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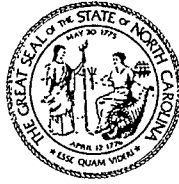
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State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
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James G. Martin, Governor
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June 2, 1992

Ms. Kathy Amoroso
EPA NC CERCLA Project Officer
EPA Region IV Waste Division
345 Courtland Street, NE
Atlanta, Georgia 30365

RE: Phase II, Screening Site Investigation
CP&L, Sutton Steam Electric Plant
Wilmington, New Hanover County, North Carolina
NCD 000 830 646

Dear Ms. Amoroso:

Enclosed herewith is the Phase II, Screening Site Investigation (SSI) Report by Greenhorne & O'Mara, Inc. for CP&L, Sutton Steam Electric Plant (NCD 000 830 646).

Based on the information gathered and presented in this report, and on the results of the data validation, we recommend that this site be assigned a Medium priority for an Expanded Site Investigation.

The following discussion of the analytical results from the Phase II, SSI sampling event for the subject site, reflects data validation.

A total of nine (9) environmental samples were collected to characterize the site. To characterize whether a release of contaminants has occurred, a limited subsurface and surficial investigation was conducted to obtain ground water, surface water, soil and sediment samples for laboratory analysis. The sampling locations are shown on Appendix A, Figure 2. These samples consisted of three (3) ground water sample, one (1) on-site drinking water well sample, three (3) composite soil samples and two (2) sediment samples.

Soils

A background surface soil sample (CLSS01) was collected at the site. No Purgable Organics, Base Neutral Acid Extractable (BNAs) or Pesticides/PCBs were reported in this sample. See Table 1 for the inorganic results.

A composite soil sample (CLSS02) was collected from three locations in the vicinity of the inactive fly-ash pond. No Purgable Organics, BNAs or Pesticides/PCBs were reported in this sample. See Table 1 for the inorganic results.

A composite soil sample (CLSS03) was collected from three locations in the vicinity of the old fly-ash pond. No Purgable Organics or BNAs were reported in this sample. 4,4'-DDD (3.7 ppb) was the only Pesticide/PCB reported in this sample. This concentration is considered significant. See Table 1 for the inorganic results.

An observed release to soils has been documented from the data gathered relative to the soil samples. It appears that there are releases of 4,4'-DDD, aluminum, arsenic, barium, beryllium, calcium, chromium, copper, iron, lead, magnesium, manganese, nickel, selenium, thallium, vanadium and zinc. The values reported for all inorganics, except selenium, were within naturally occurring concentrations for inorganics in soils in the Eastern United States. Arsenic, chromium and lead are known to be attributable to site activities.

Sediments

An upstream sediment sample (CLSED01) was collected at the site. No Purgable Organics, BNAs or Pesticides/PCBs were reported in this sample. Barium (45/0.47 ppm) and lead (19/U ppm) were the only inorganics reported in this sample. The first value given in parenthesis is for totals and the second is for TCLP. Barium and lead were reported within naturally occurring concentrations for barium and lead in soils in the Eastern United States.

A downstream sediment sample (CLSED02) was collected downstream of the site on the Cape Fear River. No Purgable Organics, BNAs or Pesticides/PCBs were reported in this sample. Arsenic (5.8/U ppm), barium (21/0.36 ppm) and lead (19/U ppm) were the only inorganics reported in a significant concentration in this sample. All inorganics reported in this sample were within naturally occurring concentrations for inorganics in soils in the Eastern United States.

An observed release to sediments has been documented from the data gathered relative to sediment samples. It appears that there are releases of arsenic. Arsenic is known to be attributable to site activities.

Ground Water

A background ground water (CLMW01) was collected from an existing monitoring well on-site. No Purgable Organics, BNAs or Pesticides/PCBs were detected in this sample. See Table 2 for the inorganic results.

A downgradient ground water sample (CLGW02) was collected from a temporary monitoring well, located at the edge of the inactive fly-ash pond. No Purgable Organics, BNAs or Pesticides/PCBs were reported in this sample. See Table 2 for the inorganic results.

A downgradient ground water sample (CLGW03) was collected from a temporary monitoring well, located at the edge of the old fly-ash pond near the aboveground storage tanks. No Purgable Organics or Pesticides/PCBs were reported in this sample. Diethylphthalate (U/1J ppb) was the only BNA reported in this sample. See Table 2 for the inorganic results.

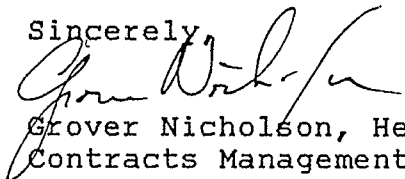
An on-site drinking water well sample (CLDW01) was collected from an on-site drinking water well located on the southern part of the site. No Purgable Organics, BNAs or Pesticides/PCBs were reported in this sample. See Table 2 for the inorganic results.

An observed release to groundwater has been documented from the data gathered relative to ground water samples. It appears that significant releases of aluminum, arsenic, barium, beryllium, calcium, chromium, copper, iron, lead, mercury, nickel, selenium, vanadium and zinc have occurred to the groundwater. As can be seen from Table 2, arsenic, barium, beryllium, chromium, iron, lead, nickel, selenium and thallium are greater than their respective North Carolina Maximum Contaminant Level (NCMCL) and/or Federal Maximum Contaminant Level (MCL). Arsenic, mercury, chromium and lead are known to be attributable to site activities.

Based on the information gathered and presented in this report, and on the results of the data validation, we recommend that this site be assigned a Medium priority for an Expanded Site Investigation. During the Expanded Site Investigation, we believe that the New Hanover County Municipal well and the nearby wetlands should be investigated to determine if any contaminants have migrated to these areas.

If you have any questions, please contact me at 919-733-2801.

Sincerely,


Grover Nicholson, Head
Contracts Management Branch

Enclosures

TABLE 1
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD 000 830 646

INORGANICS	SOILS NATURAL RANGE (PPM)	CLSS01 (PPM)	CLSS02 (PPM)	CLSS03 (PPM)
ALUMINUM	0.7->10%	50U	2000	990
ANTIMONY	<1-8.8	8.8U	9.9U	9.2U
ARSENIC	<0.1-73	1U	40	0.22U
BARIUM	10-1500	0.42U	47	3U
BERYLLIUM	<1-7	0.22U	0.29	0.22U
CADMIUM	0.01-0.7	0.83U	0.94UJ	0.88U
CALCIUM	0.01-20%	30U	3100	4100
CHROMIUM	1-1000	1U	9.8	1.1U
COBALT	<0.3-70	1U	1.3	1.1U
COPPER	<1-700	0.83U	27	0.88U
IRON	0.01->10%	40	9900	650
LEAD	<10-300	1U	2.6	1.9
MAGNESIUM	0.005-5%	8.8U	190	140
MANGANESE	<2-7000	0.42U	82	1.8
MERCURY	0.01-3.4	1UJ	0.2UJ	0.1UJ
NICKEL	<3-700	2.3U	7	2.4U
POTASSIUM	0.005-3.7%	380U	430U	400U
SELENIUM	<0.1-3.9	0.21U	4	0.22U
SILVER	0.01-5	1U	1.2U	1.1U
SODIUM	0.05-5%	110U	200U	130U
THALLIUM	-	0.42U	0.48U	0.44U
VANADIUM	<7-500	0.83U	11	1.8J
ZINC	<5-2900	4U	11	5.2
CYANIDE	-	4.9U	5.3U	5.4U

NOTES:

- 1) NA - NOT ANALYZED
- 2) N - PRESENCE OF CONTAMINANT PRESUMED
- 3) J - CONCENTRATION ESTIMATED
- 4) U - NON-DETECT
- 5) B - CONTAMINANT FOUND IN ASSOCIATED BLANK

TABLE 2
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD 000 830 646

INORGANICS	WATER NCMCL (PPB)	WATER MCL (PPB)	CLMW01 (PPB)	CLGW02 (PPB)	CLGW03 (PPB)	CLDW01 (PPB)
ALUMINUM	-	-	2700J	100000	240000J	NA
ANTIMONY	-	10/5	42UJ	42U	42UJ	NA
ARSENIC	50	-	1UJ	160	200J	U
BARIUM	1000	5000	50UJ	1900	660J	60
BERYLLIUM	-	1	1UJ	20J	1UJ	NA
CADMIUM	5	5	4UJ	4UJ	4UJ	U
CALCIUM	-	-	21000J	84000	99000J	NA
CHROMIUM	50	100	5UJ	220	150J	U
COBALT	-	-	5UJ	45	13J	NA
COPPER	1000	1300	4UJ	820	67J	NA
IRON	300	-	1600J	41000	92000J	NA
LEAD	50	50	2UJ	98	190J	U
MAGNESIUM	-	-	9000J	17000	4700J	NA
MANGANESE	50	-	890J	300	210J	NA
MERCURY	1.1	2	0.10UJ	0.55	0.91J	U
NICKEL	150	100	11UJ	190	50J	NA
POTASSIUM	-	-	4900J	20000	7600J	NA
SELENIUM	10	50	2UJ	110	43J	U
SILVER	50	-	5UJ	5U	5UJ	U
SODIUM	-	-	60000J	23000	4000UJ	NA
THALLIUM	-	2/1	2UJ	13	3UJ	NA
VANADIUM	-	-	4UJ	490	360J	NA
ZINC	5000	-	20UJ	240	92J	NA
CYANIDE	154	200	10U	10U	10U	NA

NOTES:

- 1) NA - NOT ANALYZED
- 2) N - PRESENCE OF CONTAMINANT PRESUMED
- 3) J - CONCENTRATION ESTIMATED
- 4) U - NON-DETECT
- 5) R - DATA UNUSABLE
- 6) B - CONTAMINANT FOUND IN THE ASSOCIATED BLANK
- 7) NCMCL - NORTH CAROLINA MAXIMUM CONTAMINANT LEVEL
- 8) MCL - FEDERAL MAXIMUM CONTAMINANT LEVEL

CERCLA

PHASE II
SCREENING SITE INVESTIGATION
FOR THE
CAROLINA POWER AND LIGHT COMPANY,
SUTTON STEAM ELECTRIC PLANT
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
NCD 000830646

Submitted to:

State of North Carolina
Department of Environment, Health,
and Natural Resources
Division of Solid Waste Management
Superfund Section
Raleigh, North Carolina

Prepared By:

Greenhorne & O'Mara, Inc.
9001 Edmonston Road
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December 1991
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EXECUTIVE SUMMARY

The Carolina Power and Light, Sutton Steam Electric Plant is located on State Route 1394, east of U.S. Highway 421, approximately 4 miles northwest of Wilmington, North Carolina in New Hanover County. The site is located on a relatively flat large (1200-acres) parcel of land adjacent to the Cape Fear River. The plant consists of an electric coal generation facility, two inactive fly-ash ponds and one active fly-ash pond.

The Sutton Steam Plant currently generates electrical energy by burning coal, supplemented by oil during periods of peak demand. Approximately 5,000 tons of coal is burned per day, which generates about 750 tons of coal fly-ash per day. The fly-ash has been disposed of on the site in three lagoons: the active fly-ash pond, the inactive fly-ash pond and the old fly-ash pond. Both the inactive and the old fly-ash pond are not currently used to dispose of waste, but the active fly-ash pond is still receiving fly-ash. The active fly-ash pond, covering 74.3 acres, was constructed in 1985 and has a one foot thick clay liner. The inactive pond is unlined and covers 68 acres of land. The old fly-ash pond is currently over grown with grass. An unknown amount of fly-ash has been disposed of in these lagoons.

There are two (2) 11-million gallon above-ground storage tanks on the site. One is used to store "White Liquor," and the other is used to store "Kraft Pulping Liquor." Additionally, a small drum storage area is located on the site. There are 24 monitoring wells installed at the site.

The site is located in the Atlantic Coastal Plain Physiographic Province in the southeastern portion of the state. The plant is situated on the Cape Fear River alluvial plain between the coastal dunes and the interior uplands, with local elevations ranging from 15 feet above sea level to sea level. Two aquifers are used in New Hanover County for potable water. The first aquifer, and the main source of drinking water in the area of the facility, is the water-table aquifer. The water-table aquifer consists of 30 feet of surficial deposits interconnected with the upper portion of the Peedee Formation. The second aquifer in the area is the lower portion of the Peedee Formation, generally below depths of 100 to 120 feet below the land surface.

Runoff originating from the site enters the Cape Fear River, which is approximately 700 feet from the site. The Cape Fear River enters the Atlantic Ocean more than 15 miles downstream.

The NUS Corporation conducted a Phase I Screening Site Investigation (SSI) June 30, 1989. Based on the available information, the NUS report recommended that a Phase II SSI be conducted on a medium-priority basis. Consequently, Greenhorne & O'Mara, Inc. (G&O), under contract with North Carolina Department of Environment Health, and Natural resources (NCDEHNR), conducted a Phase II SSI on June 27, 1991. A total of nine (9) environmental samples were collected at the site. Analytical results from the groundwater, sediment, and soils samples obtained indicated that significant releases of hazardous contaminants have occurred. The metals detected, including arsenic, cadmium, chromium, mercury, lead, and selenium, have been attributed to site activities. In addition, releases from the site may affect a nearby New Hanover County drinking water well

field, and fishing and sensitive environments located downstream. Therefore, G&O is recommending that the site proceed into the next stage of the pre-remedial process.

1.0 INTRODUCTION

1.1 OBJECTIVES

Greenhorne and O'Mara, Inc. (G&O) conducted a Phase II Screening Site Inspection (SSI) at the CP&L, Sutton Steam Electric Plant site located in Wilmington, New Hanover County, North Carolina. The overall objective of the Phase II SSI is to provide information to support the recommendation that a site should move onto the next stage of the pre-remedial process or be designated as "no further remedial action planned (NFRAP)" under the Federal Superfund program. Additional objectives of the Phase II SSI are the following:

- 0 Identify the types of contaminants present.
- 0 Assess whether a release of hazardous substances has occurred;
- 0 Search for evidence of actual human and environmental exposure to contaminants.
- 0 Determine the likelihood of the site scoring high enough on the HRS to be recommended for further pre-remedial action under the Federal Superfund program.

The SSI builds upon data obtained during the preliminary assessment (PA) and Phase I SSI stages to further characterize problems at or near the site and to support a management recommendation.

1.2 SCOPE OF WORK

The scope of work for the Phase II SSI includes the following tasks:

- 0 Reviewing both EPA and state file material.
- 0 Preparing an abbreviated site-specific sampling plan and Health and Safety Plan. This task included developing a site map to illustrate proposed sampling locations, the approximate number of samples, and the type of samples to be collected.
- 0 Conducting a site reconnaissance with the NCDEHNR to determine and flag actual sampling locations based on the sampling plan and existing field conditions, and the professional judgement of the NCDEHNR and the G&O sampling team. During the site reconnaissance, G&O also developed a site layout map to illustrate all of the important site features including location of buildings, access roads, and waste source areas, as well as site drainage.
- 0 Performing field sampling activities by collecting up to five (5) environmental media samples and three (3) QA/QC samples. The five environmental samples usually included two (2) groundwater samples (with a maximum well depth of 15 feet) and three (3) surface soil samples. The three (3) QA/QC samples included one (1) water duplicate, one (1) surface soil duplicate, and one (1) trip blank.

- 0 Analyzing laboratory data and presenting the data in four summary tables: volatile organic compounds, semi-volatile organic compounds, inorganic compounds, and pesticides/PCBs. Any releases that were observed were highlighted on the tables and discussed in the Phase II SSI report.
- 0 Preparing a Phase II SSI report that presents information gathered during the site visit, field observations, and laboratory data with respect to observed releases. Any existing data gaps will be discussed in the text. Greenhorne and O'Mara was not contracted to collect additional background information.

2.0 SITE CHARACTERIZATION

2.1 SITE BACKGROUND AND HISTORY

The Carolina Power and Light Company (CP&L), Sutton Steam Electric Plant generates electricity by burning coal. Peak demand for electricity is met by the use of a supplemental oil fired generator (Ref. 24 and 27). The date that the plant was built is unknown (Ref. 1 and 21). The cooling water pond and the inactive fly ash pond were constructed in June 1972 (Appendix A, Photo #3 & 6). It is unknown when the oldest fly ash pond was constructed (Appendix A, Photo #4). The new fly ash pond was constructed in September 1985 (Appendix A, Photo #1 & 2; Ref. 22).

CP&L submitted a RCRA Part A Permit application on November 18, 1980 as a precautionary measure (Ref. 21). At the time of the submittal, CP&L did not treat, dispose of, or store hazardous waste at the plant; however, the facility managers were unsure whether future activities would generate hazardous waste. The facility was subsequently classified as a large quantity generator. The NCDEHNR conducted a RCRA Interim Status Inspection of the facility on January 12, 1982 (Ref. 1, 20, and 24). The inspection revealed that the plant did not produce hazardous waste. As part of the inspection, three water samples were collected from the plant's basins and analyzed for pH, suspended solids, arsenic, barium, cadmium, chromium, lead, mercury, and selenium. The concentrations of the inorganic metals were below the tests detection limits (Ref. 24). On August 9, 1982, the classification of the facility under RCRA was changed to delete the facility as a generator and add it as a small quantity generator (Ref. 2). CP&L currently has an NPDES Permit (No. NC0001422) effective January 1, 1990 and expiring on December 31, 1994 for the discharge of wastewater to the Cape Fear River (Ref. 23). Based on readily available information, there have been no violations to date. The NUS Corporation conducted a off-site reconnaissance of the 1,200 acre plant on February 7, 1989. Due to the proximity of the site to the Cape Fear River and the potential to adversely affect fish and endangered species habitats downstream of the site, a medium-priority Phase II SSI was recommended. Therefore, on June 27, 1991, G&O staff conducted an on-site reconnaissance and carried out a sampling plan on the site.

2.2 SITE DESCRIPTION

2.2.1 Site Location

The CP&L, Sutton Steam Electric Plant is located approximately 4 miles northwest of the City of Wilmington, along the east bank of the Cape Fear River, approximately 3,000 feet downstream of the confluence with Indian Creek (Appendix A, Figure 1). The site is shown on the Castle Hayne and the Leland, North Carolina USGS Topographic Maps at latitude 34° 17' 0"N and longitude 077° 59' 0"W (Ref. 4).

2.2.2 Site Features

The site is located on a relatively flat large parcel of land adjacent to the Cape Fear River and includes an electric coal generation facility,

three fly ash ponds (one active, two inactive), a large cooling water pond, and sections of wooded, undeveloped land that can be accessed by a system of unimproved roads. The site is completely fenced and is inaccessible to the public (Ref. 16). The site is bounded on the west by the Cape Fear River and to the southeast by the CSX Railroad (formerly Seaboard Coast Line). A chemical manufacturing company is located adjacent to the site, on the northeast, just east of the CSX Railroad. Undeveloped wetland areas border the site to the north (Ref. 4).

The Sutton Steam Electric Plant generates electricity. Fly ash is a byproduct of the coal incineration and has historically been disposed of in lined and unlined diked ponds or lagoons located on the site (Ref. 8 and 17). There are two inactive and one active fly ash ponds located on the site. The active fly ash pond covers 74.3 acres and has a volume of approximately 2,158,000 cubic yards. It was constructed with a one foot thick clay liner in 1985. The inactive fly ash pond is unlined and has a volume of approximately 500,000 cubic yards and a surface area of 68 acres at an elevation of 15.5 feet (Ref. 22). The oldest (original) fly ash pond is located adjacent to the plant at the location of the two 11-million gallon AGSTs, was apparently graded flat and is currently grassed (Ref. 17).

A large cooling water pond, located just east of the Cape Fear River, was constructed in 1972 to provide cooling water to the coal generation facility. Water is supplied by the Cape Fear River. The pond is divided by a series of stone and soil diking systems, designed to create a circular flow around the perimeter of the pond to maximize cooling efficiency (Appendix A, Figure 2, Photo #6). A concrete canal system connects the ends of the cooling pond circuit to the coal generation plant (Appendix A, Figure 2, Photo #5).

A small drum storage area was observed to contain ten 55-gallon drums. The drums are stored in a recently constructed concrete containment basin. The drums reportedly contain various types of petroleum lubricating oils and cleaning/degreasing products. There were no signs of prior spills or leaks observed in this area during G&O's Phase II field reconnaissance (Ref. 17). There are two 11 million-gallon AGSTs in the southern portion of the site, one of which is currently used to store white liquor, a liquid used in the paper industry. The other AGST, used to store "Kraft Pulping Liquor," was observed to be empty. The two AGSTs are situated adjacent to each other and are surrounded by a dike to contain any spills. No clay or impermeable liner was observed. A pipe system extends from the AGSTs to a pier, located on the Cape Fear River, which is used to transfer product from barges.

There are 24 monitoring wells, constructed of 2-inch PVC pipe, located onsite. The plant receives its potable water and boiler water from four on-site wells, two of which are currently in service. In addition, there are three county wells just offsite (Ref. 17). A large cooling water pond with open channel supply and return was constructed just east of the Cape Fear River in 1972 (Ref. 17).

2.2.3 Waste Characteristics

The Sutton Steam Electric Plant currently burns coal at a rate of 5,000 tons/day to generate electricity. Fly ash, a byproduct of the coal

incineration, is generated at a rate of 750 tons/day (Ref. 16). The fly ash has historically been disposed of in lined and unlined ponds or lagoons (Ref. 16, 17 and 22). There are two inactive and one active fly ash ponds located on the site. The fly ash disposed of onsite contains heavy metals, including arsenic, mercury, chromium, and lead (Ref. 1, 16, and 20). There are two basins of unknown size and condition used for the disposal of oil contaminants, boiler blowdown, and flashtank overflow. Monitoring wells onsite are tested for various parameters, including chloride, solvents, arsenic, selenium, iron, and total dissolved solids (Ref. 17). No hazardous wastes or substances were listed on the facility's EPA RCRA Part A Permit application (Ref. 21). According to facility representatives, the solvents 2-butanone (MEK) and varsol are used for cleaning (Ref. 17). There have been no known PCB spills onsite. In addition to coal, the plant burns waste oils (Ref. 17).

3.0 ENVIRONMENTAL SETTING

3.1 TOPOGRAPHY

The topography of the site is relatively flat, as the site is situated between the Cape Fear and Northeast Cape Fear Rivers. The site slope is less than one percent to the west. The elevation of the site ranges from approximately 3 to 25 feet Mean Sea Level (Appendix A, Figure 3).

3.2 SURFACE WATER

3.2.1 Overland Drainage and Potentially Affected Surface Water Bodies

Runoff from the site drains to the west, into the Cape Fear River (Ref. 4). Cape Fear River flows for more than 15 miles before entering the Atlantic Ocean. The Cape Fear River is classified as a Class C fresh and tidal salt water. Class C waters are protected for fish and wildlife propagation, secondary recreation, agriculture, and other uses requiring waters of lower quality (Ref. 13). The mixing of salt and fresh water extends upstream along the Cape Fear River to the southern portion of Wilmington (Ref. 12). There are commercial fisheries along the Cape Fear River within 4 miles downstream of the site. The Cape Fear River is also used for recreational fishing (Ref. 11).

3.2.2 Climatology

The Wilmington area has a mean annual precipitation of approximately 54 inches, and the mean annual lake evaporation is approximately 42 inches (Ref. 5). Therefore, the net annual rainfall for this area is 12 inches. The 2-year, 24-hour rainfall depth is 4.5 inches (Ref. 14).

3.3 GROUNDWATER

3.3.1 Hydrogeology

The site is located in the Atlantic Coastal Plain Physiographic Province (Appendix A, Figure 4). The site is underlain, in ascending order, by the upper Black Creek Formation, the Peedee Formation, and surficial deposits (Ref. 3, 7, and 15). The Black Creek Formation consists of gray to black clay, lignitic, contains thin beds and laminae of fine-grained micaceous sand and thick lenses of cross-bedded sand. The formation has glauconitic, fossiliferous clayey sand lenses in the upper part (Ref. 15). The Peedee Formation consists of sand, clayey sand, and clay. It is greenish gray to olive black, massive, glauconitic, locally fossiliferous and calcareous. There are patches of sandy molluscan-mold limestone in the upper part of the formation (Ref. 15). The Peedee Formation has a fresh water sandstone aquifer with an average thickness of approximately 35 feet. The aquifer slopes from the northwest, where it is found at an elevation of approximately sea level, to Wrightsville Beach where the aquifer is approximately 190 feet below sea level. Underlying

beds of relatively impermeable clay, approximately 100 to 150 feet thick, separate the sandstone aquifer from the underlying salt water aquifers, but do not preclude salt water intrusion. Throughout most of the county, except along the Cape Fear River and Atlantic Ocean, the Peedee sandstone is a confined aquifer. Well data for this aquifer show yields above 400 gpm and the specific capacity greater than 30 gallons per minute per foot of drawdown (Ref. 3).

3.3.2 Aquifer Use

The surficial and the Peedee Formation aquifers are the two aquifers used in New Hanover County (Ref. 7). In the area of the site, the surficial aquifer is the main source of drinking water (Ref. 8). This aquifer is approximately 30 feet thick and is interconnected with the upper portion of the Peedee Formation. The depth to groundwater is approximately 10 feet (Ref. 3). Well depths average 55 feet below land surface (bls) in the area of the site (Ref. 8). CP&L has several on-site wells with depth of 53 and 30 feet bls that have yields of 480 and 1,100 gpm (Ref. 7). The Peedee Formation is generally not used for drinking water because of high chloride content resulting from salt water intrusion into the lower Peedee Formation (Ref. 7).

3.3.3 Soils

Soils in the immediate area of the power plant are classified as Urban Land soils (Ref. 6). The Urban Land soil designation is used for areas where the original soil has been extensively altered by development, thus changing or destroying the natural characteristics of the soil. These areas are typically covered by asphalt, concrete, buildings, or other impervious cover. The other soils on the site include: Lakeland sand, Kureb sand, and Dorovan soils. Lakeland sand soils are excessively drained soils with slopes ranging from 1 to 8 percent. The surface layer is consists of 2 inches of grayish brown sand and yellowish brown to brownish yellow sand up to a depth of 80 inches. The permeability of Lakeland sand is very rapid, greater than 20 inches/hour (1.4×10^{-2} cm/sec). Kureb sand, 1 to 8 percent slopes, is excessively drained. The surface sand is dark gray and approximately 3 inches thick. The subsoil, for approximately 23 inches, is light gray sand followed by brownish yellow to pale brown sand to a depth of approximately 89 inches. The permeability of Kureb sand is rapid; it ranges from 6.0 to 20 inches/hour (4.2×10^{-3} to 1.4×10^{-2} cm/sec). Dorovan soils are very poorly drained soil found in nearly level areas including bays and stream flood plains. These soils are typically flooded for extended periods. Dorovan soils are located in the western portion of the site adjacent to the cooling water pond. The surface layer of typically consists of a 4 inches thick layer of black muck that is very high in organic matter content. The subsurface, to a depth of approximately 64 inches, is black or very dark gray muck. The permeability of Dorovan soils is very slow, less than 0.06 inches/hour ($<4.2 \times 10^{-5}$ cm/sec) (Ref. 6).

3.4 WATER SUPPLY

Drinking water in the area of the site is provided from both surface water and groundwater sources. There are 92 CP&L employees who obtain drinking water from two on-site wells (Ref. 17). The closest off-site well is located within the 0.25-mile radius and is operated by New Hanover County (Ref. 4 and 30). The well water is blended with water from two other close by wells located within the 0.5 mile radius. These three wells serve 67 customers, mostly residential, along U.S. Route 421 (Ref. 30). Based on the pumping rates of the three county wells, 50 percent of the water supply for the 67 connections is obtained from one of the wells located within a distance of 0.25 to 0.5 miles from the site (Ref. 31). The other two wells contribute equally, or 25 percent each to the total system (Ref. 31). Therefore, because the contribution of a single well to the system is greater than 40 percent of the total, the population served by the system is apportioned to each well based on the well's relative contribution to the total blended system (Ref. 32). The number of people served by these three county wells was estimated to be 163 (67 connections or homes x 2.43 people/house) (Ref. 10 and 29). Therefore, for this system, 41 people (25 percent of 163) are assigned to the 0.0 to 0.25 mile radius and 122 people (75 percent of 163) are assigned to the 0.25 to 0.5 mile radius. The Town of Navassa has approximately 500 people who utilize groundwater (Ref. 9). The town's water supply well was assumed to be located within the town and within the 2-mile radius (Ref. 4, 9, and 29). The City of Wilmington obtains its drinking water from a surface water intake located approximately 22 miles northwest of the site; therefore, its water supply is unaffected by the site (Ref. 8 and 16). People residing in Wrightsboro obtain their drinking water from domestic wells (Ref. 8 and 16). The population using groundwater was estimated by measuring the area within each radius ring and multiplying by 383.2 people/square mile, the 1990 population density for Wrightsboro (Ref. 10 and 29). The remainder of the population in the county obtain drinking water from private wells (Ref. 8 and 16). The population utilizing private wells was estimated by multiplying the house count by the 1990 census number of people per house in New Hanover County (2.43 people/house), and by area measurements multiplied by the County population density of 382.7 people/square mile (Ref. 29).

The following is a breakdown of the estimated population believed to be relying on groundwater within a 4-mile radius of the CP&L Sutton Steam Plant site:

<u>Radius</u>	<u>Population/Radii</u>	<u>Cumulative Population</u>
onsite	92	92
1/4-mile	41	133
1/2-mile	122	255
1-mile	0	255
2-miles	566	821
3-miles	1,943	2,764
4-miles	3,951	6,715

3.5 POPULATION DISTRIBUTION

The total population within a 4-mile radius is approximately 13,110 (Ref. 29). Based on information gathered during the G&O field reconnaissance, the facility has 92 workers; therefore, the on-site population is 92. The population within each radius ring is listed below:

<u>Radius</u>	<u>County Population</u>	<u>Wilmington Population</u>	<u>Wrightsboro Population</u>	<u>Cumulative Population</u>
onsite	92	0	0	92
1/4-mile	41	0	0	133
1/2-mile	122	0	0	255
1-mile	0	0	0	255
2-mile	566	0	0	821
3-mile	338	1,463	1,605	4,227
4-mile	2,318	4,932	1,633	13,110

The New Hanover County population was determined by conducting a house count from the USGS topographic maps and multiplying by the 1990 census figure for number of persons/household (Ref. 10 and 29). The population of Wilmington and Wrightsboro were determined by calculating the land area for the two communities and multiplying by the corresponding 1990 census figure for persons/square mile (Ref. 29).

3.6 LAND USE

The site is located approximately 4 miles northwest of the City of Wilmington (Appendix A, Figures 1 and 3). The land use of the area surrounding the site is primarily undeveloped wetlands (Ref. 4). The nearest school is located within the corporate limits of the City of Wilmington, approximately 2.9 miles southeast of the site (Ref. 4). The nearest residence is located approximately 1.0 mile southwest of the site (Ref. 4).

3.7 SENSITIVE ENVIRONMENTS

The site contains numerous wetland areas from the Palustrine and Lacustrine systems. The following wetland are found on the site: Palustrine, scrub shrub, broad leafed deciduous, seasonally flooded (PSS1C); Palustrine, unconsolidated bottom, mud, intermittently exposed (PUB3G); Palustrine, unconsolidated bottom, mud, permanently flooded (PUB3H); Palustrine, emergent, persistent, saturated (PEM1B); and Lacustrine, littoral, unconsolidated shore, seasonally flooded, diked/impounded (L2USCh) (Ref. 33). There are approximately 500 acres of wetlands within 1 mile downstream of the site (Ref. 33). The downstream wetland that may be affected by runoff from the site are: Palustrine, forested deciduous, semipermanently flooded (PF06F); Palustrine, forested needle-leaved evergreen/broad-leaved deciduous, temporarily flooded (PF04/1A); Palustrine, scrub shrub, broad-leaved deciduous, seasonally tidal (PSS1R); Palustrine, scrub shrub, broad-leaved deciduous, temporarily

flooded (PSS1A); Palustrine, emergent, persistent, regularly flooded (PEM1M) (Ref. 33).

Endangered species that inhabit the areas around the site include: Bachman's warbler, red-cockaded woodpecker, Kemp' Ridley sea turtle, loggerhead turtle, shortnose sturgeon, manatee, and the rough-leaved loose strive plant (Ref. 12).

4.0 FIELD INVESTIGATION

4.1 DESCRIPTION OF SAMPLES AND SAMPLE LOCATIONS

A total of nine (9) environmental samples were collected to characterize the site. To determine whether a release of contaminants has occurred, limited subsurface and surficial investigation was recommended to obtain soil, groundwater, surface water, and sediment samples for laboratory analysis. The locations of the sampling points were originally proposed in an abbreviated sampling plan prepared by G&O; however, the NCDEHNR made the final recommendations during the sampling effort conducted on June 27, 1991. Therefore, the final sampling locations as shown in Appendix A, Figure 2 reflects the decision of the NCDEHNR staff.

To determine whether contaminants were released into the environment, three (3) groundwater and three (3) surface soil samples were obtained by G&O (see Photographs in Appendix A). A representative of the NCDEHNR collected two (2) sediment samples and one (1) groundwater sample. All the samples collected on the site were contained, preserved and held in accordance with the Standard Operating Procedures (SOP) (Ref. 28). The locations of these samples are illustrated in Appendix A, Figure 2, and are discussed below:

BACKGROUND MONITORING WELL SAMPLE (CLMW01) - A grab background groundwater sample was collected from existing monitoring well MW-11 (CP&L ID No. 11, State well construction Permit No. 64-0036-WM-0368) located northeast of the active fly ash pond. The well is constructed of 2-inch PVC pipe with a total depth of 50. The well is screened from a depth of 40 to 50 feet with 0.010 inch slotted PVC. The well log indicates that the well is installed in the surficial sand aquifer (Ref. 18). The bottom of the well was measured to be at a depth of approximately 49.2 feet bls and groundwater was encountered at a depth of 14.05 feet bls (Appendix A, Photo #7).

DOWNGRADIENT GROUNDWATER SAMPLE (CLGW02) - A grab groundwater sample was collected from a temporary monitoring well located near the western-most area of the inactive fly ash pond. The well was located approximately 10 feet southwest of the outlet stand pipe for the inactive pond. The boring for the well was advanced to a depth of 10 feet bls and groundwater was encountered at a depth of 7.5 bls. Approximately 3 inches of fly ash was encountered on the water surface (Appendix A, Photo # 8).

DOWNGRADIENT GROUNDWATER SAMPLE (CLGW03) - A grab groundwater sample was collected from a temporary monitoring well located inside the diked old fly ash pond, adjacent to the main plant building and the two 11 million gallon AGSTs. The well was located east of the two AGSTs, approximately 32 feet inside the southeast corner of the diked area. The boring was advanced to a depth of 3 feet bls and groundwater was encountered at a depth of 1.5 feet bls (Appendix A, Photo # 9).

BACKGROUND SURFACE SOIL SAMPLE (CLSS01) - A background surface soil sample was collected adjacent to existing monitoring well MW-11 (sample point CLMW01) northeast of the active fly ash pond (Appendix A, Photo # 7).

DOWNGRAIENT SURFACE SOIL SAMPLE (CLSS02) - A downgradient composite surface soil sample was collected from two locations within the inactive fly ash pond and one location within the active fly ash pond.

DOWNGRAIENT SURFACE SOIL SAMPLE (CLSS03) - A downgradient composite surface soil sample was collected from three locations within the site of the old (original) fly ash pond. The sample points were in the vicinity of the two large AGSTs (Appendix A, Photo # 10, 11, & 12).

BACKGROUND SEDIMENT SAMPLE (CLSED01) - A background sediment sample was collected from the left (east) bank of the Cape Fear River, northwest of the cooling water pond.

DOWNGRAIENT SEDIMENT SAMPLE (CLSED02) - A downgradient sediment sample was collected from the left (east) bank of the Cape Fear River, just west of the cooling water intake (return), west of the main plant building.

ONSITE, DOWNGRAIENT DOMESTIC WELL (CLDW01) - A groundwater sample was collected from the on-site drinking water well. The sample point was obtained from an external spigot located on the north face of the power plant building.

4.2 FIELD MEASUREMENTS

Field measurements collected for groundwater samples include pH, temperature, and conductivity. These values are listed in Table 2.

TABLE 1

FIELD MEASUREMENTS FOR GROUNDWATER SAMPLES

CP&L, SUTTON STEAM ELECTRIC PLANT

WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

<u>SAMPLE CODE</u>	<u>pH</u>	<u>TEMPERATURE (°C)</u>	<u>CONDUCTIVITY (umhos/cm)</u>
MW01	NA	18.8	0.540
GW02	7.0	20.7	0.495
GW03	NA	25.2	0.304

4.3 ANALYTICAL RESULTS

Upon completion of the sampling effort, samples collected by G&O were taken to Industrial and Environmental Analysts, Inc. (IEA) in Research Triangle Park, North Carolina for analysis (see Volume II). Level IV Routine Analytical Service (RAS) Contract Laboratory Program (CLP) data packages and associated narratives were assembled for this project by IEA.

At the request of EPA Region IV, the data were validated by the NUS Corporation in Tucker, Georgia. Samples collected by NCDEHNR were analyzed by the North Carolina State Laboratory of Public Health. The results of the sample analysis are summarized in Tables 2 & 3 (Appendix B) and discussed below:

DOWNGRADIANT GROUNDWATER (CLGW02) - A groundwater sample was collected from a hand augered well at the edge of the inactive fly-ash pond. No Volatile Organic Compounds (VOCs), Semi-volatile Organic Compounds (BNAs) or Pesticides/PCBs were reported in this sample. The following inorganics were reported in significant concentrations: aluminum (100000 ppb), arsenic (160 ppb), barium (1900 ppb), beryllium (20J ppb), calcium (84000 ppb), chromium (220 ppb), copper (820 ppb), iron (41000 ppb), lead (98 ppb), mercury (0.55 ppb), nickel (190 ppb), selenium (110 ppb), thallium (13 ppb), vanadium (490 ppb) and zinc (240 ppb). The concentrations of arsenic, barium, beryllium, chromium, iron, lead, nickel, selenium and thallium exceeded their respective North Carolina Maximum Contaminant Level (NCMCL) and/or Federal Maximum Contaminant Level (MCL).

DOWNGRADIANT GROUNDWATER (CLGW03) - A groundwater sample was collected from a hand augered well at the edge of the old fly-ash pond near the above-ground storage tanks. No VOCs, BNAs or Pesticides/PCBs were reported in significant concentrations in this sample. The following inorganics were reported in significant concentrations: aluminum (240000J ppb), arsenic (200J ppb), barium (660J ppb), chromium (150J ppb), copper (67J ppb), iron (92000J ppb), lead (190J ppb), mercury (0.91J ppb), nickel (50J ppb), selenium (43J ppb), vanadium (360J ppb) and zinc (92J ppb). The concentrations of arsenic, chromium, iron, lead and selenium exceeded their respective NCMCL and/or MCL.

INACTIVE FLY-ASH POND SURFACE SOIL COMPOSITE (CLSS02) - A surface soil composite sample was collected from three locations in the vicinity of the inactive fly-ash pond. No VOCs, BNAs or Pesticides/PCBs were reported in significant concentrations in this sample. The following inorganics were reported in significant concentrations: aluminum (2000 ppm), arsenic (40 ppm), barium (47 ppm), calcium (3100 ppm), chromium (9.8 ppm), cobalt (1.3 ppm), copper (27 ppm), iron (9900 ppm), lead (2.6 ppm), magnesium (190 ppm), manganese (82 ppm), nickel (7 ppm), selenium (4.0 ppm), vanadium (11 ppm) and zinc (11 ppm). All inorganics, except selenium, were reported within naturally occurring concentrations for inorganics in soils in the Eastern United States.

OLD FLY-ASH POND SURFACE SOIL COMPOSITE (CLSS03) - A surface soil composite was collected from three locations in the vicinity of the old fly-ash pond. No VOCs or BNAs were reported in significant concentrations in this sample. 4,4'-DDD (3.7 ppb) was the only Pesticide/PCB reported in significant concentrations

in this sample. The following inorganics were reported in significant concentrations: aluminum (990 ppm), calcium (4100 ppm), iron (650 ppm), lead (1.9 ppm), magnesium (140 ppm), manganese (1.8 ppm), vanadium (1.8J ppm) and zinc (5.2 ppm). All inorganics were reported within naturally occurring concentrations for inorganics in soils in the Eastern United States.

Note - The following samples were collected by NCDEHNR and analyzed at the State Laboratory of Public Health.

DOWNGRADIENT SEDIMENT SAMPLE (CLSED02) - A sediment sample was collected on the Cape Fear River downgradient of the site. No VOCs, BNAs or Pesticides/PCBs were reported in significant concentrations in this sample. Both total metals and TCLP analysis were run on this sample. Arsenic (5.8/U ppm) was the only inorganic reported in significant concentrations in this sample. The first value is for totals and the second is for TCLP. Arsenic was reported within naturally occurring concentrations for arsenic in soils in the Eastern United States.

ONSITE WELL (CLDW01) - A groundwater sample was collected on the southern part of the site. No VOCs, BNAs or Pesticides/PCBs were reported in this sample. Barium (60 ppb) was the only inorganic reported in this sample. Using CLMW01 as a background well, this value is not considered significant.

In summary, groundwater on the site appears to be contaminated with aluminum, arsenic, barium, beryllium, calcium, chromium, copper, iron, lead, mercury, nickel, selenium, vanadium and zinc. Soils from the inactive fly-ash pond appear to be contaminated with aluminum, arsenic, barium, beryllium, calcium, chromium, copper, iron, lead, magnesium, manganese, nickel, selenium, thallium, vanadium and zinc. Soils from the old fly-ash pond appear to be contaminated with 4,4'-DDD, aluminum, calcium, iron, lead, magnesium, manganese, vanadium and zinc. Sediments from the Cape Fear River downgradient of the site appear to be contaminated with arsenic. Arsenic, mercury, chromium and lead are attributable to site activities.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information available at this time, it is believed that the site may pose a threat to human health and/or the environment. The analytical results of the sampling event at the subject site revealed environmental releases of hazardous contaminants at the following areas:

- o Groundwater in the vicinity of the inactive fly-ash pond is contaminated with significant levels of aluminum, arsenic, barium, beryllium, calcium, chromium, copper, iron, lead, mercury, nickel, selenium, thallium, vanadium and zinc. Arsenic, barium, beryllium, chromium, iron, lead, nickel, selenium and thallium exceeded their respective NCMCL and/or MCL.
- o Groundwater in the vicinity of the old fly-ash pond is contaminated with significant levels of aluminum, arsenic, barium, chromium, copper, iron, lead, mercury, nickel, selenium, vanadium and zinc. Arsenic, barium, chromium, iron, lead and selenium exceeded their respective NCMCL and/or MCL.
- o Soils from the inactive fly-ash pond are contaminated with aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, selenium, vanadium and zinc. All inorganics, except selenium, were within naturally occurring concentrations for inorganics in soils in the Eastern United States.
- o Soils from the old fly-ash pond are contaminated with 4,4'-DDD, aluminum, calcium, iron, magnesium, manganese, vanadium and zinc. All inorganics were within naturally occurring concentrations for inorganics in soils in the Eastern United States.
- o Sediment from the Cape Fear River downgradient of the site is contaminated with arsenic.

Due to the fact that these contaminants are attributable to site activities, G&O is recommending that this site proceed onto the next phase of the pre-remedial process. Over 6715 residents within a 4-mile radius of the site rely on groundwater for their potable water. In addition, the nearest well is within 1000 feet of the site. This well contributes to the New Hanover County municipal water supply and serves approximately 163 people. If the fly ash were to become airborne, on-site workers, as well as nearby wetlands associated with the Cape Fear River could be affected. Finally, contaminated surface water and sediments of the Cape Fear River may adversely impact fishing and recreational activities that occur along the river.

LIST OF REFERENCES FOR THE CAROLINA POWER AND LIGHT COMPANY,
SUTTON STEAM ELECTRIC PLANT SITE
EPA ID NUMBER - NCD 000830646

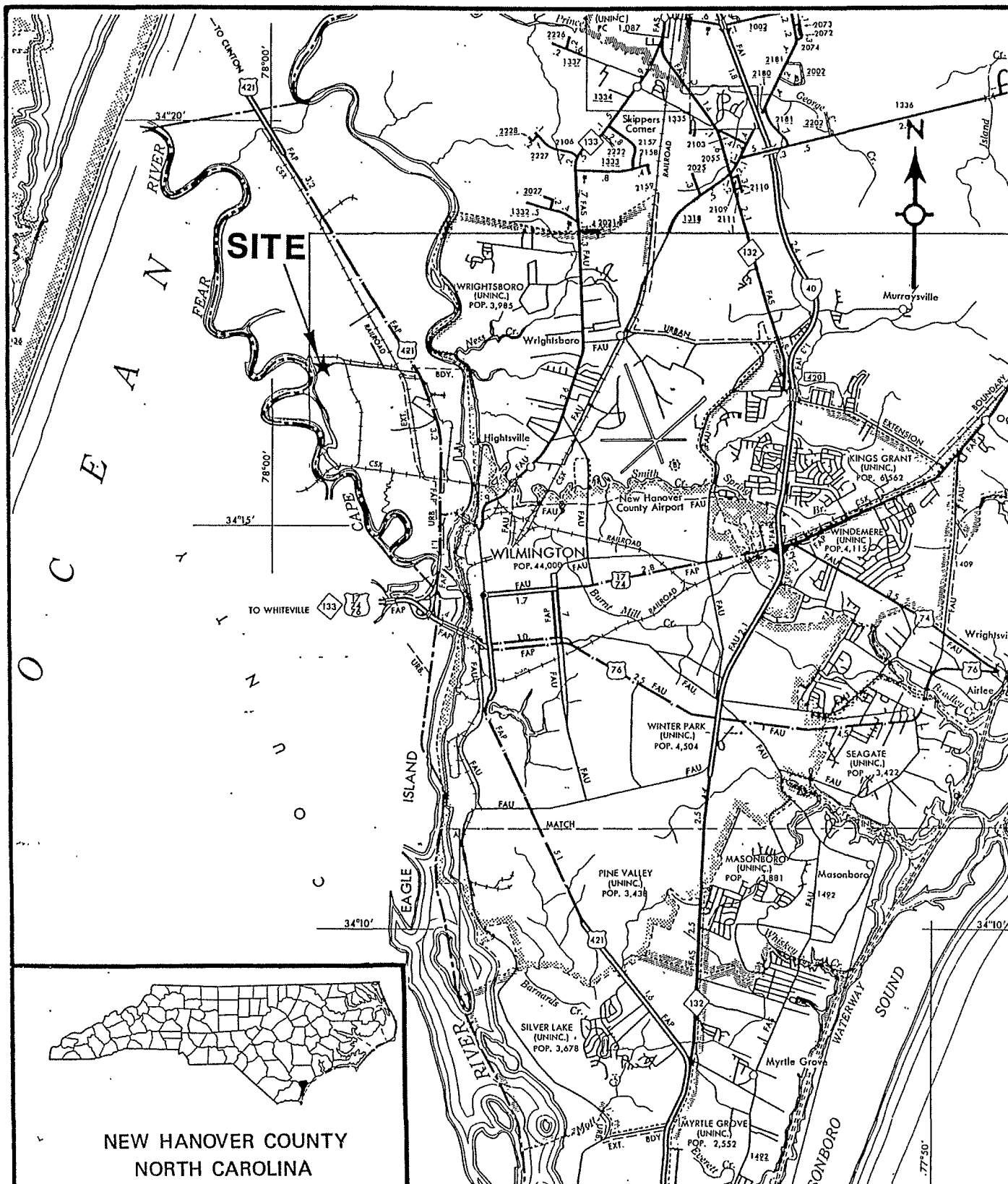
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APPENDIX A
MAPS , PHOTOGRAPHS, AND TABLES



NEW HANOVER COUNTY
NORTH CAROLINA

CP & L SUTTON STEAM ELECTRIC PLANT WILMINGTON, NORTH CAROLINA

1 0 1 2 3 4 MILES

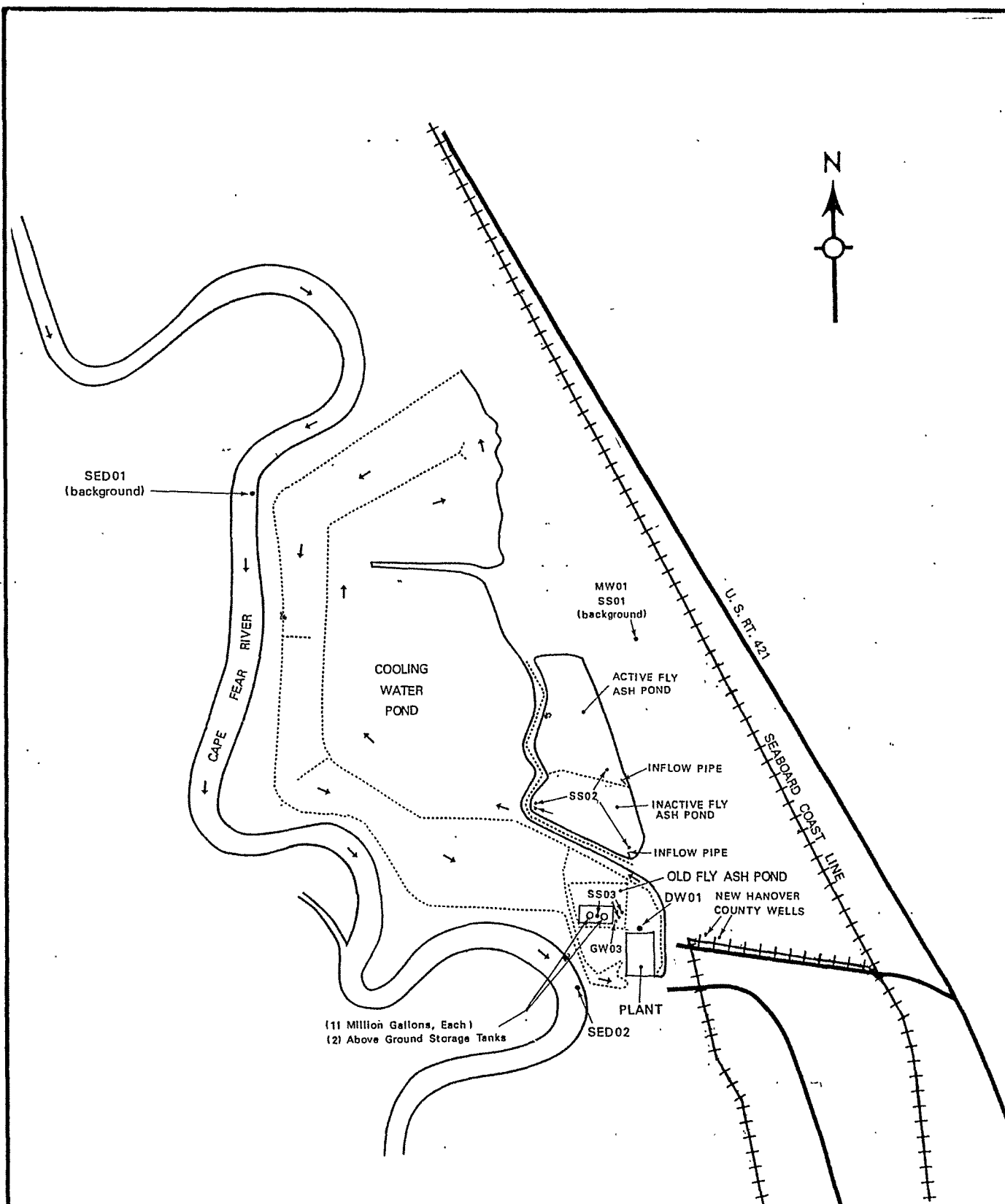
FIGURE 1



ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS
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9001 EDMONSTON ROAD, GREENBELT, MARYLAND 20770
(301) 982-2800

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CINCINNATI OH • DALLAS TX • DENVER CO • FORT LAUDERDALE FL • GREENSBORO NC • HARTFORD CT
HOUSTON TX • KANSAS CITY MO • LEXINGTON KY • LOS ANGELES CA • MEMPHIS TN • MIAMI FL
MINNEAPOLIS MN • NEW YORK NY • OMAHA NE • PHILADELPHIA PA • PORTLAND ME • RICHMOND VA
SAN FRANCISCO CA • SEATTLE WA • TAMPA FL • WASHINGTON DC • WICHITA KS

SITE LOCATION
NCD 000830646



CP & L SUTTON STEAM ELECTRIC PLANT WILMINGTON, NORTH CAROLINA

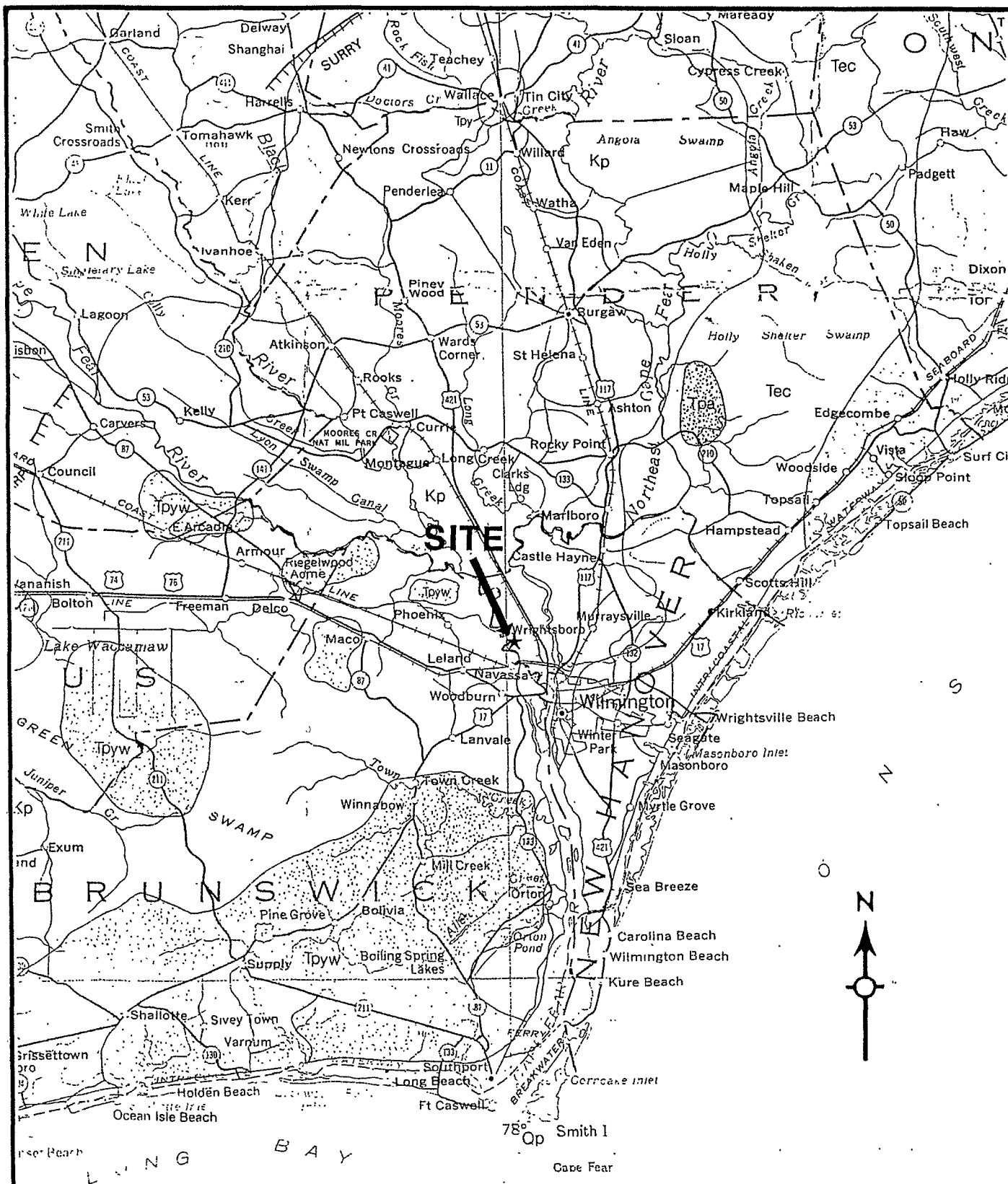
NOT TO SCALE

FIGURE 2



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 DENVER, CO • FARGO, ND • HARTFORD, CT • HOUSTON, TX • KANSAS CITY, MO • LOS ANGELES, CA
 MIAMI, FL • MINNEAPOLIS, MN • NEW YORK, NY • OMAHA, NE • PHOENIX, AZ • PORTLAND, ME • RICHMOND, VA
 SAN FRANCISCO, CA • SEATTLE, WA • TAMPA, FL • WASHINGTON, DC • WICHITA, KS

SITE LAYOUT AND SAMPLING POINTS
 NCD 000830646



CP & L SUTTON STEAM ELECTRIC PLANT WILMINGTON, NORTH CAROLINA

Scale: 10 0 10 Miles

FIGURE 4 (Reference 15)



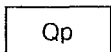
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ANNAPOLIS MD • ATLANTA GA • AURORA CO • BALTIMORE MD • CLARKESBURG VA • DULUTH GA
 EXPORT PA • FARMAX VA • MANASSAS VA • RALEIGH NC • ROCKVILLE MD • TAMPA FL

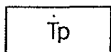
ANNOTATED GEOLOGIC MAP OF NORTH CAROLINA

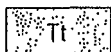
COASTAL PLAIN

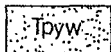
QUATERNARY

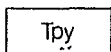
 **Qp** SURFICIAL DEPOSITS, UNDIVIDED — Sand, clay, gravel, and peat deposited in marine, fluvial, eolian, and lacustrine environments. Quaternary deposits not shown at altitudes greater than approximately 25 feet above mean sea level (Suffolk Scarp, in part)

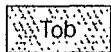
TERTIARY

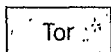
 **Tp** PINEHURST FORMATION — Sand, medium- to coarse-grained, cross-bedding and rhythmic bands of clayey sand common, unconsolidated


 **Tt** TERRACE DEPOSITS AND UPLAND SEDIMENT — Gravel, clayey sand, and sand, minor iron-oxide cemented sandstone

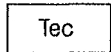
 **Tpyw** WACCAMAW FORMATION — Fossiliferous sand with silt and clay, bluish-gray to tan, loosely consolidated. Straddles Pleistocene-Pliocene boundary

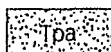
 **Tpy** YORKTOWN FORMATION AND DUPLIN FORMATION, UNDIVIDED
Yorktown Formation: Fossiliferous clay with varying amounts of fine-grained sand, bluish gray, shell material commonly concentrated in lenses; mainly in area north of Neuse River
Duplin Formation: Shelly, medium- to coarse-grained sand, sandy marl, and limestone, bluish gray; mainly in area south of Neuse River

 **Tob** BELGRADE FORMATION, UNDIVIDED
Pollocksville Member: Oyster-shell mounds in tan to orange sand matrix, indurated locally
Haywood Landing Member: Fossiliferous clayey sand, gray to brown. Members grade into each other laterally

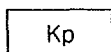
 **Tor** RIVER BEND FORMATION — Limestone, calcarenite overlain by and intercalated with indurated, sandy, molluscan-mold limestone

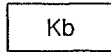
 **Tecs** CASTLE HAYNE FORMATION
Spring Garden Member: Molluscan-mold limestone, indurated, very sandy. Grades downward into a calcareous sand and laterally into Comfort Member

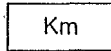
 **Tec** Comfort Member and New Hanover Member, undivided
Comfort Member: Bryozoan-echinoid skeletal limestone, locally dolomitized, solution cavities common
New Hanover Member: Phosphate-pebble conglomerate, micritic, thin; restricted to basal part of Castle Hayne Formation in southeastern counties

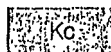
 **Tpa** BEAUFORT FORMATION, UNDIVIDED
Unnamed upper member: Sand and silty clay, glauconitic, fossiliferous, and locally calcareous
Jericho Run Member: Siliceous mudstone with sandstone lenses, thin bedded; basal phosphatic pebble conglomerate

CRETACEOUS

 **Kp** PEEDEE FORMATION — Sand, clayey sand, and clay, greenish gray to olive black, massive, glauconitic, locally fossiliferous and calcareous. Patches of sandy molluscan-mold limestone in upper part

 **Kb** BLACK CREEK FORMATION — Clay, gray to black, lignitic; contains thin beds and laminae of fine-grained micaceous sand and thick lenses of cross-bedded sand. Glauconitic, fossiliferous clayey sand lenses in upper part

 **Km** MIDDENDORF FORMATION — Sand, sandstone, and mudstone, gray to pale gray with an orange cast, mottled; clay balls and iron-cemented concretions common, beds laterally discontinuous, cross-bedding common

 **Ko** CAPE FEAR FORMATION — Sandstone and sandy mudstone, yellowish gray to bluish gray, mottled red to yellowish orange, indurated, graded and laterally continuous bedding, blocky clay, faint cross-bedding, feldspar and mica common

ANNOTATED LEGEND FOR THE GEOLOGIC MAP OF NORTH CAROLINA

CP&L, SUTTEN STEAM ELECTRIC PLANT



PHOTO #1 - Photo of the active fly-ash pond, looking from the southern corner toward the north.



PHOTO #2 - Photo of the active fly-ash pond in relation to the cooling pond.



PHOTO #3 - Photo of the inactive fly-ash pond, looking from the southwest corner toward the northeast.



PHOTO #4 - Photo of the old fly-ash pond, looking from the southern edge toward the north.



PHOTO #5 - Photo of the hot water discharge moat.



PHOTO #6 - Photo of the cooling pond, looking west from the western berm of the inactive fly-ash pond.



PHOTO #7 - Photo of the background groundwater (MW01), and the background surface soil sample (SS01).



PHOTO #8 - Photo of the overflow pipe to the old fly-ash pond at the southwest corner of the site. Approximate location of GW02.



PHOTO #9 - Photo of the GW03, located near the bottom edge of the old fly-ash pond.



PHOTO #10 - Discharge pipe to the active fly-ash pond. Location of one composite for soil sample SS03.



PHOTO #11 - One composite sample of SS03, located at the northwestern end of the old fly-ash pond.



PHOTO #12 - Location of one composite for soil sample SS03.

TABLE 2
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD000830646
SAMPLE IDENTIFICATION

			Background				Inactive Fly	
Sample Collection Information and Parameters			Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite
								Old Fly Ash Pond Surface Soil Composite
Date Collected			6/25/91	6/25/91	6/25/91	6/25/91	6/25/91	6/25/91
Laboratory			IEA	IEA	IEA	IEA	IEA	IEA
Well Water Depth (feet)			14.05	7.5	1.5	NA	NA	NA
G&O Sample ID No.			CLMW01	CLGW02	CLGW03	CLTB01	CLSS01	CLSS03
EPA Case No.			A3501	A3502	A3503	A3504	A3505	A3507
Case No.			1041-033	1041-033	1041-033	1041-033	1041-033	1041-033
Physical State	Waste Characteristics*	Category	Compounds Detected					
			VOLATILE ORGANICS					
Matrix			Water	Water	Water	Water	Soil	Soil
Level			Low	Low	Low	Low	Low	Low
% Moisture			100	100	100	100	4	13
Concentration Units			ug/l	ug/l	ug/l	ug/l	ug/kg	ug/kg
Gas	A,D,G,I	OCC	chloromethane					
Gas	A,D,G,I	OCC	bromomethane					
Gas	A,D,G,I	OCC	vinyl chloride					
Gas	A,D,G,I	OCC	chloroethane					
Liquid	A,D,H,I	SOL	methylene chloride					
Liquid	E,H,I,A	SOL	acetone					
Liquid	A,H,I	SOL	carbon disulfide					
Liquid	A,D,G,I	SOL	1,1-dichloroethene					
Liquid	A,D,H,G	SOL	1,1-dichloroethane					
Liquid	A,D,G	SOL	1,2-dichloroethene (total)					
Liquid	A,D	SOL	chloroform					
Liquid	A,D,G	SOL	1,2-dichloroethane					
Liquid	A,E,G	SOL	2-butanone (MEK)					
Liquid	A,D	SOL	1,1,1-trichloroethane					

TABLE 2

SUMMARY OF CHEMICAL ANALYSES FOR

NCD000830646

SAMPLE IDENTIFICATION

				Background				Inactive Fly		
				Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite
Physical State	Waste Characteristics*	Category	VOLATILE ORGANICS (CONT.)							
Liquid	A,D	SOL	carbon tetrachloride							
Liquid	A,D,G	SOL	vinyl acetate							
Liquid	A,D	OCC	bromodichloromethane							
Liquid	A,D,G	SOL	1,2-dichloropropane							
Liquid	A,D,G	SOL	cis-1,3-dichloropropene							
Liquid	A,D,G,B	SOL	trichloroethene							
Liquid	A,D	OCC	dibromochloromethane							
Liquid	A,D	SOL	1,1,2-trichloroethane							
Liquid	A,G	SOL	benzene							
Liquid	A,D,G	SOL	trans-1,3-dichloropropene							
Liquid	A,D	SOL	bromoform							
Liquid	A,E,G	SOL	4-methyl-2-pentanone							
Liquid	A,E,G	SOL	2-hexanone							
Liquid	A,D	SOL	tetrachloroethene							
Liquid	A,G,E	SOL	toluene							
Liquid	A,D,E	SOL	1,1,2,2-tetrachloroethane							
Liquid	A,D,G	SOL	chlorobenzene							
Liquid	A,G	SOL	ethylbenzene							
Liquid	A,D,G	OCC	styrene							
Liquid	A,G	SOL	xylenes (total)							
Tentatively Identified Compounds										

TABLE 2
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD000830646
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	Background				Inactive Fly		
				Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite
			SEMIVOLATILE ORGANICS							
			Matrix	Water	Water	Water	Water	Soil	Soil	Soil
			Level	Low	Low	Low	NA	Low	Low	Low
			% Moisture	100	100	100	NA	4	13	11
			Concentration Units	ug/l	ug/l	ug/l	NA	ug/kg	ug/kg	ug/kg
					/RE	/RE				
S, thick	A,B,E	OCC	phenol				NA			
Liquid	A,D,B	OCC	bis(2-chloroethyl)ether				NA			
Liquid	A,D,B	OCC	2-chlorophenol				NA			
Liquid	A,D,H	SOL	1,3-dichlorobenzene				NA			
Solid	A,D,H	OCC	1,4-dichlorobenzene				NA			
Liquid	A,D,H	SOL	benzyl alcohol				NA			
Liquid	A,D,H	OCC	1,2-dichlorobenzene				NA			
Liquid	A,B	OCC	2-methylphenol				NA			
	A,D	OCC	bis(2-chloroisopropyl)ether				NA			
Liquid	A,B	OCC	4-methylphenol				NA			
	A	OCC	n-nitroso-di-n-dipropylamine				NA			
Solid	A,D	OCC	hexachloroethane				NA			
Liquid	A,D	OCC	nitrobenzene				NA			
Liquid	A,D	OCC	isophorone				NA			
Solid	A,D	OCC	2-nitrophenol				NA			
Solid	A,B	OCC	2,4-dimethylphenol				NA			
Solid	A	OCC	benzoic acid				NA			
	A,D	OCC	bis(2-chloroethoxy)methane				NA			
Liquid	A,D	OCC	2,4-dichlorophenol				NA			
Liquid	A,D	OCC	1,2,4-trichlorobenzene				NA			
Solid	A	OCC	naphthalene				NA			
Solid	A,D	OCC	4-chloroaniline				NA			
Liquid	A,D,B	OCC	hexachlorobutadiene				NA			

TABLE 2
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NCD000830646
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	Background Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Inactive Fly Ash Pond		
								Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite
			SEMIVOLATILE ORGANICS (CONT.)							
Solid	A,D	OCC	4-chloro-3-methylphenol							NA
Liquid	A,D	OCC	2-methylnaphthalene							NA
Liquid	A,D,B	OCC	hexachlorocyclopentadiene							NA
Solid	A,D	OCC	2,4,6-trichlorophenol							NA
Solid	A,D	OCC	2,4,5-trichlorophenol							NA
Liquid	A,D	OCC	2-chloronaphthalene							NA
Solid	A,D	OCC	2-nitroaniline							NA
Liquid	A,D	OCC	dimethylphthalate							NA
Solid	A,D	OCC	acenaphthylene							NA
Solid	A,D	OCC	2,6-dinitrotoluene							NA
Solid	A,D	OCC	3-nitroaniline							NA
Solid	A,D	OCC	acenaphthene							NA
Solid	A,D,G	OCC	2,4-dinitrophenol							NA
Solid	A,D	OCC	4-nitrophenol							NA
Solid	A,D	OCC	dibenzofuran							NA
Solid	A,D	OCC	2,4-dinitrotoluene							NA
Liquid	A,D	OCC	diethylphthalate							NA
	A,D	OCC	4-chlorophenyl-Phenylether							NA
Solid	A,D	OCC	fluorene							NA
Solid	A,D,E	OCC	4-nitroaniline							NA
Solid	A,D	OCC	4,6-dinitro-2-methylphenol							NA
Solid	A,D	OCC	n-nitrosodiphenylamine							NA
Liquid	A,D	OCC	4-bromophenyl-phenylether							NA
Solid	A,D	OCC	hexachlorobenzene							NA
Solid	A,D	OCC	pentachlorophenol							NA
Solid	A,D	OCC	phenanthrene							NA

100R
-U/1.7

TABLE 2
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD000830646
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	Background				Inactive Fly Ash Pond		
				Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite
			SEMIVOLATILE ORGANICS (CONT.)							
Solid	A,D	OCC	anthracene				NA			
Solid	A,D	OCC	carbazole		100 U/2BJ	100R U/3BJ	NA			
Liquid	A,D	OCC	di-n-butylphthalate				NA			
Solid	A,D	OCC	fluoranthene				NA			
Solid	A,D	OCC	pyrene				NA			
Liquid	A,D	OCC	butylbenzylphthalate				NA			
	A,D	OCC	3,3-dichlorobenzidine				NA			
Solid	A,D	OCC	benzo[a]anthracene				NA			
Solid	A,D	OCC	chrysene		100 U/2BJ	100R U/1BJ	NA			
Liquid	A,D	OCC	bis(2-ethylhexyl)phthalate				NA			
Liquid	A,D	OCC	di-n-octylphthalate				NA			
Solid	A,D	OCC	benzo[b]fluoranthene				NA			
Solid	A,D	OCC	benzo[k]fluoranthene				NA			
Solid	A,D,K,L	OCC	benzo[a]pyrene				NA			
Solid	A,D	OCC	indeno[1,2,3-cd]pyrene				NA			
Solid	A,D	OCC	dibenz[a,h]anthracene				NA			
Solid	A,D	OCC	benzo[g,h,i]perylene				NA			
			Tentatively Identified Compounds		U/22JN	46JN/49JN	NA	17324JN	8610JN	16274JN
			Unknown (total)	161JN	U/38BJN	U/38BJ	NA	2200BJN	2000BJN	1200BJN
			2h-azepin-2-one,hexadydro	940JN			NA			
			halogenated ethane			47JN/15JN	NA			490JN
			hexadecanoic acid		U/4JN	U/4JN	NA			
			benzoic acid				NA	130JN		
			substituted benzene				NA	1900BJN	1400BJN	1800BJN
			octane, 3-methyl-				NA	470JN		440JN

TABLE 2
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD000830646
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters PESTICIDES/PCBs Matrix Level % Moisture Concentration Units	Background				Inactive Fly		
				Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite
				Water	Water	Water	NA	Soil	Soil	Soil
				Low	Low	Low	NA	Low	Low	Low
				100	100	100	NA	4	13	11
				ug/l	ug/l	ug/l	NA	ug/kg	ug/kg	ug/kg
Solid	A,D	PSD	alpha BHC				NA			
Solid	A,D	PSD	beta BHC				NA			
Solid	A,D	PSD	delta BHC				NA			
Solid	A,D	PSD	gamma BHC (Lindane)				NA			
Solid	A,D	PSD	Heptachlor				NA			
Solid	A,D	PSD	Aldrin				NA			
Solid	A,D	PSD	Heptachlor epoxide				NA			
Solid	A,D	PSD	Endosulfan I				NA			
Solid	A,D,E	PSD	Dieldrin				NA			
Solid	A,D	PSD	4,4'-DDE				NA	[3.4U]		(2.2U) ✓
Solid	A,D	PSD	Endrin				NA			
Solid	A,D	PSD	Endosulfan II				NA			
Solid	A,D	PSD	4,4'-DDD				NA	[3.4U]		(3.7U) ✓
Solid	A,D	PSD	Endosulfan sulfate				NA			
Solid	A,D	PSD	4,4'-DDT				NA	[3.4U]		[1.1U] ✓
Solid	A,D	PSD	Methoxychlor (Mariate)				NA			
Solid	A,D	PSD	Endrin ketone				NA			
Solid	A,D	PSD	alpha Chlordane				NA			
Solid	A,D	PSD	gamma Chlordane				NA			
Solid	A,D	PSD	Toxaphene				NA			

TABLE 2
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NCD000830646
SAMPLE IDENTIFICATION

Sample Collection Information and Parameters				Background				Inactive Fly			
				Monitoring Well	Downgradient Groundwater	Downgradient Groundwater	Trip Blank	Background Surface Soil	Ash Pond Surface Soil Composite	Old Fly Ash Pond Surface Soil Composite	
Physical	Waste										
State	Characteristics*	Category	PESTICIDES/PCBS (CONT.)								
Liquid	A,D	OCC	Aroclor 1016								NA
Liquid	A,D	OCC	Aroclor 1221								NA
Liquid	A,D	OCC	Aroclor 1232								NA
Liquid	A,D	OCC	Aroclor 1242								NA
Liquid	A,D	OCC	Aroclor 1248								NA
Liquid	A,D	OCC	Aroclor 1254								NA
Liquid	A,D	OCC	Aroclor 1260								NA

TABLE 2
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD 000 830 646

INORGANICS	WATER NCMCL (PPB)	WATER MCL (PPB)	CLMW01 (PPB)	CLGW02 (PPB)	CLGW03 (PPB)
ALUMINUM	-	-	2700J	100000	240000J
ANTIMONY	-	10/5	42UJ	42U	42UJ
ARSENIC	50	-	1UJ	160	200J
BARIUM	1000	5000	50UJ	1900	660J
BERYLLIUM	-	1	1UJ	20J	1UJ
CADMIUM	5	5	4UJ	4UJ	4UJ
CALCIUM	-	-	21000J	84000	99000J
CHROMIUM	50	100	5UJ	220	150J
COBALT	-	-	5UJ	45	13J
COPPER	1000	1300	4UJ	820	67J
IRON	300	-	1600J	41000	92000J
LEAD	50	50	2UJ	98	190J
MAGNESIUM	-	-	9000J	17000	4700J
MANGANESE	50	-	890J	300	210J
MERCURY	1.1	2	0.10UJ	0.55	0.91J
NICKEL	150	100	11UJ	190	50J
POTASSIUM	-	-	4900J	20000	7600J
SELENIUM	10	50	2UJ	110	43J
SILVER	50	-	5UJ	5U	5UJ
SODIUM	-	-	60000J	23000	4000UJ
THALLIUM	-	2/1	2UJ	13	3UJ
VANADIUM	-	-	4UJ	490	360J
ZINC	5000	-	20UJ	240	92J
CYANIDE	154	200	10U	10U	10U

NOTES:

- 1) NA - NOT ANALYZED
- 2) N - PRESENCE OF CONTAMINANT PRESUMED
- 3) J - CONCENTRATION ESTIMATED
- 4) U - NON-DETECT
- 5) R - DATA UNUSABLE
- 6) B - CONTAMINANT FOUND IN THE ASSOCIATED BLANK
- 7) NCMCL - NORTH CAROLINA MAXIMUM CONTAMINANT LEVEL
- 8) MCL - FEDERAL MAXIMUM CONTAMINANT LEVEL

TABLE 2
CP&L, SUTTON STEAM ELECTRIC PLANT
NCD 000 830 646

INORGANICS	SOILS NATURAL RANGE (PPM)	CLSS01 (PPM)	CLSS02 (PPM)	CLSS03 (PPM)
ALUMINUM	0.7->10%	50U	2000	990
ANTIMONY	<1-8.8	8.8U	9.9U	9.2U
ARSENIC	<0.1-73	1U	40	0.22U
BARIUM	10-1500	0.42U	47	3U
BERYLLIUM	<1-7	0.22U	0.29	0.22U
CADMIUM	0.01-0.7	0.83U	0.94UJ	0.88U
CALCIUM	0.01-20%	30U	3100	4100
CHROMIUM	1-1000	1U	9.8	1.1U
COBALT	<0.3-70	1U	1.3	1.1U
COPPER	<1-700	0.83U	27	0.88U
IRON	0.01->10%	40	9900	650
LEAD	<10-300	1U	2.6	1.9
MAGNESIUM	0.005-5%	8.8U	190	140
MANGANESE	<2-7000	0.42U	82	1.8
MERCURY	0.01-3.4	1UJ	0.2UJ	0.1UJ
NICKEL	<3-700	2.3U	7	2.4U
POTASSIUM	0.005-3.7%	380U	430U	400U
SELENIUM	<0.1-3.9	0.21U	4	0.22U
SILVER	0.01-5	1U	1.2U	1.1U
SODIUM	0.05-5%	110U	200U	130U
THALLIUM	-	0.42U	0.48U	0.44U
VANADIUM	<7-500	0.83U	11	1.8J
ZINC	<5-2900	4U	11	5.2
CYANIDE	-	4.9U	5.3U	5.4U

NOTES:

- 1) NA - NOT ANALYZED
- 2) N - PRESENCE OF CONTAMINANT PRESUMED
- 3) J - CONCENTRATION ESTIMATED
- 4) U - NON-DETECT
- 5) B - CONTAMINANT FOUND IN ASSOCIATED BLANK

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

			Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
			Date Collected	6/27/91	6/27/91	6/27/91
			Laboratory	State Lab	State Lab	State Lab
			G&O Sample ID No.	SED01	SED02	DW01
			NCDEHNR I.D. Nos.	16290	16289	16291
				14992	14991	14993
				912445	912444	14994
Physical	Waste					912446
						912447
State	Characteristics*	Category	Compounds Detected			
			VOLATILE ORGANICS			
			Matrix	Soil	Soil	Water
			Concentration Units	ug/kg	ug/kg	ug/l
Gas	A,D,G,I	OCC	chloromethane			
Gas	A,D,G,I	OCC	bromomethane			
Gas	A,D,G,I	OCC	vinyl chloride			
Gas	A,D,G,I	OCC	chloroethane			
Liquid	A,D,H,I	SOL	methylene chloride			1K,C
Liquid	E,H,I,A	SOL	acetone			
Liquid	A,H,I	SOL	carbon disulfide			
Liquid	A,D,G,I	SOL	1,1-dichloroethene			
Liquid	A,D,H,G	SOL	1,1-dichloroethane			
Liquid	A,D,G	SOL	1,2-dichloroethene (total)			
Liquid	A,D	SOL	chloroform			1K,T
Liquid	A,D,G	SOL	1,2-dichloroethane			
Liquid	A,E,G	SOL	2-butanone (MEK)			
Liquid	A,D	SOL	1,1,1-trichloroethane			

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
---	------------------------	--------------------------	----------------

Physical State	Waste Characteristics*	Category	VOLATILE ORGANICS (CONT.)
Liquid	A,D	SOL	carbon tetrachloride
Liquid	A,D,G	SOL	vinyl acetate
Liquid	A,D	OCC	bromodichloromethane
Liquid	A,D,G	SOL	1,2-dichloropropane
Liquid	A,D,G	SOL	cis-1,3-dichloropropene
Liquid	A,D,G,B	SOL	trichloroethene
Liquid	A,D	OCC	dibromochloromethane
Liquid	A,D	SOL	1,1,2-trichloroethane
Liquid	A,G	SOL	benzene
Liquid	A,D,G	SOL	trans-1,3-dichloropropene
Liquid	A,D	SOL	bromoform
Liquid	A,E,G	SOL	4-methyl-2-pentanone
Liquid	A,E,G	SOL	2-hexanone
Liquid	A,D	SOL	tetrachloroethene
Liquid	A,G,E	SOL	toluene
Liquid	A,D,E	SOL	1,1,2,2-tetrachloroethane
Liquid	A,D,G	SOL	chlorobenzene
Liquid	A,G	SOL	ethylbenzene
Liquid	A,D,G	OCC	styrene
Liquid	A,G	SOL	xylene (total)

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

State	Characteristics*	Category	Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
			SEMIVOLATILE ORGANICS Matrix Concentration Units	Soil ug/kg	Soil ug/kg	Water ug/l
S,thick1	A,B,E	OCC	phenol			
Liquid	A,D,B	OCC	bis(2-chloroethyl)ether			
Liquid	A,D,B	OCC	2-chlorophenol			
Liquid	A,D,H	SOL	1,3-dichlorobenzene			
Solid	A,D,H	OCC	1,4-dichlorobenzene			
Liquid	A,D,H	SOL	benzyl alcohol			
Liquid	A,D,H	OCC	1,2-dichlorobenzene			
Liquid	A,B	OCC	2-methylphenol			
	A,D	OCC	bis(2-chloroisopropyl)ether			
Liquid	A,B	OCC	4-methylphenol			
	A	OCC	n-nitroso-di-n-dipropylamine			
Solid	A,D	OCC	hexachloroethane			
Liquid	A,D	OCC	nitrobenzene			
Liquid	A,D	OCC	isophorone			
Solid	A,D	OCC	2-nitrophenol			
Solid	A,B	OCC	2,4-dimethylphenol			
Solid	A	OCC	benzoic acid			
	A,D	OCC	bis(2-chloroethoxy)methane			
Liquid	A,D	OCC	2,4-dichlorophenol			
Liquid	A,D	OCC	1,2,4-trichlorobenzene			
Solid	A	OCC	naphthalene			
Solid	A,D	OCC	4-chloroaniline			
Liquid	A,D,B	OCC	hexachlorobutadiene			

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

			Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
Physical	Waste					
State	Characteristics*	Category	SEMIVOLATILE ORGANICS (CONT.)			
Solid	A,D	OCC	4-chloro-3-methylphenol			
Liquid	A,D	OCC	2-methylnaphthalene			
Liquid	A,D,B	OCC	hexachlorocyclopentadiene			
Solid	A,D	OCC	2,4,6-trichlorophenol			
Solid	A,D	OCC	2,4,5-trichlorophenol			
Liquid	A,D	OCC	2-chloronaphthalene			
Solid	A,D	OCC	2-nitroaniline			
Liquid	A,D	OCC	dimethylphthalate			
Solid	A,D	OCC	acenaphthylene			
Solid	A,D	OCC	2,6-dinitrotoluene			
Solid	A,D	OCC	3-nitroaniline			
Solid	A,D	OCC	acenaphthene			
Solid	A,D,G	OCC	2,4-dinitrophenol			
Solid	A,D	OCC	4-nitrophenol			
Solid	A,D	OCC	dibenzofuran			
Solid	A,D	OCC	2,4-dinitrotoluene			
Liquid	A,D	OCC	diethylphthalate			
	A,D	OCC	4-chlorophenyl-Phenylether			
Solid	A,D	OCC	fluorene			
Solid	A,D,E	OCC	4-nitroaniline			
Solid	A,D	OCC	4,6-dinitro-2-methylphenol			
Solid	A,D	OCC	n-nitrosodiphenylamine			
Liquid	A,D	OCC	4-bromophenyl-phenylether			
Solid	A,D	OCC	hexachlorobenzene			
Solid	A,D	OCC	pentachlorophenol			
Solid	A,D	OCC	phenanthrene			

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

		Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
Physical	Waste				
State	Characteristics*	Category	SEMIVOLATILE ORGANICS (CONT.)		
Solid	A,D	OCC	anthracene		
Liquid	A,D	OCC	di-n-butylphthalate		
Solid	A,D	OCC	fluoranthene		
Solid	A,D	OCC	pyrene		
Liquid	A,D	OCC	butylbenzylphthalate		
	A,D	OCC	3,3-dichlorobenzidine		
Solid	A,D	OCC	benzo[a]anthracene		
Solid	A,D	OCC	chrysene		
Liquid	A,D	OCC	bis(2-ethylhexyl)phthalate		
Liquid	A,D	OCC	di-n-octylphthalate		
Solid	A,D	OCC	benzo[b]fluoranthene		
Solid	A,D	OCC	benzo[k]fluoranthene		
Solid	A,D,K,L	OCC	benzo[a]pyrene		
Solid	A,D	OCC	indeno[1,2,3-cd]pyrene		
Solid	A,D	OCC	dibenz[a,h]anthracene		
Solid	A,D	OCC	benzo[g,h,i]perylene		

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION
Analyzed at the North Carolina State Laboratory of Public Health

		Sample Collection Information and Parameters		Background Sediment	Downgradient Sediment	Onsite Well
		PESTICIDES/PCBs				
State	Characteristics*	Category	Matrix Concentration Units	Soil mg/kg	Soil mg/kg	Soil mg/l
Solid	A,D	PSD	alpha BHC	NA	NA	NA
Solid	A,D	PSD	beta BHC	NA	NA	NA
Solid	A,D	PSD	delta BHC	NA	NA	NA
Solid	A,D	PSD	gamma BHC (Lindane)	NA	NA	NA
Solid	A,D	PSD	Heptachlor	NA	NA	NA
Solid	A,D	PSD	Aldrin	NA	NA	NA
Solid	A,D	PSD	Heptachlor epoxide	NA	NA	NA
Solid	A,D	PSD	Endosulfan I	NA	NA	NA
Solid	A,D,E	PSD	Dieldrin	NA	NA	NA
Solid	A,D	PSD	4,4'-DDE	NA	NA	NA
Solid	A,D	PSD	Endrin	NA	NA	NA
Solid	A,D	PSD	Endosulfan II	NA	NA	NA
Solid	A,D	PSD	4,4'-DDD	NA	NA	NA
Solid	A,D	PSD	Endosulfan sulfate	NA	NA	NA
Solid	A,D	PSD	4,4'-DDT	NA	NA	NA
Solid	A,D	PSD	Methoxychlor (Mariate)	NA	NA	NA
Solid	A,D	PSD	Endrin ketone	NA	NA	NA
Solid	A,D	PSD	alpha Chlordane	NA	NA	NA
Solid	A,D	PSD	gamma Chlordane	NA	NA	NA
Solid	A,D	PSD	Toxaphene	NA	NA	NA

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

		Sample Collection Information and Parameters		Background Sediment	Downgradient Sediment	Onsite Well
Physical State	Waste Characteristics*	Category	PESTICIDES/PCBS (CONT.)			
Liquid	A,D	OCC	Aroclor 1016	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1221	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1232	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1242	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1248	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1254	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1260	NA	NA	NA
Liquid	A,D	OCC	PCB	<0.0001	<0.0001	<0.0001

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

State	Characteristics*	Category	Sample Collection Information	Background	Downgradient	Onsite
			and Parameters	Sediment	Sediment	Well
			ANALYTE DETECTED			
			Matrix	Soil	Soil	
			Concentration Units	mg/kg+/mg/L++	mg/kg+/mg/L++	mg/L
Solid	A,D	MES	aluminum	NA	NA	NA
Solid	A,D	MES	antimony	NA	NA	NA
Solid	A,D	MES	arsenic	U/U	5.8/[0.02]*	U
Solid	A,D	MES	barium	45/0.47	21/0.36	0.06
Solid	A,D	MES	beryllium	NA	NA	NA
Solid	A,D	MES	cadmium	U/U	U/U	U
Solid	D	MES	calcium	NA	NA	NA
Solid	A,D	MES	chromium	U/U	U/U	U
Solid	A,D	MES	cobalt	NA	NA	NA
Solid	A,D	MES	copper	NA	NA	NA
Solid	A,D	MES	iron	NA	NA	NA
Solid	A,D	MES	lead	19/[0.50]	19/[0.50]	U
Solid	A,D	MES	magnesium	NA	NA	NA
Solid	A,D	MES	manganese	NA	NA	NA
Liquid	A,D	MES	mercury	U/U	<0.11/[0.02]	U
Solid	A,D	MES	nickel	NA	NA	NA
Solid	D	MES	potassium	NA	NA	NA
Solid	A,D	MES	selenium	U/U	U/U	NA
Solid	A,D	MES	silver	U/U	U/U	NA
Solid	D	MES	sodium	NA	NA	NA
Solid	A,D	MES	thallium			

TABLE 3
SUMMARY OF CHEMICAL ANALYSES FOR
CP&L, SUTTON STEAM ELECTRIC PLANT SITE
NCD000830646

SAMPLE IDENTIFICATION

Analyzed at the North Carolina State Laboratory of Public Health

			Sample Collection Information and Parameters	Background Sediment	Downgradient Sediment	Onsite Well
Physical	Waste		ANALYTE DETECTED (CONT.)			
State	Characteristics*	Category				
Solid	A,D	MES	vanadium	NA	NA	NA
Solid	A,D	MES	zinc	NA	NA	NA
Solid	A	IOC	cyanide	NA	NA	NA

NA - Not Analyzed

* - Concentrations significant, considered to be a release

[] - Below CRDL

+ - Total inorganic metals

++ - Analyzed using Toxicity Characteristic Leaching Procedure (TCLP)

K - Actual value is known to be less than value given

C - Possible laboratory contamination

T - Trihalomethane

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a quality control (QC) protocol.	Compound was not detected if value is at CRDL, e.g., 10U UJ. If a value is reported with a UJ above CRDL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥ 10 ng/uL in the final extract shall be confirmed by GC/MS.	Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value.
B	This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).

COMPOUND QUALIFIERS

DEFINITION

INTERPRETATION

E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for the specific analysis. This flag will <u>not</u> apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative. There should be another analysis with a D qualifier, which is to be used.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRDL. Data is quantitative.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a laboratory artifact in the TICs only.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.
X	Cannot be confirmed by CLP protocols.	Compound may or may not be present.

ANALYTE QUALIFIERS

DEFINITION

INTERPRETATION

E	E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
s	s	Analysis by Method of Standard Additions.	Value is quantitative.
R	N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.

* *	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be quantitative or semi-quantitative.
+ +	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value may be biased.
[] B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ	DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
U U	Compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
M	Duplicate injection precision not met.	Value may be semiquantitative.
W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.
R	Results are unusable due to a major violation of QC protocols.	Analyte value is not usable.

Waste Characteristics Identification*

A - Toxic	D - Persistent	G - Flammable	J - Explosive
B - Corrosive	E - Soluble	H - Ignitable	K - Reactive
C - Radioactive	F - Infectious	I - Highly Volatile	L - Incompatible

APPENDIX B
SITE INSPECTION FORM



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

I. IDENTIFICATION

01 STATE NC 02 SITE NUMBER D000830646

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) CP&L, Sutton Steam Electric Plant		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER U.S. Highway 421	
03 CITY Wilmington	04 STATE 05 ZIP CODE NC 28405	06 COUNTY Hanover	07 COUNTY CODE 08 CONG DIST
09 COORDINATES 34° 17' 0" N 077° 59' 0" W		10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A PRIVATE <input type="checkbox"/> B FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN	

III. INSPECTION INFORMATION

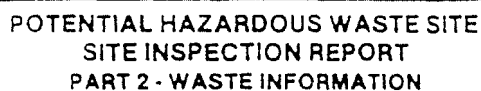
01 DATE OF INSPECTION 6 / 27 / 91 MONTH DAY YEAR	02 SITE STATUS <input checked="" type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	03 YEARS OF OPERATION BEGINNING YEAR ENDING YEAR X UNKNOWN
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <input checked="" type="checkbox"/> E. STATE <input checked="" type="checkbox"/> F. STATE CONTRACTOR Greenhome & O'Mara, Inc. (G&O) Name of firm Specify		

05 CHIEF INSPECTOR Jeff Tyburski	06 TITLE Environmental Geologist	07 ORGANIZATION G&O	08 TELEPHONE NO. 919 782-9088
09 OTHER INSPECTORS Jerry Johnson	10 TITLE Environmental Scientist	11 ORGANIZATION G&O	12 TELEPHONE NO. 919 782-9088
Chris Huff	Environmental Engineer	G&O	919 782-9088
Harvey Allen	Environmental Engineer	NCDEHNR	919 733-2801
			()
			()
13 SITE REPRESENTATIVES INTERVIEWED Donald Ennis	14 TITLE	15 ADDRESS Raleigh, NC	16 TELEPHONE NO. 919 546-7323
			()
			()
			()
			()
			()
			()

17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT	18 TIME OF INSPECTION 0900 hours	19 WEATHER CONDITIONS Fair
--	-------------------------------------	-------------------------------

IV. INFORMATION AVAILABLE FROM

01 CONTACT Harvey Allen	02 OF (Agency/Organization) NCDEHNR	03 TELEPHONE NO. 919 733-2801
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Marie Fisher	05 AGENCY	06 ORGANIZATION G&O
	07 TELEPHONE NO. (301)982-2800	08 DATE 12 / 9 / 91 MONTH DAY YEAR



01 STATE 102 SITE NUMBER

NC	D000830646
----	------------

WORKING STATES, QUANTITIES, AND CHARACTERISTICS

28. UNITED STATES (Check all that apply)

<input type="checkbox"/> A SOLID	<input type="checkbox"/> E SLURRY
<input type="checkbox"/> B POWDER FINES	<input type="checkbox"/> F LIQUID
<input checked="" type="checkbox"/> C SLUDGE	<input type="checkbox"/> G GAS

1952

02 WASTE QUANTITY AT SITE

Results of weight quantities must be independent

CONS Unknown

CUBIC YARDS

40 OF CRUMS

03 WASTE CHARACTERISTICS (check all that apply)

- .. A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- D PERSISTENT

- ☐ E SOLUBLE
- ☐ F INFECTIOUS
- ☐ G FLAMMABLE
- ☐ H IGNITABLE

- HIGHLY VOLATILE
- EXPLOSIVE
- REACTIVE
- INCOMPATIBLE
- NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
OC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

[illegible]

V. FEEDSTOCKS :See Appendix for CAS NumbersI

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

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

1. State File



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

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NC D000830646

HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☒ OBSERVED (DATE 6/27/91) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 6715 (4-mile radius) 04 NARRATIVE DESCRIPTION

Groundwater onsite is contaminated with arsenic, barium, beryllium, chromium, copper, lead, mercury, nickel, selenium, vanadium and zinc.

01 ☐ B SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 0 04 NARRATIVE DESCRIPTION

Sediments from the Cape Fear River are contaminated with arsenic and mercury.

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

No air samples have been collected.

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

No fires have been reported

01 ☒ E DIRECT CONTACT 02 ☒ OBSERVED (DATE 6/27/91) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 92 employees 04 NARRATIVE DESCRIPTION

Soils on-site are contaminated with arsenic, barium, beryllium, chromium, copper, lead, manganese, selenium, and zinc. Also 4,4-DDD.

01 ☒ F CONTAMINATION OF SOIL 02 ☒ OBSERVED (DATE 6/27/91) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

See Direct Contact

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

See Groundwater Contamination

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

See Direct Contact

01 ☒ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

See Direct Contact



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NC D00830646

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ DAMAGE TO FLORA 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 ☐ DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include names of species)

NA

01 ☐ CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 ☐ UNSTABLE CONTAINMENT OF WASTES 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
(e.g., leaks, standing liquids, leaking drums)
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

01 ☐ DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

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

NA

01 ☐ ILLEGAL UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: 6715

IV. COMMENTS

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

1. State File
2. Analytical Data



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

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER
NC D00830646

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input checked="" type="checkbox"/> RCRA <input type="checkbox"/> UIC <input type="checkbox"/> AIR <input type="checkbox"/> RCRA <input type="checkbox"/> RCRA INTERIM STATUS <input type="checkbox"/> SPCC PLAN <input type="checkbox"/> STATE (Specify) <input type="checkbox"/> LOCAL (Specify) <input type="checkbox"/> OTHER (Specify) <input type="checkbox"/> NONE	NC0001422			

III. SITE DESCRIPTION

01 STORAGE/ DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
<input checked="" type="checkbox"/> A SURFACE IMPOUNDMENT <input type="checkbox"/> B PILES <input type="checkbox"/> C DRUMS, ABOVE GROUND <input checked="" type="checkbox"/> D TANK, ABOVE GROUND <input type="checkbox"/> E TANK, BELOW GROUND <input type="checkbox"/> F LANDFILL <input type="checkbox"/> G LANDFARM <input type="checkbox"/> H OPEN DUMP <input type="checkbox"/> I OTHER (Specify)	74.3 acres + 68 acres 2.11 million gallon		<input type="checkbox"/> A INCENERATION <input type="checkbox"/> B UNDERGROUND INJECTION <input type="checkbox"/> C CHEMICAL/PHYSICAL <input type="checkbox"/> D BIOLOGICAL <input type="checkbox"/> E WASTE OIL PROCESSING <input type="checkbox"/> F SOLVENT RECOVERY <input type="checkbox"/> G OTHER RECYCLING/RECOVERY <input type="checkbox"/> H OTHER (Specify)	<input type="checkbox"/> A BUILDINGS ON SITE 06 AREA OF SITE 1200 (Ac/est)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

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

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

unlined lagoons

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO
02 COMMENTS

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

1. State File
2. G&O Field Notes



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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NC D000830646

II. DRINKING WATER SUPPLY

01 DRINKING SUPPLY (If applicable)		02 STATUS			03 DISTANCE TO SITE	
	SURFACE	WELL	ENDANGERED	AFFECTED	MONITORED	
COMMUNITY	A <input type="checkbox"/>	B <input checked="" type="checkbox"/>	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>	A on-site (mi)
NON-COMMUNITY	C <input type="checkbox"/>	D <input type="checkbox"/>	D <input type="checkbox"/>	E <input type="checkbox"/>	F <input type="checkbox"/>	B (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A ONLY SOURCE FOR DRINKING
☐ B DRINKING
Other sources available:
COMMERCIAL, INDUSTRIAL, IRRIGATION
No other water sources available
☐ C COMMERCIAL, INDUSTRIAL, IRRIGATION
Other sources available:
☐ D NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 6,715
03 DISTANCE TO NEAREST DRINKING WATER WELL on-site (mi)
04 DEPTH TO GROUNDWATER 1.5 (ft)
05 DIRECTION OF GROUNDWATER FLOW unknown
06 DEPTH TO AQUIFER OF CONCERN 1.5 (ft)
07 POTENTIAL YIELD OF AQUIFER unknown (gpd)
08 SOLE SOURCE AQUIFER ☒ YES ☐ NO

09 DESCRIPTION OF WELLS (including use, depth, and location relative to population and buildings)

10 RECHARGE AREA

☐ YES
☐ NO
COMMENTS

unknown

11 DISCHARGE AREA

☐ YES
☐ NO
COMMENTS

unknown

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A RESERVOIR, RECREATION
DRINKING WATER SOURCE
☐ B IRRIGATION, ECONOMICALLY
IMPORTANT RESOURCES
☐ C COMMERCIAL, INDUSTRIAL
☐ D NOT CURRENTLY USED

02 AFFECTED, POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Cape Fear River	<input type="checkbox"/>	700 feet (mi)
	<input type="checkbox"/>	(mi)
	<input type="checkbox"/>	(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 255 B 821 C 4227
NO OF PERSONS NO OF PERSONS NO OF PERSONS

02 DISTANCE TO NEAREST POPULATION

one (mi)

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

unknown

04 DISTANCE TO NEAREST OFF-SITE BUILDING

one (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site e.g., rural village, densely populated urban area)



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

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NC D00830646

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A 10^{-6} - 10^{-8} cm/sec ☐ B 10^{-4} - 10^{-6} cm/sec ☐ C 10^{-2} - 10^{-3} cm/sec ☐ D GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A IMPERMEABLE ☐ B RELATIVELY IMPERMEABLE ☐ C RELATIVELY PERMEABLE ☐ D VERY PERMEABLE
(Less than 10^{-10} cm/sec) 10^{-10} - 10^{-7} cm/sec 10^{-7} - 10^{-4} cm/sec Greater than 10^{-2} cm/sec

unknown

03 DEPTH TO BEDROCK

unknown (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

unknown (ft)

05 SOIL pH

unknown

06 NET PRECIPITATION

12 (in)

07 ONE YEAR 24 HOUR RAINFALL

4.5 (in)

08 SLOPE
SITE SLOPE

0 %

DIRECTION OF SITE SLOPE
west

TERRAIN AVERAGE SLOPE
0 %

09 FLOOD POTENTIAL

SITE IS IN YEAR FLOODPLAIN

10

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

OTHER

A on-site (mi)

B (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

on-site (mi)

ENDANGERED SPECIES.

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS, NATIONAL/STATE PARKS,
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS
PRIME AG LAND AG LAND

A (mi)

B (mi)

C (mi) D (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

topography of the site is relatively flat, as the site is situated between the Cape Fear and Northeast Cape Fear Rivers. The site slopes mildly to the west. The elevation of the site ranges from approximately 3 to 25 feet mean sea level.

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

1. State File
2. USGS Map
3. Field Notes



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

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

NC D000830646

II. SAMPLES TAKEN

01 SAMPLE TYPE	02 NUMBER OF SAMPLES TAKEN	03 SAMPLES SENT TO	04 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	IEA	12/91
Sediment SURFACE WATER	2	NCDEHNR - State Lab	12/91
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	3	IEA	12/91
VEGETATION			
OTHER domestic well	1	NCDEHNR - State Lab	12/91

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>Greenhorne & O'Mara, Inc.</u> <small>Name of organization or individual</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>Phase II SSI</u>

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references e.g. 1/2/91-95 sample analysis reports)

1. State File
2. Analytical Data



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

IDENTIFICATION
01 STATE NC 02 SITE NUMBER D000830646

I. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME CP&H, Sutton Steam Electric Plant		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) U.S. Highway 421		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY Wilmington		06 STATE NC	07 ZIP CODE 28405	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		10 STREET ADDRESS (P.O. Box, RFD #, etc.)		11 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
II. PREVIOUS OWNER(S) (If most recent first)				IV. REALTY OWNER(S) (If applicable, list most recent first)			
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE
V. SOURCES OF INFORMATION (Check specific references: e.g., state files, sample analysis, reports)							
1. State File							
2. G&O Field Notes							



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

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NC D000830646

II. CURRENT OPERATOR (Provide # different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

01 NAME: Same as owner
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: unknown
09 NAME OF OWNER:
10 NAME:
11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):
13 SIC CODE:
14 CITY:
15 STATE:
16 ZIP CODE:
17 YEARS OF OPERATION:
18 NAME OF OWNER DURING THIS PERIOD:

III. PREVIOUS OPERATOR(S) (List most recent first; provide only # 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:
17 YEARS OF OPERATION:
18 NAME OF OWNER DURING THIS PERIOD:
19 NAME:
20 D+B NUMBER:
21 STREET ADDRESS (P.O. Box, RFD #, etc.):
22 SIC CODE:
23 CITY:
24 STATE:
25 ZIP CODE:
26 YEARS OF OPERATION:
27 NAME OF OWNER DURING THIS PERIOD:

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

1. State File



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

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NC D000830646

III. ON-SITE GENERATOR

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

II. OFF-SITE GENERATOR(S)

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

IV. TRANSPORTER(S)

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

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

1. State File



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

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NC D000830646

1. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A WATER SUPPLY CLOSED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> B TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> C PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> D SPILLED MATERIAL REMOVED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> E CONTAMINATED SOIL REMOVED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> F WASTE REPACKAGED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> G WASTE DISPOSED ELSEWHERE 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> H ON SITE BURIAL 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> I IN SITU CHEMICAL TREATMENT 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> J IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> K IN SITU PHYSICAL TREATMENT 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> L ENCAPSULATION 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> M EMERGENCY WASTE TREATMENT 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> N CUTOFF WALLS 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> O EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> P CUTOFF TRENCHES/SUMP 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Q SUBSURFACE CUTOFF WALL 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____

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

1. IDENTIFICATION

01 STATE 02 SITE NUMBER
NC D000830646

II PAST RESPONSE ACTIVITIES (Continued)

01 <input type="checkbox"/> R BARRIER WALLS CONSTRUCTED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> S CAPPING/COVERING 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> T BULK TANKAGE REPAIRED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> V BOTTOM SEALED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> W GAS CONTROL 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> X FIRE CONTROL 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Y LEACHATE TREATMENT 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Z AREA EVACUATED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 2 POPULATION RELOCATED 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION NA	02 DATE _____	03 AGENCY _____

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

1. State File



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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D000830646

II. ENFORCEMENT INFORMATION

01 HAS REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

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

1. State File

APPENDIX C
ANALYTICAL DATA

DATA ANALYZED BY IEA

See Volume II

SOLID WASTE MANAGEMENT DIVISION
SUPERFUND SECTION

RECEIVED

OCT 6 1991

CERCLA

SUPERFUND SECTION

Chain of Custody Record

Hazardous Waste Materials

Location of Sampling: ☒ Generator ☐ Transporter
☐ Treatment Facility ☐ Storage Facility
☐ Disposal Facility ☐ Landfill
☐ Other: _____

Company's Name CPL, Sutter Steam ELEC. PLANT Telephone: _____

Address WILMINGTON, NC

Collector's Name _____ Telephone: 919 733-2801
signature

Date Sampled 6-27-91 Time Sampled _____

Type of Process Generating Waste _____

Field Information: _____

Field Sample No. 16289 16290 16291

Chain of Possession:

<u>Harvey Walker</u> signature	<u>Env. Engineer</u> title	<u>6/27/91 - 6/28/91</u> inclusive dates
<u>W.C. Walker</u> signature	<u>Chemist</u> title	<u>28 June-91</u> inclusive dates
_____ signature	_____ title	_____ inclusive dates

Results Reported:

<u>W.C. Walker</u> signature	<u>Chemist</u> title	<u>4 Oct 91</u> date
---------------------------------	-------------------------	-------------------------

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

SAMPLE ANALYSIS REQUEST

CERCLA

RECEIVED

Site Number 65D 000 830 646 Field Sample Number 16289 507 1991

Name of Site C & L Sutton Steam Elec PLANT Site Location WILMINGTON SUPERFUND SECTION

Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 10:20

Agency: Hazardous Waste Solid Waste ✓ Superfund

Sample Type

Environmental

Concentrate

Comments

 Ground water (1) Solid (5) SED - SOUTH
 Surface water (2) Liquid (6) INORGAN, 250 ML
 Soil (3) Sludge (7)
✓ Other (4) SEDIMENT Other (8)

TCLP Compounds

Inorganic Compounds

Results(mg/l)

✓ Arsenic	40.02
✓ Barium	0.36
✓ Cadmium	40.08
✓ Chromium	40.10
✓ Lead	40.50
✓ Mercury	40.02
✓ Selenium	40.02
✓ Silver	40.10

Organic Chemistry

Inorganic Chemistry

Parameter	Results(mg/l)
P&T:GC/MS	
Acid:B/N Ext.	
MTBE	

Parameter	Results(mg/l)(mg/kg)
✓ Arsenic	5.8
✓ Barium	21
✓ Cadmium	<16
Chloride	
✓ Chromium	<20
Copper	
Fluoride	
Iron	
✓ Lead	19
Manganese	
✓ Mercury	≤ 0.11
Nitrate	
✓ Selenium	<6.0
✓ Silver	<20

Organic Compounds

Results(mg/l)

benzene	
carbon tetrachloride	
chlordane	
chlorobenzene	
chloroform	
o-cresol	
m-cresol	
p-cresol	
cresol	
1,4-dichlorobenzene	
1,2-dichloroethane	
1,1-dichloroethylene	
2,4-dinitrotoluene	
heptachlor	
hexachlorobenzene	
hexachlorobutadiene	
hexachloroethane	
methyl ethyl ketone	
nitrobenzene	
pentachlorophenol	
pyridine	
tetrachloroethylene	
trichloroethylene	
2,4,5-trichlorophenol	
2,4,6-trichlorophenol	
vinyl chloride	
endrin	
lindane	
methoxychlor	
toxaphene	
2,4-D	
2,4,5-TP (Silvex)	

Radiochemistry

Parameter	Results (PCI/l)
Gross Alpha	
Gross Beta	

Microbiology

Parameter	Results (Col/100ml)

Date Received Reported by

Date Extracted Date Reported

Date Analyzed Lab Number

SAMPLE ANALYSIS REQUEST

CERCLA

RECEIVED

Site Number 65D 000 830 646 Field Sample Number 16290

Name of Site C.P. & L. Sutton Steam Elec. PLANT Site Location WILMINGTON, NC

Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 11:15

Agency: ☐ Hazardous Waste ☐ Solid Waste ☒ Superfund

Sample Type

Environmental Concentrate Comments

☐ Ground water (1) ☐ Solid (5) SED - NORTH
☐ Surface water (2) ☐ Liquid (6) INORGAN. 250 ML
☐ Soil (3) ☐ Sludge (7)
☒ Other (4) SEDIMENT Other (8)

TCLP Compounds

Inorganic Compounds	Results(mg/l)
<input checked="" type="checkbox"/> Arsenic	<u>40.02</u>
<input checked="" type="checkbox"/> Barium	<u>0.47</u>
<input checked="" type="checkbox"/> Cadmium	<u>40.08</u>
<input checked="" type="checkbox"/> Chromium	<u>40.10</u>
<input checked="" type="checkbox"/> Lead	<u>40.50</u>
<input checked="" type="checkbox"/> Mercury	<u>40.02</u>
<input checked="" type="checkbox"/> Selenium	<u>40.02</u>
<input checked="" type="checkbox"/> Silver	<u>40.10</u>

Organic Chemistry

Parameter	Results(mg/l)
<input type="checkbox"/> P&T:GC/MS	<u></u>
<input type="checkbox"/> Acid:B/N Ext.	<u></u>
<input type="checkbox"/> MTBE	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
<input checked="" type="checkbox"/> Arsenic	<u><4.6</u>
<input checked="" type="checkbox"/> Barium	<u>45</u>
<input checked="" type="checkbox"/> Cadmium	<u><16</u>
<input type="checkbox"/> Chloride	<u></u>
<input checked="" type="checkbox"/> Chromium	<u><20</u>
<input type="checkbox"/> Copper	<u></u>
<input type="checkbox"/> Fluoride	<u></u>
<input type="checkbox"/> Iron	<u></u>
<input checked="" type="checkbox"/> Lead	<u>19</u>
<input type="checkbox"/> Manganese	<u></u>
<input checked="" type="checkbox"/> Mercury	<u><0.1</u>
<input type="checkbox"/> Nitrate	<u></u>
<input checked="" type="checkbox"/> Selenium	<u><10.6</u>
<input checked="" type="checkbox"/> Silver	<u><20</u>
<input type="checkbox"/> Sulfates	<u></u>
<input type="checkbox"/> Zinc	<u></u>
<input type="checkbox"/> pH	<u></u>
<input type="checkbox"/> Conductivity	<u></u>
<input type="checkbox"/> TDS	<u></u>
<input type="checkbox"/> TOC	<u></u>

Radiochemistry

Parameter	Results (PCI/l)
<input type="checkbox"/> Gross Alpha	<u></u>
<input type="checkbox"/> Gross Beta	<u></u>

Microbiology

Parameter	Results (Col/100ml)
<input type="checkbox"/>	<u></u>
<input type="checkbox"/>	<u></u>

Organic Compounds	Results(mg/l)
<input type="checkbox"/> benzene	<u></u>
<input type="checkbox"/> carbon tetrachloride	<u></u>
<input type="checkbox"/> chlordane	<u></u>
<input type="checkbox"/> chlorobenzene	<u></u>
<input type="checkbox"/> chloroform	<u></u>
<input type="checkbox"/> o-cresol	<u></u>
<input type="checkbox"/> m-cresol	<u></u>
<input type="checkbox"/> p-cresol	<u></u>
<input type="checkbox"/> cresol	<u></u>
<input type="checkbox"/> 1,4-dichlorobenzene	<u></u>
<input type="checkbox"/> 1,2-dichloroethane	<u></u>
<input type="checkbox"/> 1,1-dichloroethylene	<u></u>
<input type="checkbox"/> 2,4-dinitrotoluene	<u></u>
<input type="checkbox"/> heptachlor	<u></u>
<input type="checkbox"/> hexachlorobenzene	<u></u>
<input type="checkbox"/> hexachlorobutadiene	<u></u>
<input type="checkbox"/> hexachloroethane	<u></u>
<input type="checkbox"/> methyl ethyl ketone	<u></u>
<input type="checkbox"/> nitrobenzene	<u></u>
<input type="checkbox"/> pentachlorophenol	<u></u>
<input type="checkbox"/> pyridine	<u></u>
<input type="checkbox"/> tetrachloroethylene	<u></u>
<input type="checkbox"/> trichloroethylene	<u></u>
<input type="checkbox"/> 2,4,5-trichlorophenol	<u></u>
<input type="checkbox"/> 2,4,6-trichlorophenol	<u></u>
<input type="checkbox"/> vinyl chloride	<u></u>
<input type="checkbox"/> endrin	<u></u>
<input type="checkbox"/> lindane	<u></u>
<input type="checkbox"/> methoxychlor	<u></u>
<input type="checkbox"/> toxaphene	<u></u>
<input type="checkbox"/> 2,4-D	<u></u>
<input type="checkbox"/> 2,4,5-TP (Silvex)	<u></u>

Date Received Reported by

Date Extracted Date Reported

Date Analyzed Lab Number

SAMPLE ANALYSIS REQUEST

CERCLA

Site Number 65D 000 830 646 Field Sample Number 14991

Name of Site CP & L, Sutton Steam Elec. PLANT Site Location WILMINGTON, NC

Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 10:20

Agency: ☐ Hazardous Waste ☐ Solid Waste ☒ Superfund

Sample Type

<u>Environmental</u>	<u>Concentrate</u>	<u>Comments</u>
<input type="checkbox"/> Ground water (1)	<input type="checkbox"/> Solid (5)	<u>SED - SOUTH</u>
<input type="checkbox"/> Surface water (2)	<input type="checkbox"/> Liquid (6)	<u>VOA / BNA / PCB's</u>
<input type="checkbox"/> Soil (3)	<input type="checkbox"/> Sludge (7)	
<input checked="" type="checkbox"/> Other (4) <u>SEDIMENT</u>	<input type="checkbox"/> Other (8)	

TCLP Compounds

<u>Inorganic Compounds</u>	<u>Results(mg/l)</u>
<input type="checkbox"/> Arsenic	
<input type="checkbox"/> Barium	
<input type="checkbox"/> Cadmium	
<input type="checkbox"/> Chromium	
<input type="checkbox"/> Lead	
<input type="checkbox"/> Mercury	
<input type="checkbox"/> Selenium	
<input type="checkbox"/> Silver	

RECEIVED
SUPERFUND SECTION

Organic Chemistry		Inorganic Chemistry	
Parameter	Results(mg/l)	Parameter	Results(mg/l)(mg/kg)
<input checked="" type="checkbox"/> P&T:GC/MS		<input type="checkbox"/> Arsenic	
<input checked="" type="checkbox"/> Acid:B/N Ext.		<input type="checkbox"/> Barium	
MTBE		<input type="checkbox"/> Cadmium	
<input checked="" type="checkbox"/> PCB'S	<u><0.0001</u>	<input type="checkbox"/> Chloride	
		<input type="checkbox"/> Chromium	
		<input type="checkbox"/> Copper	
		<input type="checkbox"/> Fluoride	
		<input type="checkbox"/> Iron	
		<input type="checkbox"/> Lead	
		<input type="checkbox"/> Manganese	
		<input type="checkbox"/> Mercury	
		<input type="checkbox"/> Nitrate	
		<input type="checkbox"/> Selenium	
		<input type="checkbox"/> Silver	
		<input type="checkbox"/> Sulfates	
		<input type="checkbox"/> Zinc	
		<input type="checkbox"/> pH	
		<input type="checkbox"/> Conductivity	
		<input type="checkbox"/> TDS	
		<input type="checkbox"/> TOC	

Radiochemistry	
Parameter	Results (PCI/l)
<input type="checkbox"/> Gross Alpha	
<input type="checkbox"/> Gross Beta	

Microbiology	
Parameter	Results (Col/100ml)

<u>Organic Compounds</u>	<u>Results(mg/l)</u>
<input type="checkbox"/> benzene	
<input type="checkbox"/> carbon tetrachloride	
<input type="checkbox"/> chlordane	
<input type="checkbox"/> chlorobenzene	
<input type="checkbox"/> chloroform	
<input type="checkbox"/> o-cresol	
<input type="checkbox"/> m-cresol	
<input type="checkbox"/> p-cresol	
<input type="checkbox"/> cresol	
<input type="checkbox"/> 1,4-dichlorobenzene	
<input type="checkbox"/> 1,2-dichloroethane	
<input type="checkbox"/> 1,1-dichloroethylene	
<input type="checkbox"/> 2,4-dinitrotoluene	
<input type="checkbox"/> heptachlor	
<input type="checkbox"/> hexachlorobenzene	
<input type="checkbox"/> hexachlorobutadiene	
<input type="checkbox"/> hexachloroethane	
<input type="checkbox"/> methyl ethyl ketone	
<input type="checkbox"/> nitrobenzene	
<input type="checkbox"/> pentachlorophenol	
<input type="checkbox"/> pyridine	
<input type="checkbox"/> tetrachloroethylene	
<input type="checkbox"/> trichloroethylene	
<input type="checkbox"/> 2,4,5-trichlorophenol	
<input type="checkbox"/> 2,4,6-trichlorophenol	
<input type="checkbox"/> vinyl chloride	
<input type="checkbox"/> endrin	
<input type="checkbox"/> lindane	
<input type="checkbox"/> methoxychlor	
<input type="checkbox"/> toxaphene	
<input type="checkbox"/> 2,4-D	
<input type="checkbox"/> 2,4,5-TP (Silvex)	

Date Received 6/28/91 4PM Reported by PCB's BNA
Date Extracted 7-18-91 12-1-91 AA Date Reported 8-16-91
Date Analyzed 8-8-91 9MP Lab Number 912444
DHIS 3191 (Revised 2/91) BD
PTC 22 C17115

SAMPLE ANALYSIS REQUEST

CERCLA

Site Number 65D 000 830 646 Field Sample Number 14992
Name of Site CP & L, Sutton Steam Elec PLANT Site Location WILMINGTON, NC
Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 11:15

Agency: ☐ Hazardous Waste ☐ Solid Waste ☒ Superfund

Sample Type

Environmental

Concentrate

Comments

☐ Ground water (1) ☐ Solid (5) SED - NORTH
☐ Surface water (2) ☐ Liquid (6) VOA/BNA/PCB's
☐ Soil (3) ☐ Sludge (7) _____
☒ Other (4) SEDIMENT Other (8) _____

TCLP Compounds

Inorganic Compounds **Results(mg/l)**

☐ Arsenic
☐ Barium
☐ Cadmium
☐ Chromium
☐ Lead
☐ Mercury
☐ Selenium
☐ Silver
RECEIVED
SUPERFUND SECTION

Organic Chemistry

Parameter	Results(mg/l)
<input checked="" type="checkbox"/> P&T:GC/MS	
<input checked="" type="checkbox"/> Acid:B/N Ext.	
<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> PCB's	<u><0.0001</u>

Radiochemistry

Parameter	Results (PCI/l)
<input type="checkbox"/> Gross Alpha	
<input type="checkbox"/> Gross Beta	

Microbiology

Parameter	Results (Col/100ml)

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
<input type="checkbox"/> Arsenic	
<input type="checkbox"/> Barium	
<input type="checkbox"/> Cadmium	
<input type="checkbox"/> Chloride	
<input type="checkbox"/> Chromium	
<input type="checkbox"/> Copper	
<input type="checkbox"/> Fluoride	
<input type="checkbox"/> Iron	
<input type="checkbox"/> Lead	
<input type="checkbox"/> Manganese	
<input type="checkbox"/> Mercury	
<input type="checkbox"/> Nitrate	
<input type="checkbox"/> Selenium	
<input type="checkbox"/> Silver	
<input type="checkbox"/> Sulfates	
<input type="checkbox"/> Zinc	
<input type="checkbox"/> pH	
<input type="checkbox"/> Conductivity	
<input type="checkbox"/> TDS	
<input type="checkbox"/> TOC	

Organic Compounds **Results(mg/l)**

☐ benzene
☐ carbon tetrachloride
☐ chlordane
☐ chlorobenzene
☐ chloroform
☐ o-cresol
☐ m-cresol
☐ p-cresol
☐ cresol
☐ 1,4-dichlorobenzene
☐ 1,2-dichloroethane
☐ 1,1-dichloroethylene
☐ 2,4-dinitrotoluene
☐ heptachlor
☐ hexachlorobenzene
☐ hexachlorobutadiene
☐ hexachloroethane
☐ methyl ethyl ketone
☐ nitrobenzene
☐ pentachlorophenol
☐ pyridine
☐ tetrachloroethylene
☐ trichloroethylene
☐ 2,4,5-trichlorophenol
☐ 2,4,6-trichlorophenol
☐ vinyl chloride
☐ endrin
☐ lindane
☐ methoxychlor
☐ toxaphene
☐ 2,4-D
☐ 2,4,5-TP (Silvex)

Date Received 6/28/91 9 AM Reported by _____
Date Extracted 7-18-91 10:30 AM Date Reported _____
Date Analyzed 8-8-91 4 PM Lab Number 912445
DIHS 3191 (Revised 2/91)

PT 8-23-91 7:11 PM

CERCLA

Site Number 65D 000 830 646 Field Sample Number 14993

Name of Site CP & L Sutton Steam Elec PLANT Site Location WILMINGTON, NC

Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 12:30

Agency: Hazardous Waste Solid Waste ☒ Superfund

Sample Type

Environmental

Concentrate

Comments

☒ Ground water (1) Solid (5) DW-01 VOA
 Surface water (2) Liquid (6)
 Soil (3) Sludge (7)
 Other (4) Other (8)

TCLP Compounds

Inorganic Compounds Results(mg/l)

 Arsenic
 Barium
 Cadmium
 Chromium
 Lead
 Mercury
 Selenium
 Silver

Organic Chemistry

Inorganic Chemistry

Parameter Results(mg/l)
☒ P&T:GC/MS
 Acid:B/N Ext.
 MTBE

Parameter Results(mg/l)(mg/kg)
 Arsenic
 Barium
 Cadmium
 Chloride
 Chromium
 Copper
 Fluoride
 Iron
 Lead
 Manganese
 Mercury
 Nitrate
 Selenium
 Silver
 Sulfates
 Zinc
 pH
 Conductivity
 TDS
 TOC

Radiochemistry

Parameter Results (PCI/l)
 Gross Alpha
 Gross Beta

Microbiology

Parameter Results (Col/100ml)

Organic Compounds Results(mg/l)

 benzene
 carbon tetrachloride
 chlordane
 chlorobenzene
 chloroform
 o-cresol
 m-cresol
 p-cresol
 cresol
 1,4-dichlorobenzene
 1,2-dichloroethane
 1,1-dichloroethylene
 2,4-dinitrotoluene
 heptachlor
 hexachlorobenzene
 hexachlorobutadiene
 hexachloroethane
 methyl ethyl ketone
 nitrobenzene
 pentachlorophenol
 pyridine
 tetrachloroethylene
 trichloroethylene
 2,4,5-trichlorophenol
 2,4,6-trichlorophenol
 vinyl chloride
 endrin
 lindane
 methoxychlor
 toxaphene
 2,4-D
 2,4,5-TP (Silvex)

Date Received 6/28/91 JPM Reported by

Date Extracted Date Reported

Date Analyzed VGC 8/20/91 JPM Lab Number 912446

SAMPLE ANALYSIS REQUEST

CERCLA

Site Number 65D 000 830 646 Field Sample Number 14994

Name of Site CP & L, Sutton Steam Elec PLANT Site Location WILMINGTON, NC

Collected By HARVEY ALLEN ID# 76 Date Collected 6-27-91 Time 12:30

Agency: Hazardous Waste Solid Waste ✓ Superfund

Sample Type

Environmental

Concentrate

Comments

✓ Ground water (1) Solid (5) DW-01
 Surface water (2) Liquid (6) 2L BNA's / PCB
 Soil (3) Sludge (7)
 Other (4) Other (8)

TCLP Compounds

Inorganic Compounds Results(mg/l)

 Arsenic
 Barium RECEIVED
 Cadmium
 Chromium 8.7 1991
 Lead
 Mercury SUPERFUND SECTION
 Selenium
 Silver

Organic Chemistry

Inorganic Chemistry

Parameter	Results(mg/l)
<u> </u> P&T:GC/MS	<u> </u>
<u>✓</u> <u>Acid:B/N Ext.</u>	<u> </u>
<u> </u> MTBE	<u> </u>
<u>✓</u> <u>PCB'S</u>	<u><0.0001</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

Parameter	Results(mg/l)(mg/kg)
<u> </u> Arsenic	<u> </u>
<u> </u> Barium	<u> </u>
<u> </u> Cadmium	<u> </u>
<u> </u> Chloride	<u> </u>
<u> </u> Chromium	<u> </u>
<u> </u> Copper	<u> </u>
<u> </u> Fluoride	<u> </u>
<u> </u> Iron	<u> </u>
<u> </u> Lead	<u> </u>
<u> </u> Manganese	<u> </u>
<u> </u> Mercury	<u> </u>
<u> </u> Nitrate	<u> </u>
<u> </u> Selenium	<u> </u>
<u> </u> Silver	<u> </u>
<u> </u> Sulfates	<u> </u>
<u> </u> Zinc	<u> </u>
<u> </u> pH	<u> </u>
<u> </u> Conductivity	<u> </u>
<u> </u> TDS	<u> </u>
<u> </u> TOC	<u> </u>

Radiochemistry

Parameter	Results (PCI/I)
<u> </u> Gross Alpha	<u> </u>
<u> </u> Gross Beta	<u> </u>

Microbiology

Parameter	Results (Col/100ml)
<u> </u>	<u> </u>
<u> </u>	<u> </u>

Organic Compounds Results(mg/l)

 benzene
 carbon tetrachloride
 chlordane
 chlorobenzene
 chloroform
 o-cresol
 m-cresol
 p-cresol
 cresol
 1,4-dichlorobenzene
 1,2-dichloroethane
 1,1-dichloroethylene
 2,4-dinitrotoluene
 heptachlor
 hexachlorobenzene
 hexachlorobutadiene
 hexachloroethane
 methyl ethyl ketone
 nitrobenzene
 pentachlorophenol
 pyridine
 tetrachloroethylene
 trichloroethylene
 2,4,5-trichlorophenol
 2,4,6-trichlorophenol
 vinyl chloride
 endrin
 lindane
 methoxychlor
 toxaphene
 2,4-D
 2,4,5-TP (Silvex)

Date Received 6/28/91 7PM Reported by

Date Extracted 7-27-91 AA, BD Date Reported

Date Analyzed 8-16-91 Lab Number 912447

SOLID WASTE MANAGEMENT DIVISION
SUPERFUND SECTION

CERCLA

Chain of Custody Record

Hazardous Waste Materials

Location of Sampling: ☒ Generator ☐ Transporter
☐ Treatment Facility ☐ Storage Facility
☐ Disposal Facility ☐ Landfill
☐ Other: _____

Company's Name CPL SUTTON STEAM ELECT. PLANT Telephone: RECEIVED

Address WILMINGTON, NC

Collector's Name _____ Telephone: 919 538-3801
signature

Date Sampled 6-27-91 Time Sampled _____

Type of Process Generating Waste _____

Field Information: _____

Field Sample No. 14990 14991 14992 14993 14994

Chain of Possession:

Harvey Allen
signature

Env. Engineer
title

6/24/91 - 6/28/91 (14990)
6/21/91 - 6/28/91
inclusive dates

Jona P. Medlin
signature

Chemist
title

6/28/91
inclusive dates

signature

title

inclusive dates

Results Reported:

John L. Neal
signature

Chemist
title

8-26-91
date

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

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

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	912444	912445	912447			
COMPOUND	FIELD #	14991	14992	14994			
	TYPE	(4)	(4)	(1)	()	()	()
	UNITS	μg/kg	μg/kg	μg/l	μg/l μg/kg	μg/l μg/kg	μg/l μg/kg
nitrosodimethylamine	10/330	12	12	12			
s(2-chloroethyl)ether							
2-chlorophenol							
phenol							
3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
s(2-chloroisopropyl)ether							
hexachloroethane							
N-nitroso-di-n-propylamine							
trobenzene							
ophorone							
2-nitrophenol							
2,4-dimethylphenol							
s(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
phthalene							
hexachlorobutadiene							
4-chloro-m-cresol							
hexachlorocyclopentadiene							
4,6-trichlorophenol							
2-chloronaphthalene							
acenaphthylene							
dimethyl phthalate							
2,6-dinitrotoluene							
acenaphthene							
4-dinitrophenol	50/1650						
4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
fluorene	10/330						
-chlorophenylphenylether							
diethyl phthalate							
4,6-dinitro-o-cresol	50/1650						
iphenylamine							
azobenzene							
4-bromophenylphenylether	10/330						
hexachlorobenzene	10/330						
pentachlorophenol	50/1650						
phenanthrene	10/330						
anthracene							
ibutyl phthalate							
fluoranthene							

MDL

H₂O/SOIL

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

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

ORGANIC CHEMICAL ANALYSIS

NEUTRAL AND ACID EXTRACTABLES	LAB NO	912444	912445	912447			
COMPOUND	FIELD #	14991	14992	14994			
	TYPE	(4)	(4)	(1)	()	()	()
	UNITS	µg µg/kg	µg µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg	µg/l µg/kg
pyrene	10/330	u	u	u			
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene	↓						
chrysene	↓						
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene	↓						
benzo(a)pyrene	↓						
indeno(1,2,3-cd)pyrene	↓						
dibenzo(a,h)anthracene	↓	✓	✓	✓			
benzo(g,h,i)perylene	↓	✓	✓	✓			
aniline	50/1650	u	u	u			
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330						
2-methylnaphthalene	↓						
2-methylphenol	↓						
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓	✓	✓	✓			
2,4,5-trichlorophenol	↓	✓	✓	✓			

MDL

H₂O/501L

J - Estimated value.

K - Actual value is known to be less than value given.

L - Actual value is known to be greater than value given.

Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL

Not analyzed.

1/ - Tentative identification.

2/ - On NRDC List of Priority Pollutants.

N. C. DEPARTMENT OF ENVIRONMENT, HEALTH, & NATURAL RESOURCES
DIVISION OF LABORATORY SERVICES, ENVIRONMENTAL SCIENCES SECTION
P.O. BOX 28047 - 306 N. WILMINGTON ST, RALEIGH, N.C. 27611

Laboratory No. 912443

PURGEABLE COMPOUNDS

Date of Analysis 8/20/91

COMPOUND	µg/l
Dichlorodifluoromethane	U
Chloromethane	
✓Vinyl Chloride	
Bromomethane	
Chloroethane	
Trichlorofluoromethane	
✓1,1-Dichloroethylene	✓
Methylene Chloride	1K, C
tert-Butyl Methyl Ether	U
trans-1,2-Dichloroethylene	
Isopropyl ether	
1,1-Dichloroethane	
2,2-Dichloropropane	
cis-1,2-Dichloroethylene	
Chloroform	
(BCM) Bromochloromethane	
✓1,1,1-Trichloroethane	
1,1-Dichloropropene	
✓Carbon Tetrachloride	
✓Benzene	
✓1,2-Dichloroethane	
✓Trichloroethylene	
1,2-Dichloropropane	
Bromodichloromethane	
Dibromomethane	
Toluene	
1,1,2-Trichloroethane	
Tetrachloroethylene	
1,3-Dichloropropane	
Dibromochloromethane	
1,2-Dibromoethane (EDB)	
1-Chlorohexane	✓

COMPOUND	µg/l
Chlorobenzene	U
Ethylbenzene	
1,1,1,2-Tetrachloroethane	1001
p-Xylene	
m-Xylene	1001
o-Xylene	
Styrene	SUPERFUND SECTION
Bromoform	
Isopropylbenzene	
1,1,2,2-Tetrachloroethane	
Bromobenzene	
n-Propylbenzene	
1,2,3-Trichloropropane	
2-Chlorotoluene	
1,3,5-Trimethylbenzene	
4-Chlorotoluene	
tert-Butyl Benzene	
Pentachloroethane	
1,2,4-Trimethylbenzene	
sec-Butyl Benzene	
p-Isopropyltoluene	
1,3-Dichlorobenzene	
✓1,4-Dichlorobenzene	
n-Butylbenzene	
1,2-Dichlorobenzene	
Bis (2-Chloroisopropyl) Ether	
1,2-Dibromo-3-Chloropropane	
1,2,4-Trichlorobenzene	
Hexachlorobutadiene	
Naphthalene	
1,2,3-Trichlorobenzene	✓

COMMENTS: Unidentified peaks present

MDL - Minimum Detection Limit for water (EPA Method 502.2), is 1.0 µg/l.

C - Possible Lab contamination.

J - Estimated value.

K - Actual value is known to be less than value given.

L - Actual value is known to be greater than value given.

U - Material was analyzed for but not detected.

NA - Not analyzed.

1/ - Tentative identification.

✓ - Regulated VOC

T - Trihalomethane

N.C. Dept. of Environment, Health, & Natural Resources
DEHNR 3068-0 (Rev. 1/91 Laboratory Services)

N. C. DEPARTMENT OF ENVIRONMENT, HEALTH, & NATURAL RESOURCES
DIVISION OF LABORATORY SERVICES, ENVIRONMENTAL SCIENCES SECTION
P.O. BOX 28047 - 306 N. WILMINGTON ST, RALEIGH, N.C. 27611

Laboratory No. 912446

PURGEABLE COMPOUNDS

Date of Analysis 8/20/91

COMPOUND	µg/l
Dichlorodifluoromethane	U
Chloromethane	U
✓Vinyl Chloride	U
Bromomethane	U
Chloroethane	U
Trichlorofluoromethane	U
✓1,1-Dichloroethylene	U
Methylene Chloride	1K, C
tert-Butyl Methyl Ether	U
trans-1,2-Dichloroethylene	U
Isopropyl ether	U
1,1-Dichloroethane	U
2,2-Dichloropropane	U
cis-1,2-Dichloroethylene	U
Chloroform	1K, T
(BCM) Bromochloromethane	U
✓1,1,1-Trichloroethane	U
1,1-Dichloropropene	U
✓Carbon Tetrachloride	U
✓Benzene	U
✓1,2-Dichloroethane	U
✓Trichloroethylene	U
1,2-Dichloropropane	U
Bromodichloromethane	U
Dibromomethane	U
Toluene	U
1,1,2-Trichloroethane	U
Tetrachloroethylene	U
1,3-Dichloropropane	U
Dibromochloromethane	U
1,2-Dibromoethane (EDB)	U
1-Chlorohexane	U
Ethyl ether	trace, C

COMPOUND	µg/l
Chlorobenzene	U
Ethylbenzene	U
1,1,1,2-Tetrachloroethane	U
p-Xylene	U
m-Xylene	U
o-Xylene	U
Styrene	U
Bromoform	U
Isopropylbenzene	U
1,1,2,2-Tetrachloroethane	U
Bromobenzene	U
n-Propylbenzene	U
1,2,3-Trichloropropane	U
2-Chlorotoluene	U
1,3,5-Trimethylbenzene	U
4-Chlorotoluene	U
tert-Butyl Benzene	U
Pentachloroethane	U
1,2,4-Trimethylbenzene	U
sec-Butyl Benzene	U
p-Isopropyltoluene	U
1,3-Dichlorobenzene	U
✓1,4-Dichlorobenzene	U
n-Butylbenzene	U
1,2-Dichlorobenzene	U
Bis (2-Chloroisopropyl) Ether	U
1,2-Dibromo-3-Chloropropane	U
1,2,4-Trichlorobenzene	U
Hexachlorobutadiene	U
Naphthalene	U
1,2,3-Trichlorobenzene	U

COMMENTS:

MDL - Minimum Detection Limit for water (EPA Method 502.2), is 1.0 µg/l.

C - Possible Lab contamination

J - Estimated value.

K - Actual value is known to be less than value given.

L - Actual value is known to be greater than value given.

U - Material was analyzed for but not detected.

NA - Not analyzed.

1/ - Tentative identification.

✓ - Regulated VOC

T - Trihalomethane

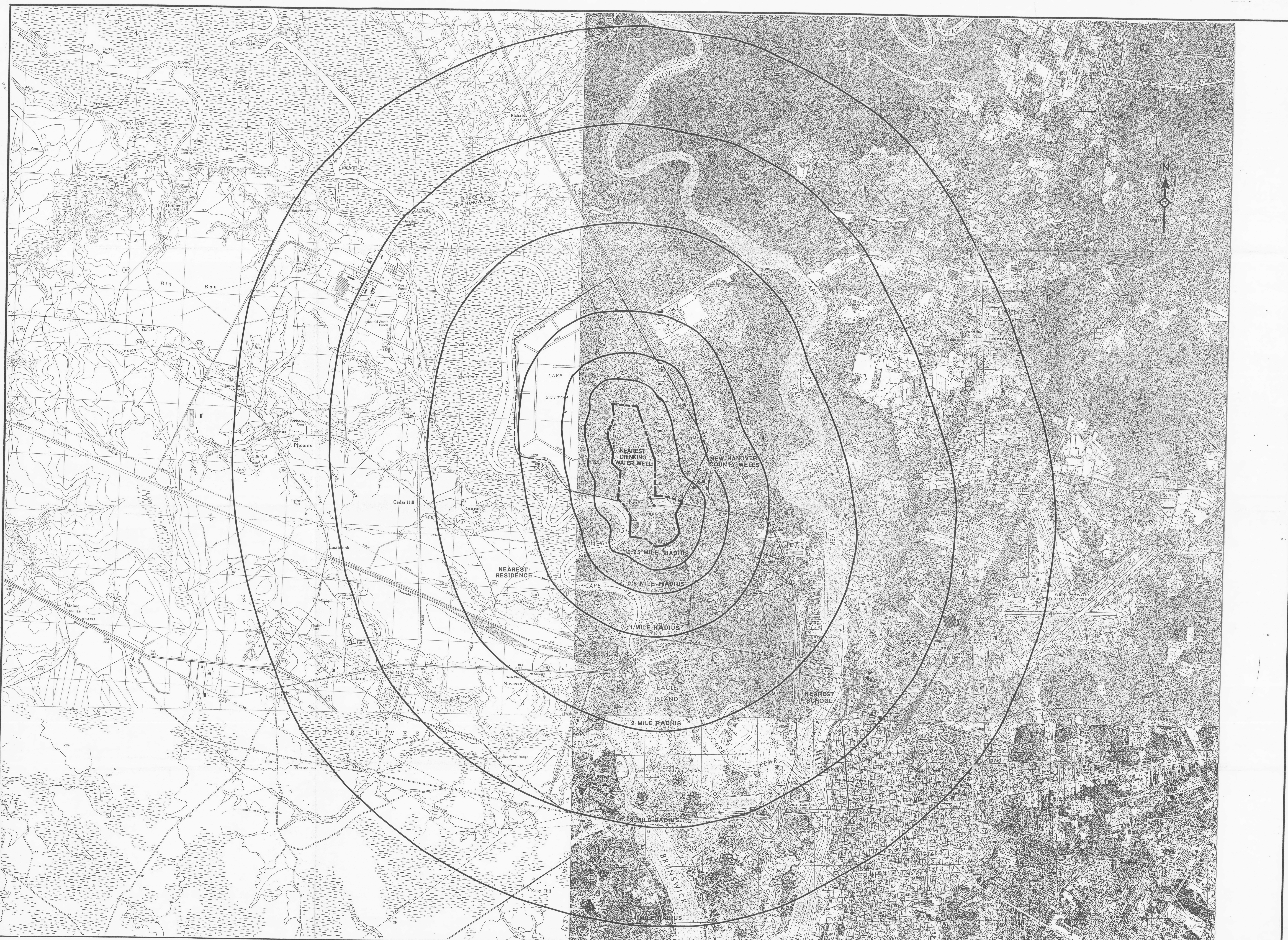
N.C. Dept. of Environment, Health, & Natural Resources
DEHNR 3068-0 (Rev. 1/91 Laboratory Services)

ORGANIC CHEMICAL ANALYSIS

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

N.C. Division of Health Services

DHS 3068-0 (4/86 Laboratory)



LEGEND

PROPERTY BOUNDARY

NEW HANOVER COUNTY WATER SYSTEM

SITE BOUNDARY

•

NEW HANOVER COUNTY DRINKING WATER WELL

GE

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CP & L, SUTTEN STEAM ELECTRIC PLANT
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
TOPOGRAPHIC MAP
NCD 000830646

SOURCE: USGS Topographic Maps: Leland, N.C., 1984, (contour interval 2') Castle Hayne, N.C., 1970, (contour interval 5')
Winnabow, N.C., 1943, (contour interval 20'); N.C., 1970, (P.R. 1979), (contour interval 5')

DESIGN	1"=2000' SCALE	SCALE IN FEET 0 2000'
DRAWN	FIGURE 3	
CHECKED	SHEET	
DATE	JOB No.	FILE No.