)
87UJ	PCB-1221 (AROCLOR 1221)
87UJ	PCB-1232 (AROCLOR 1232)
87UJ	PCB-1242 (AROCLOR 1242)
87UJ	PCB-1248 (AROCLOR 1248)
170UJ	PCB-1254 (AROCLOR 1254)
170UJ	PCB-1260 (AROCLOR 1260)
8	PERCENT MOISTURE

REMARKS
EXCESSIVE HOLDING TIME

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-04
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1250 STOP: 00/00/00
MD NUMBER: T613

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
80000	ALUMINUM	57	MANGANESE
5.6UJ	ANTIMONY	.10UR	MERCURY
2UJ	ARSENIC	4.9	NICKEL
24	BARIUM	550U	POTASSIUM
1U	BERYLLIUM	.64U	SELENIUM
.64U	CADMIUM	1U	SILVER
460U	CALCIUM	110U	SODIUM
9.6	CHROMIUM	.43UJ	THALLIUM
2	COBALT	NA	TIN
5.3J	COPPER	20	VANADIUM
9000	IRON	35J	ZINC
7.4	LEAD	07	PERCENT MOISTURE
830	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL
SOURCE: STANADYNE INC
STATION ID: SD-04
CASE.NO.: 14282 SAS NO.:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1250 STOP: 00/00/00
D. NO.: T613 MD NO: T613

RESULTS	UNITS	PARAMETER
2.4U	MG/KG	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47665 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: SD-04 COLLECTION START: 06/13/90 1250 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.: D. NO.: T613 MD NO: T613

ANALYTICAL RESULTS UG/KG

3000J	4 UNIDENTIFIED COMPOUNDS
-	OCTAHYDRODIMETHYL(METHYLETHYL)PHENANTHRENE
100JN	-CARBOXYLIC ACID, METHYLESTER
300JN	PHOSPHORIC ACID, TRIPHENYLESTER
100JN	METHYLPHENYLAZETIDINE
200JN	BENZOFLUORANTHENE (NOT B OR K)

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47652 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-01 COLLECTION START: 06/13/90 0925 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T443

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE	5U	1,2-DICHLOROPROPANE
10U	BROMOMETHANE	5U	CIS-1,3-DICHLOROPROPENE
10U	VINYL CHLORIDE	5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	CHLOROETHANE	5U	DIBROMOCHLOROMETHANE
5U	METHYLENE CHLORIDE	5U	1,1,2-TRICHLOROETHANE
20U	ACETONE	5U	BENZENE
5U	CARBON DISULFIDE	5U	TRANS-1,3-DICHLOROPROPENE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U	BROMOFORM
5U	1,1-DICHLOROETHANE	10U	METHYL ISOBUTYL KETONE
5U	1,2-DICHLOROETHENE (TOTAL)	10U	METHYL BUTYL KETONE
5U	CHLOROFORM	5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,2-DICHLOROETHANE	5U	1,1,2,2-TETRACHLOROETHANE
10U	METHYL ETHYL KETONE	5U	TOLUENE
5U	1,1,1-TRICHLOROETHANE	5U	CHLOROBENZENE
5U	CARBON TETRACHLORIDE	5U	ETHYL BENZENE
10U	VINYL ACETATE	5U	STYRENE
5U	BROMODICHLOROMETHANE	5U	TOTAL XYLENES

REMARKS ***REMARKS***

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47652 SAMPLE TYPE: GROUNDWA
SOURCE: STANADYNE INC
STATION ID: TW-01

PROG ELEM: NSF COLLED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0925 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.. T443

UG/L	ANALYTICAL RESULTS
10UJ	PHENOL
10UJ	BIS(2-CHLOROETHYL) ETHER
10UJ	2-CHLOROPHENOL
10UJ	1,3-DICHLOROBENZENE
10UJ	1,4-DICHLOROBENZENE
10UJ	BENZYL ALCOHOL
10UJ	1,2-DICHLOROBENZENE
10UJ	2-METHYLPHENOL
10UJ	BIS(2-CHLOROISOPROPYL) ETHER
10UR	(3-AND/OR 4-)METHYLPHENOL
10UJ	N-NITROSODI-N-PROPYLAMINE
10UJ	HEXACHLOROETHANE
10UJ	NITROBENZENE
10UJ	ISOPHORONE
10UJ	2-NITROPHENOL
10UJ	2,4-DIMETHYLPHENOL
50UJ	BENZOIC ACID
10UJ	BIS(2-CHLOROETHOXY) METHANE
10UJ	2,4-DICHLOROPHENOL
10UJ	1,2,4-TRICHLOROBENZENE
10UJ	NAPHTHALENE
10UJ	4-CHLOROANILINE
10UJ	HEXACHLOROBUTADIENE
10UJ	4-CHLORO-3-METHYLPHENOL
10UJ	2-METHYLNAPHTHALENE
10UJ	HEXACHLOROCYCLOPENTADIENE (HCCP)
10UJ	2,4,6-TRICHLOROPHENOL
50UJ	2,4,5-TRICHLOROPHENOL
10UJ	2-CHLORONAPHTHALENE
50UJ	2-NITROANILINE
10UR	DIMETHYL PHTHALATE
10UJ	ACENAPHTHYLENE
10UJ	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
50UJ	3-NITROANILINE
10UJ	ACENAPHTHENE
50UJ	2,4-DINITROPHENOL
50UJ	4-NITROPHENOL
10UJ	DIBENZOFURAN
10UJ	2,4-DINITROTOLUENE
10UJ	DIETHYL PHTHALATE
10UJ	4-CHLOROPHENYL PHENYL ETHER
10UJ	FLUORENE
50UJ	4-NITROANILINE
50UJ	2-METHYL-4,6-DINITROPHENOL
10UJ	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10UJ	4-BROMOPHENYL PHENYL ETHER
10UJ	HEXACHLOROBENZENE (HCB)
50UJ	PENTACHLOROPHENOL
10UJ	PHENANTHRENE
10UJ	ANTHRACENE
10UJ	DI-N-BUTYLPHTHALATE
10UJ	FLUORANTHENE
10UJ	PYRENE
10UJ	BENZYL BUTYL PHTHALATE
20UJ	3,3'-DICHLOROBENZIDINE
10UJ	BENZO(A)ANTHRACENE
10UJ	CHRYSENE
10UJ	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	DI-N-OCTYLPHTHALATE
10UR	BENZO(B AND/OR K)FLUORANTHENE
10UJ	BENZO-A-PYRENE
10UJ	INDENO (1,2,3-CD) PYRENE
10UJ	DIBENZO(A,H)ANTHRACENE
10UR	BENZO(GHI)PERYLENE

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47652 SAMPLE TYPE: GROUNDWA
SOURCE: STANADYNE INC
STATION ID: TW-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 0925 STOP: 00/00/00
ID NUMBER: T443

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
0.05UJ	ALPHA-BHC	0.50UJ	METHOXYCHLOR
0.05UJ	BETA-BHC	0.10UJ	ENDRIN KETONE
0.05UJ	DELTA-BHC		CHLORDANE (TECH. MIXTURE) /1
0.05UJ	GAMMA-BHC (LINDANE)	0.50UJ	GAMMA-CHLORDANE /2
0.05UJ	HEPTACHLOR	0.50UJ	ALPHA-CHLORDANE /2
0.05UJ	ALDRIN	1.00UJ	TOXAPHENE
0.05UJ	HEPTACHLOR EPOXIDE	0.50UJ	PCB-1016 (AROCLOR 1016)
0.05UJ	ENDOSULFAN I (ALPHA)	0.50UJ	PCB-1221 (AROCLOR 1221)
0.10UJ	DIELDRIN	0.50UJ	PCB-1232 (AROCLOR 1232)
0.10UJ	4,4'-DDE (P,P'-DDE)	0.50UJ	PCB-1242 (AROCLOR 1242)
0.10UJ	ENDRIN	0.50UJ	PCB-1248 (AROCLOR 1248)
0.10UJ	ENDOSULFAN II (BETA)	1.00UJ	PCB-1254 (AROCLOR 1254)
0.10UJ	4,4'-DDD (P,P'-DDD)	1.00UJ	PCB-1260 (AROCLOR 1260)
0.10UJ	ENDOSULFAN SULFATE		
0.10UJ	4,4'-DDT (P,P'-DDT)		

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47652 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-01 COLLECTION START: 06/13/90 0925 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T443

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
1600	ALUMINUM	30	MANGANESE
26UJ	ANTIMONY	.20UR	MERCURY
3UJ	ARSENIC	9U	NICKEL
50U	BARIUM	1400	POTASSIUM
1U	BERYLLIUM	2U	SELENIUM
3U	CADMIUM	2U	SILVER
16000	CALCIUM	2000U	SODIUM
2U	CHROMIUM	2U	THALLIUM
3U	COBALT	NA	TIN
16U	COPPER	2U	VANADIUM
820J	IRON	30U	ZINC
2U	LEAD		
1800	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47652 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-01 COLLECTION START: 06/13/90 0925 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.: D. NO.: T443 MD NO: T443

RESULTS	UNITS	PARAMETER
10U	UG/L	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47663 SAMPLE TYPE:
SOURCE:
STATION ID: TW-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1205 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T609

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE	5U	1,2-DICHLOROPROPANE
10U	BROMOMETHANE	5U	CIS-1,3-DICHLOROPROPENE
10U	VINYL CHLORIDE	5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	CHLOROETHANE	5U	DIBROMOCHLOROMETHANE
20U	METHYLENE CHLORIDE	5U	1,1,2-TRICHLOROETHANE
20U	ACETONE	5U	BENZENE
5U	CARBON DISULFIDE	5U	TRANS-1,3-DICHLOROPROPENE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U	BROMOFORM
5U	1,1-DICHLOROETHANE	10U	METHYL ISOBUTYL KETONE
5U	1,2-DICHLOROETHENE (TOTAL)	10U	METHYL BUTYL KETONE
1J	CHLOROFORM	5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,2-DICHLOROETHANE	5U	1,1,2,2-TETRACHLOROETHANE
10U	METHYL ETHYL KETONE	5U	TOLUENE
5U	1,1,1-TRICHLOROETHANE	5U	CHLOROBENZENE
5U	CARBON TETRACHLORIDE	5U	ETHYL BENZENE
10U	VINYL ACETATE	5U	STYRENE
5U	BROMODICHLOROMETHANE	5U	TOTAL XYLENES

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47663 SAMPLE TYPE:
SOURCE:
STATION ID: TW-02

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1205 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T609

UG/L	ANALYTICAL RESULTS
10UJ	PHENOL
10UJ	BIS(2-CHLOROETHYL) ETHER
10UJ	2-CHLOROPHENOL
10UJ	1,3-DICHLOROBENZENE
10UJ	1,4-DICHLOROBENZENE
10UJ	BENZYL ALCOHOL
10UJ	1,2-DICHLOROBENZENE
10UJ	2-METHYLPHENOL
10UJ	BIS(2-CHLOROISOPROPYL) ETHER
10UR	(3-AND/OR 4-)METHYLPHENOL
10UJ	N-NITROSODI-N-PROPYLAMINE
10UJ	HEXACHLOROETHANE
10UJ	NITROBENZENE
10UJ	ISOPHORONE
10UJ	2-NITROPHENOL
10UJ	2,4-DIMETHYLPHENOL
50UJ	BENZOIC ACID
10UJ	BIS(2-CHLOROETHOXY) METHANE
10UJ	2,4-DICHLOROPHENOL
10UJ	1,2,4-TRICHLOROBENZENE
10UJ	NAPHTHALENE
10UJ	4-CHLOROANILINE
10UJ	HEXACHLOROBUTADIENE
10UJ	4-CHLORO-3-METHYLPHENOL
10UJ	2-METHYLNAPHTHALENE
10UJ	HEXACHLOROCYCLOPENTADIENE (HCCP)
10UJ	2,4,6-TRICHLOROPHENOL
50UJ	2,4,5-TRICHLOROPHENOL
10UJ	2-CHLORONAPHTHALENE
50UJ	2-NITROANILINE
10UR	DIMETHYL PHTHALATE
10UJ	ACENAPHTHYLENE
10UJ	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
50UJ	3-NITROANILINE
10UJ	ACENAPHTHENE
50UJ	2,4-DINITROPHENOL
50UJ	4-NITROPHENOL
10UJ	DIBENZOFURAN
10UJ	2,4-DINITROTOLUENE
10UJ	DIETHYL PHTHALATE
10UJ	4-CHLOROPHENYL PHENYL ETHER
10UJ	FLUORENE
50UJ	4-NITROANILINE
50UJ	2-METHYL-4,6-DINITROPHENOL
10UJ	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10UJ	4-BROMOPHENYL PHENYL ETHER
10UJ	HEXACHLOROBENZENE (HCB)
50UJ	PENTACHLOROPHENOL
10UJ	PHENANTHRENE
10UJ	ANTHRACENE
10UJ	DI-N-BUTYLPHTHALATE
10UJ	FLUORANTHENE
10UJ	PYRENE
10UJ	BENZYL BUTYL PHTHALATE
20UJ	3,3'-DICHLOROBENZIDINE
10UJ	BENZO(A)ANTHRACENE
10UJ	CHRYSENE
10UJ	BIS(2-ETHYLHEXYL) PHTHALATE
10UR	DI-N-OCTYLPHTHALATE
10UJ	BENZO(B AND/OR K)FLUORANTHENE
10UJ	BENZO-A-PYRENE
10UJ	INDENO (1,2,3-CD) PYRENE
10UJ	DIBENZO(A,H)ANTHRACENE
10UR	BENZO(GHI)PERYLENE

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

1/3

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/90

PESTICIDES/PCB'S DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47663 SAMPLE TYPE:
SOURCE:
STATION ID: TW-02
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1205 STOP: 00/00/00
ID NUMBER: T609

UG/L	ANALYTICAL RESULTS
0.05UJ	ALPHA-BHC
0.05UJ	BETA-BHC
0.05UJ	DELTA-BHC
0.05UJ	GAMMA-BHC (LINDANE)
0.05UJ	HEPTACHLOR
0.05UJ	ALDRIN
0.05UJ	HEPTACHLOR EPOXIDE
0.05UJ	ENDOSULFAN I (ALPHA)
0.10UJ	DIELDRIN
0.10UJ	4,4'-DDE (P,P'-DDE)
0.10UJ	ENDRIN
0.10UJ	ENDOSULFAN II (BETA)
0.10UJ	4,4'-DDD (P,P'-DDD)
0.10UJ	ENDOSULFAN SULFATE
0.10UJ	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50UJ	METHOXYCHLOR
0.10UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
0.50UJ	GAMMA-CHLORDANE /2
0.50UJ	ALPHA-CHLORDANE /2
1.00UJ	TOXAPHENE
0.50UJ	PCB-1016 (AROCLOR 1016)
0.50UJ	PCB-1221 (AROCLOR 1221)
0.50UJ	PCB-1232 (AROCLOR 1232)
0.50UJ	PCB-1242 (AROCLOR 1242)
0.50UJ	PCB-1248 (AROCLOR 1248)
1.00UJ	PCB-1254 (AROCLOR 1254)
1.00UJ	PCB-1260 (AROCLOR 1260)

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47663 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-02 COLLECTION START: 06/13/90 1205 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T609

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
3300	ALUMINUM	170	MANGANESE
26UJ	ANTIMONY	.20UR	MERCURY
3UJ	ARSENIC	9U	NICKEL
50U	BARIUM	850	POTASSIUM
1U	BERYLLIUM	2U	SELENIUM
3U	CADMIUM	2U	SILVER
9600	CALCIUM	1400	SODIUM
2U	CHROMIUM	2U	THALLIUM
3U	COBALT	NA	TIN
16U	COPPER	4U	VANADIUM
3400J	IRON	20U	ZINC
5	LEAD		
560	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47663 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-02 COLLECTION START: 06/13/90 1205 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.: D. NO.: T609 MD NO: T609

RESULTS	UNITS	PARAMETER
10U	UG/L	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47660 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-03 COLLECTION START: 06/13/90 1110 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T612

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE	5U	1,2-DICHLOROPROPANE
10U	BROMOMETHANE	5U	CIS-1,3-DICHLOROPROPENE
10U	VINYL CHLORIDE	5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	CHLOROETHANE	5U	DIBROMOCHLOROMETHANE
5U	METHYLENE CHLORIDE	5U	1,1,2-TRICHLOROETHANE
10U	ACETONE	5U	BENZENE
5U	CARBON DISULFIDE	5U	TRANS-1,3-DICHLOROPROPENE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U	BROMOFORM
5U	1,1-DICHLOROETHANE	10U	METHYL ISOBUTYL KETONE
5U	1,2-DICHLOROETHENE (TOTAL)	10U	METHYL BUTYL KETONE
5U	CHLOROFORM	5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,2-DICHLOROETHANE	5U	1,1,2,2-TETRACHLOROETHANE
10U	METHYL ETHYL KETONE	5U	TOLUENE
5U	1,1,1-TRICHLOROETHANE	5U	CHLOROBENZENE
5U	CARBON TETRACHLORIDE	5U	ETHYL BENZENE
10U	VINYL ACETATE	5U	STYRENE
5U	BROMODICHLOROMETHANE	5U	TOTAL XYLENES

REMARKS ***REMARKS***

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

117

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47660 SAMPLE TYPE: GROUNDWA
SOURCE: STANADYNE INC
STATION ID: TW-03

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1110 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T612

UG/L	ANALYTICAL RESULTS
10UJ	PHENOL
10UJ	BIS(2-CHLOROETHYL) ETHER
10UJ	2-CHLOROPHENOL
10UJ	1,3-DICHLOROBENZENE
10UJ	1,4-DICHLOROBENZENE
10UJ	BENZYL ALCOHOL
10UJ	1,2-DICHLOROBENZENE
10UJ	2-METHYLPHENOL
10UJ	BIS(2-CHLOROISOPROPYL) ETHER
10UR	(3-AND/OR 4-)METHYLPHENOL
10UJ	N-NITROSODI-N-PROPYLAMINE
10UJ	HEXACHLOROETHANE
10UJ	NITROBENZENE
10UJ	ISOPHORONE
10UJ	2-NITROPHENOL
10UJ	2,4-DIMETHYLPHENOL
50UJ	BENZOIC ACID
10UJ	BIS(2-CHLOROETHOXY) METHANE
10UJ	2,4-DICHLOROPHENOL
10UJ	1,2,4-TRICHLOROBENZENE
10UJ	NAPHTHALENE
10UJ	4-CHLOROANILINE
10UJ	HEXACHLOROBUTADIENE
10UJ	4-CHLORO-3-METHYLPHENOL
10UJ	2-METHYLNAPHTHALENE
10UJ	HEXACHLOROCYCLOPENTADIENE (HCCP)
10UJ	2,4,6-TRICHLOROPHENOL
50UJ	2,4,5-TRICHLOROPHENOL
10UJ	2-CHLORONAPHTHALENE
50UJ	2-NITROANILINE
10UJ	DIMETHYL PHTHALATE
10UR	ACENAPHTHYLENE
10UJ	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
50UJ	3-NITROANILINE
10UJ	ACENAPHTHENE
50UJ	2,4-DINITROPHENOL
50UJ	4-NITROPHENOL
10UJ	DIBENZOFURAN
10UJ	2,4-DINITROTOLUENE
10UJ	DIETHYL PHTHALATE
10UJ	4-CHLOROPHENYL PHENYL ETHER
10UJ	FLUORENE
50UJ	4-NITROANILINE
50UJ	2-METHYL-4,6-DINITROPHENOL
10UJ	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10UJ	4-BROMOPHENYL PHENYL ETHER
10UJ	HEXACHLOROBENZENE (HCB)
50UJ	PENTACHLOROPHENOL
10UJ	PHENANTHRENE
10UJ	ANTHRACENE
10UJ	DI-N-BUTYLPHTHALATE
10UJ	FLUORANTHENE
10UJ	PYRENE
10UJ	BENZYL BUTYL PHTHALATE
20UJ	3,3'-DICHLOROBENZIDINE
10UJ	BENZO(A)ANTHRACENE
10UJ	CHRYSENE
10UJ	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	DI-N-OCTYLPHTHALATE
10UR	BENZO(B AND/OR K)FLUORANTHENE
10UJ	BENZO-A-PYRENE
10UJ	INDENO (1,2,3-CD) PYRENE
10UJ	DIBENZO(A,H)ANTHRACENE
10UR	BENZO(GHI)PERYLENE

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47660 SAMPLE TYPE: GROUNDWA
SOURCE: STANADYNE INC
STATION ID: TW-03
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/13/90 1110 STOP: 00/00/00
D. NUMBER: T612

UG/L	ANALYTICAL RESULTS
0.05UJ	ALPHA-BHC
0.05UJ	BETA-BHC
0.05UJ	DELTA-BHC
0.05UJ	GAMMA-BHC (LINDANE)
0.05UJ	HEPTACHLOR
0.05UJ	ALDRIN
0.05UJ	HEPTACHLOR EPOXIDE
0.05UJ	ENDOSULFAN I (ALPHA)
0.10UJ	DIELDRIN
0.10UJ	4,4'-DDE (P,P'-DDE)
0.10UJ	ENDRIN
0.10UJ	ENDOSULFAN II (BETA)
0.10UJ	4,4'-DDD (P,P'-DDD)
0.10UJ	ENDOSULFAN SULFATE
0.10UJ	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50UJ	METHOXYCHLOR
0.10UJ	ENDRIN KETONE
--	CHLORDANE (TECH. MIXTURE) /1
0.50UJ	GAMMA-CHLORDANE /2
0.50UJ	ALPHA-CHLORDANE /2
1.00UJ	TOXAPHENE
0.50UJ	PCB-1016 (AROCLOR 1016)
0.50UJ	PCB-1221 (AROCLOR 1221)
0.50UJ	PCB-1232 (AROCLOR 1232)
0.50UJ	PCB-1242 (AROCLOR 1242)
0.50UJ	PCB-1248 (AROCLOR 1248)
1.00UJ	PCB-1254 (AROCLOR 1254)
1.00UJ	PCB-1260 (AROCLOR 1260)

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47660 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-03 COLLECTION START: 06/13/90 1110 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T612

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
2900	ALUMINUM	53	MANGANESE
26UJ	ANTIMONY	.20UR	MERCURY
3UJ	ARSENIC	9U	NICKEL
100	BARIUM	830	POTASSIUM
1U	BERYLLIUM	2U	SELENIUM
3U	CADMIUM	2U	SILVER
57000	CALCIUM	4000	SODIUM
4U	CHROMIUM	2U	THALLIUM
4U	COBALT	NA	TIN
16U	COPPER	8	VANADIUM
4800J	IRON	20U	ZINC
5	LEAD		
1500	MAGNESIUM		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47660 SAMPLE TYPE: GROUNDWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TW-03 COLLECTION START: 06/13/90 1110 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.: D. NO.: T612 MD NO: T612

RESULTS	UNITS	PARAMETER
10U	UG/L	CYANIDE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PURGEABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47671 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TB-01 COLLECTION START: 06/12/90 0800 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T436

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
10U	CHLOROMETHANE	5U	1,2-DICHLOROPROPANE
10U	BROMOMETHANE	5U	CIS-1,3-DICHLOROPROPENE
10U	VINYL CHLORIDE	5U	TRICHLOROETHENE(TRICHLOROETHYLENE)
10U	CHLOROETHANE	5U	DIBROMOCHLOROMETHANE
5U	METHYLENE CHLORIDE	5U	1,1,2-TRICHLOROETHANE
20U	ACETONE	5U	BENZENE
5U	CARBON DISULFIDE	5U	TRANS-1,3-DICHLOROPROPENE
5U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)	5U	BROMOFORM
5U	1,1-DICHLOROETHANE	10U	METHYL ISOBUTYL KETONE
5U	1,2-DICHLOROETHENE (TOTAL)	10U	METHYL BUTYL KETONE
5U	CHLOROFORM	5U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U	1,2-DICHLOROETHANE	5U	1,1,2,2-TETRACHLOROETHANE
10U	METHYL ETHYL KETONE	5U	TOLUENE
5U	1,1,1-TRICHLOROETHANE	5U	CHLOROBENZENE
5U	CARBON TETRACHLORIDE	5U	ETHYL BENZENE
10U	VINYL ACETATE	5U	STYRENE
5U	BROMODICHLOROMETHANE	5U	TOTAL XYLENES

REMARKS ***REMARKS***

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

EXTRACTABLE ORGANICS DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47671 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: TB-01 COLLECTION START: 06/12/90 0800 STOP: 00/00/00

CASE NO.: 14282 SAS NO.: D. NO.: T436

UG/L	ANALYTICAL RESULTS
10UJ	PHENOL
10UJ	BIS(2-CHLOROETHYL) ETHER
10UJ	2-CHLOROPHENOL
10UJ	1,3-DICHLOROBENZENE
10UJ	1,4-DICHLOROBENZENE
10UJ	BENZYL ALCOHOL
10UJ	1,2-DICHLOROBENZENE
10UJ	2-METHYLPHENOL
10UJ	BIS(2-CHLOROISOPROPYL) ETHER
10UR	(3-AND/OR 4-)METHYLPHENOL
10UJ	N-NITROSODI-N-PROPYLAMINE
10UJ	HEXACHLOROETHANE
10UJ	NITROBENZENE
10UJ	ISOPHORONE
10UJ	2-NITROPHENOL
10UJ	2,4-DIMETHYLPHENOL
50UJ	BENZOIC ACID
10UJ	BIS(2-CHLOROETHOXY) METHANE
10UJ	2,4-DICHLOROPHENOL
10UJ	1,2,4-TRICHLOROBENZENE
10UJ	NAPHTHALENE
10UJ	4-CHLOROANILINE
10UJ	HEXACHLOROBUTADIENE
10UJ	4-CHLORO-3-METHYLPHENOL
10UJ	2-METHYLNAPHTHALENE
10UJ	HEXACHLOROCYCLOPENTADIENE (HCCP)
10UJ	2,4,6-TRICHLOROPHENOL
50UJ	2,4,5-TRICHLOROPHENOL
10UJ	2-CHLORONAPHTHALENE
50UJ	2-NITROANILINE
10UR	DIMETHYL PHTHALATE
10UJ	ACENAPHTHYLENE
10UJ	2,6-DINITROTOLUENE

UG/L	ANALYTICAL RESULTS
50UJ	3-NITROANILINE
10UJ	ACENAPHTHENE
50UJ	2,4-DINITROPHENOL
50UJ	4-NITROPHENOL
10UJ	DIBENZOFURAN
10UJ	2,4-DINITROTOLUENE
10UJ	DIETHYL PHTHALATE
10UJ	4-CHLOROPHENYL PHENYL ETHER
10UJ	FLUORENE
50UJ	4-NITROANILINE
50UJ	2-METHYL-4,6-DINITROPHENOL
10UJ	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10UJ	4-BROMOPHENYL PHENYL ETHER
10UJ	HEXACHLOROBENZENE (HCB)
50UJ	PENTACHLOROPHENOL
10UJ	PHENANTHRENE
10UJ	ANTHRACENE
10UJ	DI-N-BUTYLPHTHALATE
10UJ	FLUORANTHENE
10UJ	PYRENE
10UJ	BENZYL BUTYL PHTHALATE
20UJ	3,3'-DICHLOROBENZIDINE
10UJ	BENZO(A)ANTHRACENE
10UJ	CHRYSENE
10UJ	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	DI-N-OCTYLPHTHALATE
10UR	BENZO(B AND/OR K)FLUORANTHENE
10UJ	BENZO-A-PYRENE
10UJ	INDENO (1,2,3-CD) PYRENE
10UJ	DIBENZO(A,H)ANTHRACENE
10UR	BENZO(GHI)PERYLENE

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

PESTICIDES/PCB'S DATA REPORT 08/31/90

PROJECT NO. 90-530 SAMPLE NO. 47671 SAMPLE TYPE: SURFACEWA
SOURCE: STANADYNE INC
STATION ID: TB-01
CASE NUMBER: 14282 SAS NUMBER:

PROG ELEM: NSF COLLECTED BY: R WILDE
CITY: WASHINGTON ST: NC
COLLECTION START: 06/12/90 0800 STOP: 00/00/00
ID NUMBER: T436

UG/L	ANALYTICAL RESULTS
0.05UJ	ALPHA-BHC
0.05UJ	BETA-BHC
0.05UJ	DELTA-BHC
0.05UJ	GAMMA-BHC (LINDANE)
0.05UJ	HEPTACHLOR
0.05UJ	ALDRIN
0.05UJ	HEPTACHLOR EPOXIDE
0.05UJ	ENDOSULFAN I (ALPHA)
0.10UJ	DIELDRIN
0.10UJ	4,4'-DDE (P,P'-DDE)
0.10UJ	ENDRIN
0.10UJ	ENDOSULFAN II (BETA)
0.10UJ	4,4'-DDD (P,P'-DDD)
0.10UJ	ENDOSULFAN SULFATE
0.10UJ	4,4'-DDT (P,P'-DDT)

UG/L	ANALYTICAL RESULTS
0.50UJ	METHOXYCHLOR
0.10UJ	ENDRIN KETONE
	CHLORDANE (TECH. MIXTURE) /1
0.50UJ	GAMMA-CHLORDANE /2
0.50UJ	ALPHA-CHLORDANE /2
1.00UJ	TOXAPHENE
0.50UJ	PCB-1016 (AROCLOR 1016)
0.50UJ	PCB-1221 (AROCLOR 1221)
0.50UJ	PCB-1232 (AROCLOR 1232)
0.50UJ	PCB-1242 (AROCLOR 1242)
0.50UJ	PCB-1248 (AROCLOR 1248)
1.00UJ	PCB-1254 (AROCLOR 1254)
1.00UJ	PCB-1260 (AROCLOR 1260)

REMARKS
HOLDING TIMES EXCEEDED(40 CFR 136,OCTOBER 26,1984)

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.
*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/09/90

PROJECT NO. 90-530 SAMPLE NO. 47651 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R WIL
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: PB-01 COLLECTION START: 06/12/90 0800 STOP: 00/00/00
CASE NUMBER: 14282 SAS NUMBER: MD NUMBER: T436

UG/L	ANALYTICAL RESULTS	UG/L	ANALYTICAL RESULTS
110	ALUMINUM	5U	MANGANESE
26UJ	ANTIMONY	.20UR	MERCURY
3UJ	ARSENIC	9U	NICKEL
4U	BARIUM	350U	POTASSIUM
1U	BERYLLIUM	2U	SELENIUM
3U	CADMIUM	2U	SILVER
200U	CALCIUM	370U	SODIUM
2U	CHROMIUM	2U	THALLIUM
3U	COBALT	NA	TIN
16U	COPPER	2U	VANADIUM
30UJ	IRON	4U	ZINC
2U	LEAD		
50U	MAGNESIUM		

REMARKS
HOLDING TIME EXCEEDED-CN

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/09/90

SPECIFIED ANALYSIS DATA REPORT

PROJECT NO. 90-530 SAMPLE NO. 47651 SAMPLE TYPE: SURFACEWA PROG ELEM: NSF COLLECTED BY: R WILDE
SOURCE: STANADYNE INC CITY: WASHINGTON ST: NC
STATION ID: PB-01 COLLECTION START: 06/12/90 0800 STOP: 00/00/00
CASE.NO.: 14282 SAS NO.: D. NO.: MD NO: T436

RESULTS	UNITS	PARAMETER
10UJ	UG/L	CYANIDE

REMARKS
HOLDING TIME EXCEEDED-CN

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

126

REFERENCE NO. 3

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D091567065

II. SITE NAME AND LOCATION

01 SITE NAME (Legal common or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Stanadyne, Inc. Diesel Systems Group	

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG. DIST.
Washington	NC.		Beaufort		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
35 33 51.0	077 04 53.0	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (Month Day Year)	02 SITE STATUS	03 YEARS OF OPERATION
06 10 90	☒ ACTIVE ☐ INACTIVE	1978 (Beginning Year) / Present (Ending Year) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☒ B. EPA CONTRACTOR NUS Corporation (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
Ron Wilde	Project Manager	NUS-EPA	(404) 938-7710

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO
Walter Riley	Sampler	NUS-EPA	(404) 938-7710
Matt McCoy	Sample Manager	NUS-EPA	(404) -938-7710
Eddie Vasser	Sampler	NUS-EPA	(404)-938-7710
Terry Ryland	Site Safety Officer	NUS-EPA	(404) 938-7710
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Everet Byrd			( )
Randy Varni			( )
Jeff Eyman			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	0800	Fair - Sunny

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Mr Randi Varni	Stanadyne, INC.	(919) 975-2553

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE (Month Day Year)
Ron Wilde	NUS	NUS-EPA	404-938-7710	01/9/91

EPA FORM 2070-13 (7-81)

①

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D091567065

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

A SOLID
B POWDER, FINES
C SLUDGE
D OTHER Unknown (Specify)
E SLURRY
F LIQUID
G GAS

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

TONS _____
CUBIC YARDS Unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

X A TOXIC
B CORROSIVE
C RADIOACTIVE
X 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			
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown	N/A	
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
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
	(Wastes Associated with Site)				
IOC	Zinc		Shipped off Site	unknown	
IOC	Zinc phosphate		↓	↓	
SOL	Methylene chloride				
SOL	Perchloroethane				
SOL	Freon				
SOL	111-trichloroethane				
	(Wastes Found during investigation)				
IOC	Lead		Detected in Soil Samples	15mg/Kg	
IOC	Zinc		Detected in Soil Samples	20mg/Kg (est.)	
OCC	Phenol		Detected in Sediment Samples	1600ug/Kg (est)	

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)

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091562065

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
A potential exists for floral damage should contaminants migrate into surface water bodies offsite. Levels of contaminants found in environmental samples at the facility do not appear sufficient to cause observable floral damage.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include name(s) of species)
A potential exists for faunal damage should contaminants migrate into offsite surface water bodies. Levels of contaminants found in environmental samples at the facility do not appear sufficient to cause observable faunal damage

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
A potential exists for food chain contamination should contaminants migrate into offsite surface water bodies. Contaminants found in environmental samples may bioaccumulate within individual animals.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION
No unstable containment of waste was observed during field activities at the facility.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No damage to offsite property was observed at the time of the fieldwork

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
All surface water drainage from the facility flows into Cherry Run. No sewers, storm drains or wastewater treatment facilities are found along this migration pathway.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No record of illegal or unauthorized dumping was present in file material. No evidence of illegal dumping was observed at the time of the fieldwork.

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

None.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

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

EPA and State File material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091367065

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 A GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Some of the contaminants detected in surface soil and sediment samples may become mobile in groundwater ~~due~~

01 B SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Some of the contaminants detected in surface soil and sediment samples may become mobile in surface water due to their tendency to associate with particulates.

01 C CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Some of the contaminants detected in surface soil and sediment samples may become mobile in air due to their tendency to either volatilize or associate with particulates.

01 ☐ D FIRE EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
No fire or explosive conditions were observed at the time of the field work.

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Little chance of anyone other than plant employees becoming exposed to contaminants exists ~~due~~ as the facility is fenced and is in a rural area.

01 ☐ F CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ Acres — 04 NARRATIVE DESCRIPTION
Analytical Results from this investigation indicate that surficial soils and sediments on site contain various organic and inorganic contaminants.

01 ☐ G DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
No evidence of drinking water contamination can be found in file material. No potable water samples were collected during the fieldwork.

01 ☐ H WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Workers at the facility may potentially be exposed to contaminants should they have direct contact with surficial soils or sediments at the facility.

01 ☐ I POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
Total population within 4 miles is 11528

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D091367665

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				
X E RCRA INTERIM STATUS				Denial Permit 9/84
F SPCC PLAN				(Currently listed as
G STATE (Specify)				Full Generator)
H LOCAL (Specify)				
I OTHER (Specify)				
X J NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
A SURFACE IMPOUNDMENT		
B PILES		
C DRUMS, ABOVE GROUND		
X D TANK, ABOVE GROUND	Unknown	
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
X H. OTHER (Specify) None

05 OTHER
X A BUILDINGS ON SITE

06 AREA OF SITE
10 acres

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

X A ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Above ground tanks on concrete pads with diking to contain spills.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES X NO

02 COMMENTS

Continuous fence around facility.

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION
01 STATE: NC | 02 SITE NUMBER: 009156706 5

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as appropriate)

	SURFACE	WELL
COMMUNITY	A X	B X
NON-COMMUNITY	C ☐	D X

02 STATUS

	ENDANGERED	AFFECTED	MONITORED
	Potentially		
	A X	B. ☐	C ☐
	D X	E. ☐	F ☐

03 DISTANCE TO SITE
A. <1 (mi)
B. <1 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING | X B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) | ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Other sources available) | ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: 15589

03 DISTANCE TO NEAREST DRINKING WATER WELL: 0.5 (mi)

04 DEPTH TO GROUNDWATER: 3 (ft)

05 DIRECTION OF GROUNDWATER FLOW: West

06 DEPTH TO AQUIFER OF CONCERN: 80 (ft)

07 POTENTIAL YIELD OF AQUIFER: unknown (gpd)

08 SOLE SOURCE AQUIFER: ☐ YES X NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)
municipal and private wells completed in the castle hayne aquifer

10 RECHARGE AREA: ☐ YES ☐ NO
COMMENTS: unknown

11 DISCHARGE AREA: ☐ YES ☐ NO
COMMENTS: unknown

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

X 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
Cherry Run	☐	0.25 (mi)
Trotter's ~~[illegible]~~ Creek	☐	0.36 (mi)
Jar River / Pamlico River	☐	1.21 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 609 (No. of persons)	B. (No. of persons)	C. 11528 (No. of persons)

02 DISTANCE TO NEAREST POPULATION: 0.25 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: unknown

04 DISTANCE TO NEAREST OFF-SITE BUILDING: < 0.25 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site (e.g., total number of persons within specified distances, density, proximity to urban areas)
According to 1970 census data approximately 11528 people live within a 4 mile radius of the Stanadyne property. Analysis of available topographic maps of the area indicates that approximately 160 residences are located within 1 mile of the site. Approximately 2 schools are located within 4 miles of the Stanadyne Plant.

EPA FORM 2070-13 (7-81)

(6)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D091167065

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

A. 10^{-6} – 10^{-4} cm/sec X B. 10^{-4} – 10^{-4} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Greater than 10^{-6} cm/sec) X 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
40 (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
9 (in)	3.5 (in)	2 %	west	2 %

09 FLOOD POTENTIAL

SITE IS IN unknown YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. unknown (mi) OTHER: B. <0.25 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES. No critical habitats specified

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. <0.25 (mi)	B. 0.25 (mi)	C. _____ (mi)	D. <1.0 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The majority of Beaufort County is very flat. The facility is located on what appears to be a past floodplain of a ~~river~~ nearby river or creek.

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091562065

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Both water and Soil samples were	
SURFACE WATER		Sent to:	
WASTE		Organics - IT Corporation in Edison, NJ	
AIR		Inorganics - Southwest Labs, Inc. - Broken Arrow, OK	
RUNOFF			
SPILL			
SOIL	12		
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
pH	
Cond	
Temp	

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND X AERIAL

02 IN CUSTODY OF NUS Corporation (name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS NUS Corporation, Tucker GA

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

(8)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D071576056

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Standyne Incorporated		Clarks Neck Rd		Washington	NC	27889

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
Standyne Incorporated				Windsor, Connecticut		

III. PREVIOUS OWNER(S) (List most recent first)

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

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

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D091567065

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: Stanadyne Incorporated	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): PO Box 1105 Clubs Nock Rd	04 SIC CODE:
05 CITY: Washington	06 STATE: NC
07 ZIP CODE: 27889	
08 YEARS OF OPERATION: 1978 present	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME: Stanadyne Incorporated	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY: Windsor, Connecticut	15 STATE:
16 ZIP CODE:	

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE
SeaCrest Marine															
State of North Carolina															

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

(10)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091567065

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
Standard Automotive		Listed as Full RCRA Generator.
03 STREET ADDRESS	04 SIC CODE	
Clarks Creek Rd		
05 CITY	06 STATE	07 ZIP CODE
Washington	NC	

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS	04 SIC CODE	03 STREET ADDRESS	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	04 SIC CODE	03 STREET ADDRESS	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	04 SIC CODE	03 STREET ADDRESS	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	04 SIC CODE	03 STREET ADDRESS	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)

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091526065

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None documented

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None documented

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ O. EMERGENCY DIKING SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
UK	D091576265

II PAST RESPONSE ACTIVITIES Continued

01 ☐ R BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ S CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ T BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ U GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ V BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ W GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ Y LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

01 ☐ 1 ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented

01 ☐ 2 POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None Documented.

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)

EPA and State File Material

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D091762065

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION YES NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

None Documented.

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

EPA and State File Material

EPA FORM 2070-13 (7-81)

REFERENCE NO. 4

18 September 1987

TO: File

FROM: Grover Nicholson Grover Nicholson

RE: Stanadyne Inc. - Diesel Systems
NCD091567065

I spoke via telephone today with Ray Linton, Plant Engineer for Stanadyne, Inc. (919) 975-2253. He gave me the following information.

The facility began operations in 1978 on the property and in the buildings acquired at a bankruptcy sale. The property and buildings were formerly owned by Sea Crest Marine, a company that built vacuum-formed plastic fishing boats (about 12' long) for Sears, Robuck and Company. Sea Crest Marine moved onto the property and built the main building in 1968 or 1969. They operated for about 4 years and went out of business. The land and buildings remained for sale until 1978 when Stanadyne, Inc. bought the property and began operations. Prior to being owned by Sea Crest Marine, the property and the older building on the site were owned by the State of North Carolina. The old building served as a state or county jail.

Mr. Linton has been with Stanadyne at the Washington plant for nine years. He was there when manufacturing operations began. The waste generating and handling process have always been essentially the same. Mr. Linton has seen no evidence of past disposals of wastes on-site and he reports that Stanadyne has buried no wastes on-site.

The wastes generated by this manufacturer of metal parts for diesel engines are sludges from distillation of degreasing solvents. The solvents used are TF-7 (52% Freon, 48% methylene chloride), perchlororethylene, and (in the past) 1,1,1-trichloroethane. Sludges from a metal treating process known as electroles zinc phosphate conversion are also generated. Until recently, all these wastes were drummed, stored less than 90 days, and shipped to treaters and disposers, such as Pinewood, S.C., Armagedon Chemical, and McKesson Chemical (now Safety Solvent) in Kentucky. Recently, the metal treating sludge has been determined to be exempt from RCRA standards and the company is making plans to landfill the material in the Beaufort County landfill.

There are at least four wells around the site that were constructed and capped prior to 1978. These wells were not used by either Sea Crest Marine or by Stanadyne, Inc. The facility is served by the city water and sewer from Washington, NC.

JB/pb/0472.84

REFERENCE NO. 5

1. Facility Information

Diesel Systems Group
Stanadyne, Inc.
Clarks Neck Road, Route 3, Box 1105
Washington, NC 27889
Beaufort County
EPA ID# NCD091567065

2. Responsible Official

Randolph Varni, Manager
Production and Facilities Engineering
(919) 975-2553

3. Survey Participants

Randolph Varni, Stanadyne
Fred J. Wood, Division of Health Services

4. Date of Inspection

August 12, 1982

5. Applicable Regulations

No change.

6. Purpose of Survey

No change.

7. Facility Description

The Stanadyne Diesel Systems is located on approximately 32 acre site on Clarks Neck Road in Washington, NC. The manufacturing building contains 192,000 sq. ft.

The original listing had Stanadyne classified as a larger generator. The August 3, 1982 list has them classified as a generator, treater and storer. Mr. Varni stated they should be classified as a large generator only, since they store for less than 90 days. The only treating they do is a pH adjustment on some acid waste prior to going to the Washington waste water treatment system. I gave Mr. Varni Form No. 3047 (Application for Change in Classification Under RCRA) and asked him to fill out and send to the Raleigh Office.

According to Mr. Varni there are now two types of waste shipped from this point.

1. Water soluable cutting oil that is hauled to SO-Green Corp., P.O. Box 1733, Tifton, GA 31794, (912) 386-8041. SO-Green processes this waste and converts part of it to fertilizer. Mr. Varni stated that lab analysis indicated this waste was not hazardous but at the present time is being handled and shipped as hazardous under RCRA. NOTE: This waste is stored in 5000 gallon tank prior to shipping.

2. Perchlorothylene still bottoms from recovery (distillation unit) of this solvent. This waste is shipped to Armagedon Chemical Sales NCT38001148. Manifest in the company file indicated that 25 drums was shipped to Armagedon on April 5, 1982. Since that time little has been produced due to economic slow down at the company facility.

8. Documentation of Site Deficiencies

The following deficiencies were noted during this inspection:

1. The date upon which each period of accumulation begins is clearly marked and visible on each container. (262.34(3)

2. Arrangements with local authorities. (265.37)

3. Did not have inspection schedule and procedure for assessing the condition of the tank. (265.194(a)(b))

9. Compliance Schedule

A compliance date of September 30, 1982 was agreed upon by Mr. Varni and myself.

REFERENCE NO. 6

Address Donald E. Williams

Stanadyne / WASHING

Black Rock Rd

Washington N.C. 27889

RECEIVED
OCT 16 1980
SOLID & HAZARDOUS WASTE MANAGEMENT

October 14, 1980

Mr. O.W. Strickland
Solid & Hazardous Waste Management Branch
P.O. Box 2091
Raleigh, N.C.

Dear Mr. Strickland,

As per our telephone conversation October 13, 1980, I am submitting an analysis of the sludge being generated by our phosphating process for evaluation towards possible local landfill disposal. Approximately 3.0 cu. ft. of sludge at 40% concentration will be collected per week at full operation.

This material has a texture and consistancy similar to compacted relatively low moisture mud.

Thank you for your cooperation and promp attention.

William
Please approve this sludge in the landfill, according to the attached letter

Sincerely,

Donald E. Williams

Donald E. Williams

DW:km

cc: Randy Varni

ENVIRONMENTAL LABORATORY OF FAYETTEVILLE

Water and Wastewater Analysis

North Carolina Certific

"SECURING TOMORROW TODAY"

RECEIVED OCT 16 1980 WASTE MANAGEMENT

P. O. Box 49 — Phone (919) 864 - 1920
Fayetteville, North Carolina 28301

NAME Stanadyne, Inc.

Date of Sample: September, 1980

ADDRESS

Comments: Hazardous Waste Analysis
Sludge Sample
Washington Plant.

Analysis
A. Sludge Sample
B.
C.
D.

		A	B	C	D
pH					
BOD (mg/l)					
COD (mg/l)					
Fecal Coliform (/100ml)					
Total Coliform (/100ml)					
Total Solids (mg/l)					
Total Suspended Solids (mg/l)					
Total Kieldahl Nitrogen (mg/l)					
Ammonia (as N) (mg/l)					
Oil & Grease (mg/l)					
Total Phosphorus					
Turbidity (NTU)					
Chloride (mg/l)					
Synthetic Detergent (MBAS)					
Acidity (as mg/l $CaCO_3$)					
Alkalinity (as mg/l $CaCo_3$)					
Chlorine (mg/l)					
Temperature					
Chromium - Total (mg/l)		< .1			
~~Copper (mg/l)~~	Cadmium	< .05			
~~Nickel (mg/l)~~	Arsenic	< .1			
~~Zinc (mg/l)~~	Mercury	.003			
~~Dissolved Oxygen (mg/l)~~	Lead	< .1			
~~Volatile Solids (mg/l)~~	Selenium	< .1			
~~Aluminum (mg/l)~~	Silver	< .05			
~~Iron (mg/l)~~	Barium	< .1			
~~Sulfates SO_4 (mg/l)~~	Endrin	< .0004			
~~Chloride (mg/l)~~	Lindane	< .0008			
~~Fluoride (mg/l)~~	Methoxychlor	< .003			
	Toxaphene	< .001			

REFERENCE NO. 7

Please print or type in the unshaded areas only
(Fill-in areas are spaced for elite type, i.e., 12 characters/inch)

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F N C D 0 9 1 5 6 7 0 6 5 D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

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 any 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 column 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 activity 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	NO	FORM ATTACHED
A. Is this facility a publicly owned 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 aquatic 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 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

1 SKIP DIESEL SYSTEMS GROUP STANADYNE INC

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 VARNI RANDY MGR ENG	919 975 2553

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 POST OFFICE BOX 1105

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 WASHINGTON	NC	27889

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 CLARKS NECK ROAD ROUTE 3

B. COUNTY NAME

BEAUFORT COUNTY

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 WASHINGTON	NC	27889	----

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
3714 (specify) Metal Working Facility	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME: DIESEL SYSTEMS GROUP STANADYNE INC

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, M = PUBLIC (other than federal or state), S = STATE, O = OTHER (specify), P = PRIVATE

P (specify)

D. PHONE (area code & no.): A 919 975 2553

E. STREET OR P.O. BOX: P.O.S.T. O.F.F.I.C.E. B.O.X. 1105

F. CITY OR TOWN: WASHINGTON

G. STATE: NC

H. ZIP CODE: 27889

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
N NONE	P NONE
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
U NONE	(specify)
C. RCRA (Hazardous Wastes)	**F. OTHER (specify)**
R NONE	(specify)

XI. MAP

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.

XII. NATURE OF BUSINESS (provide a brief description)

Metal working facility engaged in manufacturing automotive parts and components.

XIII. 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
Paul H. Wabrek, Vice President & General Manager	Paul H. Wabrek	11/18/80

COMMENTS FOR OFFICIAL USE ONLY

C

Please print or type in the shaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch)

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. I.D. NUMBER: F N C D 0 9 1 5 6 7 0 6 5 — T/A: 1

FOR OFFICIAL USE ONLY

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

II. 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 facility or a 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 facility's 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 8 — YR. 7 8 — MO. 0 9 — DAY 0 4

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN: 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 provided for 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, then 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 OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK (NAPCO)	T00	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 OR 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 OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	O
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 the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP — T/A: 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1					7				
2	S 0 2	5000	G		8				
3	T 0 1	566	G		9				
4					10				

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCE[illegible] [illegible]R FOR DESCRIBING OTHER PROCESSE[illegible] (code [illegible]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.
3. 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	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

CONTINUE ON PAGE 3

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
W N C D 0 9 1 5 6 7 0 6 5	T/A C 1	W DUP	T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

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)				2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F 0 0 1	67,000	P	S 0 2				
2	F 0 0 3	2.5	P	S 0 2				
3	F 0 0 5	200	P	S 0 2				
4	F 0 0 7	1,655,264	P	T 0 1				
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

Continued from the front.

IV. DESCRIPTION OF HAZARD[illegible] W[illegible]ES *(continued)*

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

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

N C D 0 9 1 5 6 7 0 6 5 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)*
3 5 3 3 5 0 0	7 7 0 4 4 7 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.)*
The Beaufort County Industrial Facilities & Pollution Control Financing Authority	9 1 9 - 9 4 6 - 8 1 5 9

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
Page Building	G Washington	N C	2 7 8 8 9

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
William H. Page, Chairman	William H. Page, Chairman Angelo P. Mavo, [illegible]	11/14/80

X. OPERATOR CERTIFICATION

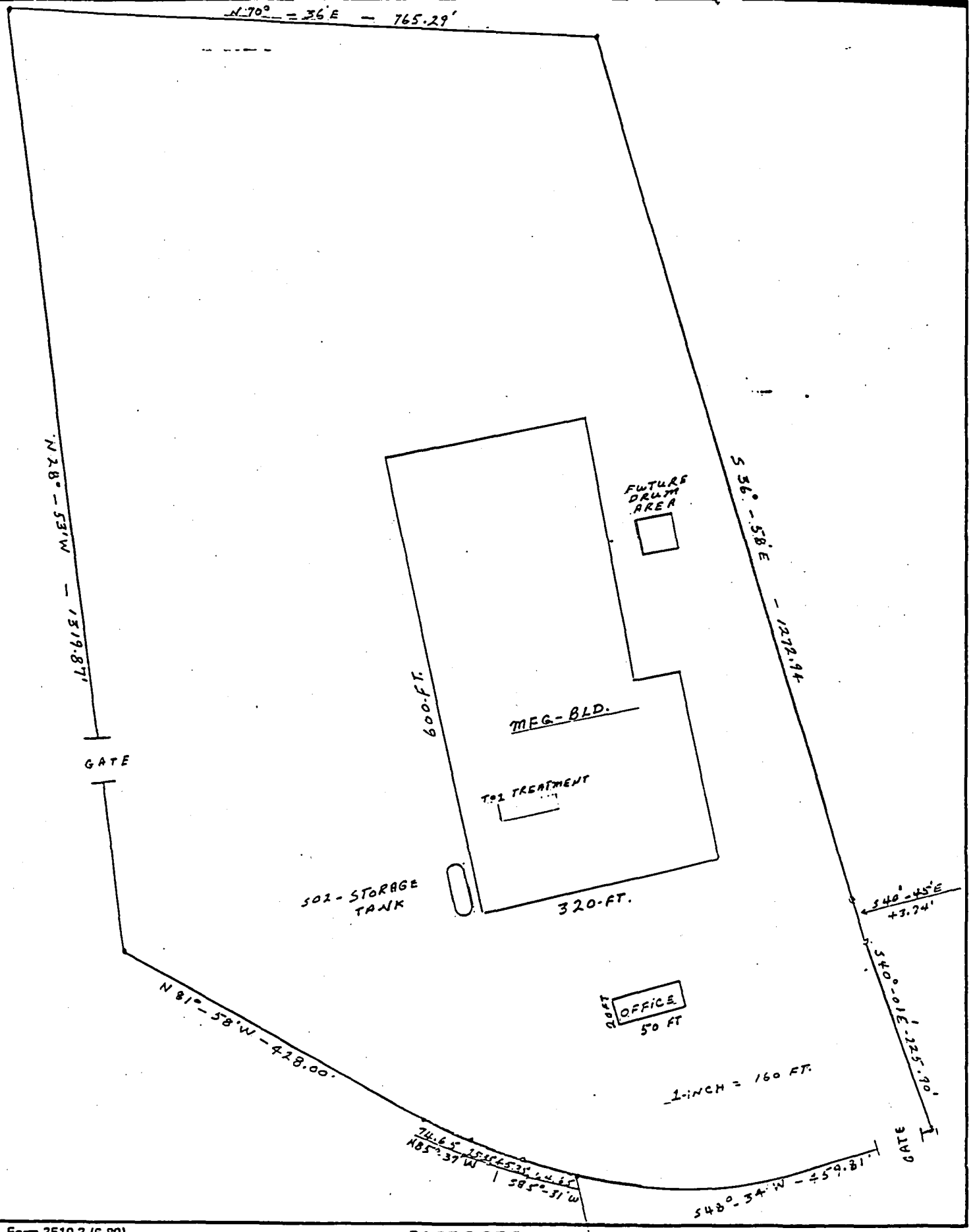
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true,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

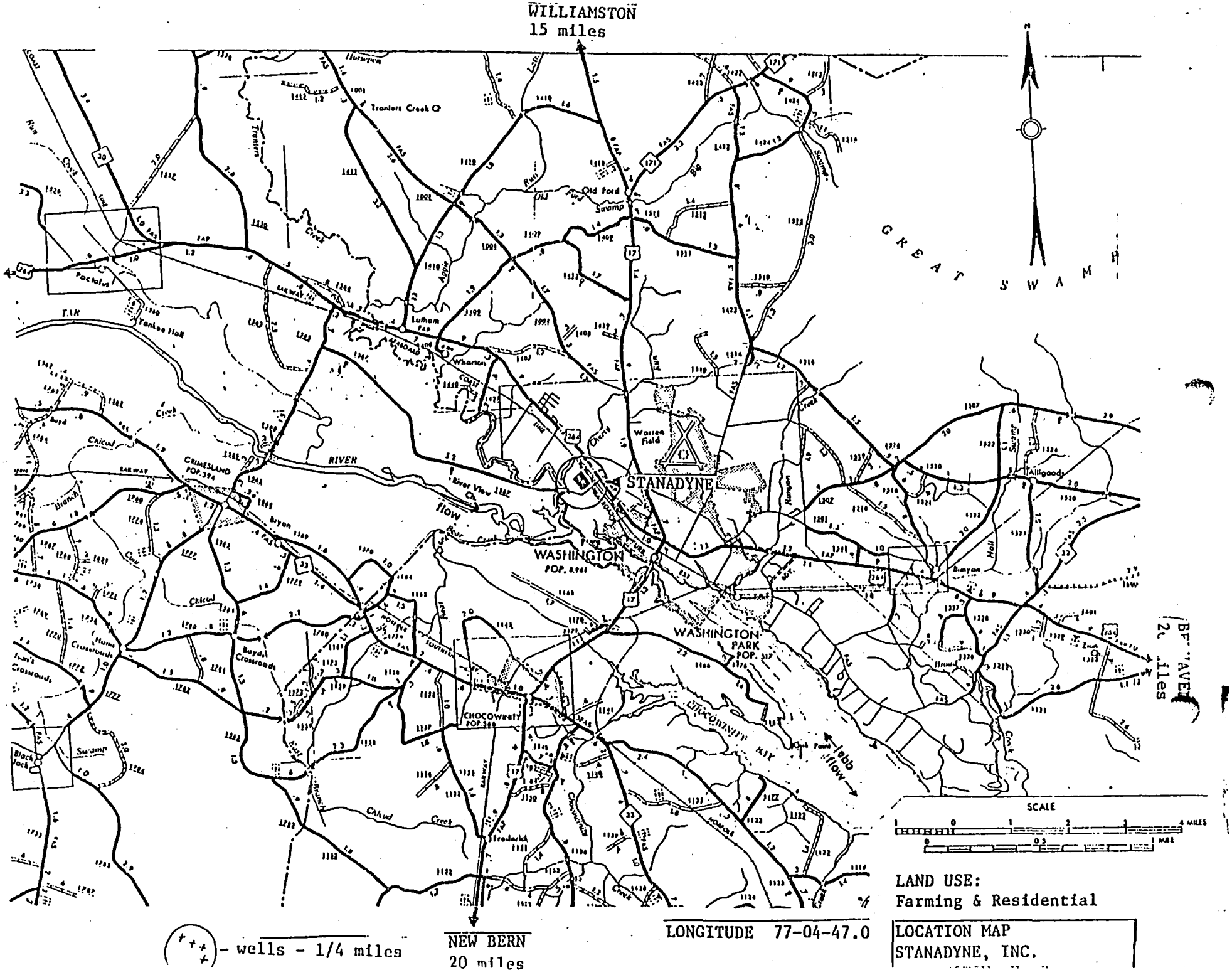
A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
Paul H. Wabrek, Vice President & General Manager	Paul H. Wabrek	11/18/80

CONTINUE ON PAGE 5

Continued from page 4.

V. FACILITY DRAWING *(see page 4)*





LAND USE:
Farming & Residential

LOCATION MAP
STANADYNE, INC.

REFERENCE NO. 8

Stanadyne diesel systems

RECEIVED
AUG 7 1984
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH

File
8/7/84

August 1, 1984

Mr. O.W. Strickland
Head Solid & Hazardous Waste Management Branch
Division Health Services
P.O. Box 2091
Raleigh, N.C. 27602-2091

Reference: Exception Reporting 262.42 b2

Dear Mr. Strickland:

On July 24, 1984, Mr. Fred Wood performed a R.C.R.A. Generator Inspection of our facility. During this inspection he discovered that I had not received my returned copy of manifest #NC0009 for 20 drums of Perchlorothylene from TSDF Facility.

Failure to notice this earlier was an oversight on my part. I immediately called Environmental Recycling and requested them to check their files for this documentation. Mr. Rick McGuire did in fact find our copy in his file. I have enclosed a copy of this manifest signed by the T.S.D.F.

My apologies for this oversight.

Sincerely,

Randy Varni

Randy Varni
Manager Facilities and Engineering

RV:km

enclosure

DIESEL SYSTEMS GROUP - STANADYNE, INC.
P. O. BOX 1105, WASHINGTON, NORTH CAROLINA 27889, PHONE: 919/975-2553

NORTH CAROLINA HAZARDOUS WASTE MANIFEST

Doct. No. NC0009

A. IDENTIFICATION INFORMATION

	EPA ID NO.	NAME	ADDRESS	TELEPHONE
GENERATOR				
TRANSPORTER 1				
TRANSPORTER 2				
TSDF*				

B. WASTE INFORMATION

CONTAINER (S) NO.	CONTAINER (S) TYPE	DOT DESCRIPTION/CLASS/ID NO.	TOTAL QUANTITY	WEIGHT	EPA WASTE CODE NUMBER	DISCREPANCY INFORMATION

C. EMERGENCY NUMBERS

NATIONAL RESPONSE CENTER: 1-800-424-8802

GENERATOR: ( ) DISPOSER: ( ) N. C. HIGHWAY PATROL (919) 733-3861

D. ~~SPECIAL HANDLING~~/EXCEPTION REPORT/DISCREPANCY REPORT (NO._____)

NOTE: All drums had loose bungs and/or no bungs which had caused leakage. In future ALL drums should have bung with gasket and be tightened to prevent leak

(IF NEEDED, USE ADDITIONAL SHEETS.)

E. CERTIFICATIONS

THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

Randolph H Varn AUTHORIZED REPRESENTATIVE OF GENERATOR	Randolph H. Varn GENERATOR REPRESENTATIVE'S SIGNATURE	2/15/84 DATE

THIS IS TO CERTIFY ACCEPTANCE OF THE HAZARDOUS WASTE SHIPMENT DESCRIBED ABOVE.

Freec Chemical AUTHORIZED REPRESENTATIVE OF TRANSPORTER 1	TRANSPORTER REPRESENTATIVE'S SIGNATURE	2/15 DATE
AUTHORIZED REPRESENTATIVE OF TRANSPORTER 2	TRANSPORTER REPRESENTATIVE'S SIGNATURE	DATE

THIS IS TO CERTIFY ACCEPTANCE OF THE HAZARDOUS WASTE SHIPMENT DESCRIBED ABOVE FOR

☐ TREATMENT ☐ STORAGE OR ☐ DISPOSAL

JERRY HEGE AUTHORIZED REPRESENTATIVE OF TSDF	Jerry Hege TSDF REPRESENTATIVE'S SIGNATURE	2/21/84 DATE

*TSDF - TREATMENT, STORAGE, OR DISPOSAL FACILITY

DHS FORM 2980 (10/80)
SOLID AND HAZARDOUS WASTE

(INSTRUCTIONS ON BACK SHEET)

FOR ADDITIONAL INFORMATION:
CONTACT MANIFEST SYSTEM
SOLID & HAZARDOUS WASTE MANAGEMENT BRANCH
N. C. DEPARTMENT OF HUMAN RESOURCES
P. O. BOX 2091, RALEIGH, N.C. 27602
(919) 733-2178

REFERENCE NO. 9

GEOLOGY AND GROUND-WATER RESOURCES OF PITT COUNTY, NORTH CAROLINA

By
Carlton T. Sumsion
U. S. Geological Survey

GROUND WATER BULLETIN NO. 18

North Carolina
Department of Water and Air Resources
George E. Pickett, *Director*

DIVISION OF GROUND WATER
Harry M. Peek, *Chief*

Prepared by the
United States Geological Survey
in cooperation with the
Pitt County Board of Commissioners
and the North Carolina
Department of Water and Air Resources

MARCH 1970

1

CONTENTS

	Page
Abstract	1
Introduction	2
Objectives and methods	2
Well-location system	3
Previous investigations	3
Acknowledgments	5
Regional setting	6
Location and accessibility	6
Climate	6
Physiography and drainage	6
Population	8
General geology	9
Basement rocks	9
Cretaceous System	10
Lower Cretaceous Series	10
Upper Cretaceous Series	10
Tuscaloosa Formation	10
Black Creek Formation	13
Peedee Formation	13
Tertiary System	17
Paleocene Series	17
Beaufort Formation	17
Eocene Series	17
Castle Hayne Limestone	17
Miocene Series	20
Yorktown Formation	20
Quaternary System	22
Post-Miocene deposits	22
Hydrology	23
Evapotranspiration	23
Occurrence of ground water	24
Recharge and movement	24
Aquifer characteristics	25
Aquifers	30
Aquifer 1	30
Aquifer 2	30
Aquifer 3	33
Aquifer 3A	33
Aquifer 4	34
Aquifer 5	34
Aquifer 6	34
Aquifer 7	35
Types of well development	36
Dug and bored wells	36
Driven wells	36

(2)

CONTENTS (Continued)

Page

Types of well development--continued
- Drilled wells 37
- Drawdown and the spacing of wells 38
- Utilization of ground water 40

Chemical quality of water 41
- Hardness 41
- Turbidity 43
- Temperature 43
- Specific electrical conductance 43
- Hydrogen-ion concentration (pH) 44
- Silica (SiO_2) 44
- Aluminum (Al) 44
- Iron (Fe) 45
- Manganese (Mn) 45
- Calcium (Ca) and magnesium (Mg) 46
- Sodium (Na) and potassium (K) 46
- Carbonate (CO_3) and bicarbonate (HCO_3) alkalinity 46
- Sulfate (SO_4) 47
- Chloride (Cl) 47
- Fluoride (F) 47
- Nitrate (NO_3) 48
- Phosphate (PO_4) 48
- Water conditioning 48

Summary and conclusions 50

References 51

Basic data 53

3

ILLUSTRATIONS

(Plates are inside back cover)

Plate 1. Geologic sections A-A' and B-B' in Pitt County, North Carolina.
2. Map showing aquifer depths and ground-water quality in Pitt County, North Carolina.

Page

Figure 1. Index map of North Carolina showing the location of Pitt County..... 2
2. Diagrams of well-numbering system used in North Carolina.. 4
3. Well-location map.....facing page 6
4. Graphs showing temperatures and precipitation at Greenville..... 7
5. Map showing generalized configuration of the top of the basement surface..... 11
6. Map showing the configuration of the top of, and the thickness of, the Lower Cretaceous Series..... 12
7. Map showing the configuration of the top of, and the thickness of, the Tuscaloosa Formation..... 14
8. Map showing the configuration of the top of, and the thickness of, the Black Creek Formation..... 15
9. Map showing the configuration of the top of, and the thickness of, the Peedee Formation..... 16
10. Map showing the configuration of the top of, and the thickness of, the Beaufort Formation..... 18
11. Map showing the configuration of the top of, and the thickness of, the Castle Hayne Limestone..... 19
12. Geologic map showing the configuration of the pre-Miocene surface..... 21
13. Seasonal changes in water level in well 16 and in flow of other artesian wells during 1964..... 26
14. Hydrologic cycle and generalized directions of ground-water movement..... 27
15. Generalized piezometric surface of aquifers 2 and 3..... 28
16. Relation of drawdown to time in artesian aquifers of different transmissibilities..... 39

TABLES

Page

Table 1. Log of test well at Winterville, N. C..... 54
2. Geologic units and related aquifers in Pitt County..... 31
3. Some quantitative values of aquifers in Pitt County..... 32
4. Chemical analyses of water from selected wells in Pitt County..... 42
5. Records of wells in Pitt County..... 57

5

GEOLOGY AND GROUND-WATER RESOURCES OF PITT COUNTY, NORTH CAROLINA

By

Carlton T. Sumsion

ABSTRACT

This report describes the geology and ground-water resources of Pitt County in eastern North Carolina. Pitt County comprises an area of 656 square miles and has a population of about 64,000. The climate is humid. Mean annual precipitation in the county is approximately 48 inches. The topography of the county is typical of the Coastal Plain Province, a flat, sandy plain whose only steep slopes are along stream-valley terraces. The northern and central parts of the county are drained by the Tar River and its tributaries. Contentnea and Swift Creeks, which are tributary to the Neuse River, drain the southern part of the county.

Nearly flat-lying surficial sediments of Holocene and Tertiary age overlie strata of Cretaceous age which dip gently to the southeast. The sedimentary strata lie on a basement complex of granitic and metamorphic rocks having an irregular surface which slopes to the southeast.

Seven major aquifers, five of which underlie only part of the county and two of which underlie the entire county, serve as sources of ground water. Ground water is recovered from both confined (artesian) and unconfined (water-table) aquifers; large quantities of ground water suitable for industrial or municipal supplies are obtained from confined (artesian) aquifers tapped by drilled wells. Current ground-water withdrawal in Pitt County is only a small percentage of recharge, and nowhere has there been an overdraft.

Ground water in the shallow unconfined aquifer is generally slightly acidic and in many cases contains objectionable amounts of iron. Most farm water supplies are withdrawn from these shallow aquifers. Deeper confined aquifers, mainly in Cretaceous sediments, yield large amounts of water suitable for most industrial and municipal requirements. Brackish or saline ground water is present in these deeper strata in the eastern part of the county.

GENERAL GEOLOGY

Pitt County lies in the middle part of the Atlantic Coastal Plain, which extends from Long Island southward to Florida, and which, in North Carolina, extends more than 100 miles inland from the coast. The Coastal Plain is underlain by beds of sand, clay, and calcareous sediment. The beds are inclined coastward at a rate only slightly greater than the slope of the land surface. Beds tend to thicken coastward, and those that are inland near the land surface occur at greater depths near the coast. The greatest thickness of the wedge of sediments is perhaps a few tens of miles out to sea from the present coastline.

The sediments are grouped according to the geologic period in which they were deposited. Beginning at the top, in Pitt County they include sediments of Quaternary, Tertiary, and Cretaceous Systems. The sediments are further divided into formations according to their lithology or character of the constituent materials. Table 1 in the Basic Data section is a log of a test well at Winterville, the test well penetrating the entire section of Coastal Plain sediments. Formations have distinctive characteristics and may be traced for many miles. The sediments contained in some beds grade from one kind of material to another, such as from coarse to fine sand or to clay. Almost all the sand, clay, and some of the calcareous material in the Atlantic Coastal Plain are unconsolidated. Clays are very common in the sedimentary sequence.

The wedge of formations underlying the Coastal Plain lies on older igneous and metamorphic rocks, such as those exposed in the Piedmont Province to the west. These rocks are not of great significance to the study of the water resources in Pitt County, and accordingly, are referred to simply as basement rocks.

During the geologic development of the Atlantic Coastal Plain, the sea advanced and retreated many times. The inner margin of the Plain west of Pitt County has been submerged during only a fraction of the time that land adjacent to the present coast has been submerged. Most sediments of the Coastal Plain were deposited in the sea, but some were deposited on land along the lowland margins of the Plain. Whether deposited in the sea or along marginal land areas, the sediments tend to be preserved in nearly flat layers which dip gently coastward. Invasions of the sea during Pleistocene time left a veneer of sand and clay, commonly 10 to 20 feet thick at the land surface. Thus, the underlying older formations are mostly hidden from view except along stream banks.

BASEMENT ROCKS

The basement rocks underlying the Pitt County area are similar in composition to rocks exposed in the Piedmont Province. Well cuttings in the Pitt County area indicate that the basement rocks consist generally of weathered schist and gneiss. Rock from the stone quarry at Fountain is gray medium-grained granite gneiss. The linear structure of the gneiss trends generally northeastward.

Logs of the formations penetrated by wells in this area, in addition to geophysical data, indicate that the surface of the basement rocks beneath the sedimentary cover is irregular. Near the town of Fountain the basement rocks have a topographic relief of more than 350 feet--from a surface exposure in the stone quarry about half a mile southeast of town to a depth of 350 feet below land surface at the town's supply wells. This irregular erosional surface slopes generally southeastward from about 300 feet below land surface at the western end of Pitt County to more than 1,150 feet below land surface at the county's southeastern boundary, an average slope of about 26 feet per mile. Figure 5 shows the surface of the basement rocks in Pitt County. The irregularities of the basement surface are not shown on the map owing to the wide spacing of data-control points.

Fracture zones in the gneiss and other rocks of the basement are known to be sufficiently permeable to yield water to wells. However, the yields of such wells are so slight in comparison to the yields of wells in the overlying sand strata that the basement rocks are not considered to be an aquifer in the Pitt County area.

CRETACEOUS SYSTEM

LOWER CRETACEOUS SERIES

Sediments consisting of sand, silt, and clay of Early Cretaceous age lie unconformably on the basement rocks throughout the Pitt County area. These sediments are not known to be exposed, but they have been penetrated by deep wells in and adjacent to Pitt County.

These sediments are predominantly sand and silt, interbedded with green and brown silty clay, not changing greatly from place to place in the county (Swain and Brown, 1964). Studies of the microfauna indicate that the sediments were deposited in a lagoonal environment that may have been similar to the modern-day Pamlico Sound. The sediments were deposited during a generally rising stage of sea level (Brown, 1959, p. 10). The Lower Cretaceous sediments thicken from about 50 feet in the western corner of Pitt County to about 300 feet at the southeastern corner. Figure 6 shows the top and the thickness of the Lower Cretaceous Series. The dip of the top of the Series is to the southeast at about 20 feet per mile.

The sand strata yield ample water of good quality to wells in the vicinity of Farmville. However, at Greenville and in the eastern part of Pitt County water in the deeper sand is slightly brackish.

UPPER CRETACEOUS SERIES

Tuscaloosa Formation

The Tuscaloosa Formation was first referred to by this name in North Carolina by Cooke (1936). Throughout the Pitt County area the Tuscaloosa Formation unconformably overlies the Lower Cretaceous Series.

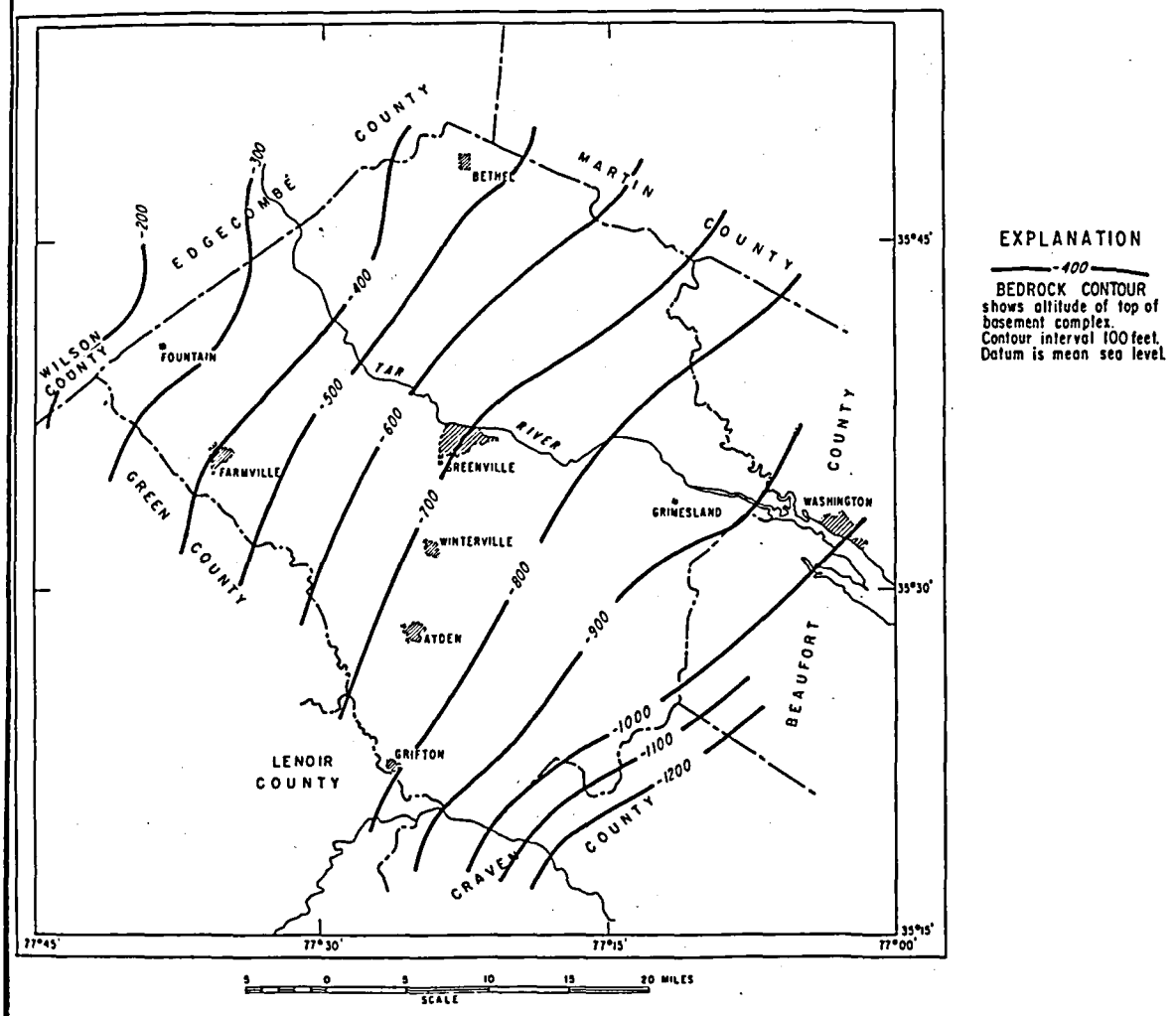


Figure 5.--Map showing generalized configuration of the top of the basement surface.

9

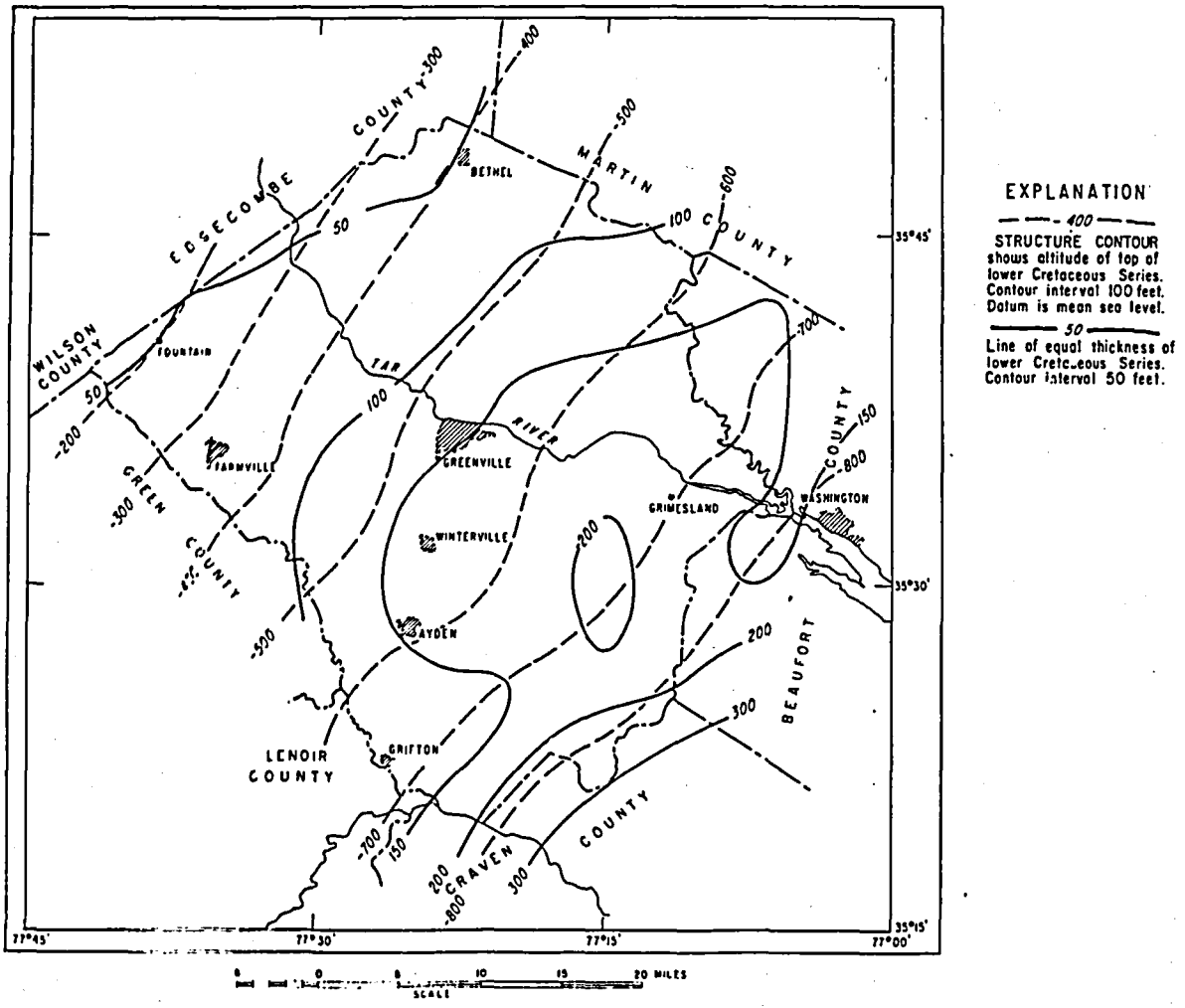


Figure 6.--Map showing the configuration of the top of, and the thickness of, the Lower Cretaceous Series.

(10)

In northwest Pitt County the upper part of the Tuscaloosa Formation is exposed in a small area along the banks of the Tar River between Otter Creek and Penny Hill. The composition of the formation varies widely from place to place but generally consists of sand or clay, sandy or silty clay, and poorly sorted silty sand. The Tuscaloosa Formation generally grades upward from fine sand and silt to coarser sand interbedded with silt and clay. Figure 7 shows the altitude of the top of the formation in Pitt County. The formation dips generally to the southeast at about 22 feet per mile. The formation is about 300 feet thick in the vicinity of Farmville and thins both toward the east and toward the west.

Sand in the upper part of the Tuscaloosa Formation yields water of excellent quality to wells at Ayden, Farmville, Greenville, and Grifton. Very thin sand layers near the bottom of the formation contain slightly brackish water at Greenville and in the eastern part of Pitt County.

Black Creek Formation

The Black Creek Formation comprises two members: an unnamed lower member of Austin age which unconformably overlies the Tuscaloosa Formation, and the Snow Hill Marl Member of Taylor age.

The lower member of the Black Creek Formation consists of alternately bedded gray sand and dark-gray clay. The upper part of the Black Creek Formation is exposed along the banks of the Tar River between Otter Creek and Greenville, and southwest of Farmville along the banks of Contentnea Creek. The Snow Hill Marl Member of the formation is composed predominantly of calcareous sand and clay layers.

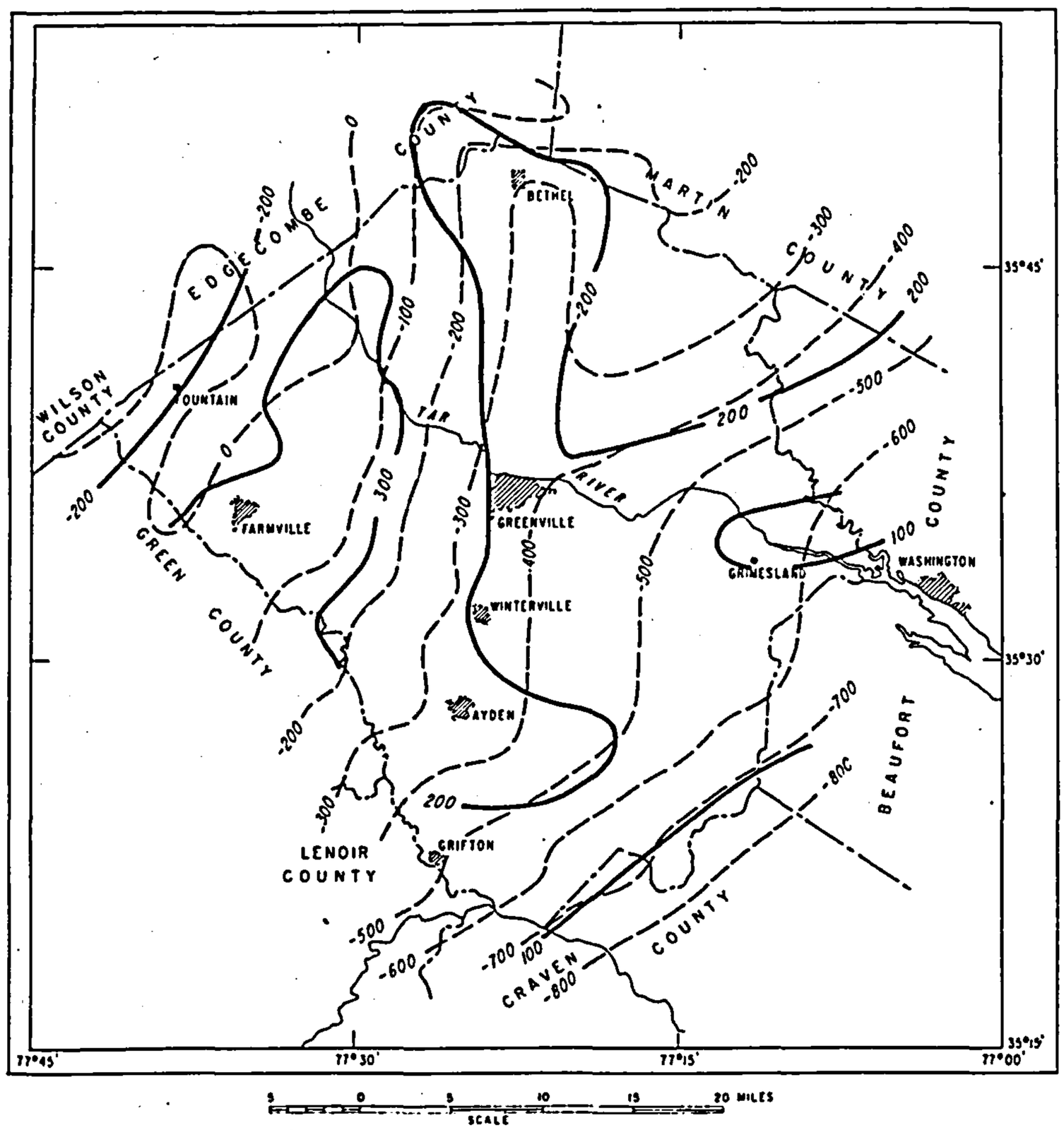
The western limit of the Black Creek Formation is shown in figure 8, which also shows the configuration of the top of the formation in Pitt County. The dip is generally southeast at about 11 feet per mile. From its margin in western Pitt County, the Black Creek Formation thickens southeastward to about 450 feet near the southeastern county boundary.

In Pitt County the sand layers of the Black Creek Formation compose a major aquifer system, yielding the greatest amounts of water to wells of all the aquifer systems in the area. The water is of excellent quality throughout the county.

Peedee Formation

As shown in figure 9, the Peedee Formation occurs in approximately the southeastern two-thirds of Pitt County. It conformably overlies the Snow Hill Marl Member in some places, but it unconformably overlies the lower member of the Black Creek Formation where the Snow Hill Marl Member does not occur.

The Peedee Formation is exposed along the banks of the Tar River from Greenville to the vicinity of Grimesland, and along the banks of Contentnea Creek and the Neuse River in the vicinity of Grifton. The Peedee Formation consists of lenticular beds of green and gray sands, dark-gray silt, and clay layers. The uppermost sand and silt beds of the formation are characteristically



EXPLANATION

-200

STRUCTURE CONTOUR shows altitude of top of Tuscaloosa Formation. Contour interval 100 feet. Datum is mean sea level.

100

Line of equal thickness of Tuscaloosa Formation. Contour interval 100 feet.

Figure 7.--Map showing the configuration of the top of, and the thickness of, the Tuscaloosa Formation.

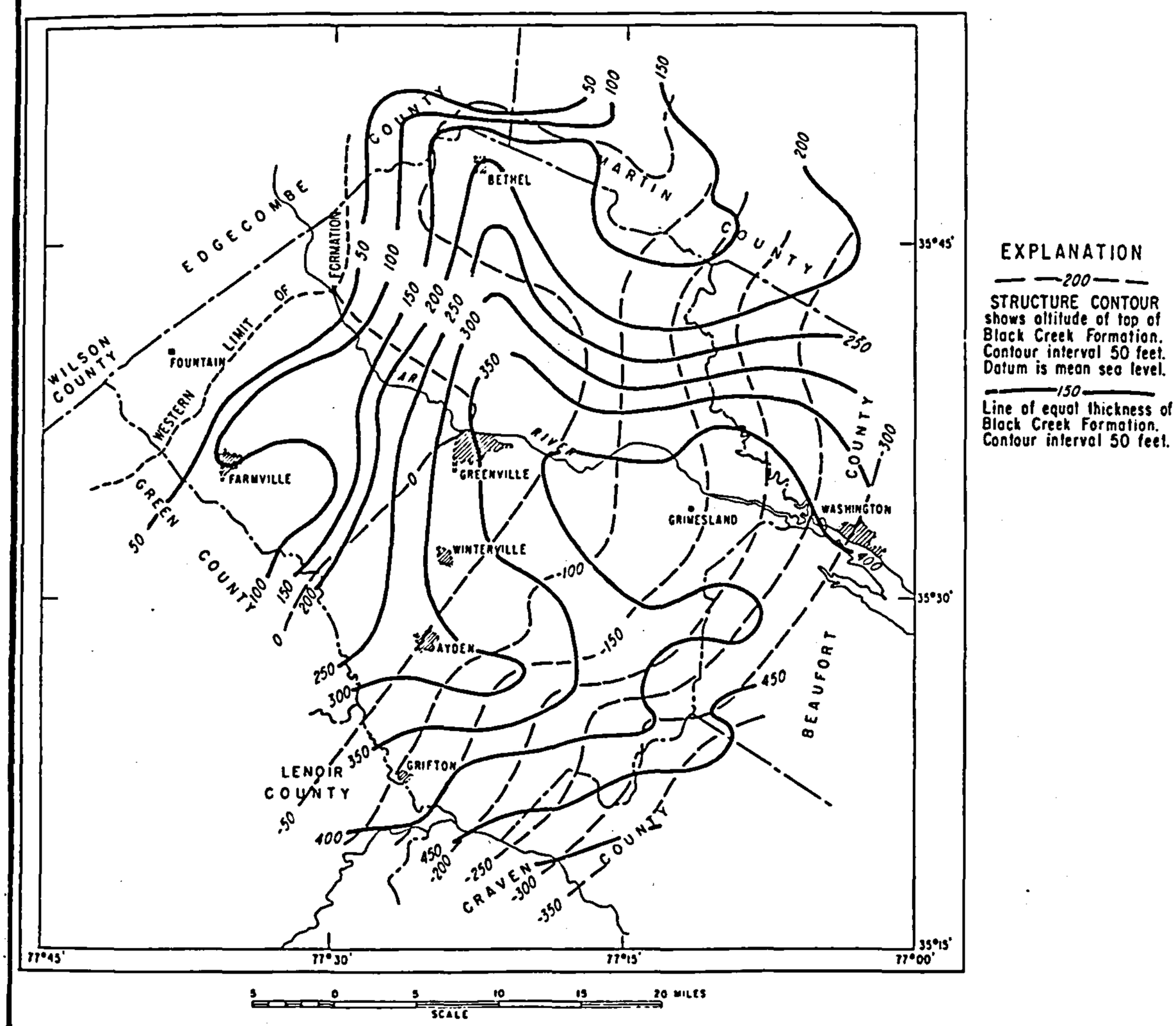


Figure 8.--Map showing the configuration of the top of, and the thickness of, the Black Creek Formation.

13

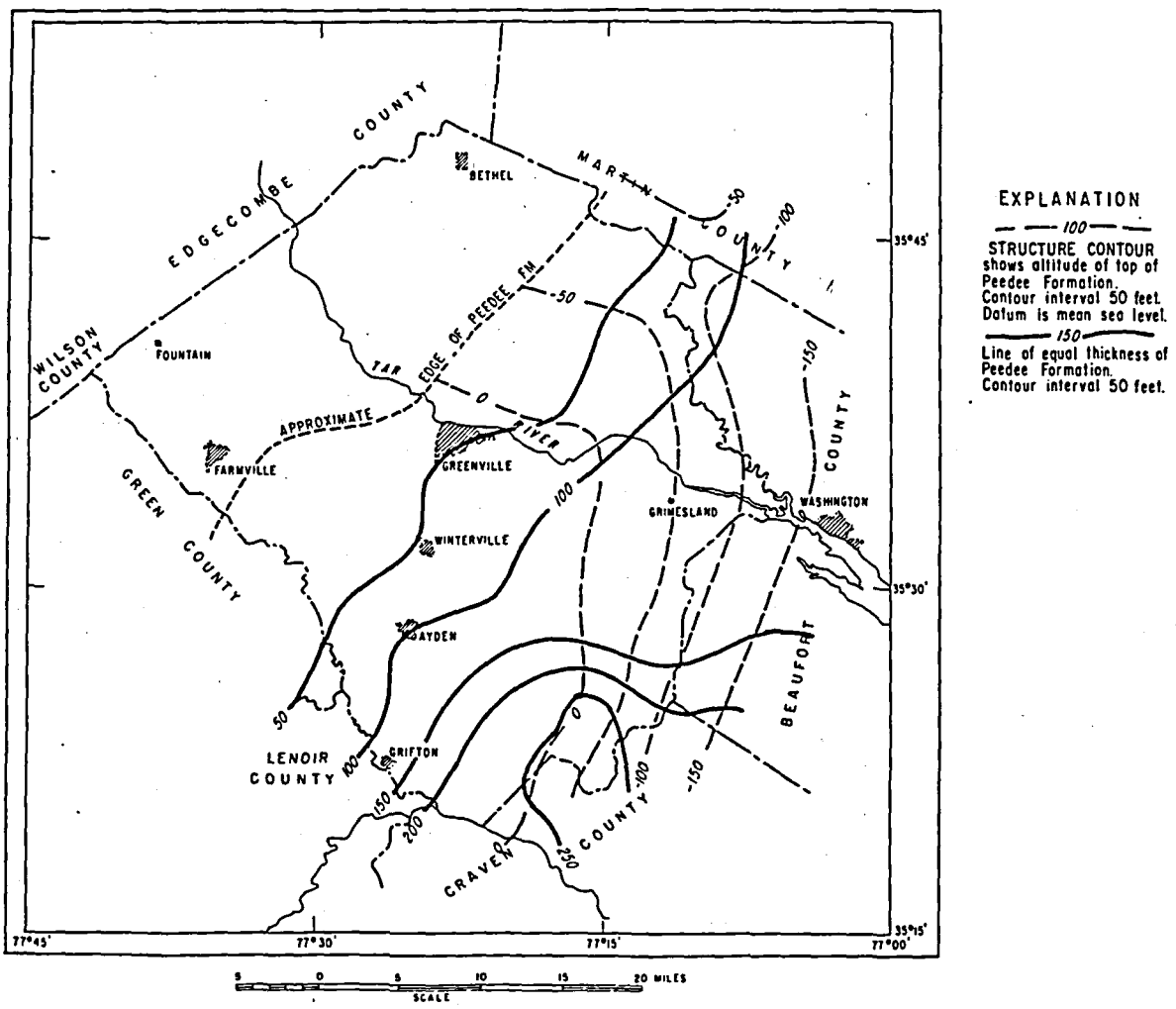


Figure 9.--Map showing the configuration of the top of, and the thickness of, the Peedee Formation.

(14)

bright green. Glauconite and collophane are generally present in relatively large proportions in the Peedee sand beds, and well-cemented calcareous lenticular sand and shell layers occur throughout the formation. The Peedee Formation probably was deposited in an estuarine or near-shore environment. The dip is southeast at about 10 feet per mile. From its margin in western Pitt County the Peedee Formation thickens southeastward to about 250 feet near the southeastern county boundary.

Sand layers of the Peedee Formation yield ample water of excellent quality to the municipal well at Grimesland. These sand layers are relatively untapped as a source of ground water in Pitt County but have an excellent potential where they are thickest.

TERTIARY SYSTEM

PALEOCENE SERIES

Beaufort Formation

The Beaufort Formation of Paleocene age occurs in the subsurface of eastern Pitt County as shown in figure 10. The Beaufort Formation overlaps the older Cretaceous formations, and it unconformably overlies the Peedee Formation in eastern Pitt County. In turn, the Beaufort Formation is unconformably overlain by the Eocene Castle Hayne Limestone and the Miocene Yorktown Formation in this area.

In eastern Pitt County the Beaufort Formation consists mainly of glauconitic "salt and pepper" sand, and also of thin calcareous clay and silty marl layers, mostly in the upper part of the formation. The dip in eastern Pitt County is generally to the east at about 14 feet per mile, but it increases northeastward. The Beaufort Formation thickens to about 50 feet at the extreme eastern tip of the county.

A few wells in the eastern corner of Pitt County obtain water for household supplies from the Beaufort Formation. The water from the Beaufort is slightly harder than that from deeper aquifers.

EOCENE SERIES

Castle Hayne Limestone

The Castle Hayne Limestone underlies a narrow strip in the eastern part of the county. Figure 11 shows the altitude of the top of the formation and its thickness. In this area the Castle Hayne Limestone is of middle Eocene age (Brown, 1959). It unconformably overlies the Paleocene Beaufort Formation and the Cretaceous Peedee Formation. The Castle Hayne Limestone is readily identified by its characteristic resistivity and spontaneous-potential patterns on electrical well logs.

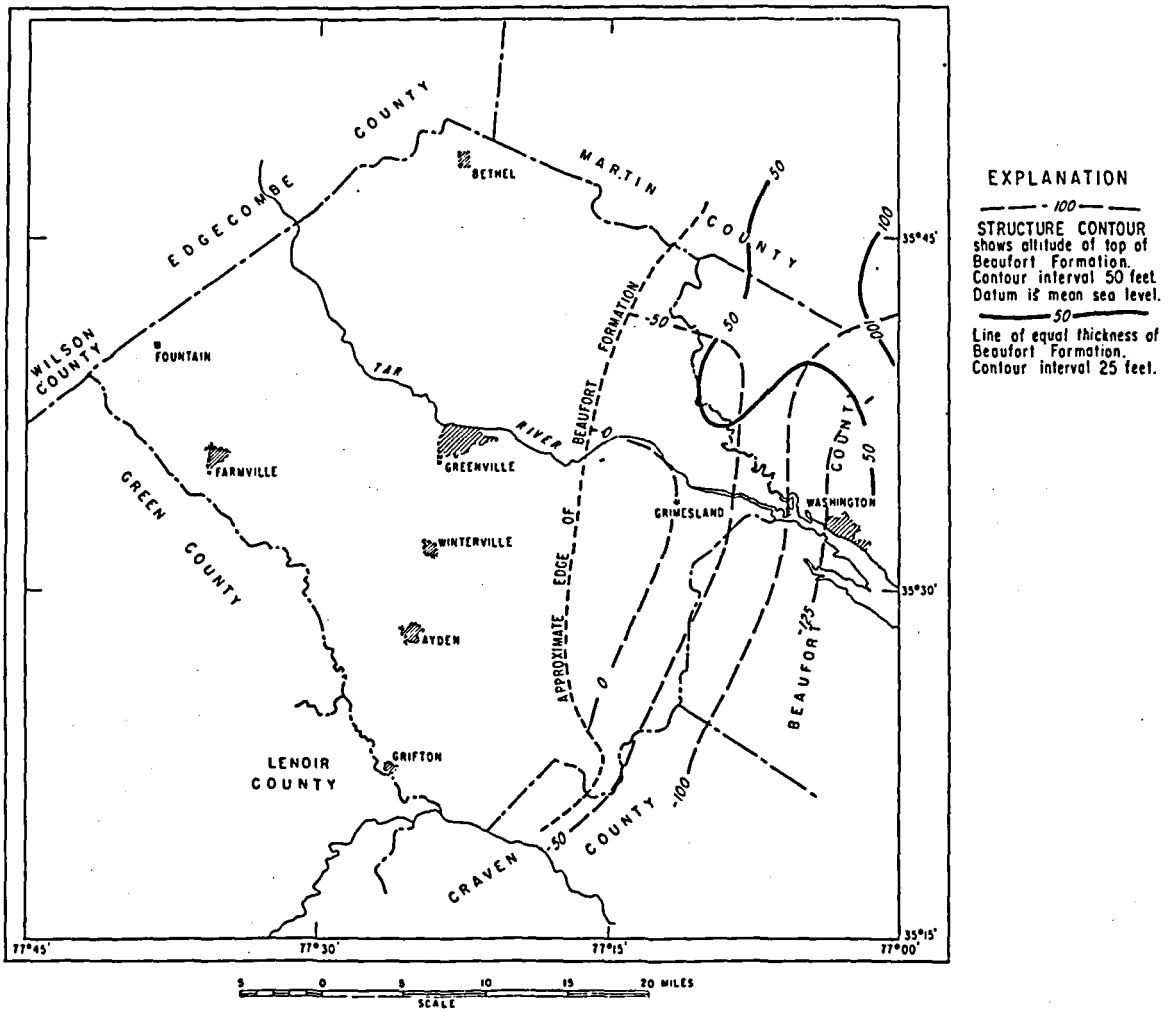


Figure 10.--Map showing the configuration of the top of, and the thickness of, the Beaufort Formation.

(16)

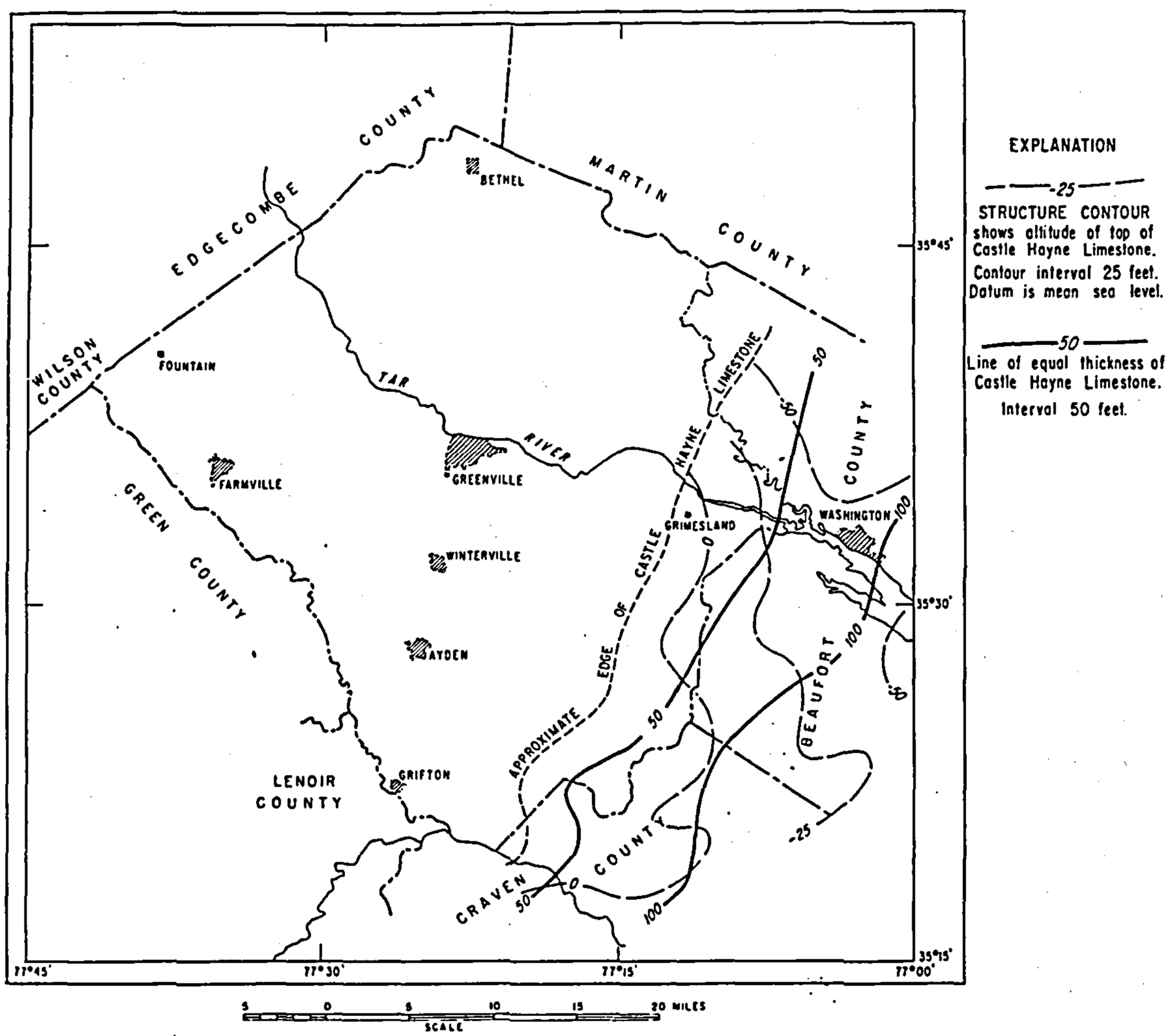


Figure 11.--Map showing the configuration of the top of, and the thickness of, the Castle Hayne Limestone.

(17)

This formation consists of light-colored marl, white calcareous sand, light-gray sandy coquina limestone, and sparse green clay in the eastern Pitt County area. Glauconite and phosphorite occur as abundant accessory minerals. The Castle Hayne Limestone was deposited in an environment which may have been similar to that of the present-day Bahama Banks. The formation dips to the southeast at approximately 7 feet per mile. The greatest thickness is about 75 feet at the extreme southeastern county boundary.

The Castle Hayne Limestone is an important aquifer in eastern North Carolina, but it remains essentially untapped in Pitt County where it yields water to wells for household use only. Water from this aquifer is hard but otherwise is of good quality.

MIOCENE SERIES

Yorktown Formation

The Yorktown Formation of late Miocene age underlies most of Pitt County. It unconformably overlies the Castle Hayne Limestone of middle Eocene age and the Peedee, Black Creek, and Tuscaloosa Formations of Late Cretaceous age.

The Yorktown Formation is overlain mainly by thin sands and silts of Pleistocene and Holocene age. Gross similarity of the upper part of the Yorktown Formation to these younger deposits causes difficulty in distinguishing them. The Yorktown Formation is commonly a massive gray silty clay throughout Pitt County. The formation is exposed on the right bank of the Tar River, at the bridge one mile northeast of Grimesland, where the lower part of the formation consists of dark blue-gray sandy clay containing abundant pelecypod and gastropod shells for about 8 feet above river level. Overlying this fossiliferous matrix is about 10 feet of massive gray silty clay. Lenticular layers of sand occur throughout the formation, and phosphorite pebbles are common.

The formation was deposited during a predominantly transgressive stage of sea level (Brown, 1959). Figure 12 shows the older formations that immediately underlie the Yorktown Formation, and the altitude of the pre-Miocene surface. The altitude of this surface decreases toward the northeast at a greater rate than does the land surface, therefore, the Yorktown Formation thickens in that direction. Its greatest thickness in Pitt County is about 105 feet in the vicinity of Bethel.

The generally fine texture of the Yorktown Formation precludes its use as a major aquifer, although it does yield sufficient water for household supplies. Water from the sand and silt layers of this formation is hard.

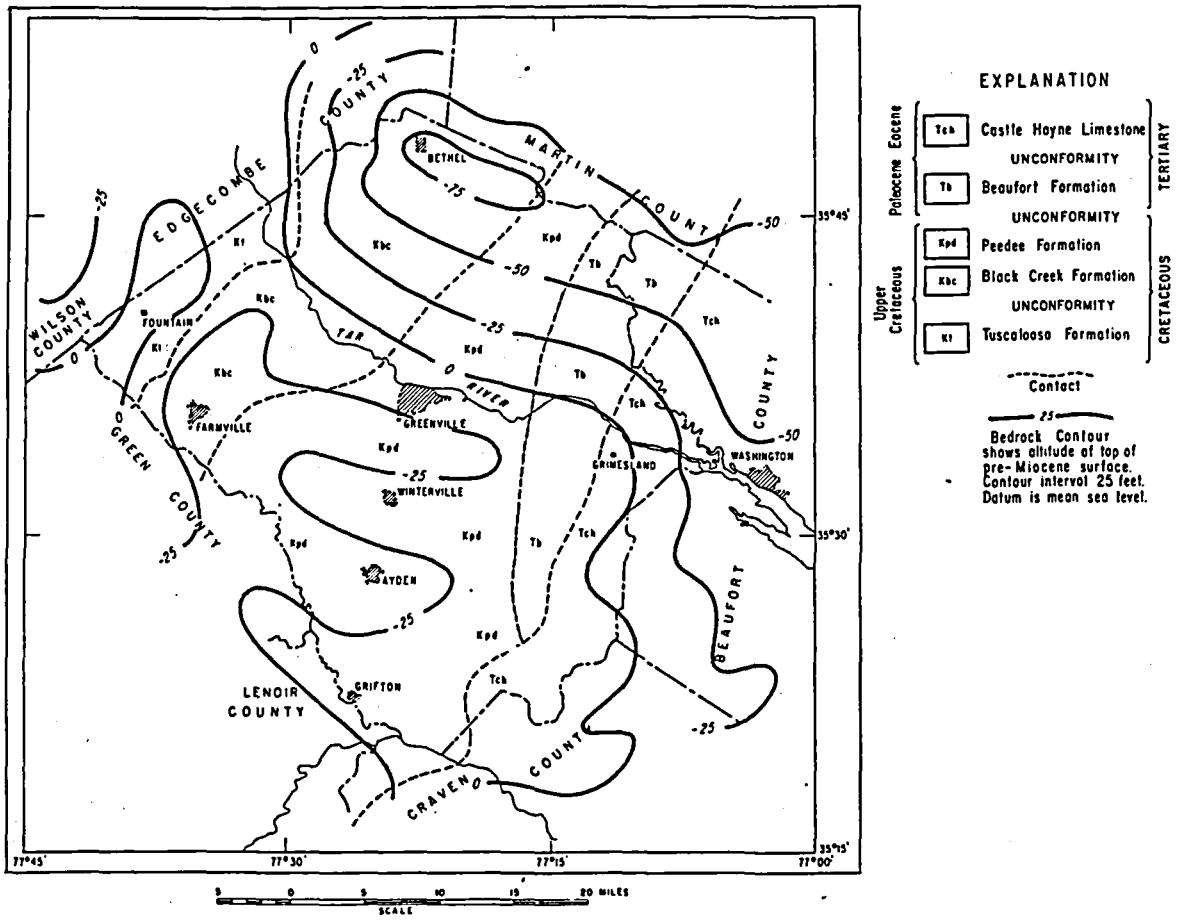


Figure 12.--Geologic map showing the configuration of the pre-Miocene surface.

(19)

QUATERNARY SYSTEM

POST-MIOCENE DEPOSITS

Most of the surface of Pitt County is underlain by beds of sand and silt of Pleistocene age. These beds overlie the Miocene and pre-Miocene formations. Remnants of Pleistocene beach-terraces or offshore bars are difficult to recognize because of subsequent erosion. The surficial deposits of sand and silt, where exposed in road cuts or stream banks, generally are crossbedded. The thickness in Pitt County may be as much as 50 feet but commonly ranges from 10 to 20 feet. The Pleistocene sand beds yield ground water to numerous shallow wells. Water from these sand beds is slightly acidic and, therefore, somewhat corrosive to metal; the water commonly contains iron in amounts sufficient to impart its distinctive taste to the water.

Sedimentary deposits of Holocene age, river-laid and windblown sand, are conspicuous along the flood plains of the Tar and Neuse Rivers, as well as along some of their larger tributaries. Well-drained interstream areas generally are covered with sandy soils of Holocene age. Swamps, bogs, pocosins, and other areas in which there are undisturbed acid soils, all contribute to the acidity of the unconfined ground water occurring in the surficial sands and silts.

HYDROLOGY

EVAPOTRANSPIRATION

Because of higher air temperatures, much of the precipitation that falls during the summer is lost by evaporation before it can enter the ground. Since the growth of vegetation reaches its peak during the summer, most of the water absorbed by the ground is intercepted by the soil zone and is used by plants in the process referred to as transpiration. Large amounts of water are required for plant growth, and when rainfall is scarce, water stored in the soil zone is soon depleted. Thus, the rainfall that infiltrates into the ground during the summer is used to replenish this soil moisture, and little, if any, percolates through the zone of aeration to the water table. Conversely, during the fall, winter, and spring, evaporation may return little of the precipitation to the atmosphere; plants are dormant after the first killing frost; a larger proportion of the water infiltrates to the zone of saturation.

Quantitatively, it is nearly impossible to separate the consumptive use of water by evaporation from that of transpiration. In combination they are termed evapotranspiration. These processes return water to the atmosphere; hence evapotranspiration may be regarded as the reverse of precipitation. Actual measurements of this type of consumptive use for any area as large as Pitt County are expensive, time consuming, and beyond the scope of this investigation. However, a method of estimating potential evapotranspiration has been described by Thornthwaite (1948). Potential evapotranspiration is defined as the amount of water that may be lost from a surface entirely occupied by vegetation where no deficiency exists in available soil moisture. At any time, potential evapotranspiration is proportional to the intensity of solar radiation. As the precipitation on a given area increases, water loss by evaporation and transpiration increases also, approaching potential evapotranspiration as an upper limit. Water yield in a given area is the surplus of precipitation over loss by evapotranspiration. Application of Thornthwaite's method requires monthly mean temperature and precipitation records, and the latitude of the area. Annual potential evapotranspiration at Greenville computed by Thornthwaite's method is estimated to be about 34.6 inches, or nearly 12.9 inches less than the annual mean precipitation. During the first part of the growing season potential evapotranspiration exceeds precipitation, which may result in a slight depletion of soil moisture. About the middle of summer, precipitation becomes greater than evapotranspiration, and moisture is added to the soil. If precipitation during the spring occurred as widespread low-intensity storms, there would be little or no runoff or water surplus during this period. However, intense storms yield precipitation at rates that exceed the infiltration capacity of Pitt County soils, resulting in runoff to streams.

OCCURRENCE OF GROUND WATER

Ground water occurs in the pore spaces between the rock particles in the zone of saturation. Rock units containing spaces that are interconnected and large enough to permit flow through them will yield water to wells. These rock units are called aquifers. Two types of aquifers in Pitt County may be distinguished on the basis of the type of spaces that transmit water: beds of sand in which the water moves or is stored in the openings between the sand grains, and beds of shell aggregate characteristic of the Tertiary sediments. The original spaces between the shells have been filled with calcareous cement, but some of the shell material has been dissolved and removed, resulting in large interconnected openings.

The uppermost water-bearing rock unit is the surface material that covers most of Pitt County to depths of generally not more than 40 feet. The upper part of the surface material comprises the zone of aeration through which water percolates downward to the zone of saturation. The zone of aeration does not yield water to wells. The lower part of the surface material is saturated with water. The upper surface of the saturated zone is called the water table. Water below the water table is called ground water. The water table is not usually a flat plane as the name would imply, but generally is a subdued reflection of the land surface. The water table may extend to the land surface, however, as it does obviously in swampy areas, bogs, some drainage ditches, and in stream channels. The water table does not remain static but is continuously rising and falling in response to changes in rainfall and evapotranspiration patterns.

All of the sediments below the water table are saturated, not only in the surface sand, but also in the underlying limestone, clay, and sand. In the Coastal Plain region, clay and silt compose aquicludes that are interlayered with the more permeable sand and limestone aquifers. These interlayered beds dip oceanward, and ground water moving downslope in the permeable beds becomes confined beneath the less permeable beds of silt and clay.

The water level in a well tapping a confined aquifer stands above the top of the water-bearing material. The height to which the water will rise forms an imaginary surface called the piezometric surface. If the piezometric surface is above land surface at the well, water will flow from the well.

RECHARGE AND MOVEMENT

Precipitation is the source of all water in the Coastal Plain of North Carolina. There are no significant local variations in precipitation in Pitt County, and the mean (64 years) annual precipitation of 47.54 inches at Greenville may be regarded as representative of the county. This amount of precipitation is equivalent to nearly 1,662,000 acre-feet per year on the entire county, approximately 2,266,000 gpd (gallons per day) on each square mile, or about 3.5 cfs (cubic feet per second) per square mile. The ability of precipitation to infiltrate the soil zone and percolate downward is dependent on the topographic relief of the surface on which it falls, the permeability of the

soil or surface material, the air temperature, the type and density of vegetative cover, and the intensity or rate at which the precipitation falls. Rain falling on the nearly level sandy loam soils that are typical of much of Pitt County has a minimum infiltration rate ranging from about 0.15 to 0.30 inch per hour.

Water-level fluctuations in observation wells indicate that the aquifers receive most of the annual recharge during the period from October through March, mainly because evapotranspiration is lowest in that period (fig. 13).

Although aquicludes, or confining layers, between aquifers are relatively impermeable, they transmit water slowly from aquifer to aquifer where hydraulic gradient exists between the aquifers. The natural movement of ground water from recharge areas to discharge areas is shown diagrammatically in figure 14.

Figure 15 is a map of the county showing the general piezometric surface of water in aquifers 2 and 3. In making this map the water levels used were obtained over a period of several years (1960-1968). The water levels were not adjusted for seasonal fluctuations, which range five to ten feet in well number 18 at Bethel. The altitudes were taken from topographic maps of 1905 or earlier vintage, which are contoured at 10-foot intervals. Thus, the contours were intentionally generalized and do not conform precisely to the water-level altitudes shown for some of the wells. In view of the inaccuracies inherent in the data used in constructing the map, we believe that the map is useful only for general evaluations. The piezometric surface in figure 15 shows prominent depressions in the central and southern part of the county. These depressions probably represent coalescing cones of depression resulting from withdrawals of water for municipal and industrial purposes at Greenville, and at Graingers, in Lenoir County. The reason for the deflection of the contours into western Pitt County has not been determined, but may result from withdrawals in the vicinity of Farmville.

The gross direction of ground-water movement within confined aquifers is from areas of high artesian head to areas of lower head and is generally perpendicular to the contours of the map. Although recharge is widespread, it is especially effective in areas aligned nearly coincident with the drainage divide between the Neuse and Tar Rivers. The ground water from these areas discharges into Contentnea Creek and the Neuse River. Ground water in the northern part of Pitt County discharges into the Tar River and Tranters Creek.

AQUIFER CHARACTERISTICS

The quantity of water contained in a rock material depends on its porosity. Porosity is the ratio of the volume of pore space or interstices to the total volume of the rock and is usually expressed as a percentage. The porosity of sediments depends mainly on the shape, arrangement, sorting, and the degree to which the sediments have been compacted or cemented. The particle sizes of gravel, sand, silt, and clay range widely, but their average porosity, if they are well sorted and relatively uncompacted, does not differ greatly. Fine sediment, such as silt and clay, may have a porosity of 40 to 45 percent, but because of the minute size of the pores, a large percentage of the water stored in the silt or clay is retained by molecular

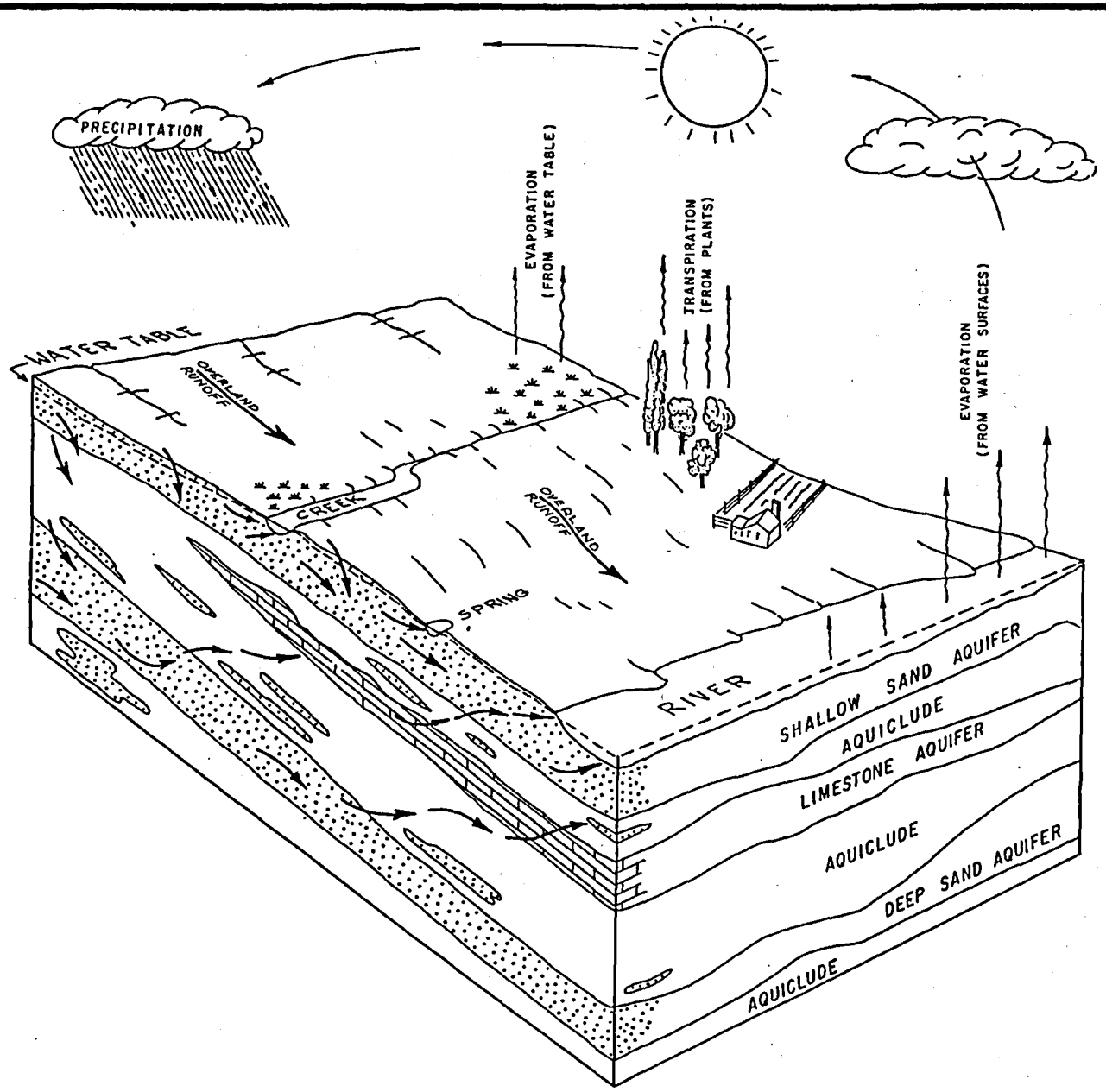


Figure 14.--Hydrologic cycle and generalized directions of ground-water movement.

attraction or surface tension. Some water will always be retained by surface tension in any sediment. The average porosity of Coastal Plain sediments in the Pitt County area is about 30 percent.

The two quantitative hydraulic characteristics that determine the value of an aquifer as a source of water are: (1) the capacity of the aquifer to store water, and (2) the ability of the aquifer to transmit water.

The capacity of an aquifer to store water may be expressed as the coefficient of storage (S). The coefficient of storage is the volume of water released from or taken into storage per unit surface area of the aquifer per unit change in the hydraulic pressure normal to the aquifer surface. The water released from or accepted by an artesian aquifer in response to a change in the hydraulic pressure is due to the compressibility of the aquifer material and the water.

The ability of an aquifer to transmit water is referred to as the coefficient of transmissibility. The coefficient of transmissibility is the rate of flow of ground water at the prevailing water temperature, in gallons per day (gpd), through a one-foot wide vertical strip of an aquifer under a hydraulic gradient of one foot per foot.

The property of any part of a water-bearing formation to transmit water is called its permeability. When the transmissibility (T) is known, the field coefficient of permeability (P) may be found by the relation $P = T/m$, where $\underline{m}$ is the aquifer thickness.

Hydraulic characteristics of aquifers are usually determined by analyzing the drawdowns produced in observation wells or in the pumped well when a production well is pumped at a constant rate.

The water level in a well not affected by pumping is referred to as the "static" water level. When water is withdrawn from a well, a difference in head between the water in the well and that in the surrounding aquifer is created, resulting in a flow of water toward the well. The surface of the water (or the piezometric surface where artesian conditions occur) around the well assumes the shape of an inverted cone, the cone of depression whose apex is at the well. The vertical distance between the static water level and the pumping level is known as the drawdown. The area in which the water level is lowered by pumping the well is referred to as the area of influence.

The shape and the rate of expansion of the "cone of depression" around the pumped well and thus, the yield of the well, are controlled by the hydraulic characteristics of the aquifer and the rate and duration of pumping.

The specific capacity of a well is the quantity of water in gallons per minute (gpm) that a well yields per foot of drawdown in water level in the pumped well after a given period of pumping at a constant rate. The theoretical specific capacity can be calculated from the transmissibility and storage coefficients of the aquifer. The actual specific capacity is calculated by dividing the yield by the number of feet of drawdown. The efficiency of a well is found by comparing the theoretical and actual specific capacities.

AQUIFERS

There are as many as eight aquifers underlying some areas of Pitt County. These aquifers occur in the following rock units: the Lower Cretaceous Series; the Tuscaloosa, Black Creek, Peedee, and Beaufort Formations; the Castle Hayne Limestone; and the surface sediments. Some of the aquifers extend over most of the county, whereas others are of limited extent. The aquifers generally are separated by beds of clay, but in some areas one aquifer directly overlies another, in which case they are interconnected and act as one aquifer. The aquifers and their relationship to geologic formations are shown in sections A-A' and B-B' of plate 1 and in table 2. In this report they are designated numerically, commencing with the lowermost aquifer. Plate 2 gives information at various places in the county about depths to aquifers. The hydraulic characteristics of the aquifers differ from place to place as the aquifer materials and thicknesses change. Wells yielding large amounts of water commonly penetrate and withdraw water from several aquifers. Municipal wells yielding large amounts of water from one or more aquifers are shown in table 3. The transmissibility of a series of aquifers is equal to the sum of the transmissibilities of the individual aquifers. The yield of wells tapping only one aquifer may be increased, therefore, by deepening the wells to penetrate other aquifers. Descriptions of the aquifers in Pitt County commencing with the deepest aquifer follow.

AQUIFER 1

Aquifer 1 is the lowermost aquifer in the Pitt County area. It occurs in the Lower Cretaceous Series immediately above the basement rocks. It is present throughout Pitt County, and dips to the southeast at an average of 20 feet per mile. The thickest parts of the aquifer are in the vicinity of Fountain and near the southeastern boundary of Pitt County where it is nearly 100 feet thick. The average thickness of aquifer 1 in Pitt County is 50 feet. Although no test was made of aquifer 1 alone, field observations indicate that the transmissibility is quite low, possibly in the range of 1,000 and 2,000 gpd per foot.

Aquifer 1 probably receives most of its recharge in areas adjoining Pitt County to the west and northwest, although some recharge may also reach it in Pitt County, especially in the western part.

Aquifer 1 yields soft bicarbonate-type water of excellent quality to municipal wells at Farmville. At Greenville and in the eastern part of Pitt County, the water in this lowermost aquifer is slightly brackish or saline, containing more than 250 mg/l (milligrams per liter) chloride.

AQUIFER 2

Aquifer 2 is present throughout Pitt County. It occurs in the upper part of the Tuscaloosa Formation and, in a few places, in the lowermost part of the Black Creek Formation as well. It is separated from the overlying aquifer

Table 2.--Geologic units and related aquifers in Pitt County

System	Series	Pitt County, N. C.	Characteristics in Pitt County	Ground-water characteristics in Pitt County
Quaternary	Holocene	Undifferentiated	Fluvial and eolian sand on river flood plains; sandy soil on interfluvial areas; gley soils, ground-water podzols, and acid soils and peat in lower or swampy areas; 0-10 feet.	Yields acidic ground water containing much soluble iron to innumerable shallow wells (10-30 feet) in this area; the most common source of water for homes and farms. Includes aquifer 7.
	Pleistocene		Fluviomarine sands and silts; remnants of beach-terrace deposits, offshore bars, and eolian dune deposits; 0-40 feet.	
Tertiary	Pliocene	--?--		
	Miocene	Yorktown Fm.	Dark, blue-gray, sandy clay with abundant marine pelecypod shells; overlain by massive gray silty clay; 0-105 feet.	Clays and silts of Yorktown Fm. in this area serve generally as an aquiclude, although water is obtained from sparse thin lenticular sand layers.
	Eocene	Castle Hayne Limestone	Light-gray marl, calcareous sand, coquina, and sparse green clay; abundant glauconite and phosphorite; 0-75 feet including the overlying unnamed Oligocene limestone.	Yields hard water to a few home and farm wells in the easternmost part of Pitt County; remains undeveloped because water of better quality at slightly greater depths. Includes aquifer 6.
	Paleocene	Beaufort Fm.	Green-gray glauconitic "salt and pepper" sand with thin calcareous clay and silty marl layers at irregular intervals; 0-50 feet.	Supplies soft, bicarbonate-type water to home and farm wells in the eastern part of Pitt County. Includes aquifer 5.
Cretaceous	Upper Cretaceous	Peedee Fm.	Bright-green glauconitic sand in the upper part; dark-gray clay and silt strata intergradational with thin sand beds in the lower part; 0-250 feet.	Sand aquifers yield soft, bicarbonate-type water of excellent quality to municipal and home or farm wells. Includes aquifer 4.
		Black Creek Fm.: Snow Hill Marl mem.	Mainly a gray calcareous sand with dark-gray and black clay layers.	Yields moderate amounts of water; soft, bicarbonate-type water of excellent quality. Includes aquifer 4.
		Black Creek Fm.: Unnamed lower mem.	Gray sand with interbedded dark-gray clay; mica, glauconite, lignite, pyrite, and collophane are conspicuous; 0-450 feet including both members.	Yields large amounts of water to municipal wells in Pitt County; soft, bicarbonate-type water of excellent quality; the principal aquifer in the Pitt County area. Includes aquifers 2, 3, and 3A.
		Tuscaloosa Fm.	Gray to red arkosic sand, gravel, and clay; mica conspicuous with some glauconite and hematite aggregates; 80-300 feet.	Yields large amounts of excellent water to municipal wells in western Pitt County; water in eastern Pitt County is slightly brackish. Includes aquifers 2 and 3.
	Lower Cretaceous	Unnamed sands and clays	Rust and tan sand bed and green clay; mica is a conspicuous accessory mineral and oyster-shell fragments are conspicuous; 50-300 feet.	Yields ample water of excellent quality to wells in western Pitt County; in eastern Pitt County these sand strata contain brackish or saline water. Includes aquifer 1.
Pre-Cretaceous rocks of the metamorphic basement complex similar to rocks exposed in the Piedmont province.			Schist, gneiss, quartzite, and related metamorphic rocks.	Not considered to be an aquifer in this area.

Table 3.--Some quantitative values of aquifers in Pitt County

Location	Well number	Aquifers supplying wells	Total length of screens	Transmissibility 1/	Field permeability 2/	Specific capacity 3/
Ayden	349	3A 3	230	28,000	236	7.7
Bethel	22	3	30	18,000	597	3.0
	23	4 3 2	92	22,000	237	7.5
Farmville	218	3 2 1	190	26,000	139	6.0
	221	3	85	36,000	419	6.1
Fountain	40	3 2	81	25,000	311	6.0
Greenville	176	3A 3	70	30,000	437	8.5
	183	3A 3	81	28,000	349	5.7
Winterville	264	3	43	7,000	170	5.3

1/ Transmissibility is in gallons per day per foot.

2/ Field permeability is in gallons per day per square foot, calculated by dividing the transmissibility by the length of screens from the length of the screened interval.

3/ Specific capacity is in gallons per minute per foot of drawdown.

(aquifer 3) by a thin sequence of clay and silt layers which range in thickness from 10 to 60 feet. The top of the aquifer dips generally to the southeast, with local variations, at an average of 17 feet per mile. The thickest part of the aquifer is in southeastern Pitt County, where it is more than 150 feet thick. The average thickness in the county as a whole is 50 feet. The pumping test data, table 3, and field observations indicate that the transmissibility may range from 1,000 to 2,000 gpd per foot. Recharge to this aquifer occurs directly in western and northwestern Pitt County and adjoining areas to the west and northwest.

Aquifer 2 yields soft, bicarbonate-type water of excellent quality to municipal wells at Bethel, Farmville, and Fountain. However, at Greenville and in the eastern part of Pitt County, the water contains more than 250 mg/l chloride.

AQUIFER 3

Aquifer 3 is the principal aquifer in Pitt County. It occurs mainly in the lower part of the Black Creek Formation, and in the uppermost part of the Tuscaloosa Formation in a few places throughout all but the western part of Pitt County. In the westernmost part of Pitt County, aquifer 3 occurs wholly within the Tuscaloosa Formation. The top of aquifer 3 dips southeastward at an average rate of nearly 15 feet per mile. The aquifer is thickest in the central part of Pitt County, centering near Greenville, and near the southern boundary of the county in the vicinity of Grifton where it is more than 150 feet thick. The average thickness of aquifer 3 in Pitt County is 125 feet. The results of pumping tests, table 3, show a transmissibility between 15,000 and 25,000 gpd per foot. Recharge to aquifer 3 occurs directly in the western part of Pitt County.

Aquifer 3 yields soft, bicarbonate-type water of excellent quality to municipal wells at Ayden, Bethel, Farmville, Fountain, Greenville, and Grifton. Only in the easternmost part of Pitt County, beginning about midway between Grimesland and Washington, does the chloride concentration of water from aquifer 3 exceed 250 mg/l.

AQUIFER 3A

Aquifer 3A is a relatively thin aquifer which does not extend throughout Pitt County. Aquifer 3A occurs generally at or near the top of the unnamed lower member of the Black Creek Formation. The aquifer is present in the central and southern parts of the county, but thins to a featheredge northward and westward. Southward, aquifers 3 and 3A are separated by a thin (about 20 feet) aquiclude, and may be locally interconnected as a single aquifer system. The top of aquifer 3A dips southeastward at an average rate of nearly 18 feet per mile. The thickest part of the aquifer in Pitt County is in the vicinity of Grifton where it is more than 100 feet thick. The average thickness of aquifer 3A in Pitt County is 40 feet. Pumping-test data, table 3, and field observations indicate that the transmissibility may be about 10,000 gpd per foot. Recharge to aquifer 3A occurs principally in the central and eastern parts of the county.

Aquifer 3A yields soft, bicarbonate-type water of excellent quality to municipal wells at Ayden and Greenville. The quality of the water is not known to vary appreciably in Pitt County.

AQUIFER 4

Aquifer 4 extends throughout Pitt County except for a small area in the westernmost corner. In eastern Pitt County, aquifer 4 occurs mainly in the Peedee Formation. Westward it transgresses the formation boundary and becomes a part of the Black Creek Formation and pinches out east of Farmville. In the southern part of the county, the top of aquifer 4 dips southeastward at about 15 feet per mile, but the dip averages nearly 8 feet per mile to the northeast in central Pitt County. The average thickness of aquifer 4 in Pitt County is 40 feet. Field observations indicate that the transmissibility may be between 1,000 and 5,000 gpd per foot. Recharge to this aquifer occurs chiefly in the central and northern parts of the county.

Aquifer 4 yields soft, bicarbonate-type water of excellent quality to municipal wells at Ayden, Bethel, Grifton, and Grimesland. The quality of the water does not vary appreciably from one part of the county to another.

AQUIFER 5

Aquifer 5 is limited to the eastern part of Pitt County. This aquifer occurs within the Beaufort Formation in eastern Pitt County and thins westward to a featheredge at a north-trending margin about midway between Greenville and Grimesland. The dip of the aquifer is southeast at nearly 20 feet per mile. The thickest part of aquifer 5 in Pitt County is near the southeastern boundary where it is more than 50 feet thick. The average thickness in Pitt County is 30 feet. Much recharge to this aquifer occurs in the east-central part of the county.

Aquifer 5 is not extensively developed for water supplies in Pitt County. It yields moderately soft, bicarbonate-type water to domestic or stock wells. Generally this water is of excellent quality, but near the western margin of the aquifer the soluble-iron content may be slightly more than desirable.

AQUIFER 6

Aquifer 6 is limited to the easternmost part of Pitt County. This aquifer occurs within the Castle Hayne Limestone. Westward, aquifer 6 thins to a featheredge at a north-northeast-trending margin a short distance west of Grimesland. Aquifer 6 dips east-southeast at an average rate of 8 feet per mile. The limestone aquifer in Pitt County is thickest at the southeastern corner where it is more than 70 feet thick. The average thickness in the county is 20 feet. Recharge occurs throughout the area underlain by the Castle Hayne Limestone except for a narrow area along the Tar River where discharge to the river takes place. The recharge to the aquifer is most effective in the east-central part of the county where the overlying beds are thin. Recharge also occurs farther downdip but is less effective because of the thickening of the overlying beds of sand and clay. Wells in aquifer 6 are commonly cased to the top of the aquifer and then developed as open-hole wells in the indurated but porous limestone.

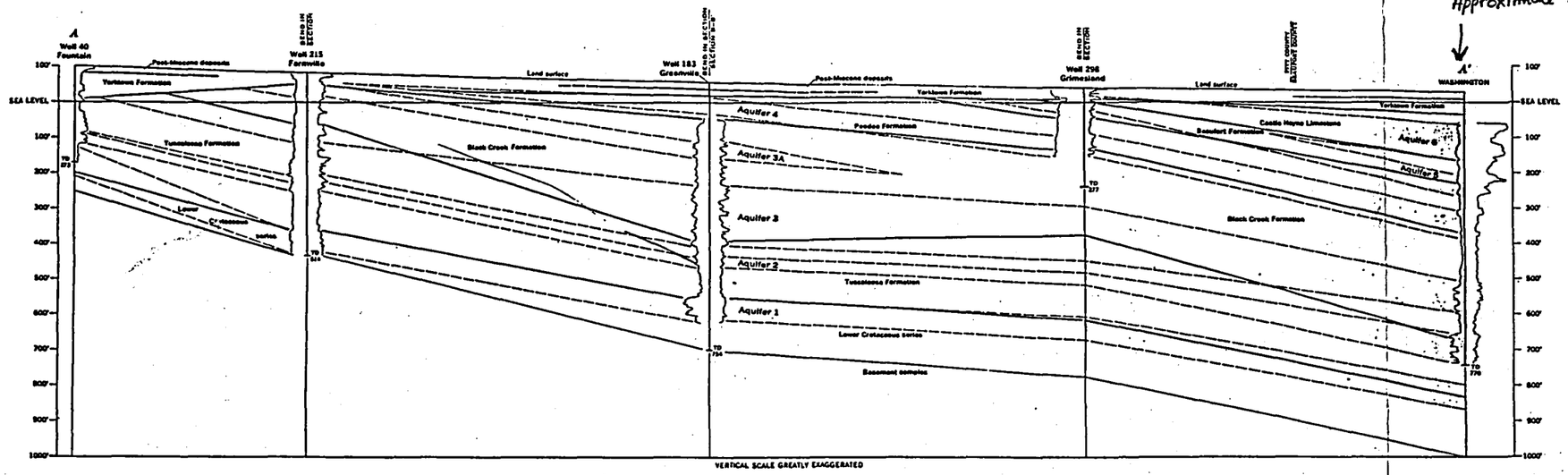
In adjacent counties to the east of Pitt County permeabilities of aquifer 6 generally range from 1,000 to 1,200 gpd per square foot. In Beaufort County 60-80 mgd (million gallons per day) of water is pumped to dewater an open-pit mine. No significant effects of the removal of this amount of water have been detected in Pitt County. The fact that the aquifer is capable of producing this much water in adjacent areas indicates that it may be more productive in Pitt County than available data indicate.

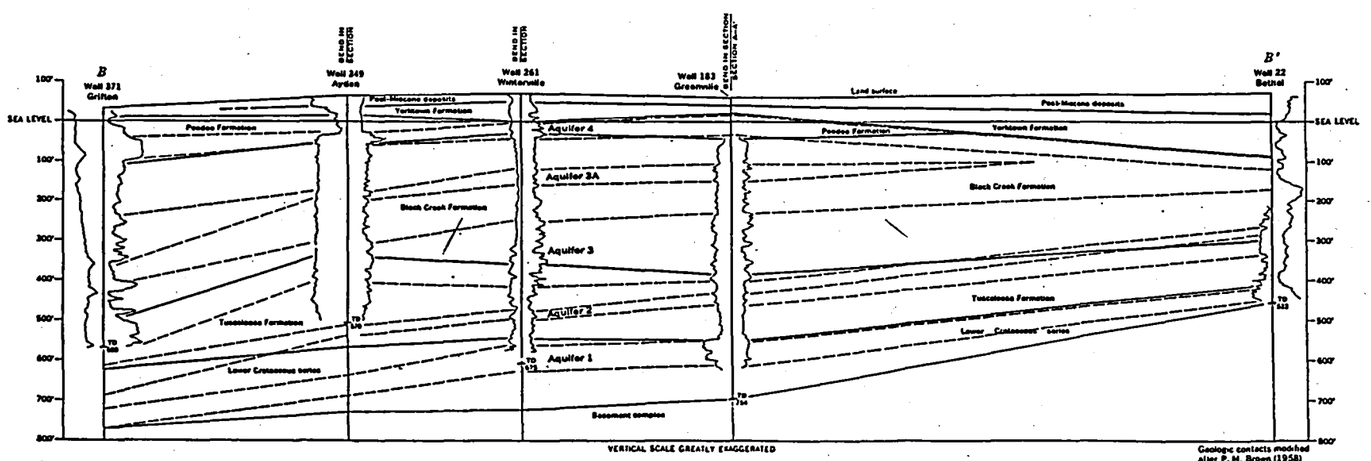
Aquifer 6 is not extensively developed for water supplies in Pitt County. It yields a hard, calcium bicarbonate type water. In all other respects water from aquifer 6 is of excellent quality, but it remains relatively undeveloped where slightly deeper aquifers yield softer water which does not require treatment for general use.

AQUIFER 7

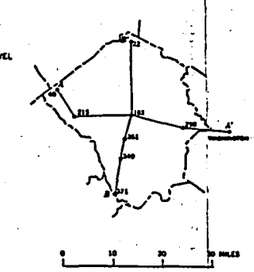
This is the unconfined or water-table aquifer which underlies the entire county. It consists of the materials underlying the surface of the county and is composed of sand and clay of fluvial and marine origin. The top of aquifer 7 is near the land surface, and the aquifer is thickest in interstream areas. The unconsolidated sediments range in thickness from less than 1 foot to nearly 50 feet, the thickest occurring in the vicinity of Bethel. The average thickness of aquifer 7 in Pitt County is 25 feet. Aquifer 7 is underlain generally by the clays and silts of the Yorktown Formation except in the southern and southwestern parts of Pitt County where it rests on the Peedee and Black Creek Formations. As the mode of deposition of the sediments in aquifer 7 was diverse, so the aquifer characteristics differ within very short distances. The results of pumping tests in Martin County (Wyrick, 1966, p. 39) show that the transmissibility is 700 gpd per foot, and the field permeability is 27 gpd per square foot. Field observations suggest that the characteristics of the shallow aquifer in Pitt County are similar to those in Martin County.

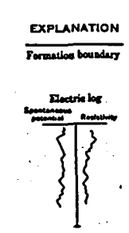
Sand strata of aquifer 7 yield water to numerous shallow wells. Water from aquifer 7 commonly has noticeably large amounts of soluble iron, is slightly acidic, and has a characteristic taste. When exposed to air, the dissolved iron oxidizes, forming a rust-red precipitate which stains laundry and utensils. Large-diameter dug wells provide water with less-noticeable amounts of iron as they permit access of air to the well water. Hence, the soluble iron oxidizes and forms a precipitate which settles to the bottom of the well. Ground water in aquifer 7 may be locally contaminated from waste disposal at the land surface, by effluent from septic tanks, and by chemical contamination from insecticides and fertilizers.



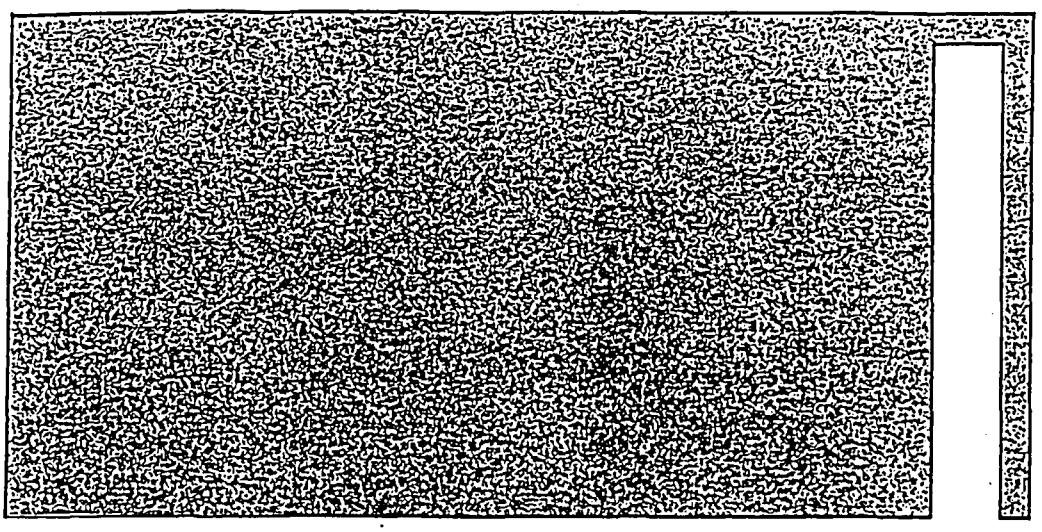


SECTIONS SHOWING CORRELATION OF GEOLOGIC FORMATIONS AND AQUIFERS





REFERENCE NO. 10



R. Allan Freeze

Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

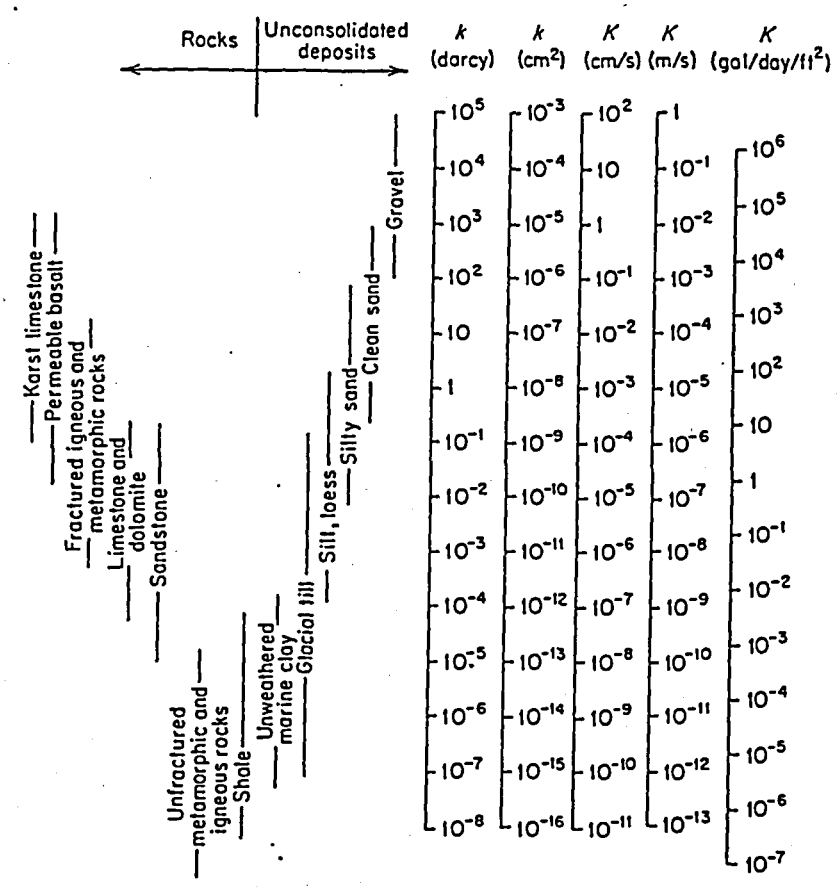


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm^2	ft^2	darcy	m/s	ft/s	U.S. gal/day/ft²
cm^2	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft^2	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05×10^{-1}	1	6.46×10^{5}
U.S. gal/day/ft²	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.55×10^{-6}	1

*To obtain k in ft^2, multiply k in cm^2 by 1.08×10^{-3}.

REFERENCE NO. 11

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV
Stanadyne, Inc.
Potable Water Supply in Washington, NC

B&V Project 52012.253
B&V File C
July 19, 1994
1320h

To: Frank Buck
Company: Washington Water Department
Phone No.: (919) 975-9302

Recorded by: Corry T. Platt CTP

I called the Washington Water Department to obtain information on the sources of potable water in the Washington, North Carolina area. Mr. Buck said that the only sources of public water are groundwater wells. The surface water intake, previously used was shut off after the new filtration plant was built. There are eight wells used to obtain potable water for the Washington Water Department (WWD). All of these wells are located on the Bunyan, NC USGS quadrangle and are located near Rt. 264. The WWD provides potable water for residents within the city limits of Washington, North Carolina.

Mr. Buck said that outside of the public water service area residents use private wells to obtain drinking water. His private well is 145 feet deep; however, the average private well depth ranges between 80 to 100 feet deep.

Mr. Buck mentioned that the Beaufort County Water Commission is planning to develop a county-wide distribution system and use groundwater to obtain the potable water. He was unaware were the well locations are planned.

REFERENCE NO. 12

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV
Stanadyne, Inc.
Potable Water Supply in Chocowinity, NC

B&V Project 52012.253
B&V File C
July 19, 1994
1325h

To: Jeff Hattock
Company: Chocowinity Water Department
Phone No.: (919) 946-6568

Recorded by: Corry T. Platt CTP

I called the Chocowinity Water Department (CWD) to obtain information on the sources of potable water in Chocowinity, North Carolina. Mr. Hattock said CWD uses two groundwater wells to serve its 400 metered customers. The two wells are located:

1) One well is located 0.7 mile east of the center of town along Edgewood Rd (approx. 0.25 mile north of Rt. 33). This well is about 200 feet deep and draws groundwater from 94 feet.

2) One well is located 0.4 mile west of the center of town and (0.2 mile south of Rt. 33). This well is about 150 feet deep and draws groundwater from 70 feet.

Mr. Hattock said the CWD serves primarily all residents within the city limits of Chocowinity, with one line extending out of the city limits south past the high school. Outside of the CWD service area, residents obtain drinking water from private wells.

Mr. Hattock said Beaufort County is planning to develop a county wide water department and that additional wells will be installed and the number of people on private wells will diminish.

REFERENCE NO. 13

BLACK & VEATCH Waste Science, Inc.
Philadelphia, PA office

MEMORANDUM

U.S. EPA-Region IV
Stanadyne, Inc.
Results of Calculation of Air and Groundwater Populations

BVWS Project 52012.253
BVWS File N
July 21, 1994

To: Stanadyne, Inc. File

From: Corry T. Platt

Residents within 4 miles of the site obtain drinking water from private wells, the Washington Water Department (WWD), and the Chocowinity Water Department (CWD). The WWD uses eight wells, all of which are located outside of the 4 mile radius from the site, to obtain drinking water for its customers within the city limits of Washington, North Carolina. The CWD uses two wells, both of which are located within the 3 - 4 mile distance ring from the site, to obtain drinking water for its 400 metered customers. The number of people served by the CWD was determined by multiplying the number of metered connections by the Beaufort County average population per household value of 2.58 persons, which yields 1,032 people served by the CWD wells. The number of people served by private supply wells was determined using a housecount method. Assuming that each house located outside of the WWD and CWD service areas has one private supply well, the number of houses were counted within each distance ring from the site. The number of houses was multiplied by the Beaufort County average population per household value of 2.58 persons to yield the number of people served by private supply wells within each distance ring. This calculation is depicted in Table 1. The total number of people using groundwater for drinking water purposes was determined by summing the people using the CWD wells and the private supply wells for each distance ring. This calculation is depicted in Table 2.

TABLE 1

Population Served by Private Wells within 4 miles of the Stanadyne, Inc. Site

Distance Ring (miles)	Houses Counted	County Population per Household[1]	Population
0 - ¼	0	2.58	0
¼ - ½	17	2.58	44
½ - 1	132	2.58	341
1 - 2	328	2.58	846
2 - 3	488	2.58	1,259
3 - 4	797	2.58	2,056
Total	1,762		4,546

Note:
[1] Reference 14

TABLE 2

Population using Groundwater as a source of Potable water within 4 miles of the Stanadyne, Inc. Site

Distance Ring (miles)	Population served by Private Supply Wells	Population served by Public Supply Wells	Population using Groundwater
0 - ¼	0	0	0
¼ - ½	44	0	44
½ - 1	341	0	341
1 - 2	846	0	846
2 - 3	1,259	0	1,259
3 - 4	2,056	1,032	3,088
Total	4,546	1,032	5,578

The population residing within four miles was determined by counting the houses in the 0 - ¼, ¼ - ½, ½ - 1, and 3 - 4 mile rings depicted on the 4 mile map (83, 24, 194, and 1,249 houses, respectively) and was then multiplied the number of houses per ring by the Beaufort County population per household value of 2.58 persons. The population residing within 1 - 3 miles of the site was calculated using the GEMS database results. The results of the population within 4 miles of the site are depicted in Table 3.

TABLE 3
Population within 4 miles of the
Stanadyne, Inc. Site

Distance Ring (miles)	Population
0 - ¼	241[1]
¼ - ½	62[1]
½ - 1	501[1]
1 - 2	2,466[2]
2 - 3	2,166[2]
3 - 4	3,222[1]
Total	**8,658**

Note:
[1] References 1, 14
[2] Reference 24

REFERENCE NO. 14

U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS

CENSUS-'90

1990 CPH-1-35

1990 Census of Population and Housing

Summary Population and Housing Characteristics

North Carolina

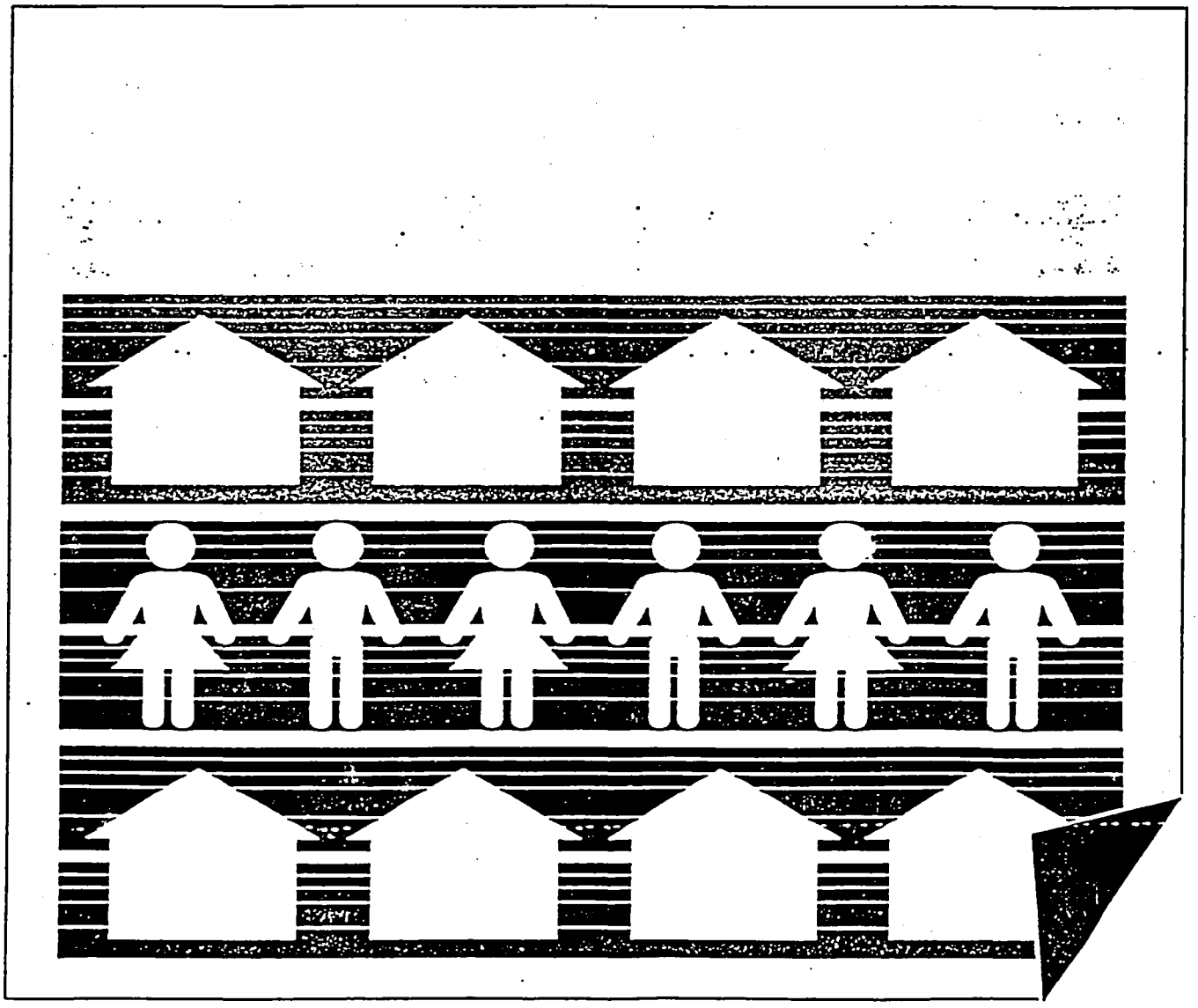


Table 6. Household, Family, and Group Quarters Characteristics: 1990

[For definitions of terms and meanings of symbols, see text]

State County Place and [In Selected States] County Subdivision	Persons in households	All households	Family households: Total	Family households: Married-couple family	Family households: Female householder, no husband present	Nonfamily households: Total	Nonfamily households: Householder living alone: Total	Nonfamily households: Householder living alone: 65 years and over: Total	Nonfamily households: Householder living alone: 65 years and over: Female	Persons per— Household	Persons per— Family	Persons in group quarters: Total	Persons in group quarters: Institutionalized persons	Persons in group quarters: Other persons in group quarters
The State	6 404 167	2 517 026	1 812 053	1 424 206	309 876	704 973	596 959	226 384	182 329	2.54	3.03	224 470	83 400	141 070
COUNTY														
Alamance County	105 327	42 652	30 745	24 295	5 130	11 907	10 467	4 598	3 748	2.47	2.94	2 886	1 173	1 713
Alexander County	27 245	10 331	8 049	6 715	952	2 282	2 022	839	651	2.64	3.02	299	299	–
Alleghany County	9 381	3 894	2 829	2 421	303	1 065	990	539	433	2.41	2.88	209	193	16
Anson County	23 117	8 531	6 359	4 552	1 475	2 172	2 042	1 075	860	2.71	3.23	357	344	13
Ashe County	21 965	8 848	6 748	5 643	816	2 100	1 935	1 014	809	2.48	2.89	244	220	24
Avery County	13 918	5 520	4 162	3 500	480	1 358	1 229	549	420	2.52	2.95	949	320	629
Beaufort County	41 704	16 157	11 840	9 140	2 186	4 317	3 915	1 974	1 605	2.58	3.07	579	441	138
Bertie County	20 321	7 412	5 501	3 831	1 419	1 911	1 797	957	755	2.74	3.28	87	87	–
Bladen County	28 150	10 760	8 017	5 854	1 762	2 743	2 579	1 243	1 000	2.62	3.11	513	509	4
Brunswick County	50 497	20 069	15 291	12 636	2 031	4 778	4 227	1 640	1 194	2.52	2.91	488	307	181
Buncombe County	169 713	70 802	49 335	39 637	7 684	21 467	18 868	8 174	6 642	2.40	2.90	5 108	2 966	2 142
Burke County	73 281	29 184	21 711	17 462	3 148	7 473	6 589	2 706	2 228	2.51	2.93	2 463	2 410	53
Cabarrus County	97 255	37 515	28 367	23 279	3 972	9 148	8 038	3 599	2 971	2.59	3.02	1 680	1 223	457
Caldwell County	69 917	27 172	20 656	16 653	2 944	6 516	5 660	2 287	1 846	2.57	2.97	792	735	57
Camden County	5 875	2 180	1 692	1 385	225	488	437	234	169	2.69	3.11	29	–	29
Carteret County	51 554	21 238	15 276	12 681	2 021	5 962	5 081	1 901	1 431	2.43	2.88	1 002	750	252
Caswell County	20 053	7 468	5 781	4 454	1 024	1 687	1 593	727	573	2.69	3.13	640	624	16
Catawba County	116 387	45 700	33 773	27 418	4 841	11 927	10 270	3 844	3 115	2.55	2.99	2 025	1 134	891
Chatham County	38 315	15 293	11 227	9 115	1 605	4 066	3 445	1 412	1 141	2.51	2.95	444	377	67
Cherokee County	19 899	7 966	6 069	5 065	765	1 897	1 764	975	759	2.50	2.91	271	196	75
Chowan County	13 233	5 113	3 775	2 842	767	1 338	1 238	641	499	2.59	3.07	273	273	–
Clay County	7 150	2 928	2 177	1 894	203	751	699	418	314	2.44	2.90	5	4	1
Cleveland County	83 012	32 037	24 282	19 011	4 168	7 755	7 011	3 202	2 624	2.59	3.02	1 702	915	787
Columbus County	48 953	18 459	13 754	10 381	2 757	4 705	4 351	2 152	1 695	2.65	3.15	634	624	10
Craven County	78 014	29 542	22 481	18 189	3 511	7 061	6 121	2 436	1 930	2.64	3.07	3 599	811	2 788
Cumberland County	253 362	91 500	69 966	54 433	12 883	21 534	17 718	4 724	3 752	2.77	3.19	21 204	1 499	19 705
Currituck County	13 486	5 038	3 854	3 272	407	1 184	984	419	312	2.68	3.08	250	217	33
Dare County	22 542	9 349	6 425	5 498	682	2 924	2 264	714	522	2.41	2.88	204	140	64
Davidson County	125 358	48 944	37 176	30 410	5 120	11 768	10 262	4 189	3 319	2.56	2.96	1 319	1 277	42
Davie County	27 541	10 785	8 270	6 999	953	2 515	2 246	1 025	817	2.55	2.95	318	288	30
Duplin County	39 368	14 925	11 036	8 376	2 099	3 889	3 553	1 779	1 439	2.64	3.12	627	560	67
Durham County	173 310	72 297	45 985	33 614	10 321	26 312	20 860	5 553	4 471	2.40	2.99	8 525	2 175	6 350
Edgecombe County	55 856	20 319	15 085	10 000	4 293	5 234	4 703	2 124	1 717	2.75	3.25	702	657	45
Forsyth County	257 466	107 419	72 621	55 715	14 052	34 798	29 870	9 779	7 975	2.40	2.94	8 412	3 493	4 919
Franklin County	35 237	13 503	10 047	7 640	1 865	3 456	3 120	1 384	1 126	2.61	3.07	1 177	568	609
Gaston County	172 791	65 347	49 754	38 905	8 439	15 593	13 580	5 720	4 720	2.64	3.07	2 302	1 458	844
Gates County	9 202	3 352	2 593	2 040	404	759	705	394	288	2.75	3.19	103	102	1
Graham County	7 176	2 772	2 166	1 839	246	606	562	294	225	2.59	2.98	20	18	2
Granville County	35 191	13 134	9 883	7 501	1 857	3 251	2 889	1 236	978	2.68	3.13	3 154	3 079	75
Greene County	14 665	5 395	4 066	3 003	875	1 329	1 189	574	481	2.72	3.18	719	704	15
Guilford County	335 348	137 706	92 891	71 195	17 570	44 815	36 578	12 180	9 951	2.44	2.97	12 072	3 084	8 988
Halifax County	54 122	20 335	14 874	10 092	4 018	5 461	5 005	2 398	1 897	2.66	3.18	1 394	1 356	38
Harnett County	65 340	25 150	18 529	14 489	3 154	6 621	5 773	2 438	1 962	2.60	3.06	2 482	1 240	1 242
Haywood County	46 152	19 211	14 120	11 831	1 774	5 091	4 601	2 337	1 886	2.40	2.83	790	751	39
Henderson County	68 206	28 709	21 169	18 113	2 344	7 540	6 838	3 531	2 859	2.38	2.80	1 079	967	112
Hertford County	21 612	8 150	5 921	4 164	1 473	2 229	2 063	977	766	2.65	3.19	911	279	632
Hoke County	21 612	7 405	5 794	3 847	1 605	1 611	1 419	523	420	2.92	3.34	1 244	1 244	–
Hyde County	5 383	2 094	1 533	1 151	321	561	516	269	191	2.57	3.07	28	19	9
Iredell County	92 082	35 573	26 869	21 726	4 023	8 704	7 646	3 271	2 682	2.59	3.02	849	814	35
Jackson County	23 834	9 683	6 970	5 749	981	2 713	2 242	966	745	2.46	2.91	3 012	280	2 732
Johnston County	80 341	31 566	23 217	18 566	3 634	8 349	7 441	3 380	2 750	2.55	3.01	965	893	72
Jones County	9 412	3 492	2 639	2 034	482	853	774	406	311	2.70	3.17	2	2	–
Lee County	40 651	15 689	11 739	9 087	2 135	3 950	3 482	1 369	1 107	2.59	3.03	723	672	51
Lenoir County	55 652	21 938	15 611	11 131	3 798	6 327	5 706	2 580	2 073	2.54	3.06	1 622	1 559	63
Lincoln County	49 802	18 764	14 661	12 207	1 827	4 103	3 580	1 467	1 173	2.65	3.03	517	517	–
McDowell County	35 064	13 680	10 366	8 576	1 363	3 314	2 996	1 399	1 135	2.56	2.99	617	416	201
Macon County	22 992	9 834	7 235	6 236	773	2 599	2 388	1 307	1 021	2.34	2.76	507	233	274
Madison County	16 104	6 488	4 806	4 058	516	1 682	1 510	789	581	2.48	2.92	849	104	745
Martin County	24 813	9 317	6 900	5 087	1 518	2 417	2 213	1 100	906	2.66	3.17	265	257	8
Mecklenburg County	499 886	200 219	134 361	103 211	25 013	65 858	52 037	12 990	10 610	2.50	3.05	11 547	3 578	7 969
Mitchell County	14 288	5 779	4 420	3 777	479	1 359	1 265	669	539	2.47	2.88	145	130	15
Montgomery County	22 279	8 290	6 274	4 823	1 119	2 016	1 838	876	690	2.69	3.14	1 067	997	70
Moore County	58 010	23 827	17 483	14 312	2 473	6 344	5 662	2 744	2 201	2.43	2.87	1 003	970	33
Nash County	75 450	29 041	21 224	16 322	3 968	7 817	6 926	2 880	2 316	2.60	3.09	1 227	807	420
New Hanover County	116 999	48 139	32 400	24 723	6 383	15 739	12 434	4 372	3 512	2.43	2.95	3 285	1 321	1 964
Northampton County	20 055	7 591	5 644	3 958	1 436	1 947	1 816	968	704	2.64	3.13	743	742	1
Onslow County	115 274	40 658	32 971	28 037	3 843	7 687	6 271	1 752	1 384	2.84	3.16	34 564	954	33 610
Orange County	84 627	36 104	21 123	16 854	3 380	14 981	10 110	2 257	1 839	2.34	2.93	9 224	770	8 454
Pamlico County	11 247	4 523	3 382	2 717	547	1 141	1 055	528	410	2.49	2.93	125	112	13
Pasquotank County	29 884	11 384	8 326	6 356	1 681	3 058	2 725	1 342	1 065	2.63	3.13	1 414	383	1 031
Pender County	28 497	11 112	8 420	6 707	1 371	2 692	2 388	1 055	796	2.56	2.99	358	348	10
Perquimans County	10 303	3 988	3 038	2 444	468	950	862	443	342	2.58	3.02	144	144	–
Person County	29 830	11 423	8 570	6 607	1 547	2 853	2 608	1 209	994	2.61	3.07	350	304	46
Pitt County	102 400	40 491	26 434	19 369	5 857	14 057	10 412	3 104	2 511	2.53	3.10	5 524	946	4 578
Polk County	14 187	6 110	4 346	3 693	511	1 764	1 599	952	768	2.32	2.79	229	227	2
Randolph County	105 440	41 096	31 363	26 135	3 957	9 733	8 590	3 435	2 789	2.57	2.97	1 106	1 050	56
Richmond County	43 534	16 793	12 270	9 126	2 551	4 523	4 174	2 011	1 600	2.59	3.11	984	875	109
Robeson County	103 186	36 154	27 429	18 451	7 353	8 725	7 891	3 355	2 651	2.85	3.34	1 993	1 280	713
Rockingham County	85 242	33 466	24 671	19 351	4 193	8 775	7 959	3 669	2 902	2.55	3.02	822	781	41
Rowan County	107 079	42 512	31 055	25 100	4 618	11 457	10 236	4 748	3 815	2.52	2.99	3 526	2 408	1 118
Rutherford County	56 197	22 198	16 480	13 191	2 551	5 718	5 255	2 556	2 050	2.53	2.99	721	721	–
Sampson County	46 754	17 526	13 191	10 058	2 525	4 335	3 975	2 032	1 610	2.67	3.14	543	490	53
Scotland County	32 679	11 837	8 971	6 225	2 338	2 866	2 618	1 173	935	2.76	3.25	1 075	401	674
Stanly County	50 734	19 747	14 967	12 451	1 975	4 780	4 396	2 164	1 785	2.57	3.01	1 031	470	561
Stokes County	36 862	14 123	11 022	9 341	1 273	3 101	2 825	1 246	1 016	2.61	3.00	361	361	–
Surry County	60 950	24 252	18 252	15 253	2 341	6 000	5 474	2 732	2 256	2.51	2.94	754	650	104
Swain County	10 653	4 173	3 063	2 382	550	1 090	985	467	369	2.55	3.01	615	215	400
Transylvania County	24 283	9 924	7 496	6 442	797	2 428	2 224	1 131	912	2.45	2.86	1 237	178	1 059
Tyrrell County	3 852	1 471	1 075	810	213	393	359	208	148	2.62	3.13	4	4	–
Union County	82 633	29 307	23 530	19 607	3 063	5 777	5 018	2 148	1 755	2.82	3.18	1 578	455	1 123

Table 6. Household, Family, and Group Quarters Characteristics: 1990—Con.

[For definitions of terms and meanings of symbols, see text]

State County Place and [In Selected States] County Subdivision	Persons in households	All households	Family households: Total	Family households: Married-couple family	Family households: Female householder, no husband present	Nonfamily households: Total	Nonfamily households: Householder living alone: Total	Nonfamily households: Householder living alone: 65 years and over: Total	Nonfamily households: Householder living alone: 65 years and over: Female	Persons per— Household	Persons per— Family	Persons in group quarters: Total	Persons in group quarters: Institutionalized persons	Persons in group quarters: Other persons in group quarters
COUNTY—Con.														
Vance County	38 080	14 166	10 502	7 408	2 584	3 664	3 238	1 440	1 137	2.69	3.16	812	517	295
Wake County	408 267	165 743	109 543	88 567	16 581	56 200	42 662	9 449	7 828	2.46	3.01	15 113	6 571	8 542
Warren County	16 918	6 305	4 762	3 357	1 127	1 543	1 422	742	559	2.68	3.15	347	332	15
Washington County	13 762	5 052	3 839	2 826	833	1 213	1 151	584	454	2.72	3.21	235	234	1
Watauga County	32 476	13 693	8 415	7 121	975	5 278	3 437	1 041	833	2.37	2.88	4 476	279	4 197
Wayne County	97 572	36 889	27 577	21 107	5 320	9 312	8 263	3 258	2 642	2.65	3.11	7 094	2 488	4 606
Wilkes County	58 787	23 021	17 586	14 634	2 274	5 435	4 855	2 182	1 723	2.55	2.96	606	586	20
Wilson County	64 414	25 093	18 031	12 986	4 180	7 062	6 277	2 679	2 184	2.57	3.08	1 647	876	771
Yadkin County	30 053	12 068	9 173	7 720	1 124	2 895	2 669	1 333	1 059	2.49	2.90	435	424	11
Yancey County	15 235	6 124	4 683	4 010	510	1 441	1 354	729	586	2.49	2.90	184	184	–
PLACE AND COUNTY SUBDIVISION														
Aberdeen town, Moore County	2 679	1 154	773	587	150	381	336	188	162	2.32	2.87	21	–	21
Ahoskie town, Hertford County	4 258	1 769	1 164	770	356	605	576	272	229	2.41	3.07	133	130	3
Alamance village, Alamance County	258	112	80	67	11	32	30	17	13	2.30	2.76	–	–	–
Albemarle city, Stanly County	14 403	6 054	4 169	3 205	812	1 885	1 746	913	762	2.38	2.92	536	459	77
Alexander Mills town, Rutherford County	662	279	176	111	55	103	93	59	50	2.37	2.97	–	–	–
Alliance town, Pamlico County	583	232	182	150	28	50	49	29	23	2.51	2.91	–	–	–
Altamahaw-Ossipee CDP, Alamance County	1 076	424	307	233	57	117	113	56	44	2.54	3.06	–	–	–
Andrews town, Cherokee County	2 520	1 065	738	566	139	327	302	191	153	2.37	2.88	31	31	–
Angier town, Harnett County	2 230	901	637	449	154	264	236	97	86	2.48	2.98	5	–	5
Ansonville town, Anson County	614	203	165	106	47	38	36	20	16	3.02	3.45	–	–	–
Apex town, Wake County	4 898	1 752	1 378	1 132	196	374	318	115	106	2.80	3.19	70	67	3
Arapahoe town, Pamlico County	430	175	129	108	15	46	44	26	21	2.46	2.93	–	–	–
Archdale city	6 913	2 803	2 085	1 758	248	718	643	183	155	2.47	2.90	–	–	–
Guilford County	234	82	72	66	5	10	8	3	3	2.85	3.07	–	–	–
Randolph County	6 679	2 721	2 013	1 692	243	708	635	180	152	2.45	2.89	–	–	–
Arlington town, Yadkin County	795	333	239	170	57	94	91	52	41	2.39	2.86	–	–	–
Asheboro city, Randolph County	15 682	6 977	4 455	3 357	930	2 522	2 256	979	820	2.25	2.84	680	636	44
Asheville city, Buncombe County	59 322	27 027	16 218	11 717	3 759	10 809	9 511	4 233	3 509	2.19	2.84	2 285	1 269	1 016
Askewville town, Bertie County	201	81	60	56	4	21	21	15	14	2.48	3.00	–	–	–
Atkinson town, Pender County	275	119	85	67	13	34	31	21	20	2.31	2.79	–	–	–
Atlantic Beach town, Carteret County	1 887	935	516	434	63	419	335	56	37	2.02	2.62	51	–	51
Aulander town, Bertie County	1 209	454	320	213	98	134	123	76	58	2.66	3.29	–	–	–
Aurora town, Beaufort County	654	260	181	119	53	79	73	51	40	2.52	3.11	–	–	–
Autryville town, Sampson County	166	73	55	40	9	18	16	8	7	2.27	2.58	–	–	–
Avery Creek CDP, Buncombe County	1 144	408	341	304	27	67	60	15	11	2.80	3.13	–	–	–
Ayden town, Pitt County	4 735	1 795	1 305	854	386	490	445	230	199	2.64	3.13	5	5	–
Badin CDP, Stanly County	1 481	616	420	315	87	196	183	119	103	2.40	2.97	–	–	–
Bailey town, Nash County	553	245	151	118	26	94	89	55	42	2.26	2.97	–	–	–
Bakersville town, Mitchell County	326	148	99	71	17	49	44	21	15	2.20	2.71	6	6	–
Bald Head Island village, Brunswick County	78	39	32	31	1	7	7	–	–	2.00	2.22	–	–	–
Balfour CDP, Henderson County	1 118	494	344	280	51	150	132	58	47	2.26	2.72	–	–	–
Banner Elk town, Avery County	339	163	89	67	18	74	64	24	19	2.08	2.80	594	–	594
Barker Heights CDP, Henderson County	1 137	468	345	248	84	123	107	47	33	2.43	2.83	–	–	–
Barker Ten Mile CDP, Robeson County	1 087	372	329	292	26	43	34	12	10	2.92	3.12	–	–	–
Bath town, Beaufort County	154	81	41	29	12	40	36	25	20	1.90	2.66	–	–	–
Battleboro town	447	176	127	87	30	49	46	23	19	2.54	3.06	–	–	–
Edgecombe County	280	100	73	39	26	27	25	9	6	2.80	3.34	–	–	–
Nash County	167	76	54	48	4	22	21	14	13	2.20	2.67	–	–	–
Bayboro town, Pamlico County	720	283	201	130	63	82	75	31	29	2.54	3.10	13	13	–
Bayshore CDP, New Hanover County	1 661	605	517	471	30	88	80	26	22	2.75	3.00	–	–	–
Beargrass town, Martin County	77	35	24	19	4	11	11	6	6	2.20	2.75	–	–	–
Beaufort town, Carteret County	3 795	1 721	1 075	741	292	646	581	255	197	2.21	2.83	13	13	–
Beech Mountain town	239	109	78	75	1	31	25	6	4	2.19	2.55	–	–	–
Avery County	7	3	2	2	–	1	1	–	–	2.33	3.00	–	–	–
Watauga County	232	106	76	73	1	30	24	6	4	2.19	2.54	–	–	–
Belhaven town, Beaufort County	2 241	840	588	359	192	252	233	138	110	2.67	3.29	28	28	–
Belmont city, Gaston County	7 774	3 049	2 149	1 603	407	900	811	354	296	2.55	3.09	660	–	660
Belville town, Brunswick County	66	28	12	7	5	16	11	4	2	2.36	3.75	–	–	–
Belwood town, Cleveland County	631	259	193	164	19	66	59	29	21	2.44	2.87	–	–	–
Benson town, Johnston County	2 728	1 137	718	456	207	419	388	202	176	2.40	3.08	82	67	15
Bent Creek CDP, Buncombe County	1 487	532	452	397	45	80	71	27	18	2.80	3.06	–	–	–
Bessemer City city, Gaston County	4 698	1 762	1 337	975	288	425	386	176	146	2.67	3.10	–	–	–
Bethel town, Pitt County	1 842	709	505	329	159	204	188	101	86	2.60	3.15	–	–	–
Bethlehem CDP, Alexander County	3 186	1 186	966	848	85	220	191	47	35	2.69	2.99	–	–	–
Beulaville town, Duplin County	921	411	274	194	67	137	122	63	52	2.24	2.77	12	12	–
Biltmore Forest town, Buncombe County	1 327	540	420	387	26	120	116	72	58	2.46	2.84	–	–	–
Biscoe town, Montgomery County	1 478	513	389	281	88	124	103	52	38	2.88	3.34	6	6	–
Black Creek town, Wilson County	615	243	192	167	24	51	46	27	24	2.53	2.89	–	–	–
Black Mountain town, Buncombe County	5 232	2 256	1 462	1 168	241	794	722	441	366	2.23	2.81	366	331	55
Bladenboro town, Bladen County	1 768	758	521	358	143	237	228	120	101	2.33	2.91	53	53	–
Blowing Rock town	1 179	570	333	286	34	237	213	85	68	2.07	2.73	78	76	2
Caldwell County	44	21	14	12	2	7	6	3	2	2.10	2.57	–	–	–
Watauga County	1 135	549	319	274	32	230	207	82	66	2.07	2.74	78	76	2
Boger City CDP, Lincoln County	1 373	569	414	341	60	155	143	56	42	2.41	2.89	–	–	–
Boiling Spring Lakes city, Brunswick County	1 650	666	523	447	53	143	122	54	38	2.48	2.79	–	–	–
Boiling Springs town, Cleveland County	1 675	668	493	380	89	175	148	59	55	2.51	2.94	772	44	726
Bolivia town, Brunswick County	228	87	64	50	12	23	21	15	13	2.62	3.13	–	–	–
Bolton town, Columbus County	531	206	148	96	43	58	56	34	22	2.58	3.16	–	–	–
Bonnie Doone CDP, Cumberland County	3 888	1 590	1 009	637	315	581	431	41	24	2.45	2.98	5	–	5
Boone town, Watauga County	8 607	4 053	1 470	1 141	248	2 583	1 305	275	238	2.12	2.71	4 358	127	4 181
Boonville town, Yadkin County	998	403	299	247	49	104	97	62	54	2.48	2.95	11	–	11
Bostic town, Rutherford County	371	137	111	92	15	26	22	11	8	2.71	3.04	–	–	–
Brevard city, Transylvania County	4 609	2 072	1 331	1 026	272	741	693	421	365	2.22	2.82	779	168	611
Bridgeton town, Craven County	453	193	130	103	16	63	57	20	17	2.35	2.88	–	–	–
Broadway town	973	362	286	247	32	76	71	37	28	2.69	3.08	–	–	–
Harnett County	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Lee County	973	362	286	247	32	76	71	37	28	2.69	3.08	–	–	–
Brogden CDP, Wayne County	3 246	1 059	851	624	182	208	162	33	25	3.07	3.44	–	–	–
Brookford town, Catawba County	451	189	133	93	27	56	52	31	21	2.39	2.85	–	–	–
Brunswick town, Columbus County	302	106	81	62	15	25	24	8	7	2.85	3.37	–	–	–
Bryson City town, Swain County	1 063	491	303	233	57	188	171	100	84	2.16	2.73	82	82	–

REFERENCE NO. 15

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV
North Carolina General
Wellhead Protection Areas

B&V Project multiple
B&V File C
March 23, 1994
1330h

To: Randy Prillaman
Company: NC DEM, Groundwater Section
Phone No.: (919) 733-7015

Recorded by: Corry T. Platt

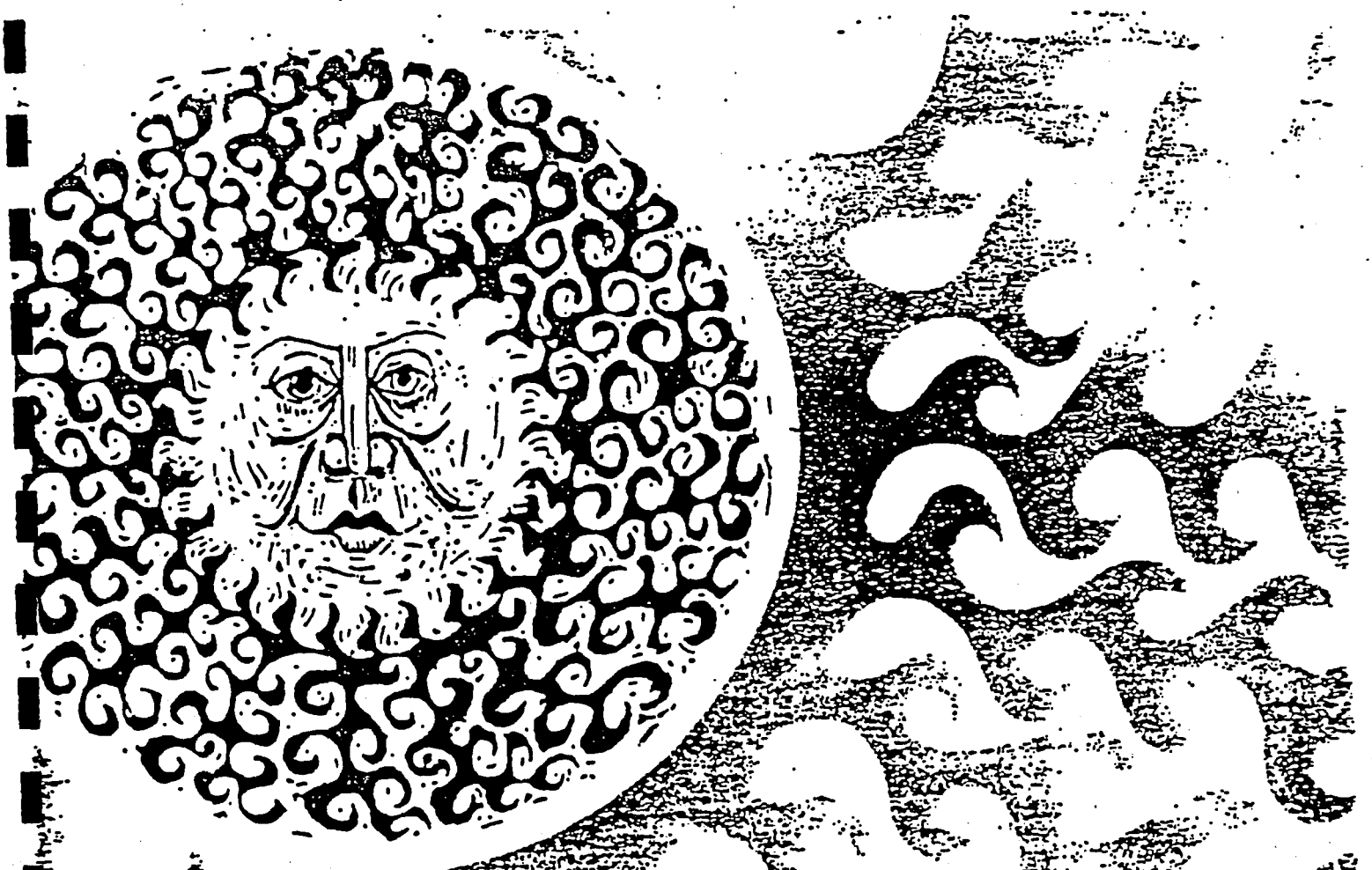
I called Mr. Randy Prillaman to determine if Wellhead Protection Areas have been delineated within the State of North Carolina. Mr. Prillaman said that Wellhead Protection Areas have not yet been delineated within North Carolina.

Mr. Prillaman said there is a pilot study occuring in Gaston County regarding Wellhead Protection Areas (WHPA) and currently the state is awaiting notice from the U.S. EPA if their grant for the delineation of WHPAs will be funded. If funding is granted, then work on the the delineations will begin. He is unsure when the delineations would be complete if funding was to be recieved this year. He recommended following up on this phone call later in the year (October or November) to find out if any guidance has been written.

Corry T. Platt

REFERENCE NO. 16

Reference



LIMATIC ATLAS OF THE UNITED STATES

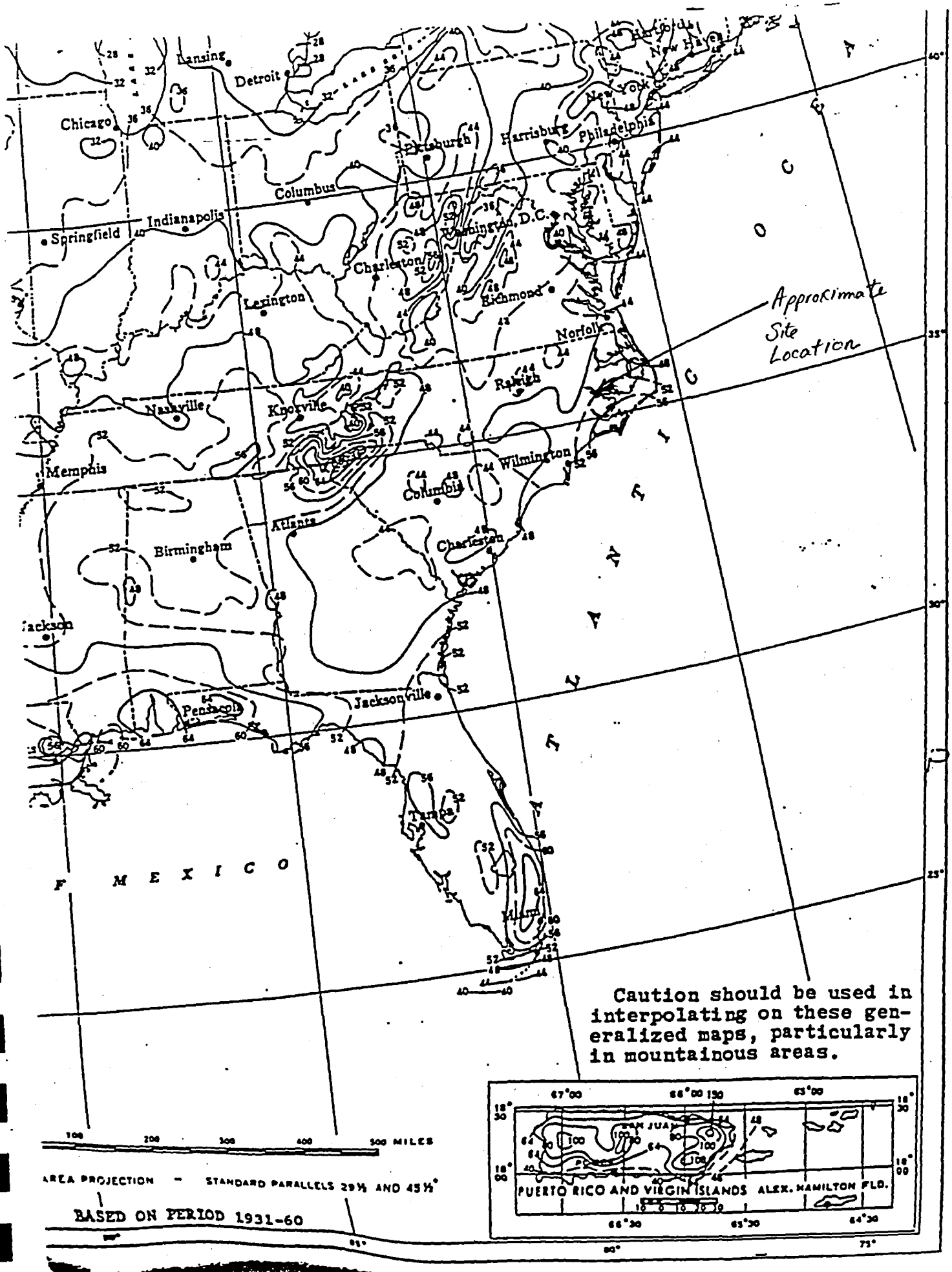
U.S. DEPARTMENT OF COMMI
C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMIT
Robert M. White, Administrator

ENVIRONMENTAL DATA SERVICE
Woodrow C. Jacobs, Director

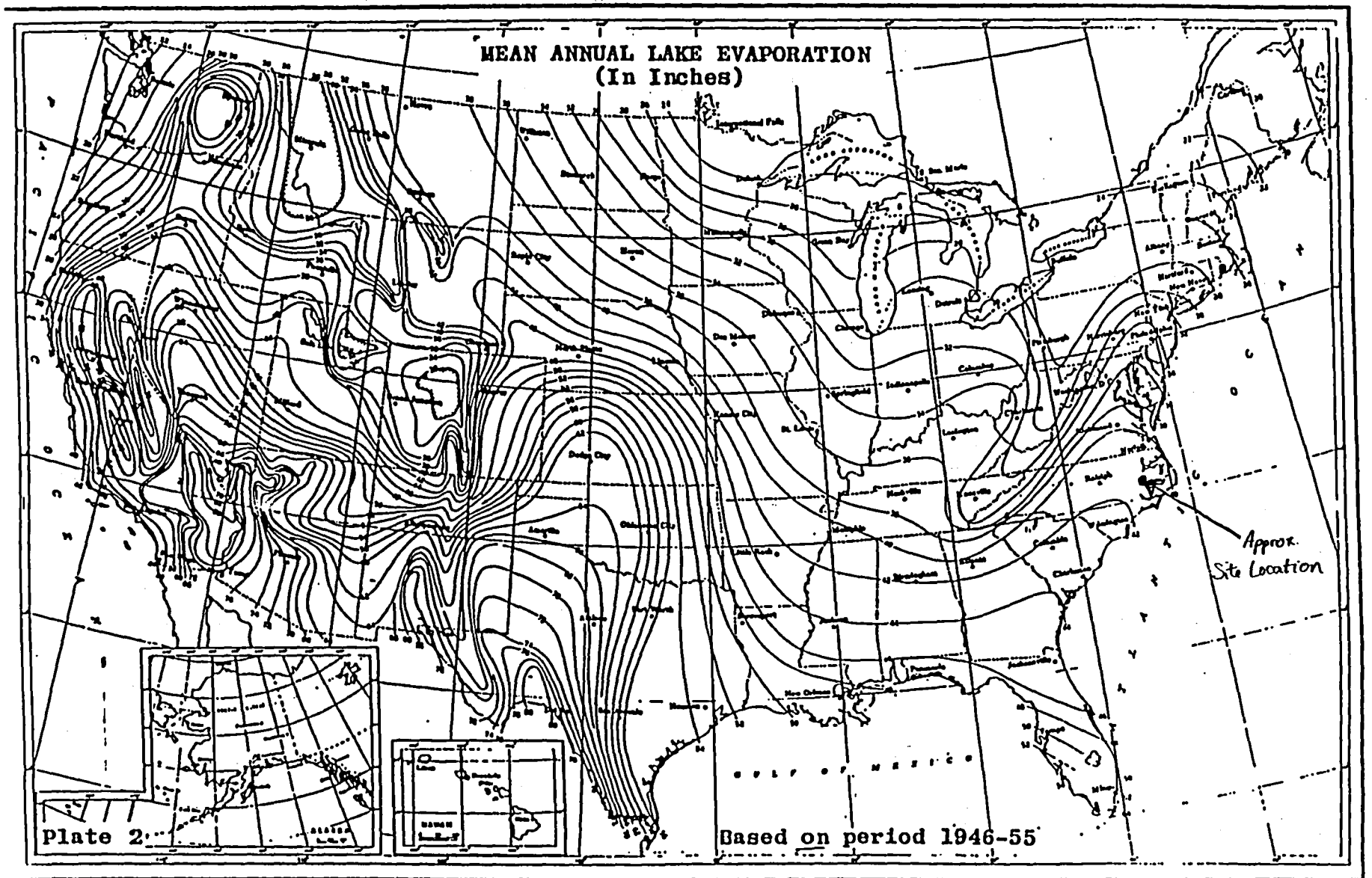
JUNE 1968

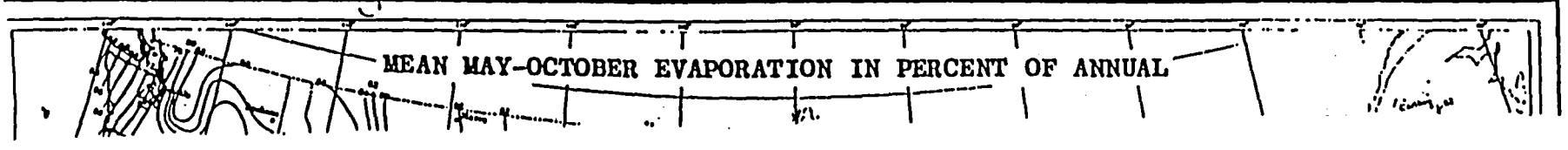
REPRINTED BY THE
NATIONAL OCEANIC AND ATMOSPHERIC ADM
1983



Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.

LAKE EVAPORATION





REFERENCE NO. 17

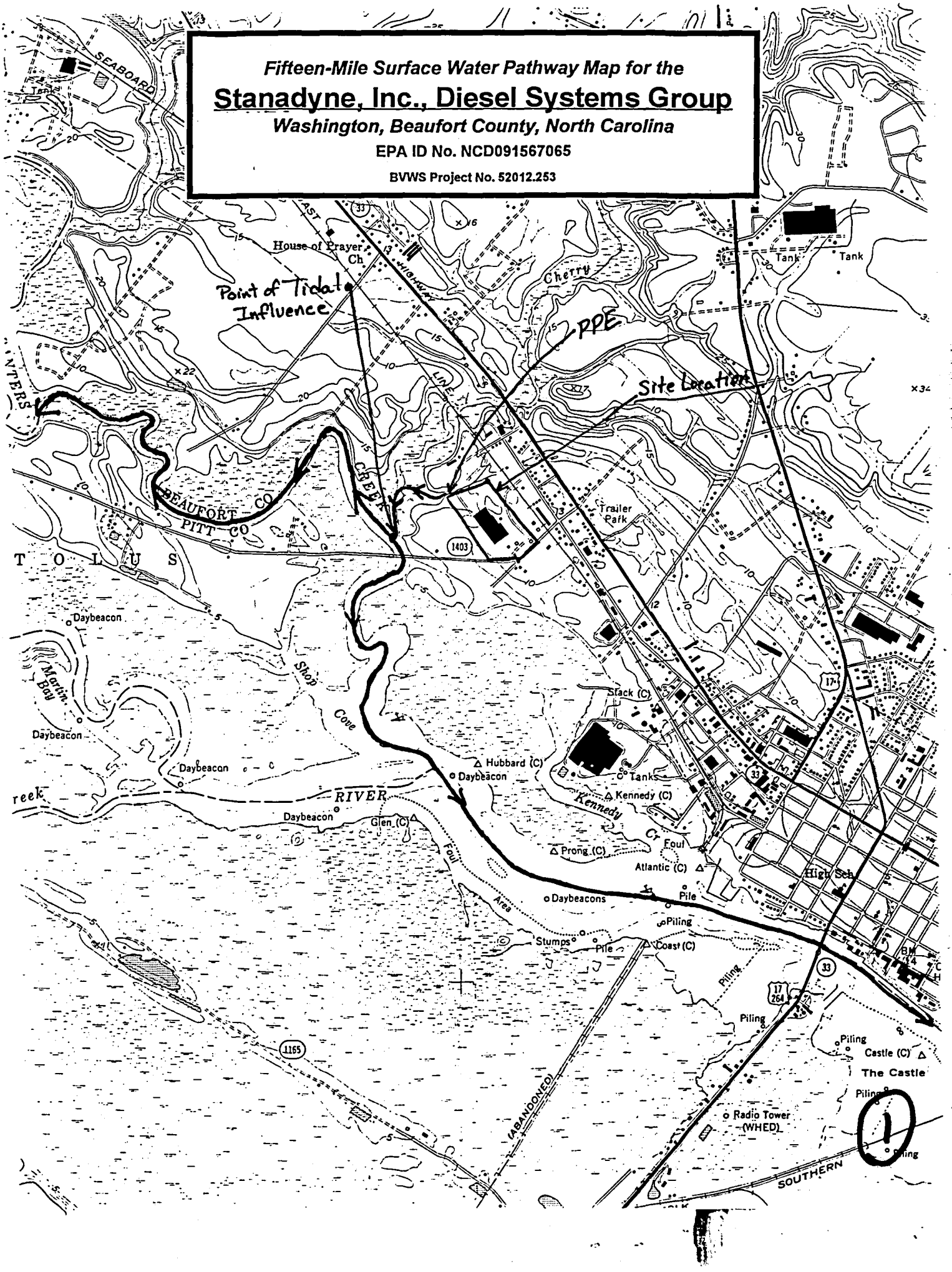
Fifteen-Mile Surface Water Pathway Map for the

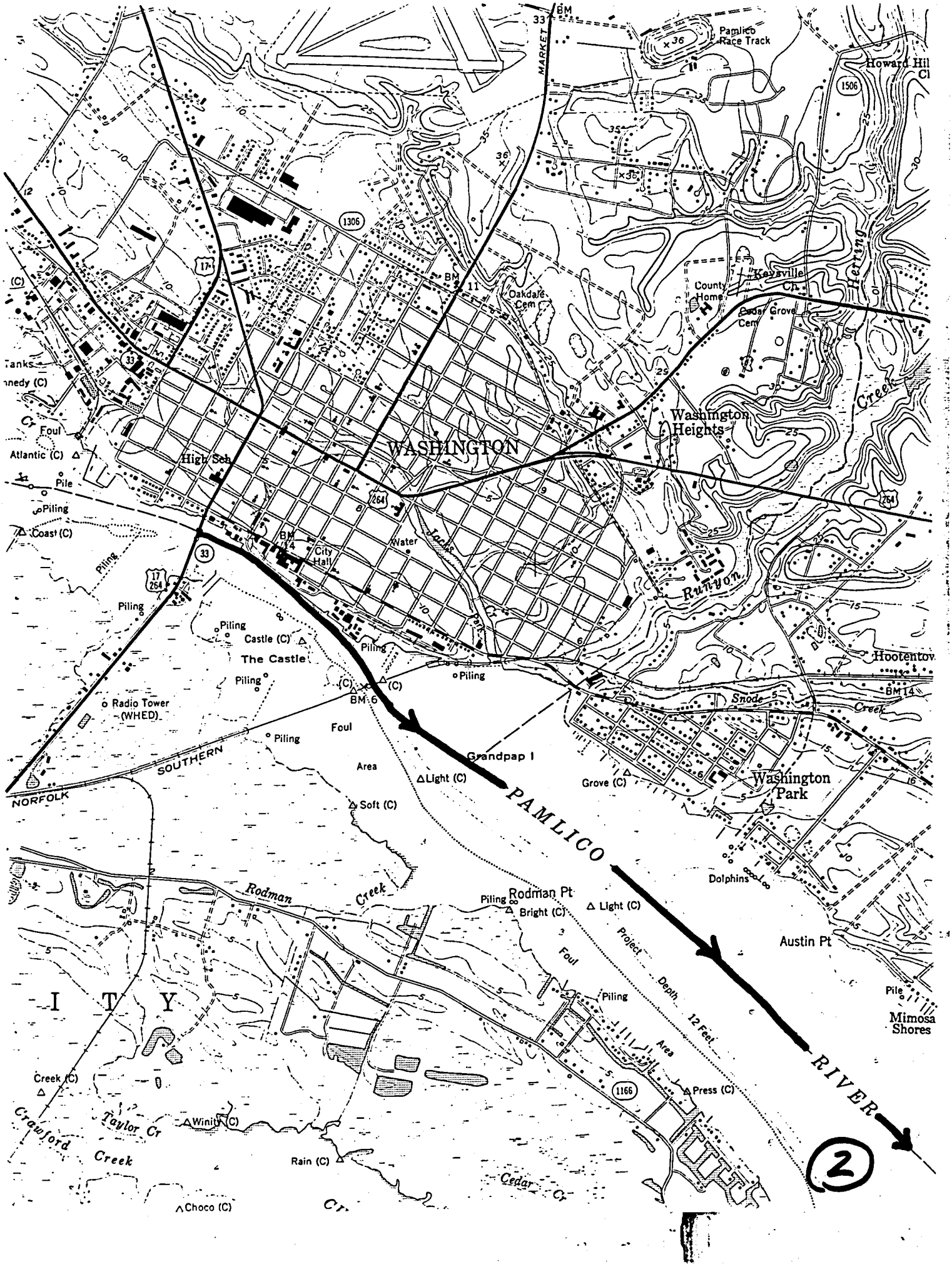
Stanadyne, Inc., Diesel Systems Group

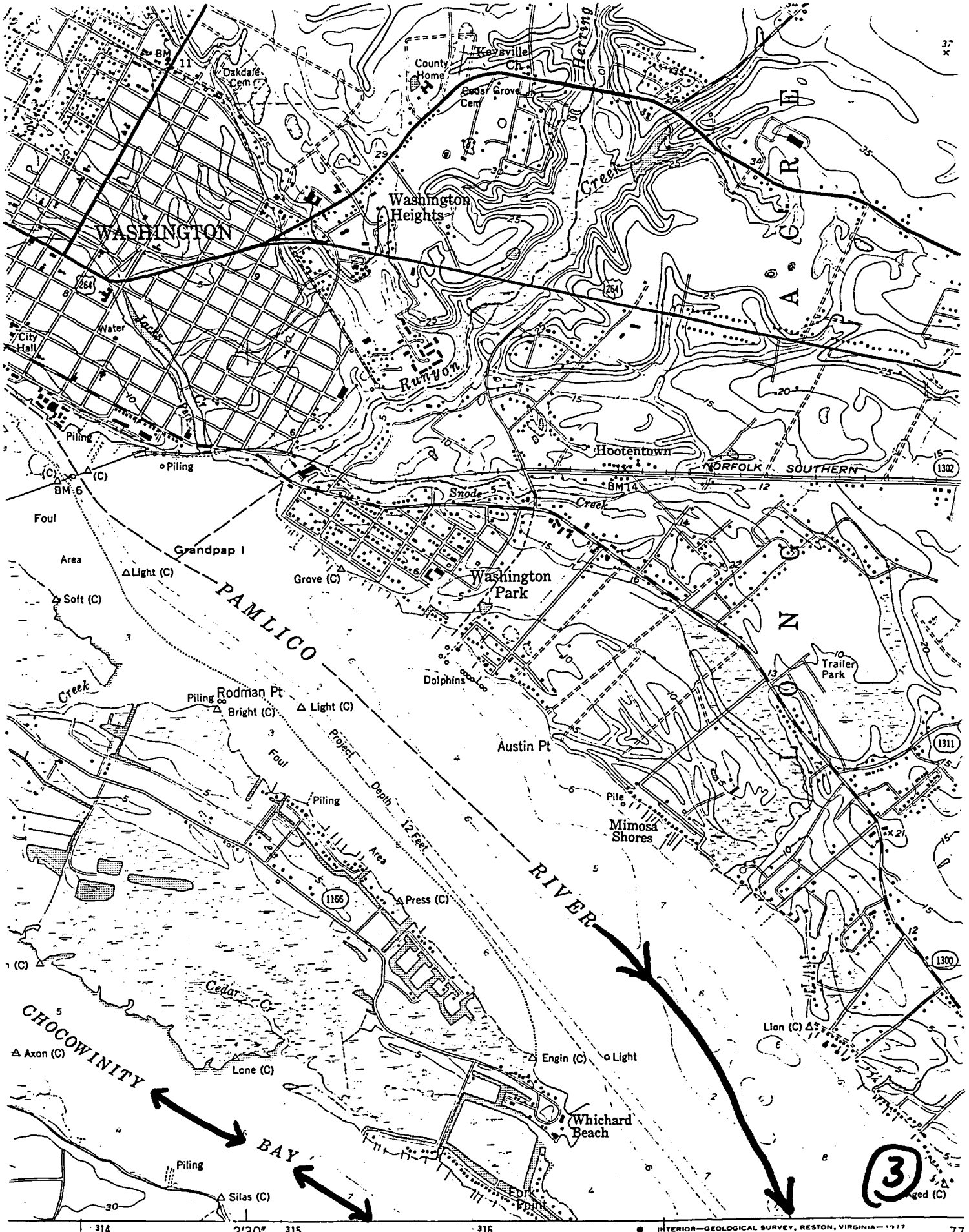
Washington, Beaufort County, North Carolina

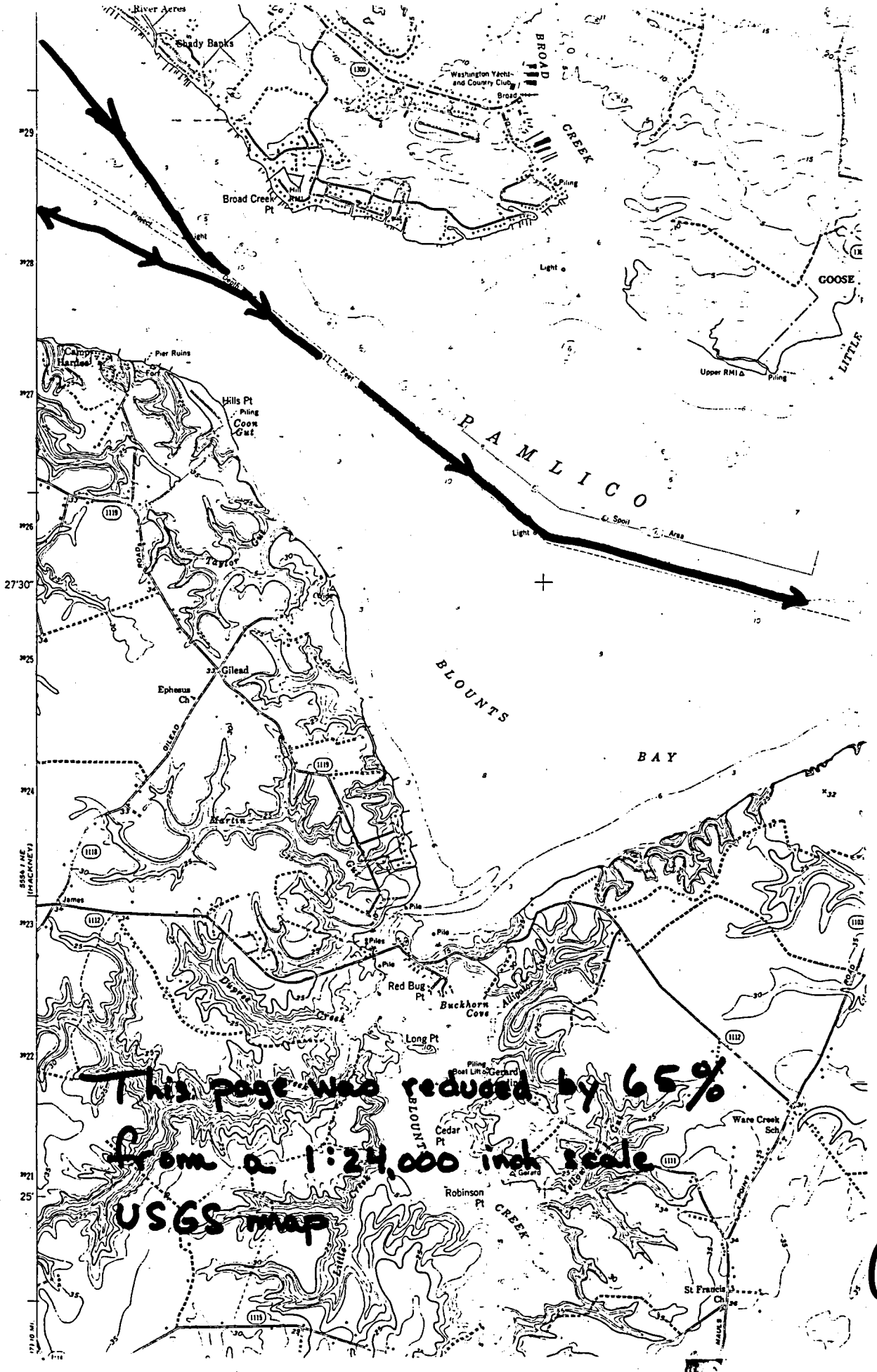
EPA ID No. NCD091567065

BVWS Project No. 52012.253



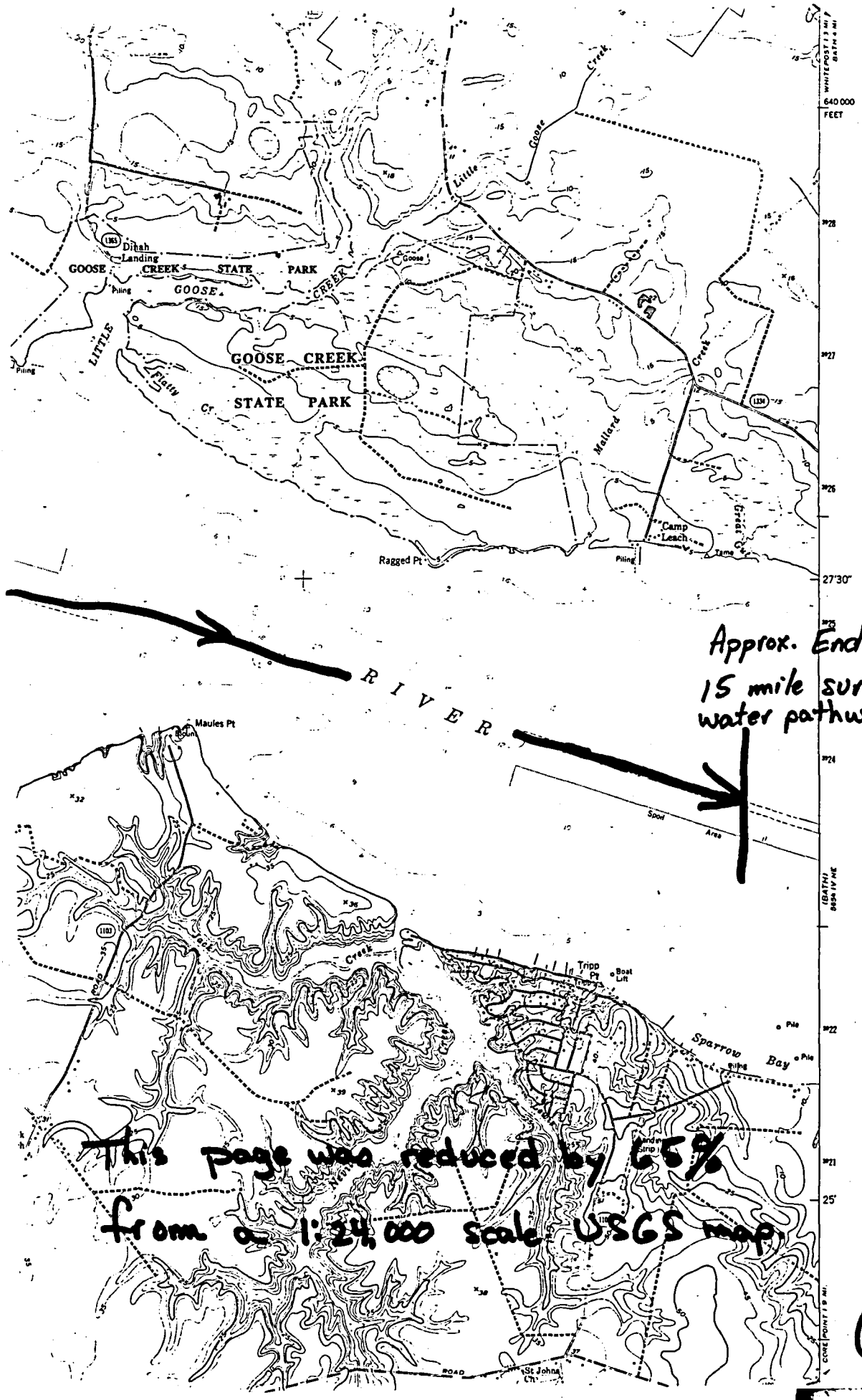

WASHINGTON
Pamlico Race Track
Howard Hill
MARKET
Oakdale Cem
County Home
Keysville Ch
Cedar Grove Cem
Herring Creek
Washington Heights
High Sch
City Hall
Water
Jacks Cr
Runyon
Hootentov
Snode Creek
Washington Park
Grandpap I
PAMLICO RIVER
Foul Area
Light (C)
Grove (C)
Soft (C)
Castle (C)
The Castle
Radio Tower (WHED)
SOUTHERN
NORFOLK
Rodman Creek
Rodman Pt
Bright (C)
Dolphins
Austin Pt
Mimosa Shores
Project Depth 12 Feet Area
Press (C)
Winit (C)
Taylor Cr
Crawford Creek
Rain (C)
Cedar Cr
Choco (C)
Creek (C)
Atlantic (C)
Coast (C)
Foul
Piling
Pile
I T Y
2


WASHINGTON
Washington Heights
County Home
Keysville Ch
Oakdale Cem
Cedar Grove Cem
Herring Creek
Runyon
Jacks Cr
City Hall
Water
Piling
BM 6
Foul
Area
Grandpap I
Light (C)
Soft (C)
Grove (C)
Snode Creek
BM 14
Hootentown
NORFOLK SOUTHERN
Washington Park
PAMLICO RIVER
Dolphins
Trailer Park
Rodman Pt
Bright (C)
Light (C)
Project Depth 12 Feet
Austin Pt
Pile
Mimosa Shores
Press (C)
Cedar Cr
CHOCOWINITY BAY
Axon (C)
Lone (C)
Engin (C)
Light
Whichard Beach
Lion (C)
Silas (C)
Fort Point
2'30"
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1977
318000m E.
3

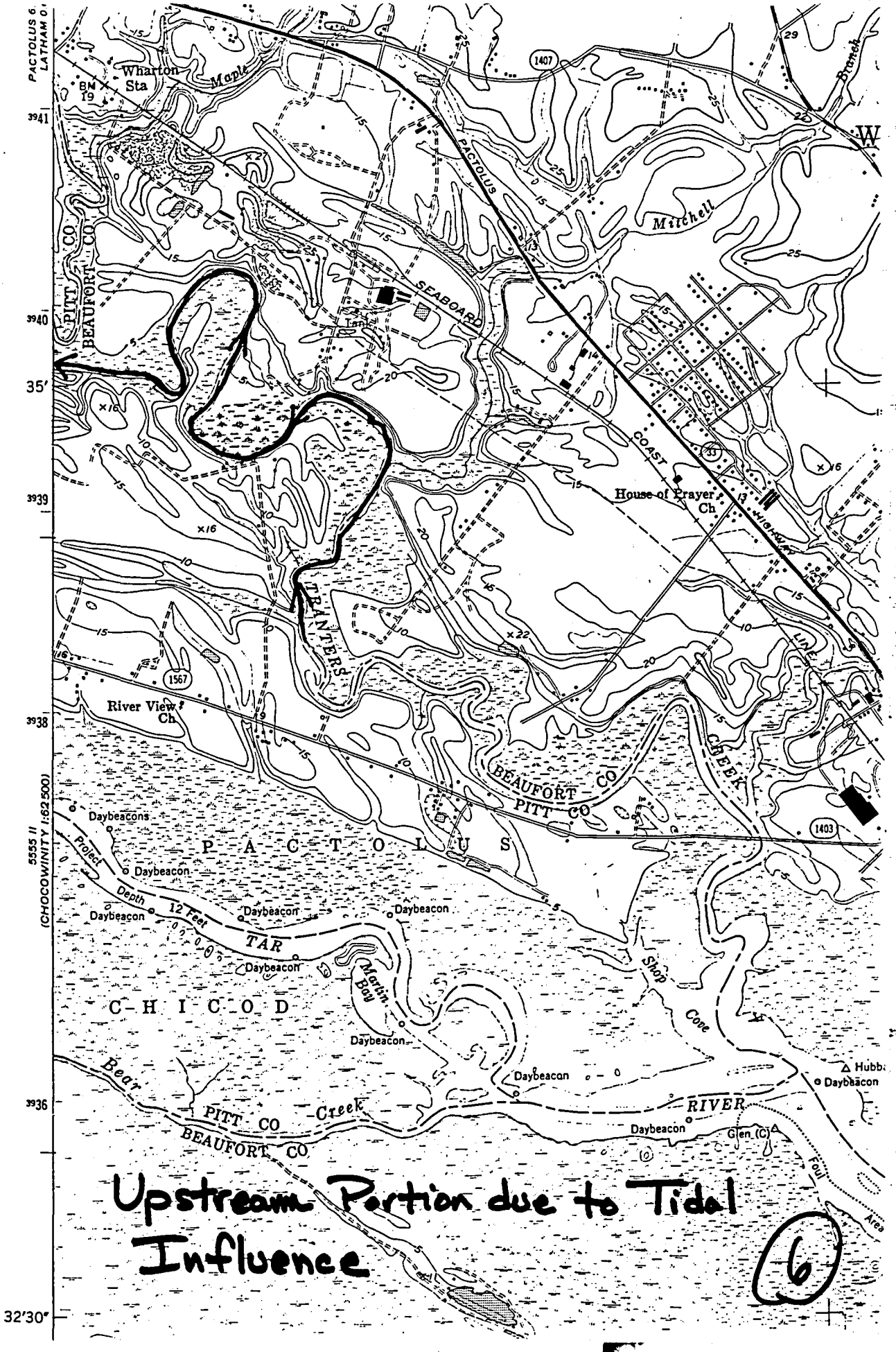


This page was reduced by 65% from a 1:24,000 inch scale USGS map

4



This page was reduced by 65% from a 1:24,000 scale USGS map.



Upstream Portion due to Tidal Influence

6

REFERENCE NO. 18

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV — BVWS Project 52012.253
Stanadyne, Inc. — BVWS File C
Tidal Influence within the Pamlico and Tar Rivers . . . . . July 21, 1994
1630h

To: Jerry Bales
Company: U.S.G.S.
Phone No.: (919)571-4000

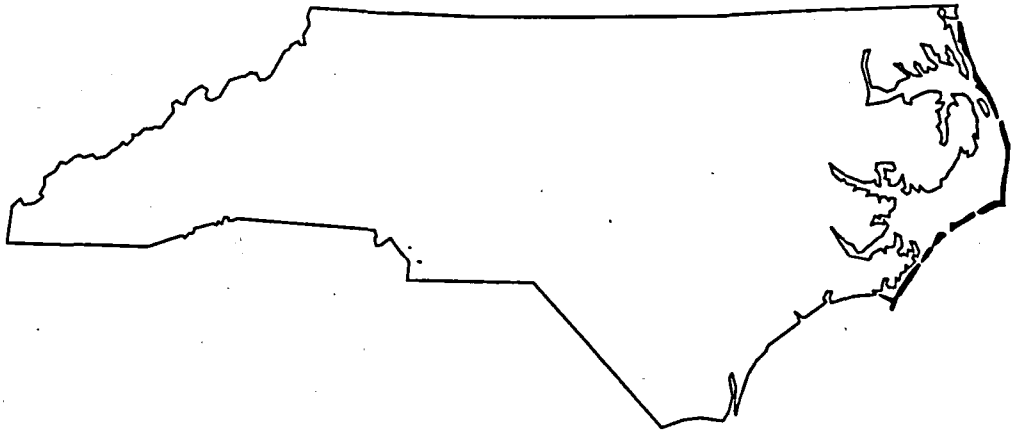
Recorded by: Corry T. Platt CTP

I called Mr. Bales to inquire about the extent of tidal influence in the Tar and Pamlico Rivers. Mr. Bales did not know the exact point of tidal influence in the Tar River, but it is tidally influenced to Greenville, North Carolina. The Pamlico River is tidally influenced as are many of the small tributaries directly feeding the Pamlico River.

REFERENCE NO. 19

Water Resources Data
North Carolina
Water Year 1992

by H.C. Gunter, J.F. Rinehardt, W.H. Eddins, and R.G. Barker



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NC-92-2
Prepared in cooperation with the North Carolina Department of Environment, Health, and Natural Resources, and with other State, municipal, and Federal agencies

The following continuous-record streamflow stations in North Carolina have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (mi^2)	Period of record
	Chowan River Basin		
02053400	Ahoskie Creek near Rich Square (d)	3.70	1964-73
02053450	Ahoskie Creek at Mintons Store (d)	24.0	1964-73
02053510	Ahoskie Creek Tributary at Poortown (d)	2.60	1963-73
	Roanoke River Basin		
02068000	Dan River near Asbury (d)	71.4	1924-26
02069000	Dan River at Pine Hall (d)	501	1924-26 1986-90
02070500	Mayo River near Price (d)	260	1929-71
02071500	Dan River at Leaksville (d)	1,150	1929-49
02074218	Dan River near Mayfield (d)	1,778	1976-84
02075160	Moon Creek near Yanceyville (d)	32.8	1961-74 1988-89
02077230	South Hyco Creek near Hesters Store (d)	29.9	1964-67
02077240	Double Creek near Roseville (d)	7.47	1964-75 1977-82
02077250	South Hyco Creek near Roseville (d)	56.5	1966-78
02077300	Hyco River at McGhees Mill (d)	191	1964-73
02077660	Mayo Creek near Woodsdale (d)	52.7	1975-77
	Pamlico River Basin		
02081800	Cedar Creek near Louisburg (d)	47.8	1956-75
02082000	Tar River near Nashville (d)	701	1928-71
02082500	Sapony Creek near Nashville (d)	64.8	1950-70
0208273070	Devils Cradle Creek at NC 39 near Kearney (d)	2.9	1984-85
02084070	Green Mill Run at Arlington Blvd at Greenville (d)	9.10	1980-85
02084164	Juniper Branch near Simpson (d)	7.5	1975-86
0208423100	Flat Swamp at SR 1157 near Robersonville (d)	21.3	1986-88
02084317	Black Swamp near Batts Crossroads (d)	1.02	1982
02084500	Herring Run near Washington (d)	9.59	1950-80
02084556	North Lake Canal above Pungo Lake near Wenona (d)	.29	1976-80
02084558	Albemarle Canal near Swindell (d)	68.0	1977-81
	Neuse River Basin		
02084903	Sevenmile Creek Trib at SR 1120 near Buckhorn (d)	1.34	1981-82
02084904	Sevenmile Creek Trib at I-85 near Miles (d)	.004	1981-82
02084905	Sevenmile Creek Trib at SR 1144 near Miles (d)	1.57	1981-82
02084908	Sevenmile Creek Trib at I-85 near Efland (d)	.29	1981-82
02085220	Little River near Orange Factory (d)	80.4	1962-87
0208650112	Flat River tributary near Willardsville (d)	1.14	1988-90
02086000	Dial Creek near Bahama (d)	4.71	1925-71 1989-91
02086849	Ellerbe Creek near Gorman (d)	21.9	1982-89
02087000	Neuse River near Northside (d)	535	1927-80
0208705200	Smith Creek at Grissom (d)	6.2	1984-85
0208721055	Perry Creek at SR 2012 near Millbrook (d)	2.43	1986-89
0208721290	Perry Creek tributary at Neuse (d)	1.07	1985-89
0208732810	Marsh Creek at SR 2030 at Millbrook (d)	1.44	1986-89
02087570	Neuse River at Smithfield (d)	1,206	1959-80
02088315	Beaverdam Creek near Grantham (d)	5.01	1978-82
02088470	Little River near Kenly (d)	191	1964-89
02088682	Big Ditch at Retha St at Goldsboro (d)	2.17	1980-84
02089216	Daileys Creek near Liddell (d)	3.80	1978-81
02089222	Bear Creek near Parkstown (d)	4.27	1978-82
02090500	Contentnea Creek near Wilson (d)	236	1930-54
02090512	Hominy Swamp at Phillips Street at Wilson (d)	7.90	1978-85
02090625	Turner Swamp near Eureka (d)	2.1	1968-87
02091700	Little Contentnea Creek near Farmville (d)	93.3	1956-87
02091960	Creeping Swamp near Calico (d)	9.80	1971-77
02091970	Creeping Swamp near Vanceboro (d)	27.0	1971-85
02092000	Swift Creek near Vanceboro (d)	182	1950-89
02092020	Palmetto Swamp near Vanceboro (d)	24.0	1971-76
0209257120	W. P. Brice Creek below SR 1101 near Riverdald (d)	11.2	1986-91
	Hewletts Creek Basin		
02093229	Hewletts Creek at SR 102 near Wilmington (d)	1.98	1977-90

Station number	Station name	Drainage area (mi^2)	Type of record	Period of record
	Pamlico River Basin			
02081153	Chapel Swamp at Skinnersville	5.70	t c	1957-62 1957-62
02081155	Albemarle Sound near Edenton	14,800	t z	1959-67 1965-67
02081166	Scuppernong River near Creswell	120	t c z	1959-67 1961-62 1959-67
02081172	Scuppernong River at Columbia	180	t z	1963-67 1964-67
0208273070	Devils Cradle Creek at NC 39 near Kearney	2.89	t z	1983-85 1984-85
02083000	Fishing Creek near Enfield	526	t	1948-49 1955-67
02084000	Tar River at Greenville	2,620	t z	1955-56 1955-56
02084124	Tar River near Pactolus	2,680	t z	1956-60 1956-60
02084160	Chicod Creek at SR 1760 near Simpson	45.0	t s z	1975-86 1975-86 1975-86
02084171	Tar River at Grimesland	2,740	t z	1955-58 1955-59 1963-67
02084317	Black Swamp near Batts Crossroads	1.02	t z	1982-83 1982-83
02084392	Tranters Creek near Washington	240	t c z	1960-67 1960-61 1960-67
02084472	Pamlico River at Washington	3,080	t c z	1962-67 1961-62 1965-67
0208450100	Pamlico River at Channel light 16	-----	t z	1989 1989
0208453300	Pamlico River at light 5	-----	t	1989
02084540	Durham Creek at Edward	26.0	t	1965-74
0208455500	Pamlico River at Pamlico Beach	-----	z	1988-89
02084556	North Lake Canal above Pungo Lake near Wenona	0.29	t s z	1976-79 1976-79 1976-79
0208455600	Goose Creek near Lowland	-----	z	1988-89
02084557	Van Swamp near Hoke	23.0	t s z	1977-80 1977-79 1977-80
02084558	Albemarle Canal near Swindell	68.0	t	1978-80
02084903	Sevenmile Creek trib. at SR 1120 near Buckhorn	1.34	t z	1981-82 1981-82
02084905	Sevenmile Creek trib. at SR 1144 near Miles	1.57	t z	1981-82 1981-82
02085070	Eno River near Durham	141	t z s z	1982 1982 1977-79 1978-80

02083500 TAR RIVER AT TARBORO, NC
(National stream-quality accounting network station)

LOCATION.--Lat 35°53'38", long 77°32'00", Edgecombe County, Hydrologic Unit 03020103, near right bank on downstream end of pier of bridge on U.S. Highway 64 in Tarboro, 6.5 mi downstream of Fishing Creek, and 49.2 mi upstream from Pamlico River ~~at Washington~~.

DRAINAGE AREA.--2,183 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1896 to December 1900, October 1931 to current year. Gage-height records at various datums collected at same site since 1905 are contained in reports of National Weather Service, NOAA, U.S. Department of Commerce.

REVISED RECORDS.--WSP 1273: 1899-1900, 1933. WSP 1503: 1932. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 10.37 ft above National Geodetic Vertical Datum of 1929. July 1896 to December 1900, nonrecording gage at Seaboard Coast Line Railroad bridge 600 ft downstream at different datum; Oct. 1 to Dec. 8, 1931, nonrecording gage at site 100 ft upstream at present datum. National Weather Service gage-height telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some diurnal fluctuation at low flow caused by mills upstream from station. Town of Tarboro diverted 4.5 ft³/s for municipal water supply. Minimum discharge for period of record also occurred Oct. 22, 1933, and Oct. 6, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 27, 1919, reached a stage of 34.0 ft, present datum, from flood-marks; discharge, 52,800 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	401	288	278	1750	2020	5180	3060	954	958	2600	882	e650
2	359	286	278	1810	1780	3550	2520	852	1520	1820	633	e550
3	364	286	281	1710	1650	2650	2170	738	1530	1290	596	e490
4	357	286	284	4960	1490	2130	1910	645	1520	1450	759	e430
5	329	283	295	7870	1320	1810	1720	667	1280	1640	780	e410
6	321	283	284	9930	1250	1590	1600	585	1070	1800	582	e390
7	314	283	285	11400	1110	1630	1500	550	1020	2550	444	e620
8	316	280	291	14100	1090	3320	1430	510	1450	2360	411	e1100
9	316	280	300	16300	1020	5240	1320	499	1500	2030	398	e2000
10	312	280	305	17600	949	6000	1250	635	1450	1720	381	e1500
11	309	287	301	15500	928	6970	1190	652	1490	1490	437	e1100
12	307	285	292	11200	886	7620	1120	726	1530	1170	411	e760
13	303	280	286	7210	850	7110	1060	692	1300	845	384	e690
14	301	280	284	4050	945	5680	1100	604	999	642	1250	e750
15	300	300	283	2520	1050	3880	1020	556	794	532	4380	e760
16	301	304	281	2070	1390	2670	1010	549	658	438	7110	e690
17	505	295	276	1890	1970	2220	1050	534	587	390	9590	579
18	670	285	278	1720	2170	1920	956	523	544	315	12500	513
19	555	276	278	1500	2200	1740	791	623	443	316	14700	485
20	567	273	278	1310	2120	1820	858	749	437	309	15000	489
21	615	276	278	1270	2010	1940	860	877	936	290	e13000	522
22	523	274	278	1210	1870	2300	1140	1120	2130	278	e10500	506
23	461	276	278	1190	1700	2380	1560	1140	2740	299	e8000	652
24	413	276	280	1400	1570	2310	1610	917	2720	421	e5900	858
25	376	276	313	1830	1450	2290	1710	677	2050	768	e4300	810
26	344	279	326	2070	1840	2470	1710	522	1690	840	e3000	710
27	313	295	459	1980	2620	3650	1990	440	2930	739	e2200	699
28	299	292	671	2000	3680	4210	1860	380	4140	793	e1800	643
29	295	288	822	2210	4780	4870	1480	511	4430	1240	e1400	631
30	291	281	1230	2220	---	4890	1150	610	3750	1380	e1000	604
31	291	---	1310	2140	---	3810	---	722	---	1280	e800	---
TOTAL	11728	8513	11963	155920	49708	109850	43705	20759	49596	34035	123528	21591
MEAN	378	284	386	5030	1714	3544	1457	670	1653	1098	3985	720
MAX	670	304	1310	17600	4780	7620	3060	1140	4430	2600	15000	2000
MIN	291	273	276	1190	850	1590	791	380	437	278	381	390
CFSM	.17	.13	.18	2.30	.79	1.62	.67	.31	.76	.50	1.83	.33
IN.	.20	.15	.20	2.66	.85	1.87	.74	.35	.85	.58	2.11	.37

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 1992, BY WATER YEAR (WY)

MEAN	1023	1241	2021	3297	4290	4336	3269	1906	1353	1344	1494	1205
MAX	6591	5049	6195	10020	12920	11050	8553	8411	4873	6291	8260	7577
(WY)	1960	1948	1949	1936	1899	1989	1987	1958	1979	1975	1940	1945
MIN	56.7	115	191	253	497	1116	819	541	243	192	206	63.8
(WY)	1934	1934	1934	1934	1934	1981	1981	1981	1986	1986	1983	1968

SUMMARY STATISTICS	FOR 1991 CALENDAR YEAR		FOR 1992 WATER YEAR		WATER YEARS 1896 - 1992	
ANNUAL TOTAL	455927		640896			
ANNUAL MEAN	1249		1751		2222	
HIGHEST ANNUAL MEAN					4057	1960
LOWEST ANNUAL MEAN					594	1981
HIGHEST DAILY MEAN	8000	Jan 17	17600	Jan 10	36100	Aug 20 1940
LOWEST DAILY MEAN	273	Nov 20	273	Nov 20	36	Oct 17 1933
ANNUAL SEVEN-DAY MINIMUM	275	Nov 19	275	Nov 19	40	Sep 26 1932
INSTANTANEOUS PEAK FLOW			17800	Jan 10	37200	Aug 20 1940
INSTANTANEOUS PEAK STAGE			24.52	Jan 10	31.77	Aug 20 1940
INSTANTANEOUS LOW FLOW			261	Nov 19	36*	Oct 17 1933
ANNUAL RUNOFF (CFSM)	.57		.80		1.02	
ANNUAL RUNOFF (INCHES)	7.77		10.92		13.83	
10 PERCENT EXCEEDS	3150		3830		5580	
50 PERCENT EXCEEDS	560		884		1220	
90 PERCENT EXCEEDS	286		285		291	

* See REMARKS.

REFERENCE NO. 20

BLACK & VEATCH ENGINEERS-ARCHITECTS

Owner: Staradyne Inc. Diesel Systems Group.
Plant: Washington NC Unit:
Project No. 52012.253 File No. NCD091567065
Title: Calculation of Average Annual Flows along Surface Water Pathway.

Computed By: C. Platt
Date: 21 July 1994
Checked By:
Date: 19
Page 1 of 1

To determine the average annual flow of waterbodies along the Staradyne surface water pathway, the drainage areas of the waterbodies was compared in ratio to the average annual flow and drainage area of the Tar River in Tarboro, NC, which is within the same drainage basin.

Tar River in Tarboro: $\frac{\text{average annual flow}}{\text{drainage area}} = \frac{2222 \text{ cfs}}{2183 \text{ mi}^2}$

① Calculation of Pamlico River Average annual flow:

$$\frac{2222 \text{ cfs}}{2183 \text{ mi}^2} = \frac{x}{3{,}080 \text{ mi}^2}$$

$$3{,}135 \text{ cfs} = x$$

② Calculation of Tranter Creek average annual flow:

$$\frac{2222 \text{ cfs}}{2183 \text{ mi}^2} = \frac{x}{240 \text{ mi}^2}$$

$$244 \text{ cfs} = x$$

③ Calculation of Herring Run average annual flow:*

$$\frac{2222 \text{ cfs}}{2183 \text{ mi}^2} = \frac{x}{9.59 \text{ mi}^2}$$

$$9.76 \text{ cfs} = x$$

* The average annual flow of Cherry Run was estimated to be the same as Herring Run because both Herring Run & Cherry Run are represented similarly on the Washington, NC USGS quadrangle.

DO NOT WRITE IN THIS SPACE

P-GN-172A

REVISED, SUPERSEDED, AND VOID CALCULATIONS MUST BE CLEARLY IDENTIFIED, INITIALED,

REFERENCE NO. 21

PB87-101580

United States
Department of
Agriculture

Soil
Conservation
Service

Engineering
Division

Technical
Release 55

June 1986

Urban Hydrology for Small Watersheds

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA. 22161

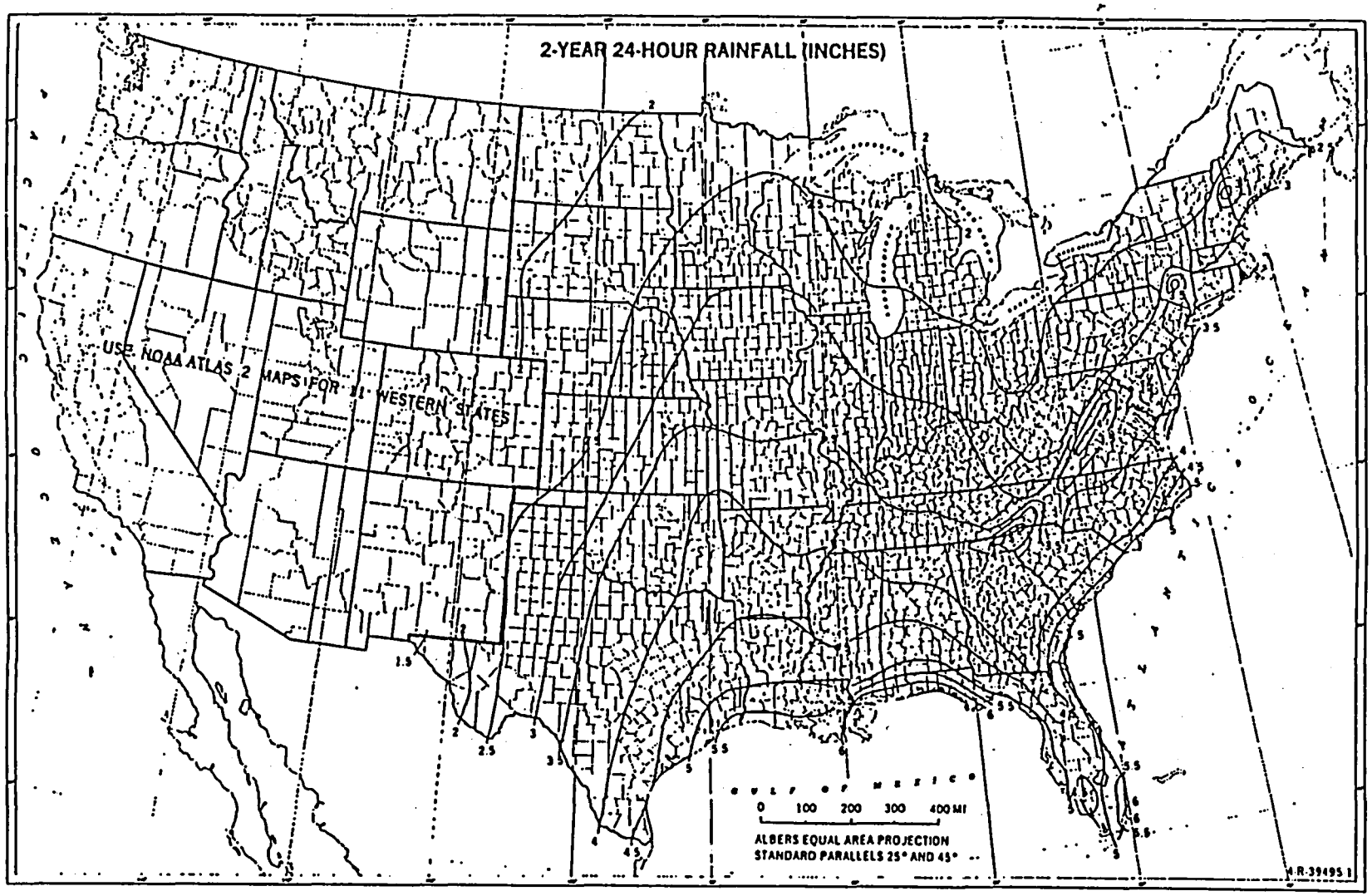


Figure B-3.—Two-year, 24-hour rainfall.

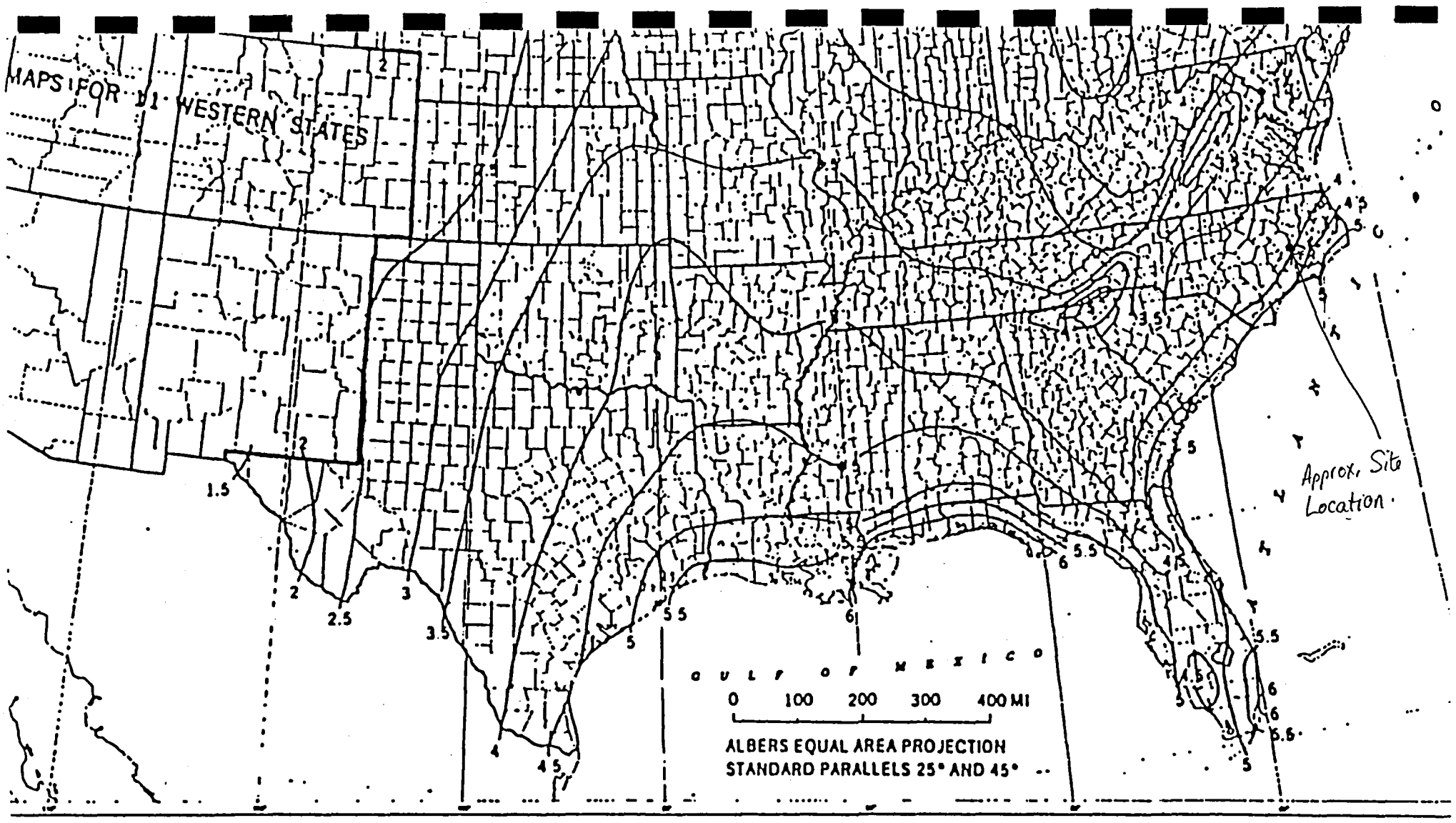


Figure B-3.—Two-year, 24-hour rainfall.

REFERENCE NO. 22

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV
Stanadyne, Inc.
Fisheries

B&V Project 52012.253
B&V File C
July 22, 1994
1530h

To: Joan
Company: NC Dept. of Fish and Wildlife
Phone No.: (919)733-3633

Recorded by: Corry T. Platt CTP

I called to determine if the Tar River, Pamlico River, Pamlico Bay and adjoining bays, and the small tributaries feeding these major waterways in the Washington, NC area are used for fishing. Joan said that these waterbodies are used for fishing and that most of the small streams feeding the Tar River, Pamlico River, Pamlico Bay and adjoining bays are stocked by the state. Joan was not sure if the Pamlico Bay was used for commercial fishing but said that it is a part of the intercoastal waterway and has the potential for commercial fishing.

REFERENCE NO. 23

ENDANGERED AND THREATENED SPECIES

U.S. FISH AND WILDLIFE SERVICE

REGION 4 - ATLANTA

PREFACE

The materials in this notebook are provided as an aid to anyone having a continuing need for current information on Federally listed endangered and threatened species found within Region 4 of the U.S. Fish and Wildlife Service. This area includes the Carolinas, Georgia, Florida, Alabama, Tennessee, Kentucky, Mississippi, Arkansas, Louisiana, Puerto Rico, and the Virgin Islands.

Recipients of the notebook are placed on a permanent mailing list and will automatically receive updated information whenever listing or other changes occur. Questions or comments pertaining to the notebook should be directed to the Endangered Species Office, U.S. Fish and Wildlife Service, Richard B. Russell Federal Building, 75 Spring St., S.W., Atlanta, Georgia 30303; telephone 404/221-3583 or FTS 242-3583. Other questions pertaining to endangered species matters should be addressed to one of the Service field stations listed at the end of this Preface.

The notebook is divided into two primary sections. Materials in the first section provide quick reference as to what species are listed, proposed, or under review, the states where they occur, the location of critical habitat areas, and other related information. The second part of the notebook contains species accounts which briefly discuss such things as the status, range, life history, and management needs of listed species. Please note that the range maps for these species generally reflect current distribution, but in many cases they reflect distribution rather broadly and should only be interpreted in relation to other information included in the species account.

The Endangered Species Act - General

Passage of the Endangered Species Act of 1973 gave the United States one of the most far-reaching laws ever enacted by any country to prevent the extinction of imperiled animals and plants. Under the law, the Secretary of the Interior (acting through the U.S. Fish and Wildlife Service) has broad powers to protect and conserve all forms of wildlife and plants he finds in serious jeopardy. The Secretary of Commerce, acting through the National Marine Fisheries Service, has similar authority for protecting and conserving most marine life.

Congress addressed the question of why we should save endangered species in the preamble to the Endangered Species Act, holding that endangered and threatened species of fish, wildlife and plants "are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." In making this statement, Congress was summarizing a number of convincing arguments advanced by thoughtful scientists, conservationists, and others who are greatly concerned by the disappearance of wildlife.

Protecting endangered species and restoring them to the point where their existence is no longer jeopardized is the primary objective of the U.S. Fish and Wildlife Service's Endangered Species Program.

The Listing Process

The Fish and Wildlife Service follows a formal "rulemaking" procedure in determining which species should be placed on the U.S. List of Endangered and Threatened Wildlife and Plants. The Act defines an "endangered" species as one that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is defined as one that is likely to become endangered within the foreseeable future.

A "rulemaking" is the process used by Federal agencies (and many states) to propose and later adopt regulations which have the effect of law, and apply to all U.S. residents. The proposed rule is published in the Federal Register, a daily Government publication, to provide for public notification and a period for comments. The proposal is then reevaluated, and if adopted it is published again as a final rule. Endangered or threatened species are placed on the list, reclassified, or deleted through this process.

Protection Under the Act

Section 9 of the Act prohibits the illegal possession, import, export, or interstate or foreign sale of listed species (including their parts and products). It is also illegal to kill, harrass, harm, or remove listed species of animals from the wild. Taking of plants is prohibited only on Federal lands. Under Section 7 of the Act, Federal agencies are required to insure that actions they authorize (by permit), fund, or carry out do not jeopardize the existence of listed species or adversely affect critical habitat.

Penalties for violations can range from a warning and seizure of illegally held wildlife specimens and products to a maximum of $20,000 and/or a year in jail for criminal offenses.

Critical Habitat

The Endangered Species Act, as amended, calls for the conservation of what is termed "critical habitat"--the areas of land, water, and air space an endangered or threatened species needs for survival. These areas include such things as food and water, breeding sites, cover or shelter, and sufficient habitat to provide for normal population growth and behavior. Critical habitat is usually included with the proposal to list a species. However, if it is determined separately at a later date, the rulemanking procedure is the same as for classifying a species as endangered or threatened.

One of the primary threats to most species is the destruction or modification of essential habitat areas by uncontrolled land and water development. Accordingly, the law requires all Federal agencies to insure that actions they authorize (by permit), fund, or carry out do not jeopardize the existence of listed species or adversely affect critical habitat.

It should be emphasized, however, that not all Federal actions will necessarily be detrimental to critical habitat. There may be many kinds of actions which can be carried out within a critical habitat area without reducing the species' numbers or distribution, or otherwise posing jeopardy to it.

In summary, the designation of critical habitat does not create a nature preserve or refuge. It does not affect private, local, or state projects unless Federal funds or permits are involved. It does provide a means by which listed species can be protected from adverse impacts resulting from Federal action.

Consultation

Section 7 of the Act requires all Federal agencies to review their actions, and if they determine that their actions may affect a listed species or its habitat, they must enter into consultation with the Fish and Wildlife Service. During the course of such consultation the involved agency and the Fish and Wildlife Service will try to determine a course of action which will allow for completion of the agency's project and at the same time not jeopardize the species. Most consultations accomplish this goal.

In the case of a conflict, the Act provides a means whereby under certain conditions the affected Federal agency may be exempted from the requirements of Section 7. Exemption applications must be submitted to the Secretary of the Interior for consideration. If the Secretary decides the application meets exemption criteria, it is then passed on to a seven-member cabinet-level Endangered Species Committee for a final decision.

Conservation and Recovery

A main aim of the Service's Endangered Species Program is to restore populations of listed species to a point where they are no longer in danger of extinction and are again self-sustaining members of their ecosystem. Recovery plans for a number of these species are already being carried out. The plans may recommend the acquisition of land, new research, captive breeding, or may call for special wildlife and habitat management techniques.

In addition to overseeing the development and implementation of recovery plans, the Fish and Wildlife Service utilizes the authorities and funding provided under the Act to provide for technical assistance, management, law enforcement, land acquisition, research, status surveys, and financial assistance to state agencies which have entered into a cooperative agreement with the Service.

Permits

The Service's Wildlife Permit Office can issue permits for certain activities involving endangered or threatened species. Permits for

endangered species are issued only for scientific or breeding purposes. In addition to these purposes, permits for threatened species may be issued for educational activities, zoo exhibitions, and other special purposes.

U.S. Fish and Wildlife Service Endangered Species Field Offices - Region 4

U.S. Fish and Wildlife Service (serves KY, NC, SC, TN)
100 Otis Street, Room 224
Asheville, NC 28801
Phone: 704/259-0321
FTS 672-0321

U.S. Fish and Wildlife Service (serves AL, AR, LA, MS)
Jackson Mall Office Center
300 Woodrow Wilson Avenue, Suite 316
Jackson, MS 39213
Phone: 601/960-4900
FTS 490-4900

U.S. Fish and Wildlife Service (serves GA and FL)
2747 Art Museum Drive
Jacksonville, Florida 32207
Phone: 904/791-2580
FTS 946-2580

U.S. Fish and Wildlife Service (serves PR and VI)
Post Office Box 491
Boqueron, PR 00622
Phone: 809/851-7297

CRITICAL HABITAT INDEX

Alabama	- *Etheostoma boschungi*, "slackwater darter"
	Peromyscus polionotus ammobates, "Alabama beach mouse"
	Peromyscus polionotus trissyllepsis, "Perdido Key beach mouse"
	Speoplatyrhinus poulsoni, "Alabama cavefish"
Arkansas	- *Percina pantherina*, "leopard darter"
Florida	- *Ammospiza maritima mirabilis*, "Cape Sable sparrow"
	Ammospiza maritima nigrescens, "dusky seaside sparrow"
	Crocodylus acutus, "American crocodile"
	Peromyscus polionotus allophrys, "Choctawhatchee beach mouse"
	Peromyscus polionotus trissyllepsis, "Perdido Key beach mouse"
	Rostrhamus sociabilis plumbeus, "Everglade kite"
	Trichechus manatus, "Florida manatee"
Georgia	- *Percina antesella*, "amber darter"
	Percina jenkinsi, "Conasauga logperch"
Kentucky	- *Myotis sodalis*, "Indiana bat"
	Palaemonias ganteri, "Kentucky cave shrimp"
Louisiana	- No designations
Mississippi	- *Grus canadensis pulla*, "Mississippi sandhill crane"
North Carolina	- *Hudsonia montana*, "mountain golden heather"
	Hybopsis monacha, "spotfin chub"
	Menidia extensa, "Waccamaw silverside"
	Notropis mekistocholas, "Cape Fear shiner"

Puerto Rico - Agelaius xanthomus, "yellow-shouldered blackbird"

Anolis roosevelti, "giant anole"

Cyclura stejnegeri, "Mona ground iguana"

Eleutherodactylus jasperi, "golden coqui"

Epicrates monensis monensis, "Mona boa"

Eretmochelys imbricata, "hawksbill sea turtle"

Sphaerodactylus micropithecus, "Monito gecko"

South Carolina - No designations

Tennessee - Etheostoma boschungi, "slackwater darter"

Hybopsis cahni, "slender chub"

Hybopsis monacha, "spotfin chub"

Myotis sodalis, "Indiana bat"

Noturus baileyi, "smoky madtom"

Noturus flavipinnis, "yellowfin madtom"

Percina antesella, "amber darter"

Percina jenkinsi, "Conasauga logperch"

Virgin Islands - Ameiva polops, "St. Croix ground lizard"

Dermochelys coriacea, "leatherback sea turtle"

12/16/87

Endangered and Threatened Species in Region 4*

(E=Endangered; T=Threatened)

Mammals:	Distribution:
Bat, gray (E)	AL,AR,FL,GA,KY,NC,TN
Bat, Indiana (E)	AL,AR,FL,GA,KY,NC,TN
Bat, Ozark big-eared (E)	AR
Bat, Virginia big-eared (E)	KY,NC
Cougar, Eastern (E)	KY,NC,SC,TN
Deer, Key (E)	FL
Manatee, West Indian (E)	AL,FL,GA,NC,PR,SC
Mouse, Alabama beach (E)	AL
Mouse, Choctawhatchee beach (E)	FL
Mouse, Key Largo cotton (E)	FL
Mouse, Perdido Key beach (E)	AL, FL
Panther, Florida (E)	AL,AR,FL,GA,LA,MS,SC,TN
Shrew, Dismal Swamp southeastern (T)	NC
Squirrel, Carolina northern flying (E)	NC,TN
Whale, finback (E)	Oceanic
Whale, humpback (E)	Oceanic
Whale, right (E)	Oceanic
Whale, sei (E)	Oceanic
Whale, sperm (E)	Oceanic
Wolf, red (E)	LA
Woodrat, Key Largo (E)	FL

Birds:	
Blackbird, yellow-shouldered (E)	PR
Caracara, Audubon's Crested (T)	FL
Crane, Mississippi Sandhill (E)	MS
Curlew, Eskimo (E)	LA (historic, near extinction)
Eagle, bald Southeastern (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN
Falcon, American peregrine Eastern (E)	AL,GA,KY,NC,SC,TN
Falcon, Arctic peregrine (T)	AL,AR,FL,GA,KY,LA,MS,NC,PR, SC,TN
Jay, Florida scrub (T)	FL
Kite, Everglade (E)	FL
Parrot, Puerto Rican (E)	PR
Pelican, brown (E)	LA,MS,PR,VI

*Includes the Carolinas, Georgia, Florida, Alabama, Tennessee, Kentucky, Mississippi, Arkansas, Louisiana, Puerto Rico, and the Virgin Islands.

Birds (cont'd):	Distribution
Pigeon, Puerto Rican plain (E)	PR
Plover, piping (T)	AL,FL,GA,LA,MS,NC,PR,SC
Sparrow, Cape Sable (E)	FL
Sparrow, dusky seaside (E)	FL (near extinction)
Sparrow, Florida grasshopper (E)	FL
Stork, wood (E)	FL,GA,SC
Tern, least; interior population (E)	AR,KY,LA,MS,TN
Tern, roseate (T)	FL,PR,VI
Warbler (wood), Bachman's (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN (historic, possibly extinct)
Warbler (wood), Kirtland's (E)	FL,GA,KY,NC,SC,TN
Whip-poor-will, Puerto Rican (E)	PR
Woodpecker, ivory-billed (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN (historic, probably extinct)
Woodpecker, red-cockaded (E)	AL,AR,FL,GA,KY,LA,MS,NC,SC,TN

Reptiles and Amphibians:	
Alligator, American (T,S/A) *	AL,AR,FL,GA,LA,MS,NC,SC
Anole, giant (E)	PR
Boa, Mona (T)	PR
Boa, Puerto Rican (E)	PR
Boa, Virgin Islands tree (E)	VI
Coqui, golden (T)	PR
Crocodile, American (E)	FL
Florida bonamia (T)	FL
Heller's blazing star (T)	NC
Higuero de Sierra (E)	PR
Gecko, Monito (E)	PR
Iguana, Mona ground (T)	PR
Lizard, St. Croix ground (E)	VI
Salamander, Red Hills (T)	AL
Shiner, Cape Fear (E)	NC
Skink, blue-tailed mole (T)	FL
Skink, sand (T)	FL
Snake, Atlantic salt marsh (T)	FL
Snake, eastern indigo (T)	AL,FL,GA,MS,SC
Toad, Puerto Rican crested (T)	PR
Tortoise, gopher (T)	AL,LA,MS

* Alligators are biologically neither endangered nor threatened and may be hunted as permitted under State law. For law enforcement purposes they are classified as "Threatened due to Similarity of Appearance."

Reptiles and Amphibians (cont'd):	Distribution
Turtle, Alabama red-bellied (E)	AL
Turtle, flattened musk (T)	AL
Turtle, green (T) (E in Florida)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, hawksbill (E)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, Kemp's (Atlantic) ridley (E)	AL,FL,GA,LA,MS,NC,SC
Turtle, leatherback (E)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, loggerhead (T)	AL,FL,GA,LA,MS,NC,PR,SC,VI
Turtle, ringed sawback (T)	LA,MS
Fishes:	
Cavefish, Alabama (T)	AL
Cavefish, Ozark (T)	AR
Chub, slender (T)	TN
Chub, spotfin (T)	NC,TN
Dace, blackside (T)	KY,TN
Darter, amber (E)	TN,GA
Darter, Bayou (T)	MS
Darter, leopard (T)	AR
Darter, Okaloosa (E)	FL
Darter, slackwater (T)	AL,TN
Darter, snail (T)	GA,TN,AL
Darter, watercress (E)	AL
Logperch, Conasauga (E)	TN,GA
Madtom, smoky (E)	TN
Madtom, yellowfin (T)	TN
Shiner, Cape Fear (E)	NC
Silverside, Waccamaw (T)	NC
Sturgeon, shortnose (E)	FL,GA,NC,SC
Mollusks:	
Mussel, Alabama lamp pearly (E)	AL,TN
Mussel, Appalachian monkeyface (E)	TN
Mussel, birdwing pearly (E)	TN
Mussel, Cumberland bean pearly (E)	KY,TN
Mussel, Cumberland monkeyface pearly (E)	TN
Mussel, Curtus' (E)	MS
Mussel, dromedary pearly (E)	TN
Mussel, fat pocketbook pearly (E)	AR
Mussel, fine-rayed pigtoe pearly (E)	AL,TN
Mussel, green-blossom pearly (E)	TN
Mussel, Judge Tait's (E)	AL,MS
Mussel, Marshall's (E)	AL

Mollusks (Cont'd.):	Distribution
Mussel, orange-footed pearly (E)	AL,TN,KY
Mussel, pale lilliput pearly (E)	AL
Mussel, penitent (E)	AL,MS
Mussel, pink mucket pearly (E)	AL,KY,TN,AR
Mussel, rough pigtoe pearly (E)	KY,TN,AL
Mussel, shiny pigtoe pearly (E)	AL,TN
Mussel, stirrup shell (E)	AL
Mussel, tan riffle shell (E)	KY,TN (historic occurrence)
Mussel, Tar River spiny (E)	NC
Mussel, tuberculed-blossom pearly (E)	KY,TN (historic, possibly extinct)
Mussel, turgid-blossom pearly (E)	TN,AL,AR (historic, possibly extinct)
Mussel, white warty-back pearly (E)	TN
Mussel, yellow-blossom pearly (E)	AL,KY,TN (historic, possibly extinct)
Snail, noonday (T)	NC
Snail, painted snake coiled forest (T)	TN
Snail, Stock Island tree (T)	FL
Arthropods	
Butterfly, Schaus swallowtail (E)	FL
Crayfish (cave species; no common name) (E)	AR
Crayfish, Nashville (E)	TN
Shrimp, Kentucky cave (E)	KY
Plants:	
Alabama leather flower (E)	AL
Beautiful goetzea (E)	PR
Beautiful pawpaw (E)	FL
Blue Ridge goldenrod (T)	NC,TN
Bunched arrowhead (E)	NC,SC
Canby's dropwort (E)	NC,SC,GA
Carter's mustard (E)	FL
Chapman's rhododendron (E)	FL
Cook's holly (E)	PR
Crenulate lead-plant (E)	FL
Deltoid spurge (E)	FL
Elfin tree fern (E)	PR
Florida bonamia (T)	FL
Florida golden aster (E)	FL
Florida torreya (E)	FL,GA

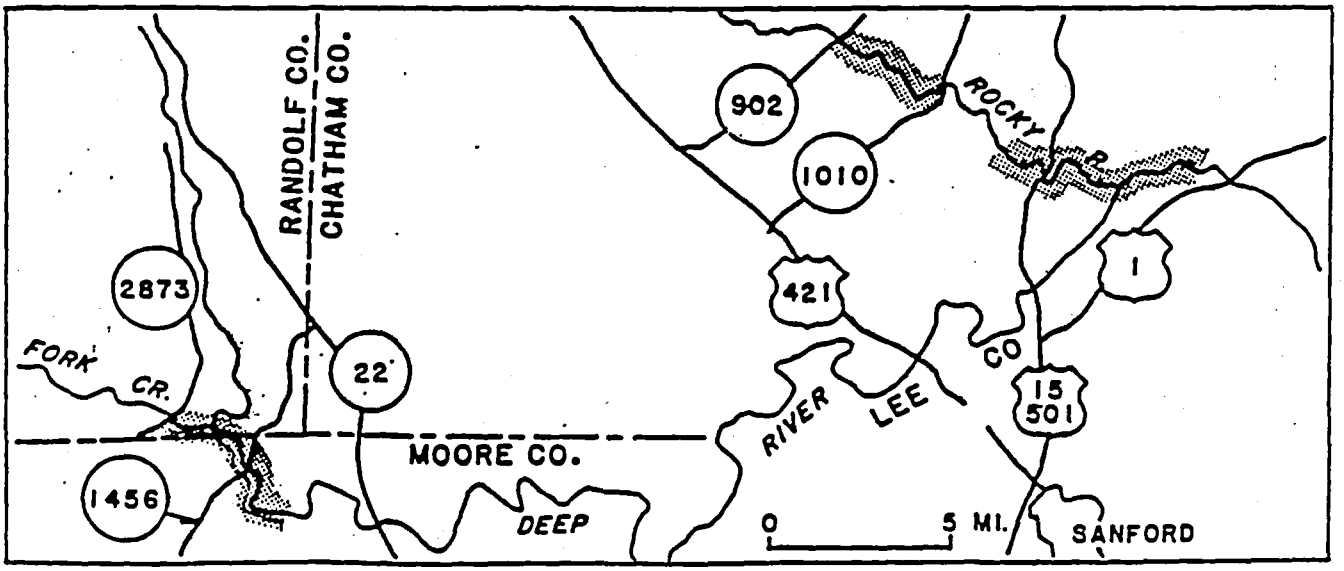
Plants (cont'd):	Distribution
Four-petal pawpaw (E)	FL
Fragrant prickly-apple (E)	FL
Garber's spurge (T)	FL
Geocarpon minimum (T)	AR
Green pitcher plant (E)	AL,GA,NC
Hairy rattleweed (E)	GA
Harper's beauty (E)	FL
Heller's blazing star (T)	NC
Highlands scrub hypericum (E)	FL
Higuero de Sierra (E)	PR
Key tree-cactus (E)	FL
Lakela's mint (E)	FL
Large-flowered skullcap (E)	GA,TN
Longspurred mint (E)	FL
Miccosukee gooseberry (T)	FL,SC
Mountain golden heather (T)	NC
Palo de Ramon (E)	PR
Papery whitlow-wort (T)	FL
Persistent trillium (E)	GA,SC
Pondberry (E)	AR,GA,MS,NC,SC
Prickly-ash (E)	PR, VI
Pygmy fringe tree (E)	FL
Rough-leaved loosestrife (E)	NC
Rugel's pawpaw (E)	FL
Ruth's golden aster (E)	TN
Scrub lupine (E)	FL
Scrub mint (E)	FL
Scrub plum (E)	FL
Short's goldenrod (E)	KY
Small whorled pogonia (E)	GA,NC,SC,TN
Small's milkpea (E)	FL
Snakeroot (E)	FL
Tennessee coneflower (E)	TN
Tiny polygala (E)	FL
Vahl's boxwood (E)	PR
Wheeler's peperomia (E)	PR
Wide-leaf warea (E)	FL
Wireweed (E)	FL

NORTH CAROLINA - Critical Habitat

Notropis mekistocholas, "Cape Fear shiner"

(1) Chatham County. Approximately 4.1 miles of the Rocky River from North Carolina State Highway 902 Bridge downstream to Chatham County Road 1010 Bridge;
(2) Chatham and Lee Counties. Approximately 0.5 river mile of Bear Creek, from Chatham County Road 2156 Bridge downstream to the Rocky River, then downstream in the Rocky River (approximately 4.2 river miles) to the Deep River, then downstream in the Deep River (approximately 2.6 river miles) to a point 0.3 river mile below the Moncure, North Carolina, U.S. Geological Survey Gaging Station; and
(3) Randolph and Moore Counties. Approximately 1.5 miles of Fork Creek, from a point 0.1 river mile upstream of Randolph County Road 2873 Bridge downstream to the Deep River then downstream approximately 4.1 river miles of the Deep River in Randolph and Moore Counties, North Carolina, to a point 2.5 river miles below Moore County Road 1456 Bridge.

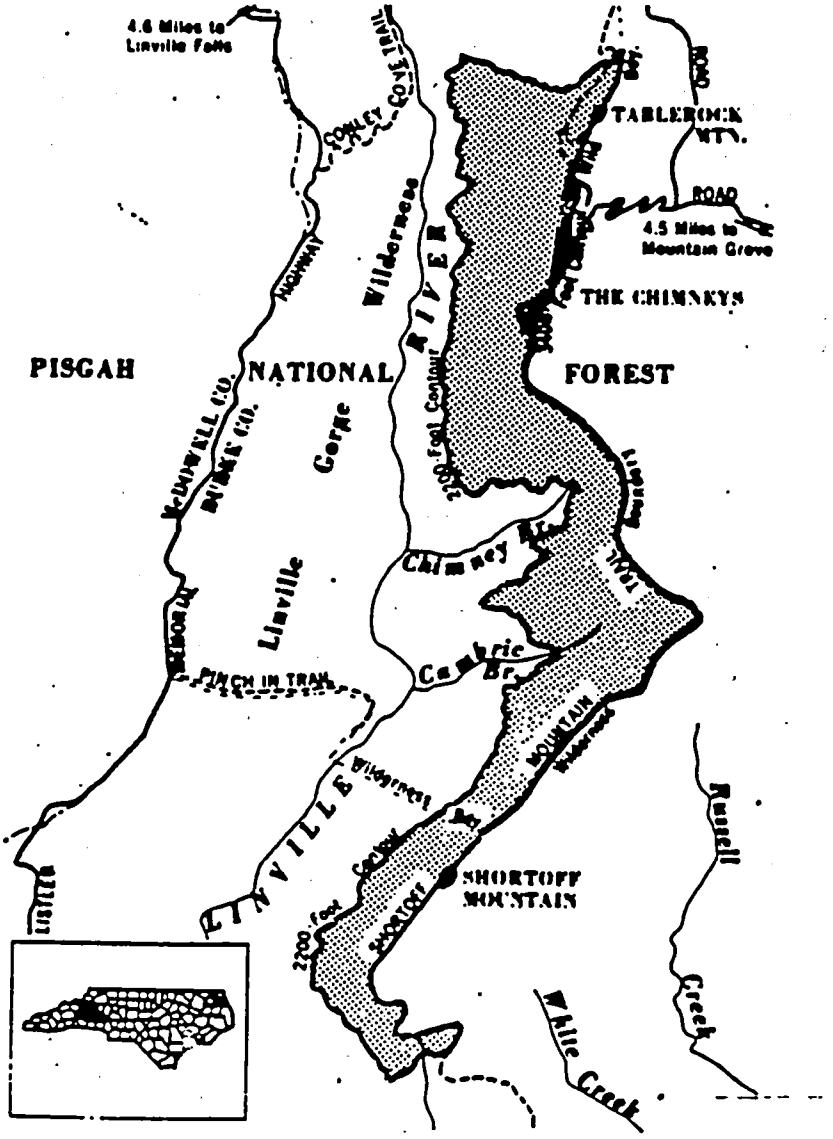
Constituent elements include clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs and slackwater areas with large rock outcrops and side channels and pools with water of good quality with relatively low silt loads.



NORTH CAROLINA - Critical Habitat

Hudsonia montana, "mountain golden heather"

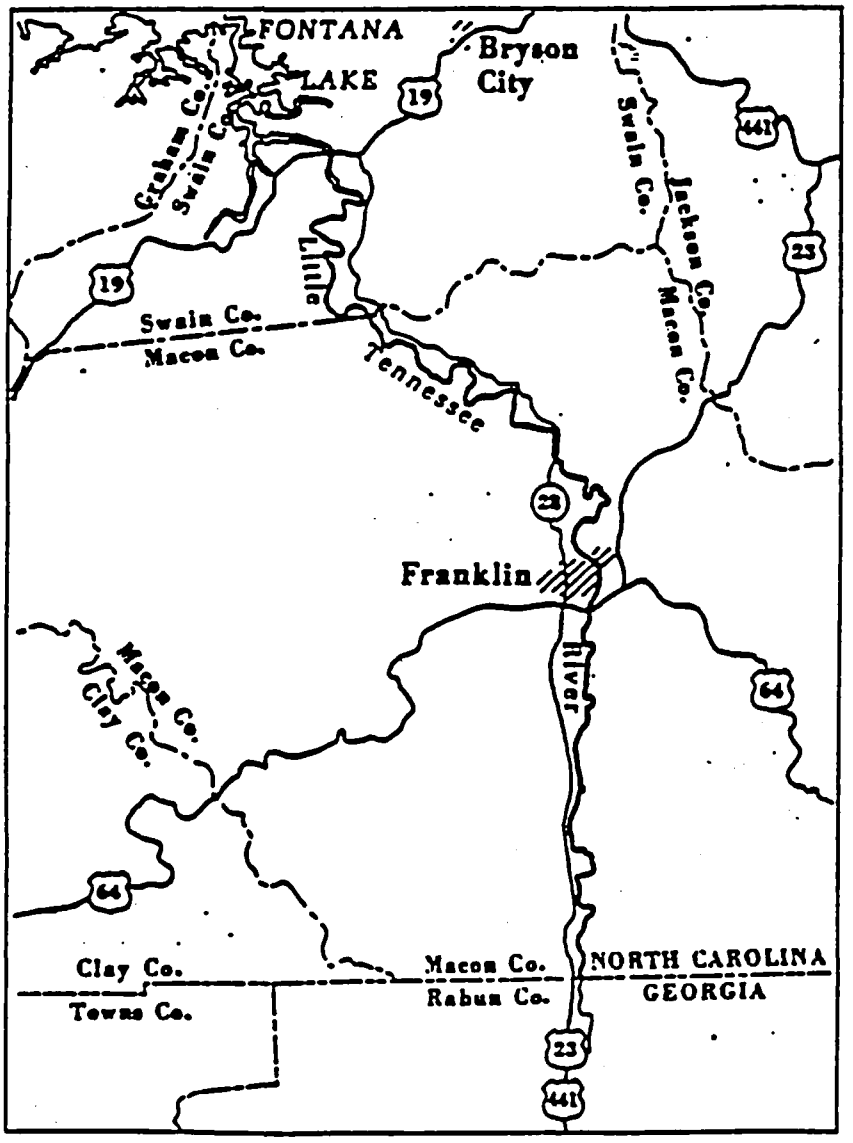
Burke County. The area bounded by the following: on the west by the 2200' contour; on the east by the Linville Gorge Wilderness Boundary north from the intersection of the 2200' contour and the Shortoff Mountain Trail to where it intersects the 3400' contour at "The Chimneys"--then follow the 3400' contour 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.



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.

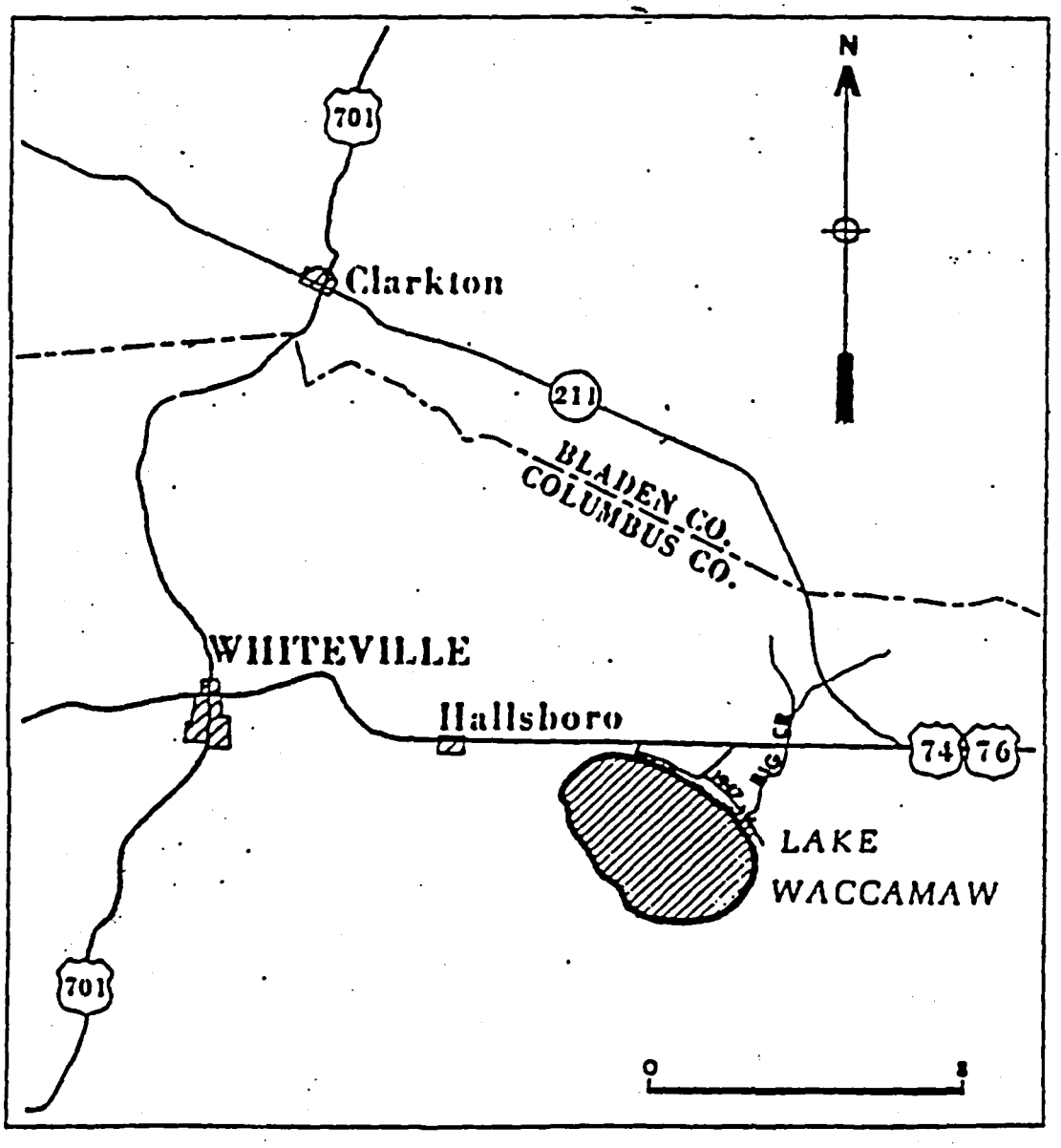


NORTH CAROLINA - Critical Habitat

Menidia extensa, "Waccamaw silverside"

Columbus County. Lake Waccamaw in its entirety to mean high water level, and Big Creek from its mouth at Lake Waccamaw upstream approximately 0.6 kilometer (0.4 mile) to where the creek is crossed by County Road 1947.

Constituent elements include high quality clear open water, with a neutral pH and clean sand substrate.



REFERENCE NO. 24

BLACK & VEATCH Waste Science, Inc.
Philadelphia Office

TELEPHONE MEMORANDUM

U.S. EPA - Region IV
Stanadyne, Inc.
Workers

B&V Project 52012.253
B&V File C
July 22, 1994
1115h

To: Receptionist
Company: Stanadyne, Inc.
Phone No.: (919) 975-2553

Recorded by: Corry T. Platt CTP

I called the Stanadyne, Inc. facility in Washington, North Carolina to obtain the number of workers at the site. The receptionist said the site is active and there are approximately 350 workers.

REFERENCE NO. 25

GEMS Database Results for Stanadyne, Inc. downloaded by Corry T. Platt, BVWS, July 20, 1994

CENSUS DATA

stanadyne
LATITUDE 35:33:53 LONGITUDE 77: 4:55 1990 HOUSING

MI	0-1/4	1/4-1/2	1/2-1	1-2	2-3	3-4	SECTOR
KM	0.00-.400	.400-.800	.800-1.60	1.60-3.20	3.20-4.80	4.80-6.40	TOTALS
S 1	0	0	0	795	0	0	795
S 2	0	0	0	0	0	0	0
S 3	0	0	0	160	228	0	388
S 4	0	0	0	1511	1938	238	3687
S 5	0	0	0	0	0	289	289
S 6	0	0	0	0	0	0	0
S 7	0	0	0	0	0	0	0
S 8	0	0	0	0	0	0	0
RING TOTALS	0	0	0	2466	2166	527	5159

Press RETURN key to continue ...
ANBILG ONBINB0:09600 7E1 [Home]=Menu FDX 8 LF X